BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICIENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

DIRECT TESTIMONY

OF

ALEXANDER M. REEDIN

April 15, 2026

NMPRC DOCKET NO. 26-00000XX
INDEX TO THE DIRECT TESTIMONY OF
ALEXANDER M. REEDIN

WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

I. INTRODUCTION AND PURPOSE

Q. Please state your name, position and business address.

A. My name is Alexander M. Reedin. I am a Program Manager, Energy Efficiency and Development, for Public Service Company of New Mexico ("PNM"). My business address is Public Service Company of New Mexico, 414 Silver Ave. SW, Albuquerque, New Mexico 87102.

Q. Please summarize your educational background and professional qualifications.

A. I graduated from Pomona College in 2007 with a Bachelor of Arts degree in Economics. Since 2018, I have been employed by PNM and have held a position in Energy Efficiency & Load Management since 2023. I have seven years' previous experience in energy efficiency & load management working at Portland General Electric, CLEAResult, and PECI. My resume is attached to my Direct Testimony as PNM Exhibit AMR-1.

Q. Please describe your responsibilities as Program Manager, Energy Efficiency and Development.

A. As a Program Manager, Energy Efficiency and Development, I am responsible for the research and development of PNM's energy efficiency and load management programs as well as preparation of regulatory filings and reporting on these programs. My responsibilities include researching potential new programs, performing cost-effectiveness analyses, soliciting public input on proposed plans, evaluating and selecting third-party implementation contractors, supporting the forecasting of energy and demand impact, tracking actual performance and customer participation, preparing annual reports for filing with the Commission, and preparing testimony and exhibits for energy efficiency cases.

Q. What is the purpose of your direct testimony?

A. My testimony is in support of the portfolio of energy efficiency and load management programs presented in PNM's 2027 Energy Efficiency and Load Management Program Plan ("2027 Plan"), which PNM proposes to implement beginning January 1, 2027. The 2027 Plan will cover plan years 2027, 2028, and 2029, consistent with requirements of 17.7.2.8(A) NMAC. The 2027 Plan is PNM Exhibit AMR-2 attached to my direct testimony. My testimony:

1. Introduces PNM's other witnesses in this case who are presenting direct testimony;
2. Summarizes PNM's Application and PNM's 2027 Plan and discusses the public advisory process PNM has implemented;
3. Describes PNM's proposed energy efficiency ("EE") programs and demand response ("DR") programs;
4. Discusses overall plan development, including costs, forecasted customer participation rates, utility cost test ("UCT") calculations, targeted customer segments and the measurement and verification ("M&V") process for the 2027 Plan;
5. Summarizes the requirements of the Efficient Use of Energy Act ("EUEA")[1] and the Energy Efficiency Rule ("EE Rule")[2];

[1] NMSA 1978, §§ 62-17-1 to 11 (2005, as amended through 2020).
[2] 17.7.2 NMAC.

6. Describes PNM's proposed profit incentive mechanism and shows that it is consistent with previous Commission orders, the EUEA, the EE Rule, and the Public Utility Act ("PUA"),[3] and should be approved; and
7. Describes PNM's requested variances from the data filing requirements of 17.9.530 NMAC and from certain requirements of 17.7.2 NMAC.

Q. Can you summarize the relevant portions of the 2025 amendments to the EE Rule, 17.7.2 NMAC?

A. The edits to the EE Rule in 24-00157-UT included, among other changes, the following:

1. Clarification that the UCT benefits must exceed the costs at the portfolio level, not the measure or program level (17.7.2.8.G NMAC).
2. A change to the maximum annual incentive award from the product expressed in dollars of the public utility's weighted cost of capital (expressed as a percent) plus two percent, and its approved plan year funding (17.7.2.8.H (4) NMAC).
3. "A public utility shall direct at least 10 percent of its plan year funding, during each year of the plan period, to programs for low-income customers." (17.7.2.9.B NMAC).
4. "The public utility shall file its annual report in the docket associated with the triennial plan covering the plan year subject of the report." (17.7.2.14.A (2) NMAC).

[3] NMSA 1978, §§ 62-1-7 to-6-28 and 62-8-1 to -13-15.

5. The Commission found it "reasonable to *sua sponte* grant PNM a variance from the 2025 total retail kilowatt-hour sales requirement to allow PNM to base its next triennial plan upon 2024 sales figures."

Q. Does PNM's application comply with these amendments?

A. Yes. The remainder of my testimony will demonstrate compliance with these amendments.

Q. What other PNM witnesses are providing direct testimony in this case?

A. Mr. Thomas Duane, PNM's Director of Integrated Resource Planning, presents the avoided energy and capacity costs that I use in the Utility Cost Test ("UCT") calculations, and the methodology used to derive the avoided energy and capacity costs.

Mr. Erfan Hakimian, PNM's Director of Transmission & Distribution Planning & Construction presents the process of selecting Demand Side Analytics as PNM's vendor for calculating avoided transmission and distribution costs.

Josh Bode, a partner at Demand Side Analytics, presents the methodology used to derive the avoided transmission and distribution costs.

Mr. Abraham Casas, PNM's Lead Pricing Analyst, supports PNM's Advice Notice No. 656, the 33rd Revised EE Rider No. 16 ("EE Rider"), through which PNM proposes to recover the costs of implementing its EE and LM programs and a reasonable profit incentive in

2027, 2028 and 2029. He also describes PNM's plan for reconciling the EE Rider based on actual revenues and energy efficiency savings realized in 2025.

II. SUMMARY OF PNM'S APPLICATION

Q. Please summarize PNM's application in this case.

A. PNM's Application requests approval of its 2027 Plan, a reasonable profit incentive, and the EE Rider. In the 2027 Plan, PNM proposes to continue all its existing energy efficiency and load management programs that were approved in Case No. 23-00138-UT (PNM's last Energy Efficiency application), with updated participation targets, budgets, and other modifications.

PNM solicited and received comments and recommendations from interested parties on its 2027 Plan through the public advisory process. PNM held two public advisory meetings related to the 2027 Plan. Among those parties in attendance at either individual, or all meetings included Staff, Western Resource Advocates ("WRA"), the New Mexico Energy, Minerals, and Natural Resources Department ("EMNRD"), Southwest Energy Efficiency Project ("SWEEP"), and NM Gas Company. PNM invited the New Mexico Department of Justice as well, but they did not attend. PNM carefully considered those comments and recommendations and incorporated many of them into the 2027 Plan. The portfolio of programs in the 2027 Plan is cost effective in 2027, 2028, and 2029, as required by the EUEA, NMSA 1978, Section 62-17-5(C). Based on 2024 sales and current rates, the 2027 Plan complies with the minimum of 3% and no more than 5% program funding requirement of Section 62-17-6A.(1) of the EUEA with 4.35% funding in 2027, 4.54% in 2028, and

4.66% in 2029, taking into account the $75,000 customer bill impact cap, customer self-directed program credits, and customer self-directed program exemptions. In order to account for rate changes and/or sales variations in the later years of the 2027 Plan, PNM proposes to update its budget and incentive with each annual reconciliation filing, as further described later in my testimony.

The 2027 Plan proposes annual funding of $42,562,135, $44,418,321 and $45,611,509 based on program plans proposed for 2027, 2028, and 2029 respectively and complying with the EUEA requirement to spend no less than 3% and no more than 5% of customers' estimated bills. The 2027 Plan proposes base level profit incentives of $3,021,912, $3,153,701, and $3,238,417, equal to 7.1% of the estimated 2027, 2028, and 2029 calendar year budgets, respectively. As I describe in more detail later in my testimony, PNM proposes to recover the base level incentives if it achieves annual savings in years 2027, 2028, and 2029 adequate for PNM to meet its 2030 energy efficiency savings requirement of 5.0% of 2025 sales to New Mexico customers, as required by Section 62-17-5(G) of the EUEA.

The 2027 Plan is cost effective, with a UCT ratio of 1.81 for the portfolio of programs in 2027, 1.77 in 2028, and 1.73 in 2029. The cost-effectiveness of the portfolio has been calculated in accordance with Section 62-17-5(C) of the EUEA. In addition, more than 10% of the 2027 Plan funding is devoted to programs directed at low-income customers, as per the most current EE Rule, 17.7.2.9 B.

17.9.530 NMAC ("Rule 530") imposes certain data filing requirements on investor-owned electric utilities applying for new or modified rates. To the extent the Commission deems Rule 530 applicable to PNM's proposed changes to the EE Rider rates, PNM requests a variance from that Rule so that PNM need not file the schedules and other data in this proceeding. Because PNM is not seeking a change in base rates and due to the specialized nature of the EE Rider, the detailed filing requirements of Rule 530 would serve no useful purpose. For that reason, the Commission granted a similar variance from Rule 530 in PNM's last energy efficiency case, Case No. 23-00138-UT.

Q. What are the energy efficiency savings requirements that PNM must meet?

A. Section 62-17-5(G) of the EUEA requires utilities to achieve cumulative energy efficiency savings of five percent of 2025 total retail kilowatt-hour ("kWh") sales to New Mexico customers that have an opportunity to participate in calendar year 2030. However, the Commission found it "reasonable to *sua sponte* grant PNM a variance from the 2025 total retail kilowatt-hour sales requirement to allow PNM to base its next triennial plan upon 2024 figures." The 2030 target may be reduced by the Commission if a utility cannot achieve the target within the 3% to 5% funding level prescribed by Section 62-17-6(A)(1) of the EUEA. PNM's total retail sales in 2024 were 8,102 GWh, making its EUEA cumulative savings requirements by 2030 to be approximately 405 GWh, or 81 GWh annually.

Q. Will the projected annual savings under the 2027 plan position PNM to meet the 2028 EUEA savings requirement?

A. Yes. If PNM achieves satisfactory program performance in 2026, 2027, and 2028, and continues to achieve satisfactory program performance through 2030, PNM will meet its statutorily required savings goal of 405 GWh in 2030.

PNM's current programs have broad application across many customer classes. PNM anticipates that the modifications proposed in the 2027 Plan will maintain the cost-effectiveness of the programs at the portfolio level and their attractiveness to customers in the rate classes to which the EE Rider applies, including low-income customers. The 2027 Plan includes low-cost and no-cost programs to achieve broad participation among all residential customers.

II. SUMMARY OF PNM'S 2027 PLAN

Q. Please summarize the 2027 plan.

A. The 2027 Plan describes the EE and DR programs PNM proposes to implement in calendar years 2027, 2028, and 2029, including the participation targets and budgets. PNM proposes to continue the portfolio of ten programs approved by the Commission in Case No. 23-00138-UT, with some program enhancements and modifications to budgets which are also described in the 2027 Plan. The portfolio of programs as a whole in the 2027 Plan passes the UCT for cost-effectiveness. The 2027 Plan complies with the minimum of 3% and no more than 5% of bills program cost funding requirement of Section 62-17-6(A)(1) of the

EUEA, based on 2024 calendar year bills. It also complies with the $75,000 customer bill impact cap of the EUEA and customers' self-directed program credits or exemptions.

The proposed 2027 Plan has a total 2027 estimated calendar year budget of $42,562,135 with projected annual energy savings of approximately 98.9 gigawatt-hours ("GWh") and demand savings of about 102 megawatts ("MW"). For 2028, the proposed calendar year budget is estimated at $44,418,321, with projected annual energy savings of approximately 99.5 GWh and demand savings of about 105 MW. The 2029 calendar year includes an estimated budget of $45,611,509, with projected annual energy savings of approximately 100.1 GWh and demand savings of about 107 MW. The 2027 Plan is cost effective, with estimated UCT ratios for the portfolio of 1.81 for calendar year 2027, 1.77 for calendar year 2028, and 1.73 for calendar year 2029. Table 1, Table 2, and Table 3, below, summarize the 2027 Plan for calendar years 2027, 2028, and 2029, respectively.

Table 1

2027 Programs	Budget	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings	UCT
Residential Comp.	$ 8,867,178	11,079,354	111,822,794	1,670	0.85
Commercial Comp.	$ 12,008,683	41,114,842	435,817,324	8,299	2.59
Behavioral Comp.	$ 1,191,541	13,481,611	24,616,371	2,618	1.82
Residential Products	$ 4,310,281	16,484,934	204,413,181	2,257	2.70
Easy Savings	$ 3,047,135	8,009,600	80,095,998	1,771	2.31
Energy Smart (Housing NM/MFA)	$ 344,416	430,004	6,622,062	241	1.83
New Home Const.	$ 1,381,265	1,459,576	23,499,175	338	0.88
Home Works	$ 883,652	3,441,789	45,775,799	106	2.46
Power Saver (LM)	$ 7,050,534	2,199,440	2,199,440	54,986	1.30
Peak Saver (LM)	$ 3,477,451	1,200,001	1,200,001	30,000	1.43
Total	**$ 42,562,135**	**98,901,152**	**936,062,145**	**102,286**	**1.81**

Table 2

2028 Programs	Budget	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings	UCT
Residential Comp.	$ 9,240,548	11,360,688	115,517,419	1,838	0.88
Commercial Comp.	$ 12,477,869	41,482,257	439,711,925	8,398	2.51
Behavioral Comp.	$ 1,243,935	13,060,328	24,195,088	2,477	1.88
Residential Products	$ 4,362,852	16,344,957	202,677,472	2,154	2.60
Easy Savings	$ 3,367,411	8,350,156	83,501,561	2,764	2.48
Energy Smart (Housing NM/MFA)	$ 365,756	450,056	6,930,862	253	1.66
New Home Const.	$ 1,469,900	1,558,115	25,085,650	360	0.85
Home Works	$ 938,446	3,441,789	45,775,799	106	2.37
Power Saver (LM)	$ 7,393,091	2,260,840	2,260,840	56,521	1.24
Peak Saver (LM)	$ 3,558,514	1,200,001	1,200,001	30,000	1.37
Total	**$ 44,418,321**	**99,509,189**	**946,856,618**	**104,871**	**1.77**

Table 3

2029 Programs	Budget	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings	UCT
Residential Comp.	$ 9,674,799	11,699,614	119,730,447	2,004	0.88
Commercial Comp.	$ 12,616,832	41,656,387	441,557,700	8,446	2.43
Behavioral Comp.	$ 1,269,830	12,620,759	23,755,519	2,424	2.07
Residential Products	$ 4,365,221	16,346,804	202,700,371	2,154	2.54
Easy Savings	$ 3,640,915	8,738,385	87,383,852	2,938	2.42
Energy Smart (Housing NM/MFA)	$ 380,011	472,336	7,273,974	265	1.60
New Home Const.	$ 1,561,370	1,664,866	26,804,346	397	0.84
Home Works	$ 971,395	3,441,804	45,775,993	106	2.26
Power Saver (LM)	$ 7,574,078	2,322,240	2,322,240	58,056	1.22
Peak Saver (LM)	$ 3,557,058	1,200,001	1,200,001	30,000	1.35
Total	**$ 45,611,509**	**100,163,196**	**958,504,443**	**106,792**	**1.73**

Q. Please compare the 2027 plan with PNM's current plan, which was approved for years 2024 – 2026 in Case No. 23-00138-UT.

A. The 2027 Plan differs from the plan approved in Case No. 23-00138-UT in the following principal respects:

- The total budget for existing EE programs would increase by approximately 17% in 2027, 22% in 2028, and 25% in 2029 over the 2026 budget. In addition to cost increases due to inflation and tariffs, PNM is aware of a federal environment that may limit the federal assistance available to customers in coming years. In this environment, PNM is striving to provide all that it can cost-effectively to customers under the EUEA.

- Table 4, Table 5 and Table 6, below, list the existing programs and show the percentage change in budgets for each of years 2027, 2028 and 2029 as compared to the program budget for 2026.

Table 4

2027 Programs	2027 Budget	2026 PRC approved Budget	Increase over 2026
Residential Comp.	$ 8,867,178	$ 7,891,239	12%
Residential Products	$ 4,310,281	$ 4,548,682	-5%
Commercial Comp.	$ 12,008,683	$ 10,639,693	13%
Behavioral Comp.	$ 1,191,541	$ 1,026,434	16%
Easy Savings	$ 3,047,135	$ 235,256	1195%
Energy Smart (Housing NM/N	$ 344,416	$ 1,320,454	-74%
New Home Const.	$ 1,381,265	$ 607,016	128%
Home Works	$ 883,652	$ 819,907	8%
Power Saver (LM)	$ 7,050,534	$ 5,547,244	27%
Peak Saver (LM)	$ 3,477,451	$ 3,843,112	-10%
Total	**$ 42,562,135**	**$ 36,479,038**	**17%**

1 **Table 5**

2028 Programs	2028 Budget	2026 PRC approved Budget	Increase over 2026
Residential Comp.	$ 9,240,548	$ 7,891,239	17%
Residential Products	$ 4,362,852	$ 4,548,682	-4%
Commercial Comp.	$ 12,477,869	$ 10,639,693	17%
Behavioral Comp.	$ 1,243,935	$ 1,026,434	21%
Easy Savings	$ 3,367,411	$ 235,256	1331%
Energy Smart (Housing NM/N	$ 365,756	$ 1,320,454	-72%
New Home Const.	$ 1,469,900	$ 607,016	142%
Home Works	$ 938,446	$ 819,907	14%
Power Saver (LM)	$ 7,393,091	$ 5,547,244	33%
Peak Saver (LM)	$ 3,558,514	$ 3,843,112	-7%
Total	**$ 44,418,321**	**$ 36,479,038**	**22%**

2 **Table 6**

2029 Programs	2029 Budget	2026 PRC approved Budget	Increase Over 2026
Residential Comp.	$ 9,674,799	$ 7,891,239	23%
Residential Products	$ 4,365,221	$ 4,548,682	-4%
Commercial Comp.	$ 12,616,832	$ 10,639,693	19%
Behavioral Comp.	$ 1,269,830	$ 1,026,434	24%
Easy Savings	$ 3,640,915	$ 235,256	1448%
Energy Smart (Housing NM/N	$ 380,011	$ 1,320,454	-71%
New Home Const.	$ 1,561,370	$ 607,016	157%
Home Works	$ 971,395	$ 819,907	18%
Power Saver (LM)	$ 7,574,078	$ 5,547,244	37%
Peak Saver (LM)	$ 3,557,058	$ 3,843,112	-7%
Total	**$ 45,611,509**	**$ 36,479,038**	**25%**

Q. Does the 2027 plan comply with the funding requirements of the EUEA and the Commission's Energy Efficiency Rule?

A. The 2027 Plan complies with the 2019 amendments to the EUEA and the edits to the EE Rule in energy efficiency rulemaking 24-00157-UT. The EUEA specifies that funding for energy efficiency and load management program costs shall be no less than 3% and no more than 5% of customers' bills but cannot exceed $75,000 for any customer per calendar year.[4] Since PNM is proposing to continue the 2024-2026 portfolio of programs, PNM has derived its 2027 Plan program budgets by updating them to account for modifications and improvements to those programs. The total proposed budgets for the 2027 Plan fall within the range of 3% to 5% of projected 2026 calendar year revenues from the classes of customers that are billed under the Energy Efficiency Rider No. 16 ("Rider 16"). PNM will update this comparison each year with its reconciliation filing in order to account for updated projected sales and/or rate changes and spending that may occur. Should it become necessary, PNM will modify its program budget in order to maintain compliance with the 3% to 5% requirement.

The calendar year 2027 budget is adjusted for the Rider 16 over-collection in calendar year 2025. The reconciliation of 2025 program costs is being filed concurrently with the 2027 Plan. PNM witness Abraham Casas discusses in his testimony the details of PNM's calculation of the funding amount used in this filing.

[4] In addition, the Commission's Energy Efficiency rule specifies that the calculation for plan year funding shall exclude customers' plan year self-directed program credits or exemptions.

Q. Does the 2027 plan comply with all other provisions of the EUEA?

A. Yes. The EUEA requires the Commission to find that the portfolio of programs is cost-effective, as measured by the UCT, before the Commission approves an EE and LM program. The portfolio of programs in the 2027 Plan meets the UCT. The EUEA also requires that energy efficiency programs implemented in 2026 through 2030 achieve savings equivalent to at least 5% of 2025 retail sales by 2030. PNM is projecting that the 2027 Plan will enable PNM to meet its 2030 energy efficiency savings target. Finally, the EE Rule requires that at least 10% of program funding be directed towards low-income programs. Under PNM's proposed 2027 Plan, the three-year average is approximately 14% of total program spending for low-income programs years 2027, 2028, and 2029, exceeding the minimum requirement.

Q. Is the proposed 2027 plan designed to provide every affected customer class with the opportunity to participate and benefit economically?

A. Yes, the portfolio of programs in the 2027 Plan is designed to be applicable and accessible to all classes of customers affected by Rider No. 16. The 2027 Plan includes programs that are designed for customers in the residential class as well as the various types of customers in the commercial classes.

Q. Does the 2027 plan comply with the recommended decision and final order in case No. 23-00138-UT?

A. Yes. PNM was required to do the following:

1. Conduct a transmission and distribution ("T & D") avoided cost study and incorporate the results in this application. PNM has done so. More information on this study is available

in the testimonies of PNM Witnesses Erfan Hakimian and Josh Bode. A comparison of the previous proxy value to the current calculated value can be found in Exhibit JLB-2, Table 16.

2. Conduct a demand response request for proposal. PNM has done so. More information on this can be found in Docket 23-00409-UT.
3. Hold annual stakeholder meetings to discuss integration with federal funding and performance. PNM has held these meetings.
4. Decrease the qualification threshold for the Strategic Energy Management program. PNM has done this.

Q. Has PNM solicited design and implementation recommendations from commission staff, the attorney general, the energy, minerals and natural resources department and other interested parties?

A. Yes. PNM invited these and other entities and individuals to form an energy efficiency public advisory stakeholder group for this purpose. PNM held meetings with the advisory group on February 5, 2026 and March 24 2026, to solicit recommendations for the proposed 2027 Plan. While not all invitees attended the meetings, the public advisory group provided comments which were carefully considered by PNM. Information on the composition of the advisory group can be found in the 2027 Plan, Appendix B.

Q. What other sources of information did PNM utilize in preparing the 2027 plan?

A. PNM contracted with Inner City Fund Inc. ("ICF"), formerly Applied Energy Group ("AEG"), which provides a wide range of energy efficiency and demand response-related management services to assist clients in designing and implementing programs for their customers. AEG performed both EE and DR potential studies in 2019-20 and 2022. The EE and DR studies were again updated in 2025 (see PNM Exhibit AMR-3), which helped guide PNM in preparing the 2027 Plan. PNM also used the New Mexico Technical Resource Manual[5] ("NM TRM") to validate energy savings for various technologies. Much of the research for the 2027 Plan was conducted through interaction with other utilities and through participation in national organizations concerned with energy efficiency, such as E Source, Consortium for Energy Efficiency ("CEE"), American Council for an Energy Efficient Economy ("ACEEE"), and Southwest Energy Efficiency Project ("SWEEP").

Q. How does PNM propose to use Advanced Metering Infrastructure ("AMI") in its energy efficiency programs?

A. PNM expects to use the near-real-time data on energy consumption available from AMI in a number of ways in its energy efficiency programs:

1. The Customer Energy Management Portal will give customers insight into the times when they use more energy, which may result in increased program participation.
2. PNM can use the data to assist customers in disaggregating their end uses. This information may also result in increased program participation.

[5]New Mexico Technical Resource Manual for the Calculation of Energy Efficiency Savings by Evergreen Economics and EcoMetric Consulting, November 28, 2022

3. PNM or its vendor(s) can analyze customers' energy use to identify likely targets for marketing for energy efficiency programs. For example, customers whose refrigerated air systems would benefit from an A/C Tune-Up could be referred to that program.

III. RESIDENTIAL PROGRAMS

Q. Please identify the residential energy efficiency programs PNM is proposing in the 2027 plan.

A. PNM is proposing to continue all residential EE programs that were approved in Case No. 23-00138-UT, including programs that serve PNM's low-income customers, which I describe in more detail later in my testimony. PNM is proposing to continue the Residential Comprehensive, Residential Products, Residential Home Energy Reports, Home Works, New Home Construction, Energy Smart, and Easy Savings programs. PNM is proposing a total budget for these programs of about $18.6 million in calendar year 2027. The proposed budget for 2028 is about $19.5 million and in 2029 the proposed budget is $20.4 million.

Q. Please describe the residential comprehensive program.

A. The Residential Comprehensive program is the primary incentive program for residential customers. The program has three components: Home Energy Checkup (including a low-income option), Residential Midstream Cooling, and Refrigerator Recycling. These programs provide energy efficiency options for customers' homes.

Home Energy Checkup is an energy assessment program that offers several rebate packages tailored to meet individual customers' needs. The Home Energy Checkup includes a walk-through assessment, additional educational materials, installation of tailored energy efficiency measures, including a varied mix of the following measures: weather stripping, door sweeps, outlet gaskets, big gap filler, LEDs, and advanced power strips. Having a Home Energy Checkup performed provides customers with access to a wide range of early-retirement appliance rebates such as high efficiency cooling equipment and ENERGY STAR washers and dryers.

Residential Midstream Cooling provides incentives to distributors and contractors for stocking and installing highly efficient cooling equipment. Discounts are passed through to customers purchasing this equipment.

Refrigerator Recycling is designed to encourage retirement of old or unnecessary second refrigerators and freezers. PNM picks up the old equipment for free and recycles about 95% of all the materials. Participants also receive an incentive, currently $75 per unit.

Q. Please describe the residential products program.

A. The Residential Products, formerly Residential Lighting, provides incentives and instant discounts on non-lighting measures such as ENERGY STAR appliances, advanced power strips, and room air conditioners purchased at approximately 135 participating retail outlets throughout PNM's service area. This program is cost effective with a UCT ratio of 2.57 in 2027, a UCT ratio of 2.46 in 2028, and a UCT ratio of 2.39 in 2029.

Q. Please describe the market-rate portion of the easy savings program.

The market-rate portion of the Easy Savings program provides a kit containing LEDs, advanced power strips, and weatherization measures such as door sweeps and foam tape insulation, for a nominal fee ($10 at present). The program distributes the kits through direct mail but the offers are sent via email. Historically, email has proven to be a successful channel in marketing this program. Customers order from an online portal.

Q. Please describe the PNM Home Works program.

A. The PNM Home Works program is an energy savings and education program that combine an energy efficiency curriculum for teachers with easy-to-install energy efficiency and water-saving measures for 5th grade and high school students to install at home with their parents. The program has two main goals: energy savings and market transformation through student education. Each participating school hosts an interactive or virtual presentation focused on energy efficiency and conservation delivered by PNM and its implementation contractor. Following the presentation, each student receives a kit of energy efficient measures to be installed in their home. The teacher and student kit materials support state and national educational standards, which allow the program to easily fit into teachers' existing schedules and requirements. Demand has been high for the program, and PNM has a waiting list of teachers and schools that wish to participate.

About 53% of the cost of delivering the program is the cost of the market transformation or general energy efficiency educational materials, presentations and activities. The purpose of the Market Transformation strategy, which I discuss later in my testimony, is to provide outreach activities that support the goals of the energy efficiency programs and that are needed to increase awareness and understanding of the importance of energy efficiency. Because the general educational component of the PNM Home Works program is important, yet does not directly result in quantifiable energy savings, the 2027 Plan proposes to continue to implement the educational portion of the program through the Market Transformation strategy.

Q. Please describe the New Home Construction program and any modifications to this program in the 2027 plan.

A. The target audience consists of custom, semi-custom, and production home builders and could also include consumers, realtors, trade allies, raters, developers and architects. PNM is collaborating and cost-sharing with New Mexico Gas Company ("NMGC") on this program for an even more robust program offering to home builders. The goal is to offer a streamlined program that offers participants incentives for highly efficient new single-family residential construction through either a prescriptive or a performance path.

The prescriptive path offers builders incentives to install above-code products in newly built homes, such as high-efficiency air conditioning and heat pump units, heat pump water heaters, and ENERGY STAR smart thermostats. The performance path provides builders with incentives for constructing new, single-family homes that exceed current New Mexico code requirements, as documented by a HERS rater using RESNET-accredited software. The performance path utilizes a pay-for-performance program design, and beginning in

2027, the program will increase performance builder incentives by raising the base incentive from $0.15 per kWh to $0.30 per kWh saved.

In 2024, the program added new manufactured homes as a pilot offering. This pilot offers incentives for manufactured homes that meet the certification requirements of ENERGY STAR or the DOE Efficient New Home Program. The pilot encourages manufactured home retailers and community owners in New Mexico to offer their customers a more efficient and higher performing home, helping them reduce their energy burden going forward. It also helps the program reach often overlooked and underserved segments in the housing market by reaching customers in rural markets. The pilot has been successful, and the program hopes to build upon this success in 2027.

The program introduced an All-Electric Home Pilot in 2024 to support high-performance home builders that choose to build efficient, all-electric new homes in PNM service territory. The initial pilot was designed to offer performance homebuilders $0.45 per kWh saved versus the $0.15 per kWh saved for a dual fuel home. In 2027, the All-Electric Home Pilot will adopt a fixed, increased incentive to eliminate confusion for builders by setting a predictable incentive amount for each home and bonus incentives for high-efficiency electric equipment like heat pump water heaters and induction cooktops.

Q. Please describe the market-rate option of the home energy checkup program.

A. The Home Energy Checkup program is available to market-rate customers for no cost. They receive an initial assessment and report. Participants may also qualify for deeper rebates such as for heat pumps or appliances.

IV. LOW-INCOME PROGRAMS

Q. How does the 2027 plan address energy efficiency for low-income customers?

A. Five of the ten programs in the 2027 Plan are either exclusively for low-income customers or serve a significant number of low-income customers. PNM will continue to fund the Energy Smart program to supplement the weatherization program offered by Housing New Mexico, formerly New Mexico Mortgage Finance Authority ("MFA") for single-family homes. PNM will also continue the low-income portion of the Easy Savings kit program, which has been very successful since it began in 2009, and the Home Energy Checkup program, which is available to low-income homeowners and renters. The PNM Home Works program, which provides energy efficiency education and free energy saving kits to fifth grade and high school students, serves a significant number of students from low-income families. The Residential Products program serves some low-income customers; PNM conservatively estimates the portion of customers served as 100% of the customers at thrift stores and dollar stores and 0% of the customers served at other retail locations. Finally, the Multifamily component of the Commercial Comprehensive program includes special options for owners of multifamily residences that serve low-income renters.

Approximately 14% of the 2027 Plan budget is projected to be expended on low-income programs over all three program years. Other programs including New Home Construction, Residential Products, and Multifamily programs positively impact the low-income market segment as well. Year-end results from those programs and others that incentivize low-income customers are detailed within the filed annual reports and contribute towards the percentage of funding allocated towards low-income customers. Please see the 2027 Plan for complete details of the low-income programs. Table 7, below, shows the low-income program budget amounts and the percent of each program directed to low-income participants in 2027, 2028 and 2029.

Table 7

Low Income Programs	% of Budget Directed to Low Income Participants	2027 Budget Directed to Low Income Participants	2028 Budget Directed to Low Income Participants	2029 Budget Directed to Low Income Participants
HEC - LI	100%	$ 1,978,812	$ 2,041,485	$ 2,323,434
Easy Savings	100%	$ 3,047,135	$ 3,367,411	$ 3,640,915
Energy Smart (Housing NM/MFA)	100%	$ 344,416	$ 365,756	$ 380,011
Home Works	40%	$ 353,461	$ 375,378	$ 388,558
Total		**$ 5,723,823**	**$ 6,150,031**	**$ 6,732,918**
% of Total Portfolio Budget		13.4%	13.8%	14.8%

Q. Please describe the Energy Smart program.

A. The Energy Smart program is implemented by Housing New Mexico as part of its New Mexico Energy Smart Weatherization Program. The Energy Smart program is funded by several sources including the U.S. Department of Energy, the Low-income Heating Energy Assistance Program ("LIHEAP"), State government, PNM, and NMGC. PNM worked with Housing New Mexico to determine a budget consistent with the funding Housing New Mexico expects in 2027 from other sources. The program currently offers the following measures for single family and multifamily projects: weatherization, attic insulation, duct sealing, pipe and tank insulation, and low-flow showerheads and aerators. As with PNM's other income-based programs, the income eligibility threshold utilized is at or below 200% of the federal poverty level. Beginning in 2021, the replacement of doors, windows, and heat pumps and other shell measures as needed are offered to increase overall savings and to leverage available federal funding.

Unfortunately, the Energy Smart program did not meet its goals in both 2024 and 2025 and the minor reduction in the large waitlist continues to be an issue. While kWh savings achieved per home can be significant in this program because of the more costly and comprehensive measure mix, overall customer participation, primarily due to DOE requirements, remains a concern. It's possible that the program budget could be used more effectively in Low Income Home Energy Checkup, which has fewer restrictions and wider participation, though it delivers lower savings per home and per dollar.

Q. Please describe the low-income portion of the easy savings program.

A. The low-income portion of the Easy Savings program provides a free kit containing LEDs, advanced power strips, and weatherization measures such as door sweeps and foam tape insulation, in addition to educational materials on saving energy to low-income customers. The program distributes the kits through direct mail. Historically, direct mail proved to be a successful channel in delivering this program; however, this method of outreach and the use of business reply cards carried additional expenses. The current outreach method is to invite low-income customers to claim a free kit via email. Customers who receive an enrollment e-mail can redeem the offer by visiting an online portal and entering a unique coupon code that is specific to their account. The online portal also allows customers to contact the program vendor via email or phone. PNM is also exploring other print media options such as customer letters or one-way postcards for customers who are less tech-savvy or who do not have internet access.

PNM also partners with the Roadrunner Food Bank (RRFB) to distribute kits at the RRFB food pantry. PNM has historically practiced a strong partnership with the PNM Good Neighbor Fund (GNF) and the GNF Administrator, Rio Grande Food Project (RGFP), through kit enrollments at GNF events. In 2025, GNF in-person events were severely limited due to GNF budget constraints, however, PNM intends to reestablish ties with these and other community partners in order to increase engagement with income qualified customers who are not accessible through email marketing.

Q. Please describe the low-income option of the home energy checkup program.

A. As I mentioned earlier in my testimony, the Home Energy Checkup program is available to low-income customers and has special no-cost features. Low-income customers receive all of the benefits of the standard Home Energy Checkup program. There is no cost for the initial assessment and report. Low-income customers may also qualify to receive a free ENERGY STAR refrigerator to replace an older, inefficient model. The home assessor determines if the home's primary refrigerator is eligible for replacement. To be eligible for the low-income benefits, participants must have incomes relative to family size at or below 200% of the federal poverty level. Participants may also qualify for deeper weatherization measures such as insulation and duct sealing. A new offering, which PNM believes will start in 2027, is a low-income heat pump pilot with higher rebates than in the market-rate heat pump offering; it will include a third-party financing option as well.

Q. What other programs directly benefit PNM's low-income customers?

A. In addition to the programs described above, the PNM Home Works program and the Multifamily component of the Commercial Comprehensive program benefit low-income customers. Many students in PNM's service territory come from low-income families. The energy savings kits and the educational materials provided by the Home Works program benefit the students and their families. In 2025, about 40% of the savings achieved through the Multifamily program were administered to properties that served low-income renters. The improvements to properties participating in the Multifamily program include energy efficiency upgrades to individual rental units and common areas which result in reduced energy consumption for tenants.

V. COMMERCIAL PROGRAMS AND OTHER INITIATIVES

Q. Please describe the commercial comprehensive program.

A. The Commercial Comprehensive program is PNM's flagship program for non-residential customers. The program provides incentives for the retrofit or installation of both prescriptive and non-prescriptive measures that decrease demand and save energy. The program is designed to be a "one-stop-shop" for commercial customers interested in improving the efficiency of their existing or planned new facilities. Examples of measures include a prescriptive list of lighting upgrades, variable speed/frequency drives, building controls, compressed air and fan systems, and HVAC and refrigeration upgrades, as well as incentives for custom measures. This program also includes a new construction option that offers incentives for buildings constructed to exceed local building code energy requirements and special incentives for small businesses. In addition, the program offers training programs and on-site audits. Enhanced incentives are also available for multi-family projects that serve low income customers, with even greater incentives available for deeper retrofits that include heat pumps or include measures from multiple measure categories. The Commercial Comprehensive program is comprised of six components: Retrofit Rebates, New Construction, Building Tune-Up, Distributor Discount, Multifamily and PNM QuickSaver™ for small business customers.

One important aspect of the Commercial Comprehensive program is its reliance on the participation of local energy efficiency vendors, suppliers and contractors who install the energy saving equipment. These businesses are critical "trade allies" and the program would not be successful without their enthusiastic support. Please see the 2027 Plan for complete program details.

Q. Please describe the market transformation strategy.

A. The Market Transformation ("MT") strategy supports educational activities that further the energy efficiency goals of the EUEA. Energy savings are not directly attributed to the MT strategy; therefore, the MT strategy is not a program subject to the UCT calculation. However, the costs of the MT strategy are included in the calculation of the total 2027 Plan portfolio UCT. The goals of the MT strategy are 1) to increase awareness of the importance and benefits of energy efficiency; 2) to encourage behavior changes that result in the adoption of energy efficient measures; and 3) to promote emerging technologies and to pilot program designs that are not part of existing energy efficiency programs but have the potential to be included in the future. The MT strategy uses various promotional activities and advertising channels to conduct targeted efforts aimed at specific customer segments, including hard-to-reach segments and schools. It focuses on community events and presentations that promote energy efficiency, engaging customers on the topic of energy efficiency through on-line PNM channels and social media, and energy efficiency educational presentations at schools as part of the Home Works programs. The MT strategy also includes studies and surveys that serve PNM's Energy Efficiency and Load Management portfolio as a whole, such as the potential study, the residential appliance saturation survey, and the transmission & distribution avoided cost study.

The Certification of Stipulation adopted by the Final Order in Case No. 17-00076-UT concluded that the cost of the Market Transformation strategy was correctly allocated pro rata to each program based on the total cost of each program. That is how MT costs are allocated in PNM's application.

Q. Please describe the trade ally initiative.

A. The Trade Ally ("TA") Initiative offers PNM's trade allies enhanced services, information and incentives, in addition to what is currently provided by third party program implementation contractors. PNM's energy efficiency programs depend on a wide range of trade allies including retail outlets, community agencies that serve PNM's low-income customers, HVAC and lighting contractors and equipment distributors. PNM expects to have over 550 trade allies participate in the 2027 Plan programs (please see a list of current trade allies in Appendix D of the 2027 Plan). Building positive relationships with the trade allies that represent the utility to its customers is important to the success of the energy efficiency programs. The activities include trade ally recognition and awards for achieving program performance goals; trade ally incentives to drive improved customer service across PNM's service area; technical, marketing and customer service training; and program-related information. Benefits included in the 2027 TA Initiative include co-branded apparel for vendors, special recognition for excellent performance, and an annual awards banquet acknowledging program performance.

VII. LOAD MANAGEMENT PROGRAMS

Q. Please describe the PNM demand response programs.

A. PNM has a well-established base of Demand Response ("DR") resources that the Company has used since 2008. DR is a form of load management. In this filing, PNM uses the terms 'load management' and 'demand response' interchangeably. PNM DR resources consist of 1) Power Saver, an air conditioner ("A/C") cycling program (using switches and thermostats) open to residential and small business customers with central A/C units, and 2) Peak Saver, a commercial and industrial ("C&I") customer curtailment program available for larger business customers. PNM has outsourced the administration of both programs to a firm specializing in delivery of DR products and services. Over the years, these DR resources have been integrated into PNM's resource portfolio. PNM power dispatchers call on the programs during periods when generation, distribution or transmission resources are strained and the demand reduction is counted as a supply resource in PNM's load and resources table. DR provides a unique, demand-side resource that further diversifies PNM's resource portfolio and contributes to the efficient and cost-effective use of supply-side resources.

Q. Has PNM utilized the demand response programs recently as a peaking resource?

A. Yes. The Power Saver and Peak Saver programs are typically dispatched simultaneously in order to achieve the maximum load reduction. The programs were not dispatched in 2025. In 2023 and 2024, the programs were dispatched three times (twice in 2023 and once in 2024), for a total of 12 hours (8 hours in 2023 and 4 hours in 2024). Even at times when the programs were not dispatched, they often performed an important function as reserve resources in PNM's portfolio. Furthermore, in compliance with the Final Order in Case No. 17-00076-UT, PNM addresses in its Annual Reports that the Load Management measures "avoid or offset" the need for or use of additional peaking units or power purchases, which is also verified by the M&V Report.

Q. Is demand response cost-effective?

A. PNM's demand response programs are cost-effective, with a projected average UCT ratio between both Power Saver and Peak Saver programs of 1.37 in 2027, 1.31 in 2028, and 1.28 in 2029. The avoided cost of capacity is the primary component of program benefits.

Q. Does PNM utilize the demand response programs as a firm capacity resource?

A. Yes, due to the contract penalties for non-performance, a portion of the capacity provided by the existing programs is considered a firm resource. The contracted firm resources are 15 MW in Peak Saver and 20 MW in Power Saver.

Q. What are the proposed budgets for the demand response programs and how do they compare to the previous 2024 program plan budget(s)?

A. PNM is proposing a total annual budget for the DR programs of about $10.5 million in 2027, $11.0 million in 2028 and $11.1 million in 2029. The Power Saver budget is $7 million in 2027, $7.3 million in 2028 and $7.5 million in 2029; and the Peak Saver budget is $3.5 million in 2027, $3.6 million in 2028, and $3.6 million in 2029. This represents about a 18.5% increase compared to the 2026 budgeted expenses for DR.

Q. Does PNM plan to develop its demand response programs further within the 2027-2029 triennium?

A. Yes. PNM proposes to conduct a behavioral demand response pilot in 2028 and/or 2029. This pilot would leverage PNM's investment in Advanced Metering Infrastructure ("AMI"). It would include behavioral messaging to customers in an opt-out design. Customers would be encouraged to reduce electricity consumption on peak days at particular times. PNM is still determining whether an incentive is appropriate for this program design.

A pilot is the appropriate way forward for this program design for a few reasons:

1. Due to the behavioral nature of the program, PNM does not know what demand reduction it can anticipate from this program. A pilot using the data available from AMI would enable PNM to determine demand reduction per enrolled household.
2. Without knowing what demand reduction can be expected, PNM cannot calculate the cost-effectiveness of this program. Therefore, it is prudent for PNM to pilot this program prior to committing to a full-scale deployment.

VIII. OVERALL 2027 PLAN DEVELOPMENT

Q. Has PNM explored collaboration opportunities with new Mexico Gas Company?

A. Yes. PNM and NMGC are collaborating in several ways, including cross-promotion of programs and actual sharing of costs in certain situations. Collaboration increases the value of the programs to participants and helps reduce implementation costs. These collaboration efforts are discussed in more detail where my testimony describes the Home Energy Checkup, New Homes Construction, and other low-income programs. PNM and NMGC meet regularly to discuss common program performance and future potential program opportunities shared by our customers. Moreover, PNM, NMGC, Southwestern Public Service Company/Xcel Energy and El Paso Electric Company meet monthly to discuss Energy Efficiency & Load Management challenges, trends, or program potential within the state of New Mexico.

Q. What are the UCT ratios for the programs in the 2027 plan, based on PNM's projected program costs and benefits?

A. The UCT ratio is the ratio of the present value of savings and the present value of costs associated with a given program. Any program that has a UCT greater than 1.0 is cost-effective. The UCT costs include all costs borne by the utility to implement the program over a 12-month period. The value of the savings used in the UCT calculation is determined by multiplying the expected energy and demand savings over the useful life of each program by PNM's avoided costs. PNM's avoided costs are shown in the 2027 Plan, Appendix A. PNM Witness Tom Duane describes the development of the avoided resource costs in his testimony. PNM Witnesses Erfan Hakimian and Josh Bode discuss the development of avoided transmission and distribution costs. For the existing programs that will be continued, the energy and demand savings used in the UCT calculation are based on the results of independent M&V analysis. These values and other assumptions used in the UCT calculations are listed in the 2027 Plan, Appendix E. The UCT ratios for each program, based on PNM's projection of annual participation levels, savings and costs for the programs have been provided in Tables 1, 2 and 3 earlier in my testimony.

Q. What discount rate did PNM use to calculate the present value of costs and benefits and how was it determined?

A. PNM used a discount rate of 8.54 percent, which is PNM's most recently approved unadjusted weighted average cost of capital ("WACC")[6]. Section 62-17-5(C) of the EUEA states that "[i]n determining life-cycle costs and benefits of energy efficiency programs,

[6] Final Order adopting Certification of Stipulation in Case No. 24-00089-UT .

the commission shall not adjust for taxes when selecting a discount rate." PNM has therefore not made a tax adjustment to its WACC that is being used as the discount rate.

Q. How many customers are expected to participate in the 2027 plan programs?

A. Estimates of the anticipated annual participation in each program is shown in Table 8, below.

Table 8

Programs	Unit Type	2027	2028	2029
Residential Comprehensive		**10,887**	**11,191**	**11,524**
Res. Comp. - Refrigerator Recycling	Unit	5,500	5,500	5,500
Res. Comp. - Home Energy Checkup	Participant	2,075	2,116	2,179
Res. Comp. - LI Home Energy Checkup	Participant	650	663	682
Res. Comp. - Midstream Cooling	Unit	2,662	2,912	3,162
Residential Products	Unit	320,600	320,600	320,600
Commercial Comprehensive		**532**	**541**	**548**
Comm. Comp. - Retrofit/NC/Mid	Participant	223	223	223
Comm. Comp. - QuickSaver	Participant	202	202	202
Comm. Comp. - Bldg Tune-Up	Participant	11	11	11
Comm. Comp. - Multifamily	Participant	96	105	112
Behavioral Comprehensive		**139,717**	**131,550**	**123,872**
Behavioral - Residential	Participant	139703	131536	123858
Behavioral - Commercial	Participant	14	14	14
Easy Savings	Participant	20,715	21,597	22,602
Energy Smart (Housing NM/MFA)	Participant	193	202	212
New Home Construction	Unit	1,488	1,568	1,652
Home Works	Participant	14,600	14,600	14,600

Q. How did PNM determine the participation rates and unit targets?

A. All programs in the 2027 Plan are programs that were approved by the Commission in previous cases and implemented in previous years. The participation estimates for these programs are based on the most recent participation results, known changes in the market, and discussions with the third-party contractors implementing the programs.

Q. What are the projected annual energy and demand savings from the 2027 plan?

A. Tables 9, 10, and 11, below, provide the projected annual electric energy and demand savings for each program of the 2027 Plan.[7] Program savings are derived using savings estimates for each measure in the program multiplied by projected participation levels. Specific details on all savings assumptions are shown in the 2027 Plan, Appendix E.

Table 9

2027 Programs	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings
Residential Comp.	11,079,354	111,822,794	1,670
Commercial Comp.	41,114,842	435,817,324	8,299
Behavioral Comp.	13,481,611	24,616,371	2,618
Residential Products	16,484,934	204,413,181	2,257
Easy Savings	8,009,600	80,095,998	1,771
Energy Smart (Housing NM/MFA)	430,004	6,622,062	241
New Home Const.	1,459,576	23,499,175	338
Home Works	3,441,789	45,775,799	106
Power Saver (LM)	2,199,440	2,199,440	54,986
Peak Saver (LM)	1,200,001	1,200,001	30,000
Total	**98,901,152**	**936,062,145**	**102,286**

[7] The annual savings values reflect annualized savings for all customers that begin participating in PNM's EE programs in a calendar year. For example, if a customer begins participating in an EE program in December 2027, a full year's worth of savings from that participation is attributed to 2027 for purposes of calculating 2027 savings and the UCT. However, the customer's participation will not have a full year's impact on PNM's system load until 2028.

Table 10

2028 Programs	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings
Residential Comp.	11,360,688	115,517,419	1,838
Commercial Comp.	41,482,257	439,711,925	8,398
Behavioral Comp.	13,060,328	24,195,088	2,477
Residential Products	16,344,957	202,677,472	2,154
Easy Savings	8,350,156	83,501,561	2,764
Energy Smart (Housing NM/MFA)	450,056	6,930,862	253
New Home Const.	1,558,115	25,085,650	360
Home Works	3,441,789	45,775,799	106
Power Saver (LM)	2,260,840	2,260,840	56,521
Peak Saver (LM)	1,200,001	1,200,001	30,000
Total	**99,509,189**	**946,856,618**	**104,871**

Table 11

2029 Programs	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings
Residential Comp.	11,699,614	119,730,447	2,004
Commercial Comp.	41,656,387	441,557,700	8,446
Behavioral Comp.	12,620,759	23,755,519	2,424
Residential Products	16,346,804	202,700,371	2,154
Easy Savings	8,738,385	87,383,852	2,938
Energy Smart (Housing NM/MFA)	472,336	7,273,974	265
New Home Const.	1,664,866	26,804,346	397
Home Works	3,441,804	45,775,993	106
Power Saver (LM)	2,322,240	2,322,240	58,056
Peak Saver (LM)	1,200,001	1,200,001	30,000
Total	**100,163,196**	**958,504,443**	**106,792**

Q. How will measurement and verification of these programs be conducted?

A. M&V will be conducted by an independent program evaluator selected by the Commission. PNM will work closely with the independent evaluator for evaluation of the 2027 Plan programs.

Q. Did the 2025 M&V report find that any existing program failed to pass the UCT?

A. Yes. Although the statutory test for cost-effectiveness is at the total portfolio level, the M&V evaluator also assessed the cost-effectiveness of each individual program. The 2025 report[8] found that the Energy $mart and Peak Saver programs did not pass the UCT. The results are shown in PNM's 2025 annual program report[9]. The 2025 M&V report from the independent evaluator and the 2025 PNM annual report are attached as Appendices B and C to PNM's application in this case. PNM posted the 2025 annual report on the following public website, as required by 17.7.2.14(B) NMAC: https://www.pnm.com/regulatory.

Q. Does PNM recommend continuing all individual energy efficiency programs within the portfolio regardless of individual program UCTs less than 1.0?

A. Yes. The EE Rule, 17.7.2.8(G) NMAC states, with respect to energy efficiency applications, that the application shall "include an analysis showing that the portfolio is cost-effective by meeting the utility cost test..." Such an analysis is included in the Plan. Thus, in PNM's view, UCT of the proposed portfolio of programs should be the primary metric when evaluating the cost-effectiveness of the program plan. This is consistent with NMSA 1978, Section 62-17-5(C), which states that "[b]efore the commission approves an

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[8] "Evaluation of 2025 Public Service Company of New Mexico Energy Efficiency & Demand Response Portfolio", EcoMetric, April 2026.
[9] "PNM Energy Efficiency Program 2025 Annual Report", PNM, April 15, 2026.

energy efficiency or load management for a public utility, it shall find that the portfolio of programs is cost-effective and designed to provide every affected customer class with the opportunity to participate and benefit economically."

Therefore, to provide the greatest opportunity for each affected customer class to participate in energy efficiency programs, PNM recommends that the entire portfolio be approved. Furthermore, some of the programs with low UCTs are directly beneficial to low-income customers. In addition, these programs provide environmental benefits by avoiding emissions that may be associated with supply-side resources. For all the above reasons, PNM believes it is reasonable to approve the entire portfolio of programs.

Q. What are the anticipated program costs associated with the 2027 plan?

A. The projected total program costs for all programs for a full year of implementation are estimated to be $42,562,135 in 2027, $44,418,321 in 2028 and $45,611,509 in 2029, not including profit incentives. The 2027 Plan costs are comprised of internal administrative costs (primarily labor costs), third-party administrative costs, rebates, promotion, and costs associated with M&V of the individual programs. Tables 12, 13, and 14, below, provide a breakdown of the total costs.

Table 12

2027 Program	Admin	Third Party	Rebates	Promotion	M&V - Excluded from Rider 16	Market Transformation	Total
Commercial Comprehensive	$ 323,667	$ 3,867,660	$ 7,486,828	$ 164,495	$ 221,443	$ 166,033	$ 12,008,683
Residential Comprehensive	$ 236,667	$ 4,652,128	$ 3,736,699	$ 120,280	$ 161,920	$ 121,404	$ 8,867,178
Behavioral Comprehensive	$ 30,725	$ 1,073,766	$ 55,674	$ 15,615	$ 21,021	$ 15,761	$ 1,191,541
Residential Products	$ 118,971	$ 1,479,369	$ 2,590,448	$ 60,464	$ 81,396	$ 61,029	$ 4,310,281
Easy Savings Kit	$ 78,563	$ 338,326	$ 2,550,017	$ 39,928	$ 53,751	$ 40,301	$ 3,047,135
Energy Smart (Housing NM/MFA)	$ 9,506	$ 36,167	$ 289,034	$ 4,831	$ 6,504	$ 4,877	$ 344,416
New Home Construction	$ 37,032	$ 542,611	$ 763,805	$ 18,820	$ 25,336	$ 18,996	$ 1,381,265
Home Works	$ 24,390	$ 214,584	$ 619,770	$ 12,396	$ 16,687	$ 12,512	$ 883,652
Power Saver	$ 181,138	$ 6,684,418	$ -	$ 92,058	$ 123,929	$ 92,919	$ 7,050,534
Peak Saver	$ 89,341	$ 3,296,876	$ -	$ 45,405	$ 61,124	$ 45,829	$ 3,477,451
TOTALS	**$ 1,130,002**	**$ 22,185,905**	**$ 18,092,275**	**$ 574,292**	**$ 773,111**	**$ 579,662**	**$ 42,562,135**

Table 13

2028 Program	Admin	Third Party	Rebates	Promotion	M&V - Excluded from Rider 16	Market Transformation	Total
Commercial Comprehensive	$ 393,372	$ 4,061,043	$ 7,572,076	$ 169,339	$ 226,733	$ 282,040	$ 12,477,869
Residential Comprehensive	$ 288,733	$ 4,789,090	$ 3,831,415	$ 124,294	$ 166,421	$ 207,016	$ 9,240,548
Behavioral Comprehensive	$ 37,559	$ 1,107,604	$ 55,674	$ 16,168	$ 21,648	$ 26,929	$ 1,243,935
Residential Products	$ 140,889	$ 1,511,529	$ 2,548,770	$ 60,650	$ 81,206	$ 101,014	$ 4,362,852
Easy Savings Kit	$ 101,660	$ 363,735	$ 2,785,365	$ 43,763	$ 58,595	$ 72,888	$ 3,367,411
Energy Smart (Housing NM/MFA)	$ 11,811	$ 37,881	$ 302,511	$ 5,085	$ 6,808	$ 8,468	$ 365,756
New Home Construction	$ 46,165	$ 552,320	$ 818,442	$ 19,873	$ 26,609	$ 33,099	$ 1,469,900
Home Works	$ 30,305	$ 234,909	$ 638,458	$ 13,046	$ 17,467	$ 21,728	$ 938,446
Power Saver	$ 222,441	$ 6,915,408	$ -	$ 95,756	$ 128,212	$ 159,486	$ 7,393,091
Peak Saver	$ 107,067	$ 3,328,591	$ -	$ 46,090	$ 61,712	$ 76,765	$ 3,558,514
TOTALS	**$ 1,380,002**	**$ 22,902,110**	**$ 18,552,711**	**$ 594,064**	**$ 795,411**	**$ 989,434**	**$ 44,418,321**

Table 14

2029 Program	Admin	Third Party	Rebates	Promotion	M&V - Excluded from Rider 16	Market Transformation	Total
Commercial Comprehensive	$ 396,984	$ 4,264,095	$ 7,616,074	$ 173,959	$ 231,378	$ 165,720	$ 12,616,832
Residential Comprehensive	$ 301,629	$ 5,178,244	$ 3,936,837	$ 132,174	$ 175,801	$ 125,914	$ 9,674,799
Behavioral Comprehensive	$ 38,273	$ 1,143,134	$ 55,674	$ 16,771	$ 22,307	$ 15,977	$ 1,269,830
Residential Products	$ 140,825	$ 1,555,130	$ 2,548,770	$ 61,710	$ 82,078	$ 58,787	$ 4,365,221
Easy Savings Kit	$ 109,720	$ 391,468	$ 3,045,846	$ 48,079	$ 63,949	$ 45,802	$ 3,640,915
Energy Smart (Housing NM/MFA)	$ 12,259	$ 39,775	$ 317,487	$ 5,372	$ 7,145	$ 5,118	$ 380,011
New Home Construction	$ 48,971	$ 594,391	$ 876,106	$ 21,459	$ 28,542	$ 20,443	$ 1,561,370
Home Works	$ 31,338	$ 255,660	$ 657,584	$ 13,732	$ 18,265	$ 13,082	$ 971,395
Power Saver	$ 227,501	$ 7,151,916	$ -	$ 99,691	$ 132,596	$ 94,970	$ 7,574,078
Peak Saver	$ 106,843	$ 3,358,796	$ -	$ 46,819	$ 62,272	$ 44,601	$ 3,557,058
TOTALS	**$ 1,414,342**	**$ 23,932,608**	**$ 19,054,378**	**$ 619,767**	**$ 824,334**	**$ 590,414**	**$ 45,611,509**

Q. What are the internal administrative costs?

A. The internal administrative costs consist primarily of internal labor to research, develop, implement and manage the programs, coordinate with third-party contractors, administer any contracts associated with the specific programs, work with the independent evaluator, and prepare annual compliance filings. This work will continue to be performed by PNM's energy efficiency department staff. Administrative costs also include the costs associated with membership in research organizations such as ESource, DesignLights Consortium ("DLC"), American Council for an Energy Efficient Economy ("ACEEE") and Consortium for Energy Efficiency ("CEE"). Administrative costs were allocated pro rata to the energy efficiency programs based on the direct costs associated with each program, with some adjustments based on dedicated costs.

Q. What are PNM's promotional costs and how were they estimated?

A. The promotional budget is for costs associated with specific promotional activities that are in addition to the promotional activities conducted by third-party contractors. Although program promotion is done by most of the third-party implementation contractors and included in their budgets, PNM is responsible for promotional costs and activities for some programs. PNM provides supplemental marketing and executes customer outreach strategy for the Residential Comprehensive programs. PNM also assists Itron, Bidgely, TechniArt/Resource Innovations, ICF, and CLEAResult in the development marketing materials and campaigns for the Power Saver, Home Energy Reports, Easy Savings Kit, Home Energy Checkup, Residential Products, Refrigerator Recycling, and Midstream Cooling programs. While PNM works in conjunction with each third-party contractor to market its respective program, this may also include cross-promotion of other programs in its own marketing materials and customer outreach channels where appropriate. These marketing channels can include direct mail, outreach events (including events specifically for low-income customers), outdoor advertising, broadcast television, radio spots, bill inserts, digital channels (email, social media, digital display, and streaming TV), call center staff, and the PNM website.

Q. Are the costs to implement the 2027 plan reasonable?

A. Yes. The incentive or rebate levels are consistent with industry practice and the program costs are consistent with the EUEA. The internal administrative costs are about three percent (3%) of the total cost and the M&V costs are about two percent (2%) of the total cost. The portfolio of programs has a UCT of greater than 1.0, so the portfolio of programs is therefore cost-effective. All costs associated with the development and implementation of the programs are excluded from PNM's electric cost of service used to determine base rates.

Q. How does PNM propose to comply with the requirement to include language on customer bills and in customer bill inserts explaining program benefits?

A. The Commission's Final Order in Case No. 10-00280-UT approved the following statement to be included in PNM customer bill inserts: "The energy efficiency line on your bill pays for programs that save energy and avoid the cost of new electricity generation." The Commission's Final Order in Case No. 10-00280-UT also approved the line item title on PNM customer bills to read: "Cost-Effective Energy Saving Prog." In subsequent PNM

EE/LM proceedings (Case Nos. 14-00310-UT, 16-00096-UT, 17-00076-UT, 20-00087-UT, and 23-00138-UT), this language was recognized as satisfactory.[10] PNM therefore proposes to continue to include this bill insert statement and line-item title on customer bills.

X. PROPOSED PROFIT INCENTIVE

Q. What are the primary financial implications for a utility of providing energy efficiency programs?

A. The traditional electric utility business model seeks to provide adequate and reliable power to meet customer demand. It involves building and maintaining generation plants, transmission lines, transformers, substations, distribution lines and other plants and facilities necessary to accomplish this objective. This involves heavy capital investment, making the traditional electric utility business model "capital intensive." Under traditional regulation, utilities make money by selling the power they generate at rates sufficient to recover their costs and earn a return on the capital invested in the property used to serve customers. Traditional rates are designed in such a manner that the more electricity sold by the utility, the more plants and facilities it builds to meet customer demand, and the greater the profits it earns.

Energy efficiency programs are in direct conflict with this traditional model. The EUEA requires utilities to spend resources on programs that necessitate little or no capital investment and result in selling less of their product, which reduces the revenue they can

[10] Certification of Stipulation, p. 13, Order Adopting and Approving Certification of Stipulation, Case No. 16-00096-UT, January 11, 2017.

earn to recover their fixed costs. This, in turn, reduces the overall profitability and profit potential of the traditional business. In short, energy efficiency investments present PNM with three primary financial concerns:

1. energy efficiency program costs that must be recovered;
2. reduced sales that reduce fixed cost recovery and profits; and
3. money spent on energy efficiency programs does not provide an opportunity for a return or profit margin as does the capital investment in utility property that is used to meet customer demand for electricity.

Consequently, in order to incentivize utilities and adequately compensate them for implementing energy efficiency programs and meeting statutory savings goals, all three financial concerns must be appropriately addressed.

Q. Does the EUEA provide an appropriate framework for addressing these concerns?

A. Yes. The EUEA addresses all three of these concerns.

- First, the EUEA grants the Commission authority to approve program plans if the portfolio of programs meets the UCT and, therefore, is cost-effective. The EUEA then allows a utility to recover the program costs through base rates, a tariff rider, or a combination of the two, at the utility's option. NMSA 1978, Section 62-17-5(C).
- Second, the EUEA requires the Commission to identify regulatory disincentives to energy efficiency and take steps to remove those disincentives in a manner that balances the interests of customers and investors and the overall public interest. In accordance with the 2019 amendments to the EUEA, the Commission is required

to "remove regulatory disincentives through the adoption of a rate adjustment mechanism that ensures that the revenue per customer approved by the commission in a general rate case proceeding is recovered by the public utility without regard to the quantity of electricity actually sold by the public utility subsequent to the date the rate took effect." NMSA 1978, Section 62-17-5(F).

- Third, the EUEA requires the Commission to provide utilities with "an opportunity to earn a profit on cost-effective energy efficiency and load management resource development that, with satisfactory program performance, is financially more attractive to the utility than supply-side utility resources." NMSA 1978, Section 62-17-5(F). The EUEA also provides that recovery of the profit incentive shall be through base rates, a tariff rider, or a combination of the two, at the utility's option.

Q. Does PNM'S application address all three financial components in the EUEA?

A. PNM's application addresses the first and third financial components, as well as PNM's election to recover program costs and profit incentive through a tariff rider.

Q. Why is the proposed incentive an essential component of PNM's application?

A. PNM has developed and offered cost-effective energy efficiency programs since 2007. PNM has satisfactorily implemented those programs so that it was able to meet the 2014 energy savings required by the EUEA at that time, PNM was able to exceed the 2021-2025 savings requirement specified in the EUEA, and PNM expects that it will meet the 2030 energy savings requirements established revised EE Rule in 24-00157-UT. Satisfactory performance of these programs has reduced participating customers' bills and has provided and will continue to provide system benefits in terms of avoided fuel and avoided capacity costs to all customers. Yet, as I explained earlier, these savings will result in reduced revenues, reduced additions to rate base and, in turn, reduced shareholder returns. That being the case, approval of a meaningful incentive that fairly balances customer interests, investor interests, and the overall public interest as required by the EUEA, is essential.

Q. With what ratemaking standards must PNM's EE Rider comply?

A. All rates, including energy efficiency rates, must be "just and reasonable." A rate is "just and reasonable" if it falls within a "zone of reasonableness" that balances the interests of customers and investors. These general ratemaking requirements were confirmed by the New Mexico Supreme Court to be applicable to energy efficiency rates in *Attorney General v. New Mexico Public Regulation Commission,* 2011-NMSC-034, 150 N.M. 174. In that regard, the Supreme Court has said that a profit incentive under the EUEA must be evidence-based, cost-based, and utility-specific. *Attorney General,* 2011-NMSC-034, ¶ 18.

Q. How does the derivation of a reasonable profit incentive for energy efficiency programs differ from the derivation of a reasonable return on equity?

A. It differs in two regards. The first is that different profitability measures must be used to derive the reasonable profit level due to the practical consideration that energy efficiency programs do not result in a rate base upon which a return may be granted. The New Mexico Supreme Court confirmed the Commission's authority to set profits on energy efficiency measures using techniques other than return on rate base two years later. *New Mexico*

Attorney General v. New Mexico Public Regulation Commission, 2013-NMSC-042, ¶¶ 16, 22, 27, 33-34, 309 P.3d 89.

The second difference is that the EUEA requires that utilities be given a chance to earn a reasonable profit incentive for energy efficiency programs that is financially *more attractive* than the reasonable return on equity the utility would earn for investment in supply side resources. The EUEA ties this increased energy efficiency profit incentive to satisfactory performance of the utility's energy efficiency programs. NMSA 1978, Section 62-17-5(F)(3).

Q. Turning to PNM's proposed incentive mechanism, what is the basis for PNM's 2027 plan incentive?

A. PNM's incentive is based on PNM meeting the energy savings mandated in the EUEA. The EUEA provides that "[t]his requirement, however, for public utilities providing electricity service, shall not be less than savings of five percent of 2020 total retail kilowatt-hour sales to New Mexico customer classes that have the opportunity to participate in calendar year 2025 as a result of energy efficiency and load management programs implemented in years 2021 through 2025."[11] For PNM, this calculation was approved to be based on 2024 sales. Based on PNM's actual sales for 2024 of 8,102 GWh, PNM's targeted cumulative energy savings in 2030 is calculated to be 405 GWh (8,102 x 0.05).

[11] NMSA 1978, Section 62-17-5(G).

Q. What is PNM's base level incentive amount for the 2027 calendar year?

A. PNM is proposing a base incentive for 2027 of $3,021,912, equal to 7.1% of PNM's 2027 calendar year budget ($42,562,135). This base incentive is conditioned on PNM achieving energy savings in 2027 that will allow it to meet its EUEA mandated energy savings goal of 405 GWh by 2030. The incentives for the 2028 and 2029 calendar years are discussed later in my testimony.

Q. How does PNM determine if it should be awarded its base incentive?

A. The EUEA has specified a target energy savings goal for 2030. PNM's EE and LM programs have been designed and maximized to achieve energy savings annually that will put PNM on a path toward achieving its 2030 cumulative savings goal as specified in the EE Rule. In PNM's energy efficiency application in Case No. 20-00087-UT, the Commission approved a recommended decision adopting target levels of annual energy savings of 80 GWh, the average annual amount needed to achieve the mandated savings amount set by the EUEA for 2025. Similar to PNM's previous EE cases, its base incentive should be premised on satisfactory performance of programs to achieve the energy savings mandated by the EUEA. If PNM can achieve savings of approximately 81 GWh annually in 2026 through 2030 it will meet its 2030 EUEA mandated energy savings goal of 405 GWhs and should be awarded its base incentive.

Q. Please explain how PNM determined the second element of the base level incentive, the dollar amount.

A. The dollar amount of the base level incentive is equal to 7.1% of program costs. This percentage is at or below the level of incentive the Commission has found reasonable for PNM in previous litigated cases. In Case No. 12-00317-UT, the Commission approved an incentive equal to 7.6% of budget. The Commission approved an incentive level of 7.7% of budget in Case No. 10-00280-UT. In PNM's most recent litigated EE application, Case No. 23-00138-UT, the Commission approved a base incentive of 7.1% of budget.

The Commission approved incentive amounts of 6.8% for 2015 and 7.1% for 2016 in Case No. 14-00310-UT, 7.1% in Case No. 16-00096-UT and 7.1% in Case No. 17-00076-UT. Those cases, however, were resolved based on stipulations in which PNM agreed to lower incentive amounts than the Commission had historically approved as part of the overall give and take of the settlement. It would be reasonable for the Commission to approve a base level incentive in this case that is at least as high as the incentives approved in PNM's last fully litigated energy efficiency cases because PNM has consistently met or exceeded its savings goals, its 10% low-income program funding goal, and all other requirements of the EUEA. PNM projects that it will accomplish the same in 2027.

The base incentive that PNM has proposed in this case is less than or equal to that which PNM has been granted in litigated cases because it includes a sliding scale mechanism that affords the Company the opportunity to earn a higher incentive if it is able to achieve savings in excess of its 2027 target. The base incentive and sliding scale mechanism are very similar to those approved by the Commission for plan years 2024,2025, and 2026.

Q. Please describe PNM's proposed sliding scale mechanism.

A. PNM should be awarded its base incentive in 2027, 2028, and 2029 if it achieves annual energy savings of 81 GWh, with no additional incentive up to 81 GWh of annual energy savings. In addition to this base incentive equal to 7.1% of program costs, or $3,021,912, PNM will earn additional incentive based on a sliding scale that will be triggered if PNM is able to achieve annual savings in excess of 81 GWh in 2027, 2028, and 2029. PNM Exhibit AC-5 of PNM Witness Abraham Casas's Testimony shows how the incentive increases in a series of steps, a "sliding scale", to provide increased incentive for higher levels of annual savings achieved. Similar to the incentive mechanism proposed in PNM's most recent EE application, Case No. 23-00138-UT, the sliding scale includes three "steps" of additional incentive. The first step would provide an additional 0.125% of program cost for each additional GWh of energy savings of 82 through 86 GWh. The second step would provide an additional 0.175% of program cost for each additional GWh of energy savings of 87 through 91 GWh, and the third step would provide 0.225% of program cost for each additional GWh above 91 GWh up to the maximum. The sliding scale is capped at 10.54% of program costs, or $4,486,049 which PNM would earn if it is able to achieve annual savings of 100 GWh or more in 2027. This cap is equal to the maximum incentive provided by the EE Rule, 17.7.2.8(L) NMAC, PNM's pre-tax weighted average cost of capital ("WACC") multiplied by program costs[12].

Q. What are the benefits of the sliding scale mechanism?

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[12] In Case No. 24-00157-UT, the Commission determined that the appropriate WACC for setting the cap is the pre-tax WACC plus 2 percent.

A. The sliding scale provides an incentive for PNM to achieve energy efficiency savings above the "satisfactory" level required by the EUEA, which is program performance that puts PNM on a path to achieve 405 GWh of energy savings by 2030. It incentivizes PNM to achieve savings it may need in future years so that it will be better positioned to meet its EUEA savings requirement.

Q. What incentive mechanism does PNM propose for the 2027, 2028 and 2029 program years?

A. For 2027, PNM is proposing the same base level profit incentive of 7.1% of program costs for minimum annual energy savings of 81 GWh and the same sliding scale mechanism for achieving annual savings in excess of 81 GWh as is proposed for 2028, and 2029.

Q. Is PNM'S incentive mechanism consistent with the Commission's Energy Efficiency Rule?

A. Yes. The Commission's energy efficiency rule requires that a utility's proposed incentive:

(1) be based on the utility's costs or net benefits;

(2) be based on satisfactory performance of the triennial plan in a given plan year, which may be shown by the utility meeting or exceeding the energy savings requirements of this rule;

(3) be supported by written testimony and exhibits; and

(4) shall not exceed the product (expressed in dollars) of:

(a) its weighted cost of capital (expressed as a percent) plus two percent, and

(b) its approved plan year funding.[13]

Because PNM's proposed incentive is based on a percentage of program costs, it is cost-based. It is also based on satisfactory performance of measures and programs in that the base level incentive for each year is tied to the satisfactory progress toward achieving the EUEA savings goal in 2030, while the sliding scale mechanism provides an incentive for PNM to achieve savings above the satisfactory level. PNM will not recover any incentive amount in excess of the EE Rule limit, which is equal to PNM's WACC multiplied by program costs plus two percent.

Q. Is the incentive mechanism consistent with what other regulatory commissions have approved?

A. Yes. According to a report issued by the American Council for an Energy-Efficient Economy, 29 states have adopted some form of performance-based incentive mechanism ("PIM").[14] The report describes the prevalent types of incentives such as shared savings, multi-factor and return on equity and summarize the various incentive mechanisms approved in several of those states. The report states that the majority of states with PIMs have incentives based on shared savings or a multi-factor mechanism. Of the states discussed in this report, the states with mechanisms similar to PNM have maximum incentives that range from 3% to 15% of budget or savings. PNM's proposed maximum

13 17.7.2.8(H) NMAC.
[14] "Snapshot of Energy Efficiency Performance Incentives for Electric Utilities" ACEEE Report, December 11, 2018, available at:
https://www.aceee.org/sites/default/files/pims-121118.pdf.

incentive would equal 10.54% of budget, and is reasonable based on a comparison with incentives approved in other states.

Q. Will there be a reconciliation or true-up of the profit incentive amount based on actual costs, revenues and savings?

A. Yes. Because PNM's incentive amount depends on the savings it actually achieves and its actual program costs, the incentive amount will be recalculated at the end of the year and trued-up against the actual revenues received under the incentive element of the EE Rider. PNM witness Abraham Casas describes the Rider reconciliation/true-up in his testimony.

XI. PROPOSED REVISIONS TO THE EE RIDER

Q. What revisions to PNM's Rider No. 16, the EE Rider, will result from PNM's proposed 2027 plan?

A. As discussed by Mr. Casas, PNM is updating Section IV(C) of the EE Rider for the 2027 Plan costs and the profit incentive. The EE Rider proposed for 2027 does not include true-up collections under the current plan and incentive, which will be fully collected by year end 2026, and will not be continued into 2027.

Q. Are PNM's 2027 energy efficiency plan, profit incentive and proposed revisions to Rider No. 16 just and reasonable and in the public interest?

A. Yes. PNM's 2027 Plan is just and reasonable and in the public interest because it modifies current programs to improve cost effectiveness and administrative efficiency. It is consistent with the statutory requirements of the EUEA regarding the annual expenditure amount and the UCT cost-effectiveness test; and it implements a straight-forward profit incentive mechanism that complies with the EUEA and the EE Rule. It is also consistent with Commission orders in other efficiency cases.

Revised Rider No. 16 is just and reasonable because it will recover the costs of the EUEA as provided by the EUEA and the EE Rule and ensures through the reconciliation process that only actual program costs and the authorized profit incentive are passed through to customers. Additionally, the sliding scale method for setting the profit incentive provides a verifiable, utility-specific and cost-based incentive that is directly tied to PNM's success in implementing energy efficiency programs and that is consistent with the EUEA, the EE Rule and Commission precedents. It will reward PNM for achieving energy efficiency savings in excess of the savings required to achieve the 2030 savings target.

Q. Does PNM file its annual report in this docket, per 17.7.2.14.A (2) NMAC?

A. Yes.

Q. Does this conclude your testimony?

A. Yes, it does.

GCG#535140 v2

Resume

PNM Exhibit AMR-1

Is contained in the following 1 page.

ALEXANDER M. REEDIN

EDUCATIONAL AND PROFESSIONAL SUMMARY

Name: Alexander M. Reedin

Address: Public Service Company of New Mexico
414 Silver Ave SW
Albuquerque, NM 87102

Position: Program Manager, Energy Efficiency and Development

Education: Bachelor of Arts in Economics, Pomona College, Claremont, CA

Employment:

Public Service Company of New Mexico, Albuquerque, NM since 2018

- Program Manager, Energy Efficiency and Development
- Senior Load Research Analyst
- Senior Business Analyst

Portland General Electric, Portland, OR, 2016-2018

- Customer Program Evaluator
- Load Research & Program Evaluation Analyst

CLEAResult, Portland, OR, 2014-2016

- Sr. Business Intelligence Analyst

PECI, Portland, OR, 2011-2014

- Energy Analyst
- Business Intelligence Analyst

2027 Energy Efficiency and Load Management Program Plan

PNM Exhibit AMR-2

Is contained in the following 59 pages.

Powering New Mexico, Together

2027

ENERGY EFFICIENCY AND

LOAD MANAGEMENT

PROGRAM PLAN

NMPRC CASE NO. 26-000XX

APRIL 15, 2026

Table of Contents

1 EXECUTIVE SUMMARY

PNM began offering Energy Efficiency (EE) and Load Management (LM)[1] programs to residential and commercial customers in October 2007, with the approval of the New Mexico Public Regulation Commission (NMPRC) in Case No. 07-00053-UT. The NMPRC approved subsequent EE programs in Case No. 08-00204-UT in May 2009, in Case No. 10-00280-UT in June 2011, in Case No. 12-00317-UT in November 2013, in Case No. 14-00310-UT in April 2015, in Case No. 16-00096-UT in January 2017, in Case No. 17-00076-UT in January 2018, in Case No. 20-00087-UT in October 2020, and in Case No. 23-00138-UT in March 2024. Table 1-1 summarizes EE and LM program performance from 2008 through 2025. Detailed analyses of the most recent year's (2025) performance are available in PNM's annual EE and LM program report and measurement and verification report, which are filed concurrently with the 2027 Energy Efficiency and Load Management Program Plan (2027 Plan) and are available at www.pnm.com/regulatory.

[1] Load Management is also referred to as Demand Response (DR). In this filing, PNM uses the terms "load management" and "demand response" interchangeably.

Table 1--1

Year	Portfolio Benefit Cost	Incremental Annual Energy	Peak Demand Reduction*	Dispatchable Capacity (DR)	Total Program
2008	2.71	35.2GWh	7.5 MW	47 MW	$8.0
2009	1.56	39.9 GWh	6.3 MW	53 MW	$12.0
2010	2.2	58.8 GWh	9.9 MW	67 MW	$16.6
2011	1.78	57.6 GWh	9.7 MW	57 MW	$16.6
2012	2.85	79.3 GWh	13.6 MW	57 MW	$17.3
2013	1.91	75.6 GWh	11.8 MW	62 MW	$18.1
2014	1.74	74.8 GWh	12.0 MW	61 MW	$21.7
2015	1.79	79.3 GWh	12.1 MW	57 MW	$24.3
2016	1.75	82.0 GWh	13.0 MW	57 MW	$25.6
2017	1.74	74.4 GWh	11.9 MW	60 MW	$25.8
2018	1.67	70.8 GWh	12.5 MW	57 MW	$23.5
2019	1.93	78.2 GWh	13.7 MW	44 MW	$24.0
2020	2.32	87.1 GWh	15.0 MW	44 MW	$26.0
2021	1.48	107.1 GWh	18.8 MW	51.6 MW	$29.5
2022	1.77	96.1 GWh	13.9 MW	51.7 MW	$30.9
2023	1.3	92.02 GWh	15.9 MW	54.31 MW	$32.2
2024	1.51	86.5 GWh	17.5 MW	62.86 MW	$35.7
2025	1.38	86.8 GWh	18.0 MW	80.54 MW	$39.1

* Savings at the customer meter. Savings at the generator include an additional 8% system losses.

** Utility Cost Test applied beginning in 2015; Total Resource Cost applied in prior years.

The 2027 Plan describes PNM's portfolio of EE and LM programs, and also presents updated participation targets and budgets for the EE and LM programs currently in effect, that were approved by the NMPRC in Case No. 20-00087-UT. PNM is filing the 2027 Plan pursuant to the Efficient Use of Energy Act, NMSA 1978 Sections 62-17-1 to -11 (2005, as amended through 2025), (EUEA or Act) and the NMPRC's Energy Efficiency Rule, 17.7.2 NMAC (Rule). The 2027 Plan includes proposed budgets and savings for calendar years 2027, 2028 and 2029.

PNM is proposing to continue all of its existing EE and LM programs, with the modifications described in this Plan. All programs proposed in the 2027 Plan were selected based on the criteria detailed below, including that the portfolio of programs pass the Utility Cost Test (UCT). PNM also carefully considered public comments and suggestions, as described in Section 3, especially from the members of the public advisory group, concerning the reasonableness of program changes. PNM developed the portfolio of programs to appeal to various segments of residential customers, including low-income customers. The 2027 Plan includes low-cost and no-cost programs to achieve broad participation among all residential customers. In addition, every commercial or industrial customer who pays the energy efficiency rider is eligible to participate in the programs for non-residential customers. The proposed 2027 Plan has a total projected 12-month budget of $42,562,135 for calendar year 2027 with projected energy savings of approximately 98.9 gigawatt-hours (GWh). Tables 1-2, 1-3, and 1-4 show the projected annual budgets, energy and demand savings, participation targets and the UCT ratios for each program and the total portfolio.

Table 1-2

2027 Programs	Budget	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings	UCT	Participation /Units
Residential Comp.	$ 8,867,178	11,079,354	111,822,794	1,670	0.85	10,887
Commercial Comp.	$ 12,008,683	41,114,842	435,817,324	8,299	2.59	532
Behavioral Comp.	$ 1,191,541	13,481,611	24,616,371	2,618	1.82	219,456
Residential Products	$ 4,310,281	16,484,934	204,413,181	2,257	2.70	320,600
Easy Savings	$ 3,047,135	8,009,600	80,095,998	1,771	2.31	20,715
Energy Smart (Housing NM/MFA)	$ 344,416	430,004	6,622,062	241	1.83	193
New Home Const.	$ 1,381,265	1,459,576	23,499,175	338	0.88	1,488
Home Works	$ 883,652	3,441,789	45,775,799	106	2.46	14,600
Power Saver (LM)	$ 7,050,534	2,199,440	2,199,440	54,986	1.30	
Peak Saver (LM)	$ 3,477,451	1,200,001	1,200,001	30,000	1.43	
Total	**$ 42,562,135**	**98,901,152**	**936,062,145**	**102,286**	**1.81**	

Table 1-3

2028 Programs	Budget	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings	UCT	Participation /Units
Residential Comp.	$ 9,240,548	11,360,688	115,517,419	1,838	0.88	11,191
Commercial Comp.	$ 12,477,869	41,482,257	439,711,925	8,398	2.51	541
Behavioral Comp.	$ 1,243,935	13,060,328	24,195,088	2,477	1.88	219,456
Residential Products	$ 4,362,852	16,344,957	202,677,472	2,154	2.60	320,600
Easy Savings	$ 3,367,411	8,350,156	83,501,561	2,764	2.48	21,597
Energy Smart (Housing NM/MFA)	$ 365,756	450,056	6,930,862	253	1.66	202
New Home Const.	$ 1,469,900	1,558,115	25,085,650	360	0.85	1,568
Home Works	$ 938,446	3,441,789	45,775,799	106	2.37	14,600
Power Saver (LM)	$ 7,393,091	2,260,840	2,260,840	56,521	1.24	
Peak Saver (LM)	$ 3,558,514	1,200,001	1,200,001	30,000	1.37	
Total	**$ 44,418,321**	**99,509,189**	**946,856,618**	**104,871**	**1.77**	

Table 1-4

2029 Programs	Budget	Annual Net kWh Savings	Lifetime Net kWh Savings	Annual kW Savings	UCT	Participation /Units
Residential Comp.	$ 9,674,799	11,699,614	119,730,447	2,004	0.88	11,524
Commercial Comp.	$ 12,616,832	41,656,387	441,557,700	8,446	2.43	548
Behavioral Comp.	$ 1,269,830	12,620,759	23,755,519	2,424	2.07	219,456
Residential Products	$ 4,365,221	16,346,804	202,700,371	2,154	2.54	320,600
Easy Savings	$ 3,640,915	8,738,385	87,383,852	2,938	2.42	22,602
Energy Smart (Housing NM/MFA)	$ 380,011	472,336	7,273,974	265	1.60	212
New Home Const.	$ 1,561,370	1,664,866	26,804,346	397	0.84	1,652
Home Works	$ 971,395	3,441,804	45,775,993	106	2.26	14,600
Power Saver (LM)	$ 7,574,078	2,322,240	2,322,240	58,056	1.22	
Peak Saver (LM)	$ 3,557,058	1,200,001	1,200,001	30,000	1.35	
Total	**$ 45,611,509**	**100,163,196**	**958,504,443**	**106,792**	**1.73**	

1.1 SUMMARY OF CHANGES FROM PREVIOUS PLAN

PNM is not proposing new programs in the 2027 Plan and has evaluated existing programs and explored strategies and tactics to increase program effectiveness. Therefore, PNM is proposing the following additions and modifications in the 2027 Plan:

- The total first year budget for the 2027 Plan is $42,562,135. This annual budget and the 2028 and 2029 budget targets comply with the EUEA requirement of no less than 3% and no more than 5% funding requirement.
- The total 2027 budget for the energy efficiency portfolio has increased from the 2026 filed budget by approximately 20%. However, PNM exceeded the 2025 filed and approved budget by 10.42% and expects to exceed the 2026 filed and approved budget as well. This means that about half of the cost increase has already occurred. The additional cost increase is due to enhancements to and increased participation in existing programs, inflation, and the reduction

in cheaper "low-hanging fruit" due to standards increases and market saturation. The programs with the biggest cost increases over the 2026 filed budget are:

  - Easy Savings, due to PNM's expansion of the program to providing mailed kits to market-rate customers at reduced but non-zero cost
  - Power Saver, due to increased enrollment in the program
  - Midstream Cooling, due to increased participation in the program due to higher incentives for heat pumps
  - New Homes, due to the manufactured homes pilot and increased builder participation

- PNM will pursue a pilot heat pump offering to extend the measures offered by the low-income Home Energy Checkup program.

- PNM will continue to modify the all-electric New Homes pilot to attempt to increase participation.

- In response to the results of the energy efficiency & demand response potential study performed in 2025, PNM will strive to align and simplify smart thermostat program offerings in order to increase participation. Also, PNM will pursue networked lighting controls in its commercial & industrial programs.

- PNM expects to use the near-real-time data on energy consumption available from AMI in a number of ways in its energy efficiency programs:
  - The Customer Energy Management Portal will give customers insight into their energy consumption, which may result in increased program participation.
  - PNM can use the data to assist customers in disaggregating their end uses. This information may also result in increased program participation.
  - PNM can analyze customers' energy use itself to identify likely targets for marketing for energy efficiency programs. For example, customers whose refrigerated air systems would benefit from an A/C Tune-Up could be referred to that program.

2 PROGRAM GOALS

2.1 LEAST-COST RESOURCE PLANNING

PNM EE and LM programs benefit the PNM system, participating customers, non-participating customers, the environment and the New Mexico economy. The programs were identified as a key resource in the PNM 2023 Integrated Resource Plan (2023 IRP).[2] The 2023 IRP examined many different portfolios of options that could be implemented to meet expected growth in the demand for electricity from 2023 to 2042. EE and LM programs were consistently found to be cost-effective alternatives for meeting system needs when compared with traditional supply-side resources. PNM is currently preparing its 2026 Integrated Resource Plan; the 2027 Energy Efficiency Plan will once again be utilized as a key resource. The 2027-2029 Plan includes a revised estimate of avoided costs which were used to calculate cost-effectiveness of the EE programs.

2.2 REQUIREMENTS OF THE EFFICIENT USE OF ENERGY ACT

Projected growth of PNM's EE and LM programs will allow PNM to achieve the minimum energy saving goals at the budget levels specified in the Final Order in Docket No. 24-00157-UT.[3] In that Order, Exhibit B, Section 17.7.2.18(A), the Commission states: "A public utility providing electricity service to New Mexico customers shall acquire or implement, over plan years 2026-2030, a portfolio of cost-effective and achievable energy efficiency and load management available in its service territory that shall produce a savings, by plan year 2030, of at least five percent of its 2025 total retail kilowatt-hour sales to New Mexico customer classes that had the opportunity to participate." On page 20 of that order, the Commission states: "Thus, PNM's proposal is rejected, but it is reasonable to *sua sponte* grant PNM a variance from the 2025 total retail kilowatt-hour sales requirement to allow PNM to base its next triennial plan upon 2024 sales figures."

Thus, in plan years 2026-2030, PNM's goal should be five percent of its 2024 total retail kilowatt-hour sales to New Mexico customer classes that had the opportunity to participate. That total is 8,102 GWh; therefore, PNM is required to achieve cumulative savings of 405 GWH, or five percent of 2024 retail sales.

New programs are developed according to the specifications included in the Act and the Rule, which include passing the UCT standard at a portfolio level, and meeting or exceeding the EUEA goals.

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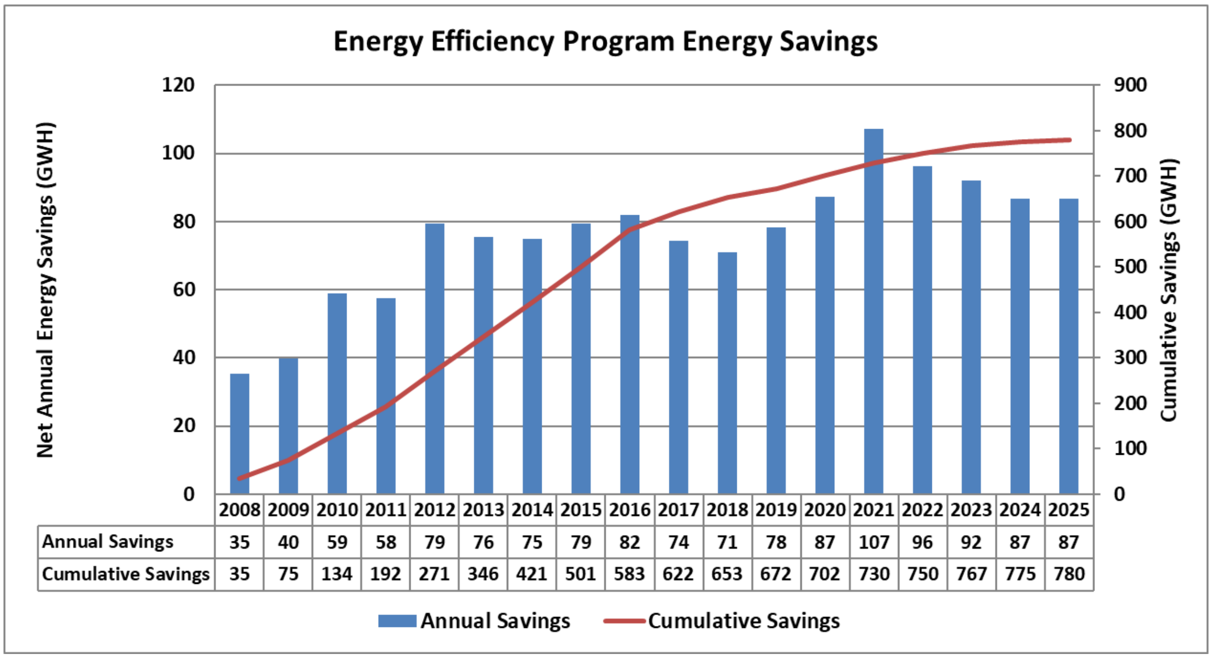
[2] "PNM 2023-2042 Integrated Resource Plan" December 2023. https://gridworks.org/wp-content/uploads/2023/12/PNMs-2023-Integrated-Resource-Plan-1.pdf

[3] Docket No. 24-00157-UT, Final Order (June 6, 2025).

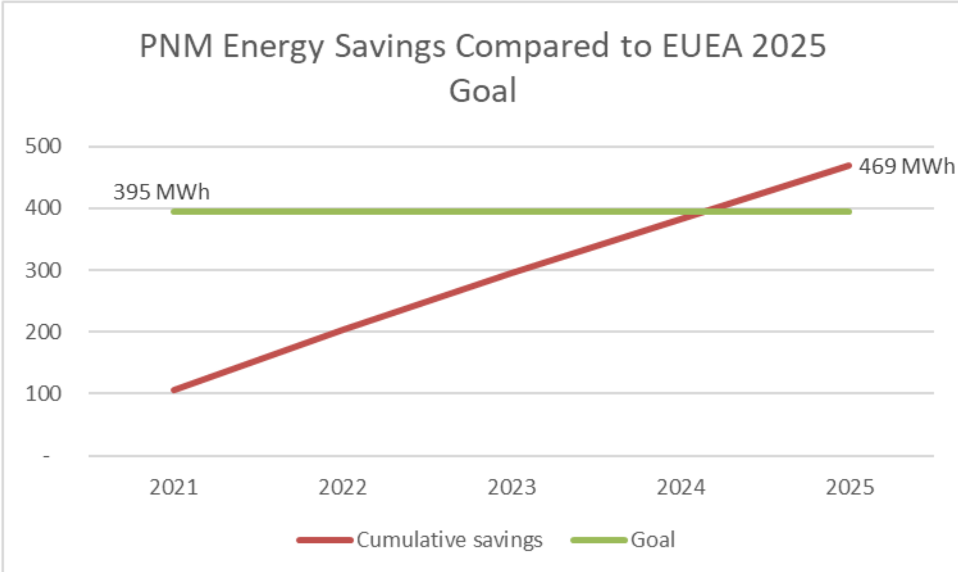
For cost-effectiveness analysis and for determining the cumulative savings that contribute to meeting the EUEA goals, PNM calculates the average effective useful life (EUL) of the portfolio, this value is determined by dividing the total lifetime savings by the annual savings, resulting in an average estimate of how long measures will continue to provide savings. The average portfolio EUL for the 2025 Program was 9.4 years. The cumulative savings for 2025 are the sum of all annual savings for the nine years from 2017 through 2025. Beginning in 2025, the 2016 annual savings will no longer contribute to cumulative savings. Based on the annual savings achieved through 2025, PNM programs achieved more than the 2025 minimum savings goal of 395 GWh.

Figure 2-1



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Annual Savings	35	40	59	58	79	76	75	79	82	74	71	78	87	107	96	92	87	87
Cumulative Savings	35	75	134	192	271	346	421	501	583	622	653	672	702	730	750	767	775	780

Figure 2-2



2.3 INCREASED ADOPTION OF ENERGY EFFICIENCY TECHNOLOGIES

In addition to meeting the requirements of the Act, PNM's EE programs encourage lasting structural and behavioral changes in the New Mexico economy through the process of market transformation. This is accomplished by promoting the purchase of energy efficient products and services, increasing customer awareness of energy efficiency measures, providing incentives to change behaviors, and removing market barriers. Over time, distributors will stock more efficient equipment, contractors will promote more efficient equipment to their customers, and customers will become more inclined to purchase efficient equipment. The programs included in the 2027 Plan continue to fine tune program design and delivery elements in PNM EE programs including, but not limited to:

- Implementing multi-channel promotional campaigns that increase customer awareness of EE products and their benefits
- Educating the vendor community of retailers and installation contractors who provide EE products and services, to build awareness, encourage participation and promote consistency in business operations and customer service within PNM's service area
- Partnering with community-based organizations to educate customers

- Using rebates to shift the focus from the initial cost of installing measures to the long-term savings in operating costs
- Simplifying rebates for customers by offering multiple rebate channels, such as online rebate submittal, instant in-store discounts, and mail-in and electronic rebate forms as applicable
- Increasing awareness of low-income programs by expanding the Low Income Home Energy Checkup and Multifamily Step-It-Up program to include additional measures for deeper energy savings, and continuing to monitor and adjust the other low-income programs to encourage broad participation across PNM's service area
- Implementing educational programs for different customer segments about the benefits of the EE programs
- Developing emerging markets and technologies through pilots. For example:
  - Continuing an All-Electric New Homes pilot with increased and simplified incentives
  - Graduating our New Manufactured Homes pilot to an ongoing part of the program
  - Starting a low-income heat pump pilot through our Low Income Home Energy Checkup program
  - Graduating our Step It Up low-income multifamily pilot of deep-savings measures from a pilot to an ongoing part of the program
  - Starting a "Business Uplift" pilot to reward energy efficiency investments for small business customers in disadvantaged areas with increased incentives.

3 PROGRAM SELECTION

3.1 PROGRAM RESEARCH

In 2020, 2022, and 2025, Applied Energy Group (AEG) – now part of Inner City Fund (ICF) - completed energy efficiency potential studies (ICF Potential Study), which identified categories of energy efficient equipment and the estimated technical, economic and market potential for adoption of that equipment in the state. The 2025 potential study will be used as a reference for future program design and analysis and in preparing the 2027 plan. The potential study is attached as Exhibit AMR-2. PNM also completed an updated residential appliance and socket saturation survey in 2025 to be utilized in program design.

Much of the research for the 2027 Plan was done in conjunction with other electric utilities and through participation in national organizations concerned about energy efficiency such as E Source, Consortium for Energy Efficiency (CEE), American Council for an Energy-Efficient Economy (ACEEE), Southwest Energy Efficiency Project (SWEEP), and the Association of Energy Services Professionals (AESP).

PNM also solicited input regarding existing and new programs from a public advisory stakeholder group. A list of those invited to the advisory group meetings is provided in Appendix B. The public advisory group met on February 5, 2025 and again on March 24, 2025 to discuss the development of the 2027 Plan. Individual members of the public advisory group provided comments and information at other times during the Plan development process.

3.2 SELECTION CRITERIA

The following criteria were considered when evaluating and considering modifications to existing programs:

A. Cost effectiveness – The Act establishes the Utility Cost Test (UCT) as the standard to be used in determining the cost-effectiveness of energy efficiency or load management programs. The UCT, as defined in the Act, "means a standard that is met if the monetary costs that are borne by the public utility and that are incurred to develop, acquire and operate energy efficiency or load management resources on a life-cycle basis are less than the avoided monetary costs associated with developing, acquiring and operating the associated supply-side resources."[4]

1. Costs are identified by the following categories: PNM program administration costs, promotion, third-party implementation, participant rebates/incentives, and market

[4] NMSA 1978, § 62-17-4(K).

transformation. Measurement and verification costs will be recovered in a future rate case.

2. Benefits include avoided costs to the utility for energy, capacity, transmission, and distribution. PNM's EE avoided costs, including transmission & distribution, are provided in Appendix A.

3. Not all programs in the 2027 Plan are cost-effective because they do not individually have a UCT greater than 1.0. However, the overall portfolio of programs does have a UCT greater than 1.0.

B. System benefits – programs should deliver system benefits through demand and energy savings or the ability to dispatch load or shift it to off-peak times.

The programs selected for the 2027 Plan provide significant energy and demand savings as shown in Table 4-2 below.

C. Broad participation potential – programs should provide the opportunity for broad participation among eligible customer classes targeting residential, commercial, industrial and low-income customers.

The 2027 Plan includes programs for residential customers, low-income customers, homebuilders, commercial and industrial customers.

D. Energy and demand savings – collectively, the proposed programs will contribute to meeting the 2030 savings requirements, calculated consistently with the Final Order in Docket No. 24-00157-UT.

E. Non-energy benefits – programs should create significant non-energy benefits, including lower bills for customers, increased consumer awareness and adoption of energy efficient technologies, removal or minimization of market barriers to adoption of energy efficiency products and technologies, and environmental benefits through the reduction in emissions and water use associated with the production of electricity. Programs in the 2027 Plan provide significant non-energy benefits including:

1. Lower bills for those who participate. Energy savings for the measures in each program are shown in Table 4-2. These savings will result in lower bills for those who participate.

2. Increased awareness and adoption of technologies. The programs include substantial promotional efforts designed to increase customer awareness and understanding of energy efficiency. The participation goals, shown in Table 4-1, will ensure increased adoption of measures.

3. Water use and CO_2 reduction. The programs result in significant water savings and reduction in greenhouse gases that would not have occurred absent the programs. The estimated reductions are described in Section 4.2.2.

F. Implementation – Programs should have a proven track record in other utility markets and a defined target market within PNM service areas that ensures straightforward program implementation.

Programs are implemented and managed by PNM staff and third-party contractors who are experienced with specific programs and technologies, and who leverage the existing market experience by implementing programs that attract customers and encourage them to save additional money and energy. Table 3-4 lists the parties responsible for program implementation.

G. Measurement and verification (M&V) – Each program implemented should have a defined method for measuring and verifying savings to determine the contribution to overall energy efficiency goals.

PNM has worked closely with independent M&V evaluators since 2008 and will continue to work with the state-appointed evaluator when they examine the 2027 Plan programs. Section 4.4 provides a description of the important elements of program M&V.

H. Performance risk of the technologies – None of the products promoted by any of the programs should rely on unproven technologies.

Each program contained in the 2027 Plan is based on proven measures that have been implemented successfully by other utilities.

3.3 PROGRAM BUDGETS AND COST-EFFECTIVENESS

3.3.1 UCT MODEL

PNM has developed a spreadsheet model for performing the UCT calculation. The input assumptions and UCT results are shown in Appendix E – Technical Manual. Inputs to the UCT model include measure life, per-unit energy and capacity savings, forecasted participation rates, rebate costs, administration costs and M&V costs. These inputs are based on independent measurement and verification reports for past program years, New Mexico Technical Resources Manual (TRM), research on programs at other utilities, and standards set by ENERGY STAR, Consortium for Energy Efficiency (CEE) and other energy efficiency organizations.

Several factors were considered in estimating portfolio participation targets, including past program performance, the potential participation rates identified in potential studies, participation targets identified in responses to Requests for Proposals (RFPs) issued by PNM, and third-party contractor estimates. PNM also considered participation rates at other utilities and the cost impact to participants of installing efficiency measures.

3.3.2 PROGRAM BENEFITS

Program benefits are determined by multiplying the annual program energy and demand savings by the annual avoided costs for energy and demand, over the useful life of the program, and taking the net present value of the sum. The avoided costs used in the UCT model are provided in Appendix A.

3.3.3 PROGRAM COSTS

Tables 3-1, 3-2, and 3-3 show the estimated annual costs to implement the 2027 Plan programs (for 12 months of implementation). The total 2027 Plan budget amount of $42,562,135 for calendar year 2027 is based on 4.35% of 2024 revenues. Likewise, the $44,418,321 budget for 2028 is based on 4.54% of 2024 revenues. Finally, the $45,611,509 budget for 2029 is based on 4.66% of 2024 revenues. Costs are presented in six categories which are described in detail following the table.

Table 3-1

2027 Program	Admin	Third Party	Rebates	Promotion	M&V - Excluded from Rider 16	Market Transformation	Total
Commercial Comprehensive	$ 323,667	$ 3,867,660	$ 7,486,828	$ 164,495	$ 221,443	$ 166,033	$ 12,008,683
Residential Comprehensive	$ 236,667	$ 4,652,128	$ 3,736,699	$ 120,280	$ 161,920	$ 121,404	$ 8,867,178
Behavioral Comprehensive	$ 30,725	$ 1,073,766	$ 55,674	$ 15,615	$ 21,021	$ 15,761	$ 1,191,541
Residential Products	$ 118,971	$ 1,479,369	$ 2,590,448	$ 60,464	$ 81,396	$ 61,029	$ 4,310,281
Easy Savings Kit	$ 78,563	$ 338,326	$ 2,550,017	$ 39,928	$ 53,751	$ 40,301	$ 3,047,135
Energy Smart (Housing NM/MFA)	$ 9,506	$ 36,167	$ 289,034	$ 4,831	$ 6,504	$ 4,877	$ 344,416
New Home Construction	$ 37,032	$ 542,611	$ 763,805	$ 18,820	$ 25,336	$ 18,996	$ 1,381,265
Home Works	$ 24,390	$ 214,584	$ 619,770	$ 12,396	$ 16,687	$ 12,512	$ 883,652
Power Saver	$ 181,138	$ 6,684,418	$ -	$ 92,058	$ 123,929	$ 92,919	$ 7,050,534
Peak Saver	$ 89,341	$ 3,296,876	$ -	$ 45,405	$ 61,124	$ 45,829	$ 3,477,451
TOTALS	**$ 1,130,002**	**$ 22,185,905**	**$ 18,092,275**	**$ 574,292**	**$ 773,111**	**$ 579,662**	**$ 42,562,135**

Table 2-2

2028 Program	Admin	Third Party	Rebates	Promotion	M&V - Excluded from Rider 16	Market Transformation	Total
Commercial Comprehensive	$ 393,372	$ 4,061,043	$ 7,572,076	$ 169,339	$ 226,733	$ 282,040	$ 12,477,869
Residential Comprehensive	$ 288,733	$ 4,789,090	$ 3,831,415	$ 124,294	$ 166,421	$ 207,016	$ 9,240,548
Behavioral Comprehensive	$ 37,559	$ 1,107,604	$ 55,674	$ 16,168	$ 21,648	$ 26,929	$ 1,243,935
Residential Products	$ 140,889	$ 1,511,529	$ 2,548,770	$ 60,650	$ 81,206	$ 101,014	$ 4,362,852
Easy Savings Kit	$ 101,660	$ 363,735	$ 2,785,365	$ 43,763	$ 58,595	$ 72,888	$ 3,367,411
Energy Smart (Housing NM/MFA)	$ 11,811	$ 37,881	$ 302,511	$ 5,085	$ 6,808	$ 8,468	$ 365,756
New Home Construction	$ 46,165	$ 552,320	$ 818,442	$ 19,873	$ 26,609	$ 33,099	$ 1,469,900
Home Works	$ 30,305	$ 234,909	$ 638,458	$ 13,046	$ 17,467	$ 21,728	$ 938,446
Power Saver	$ 222,441	$ 6,915,408	$ -	$ 95,756	$ 128,212	$ 159,486	$ 7,393,091
Peak Saver	$ 107,067	$ 3,328,591	$ -	$ 46,090	$ 61,712	$ 76,765	$ 3,558,514
TOTALS	**$ 1,380,002**	**$ 22,902,110**	**$ 18,552,711**	**$ 594,064**	**$ 795,411**	**$ 989,434**	**$ 44,418,321**

Table 3-3

2029 Program	Admin	Third Party	Rebates	Promotion	M&V - Excluded from Rider 16	Market Transformation	Total
Commercial Comprehensive	$ 396,984	$ 4,264,095	$ 7,616,074	$ 173,959	$ 231,378	$ 165,720	$ 12,616,832
Residential Comprehensive	$ 301,629	$ 5,178,244	$ 3,936,837	$ 132,174	$ 175,801	$ 125,914	$ 9,674,799
Behavioral Comprehensive	$ 38,273	$ 1,143,134	$ 55,674	$ 16,771	$ 22,307	$ 15,977	$ 1,269,830
Residential Products	$ 140,825	$ 1,555,130	$ 2,548,770	$ 61,710	$ 82,078	$ 58,787	$ 4,365,221
Easy Savings Kit	$ 109,720	$ 391,468	$ 3,045,846	$ 48,079	$ 63,949	$ 45,802	$ 3,640,915
Energy Smart (Housing NM/MFA)	$ 12,259	$ 39,775	$ 317,487	$ 5,372	$ 7,145	$ 5,118	$ 380,011
New Home Construction	$ 48,971	$ 594,391	$ 876,106	$ 21,459	$ 28,542	$ 20,443	$ 1,561,370
Home Works	$ 31,338	$ 255,660	$ 657,584	$ 13,732	$ 18,265	$ 13,082	$ 971,395
Power Saver	$ 227,501	$ 7,151,916	$ -	$ 99,691	$ 132,596	$ 94,970	$ 7,574,078
Peak Saver	$ 106,843	$ 3,358,796	$ -	$ 46,819	$ 62,272	$ 44,601	$ 3,557,058
TOTALS	**$ 1,414,342**	**$ 23,932,608**	**$ 19,054,378**	**$ 619,767**	**$ 824,334**	**$ 590,414**	**$ 45,611,509**

THIRD PARTY IMPLEMENTATION

PNM is the administrator for its entire portfolio of EE and LM programs, but has engaged third-party contractors with proven expertise to implement the programs because of the many advantages that this approach provides, including:

- *Selecting contractors through an RFP process allows PNM to determine the most qualified contractor and best proposal for program implementation.*

- *Proven expertise and experience in delivering similar programs by the selected contractor reduces the risk associated with implementing a program and achieving participation and savings goals.*

- *Program scale can be adjusted up or down quickly using contractor personnel.*

- *Contracts can be designed to limit PNM and customer risk by including provisions to pay for performance achieved.*

Third-party implementation costs are the costs paid by PNM to the third-party contractors. These costs can include contractor labor, development of promotional material, marketing, customer outreach, development of program processes and customer enrollment procedures, trade ally recruitment and other program specific costs. Table 3-4 lists each program and the contractor responsible for implementation.

Table 3-4

Program	Primary Implementer	Program Type			
		Commercial	Residential	Low Income	Load Management
Commercial Comprehensive	DNV	X			
Comm. Comp. - Multifamily	DNV	X	X	X	
Res. Comp. - Refrigerator Recycling	CLEAResult	X	X		
Res. Comp. - Home Energy Checkup	ICF		X	X	
Res. Comp. - Cooling	CLEAResult	X	X		
Residential Products	CLEAResult		X		
New Home Construction	ICF	X	X		
PNM Home Works	NEF		X	X	
Energy Smart (Housing NM/MFA)	Housing NM			X	
Easy Savings Kit	Resource Innovations			X	
Behavioral Comp.	Bidgely & TRC		X	X	
Power Saver	Itron	X	X		X
Peak Saver	Itron	X			X

CUSTOMER INCENTIVES (REBATES)

One of the barriers to energy efficiency deployment is that, although high efficiency options are cost-effective on a life-cycle basis, initial costs may be higher than they are for less efficient options. Customer incentives or rebates are designed to help overcome this barrier. Rebates provided in the 2027 Plan are designed to provide between 25% and 50% of the incremental cost of purchasing the energy efficiency measure over the standard non-energy efficient option. Exceptions to this are the programs that target low-income customers and other hard-to-reach customer segments, such as small-business customers. PNM and its implementers find from experience in the market that this 25% to 50% range is sufficient to drive sales and savings while remaining cost effective. The low-income programs are offered at no cost to income-qualified participants, and the small-business component of the Commercial Comprehensive program provides higher incentives to encourage greater participation. In addition to using the general guideline of 25% to 50% of incremental cost, rebate amounts are set for each measure in a program based on a market assessment of what it will take to achieve the participation targets for the program. For some programs, such as the Home Energy Checkup component of the Residential Comprehensive program, the rebates are determined in part on past participation rates at a given rebate level and the need to increase participation.

INTERNAL ADMINISTRATION

The primary internal administrative cost is the labor associated with program management and administration, including program development, tracking, reporting and the time needed to oversee and interact with third-party contractors and stakeholders. Additional costs include incidental costs, such as travel and membership fees for energy efficiency organizations. Internal administrative costs are proportionally allocated to the energy efficiency programs based on the direct costs associated with each program with some adjustments for known dedicated costs. Direct costs are the costs specific to individual programs such as third-party costs, rebates, and promotional costs. Administrative costs represent less than five percent of the total 2027 Plan costs.

MEASUREMENT AND VERIFICATION

The budget for independent M&V of the programs is estimated to be about two percent of the total program budget, based on the current contract approved by the NMPRC. The EE portfolio M&V is discussed in more detail in Section 4.4. These costs will not be recovered via Rider No. 16. Per Exhibit B of the Final Order of Docket No. 24-00157-UT, section 17.7.2.13(G): "Funding for the services of an independent program evaluator shall be paid by the public utility and treated as a regulatory asset to be recovered through rates established in the public utility's next general rate proceeding." Therefore, the M&V costs will be tracked in a regulatory asset and submitted for recovery in a future PNM rate case.

3.4 PROMOTION

Effective promotion and marketing are critical to the success of the EE programs. PNM oversees planning for program marketing across its EE portfolio and continuously monitors each program's promotional plans. The day-to-day management of marketing depends on each program's needs. Where third-party contractors are responsible for marketing the programs they administer, their promotional costs are recorded in the third-party expense category. In some cases, where contractors do not have the necessary marketing capabilities, PNM directly manages marketing for these programs. PNM also produces its own marketing materials to use in a variety of customer outreach channels where appropriate. These marketing channels include program marketing materials (such as case studies, bill inserts, flyers, or brochures), direct mail, email, outreach events (including events focusing on low-income customers), customer communications with call center staff, the PNM website, social media, digital advertising, outdoor advertising, and television and radio commercials. Efforts to cross-promote between energy efficiency and other PNM programs have expanded and continue to evolve, whether it's promotional materials, outreach events, or recommendations through program communications.

To continue increasing customer awareness, participation, and satisfaction, the marketing plan continued to include a microsite that ties directly to the core message for the campaign: Check with PNM before making an appliance purchase. Throughout 2025, the primary brand campaign directing customers to visit CheckWithPNM.com[5] was very successful, with over 80,000 unique views to the site, which directs customers to all PNM energy efficiency programs from a single landing page.

Additionally, to make communications more equitable and increase program awareness on a larger scale, PNM has pivoted to produce dual-language bill inserts to ensure both English and Spanish-speaking customers are aware of the EE offerings. Spanish is available in most of PNM's EE programs through one or more of the following channels: online rebate applications, online appointment scheduling, call center representatives and installation contractors, and marketing collateral.

TRADE ALLY NETWORK STRATEGY

As of 2026, over 550 businesses, or trade allies, will actively participate in PNM's EE programs by delivering program services and incentives to customers (see Appendix D for a list of current EE trade ally businesses). By consolidating synergies where appropriate and consolidating the trade ally network across almost all of its EE programs, PNM is able to support the many businesses that drive energy efficiency implementation in its service area. This trade ally network strategy offers services and incentives in addition to those already offered by third party program implementation contractors, including market research, public recognition and sales training. Other utilities have shown that such efforts result in increased trade ally engagement with programs and improved program outcomes, including increased customer participation and energy savings.

[5] https://www.checkwithpnm.com/.

4 2027 PROGRAM PLAN SUMMARY

4.1 SUMMARY TABLES

The tables in this section present the key performance measures and assumptions for each program in the 2027 Plan. Table 4-1 shows the customer participation and unit targets forecasted for each program.

Table 4-1

Programs	Unit Type	2027	2028	2029
Residential Comprehensive		**10,887**	**11,191**	**11,524**
Res. Comp. - Refrigerator Recycling	Unit	5,500	5,500	5,500
Res. Comp. - Home Energy Checkup	Participant	2,075	2,116	2,179
Res. Comp. - LI Home Energy Checkup	Participant	650	663	682
Res. Comp. - Midstream Cooling	Unit	2,662	2,912	3,162
Residential Products	Unit	320,600	320,600	320,600
Commercial Comprehensive		**532**	**541**	**548**
Comm. Comp. - Retrofit/NC/Mid	Participant	223	223	223
Comm. Comp. - QuickSaver	Participant	202	202	202
Comm. Comp. - Bldg Tune-Up	Participant	11	11	11
Comm. Comp. - Multifamily	Participant	96	105	112
Behavioral Comprehensive		**139,717**	**131,550**	**123,872**
Behavioral - Residential	Participant	139703	131536	123858
Behavioral - Commercial	Participant	14	14	14
Easy Savings	Participant	20,715	21,597	22,602
Energy Smart (Housing NM/MFA)	Participant	193	202	212
New Home Construction	Unit	1,488	1,568	1,652
Home Works	Participant	14,600	14,600	14,600

Table 4-2 shows the EUL, energy and demand savings, and average rebate cost per unit for each program.

Table 4-2

Programs	EUL	Per Unit Net kWh Savings	Per Unit Net kW Savings	Per Unit Average Rebate Amount
Refrigerator Recycling	7	860	0.11	$80
Home Energy Checkup (Mkt)	9	1573	0.18	$263
Home Energy Checkup (LI)	9	2792	0.32	$1,182
Residential Midstream Cooling	15	1687	0.46	$705
Residential Products	12	80	0.01	$8
Retrofit/NC/Mid	11	172561	37.09	$19,530
QuickSaver	11	35358	5.67	$6,261
Bldg Tune-Up	11	46436	2.39	$1,887
Multifamily	11	58672	11.73	$17,457
Easy Savings	10	387	0.11	$129
Energy Smart (Housing NM/MFA)	15	2228	1.25	$1,498
New Home Const.	16	1400	0.33	$522
Behavioral Res	1	57	0.01	$0
Behavioral Com	3	397670	75.42	$3,977
Home Works	13	236	0.01	$44

Tables 4-3, 4-4, and 4-5 show the net present value (NPV) of program costs, the NPV of program benefits, and the ratio of benefits to costs, which is the UCT for each program. NPV Costs are different from program budgets because they are discounted for the time value of money. Additional detail on the UCT calculations for each program is in Appendix E.

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Table 4-3

2027 Programs	NPV Benefits	NPV Costs	2027 UCT
Residential Comp.	$ 7,540,452	$8,867,178	0.85
Refrig. Recycl.	$ 1,431,108	$1,838,225	0.78
HEC - Mkt	$ 1,869,947	$2,252,036	0.83
HEC - LI	$ 1,259,891	$1,978,812	0.64
Midstream Cooling	$ 2,549,365	$2,798,105	0.91
Residential Products	$ 11,626,813	$4,310,281	2.70
Commercial Comp.	$ 31,057,981	$12,008,683	2.59
Easy Savings	$ 7,043,963	$3,047,135	2.31
Energy Smart (Housing NM/MFA)	$ 629,696	$344,416	1.83
New Home Const.	$ 1,209,625	$1,381,265	0.88
Behavioral (Residential)	$ 662,310	$713,832	0.93
Behavioral (Commercial)	$ 1,300,104	$477,709	2.72
Home Works	$ 2,171,222	$883,652	2.46
Power Saver (LM)	$ 9,144,896	$7,050,534	1.30
Peak Saver (LM)	$ 4,989,395	$3,477,451	1.43
Total	$ 76,946,317	$ 42,562,135	1.81

Table 4-4

2028 Programs	NPV Benefits	NPV Costs	2028 UCT
Residential Comp.	$ 8,114,969	$9,240,548	0.88
Refrig. Recycl.	$ 1,537,427	$1,904,933	0.81
HEC - Mkt	$ 2,024,858	$2,343,676	0.86
HEC - LI	$ 1,362,417	$2,041,485	0.67
Midstream Cooling	$ 2,715,714	$2,950,453	0.92
Residential Products	$ 11,325,539	$4,362,852	2.60
Commercial Comp.	$ 31,305,502	$12,477,869	2.51
Easy Savings	$ 8,365,228	$3,367,411	2.48
Energy Smart (Housing NM/MFA)	$ 605,529	$365,756	1.66
New Home Const.	$ 1,246,606	$1,469,900	0.85
Behavioral (Residential)	$ 602,078	$759,688	0.79
Behavioral (Commercial)	$ 1,441,026	$484,247	2.98
Home Works	$ 2,226,810	$938,446	2.37
Power Saver (LM)	$ 9,184,956	$7,393,091	1.24
Peak Saver (LM)	$ 4,875,156	$3,558,514	1.37
Total	$ 78,818,847	$ 44,418,321	1.77

Table 4-5

2029 Programs	NPV Benefits	NPV Costs	2029 UCT
Residential Comp.	$ 8,475,451	$9,674,799	0.88
Refrig. Recycl.	$ 1,620,486	$1,927,225	0.84
HEC - Mkt	$ 2,155,278	$2,391,638	0.90
HEC - LI	$ 1,457,251	$2,323,434	0.63
Midstream Cooling	$ 2,876,062	$3,032,501	0.95
Residential Products	$ 11,072,675	$4,365,221	2.54
Commercial Comp.	$ 30,598,901	$12,616,832	2.43
Easy Savings	$ 8,798,646	$3,640,915	2.42
Energy Smart (Housing NM/MFA)	$ 608,606	$380,011	1.60
New Home Const.	$ 1,305,112	$1,561,370	0.84
Behavioral (Residential)	$ 652,761	$790,175	0.83
Behavioral (Commercial)	$ 1,585,106	$479,655	3.30
Home Works	$ 2,197,434	$971,395	2.26
Power Saver (LM)	$ 9,259,309	$7,574,078	1.22
Peak Saver (LM)	$ 4,784,678	$3,557,058	1.35
Total	$ 78,972,304	$ 45,611,509	1.73

4.2 NON-ENERGY BENEFITS

4.2.1 ECONOMIC BENEFITS

The PNM Energy Efficiency Program has a positive economic impact on New Mexico through the creation of new jobs associated with delivering efficiency products, services and incentives to customers. As determined by the independent M&V evaluation of the programs, most projects would not have been completed without the program incentives. For every dollar spent in EE programs, a portion of it remains within the state as wages and payment for local equipment and services. As this money gets re-spent within the state, it increases its overall benefit through a multiplier effect. The incentive levels in the 2027 Plan are designed to cover between 25% and 50% of the incremental cost of performing retrofits and encourage investments that would otherwise not be made. Although PNM is not aware of specific studies that quantify additional economic benefits due to funding energy efficiency improvements in New Mexico, one conservative approach to estimating the increased investment caused by the rebate payments would be to assume that the rebates cause spending on retrofits valued at twice the rebate level, assuming the rebates cover about half of the incremental cost. Based on the estimated annual average of customer incentives totaling approximately $18,566,454, this would result in about $37,132,909 in investment in energy efficiency improvements that would otherwise not have been made.

The number of direct jobs created by the existing PNM Energy Efficiency Program is shown in Table 4-6. These jobs are full-time positions created by the third-party contractors to implement the programs. The Commercial Comprehensive program, for example, directly employs twelve people locally. In addition to the jobs shown in Table 4-6, many additional jobs are being supported in the trade ally and contractor community to install the measures associated with PNM's EE programs. According to a national study completed in 2025, there are over 4,000 energy efficiency-related jobs in PNM's service area.[6]

Table 4-6

Program	Direct Energy Efficiency Jobs
Residential Comp. Refrigerator Recycling	8
Residential Comp. Home Energy Checkup	5
Residential Comp. Midstream Cooling	2
Residential Products	3
Commercial Comp.	12
Home Works	2
Energy Smart (Housing NM/MFA)	1
New Home Const.	4
Power Saver (LM)	8
Peak Saver (LM)	4
Total	**49**

[6] https://building-performance.org/documents/EEJA_Full%20Report_Updated_May7_2025.pdf.

4.2.2 EMISSIONS REDUCTIONS

The energy savings attributed to the proposed 2027 Plan, if approved and implemented, would result in significant reductions of various environmental emissions and in water needed for the generation of electricity. The cumulative CO_2 reduction is estimated to save about 36,000 metric tons for the planning years 2027, 2028, and 2029, assuming the 2025 PNM average generation portfolio production values. The cumulative water reduction is estimated at about 41,000,000 gallons for the planning years 2027, 2028, and in 2029.

4.3 TARIFF RIDER AND MEASUREMENT AND VERIFICATION

PNM Rider No. 16 (Rider) recovers the program costs and approved profit incentive associated with the PNM's EE and LM programs. Beginning in January 2026, the program cost element of the Rider was set to 3.931% of bills and the profit incentive element set at 0.260%.[7] PNM is filing a reconciliation of 2025 program costs and profit incentive concurrently with the 2027 Plan on April 15, 2026. The reconciliation of program costs shows an over collection in 2025 compared to actual 2025 program costs. The reconciliation filing includes a proposed adjustment to the Rider to account for under-collection of profit incentive costs in 2025. In 2027 the total program cost element is set to 3.676% of bills and the base level profit incentive element is set to 0.228% of bills totaling 3.904% in cost.

Measurement and Verification (M&V)

The Act requires that M&V be performed by an independent program evaluator that, pursuant to the Rule, is approved by the NMPRC. The independent evaluator prepares a report that documents the total portfolio and individual program-level expenditures, measured and verified savings, and cost-effectiveness of all the EE and LM programs plus self-direct programs. The report includes deemed savings assumptions and all other assumptions determined by the evaluator. Objectives of the M&V process include verifying that measures were installed and documentation matches rebate applications; and that measures are operating properly within program quality standards and expected to generate the predicted savings. In addition to providing measured and verified information regarding PNM's programs, the M&V report also provides guidance for how PNM can assess its own program metrics and informs future program design and budget allocation decisions.

PNM will work closely with EcoMetric as the evaluator approved by the NMPRC for evaluation of the 2027 Plan programs.

4.4 REPORTING

[7] Advice Notice 640, Filed June 20, 2025

PNM will make annual filings, currently required on April 15 of each year, that will provide program evaluation information, as required by 17.7.2.14 NMAC, and Rider collections. The filings will also include the M&V reports completed by the independent evaluator. Concurrently with filing the annual report, PNM will request any needed reconciliation of the tariff Rider to reflect actual participation levels and actual expenditures made in implementation of the programs. Annual reports are available through the PNM website at: www.pnm.com/regulatory.

5 PROGRAM DESCRIPTIONS

Continuing programs and enhancements are described in the following sections:

5.1 – Commercial Programs

5.2 – Residential Programs

5.3 – Low-Income Programs

5.4 – *Behavioral Programs*

5.5 – Load Management Programs

5.6 – Market Transformation Program

5.1 COMMERCIAL PROGRAMS

5.1.1 CONTINUING PROGRAMS – APPROVED IN CASE NO. 23-00138-UT

COMMERCIAL COMPREHENSIVE

The Commercial Comprehensive program is PNM's flagship program for non-residential customers. The program provides incentives for the retrofit or installation of both prescriptive and non-prescriptive measures that decrease demand and save energy. The program is designed to be a "one-stop-shop" for commercial customers interested in improving the efficiency of their existing or planned new facilities. Examples of measures include a prescriptive list of lighting upgrades, building controls, compressed air and fan systems, and HVAC and refrigeration upgrades, as well as incentives for custom measures. This program also includes a new construction option that offers incentives for buildings constructed to exceed local building code energy requirements and special incentives for small businesses. In addition, the program offers training programs and on-site audits. Last, the program includes a "Manufacturing Glow-Up" pilot for new and expanding manufacturing businesses. They must participate in one of the Commercial Comprehensive rebate programs. They receive assistance with engineering needed for Non-

Taxable Transaction Certificates ("NTTC") related to manufacturing processes. The incentives to cover these engineering costs are paid from market transformation funds.

One important aspect of the Commercial Comprehensive program is its reliance on the participation of local energy efficiency vendors, suppliers and contractors who install energy saving equipment. These businesses are critical "trade allies" and the program would not be successful without their enthusiastic support. PNM conducts several training sessions each year for participating trade allies in which the program processes are reviewed, and technical training is provided on new efficiency approaches.

The Commercial Comprehensive program is implemented for PNM by DNV. In collaboration with DNV, PNM continuously monitors market conditions and changes in the status of commercial and industrial technologies to keep the list of eligible upgrades current and the rebates appropriate. For example, PNM regularly consults the DesignLights Consortium[8] website to search for new energy efficient lighting technologies that could be added to the program. The DesignLights Consortium is a non-profit membership organization that promotes quality, performance, and energy efficient commercial sector lighting solutions.

The Commercial Comprehensive program has six components: Retrofit Rebates, New Construction, Building Tune-Up, Distributor Discount, Multifamily and PNM QuickSaver™ for small business customers. Each of these is described in detail below. Complete program details, including the customer application and a list of all rebates, is available on the PNM website.[9]

RETROFIT REBATES

The Retrofit Rebate is the largest component of the Commercial Comprehensive program in terms of total savings. The Retrofit Rebate component offers two options for a PNM business customer: 1) a pre-set menu of rebates for installing qualifying equipment in new and existing buildings; and 2) custom rebates for reducing energy use with a system improvement that is not included on the pre-set menu. Custom rebates are based on the estimated first-year energy savings. Complete program details including a list of all rebates are available on the PNM website.[10]

A Business Uplift pilot starting in 2026 provides higher incentive levels for small businesses needing retrofits in underserved areas. Commercial customers operating in zones identified by the City of Albuquerque to be part of the Metropolitan Redevelopment Area and employ fewer than 100 local

[8] https://www.designlights.org/.

[9] https://www.pnm.com/bizrebates.

[10] https://www.pnm.com/bizrebates.

employees will be eligible for increased incentives for retrofit or new construction projects under the Business Uplift program.

NEW CONSTRUCTION

Customers that build new facilities or make major renovations of existing buildings can receive an incentive if they install equipment or systems that result in surpassing existing building code requirements and save additional energy. Savings are determined by following American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRAE) Standards and must be validated using a standard modeling tool, such as DOE-2, BLAST, EnergyPlus or eQUEST, capable of hourly calculations and modeling multiple thermal zones. The tool used must be approved by PNM staff.

The whole-building New Construction component provides an incentive based on the amount of annual energy saved due to constructing the building to standards at least 10% better than local building code, which is currently the ASHRAE 90.1 2019 – IECC 2021 standard. There are two levels of incentives available based on the following conditions:

- Surpass ASHRAE 90.1 2019 on a new building by 10 percent and receive an incentive based on first-year kilowatt-hours saved.
- Surpass ASHRAE 90.1 2019 on a new building by 20 percent and receive a higher incentive based on first-year kilowatt-hours saved.

BUILDING TUNE-UP

Building Tune-Up has historically been comprised of three sub-programs: Retro-Commissioning, Building Operator Certification and Advanced A/C Tune-Up. Due to synergy with the Residential A/C Tune-Up program and lack of participation in the commercial sector, PNM recommends that the Advanced A/C Tune-Up program be combined with the Residential A/C Tune-Up program and fall under the Residential Comprehensive Program umbrella.

Retro-commissioning refers to the process of bringing a building's mechanical and electrical systems, including building controls, to peak performance. Existing systems are analyzed, parameters are adjusted and equipment repaired as necessary. Low-cost operational improvements that deliver high energy savings are also identified. For more complex systems, a building analysis may be performed. The Retro-Commissioning program offers a 2-Tier incentive structure that is largely based on facility size and energy consumption. In order to earn a Tier 1 incentive, the customer must commit to install all the no or low-cost measures identified in the project analysis that have a payback of less than two years and cost less than $2,000. The Tier 2 incentive requires enhanced control systems to be in place, completion of Tier 1 improvements and installation of measures with a payback of less than two years and cost less than $5,000. After system improvements are identified and prior to any system modifications, a baseline of electricity consumption is estimated. PNM pays a rebate based on the one-year annualized rate of energy savings. For more complicated buildings, the program also provides a rebate for a portion of the study expenses.

The Building Operator Certification is a nationally recognized certification program that provides 100% of tuition reimbursement for qualifying personnel. The certification leads to improved job skills and knowledge which are intended to increase facility efficiency and comfort.

The Building Tune-Up component of the Commercial Comprehensive program differs from the Retrofit Rebate component in that the primary goal is to identify low-cost operational improvements that deliver energy savings. Existing mechanical and electrical systems and building controls will be adjusted, typically with minimum capital cost. To the extent a building tune-up incorporates prescriptive elements included in the Retrofit Rebate component, the customer will generally receive rebates through the Retrofit Rebate component.

DISTRIBUTOR (MIDSTREAM) INCENTIVES

In 2015, PNM expanded program outreach through “midstream” marketing for HVAC measures that are also available through the Retrofit Rebate component. In 2019, commercial cooking measures were added to the program. Midstream refers to providing incentives at the distribution level rather than, or in addition to, the customer. Without midstream incentives, distributors tend to stock basic equipment that is less expensive to install. Energy efficient alternatives are generally more expensive and must be “special ordered.” Therefore, if a customer’s piece of equipment fails and it must be replaced under time constraints, the energy-efficient alternative is often not installed. Moreover, the midstream model allows for incentives to be paid to the counter sales staff. This further motivates sales staff to promote efficient equipment. Also, midstream incentives show the point-of-sale discount on the quotation or invoice which will further motivate contractors and customers to select the energy efficient choice. The current list of equipment included in Distributor Incentives is based on an assessment of technologies that are not readily available or stocked in the high efficiency option. The program currently provides incentives for HVAC equipment and food service equipment. The program will also work to recruit additional distributors throughout PNM’s service area.

The Distributor Discount program has experienced lower levels of participation than anticipated; however, PNM and its third party implementer are actively implementing targeted enhancements to improve program performance. These efforts include recruiting additional in-state and out-of-state distributors, offering alternative incentive payment options to customers, and expanding marketing and training activities for participating distributors.

MULTIFAMILY

The Multifamily program targets a unique and hard-to-reach customer segment. The target audience consists of owners of multifamily (apartment) dwellings, who are eligible to receive rebates and direct-install measures for energy efficiency upgrades in common areas and residential housing units. For the purpose of this program, PNM defines multifamily dwellings as residential buildings with five or more attached units as well as residential campuses with two or more buildings with four or more units with common walls within each building owned by the same owner. The goal is to offer a program that is streamlined and offers a simple approach to participation, and that will make their buildings more energy efficient. Making recommended, cost-effective energy efficiency upgrades, including lighting retrofits, appliance upgrades, and direct installation of smaller measures, is a good investment for the property owner and will also benefit tenants and property owners with lower utility bills, increased comfort, and improved security. The program is administered by DNV, a third-party implementer. DNV manages all components of the program, including marketing, outreach, and rebate processing. A central part of the program delivery includes utilizing a primary point of contact or liaison either employed by or contracted with the implementer to assist the property manager throughout the entire project.

The program has special incentives available to multifamily participants with a majority of low-income tenants, defined as being at or below 200% of the federal poverty level. These properties are typically operated by a recognized low-income housing provider including, but not limited to, government entities, nonprofit agencies, and private-market Section 8 providers.

Energy savings are achieved through both prescriptive and custom measures. Projects that include custom measures that are not included in the prescriptive list can receive rebates provided that building system analysis shows them to be cost-effective. PNM will continuously monitor participation in the program and make modifications to the measure list and rebate amounts as needed to achieve participation and budget goals. Complete program details including a list of all rebates are available on the PNM website.[11]

Since the last program plan filing, PNM has added a Step It Up pilot to the program. It provides additional incentives for “deep” retrofits of low-income multifamily properties. “Deep” retrofits are defined as those including measures from two or more measure categories, or including a heat pump.

PNM QUICKSAVER

[11] https://www.pnm.com/bizrebates.

The PNM QuickSaver component provides special incentives for PNM small-business customers who are considered a hard-to-reach segment because of their limited access to capital and other barriers to participation. Beginning in 2015, the upper threshold for eligibility in QuickSaver was increased from business accounts with peak demand of 100 kW to those with 200 kW in 2016 to reach even more small business customers and has maintained this level since. Case-by-case exemptions for larger businesses with a peak demand up to 250 KW are provided for non-profits, religious organizations or educational facilities that lack in-house engineering support. These exemptions are made to preserve the intent of serving small businesses but also recognizing that QuickSaver support and rebates to underprivileged customer segments help reduce operating costs for businesses that have special needs. Qualifying businesses contact an approved PNM QuickSaver contractor to schedule an energy efficiency evaluation. The PNM QuickSaver-approved contractor then provides an on-site evaluation and a written proposal for the energy efficiency equipment upgrades for which the facility qualifies. Using this information, a contract between the customer and the contractor is drafted with the costs and final project completion payment clearly defined. The contractor handles all of the project paperwork. PNM QuickSaver covers on average about 65% of the project cost, which makes improved efficiency more affordable and attractive to the hard-to-reach small business customer. PNM pays the rebate to the contractor and, for many projects, utility savings will pay back out-of-pocket costs incurred by the business participant in less than one year.

Fewer energy savings measures are available under the QuickSaver component as compared to the Retrofit or New Construction components. However, QuickSaver focuses on measures that are the most common and cost-effective measures for the typical small business such as refrigeration components, lighting fixtures and lamps, and lighting control upgrades. These measures are also ones that can be installed quickly and provide immediate electric cost savings to participating small business owners. Many of the retrofits that have been done have focused on lighting, but contractors are also promoting more refrigeration and controls retrofits. In addition, PNM's third-party contractor is providing analytics to support targeted marketing of the program to increase participation and engagement of eligible customers.

REFRIGERATOR RECYCLING

The Refrigerator Recycling program is primarily a residential program but is also available to commercial customers. Please see the residential Refrigerator Recycling program description for more detail.

SELF-DIRECT

This program allows large customers (with energy usage greater than 7 million kWh per year) to receive credits for qualifying incremental expenditures made towards energy efficiency measures at the customers' facilities. Credits for approved self-direct programs may be used to offset up to seventy percent of the energy efficiency tariff Rider until the credit is exhausted. Qualifying customers apply for the credit through submitting a proposed EE project they intend to implement at their facility. The PNM Self-Direct program manager reviews the application. If the project meets the program requirements the application is approved and the customer's electric bill is credited. Projects must not utilize funding from any other PNM EE program in order to be eligible.

5.2 RESIDENTIAL PROGRAMS

5.2.1 CONTINUING PROGRAMS – APPROVED IN CASE NO. 23-00138-UT

RESIDENTIAL COMPREHENSIVE & COMMERCIAL A/C TUNE-UP

The Residential Comprehensive program is the primary incentive program for residential customers. The program has four components; Home Energy Checkup (including a low-income option), Residential Midstream Cooling, Residential & Commercial A/C Tune-Up, and Refrigerator Recycling. All of these programs provide energy efficiency options for customers' homes and have similar offers and benefits. For example, cooling options are available through Home Energy Checkup and Residential Midstream Cooling and customers recycling their refrigerators may also wish to take advantage of rebates on new appliances. PNM will continue to monitor the market for efficient appliances and HVAC equipment and make additions and modifications to the rebates to reflect market conditions and achieve budget and savings targets. Complete program details including customer applications and a list of all rebates are available on the PNM website.[12]

HOME ENERGY CHECKUP

Home Energy Checkup, newly managed by ICF, provides PNM residential customers, including low-income customers, the opportunity to participate in a Home Energy Checkup to save money and energy through an individualized Checkup and installation of energy-saving measures. The Home Energy Checkup applies a one-stop-shop approach at no charge to the customer. This includes a walk-through assessment and informative discussion between the program participant and energy ambassador explaining the

[12] https://www.checkwithpnm.com/.

assessment results and relevant opportunities. The ambassador will provide additional educational materials including conservation tips, ENERGY STAR appliance rebate eligibility, weatherization eligibility, and information about other energy efficiency programs available to participants. Once the assessment has been completed and the results and materials presented, the ambassador directly installs applicable energy efficiency measures. These measures include a varied mix of the following: weather stripping, door sweeps, outlet gaskets, LEDs, faucet aerators, showerheads, pipe insulation, spray foam, and advanced power strips.

Low-income customers will receive additional benefits for a more thorough impact. Customers can qualify to receive an ENERGY STAR refrigerator to replace an older, inefficient model. The energy ambassador determines whether the home's primary refrigerator is eligible for replacement, and our contractor will remove and recycle the old, while installing the new. Low-income customers with central air conditioning can also qualify for free weatherization upgrades in the form of comprehensive envelope measures including insulation, air sealing, duct sealing and the installation of smart thermostats. These advanced weatherization measures will be offered in conjunction with NMGC and offer deeper savings and ease of participation. This assessment for joint-territory low-income customers, to be performed by a local contactor, will include a blower door and duct leakage tests. Scheduling for upgrades is managed by the implementer.

For all participants, rebates are also provided for the purchase of ENERGY STAR appliances, heat pump water heaters, replacement of existing and working HVAC units with more efficient units and adding insulation for homes with refrigerated air-conditioning or evaporative cooling with electric heating. The program also identifies customers who may qualify for additional incentives on advanced evaporative cooling. Appliances and HVAC equipment that qualify for rebates through the program currently include the following:

- ENERGY STAR Refrigerator (excluding low-income customers receiving service at no cost)
- ENERGY STAR Freezer
- ENERGY STAR Clothes Washer
- ENERGY STAR Clothes Dryer
- ENERGY STAR Air Purifier
- Insulation (excluding low-income customers receiving service at no cost)
- ENERGY STAR Dishwasher
- ENERGY STAR Smart Thermostat (excluding low-income customers receiving service at no cost)
- HVAC Early Replacement
- Heat Pump Early Replacement
- Heat Pump Water Heater

ICF's duties include recruitment and training of energy ambassadors and contractors (trade allies), rebate fulfillment, customer support, marketing and advertising, data tracking, reporting, and quality assurance. PNM is collaborating and cost-sharing with the New Mexico Gas Company (NMGC) on this program for an even more robust program offering to customers, including tribal customers. As with the other programs in the portfolio, PNM will continue to monitor and evaluate the market for high-efficiency appliances and other efficient measures that could be included as rebate options, provided they are cost-effective and can be provided within the program budget.

RESIDENTIAL MIDSTREAM COOLING

The Residential Midstream Cooling program offers distributors and contractors incentives to stock highly efficient cooling equipment so it is readily available for a broader customer reach. The program also offers contractors incentives to install highly efficient units. Qualifying equipment includes CEE Tier one, two and three tier refrigerated air conditioning equipment, ducted and non-ducted heat pumps, heat pump water heaters, smart thermostats and any additional measures that pass cost effectiveness analysis. Discounts are passed through to customers having this equipment installed.

RESIDENTIAL & COMMERCIAL A/C TUNE-UP

Refrigerated A/C tune-ups are also offered to customers free of charge through this program when the ambient temperature reaches 55 degrees Fahrenheit or above. The tune-ups help systems maintain optimal performance to save customers more energy and money on their utility bills. Advanced evaporative and other cooling equipment incentives are now offered through the Residential Products program discussed later in the Plan. In 2027-2029, PNM is proposing to include Commercial HVAC tune-ups in the Residential A/C Tune-Up program. This is due to the overlap in contractors performing HVAC maintenance between the commercial and residential markets.

REFRIGERATOR RECYCLING

The Refrigerator Recycling program is designed to encourage retirement of old or unnecessary second refrigerators and freezers. A refrigerator manufactured before 1995 can use up to three times more energy than a newer model. By retiring and not replacing an extra working unit, a PNM residential customer can save up to $175 a year in electricity costs. This program is also available to PNM business customers, although only residential size and type refrigerators and freezers are accepted. The program provides a rebate for each unit that is recycled. The rebate amount is currently $75 per refrigerator or freezer.

PNM is contracted with CLEAResult to implement the program, which includes picking up old units and transporting them to the local recycling facility. Approximately 95% of each refrigerator or freezer is recycled. The unit must be in working condition and be between 10 and 30 cubic feet in size. There is a limit of two refrigerators and/or freezers per household, and more than two refrigerators and/or freezers for business customers with PNM program manager approval.

EASY SAVINGS KIT

The Easy Savings Kit program provides LED nightlights, advanced powerstrips, weatherization measures, and educational materials on saving energy to PNM customers. This program currently primarily targets low-income PNM customers for free kits and other measures through direct email. The program also targets non-low-income customers for kits and smart thermostats but requires a co-pay for those customers.

Customers who receive the enrollment email can request the energy efficiency kit. Customers can order over the phone or online at the program website link provided in the enrollment email. Customers receive marketing materials with the kits that educate customers about our other programs and encourage them to participate. PNM views these kits as a low- or no-cost entry point into energy efficiency for customers that is intended to lead them towards participating in programs that provide deeper savings.

RESIDENTIAL PRODUCTS

Beginning in 2021, the Residential Products program, formerly the Residential Lighting program, incorporated additional retail products such as ENERGY STAR appliances, advanced power strips, evaporative cooling equipment and other measures. PNM will continue to expand the program with additional cost-effective products as advised by results of a residential appliance saturation survey conducted in 2025 and current market conditions. Incorporating additional offerings has partially offset eliminated lighting savings due to EISA standard changes in 2023.

A list of retailers that offer discounts is available at https://www.pnm.com/instantdiscounts. The list of participating retailers is also shown in Appendix D.

PNM HOME WORKS (AND ENERGY INNOVATION)

PNM Home Works and Energy Innovation are an energy savings and education program that combines energy efficiency curriculum for teachers with easy-to-install energy efficiency and water-saving measures for students to install at home with their parents. The program has two main goals: energy savings and market transformation through student education.

PNM contracted with National Energy Foundation (NEF) to implement this program which consists of general program oversight, student and teacher presentations, web design, kit production, warehousing and distribution, marketing, program tracking, data tabulation, and reporting. This program is designed to generate immediate and long-term savings by sending energy savings measures and interactive hands-on education home with motivated students. The 2027 Plan program will continue to have two presentations and kits designed for 5th grade students and high school students. Each student will receive educational materials designed to build knowledge and demonstrate simple ways to save by changing habits in conjunction with easy-to-install measures. The teacher and student kit materials support state and national educational standards, which allow the program to easily fit into teachers' existing schedules and requirements. The total cost of providing the program, including all presentation time and materials is about $60 per kit in 2027.

The program begins with an interactive presentation at a school assembly or similar event teaching the importance of using water and energy efficiently, followed by hands-on, creative problem solving. Next, participating students take home an activity kit that includes high efficiency water, lighting, and weatherization measures. With the help of their parents or caregivers, the students install the measures at home and complete a home survey. The high school presentation includes a special emphasis on sustainability and on the unique energy usage footprint of a high school-aged student in the home. The high school kits contain a Tier two advanced power strip. The NEF staff tabulates all the responses, including home survey information, teacher responses, student input and parent responses, and generates a program summary report. Teachers receive a small mini grant to purchase supplies and materials for their classrooms. The amount of the mini grant is calculated based on the completed percentage of Home Energy Worksheets (HEWS) returned by each teacher. PNM will target approximately 14,600 students each year across the service area.

The educational and energy awareness training is a crucial part of the PNM Home Works program but is not directly linked to specific energy savings. Rather, the education builds awareness of the importance of energy efficiency in general and supports the goals of the 2027 Plan in general. Therefore, PNM funds the general energy efficiency educational materials and presentations activities of the program, about 53% of the program cost, through the Market Transformation (MT) program, which is described in the MT section of the 2027 Plan below.

NEW HOME CONSTRUCTION

ICF is the third-party implementer managing this turnkey program which includes marketing and outreach, builder and HERS rater outreach and training, quality assurance, data tracking and reporting, and rebate processing. PNM is collaborating and cost-sharing with the New Mexico Gas Company (NMGC) on this program for an even more robust program offering to home builders.

The target audience consists of custom, semi-custom, production, and manufactured home builders and includes consumers, realtors, trade allies, raters, developers and architects. The goal is to offer a streamlined program that offers participants incentives for highly efficient new single-family residential construction through either a prescriptive or a performance path.

The combined prescriptive and performance program approach has proven less stringent than the previous ENERGY STAR-only approach because homebuilders could choose to install a list of efficient prescriptive measures that meet or exceed efficiency goals or choose a whole home performance path approach for properties exceeding the previous building code while continuing to encourage home builders to participate in ENERGY STAR®, Zero Energy Ready Homes (ZERH) and Build Green NM initiatives.

The manufactured home pilot has been a success, with a total of 96 factory-built homes incentivized through the program between 2024 and 2025, and all but one being built as ZERH. The goal for 2026 is 83 homes, and the goals for the manufactured home segment for 2027-2029 have been increased accordingly for each consecutive year to 105, 116, and 127 homes.

PNM proposes to continue its all-electric homes pilot. Despite PNM's efforts, we have not seen the market uptake in this area that we had hoped for, so we are continuing all-electric home rebates as a pilot. This program is intended to accelerate the adoption of technologies like heat pump water heaters and air source heat pumps in new homes. To increase participation in 2027-2029, PNM has planned a transition to prescribed rebates for specific technologies as long as the home itself is all-electric. The prescribed rebates are higher than the previous performance rebates. The proposed 2027 participation goal is 40 homes.

MULTIFAMILY

The Multifamily program is described in detail in the previous Commercial section. The ultimate participant in the program is the property owner rather than the residents. However, the residents benefit directly from the program, especially if they have PNM electric accounts. Therefore, the Multifamily program benefits both commercial and residential customers.

5.3 LOW INCOME PROGRAMS

5.3.1 CONTINUING PROGRAMS – APPROVED IN CASE NO. 23-00138-UT

EASY SAVINGS KIT

The Easy Savings Kit program provides LED nightlights, advanced powerstrip, weatherization measures and educational materials on saving energy to PNM customers. This program currently primarily targets low-income PNM customers for free kits and other measures through direct email.

Customers who receive the enrollment email can request the energy efficiency kit. Customers can order over the phone or online at the program website link provided on the enrollment email. Kits are also distributed by non-profit agencies throughout PNM's service area.

ENERGY SMART – HOUSING NEW MEXICO

The Energy Smart program provides funding to the New Mexico Energy$mart weatherization program implemented by Housing New Mexico (formerly the New Mexico Mortgage Finance Authority). PNM funding is used by Housing New Mexico to supplement federal and state funding they receive to administer the low-income weatherization program. In recent years, the program has focused on installation of LED bulbs, weatherization, and replacement of older inefficient refrigerators with ENERGY

STAR qualified models. Measures also include: attic and wall insulation, duct and air sealing, hot water heater pipe and tank insulation, programmable thermostats, low-flow showerheads and aerators, and door and window replacement. This federal and state funding allows the program to achieve deep savings for customers. However, the restrictions associated with that funding limit the ability of the program to meet goals; the program did not meet goals in 2025.

PNM has worked with Housing New Mexico to reduce the waitlist of this program by expanding the use of PNM funds to health and safety measures. This allowed some improvement in the waitlist: it reduced from 623 households to 528 households between January 2024 and December 2025.

HOME ENERGY CHECKUP (LOW-INCOME)

This program is a component of the Home Energy Checkup program described in the Residential Programs section above. The program is the same as the Home Energy Checkup program with the exception that the copay for the smart thermostat and direct-install weatherization measures, which include installation, are waived and a free replacement refrigerator and more involved weatherization measures may be available through the program if eligibility criteria are met.

To be eligible, participants must have incomes relative to family size at or below 200% of the federal poverty level. A program participant's refrigerator must meet the following criteria to be eligible for replacement:

- Be in working condition.
- Be the primary refrigerator used in the home.
- Be at least 10-30 cubic feet to qualify for replacement.
- Be at least ten years old, or 12 years or older if it is ENERGY STAR.
- Consumption must be at least twice that of the efficient model being installed or have an observed physical condition causing excessive consumption such as poor door seal and an inability to cool.

Additional weatherization measures such as attic insulation and air and duct sealing are also available to eligible low-income participants.

PNM HOME WORKS (LOW INCOME)

The PNM Home Works program is described in detail in the previous Residential section. Although it is not a low-income program specifically, because so many students are from low-income families, this program benefits many low-income PNM customers. PNM estimates that at least 40% of students are from families with annual income below 200% of the federal poverty level.

MULTIFAMILY (LOW INCOME)

The Multifamily program is described in detail in the previous Commercial section.

5.4 BEHAVIORAL PROGRAMS

5.4.1 CONTINUING PROGRAMS – APPROVED IN CASE NO. 23-00138-UT

5.4.1.1 BEHAVIORAL COMPREHENSIVE

In the 2021 – 2023 program plan filing, PNM began a residential behavioral home energy reports (“HER”)program and a commercial behavioral strategic energy management (”SEM”) program.. They were continued in the 2024 – 2026 program plan filing.

The SEM program approach emphasizes the importance of equipping and enabling plant management and staff to impact energy consumption through behavioral and operational change and structured planning of commercial and industrial facility upgrades and process improvements. Customer recruitment efforts include: webinars, Lunch & Learns, Email newsletters, PNM Key Account Manager outreach, SEM program webpage information, Case Studies, and Trade Ally cross-promotion. Customers targeted include: government, healthcare, education, manufacturing, retail, aviation, water utilities and tribal segments. In 2024, PNM added energy savings monetary incentives to the program design and saw the program continue to grow in 2025.

In addition to a commercial SEM program, PNM also launched a behavioral-based residential Home Energy Report program in 2021. This program is delivered through a combination of customizable and personalized home energy reports (both paper and digital), a customer survey to enhance and further customize future report content, a customer web portal with specific and personalized insights and cross-promotion of other relevant energy efficiency rebate programs, and an online marketplace offering discounts on energy efficient measures. The treatment group consists of approximately 70% of PNM residential customers, with the remaining 30% in the control group.

PNM has continued to iterate on the HER program in the intervening years. A number of changes have been made to the customers in the treatment and control groups, with different “waves” being added in order to maximize energy savings.

This platform can function with either non-advanced metering infrastructure (AMI) or AMI-enabled metering. With the existing non-AMI infrastructure, customers can still receive information about their consumption through higher-level end use disaggregation. As AMI is rolled out, participants in the Home Energy Report program will continue to receive a similar homes comparison email which compares the participant’s energy usage to similar households, based on similar size, age or home, and cooling and heating equipment. As AMI is rolled out, customers will also receive monthly email messaging through the Customer Energy Management Portal (“CEMP”) which will include a more granular view of how they use energy and energy efficiency tips and energy efficiency program recommendations based on selfreported equipment in their homes. The total 2027 annual budget for the HER program is approximately $627,360. The projected annual energy savings equal 7.9 GWh in 2027.

5.5 LOAD MANAGEMENT PROGRAMS

CONTINUING PROGRAMS – APPROVED IN CASE NO. 23-00138-UT

The load management programs provide PNM with a demand-side resource that can be used to meet peak demand requirements.

PNM's residential and small commercial HVAC program, Power Saver, is available for up to 100 hours per year, June 1 through September 30. Power Saver is available 12pm to 10pm, Monday through Friday, excluding holidays and weekends.

PNM's medium and large commercial and industrial program, Peak Saver, is available at full capacity 10am to 10pm, Monday through Friday, excluding holidays and weekends. Peak Saver is available at a reduced capacity 24/7, 365 days a year. It is available for 100 hours June 1st through September 30th, and an additional 300 hours October 1st through May 31st.

PNM did not dispatch either Power Saver or Peak Saver during the summer of 2025. Below please find the dispatch days for 2024.

Table 5-2

Event Date	Start Time (MDT)	End Time (MDT)	Duration (Hr)
7/31/24	5:00 PM	9:00 PM	4

PEAK SAVER

The PNM Peak Saver program targets non-essential electric loads that can be reduced during periods of peak system demand and is available to commercial and industrial customers with greater than 50 kW peak demand. Current rate classes include 4B, 5B, 15B, 30B, 35B, and 38. Participating customers receive an incentive based on their level of load reduction at the end of each control season.

PNM's third-party contractor, Itron, is responsible for building and operating a direct load control system that provides PNM with the ability to achieve contracted load reductions through control of end-use equipment at participating businesses. Itron's responsibilities include marketing, installing load control equipment, data collection and analyses required for validating the contract capacity.

PNM plans to explore alternate modes of using the Peak Saver program in 2027-29. For example, PNM might have only the participants in Southern New Mexico or Northern New Mexico reduce their electric load.

ENHANCEMENTS AND GROWTH

The Peak Saver program will retain the same program elements that are currently available to existing customers. Itron intends to automate as many participant sites as possible with its IntelliSOURCE platform. PNM plans to explore adding additional technologies similar to those in VPPs to Peak Saver within the existing contract with Itron.

POWER SAVER

The PNM Power Saver program is the load management program for residential customers and small commercial customers who are not served by the Peak Saver program. This program cycles non-critical loads, such as refrigerated air conditioning units, on and off during summer peak hours. Thermostats that are participating in the program will be set to a warmer temperature during an event. Participating customers receive a modest incentive at the end of each control season. PNM retained its third-party contractor, Itron, to manage this program. Itron is responsible for marketing the program to customers, installing load control equipment, data collection and analyses required for validation of the contract capacity.

ENHANCEMENTS AND GROWTH

The Power Saver program has grown to offer 20 MW firm capacity and 20 MW non-firm capacity. The Peak Saver program has grown to 15 MW firm capacity and 15 MW non-firm capacity. There are penalty provisions that will keep PNM whole if Itron is unable to deliver the minimum (firm) capacity commitments. Appendix C has additional detail.

PNM plans to explore adding additional technologies similar to those in VPPs to Power Saver within the existing contract with Itron.

BEHAVIORAL DEMAND RESPONSE

PNM proposes to implement a limited behavioral demand response pilot sometime during the 2027–2029 triennial plan years, dependent on having enough operational AMI meters for measurable results. The pilot aims to inform a broader program following full AMI deployment and maximize AMI investments. It will use opt-out behavioral messaging to encourage customers to reduce electricity use during peak periods. PNM is evaluating whether incentives are needed for this design.

5.6 MARKET TRANSFORMATION

OVERVIEW AND DESCRIPTION

The goals of the Market Transformation (MT) strategy are to 1) achieve a measurable increase in awareness of the importance of energy efficiency; 2) encourage behavior changes that result in the adoption of energy efficient measures; and 3) promote emerging technologies that are not part of existing EE programs but have the potential to be included in programs in the future. MT uses mass-market advertising channels and conducts targeted efforts aimed at specific customer segments, including hard-to-reach segments and schools. In addition to current awareness-building activities that are ongoing. MT costs are allocated on a pro rata basis across the portfolio.

2027 PLAN PROGRAM SCOPE

In prior years, PNM's MT strategy has focused on EE promotional events including community events and presentations, engaging customers on energy efficiency through on-line PNM channels and tools, funding the educational component of the PNM Home Works and Energy Innovation school kit program, and any potential or other ad hoc studies or residential saturation surveys to assist in designing attractive and cost effective programs. PNM will continue to use Market Transformation funding to provide these awareness building services as well as fund updates to the energy efficiency potential study, residential appliance saturation surveys, and continuing funding for other educational efforts. Additionally, PNM will provide an incentive for the Manufacturing Glow-Up commercial & industrial pilot (described in the Business Energy Efficiency Program section) through market transformation funding because this program allows awareness building about energy efficiency in a hard-to-reach market segment. Although it is outside the scope of the EUEA requirements, PNM is providing web links to state and federal websites for information on additional tax credits and incentives available. PNM is providing this information as a courtesy and is not responsible for the validation and maintenance of the content on state and federal websites. Third-party implementers also reference state and federal government links when training participating trade allies who work with PNM customers.

PNM will continue funding the general energy efficiency educational activity that is currently part of the PNM Home Works and Energy Innovation program with Market Transformation funding. While PNM has received very positive feedback from teachers and students on the education component of the program, the training by itself is not directly linked to energy savings. Rather, the education builds awareness of the importance of energy efficiency in general and supports the goals of the 2027 Plan.

PNM also performs research that supports the portfolio overall, thereby resulting in market transformation. These research studies, performed once per triennium, include the residential appliance saturation survey, the energy efficiency & demand response potential study, and the transmission & distribution avoided cost study.

ONGOING RESEARCH AND DEVELOPMENT

PNM understands that its energy efficiency plans and programs will need to continue being responsive to evolving markets and technologies. PNM will maintain an active research and program design effort throughout the next planning cycle and for the foreseeable future. While specific initiatives may be modified over time to reflect the changing needs of the energy efficiency portfolio, the anticipated initiatives that may be developed over the next year or two include:

- Continued collaboration with New Mexico Gas Company and other community organizations and public entities where appropriate to encourage robust and comprehensive program offerings with maximum customer appeal.
- Leverage enhancements AMI provides such as more granular customer end use disaggregation, possible targeted marketing opportunities for customers with older appliances and cooling equipment, and energy efficiency tips and program recommendations in the Customer Energy Management Portal.
- Continued expansion of outreach/education-based initiatives either through Market Transformation or within specific programs.
- Increasing incentive budgets in programs with higher energy savings and participation potential and lower market saturation such as broader heat pump adoption.
- Continued monitoring of any potential new program design concepts being developed or offered in similar utility programs and legislation modifications to support additional carbon emissions reductions and other non-energy benefits as a result of energy efficiency offerings.
- A pilot supporting heat pumps with higher incentives in the low-income Home Energy Checkup program.
- Increased incentives for retrofits and new construction of multifamily properties serving low-income customers.
- Increased incentives for retrofits of small businesses in Metropolitan Redevelopment Areas in Albuquerque.
- Expansion of the Residential A/C Tune-Up program to include commercial HVAC tune-ups as well.

6 APPENDICES

6.1 APPENDIX A – AVOIDED COSTS

The benefits of energy efficiency and load management are evaluated over the life of the programs in the UCT model using PNM avoided costs and a discount rate of 8.54%. Avoided costs are the costs that PNM would not incur as a result of lower energy consumption and demand resulting from implementation of energy efficiency and load management measures. Energy efficiency avoided cost forecasts were developed by the staff of the PNM Planning and Resources department and are shown in Table 6-1 below.

Table 6--1

Avoided Energy and Capacity Costs EE and DR	EE MW Capacity ($/kW-yr)	EE T&D Capacity ($/kW-yr)	EE Total Capacity ($/kW-yr)	EE Energy ($/kWh)	DR MW ($/kW-yr)	DR Energy $/kWh	DR T&D 9yr levelized ($/kW-yr)
2027	$304.88	$1.510	$306.392	$0.023	$141.21	$0.000	$44.14
2028	$139.06	$21.150	$160.209	$0.050	$130.43	$0.000	$44.14
2029	$85.06	$23.650	$108.710	$0.071	$123.02	$0.000	$44.14
2030	$82.12	$25.060	$107.182	$0.090	$117.65	$0.000	$44.14
2031	$78.75	$26.190	$104.938	$0.087	$112.28	$0.000	$44.14
2032	$74.93	$40.960	$115.888	$0.088	$108.44	$0.000	$44.14
2033	$74.25	$43.260	$117.514	$0.089	$106.14	$0.000	$44.14
2034	$66.85	$43.860	$110.705	$0.086	$103.84	$0.000	$44.14
2035	$55.19	$45.460	$100.646	$0.085	$101.55	$0.000	$44.14
2036	$52.17	$47.910	$100.082	$0.083	$99.28	$0.000	N/A
2037	$75.11	$47.850	$122.962	$0.071	$97.02	$0.000	N/A
2038	$144.53	$44.920	$189.454	$0.022	$94.78	$0.000	N/A
2039	$0.00	$51.810	$51.810	$0.000	$92.55	$0.000	N/A
2040	$0.00	$45.890	$45.890	$0.000	$90.34	$0.000	N/A
2041	$0.00	$46.850	$46.850	$0.000	$88.13	$0.000	N/A
2042	$0.00	$47.410	$47.410	$0.000	$85.95	$0.000	N/A
2043	$0.00	$48.250	$48.250	$0.000	$85.95	$0.000	N/A
2044	$0.00	$46.520	$46.520	$0.000	$85.95	$0.000	N/A
2045	$0.00	$43.220	$43.220	$0.000	$85.95	$0.000	N/A

6.2 APPENDIX B – PUBLIC ADVISORY GROUP MEMBERS

Table 6-2 lists the organizations that have been invited to participate in the energy efficiency advisory group and who receive regular updates on the status and progress of PNM's energy efficiency efforts.

Table 6--2

Name	Organization
Courtney Fieldman	Southwest Energy Efficiency Project
Bud Wilden	Retired UNM professor
Camilla Fiebelman	Sierra Club
Chuck Noble	N/A
Cissy McAndrew	Southwest NM Green Chamber of Coı
Dave Nelson	AARP
Jim Folkman	Foundation for Building/Green Buildin
Joan Brown	Interfaith Power & Light
Eli LaSalle	NM Public Regulation Commission
Kurt Albershardt	Southwest Energy Generators (silver
Ona Porter	Prosperity Works
Pat Cardona	AARP
Peter Gould	NM Area
Rick D. Chamberlain	Behrens, Wheeler & Chamberlain
Robb Hirsch	Santa Fe Green Chamber of Commer
Robert Mang	Smart Home Project
Carey Salaz	NM Gas Company
Ed Rilkoff	NMPRC
Tammy Fiebelkorn	WRA
Tom Singer	Western Environmental Law Center
Wayne Hofeldt	Retired So. Cal Edison
Rick Rennie	Downtown Improvement District
Ken Walsh	Xcel Energy
Michael Pascucci	Xcel Energy
Ken Baker	Walmart
Kelly Gould	NM Area
Cydney Beadles	WRA
Cara Lynch	CCAE
Dana Howard	EMNRD (State of NM)
Victor Silva	El Paso Electric
Jeremy Lovelady	Xcel Energy SPS
Nancy Burns	El Paso Electric
Caitlin Evans	Western Resource Advocates
Michael Kenney	Western Resource Advocates
Charles de Saillan	CCAE
Don Hancock	CCAE
Gideon Elliot	NMAG
Keith Herrmann	ABCWUA
Valerie Joe	Bernalillo County
Stefi Weisburd	350 New Mexico
Elizabeth Acosta	NM PRC
Christopher Dunn	NM PRC

6.4 APPENDIX D – trade ally business list

Trade Ally Businesses Supporting PNM Commercial Programs

Name	Area Served			
	Central	Northern	South Central	Southwest
3B Builders Inc.	X			
3B Electrical LLC	X			
A-1 Electric Inc.	X	X		
Abraxas Electric LLC	X	X	X	X
Albuquerque Plumbing, Heating & Cooling	X	X	X	X
Alderete Electric Service Corp.	X			
Allied Electric Inc.		X		
Alza Electrical Corp.			X	X
Armour Electical Contractors, LLC.	X	X	X	X
AZ Insulation & Energy Solutions dba Tru Lite	X	X	X	X
Aztec Mechanical, Inc.	X			
B&D Industries Inc.	X	X	X	X
Benchmark Group Inc.	X			
Bernard TME LLC	X	X	X	X
Beyond Electric	X			
Bixby Electric Inc	X	X		
Bridgers & Paxton Consulting Engineers	X	X	X	X
Bright Ideas Inc. dba The Lamp shop	X	X	X	X
Building Energy Solutions and Technology, dba Bes-Tech Inc.	X	X	X	X
Bulldog Energy Solutions Inc.	X	X	X	X
CB Power LLC	X	X	X	X
Chef Link Supply	X	X	X	X
Circuit Breakerz LLC	X			
Constellation Energy dba Optima Technology & BidEnergy	X	X	X	X
Corrales Electric Inc.	X	X		
DAC Electric	X	X		
Dalkia Energy Solutions	X	X	X	X
Dekker/Perich Sabatini	X	X	X	X
Del Electric LLC	X	X		

Dove Electric				
DRB Electric Inc.	X	X	X	X
E.R.M. electric LLC			X	
Eco Electric LLC	X	X		
ECOterra Energy Consulting	X			
EEA consulting Engineers	X	X	X	X
Energy Design Service Systems	X			
Energy Management Collaborative LLC	X			
EnergyWorks LLC	X	X	X	X
EnerNet Solutions, LLC	X	X	X	X
Engie Insight Services dba Engie Impact	X	X	X	X
Engineering Economics	X	X	X	X
Enterprise Builders Corp	X	X	X	X
Enterprise Electrical Services, Inc	X	X	X	X
Evergreen Contractors, LLC	X	X		
Experienced Solar, LLC	X	X		
Facility Solutions Group	X	X	X	X
Facility Solutions Group (EP)			X	X
Fat Tire Cycles	X	X		
Frankhouse Brothers LLC	X	X		
Frank's Electric	X	X	X	
Glass-Rite	X	X		
Goodmen Electrical Services	X	X	X	X
Gorman Distributing Co., Inc.	X	X		
Graybar Electric Company, Inc	X			
Green Insight LLC	X	X	X	X
Green Rebates LLC	X	X	X	X
Greenleaf Energy Solutions	X	X	X	X
HD Supply Facilities Maintenance	X	X	X	X

HDZ Electric LLC	X	X		
HEI Inc.	X			
High Desert Lighting & Electric LLC	X	X	X	X
Horizon Electric Signs, LLC	X	X		
Illumetek	X	X	X	X
J & C Ortiz Electric LLC	X	X		
Jesse Arias Electrical Contractor	X			
Johnson Controls	X	X	X	X
L & K Electric		X		
Leidos Engineering LLC	X	X	X	X
Lightserve	X	X	X	X
M Squared Electric LLC				X
McDade-Woodcock Inc	X	X	X	X
Mechanical Systems Inc.	X	X	X	X
Mid-American Gunite, Inc. dba Mag Energy	X	X	X	X
Mora Electric LLC	X	X	X	X
Mosher Enterprises	X	X		
Mountain Electric, LLC	X	X		
Mountain Vector Energy	X	X	X	X
New Generation Electric, LLC	X	X		
New Line Technology Inc.	X	X		
Nex Rev	X	X	X	X
Nexus Solutions, LLC	X	X		
Nomad Energy Group, LLC	X	X		
Norman S Wright Co	X	X	X	X
Nowlin Mechanical	X	X	X	X
Omega Contractors	X	X	X	X
Osceola Inc. dba OE Solar	X	X		
Phaze One Electric	X	X		
Potter Electric	X	X		

Prostar Energy Solutions, L.P.	X	X	X	X
Randy's Electric Co Inc.	X	X		
RE Michel Co LLC	X	X	X	X
Reliable Electric LLC	X	X		
Reliable Relamping	X	X	X	X
Rexel USA	X	X	X	X
Rivas Electric, LLC	X	X		
RKL Sales Corporation	X		X	
ROI Energy Investments LLC	X	X	X	X
ROI Energy LLC	X	X	X	X
Royal Pacific, LTD	X			
Russel Sigler Inc.	X			
Schneider Electric Inc	X	X		
Solar Works Energy	X	X		
SourceOne Solutions	X	X	X	X
SRS Electric	X	X		
Standard Restaurant Supply	X	X	X	X
Stone Electric and Power LLC				X
Strategic Lighting	X	X		
Summit Electric Supply	X	X	X	X
Sustainable Building Solutions LLC	X	X		
Sustainable Engineering LLC	X	X	X	X
Texal Energy LLC	X	X	X	X
ThermaAir Systems NM	X	X		
Thompson Construction	X			
TLC Company	X	X	X	X
Tofel Dent Construction	X	X	X	X
Trane SW	X	X	X	X
Travers Mechanical	X			
U.S. Electrical Corp	X	X	X	X
United Refrigeration Inc	X	X	X	X
Voss Lighting	X			

W.W. Grainger, Inc.	X	X		
Wesco Energy Solutions	X	X		
What Rebates	X	X	X	X
Wizer Electric LLC	X	X	X	X
Yearout Energy Services Company	X	X	X	X
Yearout Service LLC	X			

Trade Ally Businesses Supporting PNM Residential Programs

Name	Area Served			
	Central	Northern	South Central	Southwest
1-Call Mechanical, LLC	X			
AAG, Inc Heating and Air Conditioning	X	X		
ABQ Air, Inc.	X			
Abrazo Homes	X	X		
Advantage Plumbing		X		
Affordable Service, Inc.	X			
Air Conditioning Systems, Inc.	X			
Air Efficiency Heating and Cooling Services		X		
Air Pro, Inc.	X			
Albuquerque Plumbing Heating & Cooling	X			
Allied Plumbing	X			
Amreston Homes	X			
Anderson Air Corps	X			
Anderson Refrigeration Inc.			X	
Armor Heating & Cooling				X
Axiom Home Services	X			
B. Carlson Heating, Air Conditioning & Plumbing, Inc.	X	X		
Banda Plumbing & Heating		X		
Blue Desert Heating & Air	X			
Blue Ridge Mechanical		X		
Brothers Electro Mechanical, Inc.	X			
Cactus Mechanical	X			
Central New Mexico Housing Corporation	X	X		
Champ Enterprises	X			
Chase Electrical	X			
Chase Mechanical				X
Chicos Mechanical	X			
Clayton Homes of Bernalillo	X			

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Courtesy Plumbing Heating & Air Conditioning Inc.	X			
CRAG Enterprises, LLC	X			
CR Refrigeration, LLC	X			
Daniels Heating and Air Conditioning LLC	X	X		
Deans Mechanical Control		X		
Diego Handcrafted Homes, LLC	X			
DJ'S Plumbing & Mechanical, LLC	X			
DR Horton	X	X		
Duke City Heating & Cooling, LLC	X	X		
Eagle Eye Mechanical		X		
Easy Plumbing, Heating & Collingbi		X		
Enchanted Hills Mechanical	X			
Enchantment Refrigeration, LLC		X		
Estancia Homes, LLC		X		
Factory Homes Direct	X			
FCH Mechanical				X
Fiesta Mobile Homes, LLC			X	X
First Rate Plumbing, Heating & Cooling, Inc.	X	X		
Garrity Insulation, Inc.	X	X		
Gimesum Heating & Cooling	X			
Hakes Brothers	X			
Homes Dierct of Albuquerque	X			
Homewise, Inc.		X		
Husky Refrigeration, HVAC & Mechanical		X		
Image Electric and Mechanical	X			
Insight Mechanical		X		
JeHu Services, LLC	X	X		X
Jerome's Mechanical		X		
John Kaltenbach Homes, LLC	X			
Kidzz Mechanical	X			
Koala Insulation	X	X		
Las Ventanas Homes	X			
Lobo Tech, LLC		X		
Los Altos Plumbing & HVAC		X		
LOWE-BO Homes	X			
Luxury Plumbing	X			
Master Homecrafters, Inc.				
Mechanical CEU & Service	X			
Medlin Mechanical		X		
Metal Craft Company	X	X		

MGP Mechanical	X			
MTV Enterprises, LLC	X	X		
National Plumbing & Heating		X		
NCB Mechanical	X			
Nespolo Mechanical	X			
Oakwood Homes	X	X	X	X
Ortega Quality Mechanical	X			
Ortiz Mechanical		X		
Porky's Heating & Cooling			X	
Pro-Tech Air Conditioning & Heating		X		
Probst Electric		X		
Pulte Homes	X	X		
Quality Builders, Inc.	X			
Redline Mechanical	X	X	X	X
Reliable Climate Control Solutions	X			
Reliable Tech Heating, Cooling & Plumbing		X		
Rich Duran Plumbing & Heating Inc.		X		
Richmond American Homes	X			
RJ's HVAC, LLC.	X			
Roadrunner Air Conditioning, Heating & Refrigeration		X		
Salazar Heating Cooling & Plumbing		X		
Santa Fe Ductless		X		
Santa Fe Express Plumbing & Drain		X		
Santa Fe Heating & Cooling		X		
Signature Heating & Cooling	X	X		
Southwestern Regional Housing & Community Development Corporation			X	X
Spiegel Kinsley Construction, LLC	X			
Strongbuilt Plumbing & Air	X	X	X	X
Sustainable Energy and Building of New Mexico	X			
Tech Air Heating & Cooling	X			
Techwest, Inc.	X	X	X	X
Thompson Heating & Air Conditioning, Inc.	X			
TLC Plumbing, Heating, Cooling & Electrical	X	X		
Totally Cool Air, Heating & Cooling	X			
Unlimited Construction Services	X			
Wagner Mechanical	X			
Walker Energy Services	X			
Westway Homes	X			
Whitney Plumbing Company	X			
Zia Estates, LLC		X		

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Trade Ally Businesses Supporting Retail Rebate Programs

Retailer	Location
Dollar Tree	Alamogordo
Dollar Tree	Alamogordo
E-Z TV & Appliances	Alamogordo
Home Depot	Alamogordo
Lowe's	Alamogordo
Samon's	Alamogordo
Appliance Liquidators	Albuquerque
Baillio's	Albuquerque
Best Buy	Albuquerque
Best Buy	Albuquerque
Blue Water Pools	Albuquerque
Builders Source Appliance Gallery	Albuquerque
Champion Window Company of Albuquerque	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
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Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Dollar Tree	Albuquerque
Don’s Windows & Doors	Albuquerque
Family Dollar	Albuquerque

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Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
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Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Family Dollar	Albuquerque
Habitat for Humanity	Albuquerque
Home Depot	Albuquerque
Home Depot	Albuquerque
Home Depot	Albuquerque
Home Depot	Albuquerque
Lee-Sure Pools	Albuquerque
Leslie’s Swimming Pool Supplies	Albuquerque
Leslie’s Swimming Pool Supplies	Albuquerque
Leslie’s Swimming Pool Supplies	Albuquerque
Lowe's	Albuquerque
Lowe's	Albuquerque
Lowe's	Albuquerque
Lowe's	Albuquerque
Matt’s - The Pool & Fire Place	Albuquerque
Pella Windows & Doors of Albuquerque	Albuquerque
Pool Works	Albuquerque
Salvation Army	Albuquerque

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Salvation Army	Albuquerque
Samon's	Albuquerque
Samon's	Albuquerque
Samon's	Albuquerque
Samon's	Albuquerque
Samon's	Albuquerque
SCP Distributors	Albuquerque
Sierra Pacific Windows	Albuquerque
St. Vincent de Paul	Albuquerque
Valentine’s Swimming Pool & Spa Supplies	Albuquerque
Valentine’s Swimming Pool & Spa Supplies	Albuquerque
Window World of Albuquerque	Albuquerque
Family Dollar	Algodones
Family Dollar	Bayard
Dollar Tree	Belen
St. Vincent de Paul	Belen
Family Dollar	Bernalillo
Samon's	Bosque Farms
Family Dollar	Clayton
Dollar Tree	Deming
Family Dollar	Deming
St. VIncent de Paul	Deming
Dollar Tree	Las Vegas
Family Dollar	Las Vegas
Family Dollar	Lordsburg
Dollar Tree	Los Lunas
Dollar Tree	Los Lunas
Family Dollar	Los Lunas
Family Dollar	Los Lunas
Home Depot	Los Lunas
Lowe's	Los Lunas
St. Vincent de Paul	Los Lunas
Family Dollar	Peralta
Family Dollar	Pojoaque
Dollar Tree	Rio Rancho
Dollar Tree	Rio Rancho
Dollar Tree	Rio Rancho
Home Depot	Rio Rancho

Lowe's	Rio Rancho
New Mexico Pools and Spas	Rio Rancho
Dollar Tree	Ruidoso
Family Dollar	Ruidoso
Best Buy	Santa Fe
Builders Source Appliance Gallery	Santa Fe
Dollar Tree	Santa Fe
Dollar Tree	Santa Fe
Dollar Tree	Santa Fe
Dollar Tree	Santa Fe
Family Dollar	Santa Fe
Genesis Pools and Spa	Santa Fe
Habitat for Humanity	Santa Fe
Home Depot	Santa Fe
Lowe's	Santa Fe
Pella Windows & Doors of Santa Fe	Santa Fe
Salvation Army	Santa Fe
Sierra Pacific Windows	Santa Fe
Family Dollar	Santa Teresa
Dollar Tree	Silver City
Family Dollar	Silver City
Family Dollar	Tularosa

Trade Ally Businesses Supporting Residential Midstream Program

Wholesalers	Location
Albuquerque Winair	Albuquerque
Dahl Plumbing Albuquerque (Hajoca Corporation)	Albuquerque
Dahl Plumbing Santa Fe (Hajoca Corporation)	Santa Fe
Ferguson Enterprises Albuquerque	Albuquerque
Ferguson Enterprises Ruidoso	Ruidoso
Ferguson Enterprises Santa Fe	Santa Fe
Gorman Industries	Albuquerque
Gustave Larson	Albuquerque
Hercules Industries	Albuquerque
Johnston Supply Albuquerque	Albuquerque
Johnstone Supply Rio Rancho	Rio Rancho
Johnstone Supply Santa Fe	Santa Fe

Lennox Industries, Inc.	Albuquerque
Norman S. Wright	Albuquerque
Perry Supply Albuquerque	Albuquerque
Perry Supply Santa Fe	Santa Fe
Reece Plumbing	Santa Fe
Russell Sigler	Albuquerque
Stevens Equipment Supply	Albuquerque

6.5 APPENDIX E – TECHNICAL MANUAL

The following page shows the UCT calculations for the various programs. These tables are extracted from the PNM UCT model.

Powering New Mexico, Together

2027

	kWh	kW	Lifetime kWh	EUL	LI%	Total Cost	2027 UCT	kWh NPV Factor	kW NPV Factor
Residential Comp.	11,079,354	1,670	111,822,794	10	14.6%	8,867,178	0.850	$ 0.5080	$ 1,017
Refrig. Recycl.	2,978,445	364	19,359,891	7	0.0%	$ 1,838,225	0.779	$ 0.3760	$ 855
HEC - Mkt	3,231,335	369	29,082,017	9	0.0%	$ 2,252,036	0.830	$ 0.4681	$ 969
HEC - LI	1,814,150	207	16,327,350	9	100.0%	$ 1,978,812	0.637	$ 0.4681	$ 969
Midstream Cooling	3,055,424	730	47,053,536	15	0.0%	$ 2,798,105	0.911	$ 0.5481	$ 1,198
Residential Products	16,484,934	2,257	204,413,181	12	0.0%	$ 4,310,281	2.697	$ 0.5481	$ 1,148
Commercial Comp.	41,114,842	8,299	435,817,324	11	0.0%	$ 12,008,683	2.586	$ 0.5392	$ 1,071
Easy Savings	8,009,600	1,771	80,095,998	10	100.0%	$ 3,047,135	2.312	$ 0.5080	$ 1,017
Energy Smart (Housing NM/MFA)	430,004	241	6,622,062	15	100.0%	$ 344,416	1.828	$ 0.5481	$ 1,198
New Home Const.	1,459,576	338	23,499,175	16	0.0%	$ 1,381,265	0.876	$ 0.5481	$ 1,212
Behavioral (Residential)	7,914,231	1,562	7,914,231	1	0.0%	$ 713,832	0.928	$ 0.0232	$ 306
Behavioral (Commercial)	5,567,380	1,056	16,702,140	3	0.0%	$ 477,709	2.722	$ 0.1299	$ 546
Home Works	3,441,789	106	45,775,799	13	40.0%	$ 883,652	2.457	$ 0.5481	$ 1,167
Power Saver (LM)	2,199,440	54,986	2,199,440	7	0.0%	$ 7,050,534	1.297	$ -	$ 166
Peak Saver (LM)	1,200,001	30,000	1,200,001	7	0.0%	$ 3,477,451	1.435	$ -	$ 166
Total	98,901,152	102,286	936,062,145			$ 42,562,135	1.81		

2027 Programs	NPV Benefits	NPV Costs	2027 UCT
Residential Comp.	$ 7,540,452	$8,867,178	0.85
Refrig. Recycl.	$ 1,431,108	$1,838,225	0.78
HEC - Mkt	$ 1,869,947	$2,252,036	0.83
HEC - LI	$ 1,259,891	$1,978,812	0.64
Midstream Cooling	$ 2,549,365	$2,798,105	0.91
Residential Products	$ 11,626,813	$4,310,281	2.70
Commercial Comp.	$ 31,057,981	$12,008,683	2.59
Easy Savings	$ 7,043,963	$3,047,135	2.31
Energy Smart (Housing NM/MFA)	$ 629,696	$344,416	1.83
New Home Const.	$ 1,209,625	$1,381,265	0.88
Behavioral (Residential)	$ 662,310	$713,832	0.93
Behavioral (Commercial)	$ 1,300,104	$477,709	2.72
Home Works	$ 2,171,222	$883,652	2.46
Power Saver (LM)	$ 9,144,896	$7,050,534	1.30
Peak Saver (LM)	$ 4,989,395	$3,477,451	1.43
Total	$ 76,946,317	$ 42,562,135	1.81

Table 4-4

2028

	kWh	kW	Lifetime kWh	EUL	LI%	Total Cost	kWh NPV Factor	kW NPV Factor
Residential Comp.	11,360,688	1,838	115,517,419	10	14.4%	9,240,548	$ 0.5600	$ 830
Refrig. Recycl.	2,978,462	364	19,360,003	7	0.0%	$ 1,904,933	$ 0.4352	$ 663
HEC - Mkt	3,296,692	376	29,670,224	9	0.0%	$ 2,343,676	$ 0.5262	$ 771
HEC - LI	1,848,444	211	16,635,996	9	100.0%	$ 2,041,485	$ 0.5262	$ 771
Midstream Cooling	3,237,091	887	49,851,196	15	0.0%	$ 2,950,453	$ 0.5697	$ 983
Residential Products	16,344,957	2,154	202,677,472	12	0.0%	$ 4,362,852	$ 0.5697	$ 935
Commercial Comp.	41,482,257	8,398	439,711,925	11	0.0%	$ 12,477,869	$ 0.5697	$ 914
Easy Savings	8,350,156	2,764	83,501,561	10	100.0%	$ 3,367,411	$ 0.5600	$ 830
Energy Smart (Housing NM/MFA)	450,056	253	6,930,862	15	100.0%	$ 365,756	$ 0.5697	$ 983
New Home Const.	1,558,115	360	25,085,650	16	0.0%	$ 1,469,900	$ 0.5697	$ 997
Behavioral (Residential)	7,492,948	1,421	7,492,948	1	0.0%	$ 759,688	$ 0.0500	$ 160
Behavioral (Commercial)	5,567,380	1,056	16,702,140	3	0.0%	$ 484,247	$ 0.1922	$ 351
Home Works	3,441,789	106	45,775,799	13	40.0%	$ 938,446	$ 0.5697	$ 952
Power Saver (LM)	2,260,840	56,521	2,260,840	6	0.0%	$ 7,393,091	$ -	$ 163
Peak Saver (LM)	1,200,001	30,000	1,200,001	6	0.0%	$ 3,558,514	$ -	$ 163
Total	99,509,189	104,871	946,856,618			$ 44,418,321		

2028 Programs	NPV Benefits	NPV Costs	2028 UCT
Residential Comp.	$ 8,114,969	$9,240,548	0.88
Refrig. Recycl.	$ 1,537,427	$1,904,933	0.81
HEC - Mkt	$ 2,024,858	$2,343,676	0.86
HEC - LI	$ 1,362,417	$2,041,485	0.67
Midstream Cooling	$ 2,715,714	$2,950,453	0.92
Residential Products	$ 11,325,539	$4,362,852	2.60
Commercial Comp.	$ 31,305,502	$12,477,869	2.51
Easy Savings	$ 8,365,228	$3,367,411	2.48
Energy Smart (Housing NM/MFA)	$ 605,529	$365,756	1.66
New Home Const.	$ 1,246,606	$1,469,900	0.85
Behavioral (Residential)	$ 602,078	$759,688	0.79
Behavioral (Commercial)	$ 1,441,026	$484,247	2.98
Home Works	$ 2,226,810	$938,446	2.37
Power Saver (LM)	$ 9,184,956	$7,393,091	1.24
Peak Saver (LM)	$ 4,875,156	$3,558,514	1.37
Total	$ 78,818,847	$ 44,418,321	1.77

Table 4-5

2029

	kWh	kW	Lifetime kWh	EUL	LI%	Total Cost	kWh NPV Factor	kW NPV Factor
Residential Comp.	11,699,614	2,004	119,730,447	10	14.3%	9,674,799	$ 0.5641	$ 818
Refrig. Recycl.	2,978,445	364	19,359,891	7	0.0%	$ 1,927,225	$ 0.4699	$ 607
HEC - Mkt	3,394,039	380	30,546,349	9	0.0%	$ 2,391,638	$ 0.5536	$ 727
HEC - LI	1,908,376	217	17,175,383	9	100.0%	$ 2,323,434	$ 0.5536	$ 727
Midstream Cooling	3,418,755	1,043	52,648,824	15	0.0%	$ 3,032,501	$ 0.5641	$ 908
Residential Products	16,346,804	2,154	202,700,371	12	0.0%	$ 4,365,221	$ 0.5641	$ 859
Commercial Comp.	41,656,387	8,446	441,557,700	11	0.0%	$ 12,616,832	$ 0.5641	$ 841
Easy Savings	8,738,385	2,938	87,383,852	10	100.0%	$ 3,640,915	$ 0.5641	$ 818
Energy Smart (Housing NM/MFA)	472,336	265	7,273,974	15	100.0%	$ 380,011	$ 0.5641	$ 908
New Home Const.	1,664,866	397	26,804,346	16	0.0%	$ 1,561,370	$ 0.5641	$ 922
Behavioral (Residential)	7,053,379	1,368	7,053,379	1	0.0%	$ 790,175	$ 0.0715	$ 109
Behavioral (Commercial)	5,567,380	1,056	16,702,140	3	0.0%	$ 479,655	$ 0.2285	$ 297
Home Works	3,441,804	106	45,775,993	13	40.0%	$ 971,395	$ 0.5641	$ 877
Power Saver (LM)	2,322,240	58,056	2,322,240	5	0.0%	$ 7,574,078	$ -	$ 159
Peak Saver (LM)	1,200,001	30,000	1,200,001	5	0.0%	$ 3,557,058	$ -	$ 159
Total	100,163,196	106,792	958,504,443			$ 45,611,509		

2029 Programs	NPV Benefits	NPV Costs	2029 UCT
Residential Comp.	$ 8,475,451	$9,674,799	0.88
Refrig. Recycl.	$ 1,620,486	$1,927,225	0.84
HEC - Mkt	$ 2,155,278	$2,391,638	0.90
HEC - LI	$ 1,457,251	$2,323,434	0.63
Midstream Cooling	$ 2,876,062	$3,032,501	0.95
Residential Products	$ 11,072,675	$4,365,221	2.54
Commercial Comp.	$ 30,598,901	$12,616,832	2.43
Easy Savings	$ 8,798,646	$3,640,915	2.42
Energy Smart (Housing NM/MFA)	$ 608,606	$380,011	1.60
New Home Const.	$ 1,305,112	$1,561,370	0.84
Behavioral (Residential)	$ 652,761	$790,175	0.83
Behavioral (Commercial)	$ 1,585,106	$479,655	3.30
Home Works	$ 2,197,434	$971,395	2.26
Power Saver (LM)	$ 9,259,309	$7,574,078	1.22
Peak Saver (LM)	$ 4,784,678	$3,557,058	1.35
Total	$ 78,972,304	$ 45,611,509	1.73

Potential Study

PNM Exhibit AMR-3

Is contained in the following 98 pages.

Public Service Company of New Mexico Potential Study 2026-2045

October 2025

ICF

Submitted to:

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Submitted by:

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Abbreviations and Acronyms

Term	Definition
AEO	Annual Energy Outlook forecast developed by EIA
B/C Ratio	Benefit to Cost Ratio
BEST	ICF's Building Energy Simulation Tool
CBECS	Commercial Buildings Energy Consumption Survey
C&I	Commercial and Industrial
DEEM	Database of Energy Efficiency Measures
DEER	Database of Energy Efficiency Resources
DSM	Demand-Side Management
EE	Energy Efficiency
ECM	Energy Conservation Measure
EIA	Energy Information Administration
EPRI	Electric Power Research Institute
EUEA	New Mexico's Energy Use of Energy Act
EUL	Effective Useful Life
EUI	Energy Use Intensity
GWh	Gigawatt Hour
HVAC	Heating Ventilation and Air Conditioning
IRP	Integrated Resource Plan
LED	Light Emitting Diode lamp
VisionLoadMAP	ICF's Load Management Analysis and Planning™ tool
MECS	Manufacturing Energy Consumption Survey
MW	Megawatt
NPV	Net Present Value
O&M	Operations and Maintenance
PTAC	Packaged Terminal Air Conditioner
PTHP	Packaged Terminal Heat Pump
RECS	Residential Energy Consumption Survey
RTU	Rooftop Unit
TRC	Total Resource Cost test
UCT	Utility Cost Test
UEC	Unit Energy Consumption
UES	Unit Energy Savings

Executive Summary

In 2025, Public Service Company of New Mexico (PNM) engaged ICF International (ICF) to perform PNM's 2026-2045 Energy Efficiency Potential Study, supporting its conservation and resource planning activities. This study continues the long working relationship between PNM and Applied Energy Group (AEG), which was acquired by ICF in 2025. This report documents the effort and provides estimates of the potential annual energy usage reductions for electric customers within PNM service territory, achieved through energy conservation measures from 2026 to 2045.

This study was designed to accomplish the following goals:

- Update the model base year consumption and characterization to 2024 using the latest available data resources and PNM's actual billed electric sales for that year
- Estimate energy conservation potential for a broad array of possible measures to assist PNM in conservation goal setting and program development

In summary, the potential study provides a solid foundation for the development of PNMs short-term energy efficiency program planning. The results were also prepared for PNM's Integrated Resource Planning (IRP) team, who use the hourly measure-level savings and measure economics estimates as inputs to their long-term planning model.

Table ES-1 summarizes the high-level results of this study. ICF analyzed potential for the residential, commercial, and industrial sectors. The ten-year potential in 2035 is 537,538 MWh. Key opportunities for savings are residential infiltration control and high efficiency windows, remaining lighting upgrades in commercial and industrial, water heating upgrades in commercial, and pumping upgrades in industrial.

Table ES-1: Achievable Potential in 2035 (10-year cumulative savings)

Sector	2035 Achievable Potential (MWh)	% of Total Potential
Residential	216,397	40%
Commercial	262,719	49%
Industrial	58,422	11%
Total	**537,538**	100%

Comparison with Prior Study

Compared to the prior potential study, this study updated several key assumptions and methodologies used. These include:

- Latest customer database and electric use per customer information from PNM
- Updated data from the 2018 Commercial Building Stock Assessment (CBECS), released late 2023
- Updated avoided costs from latest PNM projections and analysis

Compared to the previous study, 10-year achievable potential has decreased by 18%, or 118 GWh. Key contributions to changes relative to the previous study include:

- Residential potential is higher compared to the previous study, based on analysis of PNM's recent program activity and accomplishments. Opportunities in the residential sector are concentrated in building shell measures that affect cooling and space heating. Commercial and industrial sector potential have decreased compared to the previous study, mostly due to the market transformation of LED lighting in the baseline.

- Single-family, non-income qualified households make up the majority (80%) of residential load and 68% of the corresponding residential potential. This is compared to 71% of the residential load in the previous study, and 66% of the corresponding potential.
- Updates to lighting baselines show a large portion of lighting has already converted to LED in all sectors, which reduces the available opportunity compared to the prior study.

Table ES-2 compares 10-year sector-level achievable potential between the two studies.

Table ES-2: Comparison of Current and Prior Study for 10-Year Achievable Potential

Sector	Current Study: 2026-2035 Potential (MWh)	*Prior Study: 2023-2032 Potential (MWh)*	Change from Prior Study (MWh)	% Change from Prior Study
Residential	216,397	122,633	93,764	76%
Commercial	262,719	435,797	-173,078	-40%
Industrial	58,422	97,919	-39,497	-40%
Total	**537,538**	**656,349**	**-118,811**	**-18%**

Report Contents

The remainder of this report is divided into seven chapters and three appendices, summarizing the approach, assumptions, and results of PNM's 2026-2045 Potential Study. We describe each section below:

- **Introduction.** Introduction of the study objectives and summary of considerations that have come up in this study or prior studies.
- **Analysis Approach and Data Development**. Detailed description of ICF's approach to conducting PNM's 2026-2045 Potential Study and documentation of primary and secondary sources used.
- **Market Characterization and Market Profiles**. Characterization of PNM's service territory in the base year of the study, 2024. This characterization includes total consumption, number of customers and market units, and energy intensity. This also includes a breakdown of energy consumption for the residential, commercial, and industrial sectors by end use and technology.
- **Baseline Projection**. Projection of baseline energy consumption described at the end-use level. The VisionLoadMAP models were compared with PNM's official econometric forecast and then varied to include the impacts of future federal standards and customer growth assumptions.
- **Overall Conservation Potential**. Summary of conservation potential for PNM's entire service territory for selected years between 2026 and 2045, including potential estimates for each sector, including behavioral programs in residential.
- **Sector-Level Conservation Potential**. Summary of conservation potential for each market sector within PNM's service territory, including residential, commercial, and industrial. This section includes a more detailed breakdown of potential by measure type, vintage, market segment, and end use.
- **Comparison with Prior Study**. Detailed comparison of changes between the prior and current study.
- **Appendix A. Market Profiles**. Detailed market profiles for each market sector. Includes equipment saturation, unit energy consumption or energy usage index, energy intensity, and total consumption.

- **Appendix B. Customer Adoption Factors**. Documentation of the ramp rates used in this analysis.
- **Appendix C. Measure List**. List of measures, along with example baseline definitions and efficiency options by market sector analyzed.

1 Introduction

This report documents the results of the PNM's 2026-2045 Potential Study and the steps ICF followed in its completion. Throughout this study, ICF worked with PNM staff to understand the baseline characteristics of their service territory, including a detailed understanding of energy consumption, the assumptions and methodologies used in PNM's official load forecast, and recent programmatic accomplishments. Using methodologies consistent with the, ICF then developed an independent estimate of available potential within PNM's service territory between 2026 and 2045.

This Potential Study builds upon the background material established in earlier potential studies conducted by AEG (now ICF) and includes updates to the latest available customer data from PNM, most recent market data from the Residential Appliance Saturation Survey and updated technical data from the US DOE.

Objectives of the Analysis Tasks

This Potential Study was designed to identify the technical, economic, and achievable potential across the residential, commercial, and industrial sectors in PNM's territory. As part of this analysis, the ICF team:

- Characterized the current electric equipment penetration and consumption by homes, businesses, and industries for the Consumers Energy service territory.
- Estimated the energy savings, demand reductions, and costs for energy efficiency measures across different sectors, market segments, and end uses.
- Estimated the impact of building energy codes and equipment efficiency standards on future energy consumption and savings potential.

Study Considerations

This study considered several items worth summarizing here. These items are discussed throughout the rest of the report.

- **Potential Assessment vs. Program and Portfolio Design:** Potential Studies generally use the average costs and impacts of energy efficiency measures for specific customer groups to calculate the total potential for particular measures and their average cost-effectiveness. They make a binary decision on whether to include a measure in the economic potential. In comparison, energy efficiency programs operate differently by providing prescriptive incentives for measures anticipated to be cost-effective on average, along with a custom measure path for those that may only be cost-effective in certain applications. Therefore, while the potential study can offer useful insights into measures to consider for inclusion in programs, especially prescriptive ones, the identified cost-effective potential should not be viewed as exhaustive of all program opportunities.

    - **Impacts of Codes and Legislation:** ICF collaborated with PNM to evaluate the impacts of codes and standards on electric consumption and potential savings. It accounted for existing and approved changes to building codes and equipment standards,

- **Assessing Energy Efficiency Potential by Residential Customer Income Level**. This study segmented residential energy use and savings potential according by income group and housing type. Identifying differences in equipment and average consumption by income group offers insights into customer engagement with energy efficiency programs, as well as variations in cost-effectiveness and impacts among the groups.

2 Analysis Approach and Data Development

This section describes the study's analysis approach, and the data sources used to develop the potential estimates.

Overview of Analysis Approach

To perform the potential analysis, ICF used a bottom-up approach following the major steps listed below. We describe these analysis steps in more detail throughout the remainder of this chapter.

1. Performed a market characterization to describe sector-level electricity use for the residential, commercial, and industrial sectors in the study's base year (2024). This included using PNM load and survey data as well as secondary data sources such as the U.S. Energy Information Administration (EIA)'s Residential, Commercial Building, and Manufacturing Energy Consumption Surveys (RECS, CBECS, and MECS).
2. Developed a baseline projection of energy consumption by sector, segment, end use, and technology for 2025 through 2045.
3. Defined and characterized several hundred energy conservation measures (ECMs) to be applied to all sectors, segments, and end uses.
4. Estimated technical, economic, and achievable potential at the measure level for 2026-2045.
5. Used the Utility Cost test (UCT) as the cost-effectiveness metric which compares the lifetime avoided cost benefits sof each applicable measure with the combined cost of assumed customer incentives and utility-incurred costs of measure delivery and administration.

VisionLoadMAP Model

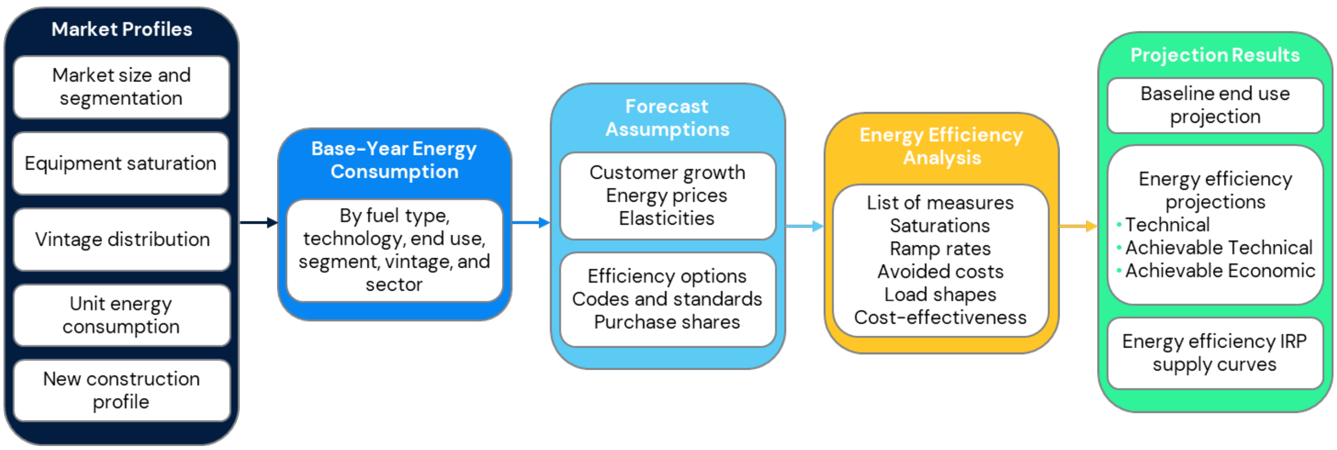
For this analysis, ICF used its Load Management Analysis and Planning tool (VisionLoadMAP™) to develop both the baseline projection and the estimates of potential. AEG (now ICF) developed LoadMAP in 2007 and has enhanced it over time. Previously built in Microsoft Excel, has been adapted to a cloud-based modeling platform now known as VisionLoadMAP (see Figure 2-1) that is both accessible and transparent and has the following key features:

- Embodies the basic principles of rigorous end-use models
- Includes stock-accounting algorithms that treat older, less efficient appliance/equipment stock separately from newer, more efficient equipment. Equipment is replaced according to the measure life and appliance vintage distributions defined by the user.
- Balances the competing needs of simplicity and robustness by incorporating important modeling details related to equipment saturations, efficiencies, vintage, and the like, where market data are available, and treats end uses separately to account for varying importance and availability of data resources.
- Isolates new construction from existing equipment and buildings and treats purchase decisions for new construction and existing buildings separately.
- Uses a simple logic for appliance and equipment decisions. The VisionLoadMAP approach allows the user to drive the appliance and equipment choices year by year directly in the model. This flexible approach enables users to import the results from diffusion models or to input individual assumptions.

- Can accommodate various levels of segmentation. Analysis can be performed at the sector level (e.g., total residential) or for customized segments within sectors (e.g., housing type, climate zone, or income level).
- Natively outputs model results in a detailed Power B.I. interactive dashboard, allowing for review of high-level summaries and granular interactivity of potential results or cost-effectiveness estimates.

Consistent with the segmentation scheme and the market profiles we describe below, the VisionLoadMAP model provides projections of baseline energy use by sector, segment, end use, and technology for existing and new buildings. It also provides forecasts of total energy use and energy-efficiency savings associated with the various types of potential.[1]

Figure 2-1: VisionLoadMAP Analysis Framework



Types of Energy Efficiency Potential

This study estimates savings for three types of potential: technical, economic, and achievable. These analyses are conducted at the measure level, and results are provided as savings impacts over the forecasting period. The various levels of potential are detailed Table 2-1.

[1] The model computes energy forecasts for each type of potential for each end use as an intermediate calculation. Annual-energy savings are calculated as the difference between the value in the baseline projection and the value in the potential forecast (e.g., the technical potential forecast).

Table 2-1: Types of Potential

Potential Type	Definition
Technical Potential	The *theoretical* upper limit of energy efficiency potential. It assumes customers adopt all feasible measures regardless of their cost. At the time of existing equipment failure, customers replace their equipment with the most efficient option available. In new construction, customers and developers also choose the most efficient equipment option.
Economic Potential	Represents the adoption of all cost-effective energy efficiency measures. In this analysis, the cost-effectiveness is measured by the utility cost test (UCT), which compares lifetime energy and capacity benefits to the costs of delivering the measure through a utility program. These costs are the incentive paid by the utility for the measure, plus any administrative costs that are incurred by the program to deliver and implement the measure. If the benefits outweigh the costs, a given measure is included in the economic potential.
Achievable Potential	Refines economic potential by applying customer participation rates that account for market barriers, customer awareness and attitudes, program maturity, and recent PNM program history

Market Characterization

To estimate the potential for savings from energy-efficient measures, it is necessary to first understand how much energy is used today and what equipment is currently in service. This market characterization begins with a segmentation of PNM's electricity footprint to quantify energy use by sector, segment, end-use application, and the current set of technologies in operation. For this we rely primarily on information from PNM, augmenting with secondary sources as necessary.

Segmentation for Modeling Purposes

This assessment first defined the market segments (building types, end uses, and other dimensions) that are relevant in the PNM service territory. The segmentation scheme for this project is presented in Table 2-2.

Table 2-2: Segmentation Overview

Segmentation Variable	Description
Sector	Residential, Commercial, Industrial
Segment	**Residential:** Single family, Single family Low Income, Multifamily, , and Manufactured Homes and Multifamily Low Income. **Commercial:** Small Office, Large Office, Restaurant, Retail, College, School, Grocery, Health, Lodging, Warehouse, and Miscellaneous **Industrial:** Industrial
Vintage	Existing and new construction
End uses	Cooling, lighting, water heating, motors, etc. (as appropriate by sector)
Appliances/end uses and technologies	Technologies such as lamp type, air conditioning equipment, motors by application, etc.
Equipment efficiency levels for new purchases	Baseline and higher-efficiency options as appropriate for each technology

With the segmentation scheme defined, we then performed a high-level market characterization of electricity sales in the base year. We used detailed PNM billing and customer data with minimal augmentation from secondary sources to allocate energy use and customers to the various sectors and segments such that the total customer count and energy consumption matched PNM's system totals for 2024. This information provided control totals at a sector level for calibrating the VisionLoadMAP model to known data for the base year.

Market Profiles

The market profile is a snapshot of an entire sector in the base year, summarizing energy use for each segment in the study and apportioning the annual energy consumption into the various end uses and technologies. The market profile serves as the foundation for the baseline projection by defining the count of stock units that are available, and what the consumption of those units looks like in each segment. Chapter 3 provides details on the key market profile elements.

Baseline Projection

The next step was to develop the baseline projection of annual electricity use for 2025 through 2045 by customer segment and end use without new utility conservation programs. The baseline projection is the foundation for the analysis of savings in future conservation cases and scenarios as well as the metric that potential is measured against. ICF developed the reference baseline in alignment with PNM's long-term demand forecast, but with some modifications to account for known future conditions.

Inputs to the baseline projection include:

- Customer growth projections
- Trends in fuel shares and equipment saturations
- Existing and approved changes to building codes and equipment standards

It should also be noted that this reference baseline does **not** include the following:

- Future DSM program impacts
- Climate change projections – to remain consistent with PNM's official load forecast, these projections assume normal weather conditions
- Does not include the explicit electrification of fossil fuels

We present the baseline projection results for the system as a whole and for each sector in Chapter 4.

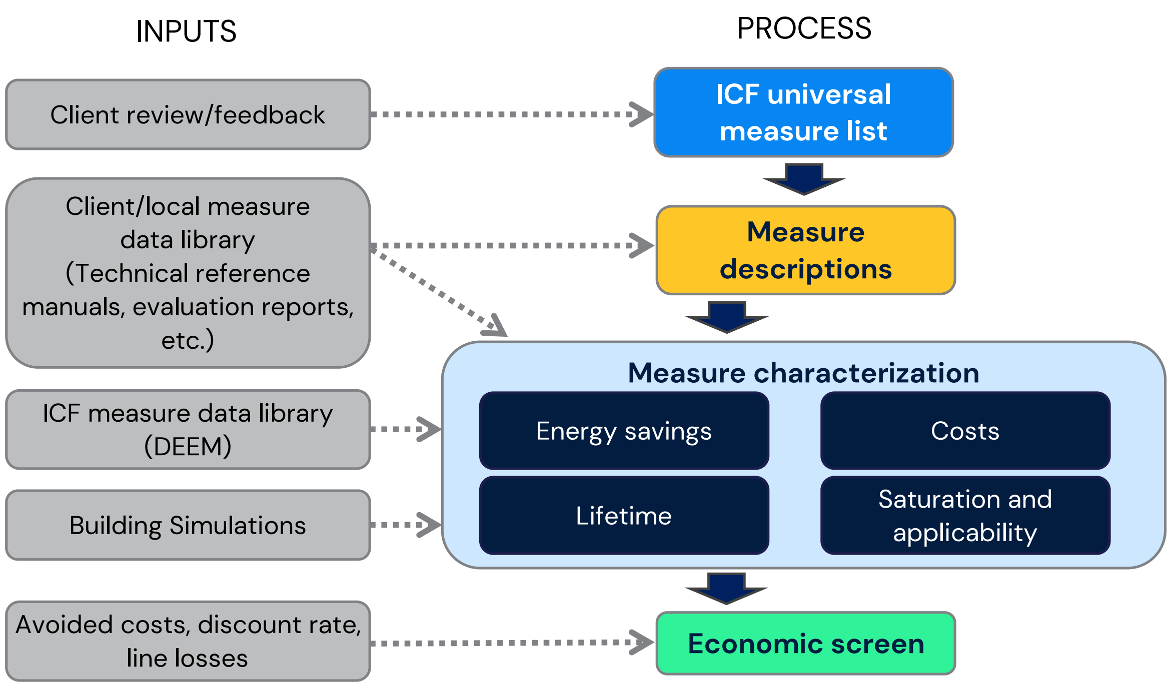
Energy Conservation Measure Development

This section describes the framework used to assess the savings, costs, and other attributes of ECMs. These characteristics form the basis for measure-level cost-effectiveness analyses as well as for determining measure-level savings. For all measures, ICF assembled information to reflect equipment performance, incremental costs, and equipment lifetimes. Combined with PNM's avoided cost data, this information informs the economic screen that determines economically feasible measures.

Figure 2-2 outlines the framework for the ECM analysis. The framework for assessing savings, costs, and other attributes of ECMs involves identifying the list of ECMs to include in the analysis, determining their applicability to each market sector and segment, fully characterizing each measure, and performing cost-effectiveness screening. PNM provided feedback during each step of the process to ensure measure assumptions and results aligned with programmatic experience.

ICF compiled a robust list of ECMs for each customer sector, primarily from relevant technical reference manuals, but also drawing upon PNM's program experience, ICF's own measure databases and building simulation models, and secondary sources. This universal list of measures covers all major types of end-use equipment, as well as devices and actions to reduce energy consumption. While this list may ultimately not be exhaustive of every possible intervention, it presents a wide array of reasonable and possible options with sufficient data for modeling and applying in PNM's territory. If considered today, some of these measures would not pass the economic screens but may pass in future years as a result of lower projected equipment costs or higher avoided cost benefits.

Figure 2-2: Approach for ECM Development



The selected measures are categorized into two types according to the VisionLoadMAP modeling taxonomy: equipment measures and non-equipment measures.

- **Equipment measures** represent efficient energy-consuming pieces of equipment that save energy by providing the same service with a lower energy requirement than a standard unit, such as, an ENERGY STAR refrigerator replacing a standard refrigerator. For equipment measures, many efficiency levels may be available for a given technology, ranging from the baseline unit (often determined by code or standard) up to the most efficient product commercially available. For instance, in the case of residential central air conditioners, this list begins with the federal minimum efficiency level unit and spans a broad spectrum up to a maximum efficiency of a SEER 24 unit. These measures are applied on a stock-turnover basis, and in general, are referred to as **"lost opportunity"** measures since once a purchase decision is made, there will not be another opportunity to improve the efficiency of that equipment item until the lifetime expires again.

- **Non-equipment measures** save energy by reducing the need for delivered energy, but do not involve the replacement or purchase of major end-use equipment (such as a refrigerator or air conditioner). Since measure installation is not tied to a piece of equipment reaching the end of its useful life, these are generally categorized as **"retrofit"** measures. An example would be a wi-fi-enabled thermostat that is pre-set to run heating and cooling systems only when people are home. Non-equipment measures can apply to more than one end use. For instance, the addition of wall insulation will affect the energy use of both space heating and cooling equipment. Non-equipment measures typically fall into one of the following categories:

- Building shell (windows, insulation, roofing material)
- Equipment controls (smart thermostats, integrated lighting fixture controls)
- Whole-building design (zero-net energy, passive solar lighting)
- Displacement measures (ceiling fan to reduce use of central air conditioners)
- Retro-commissioning
- Residential behavioral programs
- Energy management programs

ICF developed a preliminary list of efficient measures, which was distributed to the PNM project team for review. The measure list was finalized after incorporating comments and is presented in the Appendix D. Once the list of measures to assess was finalized, the project team fully characterized each measure in terms of energy savings, incremental cost, effective useful life, and other performance factors.

Calculation of Energy Conservation Potential

Three types of potential were developed as part of this study: Technical potential, economic potential, and achievable potential.

Estimating Customer Adoption

Customer adoption rates, also referred to as take rates or ramp rates, were applied to measures on a year-by-year basis. These rates represented customer adoption of measures when delivered through a portfolio of well-operated efficiency programs under a reasonable policy or regulatory framework. The approach for estimating PNM adoption rates considered several factors:

- **First-year Adoption Rates:** Customer willingness to participate data was reviewed from several surveys of comparable customer groups from ICF's work regionally and from around the nation. This provided a point estimate of short-term customer participation in measures that were relevant and cost-effective.
- **Measure Adoption Growth:** Adoption was assumed to increase over time as awareness and interest increased and programs evolved to reach more customers. To reflect this, data was used on how different factors such as personal finances, program delivery styles, and other aspects of the measure could drive increased participation and applied the total of these benefits as a lift factor to the initial adoption values. Adoption for a given measure type then progressed from the starting point to the estimated maximum adoption rate following a normal distribution curve that reflected the measure's increased maturity over time.

- **Technical Diffusion Curves for Non-Equipment Measures:** Equipment replacement measures were assumed to be installed when existing units fail. Non-equipment measures do not have this natural periodicity, so rather than installing all available non-equipment measures in the first year of the projection (instantaneous potential), they were phased in over 20 years.

All measure adoption rates used in the potential study are available in Appendix B.

Screening Measures for Cost-Effectiveness

The cost-effectiveness screening process relied on a set of economic assumptions, including:

- All cost and benefit values were analyzed in real (2024) dollars using a real discount rate of 4.89% as provided by PNM.
- While all impacts in this report were presented at the customer meter, PNM also supplied electric energy delivery loss factors to estimate generator-level impacts for economic analysis. The economic analysis included an average line-loss factor of 6.77%.
- Avoided energy and capacity cost values were provided by PNM.

To calculate the UCT benefit-cost ratio for each measure, program costs were calculated using incentive and administrative (non-incentive) costs as a percentage of each measure's incremental cost. Then, the incentive cost plus assumed program administrative costs were compared to the value of avoided supply associated with the measure. Measures with a benefit-cost ratio greater than 0.8 were considered cost-effective and were included in the economic and achievable potential. Allowing measures that are close to cost-effective into the economic potential even while not quite at a 1.0 ratio enables programs to access savings from measures which are nearly cost-effective on their own merits but could be part of a robust and well-designed portfolio that maintains an overall average benefit/cost ratio above 1.0.

Table 2-3: Components of Cost-Effectiveness

Component	UCT
Avoided Energy & Capacity	Benefit
Operations & Maintenance	--
Incremental Cost	--
Incentive Program Cost	Cost
Administrative (Non-Incentive) Program Cost	Cost

The VisionLoadMAP model performs this screening dynamically, taking into account changing savings and cost data over time. Thus, a given measure could pass the economic screen for some, but not all, of the years in the forecast.

It is important to note the following about the economic screen:

- The economic evaluation of every measure in the screen is conducted relative to a baseline condition. For instance, in order to determine the kilowatt-hour (kWh) savings potential of a measure, kWh consumption with the measure applied must be compared to the kWh consumption of a baseline condition.
- The economic screening was conducted only for measures that are applicable to each building type and vintage; thus, if a measure is deemed to be irrelevant to a building type and vintage, it is excluded from the respective economic screen.

- Savings and cost effectiveness are considered in relation to the average customer case, characterized across the population.

This constitutes the achievable potential and includes every program-ready opportunity for conservation savings. Potential results are presented in Chapters 5 and 6.

Data Development

This section details the data sources used in this study, followed by a discussion of how these sources were applied. In general, data were adapted to local conditions, for example, by using local sources for measure data and local weather for building simulations.

Data Sources

The data sources are organized into the following categories:

- PNM data
- Regional data
- ICF's databases and analysis tools
- Other secondary data and reports

PNM Data

The highest priority data sources for this study were those specific to PNM's service territory. This is best practice when developing potential study baselines when the data is available.

Customer account database. PNM provided billing data for development of customer counts and energy use for each sector. This included a detailed database of customer building classifications which was instrumental in the development of segmentation. In addition, the account database included the following information which was instrumental to informing the potential study.

- Accomplishment data
- Equipment saturation surveys
- Residential income grouping based on census data

- **Load and customer forecasts.** PNM provided forecasts of energy consumption, customer counts by sector, and exogenous forecasting variables such as weather data.
- **Economic information.** PNM provided a discount rate as well as avoided cost forecasts and line loss factors.
- **PNM program data.** PNM provided information about past and current programs, including program descriptions, goals, and measure achievements to date.

ICF Data

ICF maintains several databases and modeling tools that we use for forecasting and potential studies. Relevant data from these tools has been incorporated into the analysis and deliverables for this study.

- **Building Energy Simulation Tool (BEST).** ICF's BEST is a derivative of the DOE-2.2 building simulation model, used to estimate base-year unit energy consumptions (UECs) and energy use intensities (EUIs), as well as measure savings for the HVAC-related measures.
- **Recent studies.** ICF conducted numerous studies of energy efficiency potential in the last five years. We checked our input assumptions and analysis results against the results from these other studies, both withing the region and across the country.

Other Secondary Data and Reports

Finally, a variety of secondary data sources and reports were used for this study. The main sources are identified below.

- **Annual Energy Outlook.** The Annual Energy Outlook (AEO), conducted each year by the EIA, presents yearly projections and analysis of energy topics. For this study, we used data from the 2024 AEO.
- **Local Weather Data.** Weather from National Oceanic and Atmospheric Administration's National Climatic Data Center for Albuquerque, NM (specifically from the Albuquerque International Airport) was used where applicable.
- **Other relevant resources.** These include Technical Reference Manuals from other states, reports from the Consortium for Energy Efficiency, the Environmental Protection Agency, and the American Council for an Energy-Efficient Economy. Data from regions outside of New Mexico state are validated for reasonableness and adjusted to reflect climactic conditions where necessary and proper.

Application of Data to the Analysis

We now discuss how the data sources described above were used for each step of the study.

Data Application for Market Characterization

To construct the high-level market characterization of electricity consumption and market size units (households for residential, floor space for commercial, employees for industrial, we primarily used PNM billing data as well as secondary data from ICF's Energy Market Profiles database.

Data Application for Market Profiles

The specific data elements for the market profiles, together with the key data sources, are shown in Table 2-4. To develop the market profiles for each segment, we used the following approach:

1. Developed control totals for each segment. These include market size, segment-level annual electricity use, and annual intensity. PNM's customer account database, which includes estimates on square footage as well as consumption, was used as the primary data point for the calculation of intensities. These calculations were then compared with other regional sources and prior studies conducted by AEG (now ICF) in the region for reasonableness. Adjustments to customer segmentation and intensity were then made as necessary.
2. Used PNM's 2025 Residential Appliance Saturation Survey, EIA's RECS 2020, CBECS 2018 and MECS 2018, and ICF's Energy Market Profiles database to develop existing appliance saturations, appliance and equipment characteristics, and building characteristics.
3. Ensured calibration to control totals for annual electricity sales in each sector and segment.
4. Compared and cross-checked with other recent studies.
5. Worked with PNM staff to vet the data against their knowledge and experience.

Table 2-4: Data Applied for the Market Profiles

Model Inputs	Description	Key Sources
Market size	Base-year residential dwellings, commercial floor space, and industrial employment	• PNM account database • PNM load forecasting
Annual intensity	Residential: Annual use per household Commercial: Annual use per square foot Industrial: Annual use per employee	• PNM account database • RECS 2020, 2018 CBECS and 2018 MECS • Other recent studies
Appliance/equipment saturations	Fraction of dwellings with an appliance/technology; percentage of C&I floor space/employment with equipment/technology	• PNM RASS • RECS 2020, 2018 CBECS and MECS
UEC/EUI for each end-use technology	UEC: Annual electricity use in homes and buildings that have the technology EUI: Annual electricity use per square foot/employee in floor space that has the technology	• Building simulations using prototypes developed for PNM • Engineering analysis • AEO 2021 • RECS 2020, CBECS 2018, MECS 2018 • Recent regional ICF studies
Appliance/equipment age distribution	Age distribution for each technology	• Recent regional ICF studies • RECS 2020 equipment age data
Efficiency options for each technology	List of available efficiency options and annual energy use for each technology	• AEO 2021 • DOE Technical Support Documents • California eTRM • Recent regional ICF studies

Data Application for Baseline Projection

Table 2-5 summarizes the VisionLoadMAP model inputs required for the baseline projection. These inputs are required for each segment within each sector, as well as for new construction and existing dwellings/buildings.

Table 2-5: Data Applied for the Baseline Projection in VisionLoadMAP

Model Inputs	Description	Key Sources
Customer growth forecasts	Forecasts of new construction in residential and C&I sectors	• PNM load forecast
Equipment purchase shares for baseline projection	For each equipment/technology, purchase shares for each efficiency level; specified separately for existing equipment replacement and new construction	• Shipment data from AEO and ENERGY STAR • AEO regional forecast assumptions[2] • Appliance/efficiency standards analysis • PNM program results and evaluation reports
Electricity prices	Forecast of monthly average real retail price	• PNM load forecast
Utilization model parameters	Price elasticities, elasticities for other variables (income, weather)	• PNM econometric coefficients • Previous ICF potential studies • EPRI's REEPS and COMMEND models

In addition, assumptions were incorporated for known future equipment standards as of January 2025, as shown in Table 2-6 and Table 2-7. The assumptions in these tables extend through 2030, after which all standards are assumed to hold steady.

Table 2-6: Residential Electric Equipment Standards

End Use	Technology	2023	2024	2025	2026	2027	2028	2029	2030
Cooling	Central AC	SEER 15.0							
	Room AC	CEER 10.9				CEER 16.0 (Mid-2026)			
Cool/Heating	Air-Source Heat Pump	SEER 15.0 / HSPF 8.8							
Water Heating	Water Heater (≤55 gallons)	UEF 0.92				UEF 2.3/CCE 2.0 (Mid-2029)			
	Water Heater (>55 gallons)	UEF 2.05/CCE 2.0				UEF 2.5/CCE 2.3 (Mid-2029)			
Lighting	General Service	Federal Backstop (45 lm/W lamp)				LED (Mid-2028)			
	Linear Fluorescent	T8 (80.0 lm/W lamp)							
Appliances	Refrigerator & Freezer	2014 Standard				2029 Standard			
	Clothes Washer	2018 Standard				2028 Standard / Energy Star 8.1			
	Clothes Dryer	CEF(D2) 3.11				CEF(D2) 3.93			
	Dishwasher	2013 Standard (307 kWh/yr)				2027 Standard (223 kWh/yr)			

[2] We developed baseline purchase decisions using the Energy Information Agency's *Annual Energy Outlook* report (2021), which utilizes the National Energy Modeling System (NEMS) to produce a self-consistent supply and demand economic model. We calibrated equipment purchase options to match distributions/allocations of efficiency levels to manufacturer shipment data for recent years and then held values constant for the study period.

	Stove/Oven	No standard		2028 Standard	
	Microwave	2016 Standard		2026 Standard	
	Air Purifier	None	Std 1.9 CADR/W	Tier 2 (2.4 CADR/W)	
Miscellaneous	Pool Heater	Electric Resistance		Heat Pump (Mid-2028)	

Table 2-7: Commercial and Industrial Electric Equipment Standards

End Use	Technology	2023	2024	2025	2026	2027	2028	2029	2030
Cooling	Chillers	2016/2019 ASHRAE 90.1							
	Roof Top Units	IEER 14.8						IEER 18 / IVEC 14.3	
	PTAC	EER 10.4							
Cool/Heating	Heat Pump	IEER 14.1 / COP 3.4						IEER 17.3 / COP 3.4 IVEC 13.4 / IVHE 6.2	
	PTHP	EER 10.4 / COP 3.1							
Ventilation	All	Constant Air Volume/Variable Air Volume							
Lighting	General Service	Federal Backstop (45 lm/W lamp) [100% LED in CA]						LED (Mid-2028)	
	Linear Lighting	T8 (80.0 lm/W lamp)							
	High Bay	HID (56.0 lm/W lamp)							
Refrigeration	Walk-In/Reach-in/Display	Federal Register EERE–2010–BT–STD–0003[3]							
	Icemaker	Federal Register EERE-2010-BT-STD-0037[4]							
Miscellaneous	Pool Heater	Electric Resistance						Heat Pump (Mid-2028)	
Motors	All	Expanded EISA 2007					EERE-2020-BT-STD-0007		

*RTU: Rooftop Unit, PTAC: Packaged Terminal Air Conditioner, PTHP: Packaged Terminal Heat Pump

Measure Data Application

Table 2-8 details the energy efficiency data inputs to the VisionLoadMAP model. It describes each input and identifies the key sources used in the analysis.

[3] DOE Final Rule from 2014 available here: https://www.regulations.gov/document/EERE-2010-BT-STD-0003-0104. The DOE issued a new final rule on December 20, 2024, but this is still in pre-publication and has not been implemented.
[4] DOE Final Rule from 2015 available here: https://www.regulations.gov/document/EERE-2010-BT-STD-0037-0137

Table 2-8: Data Inputs for the Measure Characteristics in VisionLoadMAP

Model Inputs	Description	Key Sources
Energy Impacts	The annual reduction in consumption attributable to each specific measure. Savings were developed as a percentage of the energy end use that the measure affects.	• ICF BEST • Annual Energy Outlook • DOE Technical Support Documents • California eTRM • Regional Technical Forum • ICF Research and Benchmarking • Regional/National TRMs • Other secondary sources
Peak Demand Impacts	Savings during the peak demand periods are specified for each electric measure. These impacts are related to energy savings and depend on the extent to which each measure is coincident with the system peak. Peak data is based on normal weather, not climate change or extreme scenarios.	• Regional/National TRMs • 8,760 hourly load shapes calibrated to PNM's load
Costs	Equipment Measures: Includes the full cost of purchasing and installing the equipment on a per-household, per-square-foot, or per employee basis for the residential, commercial, and industrial sectors, respectively. Non-Equipment Measures: Existing buildings – full installed cost. New Construction - the costs may be either the full cost of the measure, or as appropriate, it may be the incremental cost of upgrading from a standard level to a higher efficiency level.	• PNM program data • ICF DEEM • Annual Energy Outlook • CA DEER • RS Means • Other secondary sources
Measure Lifetimes	Estimates derived from the technical data and secondary data sources that support the measure demand and energy savings analysis.	• ICF DEEM • CA DEER • Other secondary sources
Applicability	Estimate of the percentage of dwellings in the residential sector, square feet in the commercial sector, or employees in the industrial sector where the measure is applicable and where it is technically feasible to implement.	• ICF DEEM • CA DEER • Other secondary sources
On Market and Off Market Availability	Expressed as years for equipment measures to reflect when equipment technology is available or no longer available in the market.	• ICF appliance standards and building codes analysis

Data Application for Cost-Effectiveness Screening

To perform the cost-effectiveness screening, a number of economic assumptions were needed. All cost and benefit values were analyzed in real (2024) dollars using a real discount rate of 4.89% as provided by PNM. All impacts in this report are presented at the customer meter, but electric energy delivery losses were provided by PNM to estimate impacts at the generator for economic analysis. PNM also provided annual avoided cost values.

3 Market Characterization and Market Profile

In this section, we describe how customers in the PNM service territory use electricity in the base year of the study, 2024, beginning with a high-level summary of energy use across all sectors and then examining each sector in more detail.

Each market profile includes the following elements:

- **Market size** is a representation of the number of customers in the segment. For the residential sector, the unit we use is number of households. In the commercial sector, it is floor space measured in square feet. For the industrial sector, it is number of employees.
- **Saturations** define the fraction of the market (e.g., portion of homes or portion of floor space served) where each end-use technology is installed.
- **UEC** and **EUI** describes the amount of energy consumed in the base year by a specific technology in buildings where that technology is used. UECs are expressed in kWh/household for the residential sector, and EUIs are expressed in kWh/square foot or kWh/employee for the commercial and industrial sectors, respectively.
- **Annual energy intensity** for the residential sector represents the average energy use for the technology across all homes in 2024. It is computed as the product of the saturation and the UEC and is defined as kWh/household for electricity. For the commercial and industrial sectors, intensity, computed as the product of saturation and the EUI, represents the average use for the technology across all floor space or all employees in the base year.
- **Annual usage** is the annual energy used by each end-use technology in the segment. It is the product of the market size and annual energy intensity and quantified in GWh.

Overall Energy Use Summary

Total electricity consumption for all sectors in the base year was GWh. As shown in Figure 3-1 and Table 3-1, the residential sectors account for 38% of annual energy use. The commercial sector accounts for 41% of annual energy use. The industrial sector accounts for 21%.

Figure 3-1: Sector-Level Electricity Use in Base Year (Percent)

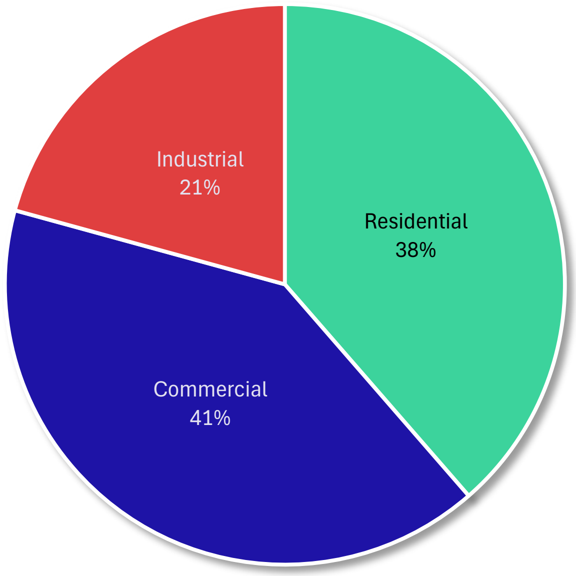


Table 3-1: PNM Sector Control Totals (2024)

Sector	Electric Use (GWh)	% of Total Usage
Residential	3,354	40%
Commercial	3,458	41%
Industrial	1,537	18%
Total	**8,349**	**100%**

Residential Sector

The total number of households and electricity sales for the service territory were obtained from PNM's customer database. In 2024, there were about 493 thousand households in PNM's service territory, using a total of 3,354 GWh of electricity, for an average of 6,804 kWh per household. Individual household consumption may vary based on house size, age, and presence of natural gas or secondary heat. We allocated these totals into four residential segments as shown in Table 3-2

Table 3-2: Residential Sector Control Totals (2024)

Segment	Electric Use (GWh)	Households	kWh/HH	% of Annual Use
Single Family	2,254	299,090	7,535	67%
Single Family Low Income	540	72,003	7,499	16%
Multifamily	98	19,385	5,057	3%
Multifamily Low Income & Manufactured Home	463	102,466	4,514	14%
Total	**3,354**	**492,945**	**6,804**	**100%**

Low-income households in this study were defined to be any household earning less than 150% of the poverty level set out by the 2024 Federal Poverty Guidelines. Manufactured Homes and low-income multifamily households were combined into a single segment.

As described in the previous chapter, the market profiles provide the foundation for development of the baseline projection and the potential estimates. The average market profile for the residential sector is presented in Table 3-3. Segment-specific market profiles are presented in Appendix B.

Figure 3-2 shows the average distribution of annual electricity use by end use across the residential sector. Three main electric end uses — space heating, water heating, and appliances — account for 56% of total use. Appliances include refrigerators, freezers, stoves/ovens, clothes washers, clothes dryers, dishwashers, microwaves, dehumidifiers, and air purifiers. The remainder of the energy falls into the electronics, lighting, cooling, and miscellaneous category – which is composed of furnace fans, pool pumps, and other "plug" loads (all other usage not covered by those listed in Table 3-3 such as hair dryers, power tools, coffee makers, etc.).

This graphic reflects average consumption describing residential consumption for the entire service territory and would look significantly different between gas and electrically heated homes. Within PNM's service area, around 56.9% of homes primarily use electricity for heating. Specifically, about 55% of single-family homes and approximately 59% of multifamily homes are electrically heated.

Figure 3-3 presents the electricity intensities by end use and housing type. As shown in this graphic, space heating end use takes up a greater share in manufactured home segment as electric heating is more common in this segment compared to single family and multifamily homes.

Figure 3-2: Residential Electricity Use by End Use (2024)

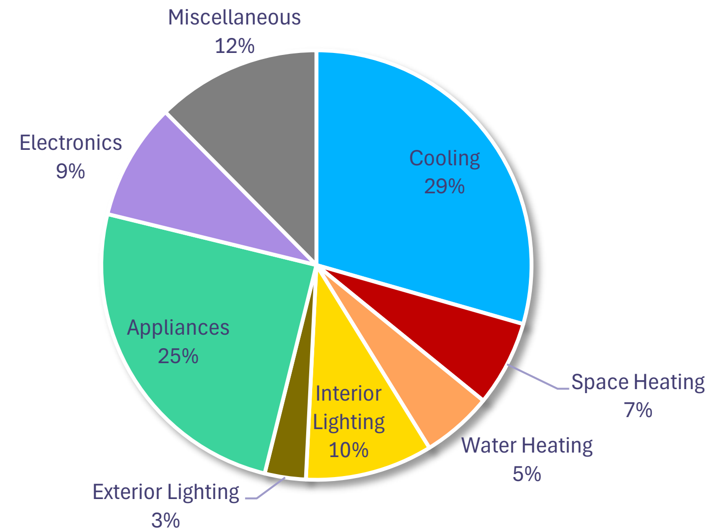


Figure 3-3: Residential Electricity Intensity by End Use and Segment (Annual kWh/household, 2024)

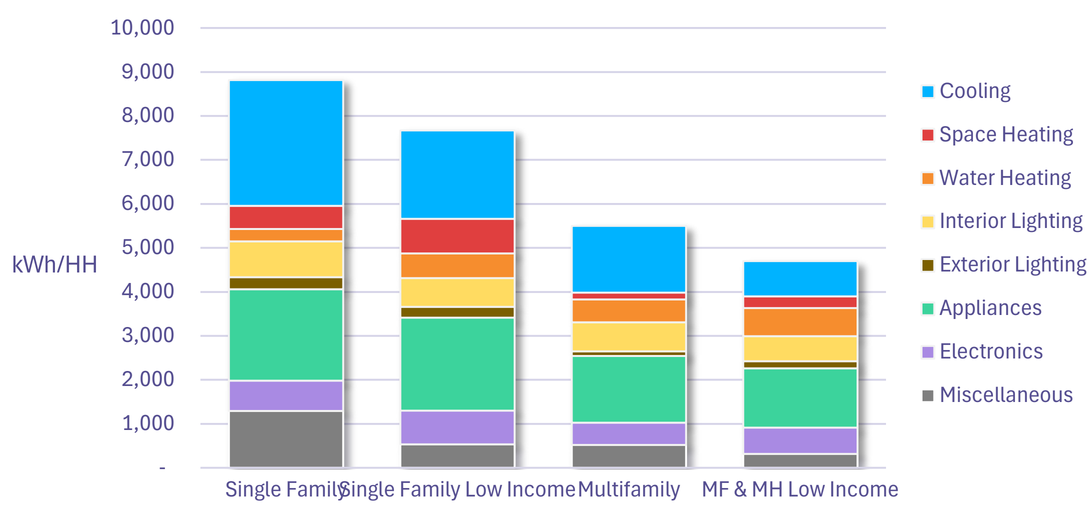


Table 3-3: Average Market Profile for the Residential Sector (2024)

End Use	Technology	Saturation	UEC (kWh/HH)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Central AC	45.0%	3,904.4	1,755.8	865.50
	Room AC	9.1%	537.3	48.8	24.05
	Evaporative Cooler	34.1%	1,000.8	341.8	168.47
	Portable AC	0.7%	758.1	5.0	2.48
	Air-Source Heat Pump	2.1%	3,982.5	82.2	40.54
	Geothermal Heat Pump	0.2%	4,194.3	7.1	3.51
	Ductless Mini Split Heat Pump	2.3%	603.6	13.9	6.83
Space Heating	Electric Furnace	8.3%	4,659.9	388.6	191.54
	Electric Room Heat	7.9%	424.8	33.4	16.44
	Air-Source Heat Pump	2.1%	2,787.3	57.6	28.37
	Geothermal Heat Pump	0.2%	3,164.1	5.4	2.65
	Ductless Mini Split Heat Pump	2.3%	366.2	8.4	4.14
Water Heating	Water Heater (<= 55 Gal)	16.4%	2,148.2	353.0	174.02
	Water Heater (> 55 Gal)	4.4%	1,267.6	55.2	27.19
Interior Lighting	General Service Lighting	100.0%	678.0	678.0	334.21
	Linear Lighting	100.0%	51.1	51.1	25.19
	Exempted Lighting	100.0%	5.0	5.0	2.47
Exterior Lighting	General Service Lighting	100.0%	236.3	236.3	116.49
Appliances	Refrigerator	100.0%	492.7	492.7	242.89
	Second Refrigerator	12.3%	559.0	68.8	33.92
	Freezer	42.8%	461.5	197.7	97.47
	Clothes Washer	94.1%	192.1	180.8	89.10
	Clothes Dryer	71.6%	681.5	488.2	240.67
	Dishwasher	85.0%	244.4	207.8	102.44
	Stove/Oven	34.7%	150.9	52.4	25.84
	Microwave	100.4%	101.2	101.6	50.08
	Dehumidifier	11.7%	626.1	73.5	36.24
	Air Purifier	48.0%	99.3	47.6	23.47
Electronics	Personal Computers	60.7%	105.8	64.2	31.67

End Use	Technology	Saturation	UEC (kWh/HH)	Intensity (kWh/HH)	Usage (GWh)
	Monitor	85.7%	54.1	46.4	22.86
	Laptops	113.4%	26.4	29.9	14.74
	Imaging Equipment	79.9%	34.7	27.7	13.66
	TVs	224.1%	67.2	150.6	74.25
	Set-top Boxes/DVRs	272.7%	83.4	227.5	112.15
	Devices and Gadgets	100.0%	127.6	127.6	62.89
Miscellaneous	EV Supply Equipment	3.8%	2,259.1	86.4	42.60
	Pool Heater	0.7%	862.3	5.8	2.87
	Pool Pump	5.2%	1,313.0	67.9	33.45
	Hot Tub/Spa	3.3%	2,043.9	68.0	33.51
	Furnace Fan	68.3%	319.9	218.4	107.67
	Bathroom Exhaust Fan	104.6%	45.7	47.8	23.58
	Well Pump	0.0%	0.0	0.0	0.00
	Miscellaneous	100.0%	454.4	454.4	224.00
Generation	Solar PV	9.1%	-9,390.2	-856.3	-422.12
	Total			**6,804.0**	**3,354.01**

Commercial Sector

The total electric energy consumed by PNM's commercial customers in 2024 was 3,458 GWh. PNM billing data, forecast results and secondary data were used to allocate this energy usage among eleven commercial segments and to develop estimates of energy intensity (annual kWh/square foot). ICF utilized PNM's detailed customer account database to classify each account into a market segment. Buildings with multiple accounts were classified based on the largest electric customer account in the building. The values are shown in Table 3-4.

Table 3-4: Commercial Sector Control Totals (2024)

Segment	Electric Use (GWh)	Floor Space (Million sqft)	kWh/sqft	% of Annual Use
Small Office	408.2	33.7	12.1	12%
Large Office	399.8	27.1	14.7	12%
Restaurant	213.8	6.4	33.6	6%
Retail	505.0	43.3	11.7	15%
Grocery	161.8	4.9	33.1	5%
College	218.4	12.5	17.4	6%
School	231.5	32.2	7.2	7%
Health	165.5	7.5	22.0	5%
Lodging	293.0	20.4	14.4	8%
Warehouse	161.3	40.5	4.0	5%
Miscellaneous	708.1	104.5	6.8	20%
Total	**3,466.5**	**333.2**	**10.4**	**100%**

Figure 3-4 shows the distribution of annual electricity consumption by end use across all commercial buildings. Most consumption is associated with lighting and HVAC end uses, which comprise 61% of annual electricity usage. The lighting end use accounts for nearly a quarter of the commercial electricity consumption (23%), followed by building ventilation (19%) and cooling (15%).

Figure 3-4: Commercial Electricity Consumption by End Use (2024)

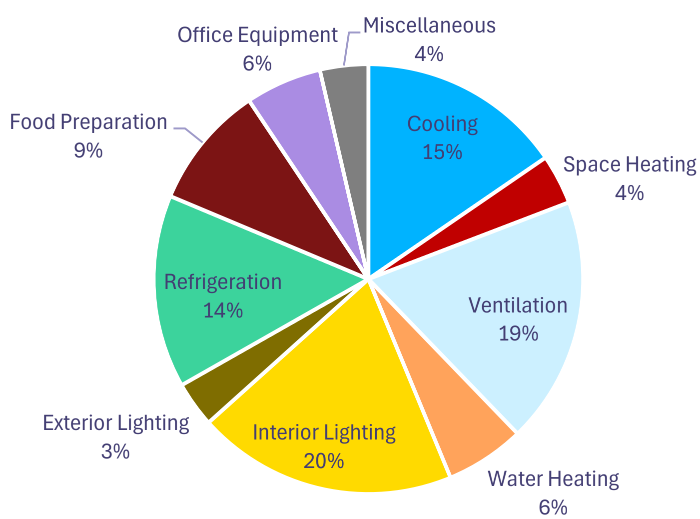


Figure 3-5 presents the electricity intensities by end use and segment. Restaurants have the highest use per square foot at 33.6 kWh/sqft. Table 3-5 shows the average market profile for the commercial sector, representing a composite of all segments and buildings. Market profiles for each segment are presented in Appendix B.

Figure 3-5: Commercial Energy Intensity by End Use and Segment (Annual kWh/sqft, 2024)

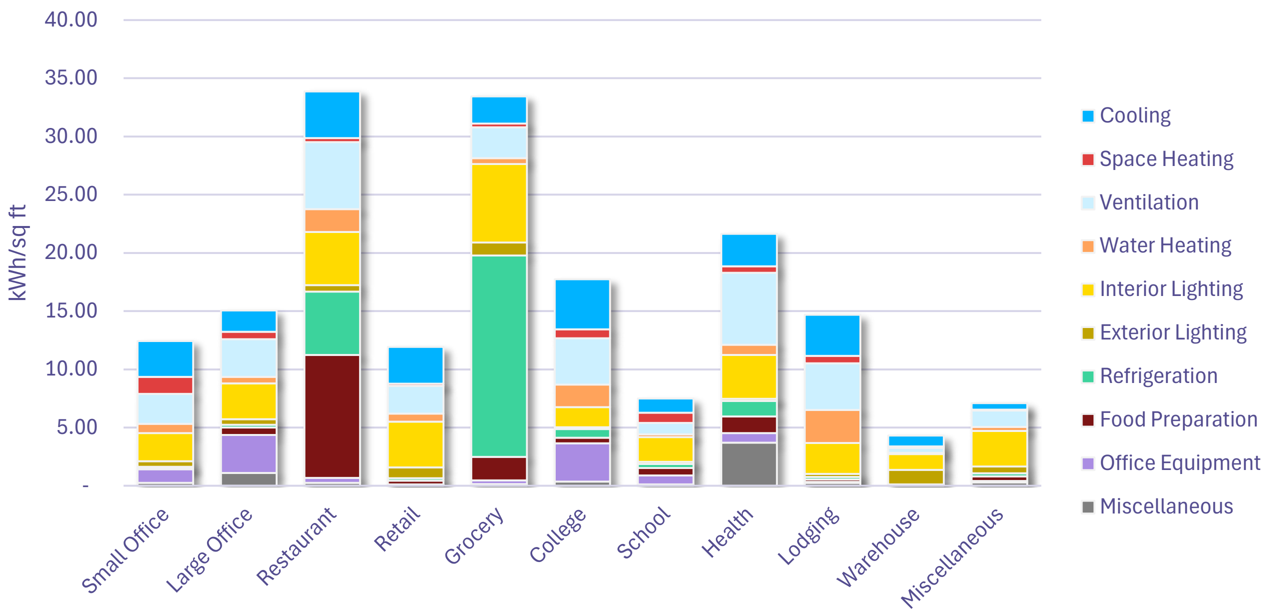


Table 3-5: Average Electric Market Profile for the Commercial Sector (2024)

End Use	Technology	Saturation	EUI (kWh/sqft)	Intensity (kWh/sqft)	Usage (GWh)
Cooling	Air-Cooled Chiller	2.4%	4.04	0.10	31.69
	Water-Cooled Chiller	6.2%	1.95	0.12	40.09
	RTU	34.5%	2.86	0.99	329.04
	Packaged Terminal AC	9.8%	3.54	0.35	115.73
	Packaged Terminal HP	1.7%	3.93	0.07	21.92
	Air-Source Heat Pump	4.1%	3.78	0.16	51.79
	Geothermal Heat Pump	2.2%	2.74	0.06	19.88
Space Heating	Electric Furnace	13.1%	2.41	0.32	105.43
	Electric Room Heat	0.0%	2.70	-	-
	Air-Source Heat Pump	4.1%	2.34	0.10	32.11
	Packaged Terminal HP	1.7%	1.43	0.02	7.96
	Geothermal Heat Pump	2.2%	1.84	0.04	13.35
Ventilation	Ventilation	100.0%	2.10	2.10	700.75
Water Heating	Water Heater	52.0%	1.27	0.66	219.92
Interior Lighting	General Service Lighting	100.0%	0.62	0.62	207.41
	Exempted Lighting	100.0%	0.00	0.00	1.16
	Linear Lighting	100.0%	1.90	1.90	631.52
	High-Bay Lighting	100.0%	0.31	0.31	103.88
Exterior Lighting	General Service Lighting	100.0%	0.28	0.28	92.45

	Linear Lighting	100.0%	0.29	0.29	96.01
	Area Lighting	100.0%	0.04	0.04	14.62
Refrigeration	Walk-in Refrigerator/Freezer	5.5%	1.10	0.06	20.29
	Reach-in Refrigerator/Freezer	12.3%	0.60	0.07	24.67
	Glass Door Display	33.5%	0.53	0.18	58.86
	Open Display Case	11.2%	0.93	0.10	34.69
	Icemaker	35.3%	0.37	0.13	43.64
	Vending Machine	35.3%	0.18	0.06	20.93
Food Preparation	Oven	21.2%	0.42	0.09	29.47
	Fryer	24.2%	0.89	0.22	71.82
	Dishwasher	11.2%	0.65	0.07	24.41
	Hot Food Container	12.9%	0.26	0.03	11.29
	Steamer	10.8%	0.78	0.08	28.08
	Griddle	11.2%	0.77	0.09	28.63
Office Equipment	Desktop Computer	100.0%	0.27	0.27	91.34
	Laptop	99.5%	0.09	0.08	28.20
	Monitor	100.0%	0.05	0.05	16.29
	Server	84.7%	0.27	0.23	76.41
	Imaging Equipment	100.0%	0.02	0.02	7.97
	POS Terminal	50.5%	0.03	0.01	4.59
Miscellaneous	Non-HVAC Motors	55.3%	0.45	0.25	82.36
	Pool Pump	9.9%	0.11	0.01	3.65
	Pool Heater	3.4%	0.14	0.00	1.55
	EV Supply Equipment	2.4%	0.03	0.00	0.21
	Clothes Washer	13.2%	0.05	0.01	2.06
	Clothes Dryer	8.0%	0.16	0.01	4.38
	Miscellaneous	100.0%	0.06	0.06	21.38
Generation	Solar PV	1.9%	(16.92)	(0.32)	(107.41)
Total				**10.40**	**3,466.45**

Industrial Sector

The total electricity used in 2024 by PNM's industrial customers was 1,537 GWh. PNM billing data, load forecast and secondary sources were used to allocate usage among different end uses. Figure 3-6 shows the distribution of annual electricity consumption by end use for all industrial customers. Motors are the largest end use in the industrial sector, accounting for 47% of energy use and including a wide range of industrial equipment, such as air and refrigeration compressors, pumps, conveyor motors, and fans. The process end use accounts for 26% of annual energy use, which includes heating, cooling, refrigeration, and electro-chemical processes. Ventilation has the next highest energy use, followed by misc., lighting, cooling, and space heating.

Note: While the Industrial model is normalized to a unit of Employees (taken from US BLS data for the region), kWh per employee is not an intuitive metric and is not presented here to maintain clarity.

Table 3-9: Industrial Sector Control Totals (2024)

Segment	Electric Use (GWh)	% of Annual Use
Industrial	1,537	100%

Figure 3-6: Industrial Electricity Use by End Use (2024)

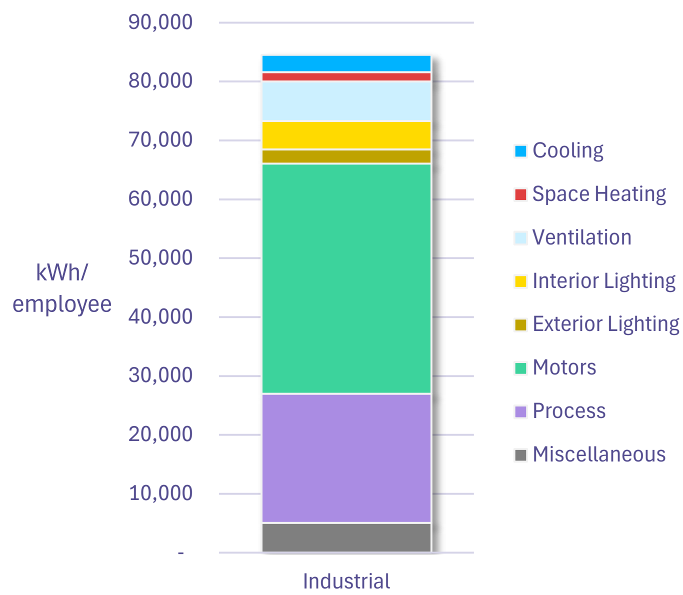


Table 3-6: Average Electric Market Profile for the Industrial Sector, 2024

End Use	Technology	Saturation	Usage (GWh)
Cooling	Air-Cooled Chiller	2.8%	11.17
	Water-Cooled Chiller	2.8%	1.28
	RTU	12.8%	37.41
	Air-Source Heat Pump	1.2%	3.06
	Geothermal Heat Pump	0.0%	0.00
Space Heating	Air-Source Heat Pump	1.2%	5.40
	Geothermal Heat Pump	0.0%	0.00
	Electric Furnace	0.6%	3.39
	Electric Room Heat	3.9%	20.09
Ventilation	Ventilation	100.0%	121.73
Interior Lighting	General Service Lighting	100.0%	8.64
	Exempted Lighting	100.0%	0.00
	Linear Lighting	100.0%	39.73
	High-Bay Lighting	100.0%	39.73
Exterior Lighting	General Service Lighting	100.0%	14.01
	Linear Lighting	100.0%	29.73
	Area Lighting	100.0%	0.38
Process	Process Cooling	100.0%	95.02
	Process Refrigeration	100.0%	102.07
	Process Heating	100.0%	130.06
	Process Electrochemical	100.0%	35.10
	Process Other	100.0%	35.54
Motors	Pumps	100.0%	132.59
	Fans & Blowers	100.0%	84.81
	Compressed Air	100.0%	123.00
	Material Handling	100.0%	334.57
Miscellaneous	Other Motors	100.0%	35.83
Total			**1,536.79**

4 Baseline Projection

Prior to developing estimates of energy-efficiency potential, ICF developed a baseline end-use projection to quantify expected consumption in the future in the absence of new conservation programs or efforts.

The first step was to align with PNM's official forecast. ICF worked with PNM's load forecasting group to incorporate assumptions and data utilized in the official utility forecast. These data points included customer growth and use-per-customer projections. These assumptions were incorporated into the VisionLoadMAP model, ensuring alignment with the official load forecast.

The end-use projection includes the relatively certain impacts of codes and standards that will unfold over the study timeframe. All such mandates that were defined as of January 2025 are included in the baseline. The baseline projection includes naturally occurring conservation that might take place in the potential forecast period (2026 and beyond). As such, the baseline projection is the foundation for the analysis of savings from future efficiency cases and scenarios as well as the metric against which potential savings are measured.

Inputs to the baseline projection include:

- Current economic growth forecasts (i.e., customer growth, income growth)
- Electricity price forecasts
- Trends in fuel shares and equipment saturations
- Existing and approved changes to building codes and equipment standards

Although it aligns closely, the baseline projection is not PNM's official load forecast. Rather it was developed as an integral component of ICF's modeling construct to serve as the metric against which conservation potentials are measured.

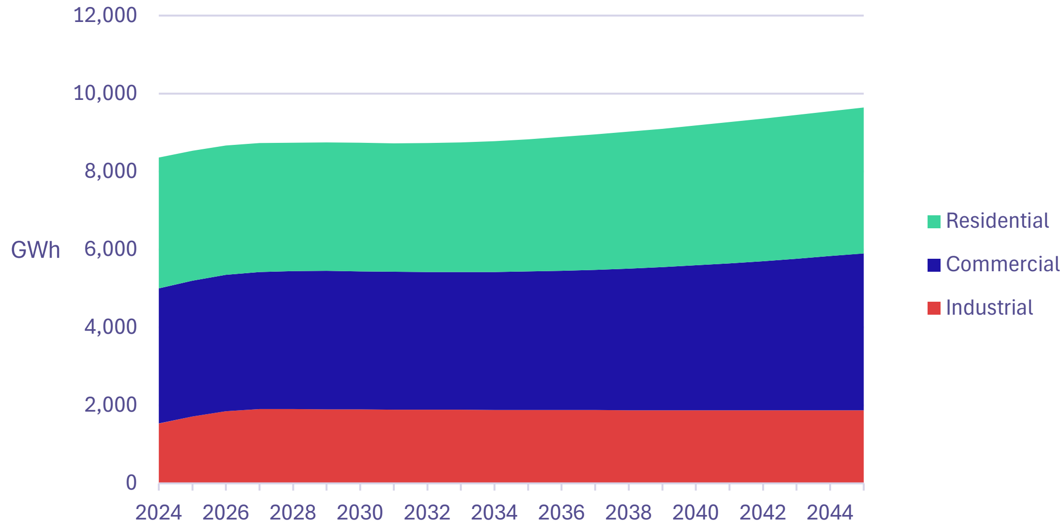
Summary of Baseline Projections Across Sectors

Table 4-1 and Figure 4-1 provide a summary of the baseline projection for annual use by sector for the entire PNM service territory. Overall, the forecast shows strong growth in electricity use, driven primarily by electric vehicle adoption along with customer growth forecasts and moderated by the effects of future codes and standards that have already been enacted.

Table 4-1: Baseline Projection Summary (GWh)

Sector	2024	2026	2028	2030	2035	2045	% Change ('26-'45)
Residential	3,354	3,316	3,300	3,296	3,392	3,743	11.6%
Commercial	3,466	3,504	3,539	3,544	3,550	4,029	16.2%
Industrial	1,537	1,847	1,903	1,897	1,883	1,870	21.7%
Total	**8,357**	**8,667**	**8,742**	**8,736**	**8,826**	**9,642**	**15.4%**

Figure 4-1: Baseline Projection Summary (GWh)



Residential Sector Baseline Projection

Table 4-2 and Figure 4-2 present ICF's independent baseline projection for electricity at the end-use level for the residential sector. Overall, residential use increases from 3,354 GWh in 2024 to 3,753 GWh in 2045, an average increase of 0.5% per year as a result of the anticipated influx of electric vehicles on the grid.

Table 4-2: Residential Baseline Projection by End Use (GWh)

End Use	2024	2026	2028	2030	2035	2045	% Change ('26-'45)
Cooling	1,111	1,127	1,148	1,174	1,253	1,498	35%
Space Heating	243	240	237	234	227	213	-12%
Water Heating	201	200	199	194	163	111	-45%
Interior Lighting	362	354	342	324	283	251	-31%
Exterior Lighting	116	113	107	100	84	74	-36%
Appliances	942	964	983	988	985	1,000	6%
Electronics	332	325	316	312	323	366	10%
Miscellaneous	425	430	437	444	464	510	20%
Electric Vehicles	43	100	188	306	701	1,426	3247%
Generation	(422)	(537)	(658)	(780)	(1,091)	(1,706)	304%
Total	**3,354**	**3,316**	**3,300**	**3,296**	**3,392**	**3,743**	**12%**

Figure 4-2: Residential Baseline Projection by End Use[5] (GWh)

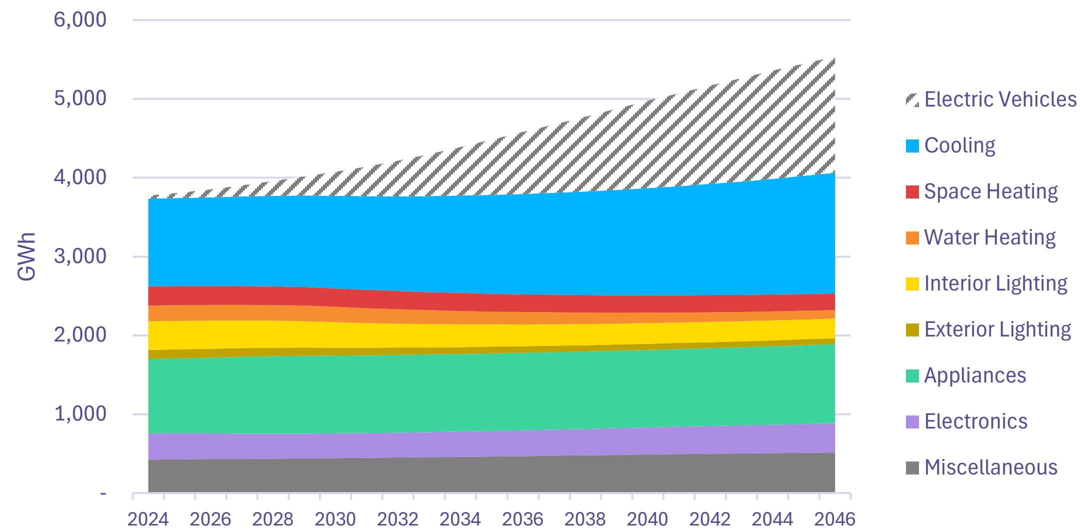
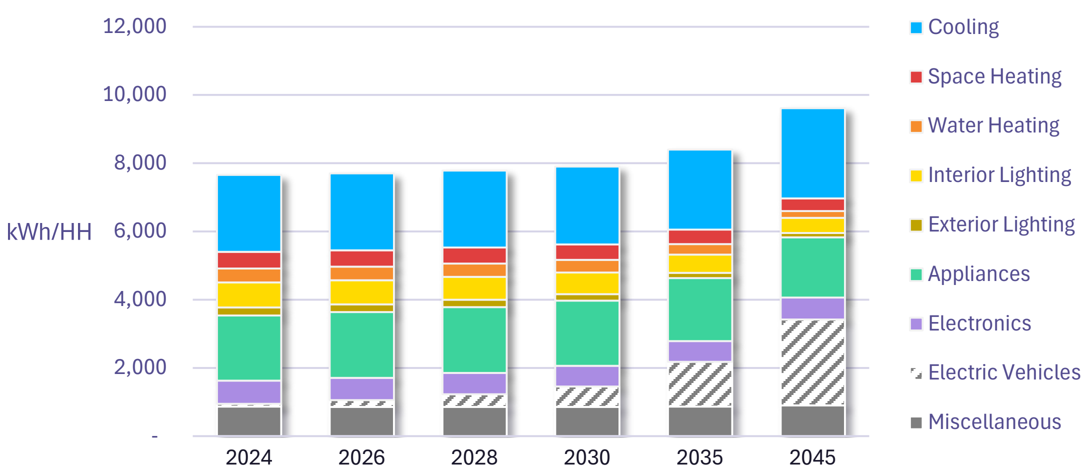


Figure 4-3: Residential Baseline Projection by End Use – Annual Use per Household



Commercial Sector Baseline Projection

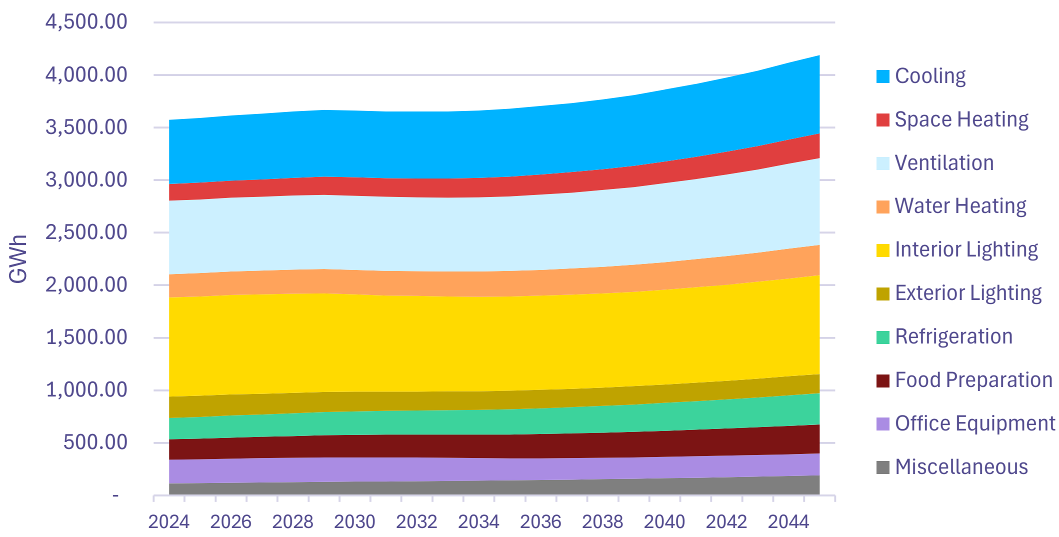
Annual electricity usage in the commercial sector increases 16.2% during the overall forecast horizon, starting at 3,466 GWh in 2024, and increasing to 4,029 GWh by 2045. Table 4-3 and Figure 4-4 present the baseline projection at the end-use level for the commercial sector. Lighting end use consumption is declining throughout the forecast, largely because of codes and standards and the market transformation of LEDs.

[5] Generation omitted – consumption shown

Table 4-3: Commercial Baseline Projection by End Use (GWh)

End Use	2024	2026	2027	2030	2035	2045	% Change ('24-'45)
Cooling	610	619	625	636	646	745	22.0%
Space Heating	159	164	166	175	188	235	48.2%
Ventilation	701	702	703	705	709	825	17.8%
Water Heating	220	224	226	233	243	289	31.3%
Interior Lighting	944	947	944	927	896	941	-0.3%
Exterior Lighting	203	200	197	186	176	183	-10.0%
Refrigeration	203	209	213	224	240	297	46.3%
Food Preparation	194	200	203	213	227	276	42.6%
Office Equipment	225	230	232	232	209	207	-8.0%
Miscellaneous	116	120	123	131	144	192	65.9%
Generation	(107)	(111)	(113)	(119)	(128)	(161)	49.7%
Total	**3,466**	**3,504**	**3,519**	**3,544**	**3,550**	**4,029**	**16.2%**

Figure 4-4: Commercial Baseline Projection by End Use



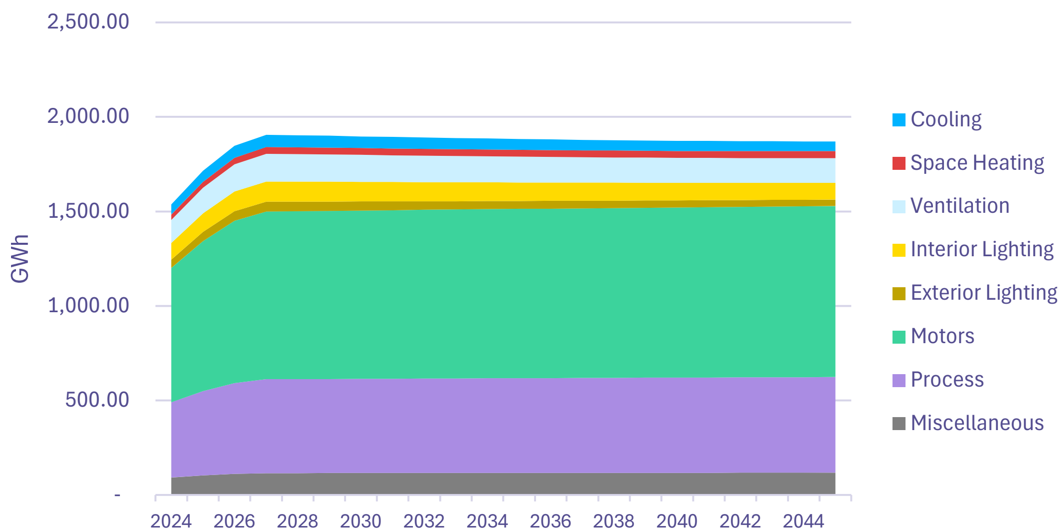
Industrial Sector Baseline Projection

Annual industrial usage declines slightly for most of the forecast period. Table 4-4 and Figure 4-5 present the projection at the end-use level. Overall, annual industrial electricity usage increases from 1,537 GWh in 2024 to 1,870 GWh in 2045 – an increase of 21.7% over the study period.

Table 4-4: Industrial Baseline Projection by End Use (GWh)

End Use	2024	2026	2027	2030	2035	2045	% Change ('24-'45)
Cooling	53	63	64	62	57	51	-3.0%
Space Heating	29	35	36	36	36	37	26.9%
Ventilation	122	144	147	142	136	130	7.2%
Interior Lighting	88	105	107	104	98	89	1.2%
Exterior Lighting	44	51	52	48	42	34	-22.1%
Process	711	858	887	891	896	904	27.2%
Motors	398	480	497	498	501	506	27.2%
Miscellaneous	92	112	115	116	116	118	27.2%
Total	**1,537**	**1,847**	**1,905**	**1,897**	**1,883**	**1,870**	**21.7%**

Figure 4-5: Industrial Baseline Projection by End Use (GWh)



5 Potential Study Results

This chapter presents the measure-level energy conservation potential across all sectors. Year-by-year savings for annual energy usage are available in the VisionLoadMAP model, which was provided to PNM at the conclusion of the study. All savings values in this study are provided at the customer meter. This section includes potential from the residential, commercial and industrial sectors.

Summary of Overall Conservation Potential

Table 5-1 and Figure 5-1 summarize the conservation potential in terms of annual impacts of all measures for three levels of potential relative to the baseline projection.

Figure 5-2 displays the conservation forecasts. Savings are represented in cumulative terms, reflecting the effects of persistent savings in prior years in addition to new savings. This allows for the reporting of annual savings impacts as they actually affect each year of the forecast.

- **Technical Potential** reflects the adoption of all conservation measures regardless of cost-effectiveness or market barriers. In this potential case, all equipment goes to the most efficient, technically feasible option (e.g. highest-tier heat pump water heaters) even when costs may be prohibitive. All eligible retrofit measures are also installed over the 20 year study horizon. Cumulative savings in 2035 are 1,535 GWh, or 17.4% of the baseline
- **Economic Potential,** which includes only cost-effective measures based on the UCT, is estimated at 1,149 GWh in 2035, or 13% of the baseline projection.
- **Program Potential** adjusts the economic potential by reflecting PNM's increased program activity to achieve New Mexico's Efficient Use of Energy Act (EUEA) requirement of five percent savings (5%) relative to 2025 retail sales by 2030. Cumulative savings in 2035 are 691 GWh, or 10.5% of the baseline.
- **Achievable Potential,** which adjusts the economic potential by reflecting customer adoption constraints and includes every possible measure that is considered in the measure list, regardless of program implementation concerns. Potential in 2035 is estimated at 538 GWh, or 6.1% of the baseline projection.

Table 5-1: Summary of Overall Potential for Selected Years

Summary of Energy Savings	2026	2027	2030	2035	2045
Baseline Forecast (GWh)	8,667	8,731	8,736	8,826	9,642
Cumulative Savings (GWh)					
Achievable Potential	67	127	297	538	1,003
Program Potential	89	171	394	691	1,211
Economic Potential	148	290	672	1,149	1,953
Technical Potential	199	390	895	1,535	2,601
Energy Savings (% of Baseline)					
Achievable Potential	0.8%	1.5%	3.4%	6.1%	10.4%
Program Potential	1.0%	2.0%	4.5%	7.8%	12.6%
Economic Potential	1.7%	3.3%	7.7%	13.0%	20.3%
Technical Potential	2.3%	4.5%	10.2%	17.4%	27.0%

Figure 5-1: Summary of Overall Potential (% of Baseline)

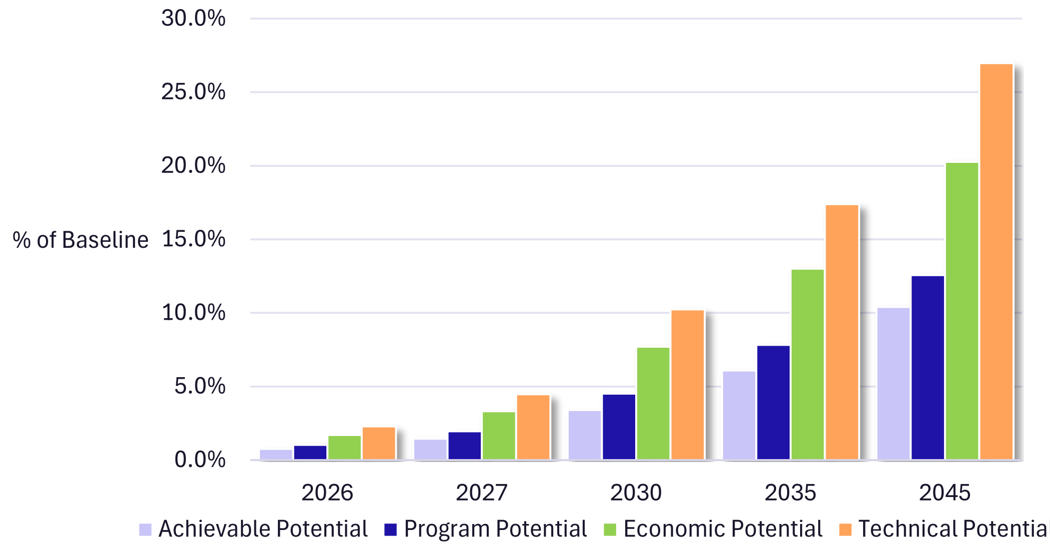
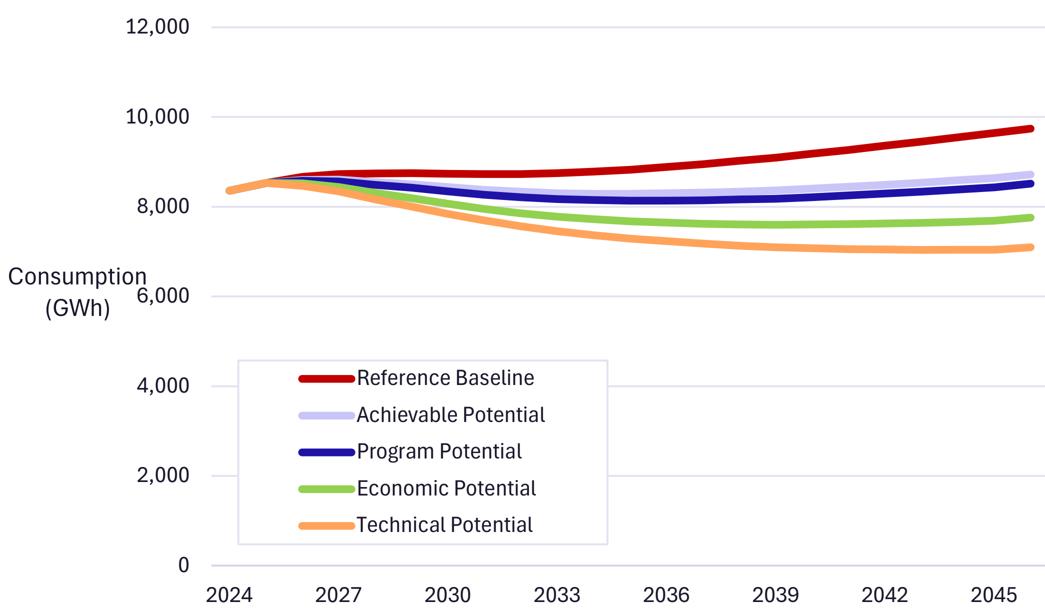


Figure 5-2: Baseline Projection and Conservation Potential Forecast Summary (Annual Energy, GWh)



Overview of Savings by Sector

Table 5-2 and Figure 5-3 summarizes achievable potential by sector for selected years. In 2035, the commercial sector represents the largest share of potential, followed by residential, then industrial.

Table 5-2: Achievable Potential by Sector for Selected Years (GWh)

Sector	2026	2027	2030	2035	2045
Residential	29.7	52.1	116.1	216.4	407.2
Commercial	30.7	62.4	150.6	262.7	489.2
Industrial	6.1	12.6	30.3	58.4	106.8
Total	**66.5**	**127.1**	**297.1**	**537.5**	**1,003.2**

Figure 5-3: Summary of Overall Savings by Sector

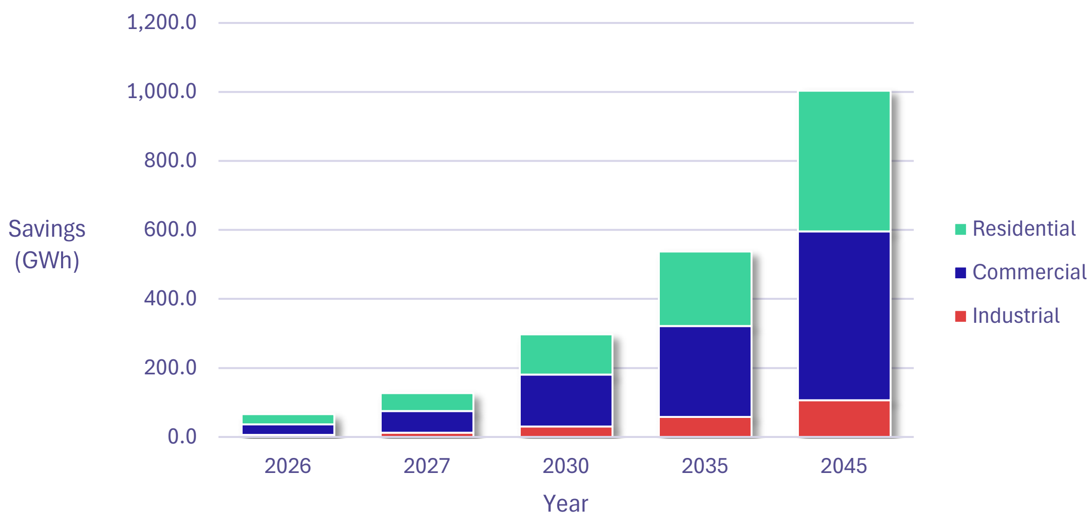
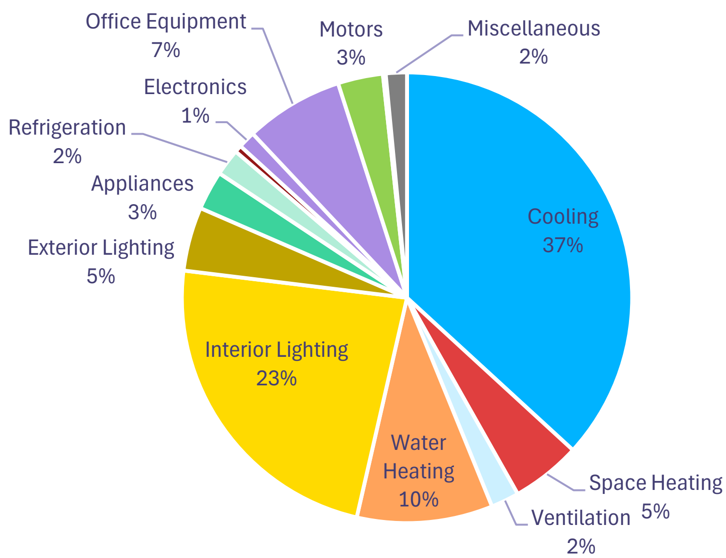


Figure 5-4 presents the cumulative savings across all sectors by end use in 2035. The Cooling end use provides the highest portion of the savings (37%), driven by building shell and infiltration control measures as well as smart thermostats in the Residential sector. Lighting measures in the C&I sectors also provide significant savings, followed by water heating savings.

Figure 5-4: Summary of Overall Savings by End Use in 2035



6 Sector-Level Savings Potential

The previous section provided a summary of potential for PNM's service territory as a whole. In this section, we provide details for each sector. For each sector, savings are shown in several tables and charts that summarize potential in different ways:

- Total potential by case (technical, economic, and achievable) and comparison to the reference baseline
- Top measures within the sector, ranked by 10-year achievable potential
- Achievable potential broken down by vintage (existing vs. new construction) by end use

Residential Potential

Table 6-1 and Figure 6-1 present estimates for measure-level conservation potential for the residential sector. In 2035, achievable potential is 6.4% of the baseline load, including savings for building shell measures such as infiltration control, high efficiency windows, and connected thermostats as the top contributors.

Table 6-1: Summary of Residential Potential for Selected Years

Summary of Energy Savings	2026	2027	2030	2035	2045
Baseline Forecast (GWh)	3,316	3,306	3,296	3,392	3,743
Cumulative Savings (GWh)					
Achievable Potential	30	52	116	216	407
Program Potential	38	69	154	281	500
Economic Potential	65	121	273	484	820
Technical Potential	93	175	390	684	1,162
Energy Savings (% of Baseline)					
Achievable Potential	0.9%	1.6%	3.5%	6.4%	10.9%
Program Potential	1.2%	2.1%	4.7%	8.3%	13.4%
Economic Potential	2.0%	3.7%	8.3%	14.3%	21.9%
Technical Potential	2.8%	5.3%	11.8%	20.2%	31.0%

Figure 6-1: Summary of Residential Potential (% of Baseline)

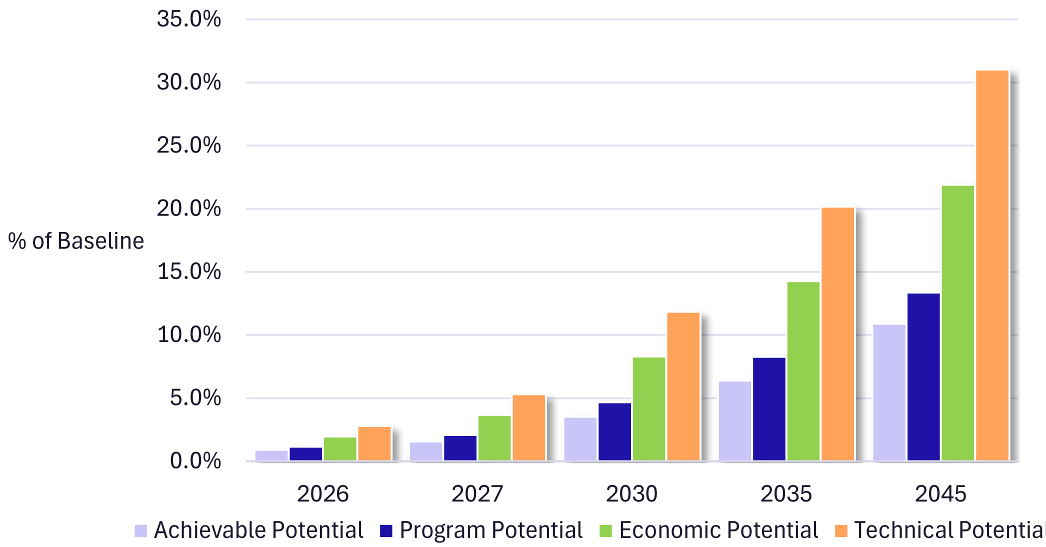


Table 6-2 identifies the top 20 residential measures ranked by cumulative achievable potential by 2035. The largest individual sources of savings in the residential sector came from Infiltration Control measures, reflecting the success of PNM's program accomplishments. Other cooling and control-related measures such as smart thermostats, and envelope insulation (e.g., high efficiency windows) also provide significant savings in the HVAC end uses. Home Energy Reports also continue to be a significant contributor to potential savings. However, there is uncertainty about the level of savings attributable to Home Energy Reports in the future, because all customers aside from a control group will begin receiving monthly emails related to PNM's Customer Energy Management Portal ("CEMP") in 2026.

Table 6-2: Residential Top Measures in 2035

Rank	Measure / Technology	2035 Achievable Potential (MWh)	% of Total
1	Building Shell - Air Sealing (Infiltration Control)	40,714	18.8%
2	Windows - High Efficiency (ENERGY STAR 7.0)	21,240	9.8%
3	Connected Thermostat - ENERGY STAR (1.0)	15,246	7.0%
4	HVAC - Maintenance and Tune-Up	14,699	6.8%
5	Building Shell - Whole-Home Aerosol Sealing	13,591	6.3%
6	Windows - Manual Shading	11,790	5.4%
7	Central AC	10,168	4.7%
8	Air Purifier	9,972	4.6%
9	Windows - High Efficiency (Triple Pane)	8,728	4.0%
10	Home Energy Reports	7,537	3.5%
11	ENERGY STAR Home Design	7,099	3.3%
12	Clothes Washer - CEE Tier 2	5,673	2.6%
13	Supplement Central System with Ductless Mini Split Heat Pump	5,371	2.5%
14	Water Heater (<= 55 Gal)	4,716	2.2%
15	Advanced Power Strips - Tier 1	4,207	1.9%
16	Refrigerator - Decommissioning and Recycling	4,100	1.9%
17	Evaporative Cooler - Whole Home	3,188	1.5%
18	Ducting - Repair and Sealing - Aerosol	2,677	1.2%
19	Windows - Low-e Storm Addition	2,576	1.2%
20	Water Heater - Low-Flow Showerheads	2,077	1.0%
	Total Savings from Top 20 Measures	**195,369**	**90.3%**
	Total Savings from All Measures	**216,397**	**100.0%**

Figure 6-2 and Figure 6-3 present forecasts of cumulative achievable potential by end use as a percentage of total annual savings and in absolute terms, respectively. Residential electric loads in PNM's territory are dominated by household cooling and appliance end uses, which together accounted for 66% of the total residential load and 80% of the cumulative potential by the end of the study. Lighting opportunities only represented 1% of the cumulative achievable potential due to the prevalence of general service lighting, the impact of lighting efficiency standards, and an already efficient market baseline.

Figure 6-2: Residential Achievable Potential – Cumulative Savings by End Use (% of Total)

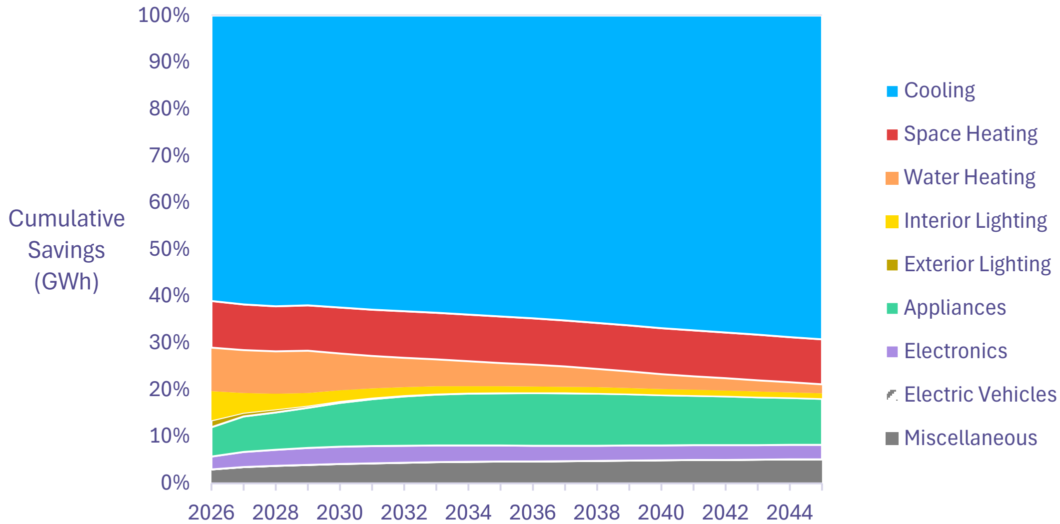


Figure 6-3: Residential Achievable Potential – Cumulative Savings by End Use (Annual MWh)

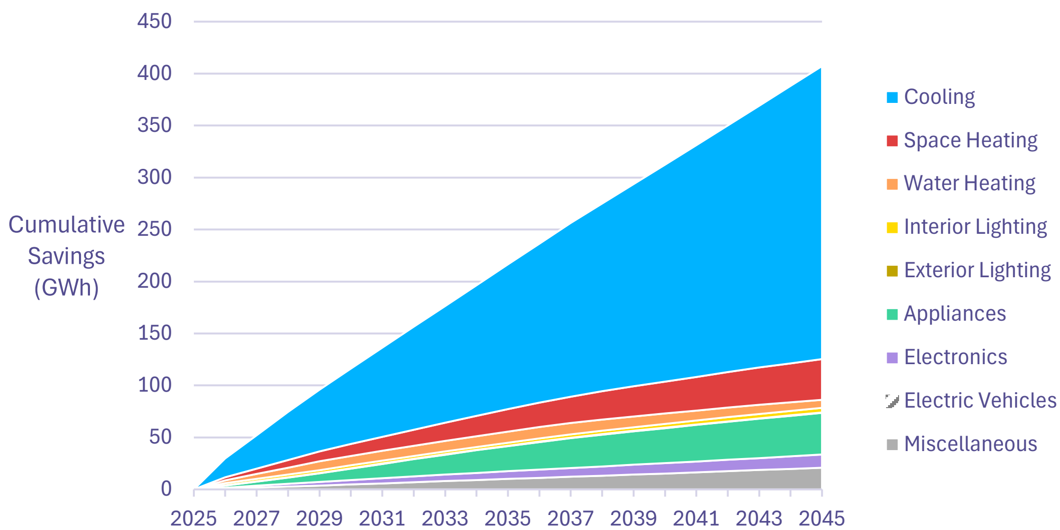


Table 6-4 summarizes residential sector cumulative achievable potential by end use. The single family segment represents the largest share of overall potential, followed by the Low-income single family segment. For all segments, the cooling end use provides the largest share of savings. Appliance end use savings are the second-highest contributor to residential savings, but is concentrated mostly in the single family segment.

Table 6-3: Residential Cumulative Achievable Potential by End Use and Segment in 2035 (MWh)

End Use	Single Family	Single Family Low Income	Multifamily	MF & MH Low Income	Total
Cooling	114,645	12,269	4,439	7,879	139,232
Space Heating	14,614	3,778	669	2,406	21,467
Water Heating	6,216	1,744	274	2,536	10,770
Interior Lighting	1,391	380	229	852	2,852
Exterior Lighting	297	56	6	47	406
Appliances	19,457	2,608	532	1,622	24,220
Electronics	5,014	775	238	1,380	7,407
Miscellaneous	8,643	1,012	137	252	10,043
Total	**170,279**	**22,623**	**6,523**	**16,973**	**216,397**

Commercial Potential

Table 6-5 and Figure 6-4 present the annual energy savings estimates for three levels of conservation potential for the commercial sector.

Lighting continues to be the main source of commercial and industrial savings, despite continuous movements in the baseline market that are shrinking the remaining opportunity, accounting for over 40% of the identified potential. Individually controlled, network-enabled fixtures enhance savings above simple LED replacement for relatively low added cost and greatly contributed to this block of savings.

Table 6-4: Summary of Commercial Conservation Potential for Selected Years

Summary of Energy Savings	2026	2027	2030	2035	2045
Baseline Forecast (GWh)	3,504	3,520	3,544	3,550	4,0297
Cumulative Savings (GWh)					
Achievable Potential	31	62	151	263	489
Program Potential	42	85	201	337	584
Economic Potential	73	148	349	572	972
Technical Potential	94	188	442	736	1,247
Energy Savings (% of Baseline)					
Achievable Potential	0.9%	1.8%	4.3%	7.4%	12.1%
Program Potential	1.2%	2.4%	5.7%	9.5%	14.5%
Economic Potential	2.1%	4.2%	9.9%	16.1%	24.1%
Technical Potential	2.7%	5.3%	12.5%	20.7%	31.0%

Figure 6-4: Summary of Commercial Potential (% of Baseline)

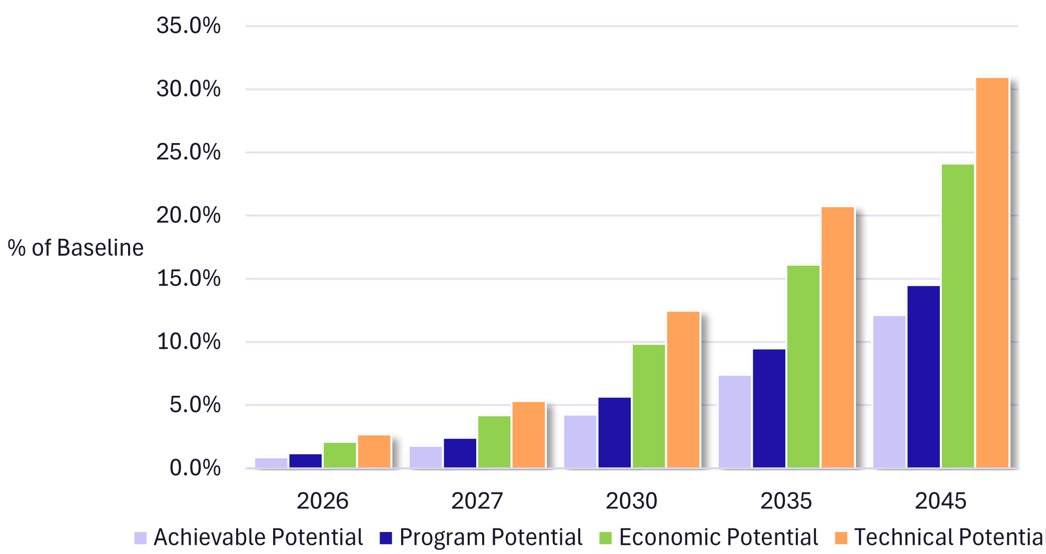


Table 6-5: Commercial Sector Top Measures in 2035

Rank	Measure / Technology	2035 Cumulative Achievable Potential (MWh)	% of Total
1	Linear Lighting	88,956	33.9%
2	Water Heater	42,385	16.1%
3	High-Bay Lighting	23,385	8.9%
4	RTU	17,845	6.8%
5	Packaged Terminal AC	11,444	4.4%
6	Windows - High Efficiency Glazing	7,098	2.7%
7	Ventilation - High Efficiency Motors	6,271	2.4%
8	Air-Source Heat Pump	4,767	1.8%
9	Water-Cooled Chiller	4,563	1.7%
10	HVAC - Economizer Repair/Addition	3,460	1.3%
11	Air-Cooled Chiller	3,440	1.3%
12	Refrigeration - High Efficiency Compressor	3,013	1.1%
13	Desktop Computer	2,854	1.1%
14	Steamer	2,769	1.1%
15	Connected Thermostat - ENERGY STAR (1.0)	2,364	0.9%
16	Reach-in Refrigerator/Freezer	2,355	0.9%
17	HVAC - Maintenance	2,144	0.8%
18	RTU - Evaporative Precooler	2,068	0.8%
19	Ventilation - Nighttime Air Purge	1,664	0.6%
20	Oven	1,584	0.6%
	Total Savings from Top 20 Measures	**234,429**	**89.2%**
	Total Savings from All Measures	**262,719**	**100.0%**

Figure 6-5 and Figure 6-6 present forecasts of energy savings by end use as a percentage of total annual savings and cumulative savings, respectively. Continued market transformation has left lighting as the dominant end use once again, though other end uses grow more as lighting becomes more and more transformed into the future.

Figure 6-5: Commercial Achievable Potential – Cumulative Savings by End Use (% of Total)

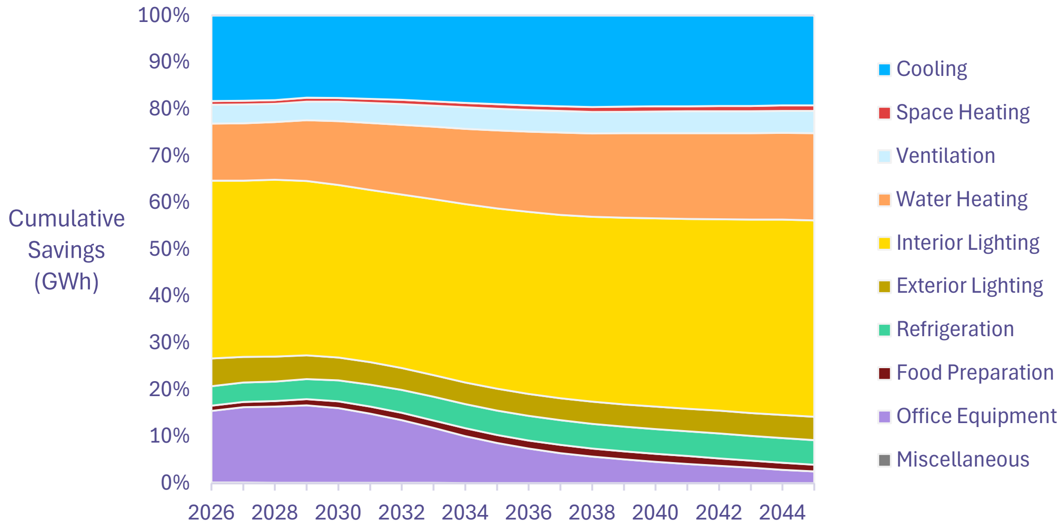


Figure 6-6: Commercial Achievable Potential – Cumulative Savings by End Use (Annual GWh)

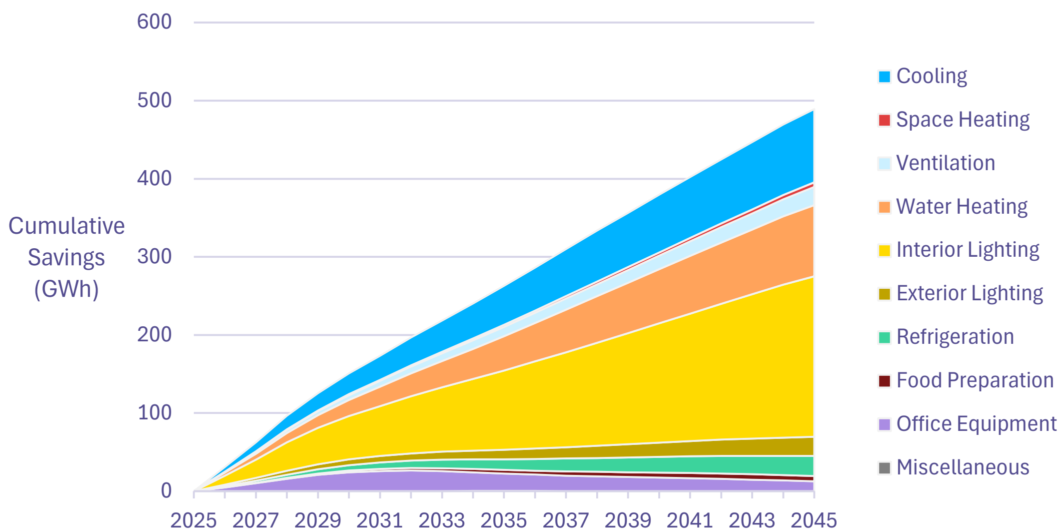


Table 6-6: Commercial Achievable Potential by End Use and Segment, 2035

End Use	Small Office	Large Office	Restaurant	Retail	Grocery	College
Cooling	8,798	2,227	1,478	15,109	1,120	5,999
Space Heating	658	300	19	258	87	346
Ventilation	1,005	1,116	582	1,858	587	1,136
Water Heating	4,717	2,636	2,446	6,914	689	6,592
Interior Lighting	6,723	6,861	1,336	32,005	5,722	3,587

Exterior Lighting	864	923	160	2,852	500	270
Refrigeration	100	219	1,845	325	9,446	639
Food Preparation	109	368	903	662	199	365
Office Equipment	3,602	7,802	181	207	107	6,286
Miscellaneous	8	1	0	0	1	77
Total	**26,583**	**22,453**	**8,949**	**60,191**	**18,457**	**25,299**

End Use	School	Health	Lodging	Warehouse	Miscellaneous
Cooling	2,367	1,550	2,713	3,520	4,882
Space Heating	240	126	295	61	224
Ventilation	61	1,405	770	377	3,152
Water Heating	1,359	1,790	9,764	719	6,221
Interior Lighting	6,811	4,645	1,147	6,270	26,164
Exterior Lighting	366	156	144	3,388	2,616
Refrigeration	326	365	62	10	403
Food Preparation	510	396	121	3	937
Office Equipment	2,060	874	106	118	1,090
Miscellaneous	7	3	48	6	38
Total	**14,107**	**11,311**	**15,171**	**14,472**	**45,726**

Industrial Potential

Table 6-9 and Figure 6-7 present potential estimates for three levels of conservation potential for the industrial sector. As a percentage of the baseline projection, industrial savings are the lowest as a result of stringent motor standards and the challenges of identifying additional opportunities to reduce process energy use. Other savings come from lighting conversions and system optimization measures.

Table 6-7: Summary of Industrial Conservation Potential for Selected Years

Summary of Energy Savings	2026	2027	2030	2035	2045
Baseline Forecast (GWh)	1,847	1,905	1,897	1,883	1,874
Cumulative Savings (GWh)					
Achievable Potential	6	13	30	58	84
Program Potential	8	17	39	73	126
Economic Potential	10	21	50	93	131
Technical Potential	13	26	62	115	158
Energy Savings (% of Baseline)					
Achievable Potential	0.3%	0.7%	1.6%	3.1%	4.5%
Program Potential	0.4%	0.9%	2.1%	3.9%	6.7%
Economic Potential	0.6%	1.1%	2.6%	4.9%	7.0%
Technical Potential	0.7%	1.4%	3.3%	6.1%	8.4%

Figure 6-7: Summary of Industrial Potential (% of Baseline)

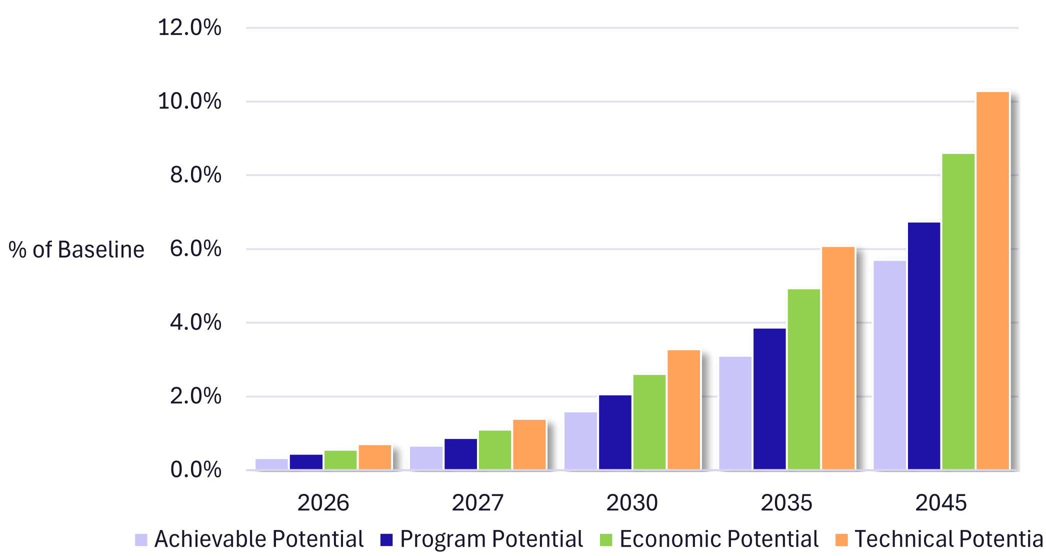


Table 6-10 identifies the top 20 industrial measures in 2035. The top savings opportunities consist of lighting upgrades and motor upgrades and optimization measures.

Table 6-8: Industrial Sector Top Measures in 2035

Rank	Measure / Technology	2035 Achievable Potential (MWh)	% of Total
1	Linear Lighting	13,008	22.3%
2	High-Bay Lighting	11,666	20.0%
3	Advanced Industrial Motors	5,024	8.6%
4	Pumping System - System Optimization	4,259	7.3%
5	Compressed Air - End Use Optimization	3,440	5.9%
6	RTU	3,119	5.3%
7	Insulation - Ceiling	2,866	4.9%
8	Fan System - Flow Optimization	2,169	3.7%
9	Fan System - Controls	1,818	3.1%
10	Fan System - Equipment Upgrade	1,482	2.5%
11	Building Operator Certification	1,361	2.3%
12	Air-Cooled Chiller	1,119	1.9%
13	Municipal Sewage Treatment - Optimization	924	1.6%
14	Compressed Air - Variable Speed Drive	719	1.2%
15	High Frequency Battery Chargers	653	1.1%
16	Compressed Air - Dryer Optimization and Replacement	648	1.1%
17	Motors - Green Rewind (<100 HP)	578	1.0%
18	Process Cooling - Upgrade and Optimization	529	0.9%
19	Material Handling - Upgrade and Optimization	455	0.8%
20	Pumping System - Equipment Upgrade	454	0.8%
	Total Savings from Top 20 Measures	**56,289**	**96.3%**
	Total Savings from All Measures	**58,422**	**100.0%**

Figure 6-8 presents the energy savings forecast by end use as a percent of total annual savings. Figure 6-9 presents the energy savings forecast by end use as cumulative savings. Motor-related measures and lighting account for most of the savings throughout the forecast horizon.

Figure 6-8: Industrial Achievable Potential – Cumulative Savings by End Use (% of Total)

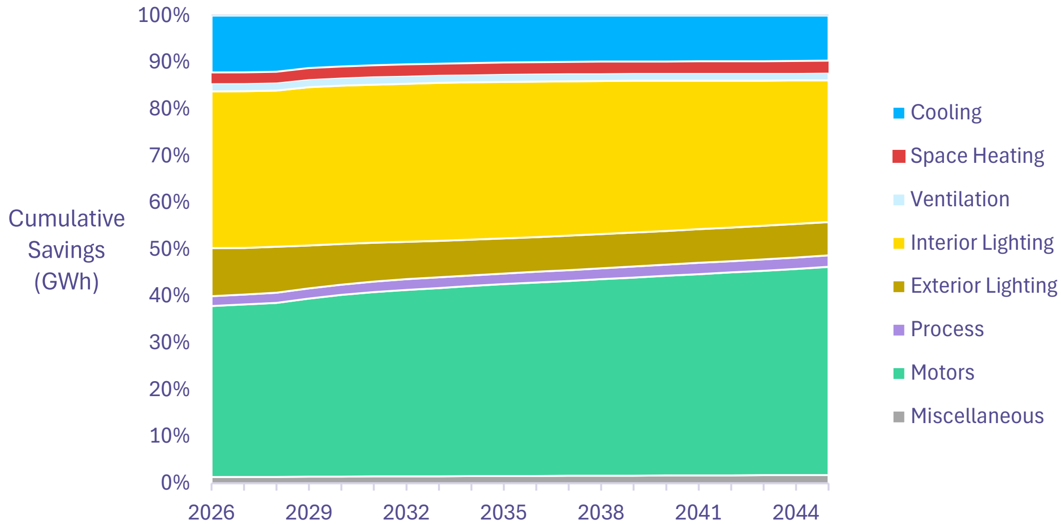


Figure 6-9: Industrial Achievable Potential – Cumulative Savings by End Use (GWh)

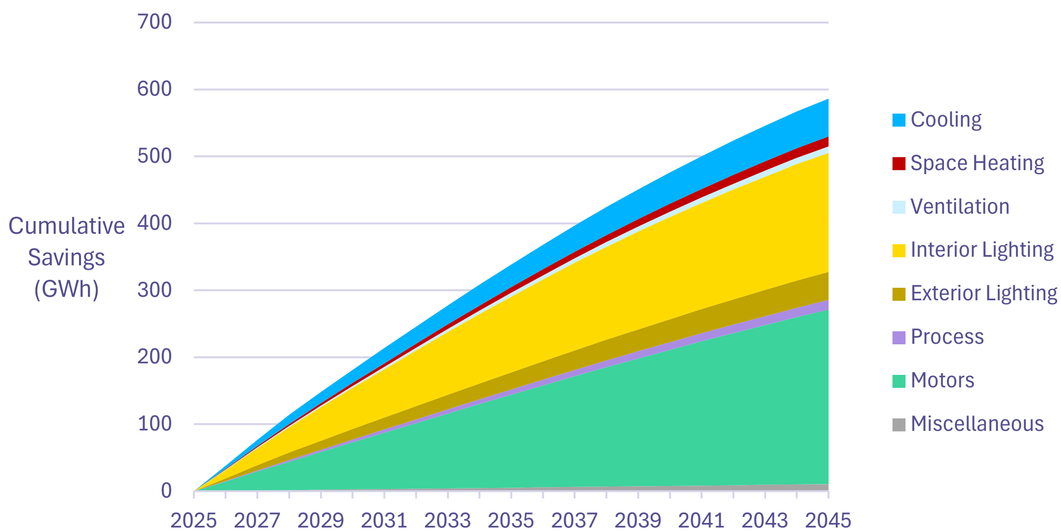


Table 6-9: Industrial Achievable Potential by End Use, MWh in 2035

End Use	Industrial
Cooling	5,912
Space Heating	1,139
Ventilation	889
Interior Lighting	19,288
Exterior Lighting	5,671
Process	23,332
Motors	1,377
Misc.	814
Total	58,422

7 Appendix A. Market Profiles

As described in Chapter 1 of this study, market profiles describe electricity use by sector, segment, end use and technology in the base year of the study (2024). The market profiles are given for average, existing buildings.

Chapter 3 includes market profiles for sectors as a whole, and this workbook contains segment-level detail within each sector. This appendix present market profiles for all modeled segments.

Table 7-1 Single Family, Residential Average Market Profile, 2024

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Central AC	52.2%	4,415.60	2,305.83	689.65
	Room AC	4.2%	758.10	31.61	9.46
	Evaporative Cooler	30.6%	1,229.30	375.67	112.36
	Portable AC	1.1%	758.10	8.29	2.48
	Air-Source Heat Pump	2.5%	4,344.35	108.61	32.48
	Geothermal Heat Pump	0.3%	4,194.25	11.74	3.51
	Ductless Mini Split Heat Pump	3.1%	628.10	19.22	5.75
Space Heating	Electric Furnace	7.7%	5,455.30	422.79	126.45
	Electric Room Heat	2.5%	403.85	10.10	3.02
	Air-Source Heat Pump	2.5%	2,785.45	69.64	20.83
	Geothermal Heat Pump	0.3%	3,164.13	8.86	2.65
	Ductless Mini Split Heat Pump	3.1%	348.10	10.65	3.19
Water Heating	Water Heater (<= 55 Gal)	9.8%	2,310.44	227.17	67.94
	Water Heater (> 55 Gal)	4.6%	1,267.63	58.41	17.47
Interior Lighting	General Service Lighting	100.0%	759.22	759.22	227.08
	Linear Lighting	100.0%	48.91	48.91	14.63
	Exempted Lighting	100.0%	6.16	6.16	1.84
Exterior Lighting	General Service Lighting	100.0%	268.94	268.94	80.44
Appliances	Refrigerator	100.0%	528.96	528.96	158.21
	Second Refrigerator	17.6%	560.99	98.67	29.51
	Freezer	41.5%	450.85	186.93	55.91
	Clothes Washer	97.8%	206.95	202.36	60.52
	Clothes Dryer	70.0%	758.18	530.72	158.73
	Dishwasher	92.8%	270.00	250.53	74.93
	Stove/Oven	33.3%	157.13	52.39	15.67
	Microwave	101.1%	109.84	111.07	33.22
	Dehumidifier	11.2%	581.12	64.85	19.40
	Air Purifier	53.6%	99.30	53.22	15.92
Electronics	Personal Computers	68.8%	105.77	72.74	21.76
	Monitor	97.4%	54.09	52.70	15.76
	Laptops	128.4%	26.36	33.83	10.12
	Imaging Equipment	87.1%	34.68	30.21	9.04
	TVs	224.3%	67.21	150.77	45.09
	Set-top Boxes/DVRs	267.1%	83.44	222.86	66.65
	Devices and Gadgets	100.0%	127.59	127.59	38.16
Miscellaneous	EV Supply Equipment	5.3%	2,259.13	119.33	35.69
	Pool Heater	1.1%	862.29	9.59	2.87
	Pool Pump	5.6%	1,313.00	73.00	21.83
	Hot Tub/Spa	5.0%	1,977.06	98.85	29.57
	Furnace Fan	75.8%	372.55	282.51	84.50
	Bathroom Exhaust Fan	116.7%	45.74	53.37	15.96
	Well Pump	0.0%	523.00	-	-
	Miscellaneous	100.0%	655.51	655.51	196.06
Generation	Solar PV	13.6%	(9,390.20)	(1,279.82)	(382.78)
	Total			**7,534.56**	**2,253.51**

Table 7-2 Single Family Low Income, Residential Average Market Profile, 2024

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Central AC	42.1%	3,412.50	1,437.00	103.47
	Room AC	7.9%	558.60	44.07	3.17
	Evaporative Cooler	44.7%	950.04	425.05	30.60
	Portable AC	0.0%	558.60	-	-
	Air-Source Heat Pump	2.6%	3,352.30	88.17	6.35
	Geothermal Heat Pump	0.0%	3,236.10	-	-
	Ductless Mini Split Heat Pump	2.6%	462.10	12.15	0.88
Space Heating	Electric Furnace	8.2%	7,102.50	579.80	41.75
	Electric Room Heat	18.4%	551.14	101.23	7.29
	Air-Source Heat Pump	2.6%	3,616.50	95.11	6.85
	Geothermal Heat Pump	0.0%	4,128.00	-	-
	Ductless Mini Split Heat Pump	2.6%	473.75	12.46	0.90
Water Heating	Water Heater (<= 55 Gal)	18.3%	2,310.44	422.75	30.44
	Water Heater (> 55 Gal)	10.7%	1,267.63	135.03	9.72
Interior Lighting	General Service Lighting	100.0%	616.69	616.69	44.40
	Linear Lighting	100.0%	35.09	35.09	2.53
	Exempted Lighting	100.0%	5.02	5.02	0.36
Exterior Lighting	General Service Lighting	100.0%	242.00	242.00	17.42
Appliances	Refrigerator	100.0%	528.96	528.96	38.09
	Second Refrigerator	9.3%	560.99	51.99	3.74
	Freezer	42.2%	450.85	190.09	13.69
	Clothes Washer	97.4%	206.95	201.51	14.51
	Clothes Dryer	76.3%	758.18	578.64	41.66
	Dishwasher	92.8%	270.00	250.53	18.04
	Stove/Oven	36.7%	157.13	57.60	4.15
	Microwave	100.0%	109.84	109.84	7.91
	Dehumidifier	18.9%	581.12	109.89	7.91
	Air Purifier	38.9%	99.30	38.62	2.78
Electronics	Personal Computers	62.2%	105.77	65.75	4.73
	Monitor	76.3%	54.09	41.26	2.97
	Laptops	89.5%	26.36	23.58	1.70
	Imaging Equipment	70.3%	34.68	24.37	1.75
	TVs	273.7%	67.21	183.92	13.24
	Set-top Boxes/DVRs	358.8%	83.44	299.39	21.56
	Devices and Gadgets	100.0%	127.59	127.59	9.19
Miscellaneous	EV Supply Equipment	0.0%	2,259.13	-	-
	Pool Heater	0.0%	862.29	-	-
	Pool Pump	5.3%	1,313.00	69.06	4.97
	Hot Tub/Spa	2.0%	2,737.68	54.75	3.94
	Furnace Fan	65.8%	372.55	245.07	17.65
	Bathroom Exhaust Fan	97.8%	45.74	44.73	3.22
	Well Pump	0.0%	523.00	-	-
	Miscellaneous	100.0%	118.30	118.30	8.52
Generation	Solar PV	1.8%	(9,390.20)	(168.30)	(12.12)
	Total			**7,498.77**	**539.94**

Table 7-3 Multifamily, Residential Average Market Profile, 2024

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Central AC	48.6%	2,316.36	1,125.98	21.83
	Room AC	6.9%	997.50	69.23	1.34
	Evaporative Cooler	33.3%	667.50	222.48	4.31
	Portable AC	0.0%	997.50	-	-
	Air-Source Heat Pump	4.2%	2,112.29	88.08	1.71
	Geothermal Heat Pump	0.0%	2,039.31	-	-
	Ductless Mini Split Heat Pump	1.4%	766.00	10.65	0.21
Space Heating	Electric Furnace	12.5%	780.42	97.55	1.89
	Electric Room Heat	18.8%	121.62	22.80	0.44
	Air-Source Heat Pump	4.2%	861.67	35.93	0.70
	Geothermal Heat Pump	0.0%	978.81	-	-
	Ductless Mini Split Heat Pump	1.4%	226.69	3.15	0.06
Water Heating	Water Heater (<= 55 Gal)	31.9%	1,628.23	520.06	10.08
	Water Heater (> 55 Gal)	0.0%	773.03	-	-
Interior Lighting	General Service Lighting	100.0%	546.31	546.31	10.59
	Linear Lighting	100.0%	107.64	107.64	2.09
	Exempted Lighting	100.0%	0.91	0.91	0.02
Exterior Lighting	General Service Lighting	100.0%	107.73	107.73	2.09
Appliances	Refrigerator	100.0%	442.76	442.76	8.58
	Second Refrigerator	7.3%	473.01	34.30	0.66
	Freezer	31.0%	460.37	142.62	2.76
	Clothes Washer	76.4%	138.25	105.61	2.05
	Clothes Dryer	62.5%	517.41	323.38	6.27
	Dishwasher	78.8%	196.89	155.07	3.01
	Stove/Oven	65.7%	133.68	87.80	1.70
	Microwave	91.7%	108.45	99.42	1.93
	Dehumidifier	14.5%	637.58	92.39	1.79
	Air Purifier	33.3%	99.30	33.11	0.64
Electronics	Personal Computers	47.2%	105.77	49.95	0.97
	Monitor	66.2%	54.09	35.81	0.69
	Laptops	105.9%	26.36	27.91	0.54
	Imaging Equipment	60.0%	34.68	20.81	0.40
	TVs	154.2%	67.21	103.61	2.01
	Set-top Boxes/DVRs	165.9%	83.44	138.39	2.68
	Devices and Gadgets	100.0%	127.59	127.59	2.47
Miscellaneous	EV Supply Equipment	4.2%	2,259.13	94.20	1.83
	Pool Heater	0.0%	862.29	-	-
	Pool Pump	4.2%	1,313.00	54.75	1.06
	Hot Tub/Spa	0.0%	1,542.11	-	-
	Furnace Fan	61.1%	63.89	39.05	0.76
	Bathroom Exhaust Fan	71.9%	45.74	32.90	0.64
	Well Pump	0.0%	523.00	-	-
	Miscellaneous	100.0%	301.17	301.17	5.84
Generation	Solar PV	4.7%	(9,390.20)	(444.10)	(8.61)
	Total			**5,057.00**	**98.03**

Table 7-4 Multifamily Low Income & Manufactured Home, Residential Average Market Profile, 2024

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Central AC	25.1%	1,963.52	493.33	50.55
	Room AC	24.7%	399.00	98.41	10.08
	Evaporative Cooler	37.3%	554.00	206.79	21.19
	Portable AC	0.0%	399.00	-	-
	Air-Source Heat Pump	0.0%	1,790.49	-	-
	Geothermal Heat Pump	0.0%	1,728.55	-	-
	Ductless Mini Split Heat Pump	0.0%	306.39	-	-
Space Heating	Electric Furnace	9.4%	2,229.18	209.37	21.45
	Electric Room Heat	14.0%	396.02	55.52	5.69
	Air-Source Heat Pump	0.0%	1,301.00	-	-
	Geothermal Heat Pump	0.0%	1,499.39	-	-
	Ductless Mini Split Heat Pump	0.0%	390.17	-	-
Water Heating	Water Heater (<= 55 Gal)	31.5%	2,033.87	639.79	65.56
	Water Heater (> 55 Gal)	0.0%	1,067.11	-	-
Interior Lighting	General Service Lighting	100.0%	508.86	508.86	52.14
	Linear Lighting	100.0%	58.04	58.04	5.95
	Exempted Lighting	100.0%	2.42	2.42	0.25
Exterior Lighting	General Service Lighting	100.0%	161.39	161.39	16.54
Appliances	Refrigerator	100.0%	371.00	371.00	38.01
	Second Refrigerator	0.0%	395.35	-	-
	Freezer	49.6%	494.16	245.05	25.11
	Clothes Washer	84.3%	139.25	117.36	12.03
	Clothes Dryer	74.9%	443.13	331.86	34.00
	Dishwasher	58.1%	108.63	63.07	6.46
	Stove/Oven	31.6%	133.38	42.20	4.32
	Microwave	100.2%	68.41	68.54	7.02
	Dehumidifier	7.9%	883.29	69.71	7.14
	Air Purifier	40.6%	99.30	40.31	4.13
Electronics	Personal Computers	38.8%	105.77	41.07	4.21
	Monitor	61.9%	54.09	33.47	3.43
	Laptops	88.1%	26.36	23.23	2.38
	Imaging Equipment	69.4%	34.68	24.08	2.47
	TVs	202.0%	67.21	135.74	13.91
	Set-top Boxes/DVRs	248.7%	83.44	207.49	21.26
	Devices and Gadgets	100.0%	127.58	127.58	13.07
Miscellaneous	EV Supply Equipment	2.2%	2,259.13	49.60	5.08
	Pool Heater	0.0%	862.29	-	-
	Pool Pump	4.2%	1,313.00	54.51	5.58
	Hot Tub/Spa	0.0%	2,520.21	-	-
	Furnace Fan	49.3%	94.39	46.57	4.77
	Bathroom Exhaust Fan	80.2%	45.74	36.70	3.76
	Well Pump	0.0%	523.00	-	-
	Miscellaneous	100.0%	132.55	132.55	13.58
Generation	Solar PV	1.9%	(9,390.20)	(181.62)	(18.61)
	Total			**4,514.01**	**462.53**

Table 7-5 Small Office, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	4.5%	4.61	0.21	7.05
	Water-Cooled Chiller	7.1%	3.15	0.22	7.54
	RTU	56.1%	3.32	1.86	62.70
	Packaged Terminal AC	10.2%	4.00	0.41	13.79
	Packaged Terminal HP	0.7%	4.46	0.03	1.06
	Air-Source Heat Pump	6.2%	4.46	0.28	9.38
	Geothermal Heat Pump	2.1%	3.29	0.07	2.31
Space Heating	Electric Furnace	26.8%	4.19	1.12	37.90
	Electric Room Heat	0.0%	3.99	-	-
	Air-Source Heat Pump	6.2%	3.70	0.23	7.79
	Packaged Terminal HP	0.7%	3.33	0.02	0.79
	Geothermal Heat Pump	2.1%	3.50	0.07	2.46
Ventilation	Ventilation	100.0%	2.56	2.56	86.42
Water Heating	Water Heater	92.4%	0.87	0.81	27.18
Interior Lighting	General Service Lighting	100.0%	0.40	0.40	13.66
	Exempted Lighting	100.0%	0.00	0.00	0.11
	Linear Lighting	100.0%	1.99	1.99	66.99
	High-Bay Lighting	100.0%	0.03	0.03	0.97
Exterior Lighting	General Service Lighting	100.0%	0.19	0.19	6.46
	Linear Lighting	100.0%	0.20	0.20	6.74
	Area Lighting	100.0%	0.09	0.09	2.91
Refrigeration	Walk-in Refrigerator/Freezer	0.0%	0.63	-	-
	Reach-in Refrigerator/Freezer	8.8%	0.38	0.03	1.12
	Glass Door Display	0.0%	0.39	-	-
	Open Display Case	0.0%	1.26	-	-
	Icemaker	5.1%	0.64	0.03	1.10
	Vending Machine	5.1%	0.41	0.02	0.70
Food Preparation	Oven	1.5%	1.21	0.02	0.61
	Fryer	1.5%	1.74	0.03	0.88
	Dishwasher	1.5%	1.10	0.02	0.56
	Hot Food Container	1.5%	0.33	0.00	0.17
	Steamer	1.5%	1.76	0.03	0.89
	Griddle	1.5%	1.71	0.03	0.86
Office Equipment	Desktop Computer	100.0%	0.61	0.61	20.64
	Laptop	100.0%	0.19	0.19	6.38
	Monitor	100.0%	0.11	0.11	3.64
	Server	100.0%	0.23	0.23	7.76
	Imaging Equipment	100.0%	0.03	0.03	1.06
	POS Terminal	20.0%	0.03	0.01	0.22
Miscellaneous	Non-HVAC Motors	22.0%	0.51	0.11	3.76
	Pool Pump	0.0%	0.00	-	-
	Pool Heater	0.0%	0.00	-	-
	EV Supply Equipment	6.2%	0.05	0.00	0.11
	Clothes Washer	0.0%	0.00	-	-
	Clothes Dryer	0.0%	0.00	-	-
	Miscellaneous	100.0%	0.13	0.13	4.34
Generation	Solar PV	1.9%	(16.92)	(0.32)	(10.87)
	Total			**12.10**	**408.15**

Table 7-6 Large Office, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	5.1%	2.71	0.14	3.76
	Water-Cooled Chiller	23.6%	1.89	0.45	12.12
	RTU	22.7%	1.89	0.43	11.65
	Packaged Terminal AC	27.5%	2.28	0.63	16.98
	Packaged Terminal HP	0.7%	2.54	0.02	0.49
	Air-Source Heat Pump	3.4%	2.54	0.09	2.36
	Geothermal Heat Pump	4.4%	1.87	0.08	2.25
Space Heating	Electric Furnace	33.2%	1.60	0.53	14.35
	Electric Room Heat	0.0%	1.52	-	-
	Air-Source Heat Pump	3.4%	1.43	0.05	1.33
	Packaged Terminal HP	0.7%	1.29	0.01	0.25
	Geothermal Heat Pump	4.4%	1.38	0.06	1.66
Ventilation	Ventilation	100.0%	3.23	3.23	87.52
Water Heating	Water Heater	56.8%	0.98	0.56	15.15
Interior Lighting	General Service Lighting	100.0%	0.51	0.51	13.94
	Exempted Lighting	100.0%	0.00	0.00	0.11
	Linear Lighting	100.0%	2.52	2.52	68.37
	High-Bay Lighting	100.0%	0.04	0.04	0.99
Exterior Lighting	General Service Lighting	100.0%	0.10	0.10	2.71
	Linear Lighting	100.0%	0.27	0.27	7.28
	Area Lighting	100.0%	0.11	0.11	2.96
Refrigeration	Walk-in Refrigerator/Freezer	2.0%	0.13	0.00	0.07
	Reach-in Refrigerator/Freezer	14.0%	0.76	0.11	2.89
	Glass Door Display	4.0%	0.39	0.02	0.42
	Open Display Case	1.3%	0.25	0.00	0.09
	Icemaker	44.9%	0.13	0.06	1.56
	Vending Machine	44.9%	0.16	0.07	1.98
Food Preparation	Oven	66.0%	0.24	0.16	4.32
	Fryer	76.4%	0.35	0.27	7.23
	Dishwasher	20.0%	0.22	0.04	1.19
	Hot Food Container	20.0%	0.07	0.01	0.36
	Steamer	20.0%	0.35	0.07	1.91
	Griddle	20.0%	0.34	0.07	1.85
Office Equipment	Desktop Computer	100.0%	1.22	1.22	33.20
	Laptop	100.0%	0.38	0.38	10.25
	Monitor	100.0%	0.22	0.22	5.86
	Server	100.0%	1.38	1.38	37.43
	Imaging Equipment	100.0%	0.06	0.06	1.70
	POS Terminal	40.0%	0.03	0.01	0.35
Miscellaneous	Non-HVAC Motors	89.6%	1.01	0.91	24.66
	Pool Pump	0.0%	0.02	-	-
	Pool Heater	0.0%	0.03	-	-
	EV Supply Equipment	6.2%	0.01	0.00	0.02
	Clothes Washer	0.0%	0.01	-	-
	Clothes Dryer	0.0%	0.02	-	-
	Miscellaneous	100.0%	0.18	0.18	5.01
Generation	Solar PV	1.9%	(16.92)	(0.32)	(8.74)
	Total			**14.74**	**399.84**

Table 7-7 Restaurant, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	14.6%	6.35	0.93	5.91
	Water-Cooled Chiller	0.0%	4.58	-	-
	RTU	54.4%	4.72	2.57	16.38
	Packaged Terminal AC	6.5%	5.69	0.37	2.36
	Packaged Terminal HP	1.7%	6.35	0.11	0.68
	Air-Source Heat Pump	0.5%	6.35	0.03	0.22
	Geothermal Heat Pump	0.0%	4.68	-	-
Space Heating	Electric Furnace	8.7%	3.52	0.31	1.95
	Electric Room Heat	0.0%	3.36	-	-
	Air-Source Heat Pump	0.5%	2.33	0.01	0.08
	Packaged Terminal HP	1.7%	2.10	0.04	0.22
	Geothermal Heat Pump	0.0%	1.93	-	-
Ventilation	Ventilation	100.0%	5.76	5.76	36.71
Water Heating	Water Heater	26.2%	7.52	1.97	12.53
Interior Lighting	General Service Lighting	100.0%	2.38	2.38	15.19
	Exempted Lighting	100.0%	0.02	0.02	0.13
	Linear Lighting	100.0%	2.11	2.11	13.42
	High-Bay Lighting	100.0%	0.04	0.04	0.27
Exterior Lighting	General Service Lighting	100.0%	0.28	0.28	1.81
	Linear Lighting	100.0%	0.21	0.21	1.33
	Area Lighting	100.0%	0.08	0.08	0.52
Refrigeration	Walk-in Refrigerator/Freezer	74.0%	3.45	2.55	16.28
	Reach-in Refrigerator/Freezer	7.0%	2.07	0.15	0.92
	Glass Door Display	5.2%	0.71	0.04	0.23
	Open Display Case	1.7%	4.57	0.08	0.50
	Icemaker	97.3%	2.32	2.26	14.40
	Vending Machine	97.3%	0.37	0.36	2.29
Food Preparation	Oven	21.0%	4.39	0.92	5.87
	Fryer	82.0%	6.34	5.20	33.13
	Dishwasher	31.7%	4.49	1.43	9.09
	Hot Food Container	84.0%	1.19	1.00	6.39
	Steamer	16.0%	6.40	1.02	6.52
	Griddle	16.0%	6.21	0.99	6.33
Office Equipment	Desktop Computer	100.0%	0.07	0.07	0.47
	Laptop	100.0%	0.02	0.02	0.15
	Monitor	100.0%	0.01	0.01	0.08
	Server	50.0%	0.42	0.21	1.33
	Imaging Equipment	100.0%	0.03	0.03	0.18
	POS Terminal	100.0%	0.06	0.06	0.37
Miscellaneous	Non-HVAC Motors	20.0%	0.92	0.18	1.18
	Pool Pump	0.0%	0.01	-	-
	Pool Heater	0.0%	0.01	-	-
	EV Supply Equipment	0.4%	0.10	0.00	0.00
	Clothes Washer	0.0%	0.00	-	-
	Clothes Dryer	0.0%	0.01	-	-
	Miscellaneous	100.0%	0.07	0.07	0.47
Generation	Solar PV	1.9%	(16.92)	(0.32)	(2.05)
	Total			**33.56**	**213.83**

Table 7-8 Retail, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	0.0%	4.45	-	-
	Water-Cooled Chiller	0.0%	3.11	-	-
	RTU	83.7%	3.12	2.61	113.07
	Packaged Terminal AC	10.8%	3.75	0.41	17.64
	Packaged Terminal HP	0.7%	4.19	0.03	1.24
	Air-Source Heat Pump	2.8%	4.19	0.12	5.05
	Geothermal Heat Pump	0.0%	3.09	-	-
Space Heating	Electric Furnace	22.7%	1.31	0.30	12.84
	Electric Room Heat	0.0%	1.24	-	-
	Air-Source Heat Pump	2.8%	1.08	0.03	1.30
	Packaged Terminal HP	0.7%	0.97	0.01	0.29
	Geothermal Heat Pump	0.0%	0.97	-	-
Ventilation	Ventilation	100.0%	2.38	2.38	102.97
Water Heating	Water Heater	82.6%	0.74	0.61	26.49
Interior Lighting	General Service Lighting	100.0%	0.37	0.37	16.16
	Exempted Lighting	100.0%	0.00	0.00	0.10
	Linear Lighting	100.0%	2.73	2.73	118.12
	High-Bay Lighting	100.0%	0.82	0.82	35.48
Exterior Lighting	General Service Lighting	100.0%	0.55	0.55	23.70
	Linear Lighting	100.0%	0.30	0.30	12.82
	Area Lighting	100.0%	0.09	0.09	4.07
Refrigeration	Walk-in Refrigerator/Freezer	2.0%	0.06	0.00	0.05
	Reach-in Refrigerator/Freezer	10.4%	0.08	0.01	0.34
	Glass Door Display	81.7%	0.08	0.06	2.76
	Open Display Case	27.2%	0.25	0.07	2.97
	Icemaker	52.4%	0.06	0.03	1.45
	Vending Machine	52.4%	0.03	0.02	0.69
Food Preparation	Oven	48.9%	0.17	0.08	3.58
	Fryer	45.2%	0.24	0.11	4.78
	Dishwasher	18.5%	0.15	0.03	1.23
	Hot Food Container	18.5%	0.05	0.01	0.37
	Steamer	18.5%	0.25	0.05	1.98
	Griddle	18.5%	0.24	0.04	1.92
Office Equipment	Desktop Computer	100.0%	0.01	0.01	0.35
	Laptop	100.0%	0.00	0.00	0.11
	Monitor	100.0%	0.00	0.00	0.06
	Server	82.0%	0.02	0.02	0.82
	Imaging Equipment	100.0%	0.00	0.00	0.10
	POS Terminal	100.0%	0.02	0.02	0.69
Miscellaneous	Non-HVAC Motors	40.2%	0.05	0.02	0.88
	Pool Pump	0.0%	0.00	-	-
	Pool Heater	0.0%	0.00	-	-
	EV Supply Equipment	0.4%	0.01	0.00	0.00
	Clothes Washer	7.0%	0.01	0.00	0.04
	Clothes Dryer	4.0%	0.04	0.00	0.07
	Miscellaneous	100.0%	0.05	0.05	2.37
Generation	Solar PV	1.9%	(16.92)	(0.32)	(13.97)
	Total			**11.65**	**504.99**

Table 7-9 Grocery, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	0.0%	3.92	-	-
	Water-Cooled Chiller	0.0%	2.74	-	-
	RTU	77.8%	2.74	2.13	10.42
	Packaged Terminal AC	3.1%	3.71	0.12	0.56
	Packaged Terminal HP	1.3%	3.71	0.05	0.24
	Air-Source Heat Pump	0.8%	3.71	0.03	0.15
	Geothermal Heat Pump	0.0%	2.31	-	-
Space Heating	Electric Furnace	1.1%	16.44	0.17	0.85
	Electric Room Heat	0.0%	15.66	-	-
	Air-Source Heat Pump	0.8%	7.17	0.06	0.29
	Packaged Terminal HP	1.3%	6.46	0.08	0.41
	Geothermal Heat Pump	0.0%	6.25	-	-
Ventilation	Ventilation	100.0%	2.65	2.65	12.95
Water Heating	Water Heater	24.1%	2.10	0.51	2.47
Interior Lighting	General Service Lighting	100.0%	0.72	0.72	3.54
	Exempted Lighting	100.0%	0.00	0.00	0.00
	Linear Lighting	100.0%	5.64	5.64	27.58
	High-Bay Lighting	100.0%	0.38	0.38	1.85
Exterior Lighting	General Service Lighting	100.0%	0.52	0.52	2.55
	Linear Lighting	100.0%	0.47	0.47	2.31
	Area Lighting	100.0%	0.11	0.11	0.56
Refrigeration	Walk-in Refrigerator/Freezer	16.0%	0.95	0.15	0.74
	Reach-in Refrigerator/Freezer	83.1%	2.85	2.37	11.57
	Glass Door Display	95.6%	9.75	9.32	45.55
	Open Display Case	31.9%	12.57	4.00	19.57
	Icemaker	98.9%	0.96	0.95	4.63
	Vending Machine	98.9%	0.51	0.50	2.45
Food Preparation	Oven	11.0%	0.72	0.08	0.39
	Fryer	87.0%	1.05	0.91	4.45
	Dishwasher	25.3%	0.74	0.19	0.92
	Hot Food Container	73.0%	0.20	0.14	0.70
	Steamer	20.0%	1.06	0.21	1.03
	Griddle	48.0%	1.02	0.49	2.40
Office Equipment	Desktop Computer	100.0%	0.02	0.02	0.10
	Laptop	64.0%	0.01	0.00	0.02
	Monitor	100.0%	0.00	0.00	0.02
	Server	100.0%	0.12	0.12	0.56
	Imaging Equipment	100.0%	0.01	0.01	0.04
	POS Terminal	100.0%	0.16	0.16	0.78
Miscellaneous	Non-HVAC Motors	34.6%	0.25	0.09	0.43
	Pool Pump	0.0%	0.00	-	-
	Pool Heater	0.0%	0.00	-	-
	EV Supply Equipment	3.6%	0.03	0.00	0.00
	Clothes Washer	0.0%	0.00	-	-
	Clothes Dryer	0.0%	0.00	-	-
	Miscellaneous	100.0%	0.06	0.06	0.30
Generation	Solar PV	1.9%	(16.92)	(0.32)	(1.57)
	Total			**33.11**	**161.80**

Table 7-10 College, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	5.6%	8.14	0.45	5.69
	Water-Cooled Chiller	0.0%	5.79	-	-
	RTU	7.9%	3.68	0.29	3.66
	Packaged Terminal AC	62.3%	4.43	2.76	34.63
	Packaged Terminal HP	2.3%	4.94	0.11	1.42
	Air-Source Heat Pump	13.6%	4.94	0.67	8.45
	Geothermal Heat Pump	0.0%	3.65	-	-
Space Heating	Electric Furnace	0.0%	8.32	-	-
	Electric Room Heat	0.0%	7.93	-	-
	Air-Source Heat Pump	13.6%	4.87	0.66	8.33
	Packaged Terminal HP	2.3%	4.38	0.10	1.26
	Geothermal Heat Pump	0.0%	4.13	-	-
Ventilation	Ventilation	100.0%	3.98	3.98	49.94
Water Heating	Water Heater	96.7%	2.00	1.94	24.32
Interior Lighting	General Service Lighting	100.0%	0.33	0.33	4.15
	Exempted Lighting	100.0%	0.00	0.00	0.03
	Linear Lighting	100.0%	1.18	1.18	14.79
	High-Bay Lighting	100.0%	0.21	0.21	2.60
Exterior Lighting	General Service Lighting	100.0%	0.07	0.07	0.84
	Linear Lighting	100.0%	0.11	0.11	1.38
	Area Lighting	100.0%	0.00	0.00	0.02
Refrigeration	Walk-in Refrigerator/Freezer	7.7%	0.36	0.03	0.35
	Reach-in Refrigerator/Freezer	13.4%	2.17	0.29	3.64
	Glass Door Display	26.6%	0.22	0.06	0.74
	Open Display Case	8.9%	0.72	0.06	0.80
	Icemaker	26.6%	0.55	0.15	1.83
	Vending Machine	26.6%	0.58	0.15	1.93
Food Preparation	Oven	9.4%	0.86	0.08	1.02
	Fryer	9.4%	1.00	0.09	1.18
	Dishwasher	9.4%	0.88	0.08	1.04
	Hot Food Container	9.4%	0.28	0.03	0.33
	Steamer	9.4%	1.01	0.09	1.19
	Griddle	9.4%	0.98	0.09	1.15
Office Equipment	Desktop Computer	100.0%	1.87	1.87	23.40
	Laptop	100.0%	0.58	0.58	7.23
	Monitor	100.0%	0.33	0.33	4.13
	Server	100.0%	0.33	0.33	4.12
	Imaging Equipment	100.0%	0.13	0.13	1.68
	POS Terminal	36.0%	0.18	0.07	0.83
Miscellaneous	Non-HVAC Motors	88.8%	0.14	0.13	1.62
	Pool Pump	90.3%	0.11	0.10	1.24
	Pool Heater	36.2%	0.14	0.05	0.65
	EV Supply Equipment	6.2%	0.02	0.00	0.01
	Clothes Washer	15.0%	0.03	0.01	0.07
	Clothes Dryer	11.0%	0.11	0.01	0.16
	Miscellaneous	100.0%	0.04	0.04	0.56
Generation	Solar PV	1.9%	(16.92)	(0.32)	(4.04)
	Total			**17.40**	**218.37**

Table 7-11 School, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	5.5%	2.35	0.13	4.19
	Water-Cooled Chiller	24.9%	1.67	0.42	13.41
	RTU	43.9%	1.06	0.47	15.03
	Packaged Terminal AC	4.3%	1.28	0.06	1.78
	Packaged Terminal HP	1.6%	1.43	0.02	0.74
	Air-Source Heat Pump	5.6%	1.43	0.08	2.59
	Geothermal Heat Pump	5.8%	1.05	0.06	1.97
Space Heating	Electric Furnace	22.6%	2.99	0.68	21.78
	Electric Room Heat	0.0%	2.85	-	-
	Air-Source Heat Pump	5.6%	1.75	0.10	3.18
	Packaged Terminal HP	1.6%	1.57	0.03	0.82
	Geothermal Heat Pump	5.8%	1.48	0.09	2.78
Ventilation	Ventilation	100.0%	0.98	0.98	31.46
Water Heating	Water Heater	24.0%	1.00	0.24	7.75
Interior Lighting	General Service Lighting	100.0%	0.18	0.18	5.92
	Exempted Lighting	100.0%	0.00	0.00	0.03
	Linear Lighting	100.0%	1.67	1.67	53.79
	High-Bay Lighting	100.0%	0.27	0.27	8.63
Exterior Lighting	General Service Lighting	100.0%	0.06	0.06	1.88
	Linear Lighting	100.0%	0.11	0.11	3.62
	Area Lighting	100.0%	0.00	0.00	0.09
Refrigeration	Walk-in Refrigerator/Freezer	19.0%	0.21	0.04	1.29
	Reach-in Refrigerator/Freezer	33.0%	0.13	0.04	1.35
	Glass Door Display	65.7%	0.07	0.04	1.38
	Open Display Case	21.9%	0.21	0.05	1.48
	Icemaker	65.7%	0.21	0.14	4.51
	Vending Machine	65.7%	0.07	0.04	1.43
Food Preparation	Oven	37.1%	0.40	0.15	4.81
	Fryer	34.0%	0.58	0.20	6.38
	Dishwasher	16.9%	0.41	0.07	2.25
	Hot Food Container	16.9%	0.11	0.02	0.60
	Steamer	16.9%	0.59	0.10	3.21
	Griddle	16.9%	0.57	0.10	3.11
Office Equipment	Desktop Computer	100.0%	0.27	0.27	8.77
	Laptop	100.0%	0.08	0.08	2.71
	Monitor	100.0%	0.05	0.05	1.55
	Server	100.0%	0.31	0.31	9.89
	Imaging Equipment	100.0%	0.05	0.05	1.68
	POS Terminal	36.0%	0.02	0.01	0.25
Miscellaneous	Non-HVAC Motors	43.7%	0.17	0.07	2.38
	Pool Pump	6.0%	0.13	0.01	0.25
	Pool Heater	1.0%	0.17	0.00	0.05
	EV Supply Equipment	6.2%	0.02	0.00	0.04
	Clothes Washer	15.0%	0.04	0.01	0.20
	Clothes Dryer	11.0%	0.13	0.01	0.46
	Miscellaneous	100.0%	0.01	0.01	0.44
Generation	Solar PV	1.9%	(16.92)	(0.32)	(10.39)
	Total			**7.18**	**231.50**

Table 7-12 Health, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	5.6%	4.85	0.27	2.04
	Water-Cooled Chiller	5.1%	3.21	0.16	1.23
	RTU	45.6%	2.83	1.29	9.70
	Packaged Terminal AC	16.6%	3.41	0.57	4.26
	Packaged Terminal HP	0.0%	3.81	-	-
	Air-Source Heat Pump	11.8%	3.81	0.45	3.39
	Geothermal Heat Pump	6.4%	2.81	0.18	1.35
Space Heating	Electric Furnace	5.1%	7.77	0.40	2.98
	Electric Room Heat	0.0%	7.40	-	-
	Air-Source Heat Pump	11.8%	4.50	0.53	4.00
	Packaged Terminal HP	0.0%	4.05	-	-
	Geothermal Heat Pump	6.4%	3.62	0.23	1.74
Ventilation	Ventilation	100.0%	6.17	6.17	46.31
Water Heating	Water Heater	31.9%	2.79	0.89	6.68
Interior Lighting	General Service Lighting	100.0%	0.72	0.72	5.42
	Exempted Lighting	100.0%	0.01	0.01	0.04
	Linear Lighting	100.0%	2.58	2.58	19.35
	High-Bay Lighting	100.0%	0.45	0.45	3.40
Exterior Lighting	General Service Lighting	100.0%	0.06	0.06	0.44
	Linear Lighting	100.0%	0.09	0.09	0.69
	Area Lighting	100.0%	0.03	0.03	0.21
Refrigeration	Walk-in Refrigerator/Freezer	33.0%	0.42	0.14	1.05
	Reach-in Refrigerator/Freezer	50.0%	0.25	0.13	0.95
	Glass Door Display	90.4%	0.13	0.12	0.88
	Open Display Case	30.1%	0.84	0.25	1.89
	Icemaker	90.4%	0.43	0.38	2.89
	Vending Machine	90.4%	0.34	0.31	2.29
Food Preparation	Oven	69.7%	0.40	0.28	2.10
	Fryer	80.7%	0.58	0.47	3.52
	Dishwasher	30.9%	0.82	0.25	1.91
	Hot Food Container	30.9%	0.22	0.07	0.51
	Steamer	30.9%	0.59	0.18	1.36
	Griddle	30.9%	0.57	0.18	1.32
Office Equipment	Desktop Computer	100.0%	0.27	0.27	2.04
	Laptop	100.0%	0.08	0.08	0.63
	Monitor	100.0%	0.05	0.05	0.36
	Server	100.0%	0.38	0.38	2.88
	Imaging Equipment	100.0%	0.03	0.03	0.20
	POS Terminal	100.0%	0.03	0.03	0.24
Miscellaneous	Non-HVAC Motors	74.1%	4.23	3.13	23.52
	Pool Pump	0.0%	0.03	-	-
	Pool Heater	0.0%	0.03	-	-
	EV Supply Equipment	2.7%	0.02	0.00	0.00
	Clothes Washer	63.0%	0.04	0.03	0.19
	Clothes Dryer	58.0%	0.13	0.08	0.57
	Miscellaneous	100.0%	0.45	0.45	3.40
Generation	Solar PV	1.9%	(16.92)	(0.32)	(2.42)
	Total			**22.05**	**165.51**

Table 7-13 Lodging, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	3.2%	1.78	0.06	1.15
	Water-Cooled Chiller	11.9%	1.21	0.14	2.95
	RTU	25.5%	4.00	1.02	20.78
	Packaged Terminal AC	10.6%	4.08	0.43	8.87
	Packaged Terminal HP	15.3%	4.14	0.64	12.96
	Air-Source Heat Pump	15.7%	4.14	0.65	13.26
	Geothermal Heat Pump	14.7%	3.99	0.59	12.00
Space Heating	Electric Furnace	9.5%	1.18	0.11	2.29
	Electric Room Heat	0.0%	1.13	-	-
	Air-Source Heat Pump	15.7%	1.02	0.16	3.27
	Packaged Terminal HP	15.3%	0.92	0.14	2.88
	Geothermal Heat Pump	14.7%	1.57	0.23	4.71
Ventilation	Ventilation	100.0%	4.01	4.01	81.82
Water Heating	Water Heater	94.7%	2.99	2.83	57.77
Interior Lighting	General Service Lighting	100.0%	2.06	2.06	42.11
	Exempted Lighting	100.0%	0.01	0.01	0.18
	Linear Lighting	100.0%	0.56	0.56	11.40
	High-Bay Lighting	100.0%	0.02	0.02	0.37
Exterior Lighting	General Service Lighting	100.0%	0.15	0.15	2.99
	Linear Lighting	100.0%	0.03	0.03	0.54
	Area Lighting	100.0%	0.08	0.08	1.64
Refrigeration	Walk-in Refrigerator/Freezer	3.0%	0.12	0.00	0.07
	Reach-in Refrigerator/Freezer	19.0%	0.07	0.01	0.27
	Glass Door Display	58.9%	0.07	0.04	0.85
	Open Display Case	19.6%	0.23	0.04	0.92
	Icemaker	58.9%	0.12	0.07	1.40
	Vending Machine	58.9%	0.07	0.04	0.89
Food Preparation	Oven	13.8%	0.22	0.03	0.62
	Fryer	21.0%	0.32	0.07	1.36
	Dishwasher	15.3%	0.20	0.03	0.62
	Hot Food Container	15.3%	0.06	0.01	0.19
	Steamer	15.3%	0.32	0.05	1.00
	Griddle	15.3%	0.31	0.05	0.97
Office Equipment	Desktop Computer	100.0%	0.03	0.03	0.61
	Laptop	100.0%	0.01	0.01	0.19
	Monitor	100.0%	0.00	0.00	0.03
	Server	100.0%	0.01	0.01	0.21
	Imaging Equipment	100.0%	0.01	0.01	0.12
	POS Terminal	58.0%	0.01	0.01	0.14
Miscellaneous	Non-HVAC Motors	91.3%	0.09	0.08	1.72
	Pool Pump	76.0%	0.07	0.05	1.08
	Pool Heater	27.0%	0.09	0.02	0.50
	EV Supply Equipment	2.5%	0.01	0.00	0.00
	Clothes Washer	67.0%	0.02	0.01	0.30
	Clothes Dryer	26.0%	0.07	0.02	0.38
	Miscellaneous	100.0%	0.06	0.06	1.24
Generation	Solar PV	1.9%	(16.92)	(0.32)	(6.58)
	Total			**14.36**	**293.01**

Table 7-14 Lodging, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	3.2%	1.78	0.06	1.15
	Water-Cooled Chiller	11.9%	1.21	0.14	2.95
	RTU	25.5%	4.00	1.02	20.78
	Packaged Terminal AC	10.6%	4.08	0.43	8.87
	Packaged Terminal HP	15.3%	4.14	0.64	12.96
	Air-Source Heat Pump	15.7%	4.14	0.65	13.26
	Geothermal Heat Pump	14.7%	3.99	0.59	12.00
Space Heating	Electric Furnace	9.5%	1.18	0.11	2.29
	Electric Room Heat	0.0%	1.13	-	-
	Air-Source Heat Pump	15.7%	1.02	0.16	3.27
	Packaged Terminal HP	15.3%	0.92	0.14	2.88
	Geothermal Heat Pump	14.7%	1.57	0.23	4.71
Ventilation	Ventilation	100.0%	4.01	4.01	81.82
Water Heating	Water Heater	94.7%	2.99	2.83	57.77
Interior Lighting	General Service Lighting	100.0%	2.06	2.06	42.11
	Exempted Lighting	100.0%	0.01	0.01	0.18
	Linear Lighting	100.0%	0.56	0.56	11.40
	High-Bay Lighting	100.0%	0.02	0.02	0.37
Exterior Lighting	General Service Lighting	100.0%	0.15	0.15	2.99
	Linear Lighting	100.0%	0.03	0.03	0.54
	Area Lighting	100.0%	0.08	0.08	1.64
Refrigeration	Walk-in Refrigerator/Freezer	3.0%	0.12	0.00	0.07
	Reach-in Refrigerator/Freezer	19.0%	0.07	0.01	0.27
	Glass Door Display	58.9%	0.07	0.04	0.85
	Open Display Case	19.6%	0.23	0.04	0.92
	Icemaker	58.9%	0.12	0.07	1.40
	Vending Machine	58.9%	0.07	0.04	0.89
Food Preparation	Oven	13.8%	0.22	0.03	0.62
	Fryer	21.0%	0.32	0.07	1.36
	Dishwasher	15.3%	0.20	0.03	0.62
	Hot Food Container	15.3%	0.06	0.01	0.19
	Steamer	15.3%	0.32	0.05	1.00
	Griddle	15.3%	0.31	0.05	0.97
Office Equipment	Desktop Computer	100.0%	0.03	0.03	0.61
	Laptop	100.0%	0.01	0.01	0.19
	Monitor	100.0%	0.00	0.00	0.03
	Server	100.0%	0.01	0.01	0.21
	Imaging Equipment	100.0%	0.01	0.01	0.12
	POS Terminal	58.0%	0.01	0.01	0.14
Miscellaneous	Non-HVAC Motors	91.3%	0.09	0.08	1.72
	Pool Pump	76.0%	0.07	0.05	1.08
	Pool Heater	27.0%	0.09	0.02	0.50
	EV Supply Equipment	2.5%	0.01	0.00	0.00
	Clothes Washer	67.0%	0.02	0.01	0.30
	Clothes Dryer	26.0%	0.07	0.02	0.38
	Miscellaneous	100.0%	0.06	0.06	1.24
Generation	Solar PV	1.9%	(16.92)	(0.32)	(6.58)
	Total			**14.36**	**293.01**

Table 7-15 Warehouse, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	0.5%	3.46	0.02	0.76
	Water-Cooled Chiller	0.7%	2.34	0.02	0.68
	RTU	28.7%	2.39	0.69	27.80
	Packaged Terminal AC	3.6%	3.21	0.12	4.69
	Packaged Terminal HP	0.7%	3.21	0.02	0.87
	Air-Source Heat Pump	2.2%	3.21	0.07	2.92
	Geothermal Heat Pump	0.0%	2.37	-	-
Space Heating	Electric Furnace	7.1%	1.23	0.09	3.53
	Electric Room Heat	0.0%	1.17	-	-
	Air-Source Heat Pump	2.2%	1.07	0.02	0.97
	Packaged Terminal HP	0.7%	0.96	0.01	0.26
	Geothermal Heat Pump	0.0%	0.99	-	-
Ventilation	Ventilation	100.0%	0.42	0.42	17.20
Water Heating	Water Heater	45.8%	0.22	0.10	4.16
Interior Lighting	General Service Lighting	100.0%	0.13	0.13	5.43
	Exempted Lighting	100.0%	0.00	0.00	0.00
	Linear Lighting	100.0%	0.80	0.80	32.40
	High-Bay Lighting	100.0%	0.43	0.43	17.50
Exterior Lighting	General Service Lighting	100.0%	0.40	0.40	16.07
	Linear Lighting	100.0%	0.84	0.84	34.08
	Area Lighting	100.0%	0.01	0.01	0.44
Refrigeration	Walk-in Refrigerator/Freezer	1.1%	0.06	0.00	0.03
	Reach-in Refrigerator/Freezer	2.0%	0.04	0.00	0.03
	Glass Door Display	10.1%	0.04	0.00	0.16
	Open Display Case	3.4%	0.13	0.00	0.17
	Icemaker	10.1%	0.06	0.01	0.26
	Vending Machine	10.1%	0.04	0.00	0.17
Food Preparation	Oven	0.9%	0.05	0.00	0.02
	Fryer	0.9%	0.07	0.00	0.02
	Dishwasher	0.9%	0.04	0.00	0.02
	Hot Food Container	0.9%	0.01	0.00	0.00
	Steamer	0.9%	0.07	0.00	0.02
	Griddle	0.9%	0.07	0.00	0.02
Office Equipment	Desktop Computer	100.0%	0.01	0.01	0.33
	Laptop	100.0%	0.00	0.00	0.10
	Monitor	100.0%	0.00	0.00	0.06
	Server	89.0%	0.02	0.02	0.83
	Imaging Equipment	100.0%	0.00	0.00	0.13
	POS Terminal	77.0%	0.00	0.00	0.10
Miscellaneous	Non-HVAC Motors	49.9%	0.05	0.03	1.03
	Pool Pump	0.0%	0.00	-	-
	Pool Heater	0.0%	0.00	-	-
	EV Supply Equipment	0.2%	0.01	0.00	0.00
	Clothes Washer	0.0%	0.00	-	-
	Clothes Dryer	0.0%	0.00	-	-
	Miscellaneous	100.0%	0.03	0.03	1.13
Generation	Solar PV	1.9%	(16.92)	(0.32)	(13.07)
	Total			**3.98**	**161.32**

Table 7-16 Miscellaneous, Commercial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/sq ft)	Intensity (kWh/sq ft)	Usage (GWh)
Cooling	Air-Cooled Chiller	0.2%	4.97	0.01	1.15
	Water-Cooled Chiller	0.6%	3.47	0.02	2.17
	RTU	10.4%	3.48	0.36	37.86
	Packaged Terminal AC	2.3%	4.19	0.10	10.17
	Packaged Terminal HP	0.5%	4.68	0.02	2.20
	Air-Source Heat Pump	0.8%	4.68	0.04	4.04
	Geothermal Heat Pump	0.0%	3.45	-	-
Space Heating	Electric Furnace	2.6%	2.56	0.07	6.96
	Electric Room Heat	0.0%	2.43	-	-
	Air-Source Heat Pump	0.8%	1.82	0.02	1.57
	Packaged Terminal HP	0.5%	1.64	0.01	0.77
	Geothermal Heat Pump	0.0%	1.51	-	-
Ventilation	Ventilation	100.0%	1.41	1.41	147.44
Water Heating	Water Heater	26.7%	1.27	0.34	35.41
Interior Lighting	General Service Lighting	100.0%	0.78	0.78	81.91
	Exempted Lighting	100.0%	0.00	0.00	0.43
	Linear Lighting	100.0%	1.96	1.96	205.30
	High-Bay Lighting	100.0%	0.30	0.30	31.82
Exterior Lighting	General Service Lighting	100.0%	0.32	0.32	33.00
	Linear Lighting	100.0%	0.24	0.24	25.22
	Area Lighting	100.0%	0.01	0.01	1.20
Refrigeration	Walk-in Refrigerator/Freezer	0.8%	0.42	0.00	0.36
	Reach-in Refrigerator/Freezer	4.3%	0.35	0.02	1.59
	Glass Door Display	21.6%	0.26	0.06	5.87
	Open Display Case	7.2%	0.84	0.06	6.30
	Icemaker	21.6%	0.43	0.09	9.62
	Vending Machine	21.6%	0.27	0.06	6.11
Food Preparation	Oven	7.3%	0.80	0.06	6.14
	Fryer	7.3%	1.16	0.08	8.88
	Dishwasher	7.3%	0.73	0.05	5.59
	Hot Food Container	7.3%	0.22	0.02	1.67
	Steamer	7.3%	1.17	0.09	8.97
	Griddle	7.3%	1.14	0.08	8.70
Office Equipment	Desktop Computer	100.0%	0.01	0.01	1.42
	Laptop	100.0%	0.00	0.00	0.44
	Monitor	100.0%	0.00	0.00	0.50
	Server	66.0%	0.15	0.10	10.58
	Imaging Equipment	100.0%	0.01	0.01	1.09
	POS Terminal	28.0%	0.02	0.01	0.63
Miscellaneous	Non-HVAC Motors	59.9%	0.34	0.20	21.18
	Pool Pump	4.0%	0.26	0.01	1.07
	Pool Heater	1.0%	0.33	0.00	0.35
	EV Supply Equipment	0.4%	0.04	0.00	0.01
	Clothes Washer	15.0%	0.08	0.01	1.27
	Clothes Dryer	10.0%	0.26	0.03	2.74
	Miscellaneous	100.0%	0.02	0.02	2.12
Generation	Solar PV	1.9%	(16.92)	(0.32)	(33.69)
	Total			**6.77**	**708.13**

Table 7-17 Industrial, Industrial Average Market Profile, 2024

End Use	Technology	Saturation	EUI (kWh/ employee)	Intensity (kWh/ employee)	Usage (GWh)
Cooling	Air-Cooled Chiller	2.8%	21,979	615	11.17
	Water-Cooled Chiller	2.8%	2,508	70	1.28
	RTU	12.8%	16,098	2,058	37.41
	Air-Source Heat Pump	1.2%	14,263	168	3.06
	Geothermal Heat Pump	0.0%	0	-	-
Space Heating	Air-Source Heat Pump	1.2%	25,154	297	5.40
	Geothermal Heat Pump	0.0%	0	-	-
	Electric Furnace	0.6%	29,817	187	3.39
	Electric Room Heat	3.9%	28,397	1,105	20.09
Ventilation	Ventilation	100.0%	6,696	6,696	121.73
Interior Lighting	General Service Lighting	100.0%	475	475	8.64
	Exempted Lighting	100.0%	0	-	-
	Linear Lighting	100.0%	2,185	2,185	39.73
	High-Bay Lighting	100.0%	2,185	2,185	39.73
Exterior Lighting	General Service Lighting	100.0%	771	771	14.01
	Linear Lighting	100.0%	1,635	1,635	29.73
	Area Lighting	100.0%	21	21	0.38
Process	Process Cooling	100.0%	5,226	5,226	95.02
	Process Refrigeration	100.0%	5,614	5,614	102.07
	Process Heating	100.0%	7,154	7,154	130.06
	Process Electrochemical	100.0%	1,931	1,931	35.10
	Process Other	100.0%	1,955	1,955	35.54
Motors	Pumps	100.0%	7,293	7,293	132.59
	Fans & Blowers	100.0%	4,665	4,665	84.81
	Compressed Air	100.0%	6,765	6,765	123.00
	Material Handling	100.0%	18,402	18,402	334.57
	Other Motors	100.0%	1,971	1,971	35.83
Miscellaneous	Miscellaneous	100.0%	5,084	5,084	92.44
	Total			84,527	**1,536.79**

8 Appendix B. Customer Adoption Curves

This data appendix contains the measure adoption curves used in the study. It is separated into two tabs, one for residential adoption curves and the other for the commercial and industrial curves. Yearly values shown should be interpreted as the percentage of the available and applicable market that can be captured by an active program in that year. Measure adoption curves are further discussed in Chapter 2.

Table 8-1 Single Family Adoption Curves

Adoption Curve	2026	2030	2035	2040	2045
Computer	25.9%	27.1%	30.8%	33.5%	34.2%
Cooking	33.5%	33.9%	36.1%	41.0%	44.0%
Cooling Maintenance	60.9%	66.1%	69.1%	69.8%	69.9%
Cooling Equipment	40.6%	44.1%	46.0%	46.5%	46.6%
Dehumidifier	38.5%	39.0%	41.6%	47.2%	50.7%
Water Heating Setback	31.7%	35.6%	39.1%	39.8%	39.9%
Dishwasher	54.2%	54.9%	58.5%	66.4%	71.3%
Duct Repair	30.0%	30.4%	32.4%	36.7%	39.4%
Appliance Recycling	70.0%	75.9%	79.3%	80.1%	80.3%
Heating Maintenance	67.0%	72.7%	75.9%	76.7%	76.9%
House Fan	22.9%	23.2%	24.7%	28.0%	30.1%
HVAC Setback	46.1%	51.8%	56.9%	57.9%	58.0%
Infiltration	85.3%	90.9%	94.0%	94.8%	95.0%
Insulation	39.8%	40.3%	42.9%	48.7%	52.3%
Laundry	36.2%	36.6%	39.1%	44.3%	47.6%
Lighting Controls	32.0%	35.9%	39.4%	40.2%	40.2%
Lighting	85.3%	90.9%	94.0%	94.8%	95.0%
Pool Pump	28.6%	29.0%	30.9%	35.0%	37.6%
Refrigerator	60.7%	63.7%	72.3%	78.6%	80.1%
Residential Electric Vehicles	23.1%	23.2%	23.8%	25.4%	27.9%
Electronics Smart Strip	30.9%	31.3%	33.4%	37.9%	40.7%
Space Heating Equipment	44.7%	48.5%	50.6%	51.1%	51.3%
Thermostat	38.2%	41.5%	43.3%	43.7%	43.8%
TV	32.5%	34.1%	38.7%	42.1%	42.9%
Water Heating Equipment	35.6%	36.1%	38.5%	43.6%	46.9%
Windows	30.5%	30.9%	32.9%	37.3%	40.1%

Table 8-2 Single Family Low Income Adoption Curves

Adoption Curve	2026	2030	2035	2040	2045
Computer	22.3%	22.7%	24.0%	24.9%	25.2%
Cooking	27.5%	27.7%	28.4%	30.0%	31.0%
Cooling Maintenance	45.1%	46.8%	47.8%	48.0%	48.0%
Cooling Equipment	16.2%	16.8%	17.1%	17.2%	17.2%
Dehumidifier	38.4%	38.6%	39.6%	41.9%	43.2%
Water Heating Setback	24.7%	26.0%	27.1%	27.4%	27.4%
Dishwasher	25.8%	25.9%	26.6%	28.1%	29.0%
Duct Repair	18.6%	18.7%	19.2%	20.2%	20.9%
Appliance Recycling	43.4%	45.0%	45.9%	46.1%	46.2%
Heating Maintenance	49.6%	51.5%	52.5%	52.8%	52.8%
House Fan	22.8%	23.0%	23.6%	24.9%	25.7%
HVAC Setback	36.0%	37.8%	39.5%	39.8%	39.9%
Infiltration	55.0%	57.1%	58.2%	58.5%	58.6%
Insulation	14.6%	14.7%	15.1%	15.9%	16.5%
Laundry	29.8%	29.9%	30.7%	32.4%	33.5%
Lighting Controls	25.0%	26.2%	27.4%	27.6%	27.6%
Lighting	55.0%	57.1%	58.2%	58.5%	58.6%
Pool Pump	28.5%	28.7%	29.4%	31.0%	32.1%
Refrigerator	27.7%	28.2%	29.8%	30.9%	31.2%
Residential Electric Vehicles	0.0%	0.0%	0.0%	0.0%	0.0%
Electronics Smart Strip	21.0%	21.1%	21.7%	22.9%	23.6%
Space Heating Equipment	15.2%	15.8%	16.1%	16.2%	16.2%
Thermostat	28.3%	29.3%	29.9%	30.1%	30.1%
TV	28.0%	28.6%	30.2%	31.3%	31.6%
Water Heating Equipment	22.8%	22.9%	23.5%	24.8%	25.7%
Windows	24.7%	24.9%	25.5%	26.9%	27.8%

Table 8-3 Multifamily Adoption Curves

Adoption Curve	2026	2030	2035	2040	2045
Computer	25.9%	27.1%	30.8%	33.5%	34.2%
Cooking	31.5%	32.0%	34.1%	38.6%	41.5%
Cooling Maintenance	60.9%	66.1%	69.1%	69.8%	69.9%
Cooling Equipment	21.6%	23.5%	24.5%	24.8%	24.8%
Dehumidifier	38.5%	39.0%	41.6%	47.2%	50.7%
Water Heating Setback	35.4%	39.8%	43.7%	44.5%	44.6%
Dishwasher	23.2%	23.5%	25.1%	28.4%	30.5%
Duct Repair	33.0%	33.4%	35.6%	40.4%	43.4%
Appliance Recycling	44.8%	48.6%	50.8%	51.3%	51.4%
Heating Maintenance	67.0%	72.7%	75.9%	76.7%	76.9%
House Fan	21.8%	22.1%	23.6%	26.7%	28.7%
HVAC Setback	47.8%	53.7%	59.0%	60.1%	60.2%
Infiltration	53.1%	57.7%	60.2%	60.9%	61.0%
Insulation	50.7%	51.4%	54.7%	62.1%	66.7%
Laundry	35.1%	35.6%	37.9%	43.0%	46.2%
Lighting Controls	32.0%	35.9%	39.4%	40.2%	40.2%
Lighting	53.1%	57.7%	60.2%	60.9%	61.0%
Pool Pump	24.9%	25.2%	26.9%	30.5%	32.8%
Refrigerator	57.0%	59.8%	67.9%	73.8%	75.2%
Residential Electric Vehicles	20.0%	20.1%	20.6%	22.0%	24.2%
Electronics Smart Strip	35.4%	35.9%	38.3%	43.4%	46.6%
Space Heating Equipment	24.5%	26.5%	27.7%	28.0%	28.1%
Thermostat	38.2%	41.5%	43.3%	43.7%	43.8%
TV	32.0%	33.6%	38.2%	41.5%	42.3%
Water Heating Equipment	23.9%	24.2%	25.8%	29.3%	31.4%
Windows	27.5%	27.9%	29.7%	33.7%	36.2%

Table 8-4 Multifamily Adoption Curves

Adoption Curve	2026	2030	2035	2040	2045
Computer	25.9%	27.1%	30.8%	33.5%	34.2%
Cooking	31.5%	32.0%	34.1%	38.6%	41.5%
Cooling Maintenance	60.9%	66.1%	69.1%	69.8%	69.9%
Cooling Equipment	21.6%	23.5%	24.5%	24.8%	24.8%
Dehumidifier	38.5%	39.0%	41.6%	47.2%	50.7%
Water Heating Setback	35.4%	39.8%	43.7%	44.5%	44.6%
Dishwasher	23.2%	23.5%	25.1%	28.4%	30.5%
Duct Repair	33.0%	33.4%	35.6%	40.4%	43.4%
Appliance Recycling	44.8%	48.6%	50.8%	51.3%	51.4%
Heating Maintenance	67.0%	72.7%	75.9%	76.7%	76.9%
House Fan	21.8%	22.1%	23.6%	26.7%	28.7%
HVAC Setback	47.8%	53.7%	59.0%	60.1%	60.2%
Infiltration	53.1%	57.7%	60.2%	60.9%	61.0%
Insulation	50.7%	51.4%	54.7%	62.1%	66.7%
Laundry	35.1%	35.6%	37.9%	43.0%	46.2%
Lighting Controls	32.0%	35.9%	39.4%	40.2%	40.2%
Lighting	53.1%	57.7%	60.2%	60.9%	61.0%
Pool Pump	24.9%	25.2%	26.9%	30.5%	32.8%
Refrigerator	57.0%	59.8%	67.9%	73.8%	75.2%
Residential Electric Vehicles	20.0%	20.1%	20.6%	22.0%	24.2%
Electronics Smart Strip	35.4%	35.9%	38.3%	43.4%	46.6%
Space Heating Equipment	24.5%	26.5%	27.7%	28.0%	28.1%
Thermostat	38.2%	41.5%	43.3%	43.7%	43.8%
TV	32.0%	33.6%	38.2%	41.5%	42.3%
Water Heating Equipment	23.9%	24.2%	25.8%	29.3%	31.4%
Windows	27.5%	27.9%	29.7%	33.7%	36.2%

Table 8-5 Multifamily Low Income & Manufactured Home Adoption Curves

Adoption Curve	2026	2030	2035	2040	2045
Computer	22.3%	22.7%	24.0%	24.9%	25.2%
Cooking	26.0%	26.1%	26.8%	28.3%	29.2%
Cooling Maintenance	45.1%	46.8%	47.8%	48.0%	48.0%
Cooling Equipment	7.1%	7.3%	7.5%	7.5%	7.5%
Dehumidifier	38.4%	38.6%	39.6%	41.9%	43.2%
Water Heating Setback	27.7%	29.1%	30.4%	30.6%	30.6%
Dishwasher	11.0%	11.1%	11.4%	12.0%	12.4%
Duct Repair	20.5%	20.6%	21.1%	22.3%	23.0%
Appliance Recycling	56.5%	58.6%	59.8%	60.1%	60.2%
Heating Maintenance	49.6%	51.5%	52.5%	52.8%	52.8%
House Fan	21.8%	21.9%	22.5%	23.7%	24.5%
HVAC Setback	37.4%	39.3%	41.0%	41.3%	41.4%
Infiltration	67.0%	69.5%	70.9%	71.3%	71.4%
Insulation	18.7%	18.7%	19.2%	20.3%	21.0%
Laundry	28.9%	29.1%	29.8%	31.5%	32.5%
Lighting Controls	25.0%	26.2%	27.4%	27.6%	27.6%
Lighting	67.0%	69.5%	70.9%	71.3%	71.4%
Pool Pump	24.9%	25.0%	25.6%	27.1%	28.0%
Refrigerator	26.0%	26.5%	28.0%	29.0%	29.3%
Residential Electric Vehicles	0.0%	0.0%	0.0%	0.0%	0.0%
Electronics Smart Strip	49.0%	49.2%	50.5%	53.3%	55.1%
Space Heating Equipment	7.0%	7.2%	7.4%	7.4%	7.4%
Thermostat	28.3%	29.3%	29.9%	30.1%	30.1%
TV	27.6%	28.1%	29.7%	30.8%	31.1%
Water Heating Equipment	12.1%	12.2%	12.5%	13.2%	13.6%
Windows	22.3%	22.4%	23.0%	24.3%	25.1%

Table 8-6 Small C&I Adoption Curves

Adoption Curve	2026	2030	2035	2040	2045
Add/Upgrade Insulation	27.2%	28.8%	30.9%	33.0%	35.1%
Chiller Fans	31.1%	33.0%	35.4%	37.8%	40.2%
Cooking Equipment	28.7%	29.0%	30.8%	34.5%	36.9%
Water Heating	32.2%	34.2%	36.7%	39.2%	41.6%
Water Heating Controls	24.5%	26.1%	27.9%	29.8%	31.7%
Duct Sealing/Insulation	27.2%	28.8%	30.9%	33.0%	35.1%
Windows	23.9%	25.4%	27.2%	29.1%	30.9%
Electronics	27.9%	29.7%	31.8%	34.0%	36.1%
Energy Management	28.2%	28.5%	30.2%	33.9%	36.2%
HVAC Controls	26.6%	28.3%	30.3%	32.3%	34.4%
HVAC Cooling	34.6%	36.8%	39.4%	42.1%	44.7%
HVAC Maintenance	38.3%	41.3%	43.0%	43.4%	43.5%
HVAC Motors/Pumps	31.9%	33.9%	36.4%	38.8%	41.3%
Lighting Controls	27.5%	29.2%	31.3%	33.4%	35.5%
Lighting General	42.1%	45.4%	47.2%	47.7%	47.8%
Lighting HID	37.9%	40.9%	42.6%	43.0%	43.1%
Pre-Rinse Spray Valves	21.4%	22.7%	24.4%	26.0%	27.6%
Pumps/Motors/Drives EQ	32.4%	34.4%	36.9%	39.4%	41.9%
Pumps/Motors/Drives NEM	30.8%	32.7%	35.1%	37.5%	39.8%
Refrigeration	29.0%	30.8%	33.1%	35.3%	37.5%
RTU/Chiller	39.1%	41.6%	44.6%	47.6%	50.6%
Thermostat	27.2%	28.8%	30.9%	33.0%	35.1%

Table 8-7 Large C&I Adoption Curves

Adoption Curve	2026	2030	2035	2040	2045
Add/Upgrade Insulation	45.9%	48.8%	52.3%	55.8%	59.4%
Chiller Fans	54.7%	58.1%	62.3%	66.5%	70.7%
Cooking Equipment	48.5%	49.1%	52.0%	58.4%	62.4%
Water Heating	52.2%	55.4%	59.5%	63.5%	67.5%
Water Heating Controls	47.1%	50.0%	53.6%	57.3%	60.9%
Duct Sealing/Insulation	45.9%	48.8%	52.3%	55.8%	59.4%
Windows	40.5%	43.0%	46.1%	49.2%	52.3%
Electronics	47.3%	50.2%	53.8%	57.4%	61.1%
Energy Management	47.7%	50.6%	54.2%	57.9%	61.6%
HVAC Controls	46.8%	49.7%	53.3%	56.9%	60.5%
HVAC Cooling	52.5%	55.8%	59.8%	63.9%	67.9%
HVAC Maintenance	67.5%	72.7%	75.7%	76.4%	76.6%
HVAC Motors/Pumps	48.5%	51.5%	55.2%	58.9%	62.6%
Lighting Controls	44.6%	47.3%	50.7%	54.2%	57.6%
Lighting General	80.8%	87.1%	90.7%	91.6%	91.7%
Lighting HID	64.2%	69.2%	72.0%	72.7%	72.9%
Pre-Rinse Spray Valves	41.1%	43.6%	46.8%	49.9%	53.1%
Pumps/Motors/Drives EQ	54.9%	58.2%	62.5%	66.7%	70.9%
Pumps/Motors/Drives NEM	60.1%	64.8%	67.5%	68.2%	68.3%
Refrigeration	51.4%	54.5%	58.5%	62.4%	66.4%
RTU/Chiller	59.4%	63.0%	67.6%	72.2%	76.7%
Thermostat	46.0%	48.8%	52.3%	55.8%	59.4%

9 Appendix C. Measure List

Here we summarize the list of measures evaluated in the Potential Study. The data are presented in six tables, separated by sector and modeling type (equipment or non-equipment).[6]

Table 9-1 Residential EQ Measures

End Use	Technology
Cooling	Central AC
Cooling	Room AC
Cooling	Evaporative Cooler
Cooling	Portable AC
Cooling/Space Heating	Air-Source Heat Pump
Cooling/Space Heating	Geothermal Heat Pump
Cooling/Space Heating	Ductless Mini Split Heat Pump
Space Heating	Electric Furnace
Space Heating	Electric Room Heat
Water Heating	Water Heater (<= 55 Gal)
Water Heating	Water Heater (> 55 Gal)
Interior Lighting	General Service Lighting
Interior Lighting	Linear Lighting
Interior Lighting	Exempted Lighting
Exterior Lighting	General Service Lighting
Appliances	Refrigerator
Appliances	Second Refrigerator
Appliances	Freezer
Appliances	Clothes Washer
Appliances	Clothes Dryer

End Use	Technology
Appliances	Dishwasher
Appliances	Stove/Oven
Appliances	Microwave
Appliances	Dehumidifier
Appliances	Air Purifier
Electronics	Personal Computers
Electronics	Monitor
Electronics	Laptops
Electronics	Imaging Equipment
Electronics	TVs
Electronics	Set-top Boxes/DVRs
Electronics	Devices and Gadgets
Miscellaneous	EV Supply Equipment
Miscellaneous	Pool Heater
Miscellaneous	Pool Pump
Miscellaneous	Hot Tub/Spa
Miscellaneous	Furnace Fan
Miscellaneous	Bathroom Exhaust Fan
Miscellaneous	Well Pump
Miscellaneous	Miscellaneous
Generation	Solar PV

Table 9-2 Residential Non-Equipment Measures

Measure
Insulation - Ceiling Installation
Insulation - Ceiling Upgrade
Insulation - Radiant Barrier
Insulation - Wall Cavity Installation
Insulation - Wall Cavity Upgrade
Insulation - Wall Sheathing

Measure
Insulation - Floor Installation
Insulation - Floor Upgrade
Insulation - Basement Sidewall
Insulation - Foundation
Insulation - Ducting
Ducting - Repair and Sealing

[6] See Chapter 2 for an explanation of equipment vs non-equipment measures in the LoadMAP framework

Measure
Ducting - Repair and Sealing - Aerosol
Building Shell - Air Sealing (Infiltration Control)
Building Shell - Whole-Home Aerosol Sealing
Building Shell - Liquid-Applied Weather-Resistive Barrier
Building Shell - High Reflectivity Roof
Windows - High Efficiency (ENERGY STAR 7.0)
Windows - High Efficiency (Triple Pane)
Windows - Low-e Storm Addition
Windows - Install Reflective Film
Windows - Manual Shading
Ductless Mini Split Heat Pump (Zonal)
Supplement Central System with Ductless Mini Split Heat Pump
Conversion to Ductless Mini Split Heat Pump
HVAC - Conversion to Ground-Source Heat Pump
Furnace - Conversion to Air-Source Heat Pump
Conversion to Packaged Terminal Heat Pump
Conversion to Portable Heat Pump
HVAC - Efficient Blower Motor
Evaporative Cooler - Zonal
Evaporative Cooler - Whole Home
Combination Heat Pump Water Heater/Space Heating
HVAC - Maintenance and Tune-Up
HVAC - Energy Recovery Ventilator
Whole-House Fan - Installation
Room AC - Recycling
Connected Thermostat - ENERGY STAR (1.0)
Connected Thermostat - Line-Voltage
Home Energy Management System (HEMS)

Measure
Water Heater - Drainwater Heat Recovery
Water Heater - Faucet Aerators
Water Heater - Low-Flow Showerheads
Water Heater - Shower Timer
Water Heater - Pipe Insulation
Water Heater - Desuperheater
Water Heater - Thermostatic Shower Restriction Valve
Water Heater - Solar System
Circulation Pump - High Efficiency Motor
Circulation Pump - Controls
Interior Lighting - Occupancy Sensors
Interior Lighting - ENERGY STAR Skylights
Exterior Lighting - Photosensor Control
Exterior Lighting - Photovoltaic Installation
Refrigerator - Decommissioning and Recycling
Freezer - Decommissioning and Recycling
Clothes Washer - CEE Tier 2
Dishwasher - ENERGY STAR (7.0)
Water Cooler - ENERGY STAR (3.0)
Advanced Power Strips - Tier 1
Advanced Power Strips - Tier 2
Pool Heater - Solar System
Pool Covers
Pool Cleaner - Robotic
Ceiling Fan - ENERGY STAR (4.1)
ENERGY STAR Home Design
Advanced New Construction Designs
Home Energy Reports

Table 9-3 Commercial Equipment Measures

End Use	Technology
Cooling	Air-Cooled Chiller
Cooling	Water-Cooled Chiller
Cooling	RTU
Cooling	Packaged Terminal AC

End Use	Technology
Cooling/Space Heating	Packaged Terminal HP
Cooling/Space Heating	Air-Source Heat Pump
Cooling/Space Heating	Geothermal Heat Pump

End Use	Technology
Space Heating	Electric Furnace
Space Heating	Electric Room Heat
Ventilation	Ventilation
Water Heating	Water Heater
Interior Lighting	General Service Lighting
Interior Lighting	Exempted Lighting
Interior Lighting	Linear Lighting
Interior Lighting	High-Bay Lighting
Exterior Lighting	General Service Lighting
Exterior Lighting	Linear Lighting
Exterior Lighting	Area Lighting
Refrigeration	Walk-in Refrigerator/Freezer
Refrigeration	Reach-in Refrigerator/Freezer
Refrigeration	Glass Door Display
Refrigeration	Open Display Case
Refrigeration	Icemaker
Refrigeration	Vending Machine
Food Preparation	Oven
Food Preparation	Fryer

End Use	Technology
Food Preparation	Dishwasher
Food Preparation	Hot Food Container
Food Preparation	Steamer
Food Preparation	Griddle
Office Equipment	Desktop Computer
Office Equipment	Laptop
Office Equipment	Monitor
Office Equipment	Server
Office Equipment	Imaging Equipment
Office Equipment	POS Terminal
Miscellaneous	Non-HVAC Motors
Miscellaneous	Pool Pump
Miscellaneous	Pool Heater
Miscellaneous	EV Supply Equipment
Miscellaneous	Clothes Washer
Miscellaneous	Clothes Dryer
Miscellaneous	Miscellaneous
Generation	Solar PV

Table 9-4 Commercial Non-Equipment Measures

Measure
Insulation - Ceiling
Insulation - Wall Cavity
Insulation - Ducting
Building Shell - High Reflectivity Roof
Ducting - Repair and Sealing
Windows - High Efficiency Glazing
Windows - Reflective Film
Chiller - Chilled Water Reset
Chiller - Variable Flow Chilled Water Pump
Water-Cooled Chiller - Variable Flow Condenser Water Pump
Water-Cooled Chiller - Condenser Water Temperature Reset
Chiller - Variable Speed Fans
Building Shell - Air Sealing (Infiltration Control)

Measure
Ventilation - High Efficiency Motors
Ventilation - Fan Drive Improvements
Ventilation - Variable Speed Control
Ventilation - Demand Controlled
Ventilation - Parking Garages, Demand Controlled
Ventilation - Nighttime Air Purge
Destratification Fans (HVLS)
HVAC - Economizer Repair/Addition
HVAC - Economizer Controls
HVAC - Hydronic Economizer
RTU - Advanced Controls
RTU - Evaporative Precooler
RTU - Evaporative Cooler
Industrial Air Curtains

Measure
HVAC - Energy Recovery Ventilator
HVAC - Maintenance
Connected Thermostat - ENERGY STAR (1.0)
Water Heater - Thermostatic Shower Restriction Valve
Water Heater - Pre-Rinse Spray Valve
Water Heater - Faucet Aerators/Low Flow Nozzles
Water Heater - Low-Flow Showerheads
Water Heater - Drainwater Heat Recovery
Water Heater - Pipe Insulation
Water Heater - Solar System
Circulation Pump - Controls
Circulation Pump - High Efficiency Motor
Commercial Laundry - Ozone Treatment
Commercial Laundry - ENERGY STAR Washer (8.0)
Water Heater - ENERGY STAR Dishwasher (3.0)
Interior Lighting - Retrofit - Networked Lighting Controls
Interior Lighting - LED/LEC Exit Lighting
Interior Lighting - Skylights
Exterior Lighting - Photovoltaic Installation
Refrigeration - Door Gasket Replacement
Refrigeration - High Efficiency Compressor
Refrigeration - Mechanical Subcooling
Refrigeration - Defrost Controls
Refrigeration - Automatic High Speed Doors
Refrigeration - High Efficiency Condenser Coil
Refrigeration - Liquid-Suction Heat Exchange
Refrigeration - High Efficiency Evaporator Fan Motors
Refrigeration - Evaporator Fan Controls
Refrigeration - Efficient Compressor Head Fan Motor
Refrigeration - Economizer Addition
Refrigeration - Suction Line Insulation
Refrigeration - Floating Head Pressure

Measure
Refrigeration - Floating Suction Pressure
Refrigeration - Evaporative Condenser
Refrigeration - Strip Curtain
Refrigeration - Air Curtain
Grocery - Display Case - Anti-Sweat Heater Controls
Grocery - Display Case - Low-Heat/No-Heat Doors
Grocery - Display Case - Door Retrofit
Grocery - Display Case - LED Lighting
Grocery - Display Case - Motion Sensors
Grocery - Open Display Case - Night Covers
Grocery - On-Demand Overwrappers
Ultra-Low Temperature Freezer - ENERGY STAR (1.1)
Vending Machine - Occupancy Sensor
Kitchen Ventilation - Advanced Controls
Optimized Lab Hood Design
Lodging - Guest Room Controls
Office Equipment - Advanced Power Strips
Data Center - Upgrade and Optimization
High Efficiency Computer Room AC
Server Room Temperature Setback
Pool Heater - Night Covers
Water Cooler - ENERGY STAR (3.0)
Water Cooler - Timer
Efficient Hand Dryers
Engine Block Heater Controls
Circulating Engine Block Heater
Improved Vertical Lift Technology
High Frequency Battery Chargers
Advanced New Construction Designs
Retrocommissioning
Building Operator Certification

Table 9-5 Industrial Equipment Measures

End Use	Technology
Cooling	Air-Cooled Chiller
Cooling	Water-Cooled Chiller

End Use	Technology
Cooling	RTU
Cooling/Space Heating	Air-Source Heat Pump

End Use	Technology
Cooling/Space Heating	Geothermal Heat Pump
Space Heating	Electric Furnace
Space Heating	Electric Room Heat
Ventilation	Ventilation
Interior Lighting	General Service Lighting
Interior Lighting	Exempted Lighting
Interior Lighting	Linear Lighting
Interior Lighting	High-Bay Lighting
Exterior Lighting	General Service Lighting
Exterior Lighting	Linear Lighting
Exterior Lighting	Area Lighting

End Use	Technology
Process	Process Cooling
Process	Process Refrigeration
Process	Process Heating
Process	Process Electrochemical
Process	Process Other
Motors	Pumps
Motors	Fans & Blowers
Motors	Compressed Air
Motors	Material Handling
Motors	Other Motors
Miscellaneous	Miscellaneous

Table 9-6 Industrial Non-Equipment Measures

Measure
Insulation - Ceiling
Insulation - Wall Cavity
Insulation - Ducting
Ducting - Repair and Sealing
Building Shell - Air Sealing (Infiltration Control)
Chiller - Chilled Water Reset
Chiller - Variable Flow Chilled Water Pump
Chiller - Variable Speed Fans
Water-Cooled Chiller - Variable Flow Condenser Water Pump
Water-Cooled Chiller - Condenser Water Temperature Reset
HVAC - Economizer Controls
Ventilation - Demand Controlled
Destratification Fans (HVLS)
RTU - Advanced Controls
RTU - Evaporative Precooler
Industrial Air Curtains
HVAC - Maintenance
HVAC - Energy Recovery Ventilator
Connected Thermostat - ENERGY STAR (1.0)
Interior Lighting - Retrofit - Networked Lighting Controls
Interior Lighting - LED/LEC Exit Lighting

Measure
Interior Lighting - Skylights
Exterior Lighting - Photovoltaic Installation
High Frequency Battery Chargers
Refrigeration - System Optimization
Refrigeration - System Upgrade
Refrigeration - System Maintenance
Pumping System - Controls
Pumping System - Equipment Upgrade
Pumping System - System Optimization
Fan System - Controls
Fan System - Equipment Upgrade
Fan System - Flow Optimization
Compressed Air - Equipment Upgrade
Compressed Air - End Use Optimization
Compressed Air - System Controls
Compressed Air - Variable Speed Drive
Compressed Air - Dryer Optimization and Replacement
Compressed Air - Low Pressure-Drop Filters
Compressed Air - Zero-Loss Condensate Drain
Motors - Green Rewind (<100 HP)
Motors - Green Rewind (100 HP+)
Advanced Industrial Motors

Measure
Engine Block Heater Controls
Circulating Engine Block Heater
Material Handling - Upgrade and Optimization
Panel - Hydraulic Press
Pulp and Paper - Process Efficiency
Wood - Process Optimization
Metal - New Arc Furnace
Process Cooling - Upgrade and Optimization
Electrochemical Processes - Upgrade and Optimization
Injection Molding - Process Improvements
Petroleum Pump - Upgrade and Optimization
Municipal Water Treatment - UV-C LED Disinfection
Municipal Sewage Treatment - Optimization
Municipal Water Supply Treatment - Optimization

Measure
Indoor Agriculture - LED Lighting
Dairy - Milk Pre-Cooler
Dairy - Heat Recovery from Refrigeration
Dairy - Variable Speed Milk Vacuum Pump
Dairy - Compressor Upgrade
Agriculture - Efficient Stock Watering Tanks
Agriculture - Stock Tank De-Icer
Agriculture - Thermostatically Controlled Outlets
Agriculture - Efficient Circulation Fan
Transformer - High Efficiency
Commissioning
Retrocommissioning
Building Operator Certification

10 Appendix D. Demand Response Results

Introduction

This section outlines ICF's assessment of demand response potential within PNM's service territory. It summarizes the methodology, key data sources, and inputs used in the analysis, along with the resulting estimates of achievable peak demand reductions from 2026 to 2045. In contrast to energy efficiency, where customers may choose to install energy-efficient technologies without utility programs, demand response resources do not exist outside of utility offerings. Therefore, ICF relied on a programmatic view of demand response to assess the potential from this resource class instead of the technology view used to assess the potential from energy efficiency resources.

The following sections detail the key steps in the potential assessment and provide results:

- Data Collection
- Program Characterization
- Baseline Peak Demand Forecast
- Potential Estimation
- Levelized Costs

Data Collection

Table 10-1 presents the key data sources and data elements ICF used to perform the demand response potential assessment. ICF relied heavily on the Northwest Power and Conservation Council's (Council) 2021 Power Plan, which characterizes demand respond programs using regional sources. Where available, ICF incorporated data specific to PNM's service territory to develop program assumptions about participation, impacts, and costs.

Table 10-1 Data Sources

Source	Data Gathered
PNM Studies	• 2024 Evaluation of Energy Efficiency and Load Management Programs • 2024 Annual Report
Northwest Power and Conservation Council 2021 Power Plan[7]	• Demand Response program characterization (e.g. Participation impacts, costs) • Program ramp rates
Other Regional Studies	• Program Characterization

Program Characterization

The program options included in the analysis are presented in Table 10-2. The Council's 2021 Power Plan largely dictated sector eligibility for each program option.

[7] In addition to the 2021 Council inputs, ICF also used several updated residential assumptions (HVAC, water heating, and EV charging programs) from the NWPCC DRAC meeting (3/26/2025) that will be included in the next version of the Power Plan.

Table 10-2 Program Options Included in the Study

Program Option	Program Description	Eligible Sector(s)
Power Saver - Connected Thermostat Direct Load Control (DLC)	Internet-enabled control of thermostat set points. Free Copeland Sensi thermostats installed by implementer. Program supports Nest and Honeywell Home as a BYOT component.	Residential
Power Saver- HVAC DLC	Participants must have a device attached to the exterior of their air conditioning unit. This "paging" device receives a paging signal during peak events that will activate a control sequence that cycles the unit's compressor for an interval of time (usually half the time as normal) to reduce peak demand in the summer.	Residential, Small-Medium Commercial
Electric Vehicle (EV) Behavioral Charge Management	Encourage customers to reduce charging at times of high stress on the electric grid through behavioral messaging and limited incentives	Residential
EV Direct Charge Management	Optimize EV charging times to reduce their impact on system peak load through direct control of EV chargers or vehicle telematics	Residential
Battery Storage DLC	Internet-enabled control of battery charging and discharging	All Sectors
Grid Interactive Water Heater	Direct control of electric water heaters through CTA-2045 or other integrated communication port	Residential
Domestic Hot Water Heater (DHW) DLC	Direct control of electric water heaters through a traditional DLC switch installed on customer equipment	Residential
Time-of-Day (TOD)	Encourage customers to reduce their demand by setting a higher rate for a particular block of hours that occurs every day	All Sectors
Behavioral DR	Voluntary DR reductions in response to behavioral messaging. Example programs exist in CA and other states. Requires AMI technology.	Residential
Electric Vehicle TOU	Higher rate for a particular block of hours (usually in the evening) that occurs every day. Requires either on/off peak meters or AMI technology to run.	Residential
Peak Saver	The Peak Saver program is a DR program offered to non-residential customers with peak load contributions of at least 150 kW. The program compensates participants for reducing electric load upon dispatch during periods of high system load. There is no penalty for non-participation in this program.	Medium-Large Commercial and Industrial Customers

After developing the program option list, ICF worked with PNM staff to develop key assumptions used to calculate the potential and cost estimates for each program option. The following section describes these assumptions in greater detail.

Participation Rates, Impacts, and Costs

ICF began with assumptions from the Council's 2021 Power Plan, then updated these values with information from PNM's existing programs, where available. Deviations from Council assumptions included the following.

- ICF calibrated program costs for the Peak Saver and Power Saver Programs using the 2024 PNM Annual Report.
- ICF calibrated program impacts per customer using the 2024 Evaluation of Energy Efficiency and Load Management Programs Report.
- For the Power Saver Program, ICF characterized both a bring-your-own-thermostat (BYOT) and direct install (DI) version of the Connect Thermostat DLC program option. These were treated as separate channels under a single program option such that program costs and potential could be stacked across both without double counting.
- The Council's 2021 Power Plan provides cost assumptions from a total resource cost (TRC) perspective, whereby a portion of the incentive costs are used as a proxy for customer costs to participate. To support PNM's IRP, ICF calculated costs from the Utility Cost Test (UCT) perspective and counted the full incentives costs towards the programs.
- Consistent with the Council's 2021 Power Plan, ICF did not burden the rates programs with the costs of infrastructure or software upgrades that may be required for PNM to deliver demand-focused rates to its customers.

Enabling Equipment

Some of the demand response program options rely on enabling equipment and technology. ICF used equipment saturation forecasts estimated through PNM's energy efficiency potential assessment, including:

- ICF used the saturation of central cooling/heating systems developed through the energy efficiency study market characterization to inform the pool of customers eligible to participate in Connected Thermostat DLC (Residential and Small Commercial), and HVAC DLC (Residential and Small/Medium Commercial).
- The analysis assumed that all new water heater purchases would be grid-enabled water heaters (e.g., CTA-2045). The overall saturation of electric water heaters aligns with the energy efficiency market characterization, but the distribution of units assumed to be grid-enabled increases throughout the forecast period as existing water heaters turn over.
- For the Battery Storage Program, ICF assumed 20% of installed solar would include battery systems.

Program Option Hierarchy

Some of the program options target the same peak load. To avoid double counting demand response potential for these competing resources, ICF worked with PNM to develop the program hierarchy. In general, the hierarchy prioritizes customers for firm resources first followed by rate options by removing participants of programs higher in the hierarchy from the pool of customers eligible for programs lower in the hierarchy.

For this analysis, the only programs that are affected by the hierarchy (competition by end use technology) are the two rates (EV TOU and TOD). For EV TOU, customers expected to participate in the EV DLC program were removed from the eligible customer pool. For TOD, participants from the following programs were removed from the eligible customer pool: Peak Saver, Power Saver, and water heating programs. Otherwise, program potential was unchanged for the remainder of programs.

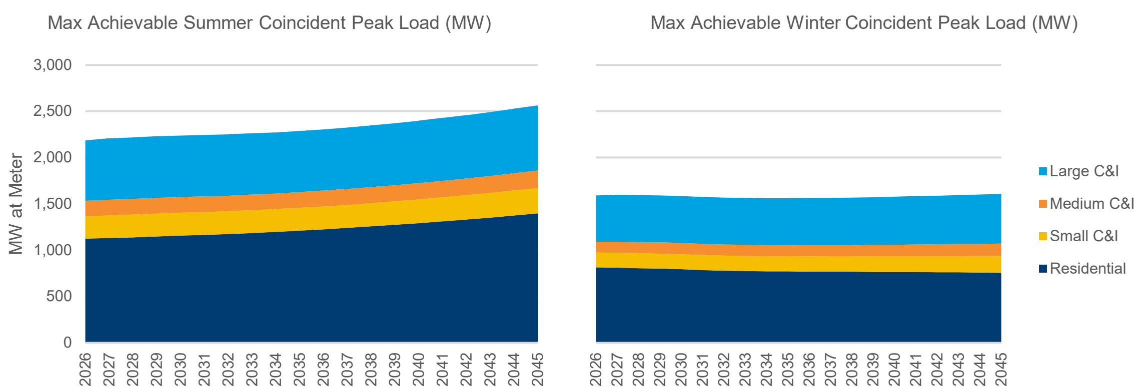
Baseline Peak Demand Forecast

ICF developed the peak demand forecast shown in Figure 10-1 by:

- Using the system-level peak demand forecast estimated for the energy efficiency potential study, and
- Segmenting the system-level peak demand forecast into sector and customer size using customer-level data provided by PNM and the market segmentation and characterization from the energy efficiency potential study, and

Demand responses potential estimates are incremental to the peak demand impacts from energy efficiency to remove double counting of EE impacts in the DR potential. ICF worked with PNM to determine the most likely EE scenario to incorporate into the DR study. Figure 10-1 shows the sector contributions to the Maximum Achievable Potential (MAP) peak demand forecast for summer and winter for each year of the study. As shown, PNM's system peak demand increases through the study period in the summer season but remains fairly constant in the winter season. The residential sector in summer is projected to increase from 1,126 MW in 2026 to 1,439 MW by 2045 reflecting projected electrification patterns and increased electric vehicle saturations by the end of the study.

Figure 10-1: Peak Demand Forecast by Season



Potential Estimation

ICF calculated the demand response potential for each program by:

1. Determining the eligible customer population using enabling equipment saturations and removing the participation from programs higher in the program hierarchy,
2. Applying participation, attrition, and event non-performance rates to estimate the number of eligible customers likely to participate in the program option, and
3. Multiplying the per-customer impacts by the number of participants to estimate the total impacts (potential) for each program option in each year of the forecast period.

Figure 10-2 shows the estimated demand response potential. The solid lines show the baseline peak demand, while the dotted lines show the estimated potential forecast after demand response programs have been implemented. The difference between these lines (shown as percentage of peak demand bars on the graph) reflects the estimated potential for each year of the study.

By the end of the forecast period, ICF estimates that demand programs could reduce the summer and winter peak demand by approximately 6%. Potential from demand response programs increases over the five to ten years as the programs enroll participants and reach full maturity. Most of the potential comes from the residential sector, where ICF estimated that residential programs have the potential to contribute 72% of the overall reduction in summer peak demand and 71% of winter peak demand by 2045.

Figure 10-2: Total Demand Response Potential Forecast

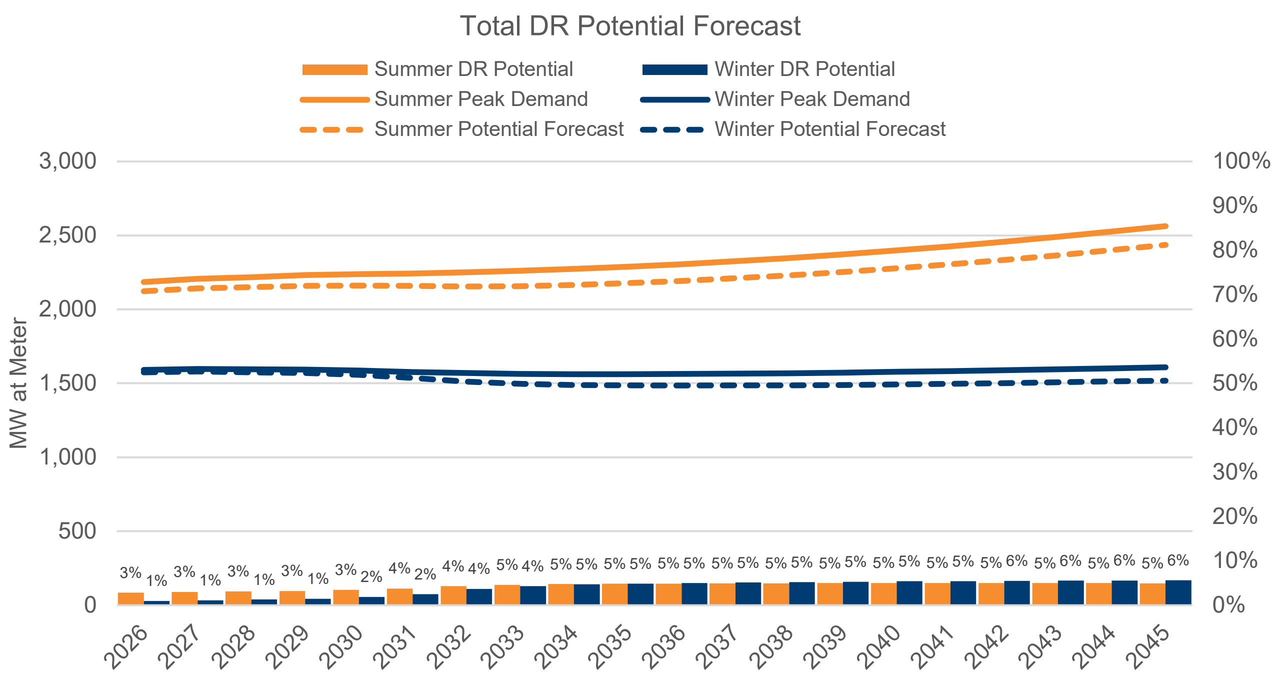


Figure 10-3 and Figure 10-4 show the potential generated by demand response programs over the select years in the forecast period for summer and winter, respectively. The early years show how the potential changes as programs mature, and the later years show what programs generate after reaching maturity. Most programs are assumed to start in 2030, a delay of four years from the start of the forecast period, to account for the time PNM would realistically need to launch programs[8].

As shown, ICF estimates that PNM could generate 127 MW of demand reduction in the summer and 90 MW in the winter through demand response programs by 2045. In summer, Power Saver (35%), Peak Saver (23%), and Electric Vehicle Direct Charge Management (23%) contribute to 81% of the total program potential. In winter, Electric Vehicle Direct Charge Management (34%), Peak Saver (25%), and Power Saver (18%)[9] make up 77% of the total program potential.

[8] Discussions with PNM suggested that 2030 would likely be an aggressive start time where program planning would likely have to begin in 2026.
[9] Power Saver is currently a summer-only program. ICF expanded this program into winter for purposes of the potential study with a 2030 start date.

Figure 10-3: Summer Demand Response Program Potential for Select Years

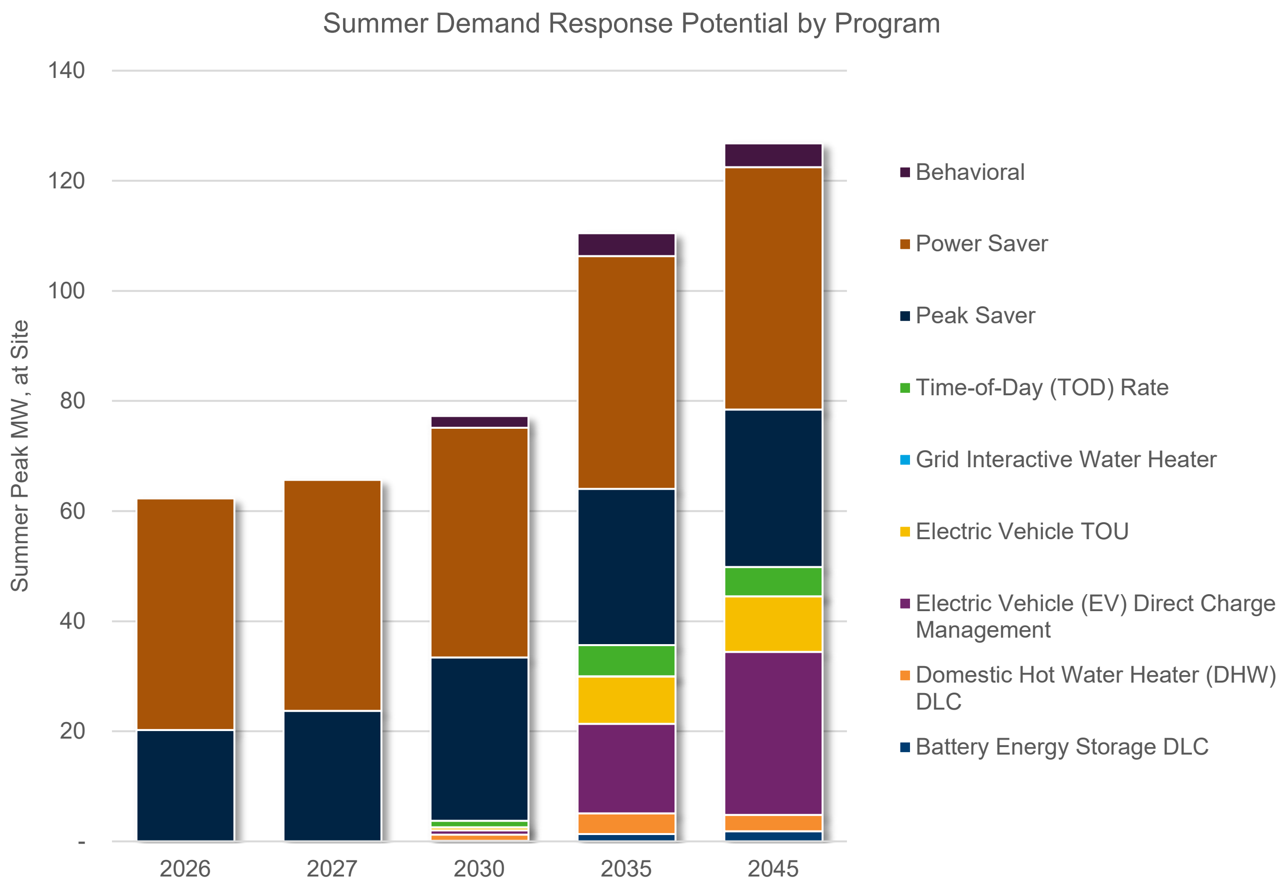
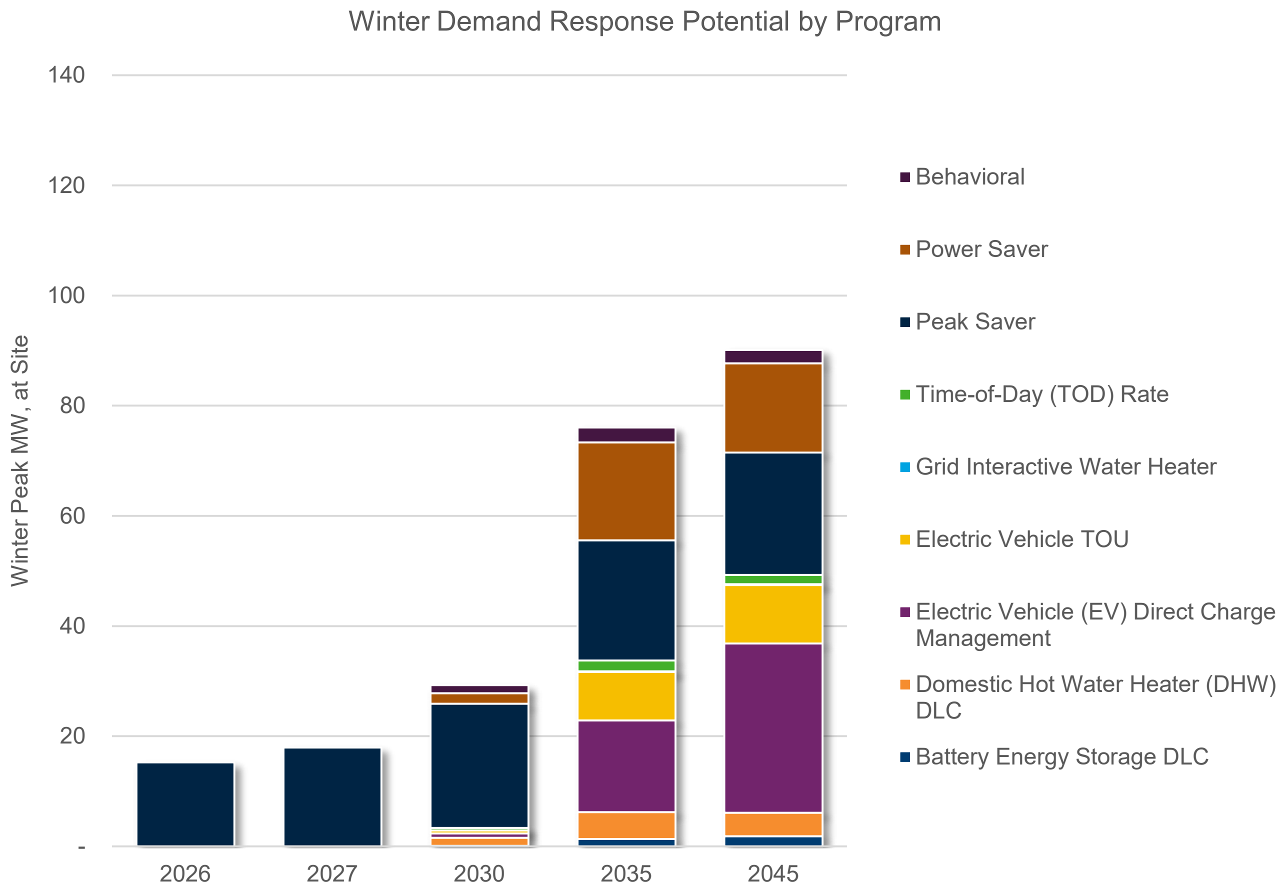


Figure 10-4: Winter Demand Response Program Potential by Selected Years



Levelized Costs

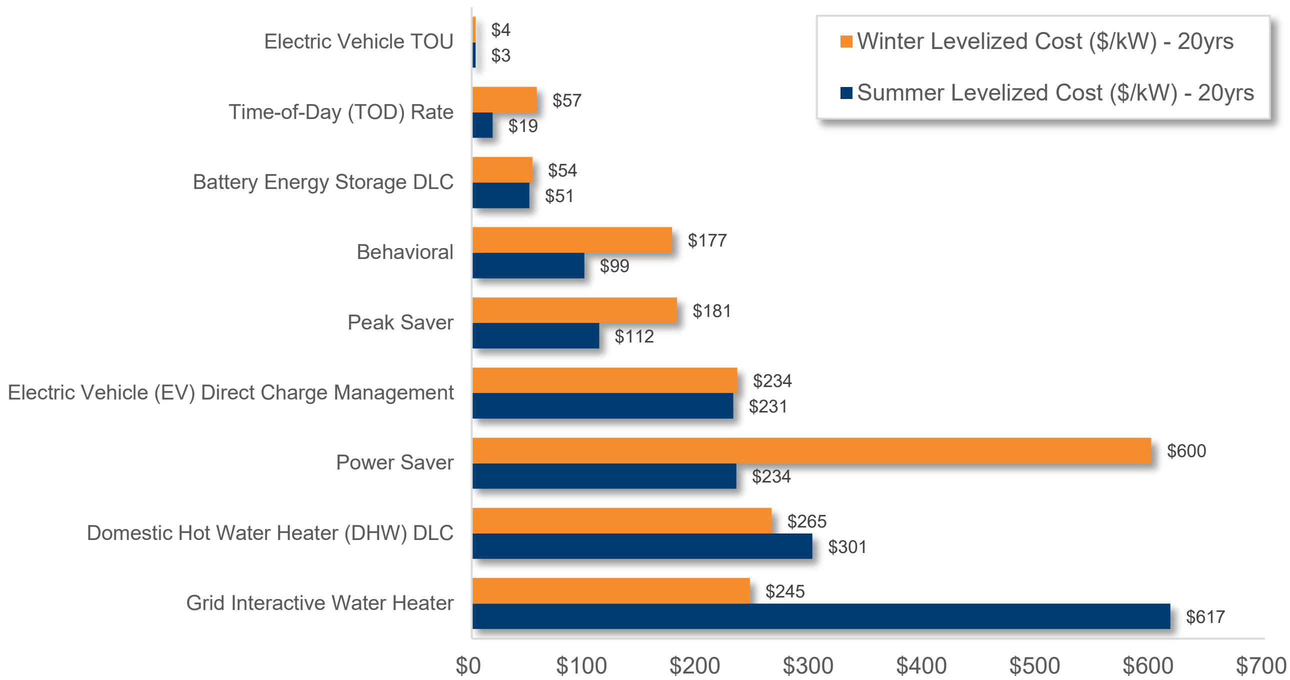
ICF calculated levelized costs for each program option, shown in Figure 11-5. Because of the staggered start times of the non-existing programs (2030) compared to the existing programs, ICF used the full forecast horizon (2026-2045) to estimate levelized costs.

All the assessed program options have the potential to generate peak demand reductions in both summer and winter, and the levelized costs shown here only apply if programs run in both seasons. Costs for single-season programs would be higher (equaling the sum of summer and winter split costs minus any season-specific incentives that are no longer applicable).

Figure 34 shows the levelized costs estimated over the first twenty years of each program's life, from a UCT perspective (i.e., including full participant incentives and additional implementation costs). If PNM requires monthly costs for the IRP model, ICF recommends replicating the costs shown here in each applicable month (i.e., summer costs in the summer months and winter costs in the winter months). Costs in the shoulder months would be $0/kW as the impacts would not be available. While this method would likely overstate the total cost if the IRP model selected demand response as a resource in all eligible months, it would avoid understating the costs if PNM only needed the capacity in one month.

As shown, Rate programs (EV TOU and TOD) provide the least expensive potential, which stems from the assumption that any billing system and infrastructure upgrades needed to offer a demand-focused rate to customers is already in place. In addition, they don't require equipment upgrades and can be run at scale. Some of the higher cost programs such as the water heater programs and EV DLC are more expensive per participant as they require equipment cost upgrades to run the program.

Figure 11-5: 20-Year Levelized Costs



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BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

AFFIDAVIT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

ALEXANDER M. REEDIN, Energy Efficiency and Development Program Manager, Public Service Company of New Mexico, upon penalty of perjury under the laws of the State of New Mexico, affirms and states: I have read the foregoing **Direct Testimony and Exhibits of Alexander M. Reedin** which are true and correct based on my personal knowledge and belief.

DATED 15th day of April, 2026.

/s/ Alexander M. Reedin
ALEXANDER M. REEDIN

<u>BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION</u>

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICIENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO	)	
Applicant.	)	

DIRECT TESTIMONY

OF

THOMAS P. DUANE

April 15, 2026

NMPRC DOCKET NO. 26-00000XX
INDEX TO THE DIRECT TESTIMONY OF
THOMAS P. DUANE

WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

I. INTRODUCTION AND PURPOSE

Q. Please state your name, position and business address.

A. My name is Thomas P. Duane. I am the Director of Integrated Resource Planning at Public Service Company of New Mexico ("PNM"). My business address is 2401 Aztec Rd. NE, Albuquerque, NM 87107.

Q. Please summarize your educational background and professional qualifications.

A. My education and professional qualifications are provided in PNM Exhibit TPD-1. Prior to my current role, I served as Manager, Transmission Planning for PNM and was responsible for the evaluation of the existing transmission planning functions, analyzing transmission system deficiencies, and creating plans for the capital expansion of the transmission system.

Q. Please describe your responsibilities as Director of Integrated Resource Planning.

A. The Integrated Resource Planning department is responsible for developing PNM's resource plans and the regulatory filings to support those resource plans, including the triennial Integrated Resource Plan ("IRP") and associated updates. The Integrated Resource Planning department is also responsible for performing resource planning analysis to support resource additions and acquisitions, all of which require New Mexico Public Regulation Commission ("NMPRC" or "Commission") approval such as those being requested in this docket.

Q. Have you previously submitted testimony before the New Mexico Public Regulation Commission ("NMPRC" or "Commission")?

A. Yes. The cases in which I have testified are identified in PNM Exhibit TPD-1.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to:

1. Present the avoided capacity costs that PNM used in determining the cost effectiveness of its energy efficiency and demand response programs, and explain the methodology PNM used to calculate the avoided capacity costs; and
2. Present the avoided energy costs that PNM used in determining the cost effectiveness of its energy efficiency programs, and explain the methodology PNM used to calculate the avoided energy costs; and
3. Indicate how the 2027 Electric Energy Efficiency and Load Management Program Plan ("2027 Plan") is consistent with PNM's upcoming 2026 IRP.

Q. What are avoided costs and how will they be used in developing the 2027-2029 Energy Efficiency plan?

A. Avoided costs are marginal fixed and variable costs attributable to additional facilities that would be needed to serve load without the implementation of the Energy Efficiency or Demand Response programs. The additional facilities represent supply-side or demand-side resources as well as transmission and distribution facilities that did not need to be built due to Energy Efficiency and Demand Response programs, and the associated costs represent avoided costs as a result. The cost savings (i.e. avoided costs) are created by customers consuming less energy and requiring less power and generating capacity than would otherwise be consumed or required without PNM's energy efficiency and demand response programs. These cost savings can then be compared with the costs of implementing the energy efficiency and demand response programs. PNM calculates these avoided costs to determine the cost-effectiveness of energy efficiency and demand response programs when programs are filed with the Commission. Cost effectiveness is demonstrated by the Utility Cost Test ("UCT") pursuant to the Efficient Use of Energy Act (EUEA) as amended. I will discuss the specific components of avoided resource costs later in my testimony.

Q. How are the Energy Efficiency avoided costs used in determining the cost effectiveness of energy efficiency programs?

A. The avoided costs from energy efficiency and demand response programs are used to determine the benefit portion of the cost-benefit ratio of the proposed portfolio of programs. For example, one year's worth of retrofits of commercial buildings delivers savings over a period of several years. The cost-benefit analysis for the 2027 Plan is described in further detail by PNM Witness Reedin.

Q. How are the energy efficiency and demand response avoided costs calculated and how are they reported for this filing?

A. The determination of avoided costs utilizes a comparison of resource expansion plans using model runs with and without the Energy Efficiency and Demand Response programs. The avoided cost valuation is done using EnCompass® software which provides candidate capacity expansion portfolios based on supply-side and demand-side resource technology options. The EnCompass® software calculates the resource costs and production costs which are used in the 2027 Plan analysis. This is the same software used for PNM's resource filing evaluations and Integrated Resource Plan ("IRP") analysis. The analysis assumptions are based on the 2026 IRP assumptions. Using the EnCompass results, PNM compiles the costs of scenarios that are differentiated only by the presence of PNM's 2027 Plan energy efficiency and demand response programs. When comparing system costs without demand-side programs to system costs with demand-side programs, the integrated system will likely have a different set of optimal generation resources and will dispatch those generation resources differently. Generally, the displaced load from the demand-side programs reduces the need to generate electricity from other sources and reduces the amount of new capacity investment. Given that different programs have different lifespans, a system analysis is needed to reflect the differing values for load reductions across years, and for different times and conditions within the year.

II. AVOIDED CAPACITY COST

Q. What is the annual avoided capacity cost determined from the energy efficiency and demand response avoided resource cost analysis?

A. The avoided capacity cost due to energy efficiency measures and demand response programs in PNM's 2027 Plan, expressed in $/kW per year, is shown in PNM Table TPD-1. The table provides annual, avoided capacity values for 2027 through the end of the expected savings of the energy efficiency programs (approximately 2039).

Table TPD-1

	Energy Efficiency		**Demand Response**
	Avoided Generation Capacity Cost		Avoided Generation Capacity Cost
	$/kW-year		$/kW-year
2027	304.88		141.21
2028	139.06		130.43
2029	85.06		123.02
2030	82.12		117.65
2031	78.75		112.28
2032	74.93		108.44
2033	74.25		106.14
2034	66.85		103.84
2035	55.19		101.55
2036	52.17		99.28
2037	75.11		97.02
2038	144.53		94.78
2039	0.00		92.55

Q. What utility avoided costs are included in the avoided capacity cost calculation?

A. Capital costs and fixed operations and maintenance costs (O&M) are included in the avoided capacity cost calculations for both energy efficiency and demand response.

Q. How did PNM determine the value of avoided capacity for the 2027 plan?

A. Using EnCompass, PNM analyzed the least cost portfolios of resources both with and without the energy efficiency and demand response resources. The value of the avoided capacity cost is based on the additional fixed costs associated with supply-side resources and infrastructure that PNM would need to incur if energy efficiency and load management programs were removed from PNM's energy supply portfolio. In other words, the capacity value of these programs is the revenue requirement associated with capital and fixed expenditures that would have otherwise been necessary (without the presence of EE and DR programs) to support the addition of resources and infrastructure.[1]

III. AVOIDED ENERGY COST

Q. What is the annual avoided energy cost determined from the energy efficiency avoided resource cost analysis?

A. The avoided energy cost due to energy efficiency in PNM's 2027 Plan, expressed in $/MWh per year, is shown in PNM Table TPD-2. The table provides annual avoided energy values for 2027 through 2038.

[1] PNM notes that the cost of capacity can sometimes differ from accounting classifications for fixed costs. For instance, building a solar facility will entail nearly all fixed costs. A PPA to take all the energy from that same solar facility will be accounted for as a variable cost since payment under the PPA is based on the amount of energy delivered. Part of the calculation is to correctly assign these cost categories between capacity and energy.

Table TPD-2

	Energy Efficiency Avoided Annual Generation Energy Cost $/MWh
2027	23.22
2028	49.98
2029	71.46
2030	89.99
2031	87.30
2032	87.73
2033	89.23
2034	85.55
2035	84.54
2036	83.38
2037	70.80
2038	22.00

Q. What utility avoided variable costs are included in the avoided energy cost calculation?

A. Avoided variable costs include generation variable costs such as fuel and variable operations and maintenance costs. Costs for solar and wind resource additions were also modeled as variable costs. Storage typically reflects a fixed cost but may include a variable energy cost component. The fixed storage costs were attributed to capacity, while the variable portion was attributed to energy. Costs for solar, wind and storage were based on recent EPRI TAG data provided for the 2026 IRP and escalated across the study period.

Q. How did PNM determine the avoided energy value?

A. Using EnCompass, PNM analyzed the most cost-effective portfolios of resources both with and without the energy efficiency resource. PNM then compared the difference in variable costs between the two portfolios – the difference represents the avoided energy cost associated with the energy efficiency resource.

Q. Does your analysis of the avoided capacity and energy costs cover the avoided transmissoin and distribution costs?

A. No. The derivation of the avoided transmisison and disribution costs are discussed by PNM Witness Bode in his testimony. PNM Witness Reedin presents the resulting outcome of the UCT tests based on the resource avoided costs discussed in this testimony plus the transmission and distribution avoided cost.

IV. CONSISTENCY WITH PNM'S UPCOMING 2026 IRP

Q. Will PNM continue to evaluate demand side alternatives to supply side resources in its 2026 IRP?

A. Yes. PNM will continue to evaluate demand side resources as an alternative to supply side resources in its 2026 IRP. PNM considers both the regulatory requirements associated with the EUEA and the energy savings and spending requirements contained therein, as well as evaluating PNM's avoided cost methodology to ensure PNM is capturing the appropriate costs and benefits over supply-side alternatives.

Q. Is the 2027 plan consistent with PNM upcoming 2026 IRP?

A. Yes. The 2027 Plan analysis is based on updated assumptions used for the 2026 IRP. These assumptions include updates for the load forecast, gas and market prices, costs associated with supply side resource options, costs and programs for demand side options along with numerous other updates. The 2026 IRP analysis will include energy efficiency and demand response programs identified in the Public Service Company of New Mexico Potential Study 2026-2045 completed by ICF in 2025. This will allow these programs to be compared on an equal basis with supply-side options for potential cost-effective solutions.

V. CONCLUSION

Q. Please summarize your testimony.

A. PNM's energy efficiency and demand response programs as proposed in the 2027 Plan reduce the need for additional generation resources resulting in lower overall capacity and energy production costs than would occur from acquiring additional resources. The costs associated with avoided energy and capacity represent utility costs that would be incurred if the 2027 Plan is not approved and implemented. The value of the avoided energy and capacity is a benefit to the cost of the total resource portfolio which is demonstrated in the UCT cost effectiveness assessment.

Q. Does this conclude your direct testimony?

A. Yes.

GCG#535113 v2

Resume

PNM Exhibit TPD-1

Is contained in the following 2 pages.

EDUCATION AND PROFESSIONAL QUALIFICATIONS OF THOMAS P. DUANE

Name: Thomas P. Duane

Address: Public Service Company of New Mexico
414 Silver Ave SW
Albuquerque, New Mexico 87102

Position: Manager, Transmission Planning

Education: Bachelor of Science in Electrical Engineering,
University of Colorado, Boulder, Colorado 1980

Master of Science in Electrical Engineering,
Electric Utility Management Program,
New Mexico State University, Las Cruces, New Mexico 1998

Employment: Public Service Company of New Mexico, Albuquerque, New Mexico

- Director, Integrated Resource Planning 2024-Present
- Transmission Planning Engineer, Manager Transmission Planning (12 Years) 1984-1996, 2006-2024
- Manager, Production Modeling 1996-2005
- Operations Engineer, Wholesale Power Marketing Analyst 1981-1984, 2005

Licensure: Licensed Professional Engineer in the State of New Mexico

Professional Affiliations: Member of Institute of Electrical and Electronic Engineers ("IEEE") Power Engineering Society and Computer Society

Experience:

- Power System Analysis, Planning and Operations – Steady State, Dynamic Stability, Transient, Short Circuit, Power Operations, Production Costs, Generation Dispatch, Resource Planning.
- Committee Representation – Over 25 years in inter-utility coordination groups, WECC and ERCOT reliability committees, RTO Tariff negotiations, stakeholder groups and industry organizations.

Previous Testimony:

New Mexico Public Regulation Commission (2025): Provided testimony on behalf of Public Service Company of New Mexico regarding the selection of resources associated with expansion of Rate 36B customer load and associated resource acquisition. Case No. 25-00048-UT.

New Mexico Public Regulation Commission (2024): Provided testimony on behalf of Public Service Company of New Mexico regarding the portfolio analysis and selection of resources associated with the 2028 resource application. Case No. 24-00271-UT.

New Mexico Public Regulation Commission (2023): Provided testimony on behalf of Public Service Company of New Mexico regarding transmission system impacts associated with the 2026 resource application. Case No. 23-00353-UT.

New Mexico Public Regulation Commission (2023): Provided testimony on behalf of Public Service Company of New Mexico regarding transmission system impacts associated with TAG solar facility interconnection. Case No Case No. 23-00251-UT.

New Mexico Public Regulation Commission (2021): Provided testimony on behalf of Public Service Company of New Mexico regarding transmission system impacts associated with replacement resources for 114 MW of Palo Verde Nuclear generation. Case No Case No. 21-00215-UT.

New Mexico Public Regulation Commission (2020): Provided rebuttal testimony on behalf of Public Service Company of New Mexico regarding transmission system impacts associated with replacement resources for San Juan Generation Station Units 1 and 4. Case No 19-00195-UT.

County of Torrance, Seventh Judicial District Court (2020) – Application for Order of Immediate Possession, State of New Mexico, Case D-722-CV-2020-00083, Provided affidavit regarding the need for immediate possession of right-of-way to maintain an existing transmission line.

Federal Energy Regulatory Commission (2010): Provide affidavit on the PNM Balancing Authority Area System Import Limit (SIL) calculations used in the Triennial Market Power Update. Docket Nos. ER96-1551, ER01-615 and ER09-746.

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

AFFIDAVIT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

THOMAS P. DUANE, Director Integrated Resource Planning, Public Service Company of New Mexico, upon penalty of perjury under the laws of the State of New Mexico, affirms and states: I have read the foregoing **Direct Testimony and Exhibits of Thomas P. Duane** which are true and correct based on my personal knowledge and belief.

DATED 15th day of April, 2026.

/s/ Thomas P. Duane
THOMAS P. DUANE

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICIENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO	)	
Applicant.	)	

DIRECT TESTIMONY

OF

ERFAN HAKIMIAN

April 15, 2026

NMPRC DOCKET NO. 26-00000XX
INDEX TO THE DIRECT TESTIMONY OF
ERFAN HAKIMIAN

WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

I. INTRODUCTION AND PURPOSE

Q. Please state your name, position and business address.

A. My name is Erfan Hakimian. I am the Director of Transmission/Distribution Planning and Contracts for Public Service Company of New Mexico ("PNM" or "Company"). My business address is 2401 Aztec Road NE, Albuquerque, New Mexico 87107. I am testifying on behalf of PNM.

Q. Please summarize your educational background and professional qualifications.

A. My educational background and professional experience are summarized in PNM Exhibit EH-1.

Q. Please describe your responsibilities as Director of Transmission and Distribution Planning.

A. As Director of Transmission/Distribution Planning and Contracts, I am responsible for overseeing the evaluation of the existing transmission and distribution system planning functions, analyzing system deficiencies, and creating plans for the capital expansion of these systems. I manage the Distribution Energy Engineering department which oversees the interconnection of generator interconnections to the PNM system under 17.9.568 NMAC ("Rule 568"). Additionally, I am also responsible for overseeing the administration of the Federal Energy Regulatory Commission ("FERC") jurisdictional open-access transmission tariff ("OATT") which involves providing transmission delivery services, processing and conducting generation interconnection studies, and executing agreements for both generation interconnections and transmission service.

Q. Have you previously submitted testimony before the New Mexico Public Regulation Commission ("NMPRC" or "Commission")?

A. Yes. A list of cases in which I have testified before the New Mexico Public Regulation Commission ("NMPRC" or "Commission") are listed in PNM Exhibit EH-1.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to:

1) Discuss why the Transmission and Distribution ("T&D") avoided cost study was performed, the methodology used to perform the T&D avoided cost study, and how the costs were determined.
2) Discuss the process of how Demand Side Analytics ("DSA") was chosen as the consultant to perform the study.
3) Discuss the different methodologies that could be utilized to perform a T&D avoided cost study and why a certain method was chosen.

Q. Why was a T&D cost study performed?

A. In Case No. 23-00138-UT, Final Order, Paragraph 6 E, the Commission ordered that "PNM shall conduct a transmission and distribution avoided cost study to be included in its next energy efficiency and load management triennial plan for years 2027-2029, and if PNM chooses to propose proxy avoided costs, it shall update the values for those proxy costs to be current as of the year of filing". Rather than use another proxy value, as has been the case historically, PNM elected to use an independent, third-party company, DSA, with broad expertise in this area to perform the study. This comprehensive study involved the analysis of inputs from areas throughout PNM primarily including, but not limited to, Integrated Resource Planning, Distribution and Transmission Planning, System Mapping, Load Forecasting, Energy Efficiency, Community Solar, Transportation Electrification, and Economic Development. The historical and forecast data from these multiple sources included data from traditional household meters, commercial metering (MV90 and Advanced Metering), and substation and feeder SCADA data. DSA performed the T&D avoided cost study with input from all relevant PNM subject matter experts. PNM's application will discuss the methodology used and provide the results of the transmission and distribution avoided cost study.

Q. What was the process PNM used to select an industry expert?

A. PNM selected its study vendor using a competitive solicitation. The process began with PNM's energy efficiency team working with PNM sourcing, PNM transmission and distribution teams, and other PNM teams to create a scope of work including specific qualification criteria (experience, capability, deliverability, past, qualified personnel, etc.) and then issued a formal Request for Proposal ("RFP"). Once bids were received from vendors PNM worked internally to evaluate the bids based on time, cost, qualification, experience etc. and selected DSA to perform the study.

Q. Why did PNM select Demand Side Analytics (DSA) to perform this study, and what qualifications made them the preferred choice?

A. From the bids received, PNM selected DSA based upon their overall expertise and experience in performing similar studies for nearly a dozen studies for utilities across the country. Their experience with probabilistic methods and location-specific deferral methods have undergone scrutiny from planners, utilities, distributed generation stakeholders, and regulators. Based upon their comprehensive proposal and PNMs past experience with DSA performing independent evaluations of PNM Energy Efficiency and Load Management programs, PNM selected DSA. Once DSA was selected, PNM worked with the DSA team to conduct the study including weekly meetings between the teams and constant input between DSA and PNM. PNM planners provided all required PNM data and information.

Q. How is the T&D deferral (avoided) cost calculated?

A. T&D deferral costs are determined by modeling the PNM system demand "with" and "without" energy efficiency going into the future. The primary purpose of this study was to determine the deferral value of Energy Efficiency and how reductions in system load as a result of energy efficiency can defer future upgrades. Of the three methods evaluated, DSA recommended using the deferral value methodology for this study because it most accurately reflects PNM's system conditions. The simplified system-wide value and marginal cost of service methods are overly simplistic and do not represent PNM's actual load characteristics. Josh Bode's testimony discusses the detail of the deferral value methodology in more detail.

II. CONCLUSION

Q. Please summarize your testimony.

A. PNM conducted the Transmission and Distribution avoided cost study in direct compliance with the Commission's directive in Case No. 23-00138-UT. Demand Side Analytics was selected as a consultant to lead this study based on demonstrated qualifications, experience, and value. Working collaboratively with PNM subject matter experts, DSA employed industry recognized methodologies and ultimately utilized the deferral value approach, which most accurately reflects PNM's planning practices and captures location-specific capital deferral opportunities. In addition, the use of a probabilistic load forecasting model ensured that the analysis appropriately accounted for uncertainties in future load growth and system conditions.

Q. Does this conclude your direct testimony?

A. Yes.

GCG#535112 v2

Resume

PNM Exhibit EH-1

Is contained in the following 1 page.

Erfan Hakimian
Educational and Professional Summary

Name: Erfan Hakimian

Address: Public Service Company of New Mexico (PNM)
2401 Aztec Rd NE
MS Z220
Albuquerque, NM 87107

Position: Director, Transmission and Distribution Planning and Contracts

Education: Bachelor of Science in Electrical Engineering, University of New Mexico, 2013
Master of Business Administration, Grand Canyon University, 2018

Employment: Employed by PNM since 2013:
Positions held with the Company include:
- Director, Transmission and Distribution Planning and Contracts
- Manager, Strategic Asset Management Department
- Engineer III, Technical Maintenance Management Department
- Senior Key Account Manager, Key Accounts Team
- Engineer I, Distribution Engineering

Testimony:

Before the New Mexico Public Regulation Commission	
25-00049-UT	PNM's First Annual Grid Modernization Review Filing
25-00055-UT	PNM's Application for a Certificate of Public Convenience and Necessity to Construct, Own, and Operate 30 Megawatts of Battery Energy Storage Facilities
26-0000041	PNM's Application for a Certificate of Public Convenience and Necessity to Construct, Own, and Operate the Rio Puerco to Pajarito to Prosperity 345 KV Transmission Project

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

AFFIDAVIT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

ERFAN HAKIMIAN, Director Transmission/Distribution Planning and Contracts, Public Service Company of New Mexico, upon penalty of perjury under the laws of the State of New Mexico, affirms and states: I have read the foregoing **Direct Testimony and Exhibits of Erfan Hakimian** which are true and correct based on my personal knowledge and belief.

DATED 15th day of April, 2026.

/s/ Erfan Hakimian
ERFAN HAKIMIAN

GCG#535083

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICIENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO	)	
Applicant.	)	

DIRECT TESTIMONY

OF

JOSH L. BODE

April 15, 2026

NMPRC DOCKET NO. 26-00000XX
INDEX TO THE DIRECT TESTIMONY OF
JOSH L. BODE

WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

I. INTRODUCTION AND PURPOSE

Q. Please state your name, position, and business address.

A. My name is Josh L. Bode. I am the Managing Partner at Demand Side Analytics. My business address is 120 Vantis Drive, Suite 300, Aliso Viejo, CA 92656.

Q. Please summarize your educational background and professional qualifications.

A. I hold a Master's in Public Policy from the University of California, Berkeley, and a Bachelor of Science in Business Economics from Willamette University. I have over 20 years of experience in the utility space conducting complex analysis using transmission and distribution (T&D), smart meter, and end use interval data for applications in planning, evaluation, forecasting, and applied research. I have analyzed the data for over 15,000 feeders and over 2000 substations and have led avoided transmission and distribution avoided cost and deferral value studies for Pennsylvania (all utilities, on behalf of the Pennsylvania PUC), PSEG Long Island, Central Hudson Electric and Gas, Narragansett Electric (Now Rhode Island Electric, Consumers Energy (Michigan). In addition, I have led the development of T&D web based tools used for distribution planning.

Q. What is the purpose of your testimony?

A. My testimony will summarize the methodology and avoided cost results of the transmission and distribution avoided cost study Demand Side Analytics prepared for PNM. The Avoided Cost of Transmission and Distribution Capacity Study may be found in PNM Exhibit JLB-2

Q. What is the purpose of the T&D Study and how will it be used?

A. The New Mexico Public Regulation Commission (PRC) in the Final Order of Case 23-00138-UT directed PNM to develop more accurate T&D cost figures based on PNM-specific data.[1] PNM contracted with DSA to conduct this T&D avoided cost study, with a key objective of replacing the current regional proxy T&D avoided cost values with PNM-specific results. The findings from this study will ultimately be used as part of the annual cost-effectiveness evaluation of PNM's energy efficiency and demand response portfolio. The Efficient Use of Energy Act (EUEA) currently requires PNM to use the Utility Cost Test (UCT) to evaluate the cost-effectiveness of PNM's energy efficiency and demand response programs, which includes the avoided transmission and distribution (T&D) capacity value (deferral value).

II. T&D STUDY METHODOLOGY

Q. What methods were considered for determining the T&D avoided costs?

A. The focus of the study is to quantify the T&D costs associated with an increase, or decrease, in peak demand.

There are three general approaches used for T&D avoided costs, described below.

1. **Deferral value:** quantifies the value of load relief in deferring location-specific investments to a later date.

[1] Additional background regarding the T&D avoided cost study directive is publicly available on the PRC's case lookup e-docket. Available at https://www.prc.nm.gov/case-lookup-e-docket/

2. **Marginal cost of service:** Used the historical cost of increasing T&D capacity and quantifies the supply cost of T&D infrastructure upgrades; and

3. **System-wide cost of load growth**: Divides the load-growth investments by total system load growth.

The T&D deferral value approach focuses on quantifying the value of load relief on ratepayer costs (i.e., revenue requirements).[2] It effectively compares revenue requirements due to growth-related T&D investments with and without load relief. While infrastructure upgrades can be temporarily avoided or deferred via load relief, they cannot be avoided indefinitely because some areas are high-growth areas that will eventually need new infrastructure or the equipment eventually ages and needs to be replaced.

The marginal cost of service study approach was initially developed for rates and has since been applied to more granular components. It does not directly account for the T&D savings due to load relief. Rather, it quantifies the supply cost of additional distribution or transmission capacity on the system. At the simplest level, it involves cataloging the costs of various infrastructure investments, identifying the growth-related investments, and dividing the costs of those investments by the incremental added transmission or distribution capacity. The approach uses the cost of adding additional transmission and distribution capacity to the system as a proxy for the cost avoided by reducing peak demand.

[2] The approach was introduced in the early 1990s as part of an initial wave of T&D deferral projects. Orans, R., Feinstein, C., et. al. (1993) Distributed Utility Valuation Study, submitted to the Electric Power Research Institute, the National Renewable Energy Laboratory, and PG&E.

The simplified system-wide value approach involves classifying T&D investments as growth-related or not and dividing the cost of the growth-related projects by the system-wide load growth.[3] However, the approach does not work when utilities experience flat or declining loads at a territory wide level.

Q. Why did you recommend the T&D deferral value approach for determining the transmission and distribution avoided costs?

A. After consideration of all three approaches, DSA recommended the T&D deferral value approach as the most accurate method for valuing load relief, given the directive to develop avoided costs to value load relief from energy efficiency and demand response.

Q. Please describe the deferral value analysis performed by PNM.

A. Key elements of the approach include:

- **Use of a probabilistic approach for load growth**: Simulating load growth trajectories 500 times and conducting the entire valuation analysis for each trajectory produces a deferral value estimate incorporating overload likelihood (unlike a deterministic approach) of overloads and distribution upgrades.
- **Granular analyses**: Both growth rates, available capacity, and T&D solutions vary by location. Average system wide growth rates mask the variation detectable at a more

[3] For a more detailed discussion on this approach see: Synapse Energy Economics (2021). Avoided Energy Supply Components in New England 2021 Report. Available at https://www.synapse-energy.com/sites/default/files/AESC%202021_20-068.pdf

granular level and cannot be used to identify and quantify locational deferral opportunities.

- **Quantify deferral value**: The deferral value is quantified by comparing the revenue requirements with and without load relief. When targeted at the right hours and locations, incremental reductions in peak demand can change the timing of capital infrastructure upgrades and modify when revenue requirements are introduced into electric delivery rates. The value is simply the reduction in costs due to load relief targeted at the right hours.
- **Quantify the main components of the T&D infrastructure**: The avoided costs were calculated for primary feeders, for bank/substation upgrades and for transmission projects. Doing so allowed the values to be stacked.
- **Time-differentiate the value**: The avoided T&D avoided cost was time differentiated by hour of day and season for each location, based on the timing of load relief needed to shave peak loads. Time-differentiating the value allows PNM and the New Mexico Public Regulation Commission to assess the extent to which energy efficiency resources contribute to deferring T&D costs.

Q. Can you please explain the deferral value approach in more detail?

A. The first step in developing avoided costs for energy efficiency and demand response was to estimate a technology-agnostic deferral value. The key steps were as follows:

1. **Clean and analyze historical T&D metering data for each locatio**n **(substation transformer and feeder)**. The objective is to identify and remove load transfers,

outages, or other anomalies in order to avoid mixing them up with load growth. At this stage, DSA calculated gross load by adding historical solar generation to metered net loads.

2. **Account for rapidly changing load-modifying technologies that impact loads**: This included behind-the-meter solar, community solar, electric vehicles, energy efficiency, and economic development loads. The system-wide forecasts used for the Integrated Resource Plan were allocated to individual premises based on historical adoption data.

3. **Estimate location-specific growth rates:** The growth rates were estimated for each bank and feeder using regression analysis to account for year-to-year trends in loads that were not due to weather. For each location, the key outputs were an estimate of the historical annual compound growth rate, the uncertainty in the growth rate, and the autocorrelation of the growth rate.

4. **Develop weather-normalized 8760 load shapes for each location**: Analyze historical weather and load patterns for each location to develop a typical weather year (1 in 2) 8760 load shape for each location.

5. **Simulate load growth trajectories:** Using the estimated growth trend, confidence bands (standard error of growth rates), and autocorrelation (random-walk variation around the growth trend), simulate 500 different 20-year load growth trajectories for each location. The simulated load growth trajectories are combined with the weather-normalized load shapes and used to identify the system peak day and local peak day for each location, year, and simulation.

6. **Calibrate locational load forecasts to IRP system load forecast**: The bottom-up forecasts on the system-peak day are scaled to the IRP system level forecast, after adjusting for transmission-connected loads.

7. **Create a modified forecast without incremental load relief from energy efficiency and behind-the-meter solar.** The forecasted, uninstalled solar and energy efficiency is removed to create a "without" forecast. The with-and-without analysis enables DSA to estimate the impact on T&D costs.

7. **Estimate the likelihood of overloads:** For the distribution analysis, the modified local peak forecasts (for each simulation, location, and year) were compared to local ratings to identify potential future overloads. The likelihood of overload for a given year and location was the average across the 500 simulations. For the transmission analysis, system load flow analysis was performed by PNM transmission planners using the modified and unmodified system coincident forecasts for each substation transformer, averaged across simulations. For the load flow analysis, the transmission analysis was not probabilistic.

8. **Gather cost data for locations with overload risk**: For the distribution analysis, locations with overload risk were narrowed to those for which construction was not underway, and risk was not imminent (less than 50% overload risk by 2027) but also meaningful (at least 10% overload risk by 2035). For the transmission analysis, project needs were determined via the load flow analysis. Transmission costs were calculated for the modified and unmodified load forecasts. The PNM distribution team provided capital costs for each potentially deferrable distribution project.

9. **Estimate the deferral value of incremental resources for each T&D component**: For each identified project (and for each simulated distribution trajectory), the timing (start year and duration) and magnitude of the load relief required for deferral were used along with the deferrable capital cost to calculate the deferral value.

10. **Produce system-wide T&D avoided cost value**: Though the avoided costs are locational specific in nature, a system-wide weighted average value was developed by using contribution to system peak to weight the value per kW-year at each location. For the distribution value, most locations had zero overload risk and therefore zero deferral value. This is reflected in the average. For the transmission analysis, the load flow calculations were used to allocate deferral value to substation transformers where load reductions helped alleviate the transmission constraint.

11. **Time differentiate value:** For the distribution analysis, the forecasted local peak day load shape for each location was used to quantify the load above the operating limit in each hour of the day and allocate peaking risk and value across hours.

Q. Please describe how the analysis aligns with PNM's 2026 IRP?

A. Where possible, the study was aligned with the PNM 2026 IRP, developed in parallel with the study. Specifically:

- Locational forecasts for loads were calibrated to align with the IRP system forecast.

- Locational forecasts for load modifiers (BTM solar, community solar, electric vehicles, energy efficiency, and economic development) were developed by dispersing the IRP system-level forecasts using customer level adoption likelihood models based on historical adoption data (for BTM solar and electric vehicles) and distribution of rate class usage (for system level energy efficiency forecasts for rate class).
- Load shapes for electric vehicle loads were drawn from the shapes used in the IRP.
- Rate class specific load shapes for energy efficiency were developed using the end use mixes from the PNM potential study which also informed the IRP.

Q. How did the approach for calculating transmission and distribution avoided costs differ?

A. PNM Table 1 summarizes the key differences between the avoided transmission and avoided distribution cost approaches.

PNM Table 1: Distribution and Transmission Avoided Cost Methodology Differences

Methodological Element	Distribution	Transmission
What type of loads were used for the analysis?	Local peak load forecasts for each feeder and substation transformer from 2026 through 2045.	System coincident peak load forecasts for each substation transformer from 2026 through 2045.
Was the analysis probabilistic?	Yes, avoided costs were estimated for each of 500 growth trajectory simulations for each location.	No, efforts were focused on load flow analysis rather than running probabilistic simulations.
How were overloads modeled?	Overloads on each location for each simulation were defined as projected peak load surpassing	Load flow analysis was performed across substation transformers with load modifiers

	the normal rating twice consecutively, or surpassing the emergency rating.	(planning load) and without load modifiers (valuation load) to identify the limiting element and projected future investments.
How was project deferral cost allocated across locations?	No allocation was needed given the locational nature of the analysis.	Load flow calculations were used to proportionally allocate deferral value to substation transformers where load reductions helped alleviate the transmission constraint.
What approach was used to quantify the magnitude of load relief required for a deferral?	Within each growth simulation, demand reductions were assumed to equal the projected overload amount.	For substation transformers where load reduction was deemed beneficial, the load relief to achieve deferral was quantified as the difference in projected loads in the final deferral year between the with and without load modifier scenarios.

III. DEFERRAL VALUE

Q. What is the technology-agnostic deferral value resulting from the deferral value approach?

A. The deferral value, expressed in $/kW per year, is presented in PNM Table 2. The table provides annual, avoided capacity values for 2026 through 2045 in nominal dollars. This is the value of a perfect resource that is equally available at all hours and seasons, with no availability constraints.

PNM Table 2: Technology Agnostic Deferral Value (Nominal $)

Year	Distribution Feeder	Distribution Substation Transformer	Transmission	Total
2026	$1.73	$0.00	$0.00	$1.73

2027	$1.70	$0.82	$0.00	$2.51
2028	$2.51	$4.44	$28.96	$35.91
2029	$3.82	$7.72	$27.72	$39.26
2030	$4.80	$9.32	$27.60	$41.72
2031	$5.71	$10.23	$27.53	$43.48
2032	$6.54	$11.90	$48.17	$66.61
2033	$8.19	$13.73	$48.12	$70.04
2034	$9.17	$14.81	$47.03	$71.02
2035	$10.43	$15.86	$47.06	$73.35
2036	$9.83	$16.52	$50.78	$77.13
2037	$10.21	$16.46	$50.17	$76.85
2038	$10.62	$14.89	$45.43	$70.94
2039	$10.31	$14.31	$56.72	$81.34
2040	$10.49	$14.72	$46.47	$71.68
2041	$11.01	$15.31	$46.50	$72.82
2042	$10.55	$15.17	$47.73	$73.45
2043	$10.80	$15.82	$47.63	$74.25
2044	$9.63	$14.32	$47.60	$71.55
2045	$8.18	$12.69	$45.72	$66.59
10-year levelized value (2028-2037, $2025)*	$6.51	$10.89	$35.76	$53.16
*** Levelized costs are for informational purposes only; annual values should be used for analysis.**				

Q. What T&D cost elements are included in the avoided capacity cost calculation?

A. Deferrable value for transmission, distribution substation transformers, and distribution feeders.

Q. Why is it important to time-differentiate the avoided costs?

A. For a resource to deliver avoided cost, it must provide load relief at the right times, days, season(s), and locations.

IV. AVOIDED COST OF ENERGY EFFICIENCY AND LOAD MANAGEMENT

Q. Can you please describe how PNM derived the avoided cost values to be applied to energy efficiency and demand response proposed for this filing?

A. Energy efficiency has a shape that is tied to the end-uses. First, end-use load shapes were weighted based on the expected end-use mix in the EE forecast to produce a portfolio weighted EE load shape for each location, season, and year. This portfolio EE load shape was multiplied by the time-differentiated deferral value at each location to reflect the coincidence of energy efficiency with the hours when resources are needed to achieve deferral. To aggregate granular values to a system-wide metric, we took a weighted average, weighting by coincidence of each location with the seasonal system peak.

For demand response avoided costs, no load shape constraints were applied to derate the deferral value. Rather, only the summer portion of deferral value was applied to reflect the ability of PNM Load Management resources to deliver T&D value given the mostly summer capacity of the PNM Load Management portfolio.

Q. What is the energy efficiency value of avoided capacity that PNM used in preparing the 2027 plan?

A. The value of avoided capacity due to energy efficiency measures in PNM's 2027 Plan, expressed in $/kW per year, is presented in PNM Table 3. The table provides annual, avoided capacity values for 2026 through 2045 in nominal dollars.

PNM Table 3: Avoided Cost of Energy Efficiency (Nominal $)

Year	Distribution Feeder	Distribution Substation Transformer	Transmission	Total
2026	$1.23	$0.00	$0.00	$1.23
2027	$1.19	$0.32	$0.00	$1.51
2028	$1.80	$1.60	$17.75	$21.15
2029	$2.74	$3.18	$17.73	$23.65
2030	$3.46	$3.92	$17.68	$25.06
2031	$4.09	$4.43	$17.67	$26.19
2032	$4.66	$5.46	$30.83	$40.96
2033	$5.84	$6.64	$30.78	$43.26
2034	$6.51	$7.31	$30.04	$43.86
2035	$7.39	$8.05	$30.02	$45.46
2036	$6.98	$8.57	$32.36	$47.91
2037	$7.20	$8.71	$31.94	$47.85
2038	$7.45	$8.57	$28.90	$44.92
2039	$7.19	$8.52	$36.10	$51.81
2040	$7.30	$8.91	$29.67	$45.89
2041	$7.65	$9.51	$29.69	$46.85
2042	$7.33	$9.59	$30.49	$47.41
2043	$7.62	$10.20	$30.43	$48.25
2044	$6.80	$9.30	$30.42	$46.52
2045	$5.78	$8.21	$29.22	$43.22
10-year levelized value (2028-2037, $2025)*	$4.58	$5.13	$22.80	$32.50
*** Levelized costs are for informational purposes only; annual values should be used for analysis.**				

Q. How does the proposed energy efficiency value of avoided capacity compare to previously approved values?

A. The values estimated for this study are specific to PNM and developed using data specific to PNM data. The avoided T&D values used previously by PNM for cost-effectiveness purposes were not specific to PNM or developed using PNM data. PNM Table 4 compares the annual value of EE from this study to the previous EE avoided cost values, from the PNM 2020 Proposed Plan. Years are only included for which values were produced in both studies. Notably, the values from this study are higher than the values previously used by PNM.

PNM Table 4: Comparison of Study Value of EE with PNM 2020 EE Proposed Plan (EE Avoided T&D, Nominal $)

Year	PNM 2020 EE and LM Proposed Plan (EE Avoided T&D)	PNM 2025 Avoided T&D Cost Study (Value of EE)
2026	$5.39	$1.23
2027	$5.47	$1.51
2028	$5.55	$21.15
2029	$5.63	$23.65
2030	$5.72	$25.06
2031	$5.80	$26.19
2032	$5.89	$40.96
2033	$5.98	$43.26
2034	$6.07	$43.86
2035	$6.16	$45.46
2036	$6.25	$47.91
2037	$6.34	$47.85
2038	$6.44	$44.92
2039	$6.54	$51.81

Q. What is the demand response value of avoided capacity that PNM used in preparing the 2027 plan?

A. The value of avoided capacity due to load management programs in PNM's 2027 Plan, expressed in $/kW per year, is presented in PNM Table 5. The table provides annual, avoided capacity values for 2026 through 2045 in nominal dollars.

PNM Table 5: Avoided Cost of load management (Nominal $)

Year	Distribution Feeder	Distribution Substation Transformer	Transmission	Total
2026	$1.73	$0.00	$0.00	$1.73
2027	$1.69	$0.27	$0.00	$1.97
2028	$2.50	$1.15	$28.96	$32.61
2029	$3.78	$3.05	$27.72	$34.54
2030	$4.75	$3.79	$27.60	$36.14
2031	$5.64	$4.34	$27.53	$37.52
2032	$6.45	$5.65	$48.17	$60.27
2033	$8.06	$7.21	$48.12	$63.39
2034	$9.02	$8.08	$47.03	$64.14
2035	$10.24	$9.01	$47.06	$66.31
2036	$9.61	$9.67	$50.78	$70.06
2037	$9.96	$9.95	$50.17	$70.09
2038	$10.33	$10.41	$45.43	$66.16
2039	$9.98	$10.55	$56.72	$77.24
2040	$10.12	$11.13	$46.47	$67.72
2041	$10.62	$12.00	$46.50	$69.12
2042	$10.16	$12.15	$47.73	$70.04
2043	$10.40	$12.96	$47.63	$70.99
2044	$9.26	$11.83	$47.60	$68.69
2045	$7.85	$10.45	$45.72	$64.02
9-year levelized value (2027-2036, $2025)*	$5.06	$8.20	$30.88	$44.14
*** Levelized costs are for informational purposes only; annual values should be used for analysis.**				

V. CONCLUSION

Q. In conclusion, what is PNM requesting in this case?

A. PNM requests approval of the proposed energy efficiency and demand response avoided cost values for use in evaluating the program portfolio in this application.

Q. Does this conclude your direct testimony?

A. Yes.

GCG#535139 v2

Resume

PNM Exhibit JLB-1

Is contained in the following 14 pages.

Demand Side Analytics
DATA DRIVEN RESEARCH AND INSIGHTS

JOSH BODE
PARTNER

Mr. Bode specializes in advanced applications of data analytics using large volumes of hourly and sub-hourly data for evaluation, valuation, planning and forecasting in the energy sector. He has led over 50 studies including some of the first innovations and largest applications of smart meter and SCADA data analytics in topics as varied as:

- DER valuation and cost-effectiveness
- Location specific probabilistic forecasting and planning methods, including locations specific T&D marginal costs
- Granular forecasting and impacts of electrification and distributed energy resources
- Impact evaluations of time varying pricing, demand response, behavioral programs, and energy efficiency programs
- Rate design and analysis
- Market potential studies of DER's including distribution level micro-potential studies
- Value based targeting analytics

Mr. Bode has analyzed hourly or sub-hourly smart meter data for tens of millions of residential and small and medium businesses and with the full population of large customers from numerous utilities. He also has applied experience with utility wide transmission level, substation, and distribution circuit feeder hourly data from multiple utilities, including PG&E, Con Edison, O&R, Central Hudson, NYSEG, RG&E, PSEG Long Island, and National Grid (Rhode Island). Most recently, he has worked on projects designed to align distributed energy resources with grid value and in developing location specific, probabilistic forecasts and T&D marginal costs.

Representative Project Experience

T&D Planning, Forecasting, and Marginal Costs

- **PG&E: Zonal Equity Electrification Pilot (2025- Present)**
- **PSEG Long Island: Distributed Energy Resources Granular Forecasts (2019-2021)** Developed adoption propensities for 1.1M customers for electric vehicles, heat pumps, solar, battery storage, and energy efficiency. Calibrated propensities to system level forecasts for 20 years. Rolled up to feeder (1000), substation (100), and transmission area (25) planning levels and combine with hourly (8,760) end use load shapes to assess impacts of local peaks and implications for planning. Produced dashboards for T&D planning teams.
- **PSEG Long Island: Distributed Energy Resources Granular Forecasts (2023)** Developed adoption propensities for 1.1M customers for EVs, heat pumps, solar, battery storage, and EE and assess grid impact for feeders, substations, and load pockets.
- **Central Hudson: Utility Thermal Energy Network (UTEN) (2025-present)**
- **Central Hudson: Distributed System Implementation Plan (2016, 2018, 2020, and 2023)**
    - Development of probabilistic forecasting and planning methodology

Education

Master of Public Policy University of California, Berkeley	2005
Bachelor of Science in Economics Willamette University	1999

Work History

Demand Side Analytics, LLC

Partner	2017-now

Nexant – San Francisco, CA

Vice President, Strategy & Planning	2016-2017
Principal Consultant	2014-2015

Freeman, Sullivan & Co – San Francisco, CA

Principal Consultant	2013
Senior Consultant	2010–2012
Consultant	2008–2009
Senior Analyst	2005–2007

U.S. Federal Energy Regulatory Commission – Washington D.C.

Energy Industry Analyst	2005

California Public Utilities Commission - San Francisco, CA

Office of Commissioner Kennedy	2004–2005

   - Develop probabilistic 10-year 8760 load forecasts for all substations, transmission areas, and planning areas in service territory.
   - Forecast adoption of DERs and their dispersion for each individual circuit feeder, including EE, solar, battery storage, heat pumps, and electric vehicles. Produce 8760 load shapes with and without DERs for all substations and feeder in service territory
   - Location specific probabilistic forecasting for all substations producing 8760 forecasts
   - Solar granular forecasts - Analyze historical adoption, estimate diffusion curves with uncertainty, granular dispersion modeling, and distributed solar production forecasts with 8760 load impacts at the substation level
   - Electric vehicle granular forecasts - Analyze vehicle registration data for 11.9M NY vehicles, estimate diffusion curves with uncertainty, granular dispersion modeling, and forecast 8760 load impact of EVs for each substation
   - Produce 8760 load shapes with and without DERs for all substations and feeder in service territory
   - Identifying locations beneficial locations for DERs
   - Advanced metering infrastructure analysis and business case
- **PG&E: Impacts of Zonal Electrification on Gas Distribution Planning and Strategy (2020-2023)** Developed adoption propensities for heat pumps and heat pump water heaters. Calibrated propensities to match four distinct long-term forecasts (20 years) and quantify implications for gas sales and throughput. Rolled up results to census block group level to produce interactive tools visualizing penetration of heat pumps and impact on gas sales and flow over time.
- **Central Hudson 2016, 2018, 2020, and 2023 Location Value Studies** Estimate location specific transmission and distribution avoided costs using probabilistic forecasting and planning methods for all substations, planning areas, and transmission projects
- **Central Hudson: Long Term Gas Plan (2023)** New York Public Service Commission ordered a granular gas planning process for decarbonization. The project included: 1) historical analysis and probabilistic forecasts of demand and pressure for all gas systems using 15 minute data, 2) Development of granular forecasts for energy efficiency, building electrification, demand response, and Non-pipe alternatives, 3) Estimation of gas distribution avoided costs 4) Estimation of the impact of planning scenarios on rates and customer bill impacts, and 5) Developing a Gas Long-Term Planning Model and training Central Hudson staff on how to update scenarios and results.
- **PG&E: Transportation Electrification Infrastructure Analysis (2021)** Developed electric vehicle adoption propensity scores for PG&E's 5+M customers. Calibrate propensities to match four distinct long-term forecasts (20 years), roll up to 3,000 feeders and visualize penetration of electric vehicles over time at the feeder level.
- **Large Western PUC (2020)** Propensity score modeling and granular allocation of electric vehicles, heat pumps, and heat pump water heaters to quantify implications of electrification of electric loads and distribution costs (with E3 and Integral Analytics)
- **PSEG Long Island: Locational Value Study (2019-2021)** Developed granular long-term forecasts and produced T&D distribution value for over 1,000 feeders, 100 substations, and 25 transmission planning areas.
- **PSEG Long Island: Interconnection Benchmarking (2021- Present)** Compared PSEG Long Island's solar infrastructure process to other utility counterparts for benchmarking purposes.
- **Central Hudson: Gas Distribution Avoided Costs and Online Planning Tool (2019)** Josh led the gas distribution avoided costs study, which included: quantifying the relationships between weather and pressure drops; quantifying the relationship between gas demand and pressure drops; identifying highly loaded local gas systems; estimating location-specific growth rates for each local gas system; producing probabilistic forecasts of pressure drops and demand (flow) for each local system, assuming no additional interventions occur; estimating the likelihood of the need for growth-related distribution investments at each location; calculating the location-specific avoided distribution costs associated with a decrease (or increase) of gas flow for each local gas system. Mr. Bode also worked with Adriana Ciccone and our web developer to convert the historical analysis and forecasting by gas line into an online tool.
- **PSEG Long Island: Locational Avoided T&D Cost Study (2019-2020)** Prepared a locational avoided T&D cost study for PSEG-LI based on analysis of 5 years of 8760 hourly SCADA data for about 1500 distribution assets (~150 substations, ~350 substation banks, ~1000 feeders). The study quantified the value associated with an increase or decrease of kW coincident with location specific peaks. It employed granular, probabilistic load forecasting and deferral value estimation.
- **PSEG Long Island: Hosting Capacity and T&D Support (2020-2021)** Leveraged granular 8760 forecasts SCADA cleaning algorithms developed for the PSEG-LI T&D Avoided Cost study to identify minimum loads and implement a bulk hosting capacity analysis of all ~1100 feeders and ~250 substation banks.
- **PSEG Long Island: Feeder Level Non-wire-alternative Assessment and Optimization Tool (2020-2021)**

Demand Side Analytics
DATA DRIVEN RESEARCH AND INSIGHTS

- **Central Hudson: Gas Non-Pipe Alternatives Assessment (2018)** Conducted a detailed assessment of local gas systems nearing operating limits to assess the feasibility non-pipe alternatives.
- **Central Hudson: T&D Analysis (2020)** Analysis of transmission and distribution head room to incorporate renewables to meet 70% renewable goals by 2030.
- **Consumers Energy, Sunverge: Identifying High Value Locations for Battery Storage (2018-2019)** T&D deferral pilot and defining operations strategy for estimating locational value of battery storage in Michigan.
- **Central Hudson: Probabilistic T&D planning Tool and Training (2017-2018**) Led design and development of a tool for central Hudson that automated T&D long term forecasting and valuation. Trained Central Hudson planning staff on how to use the tool.
- **Central Hudson: Same Day and Day Ahead Transmission and Distribution Forecasting Model (2018)** Led design and development of location specific same day and day ahead forecasting models for 60+ substations, 10 transmission areas, and 4 non-wire alternative projects.
- **Central Hudson: Non-wire Alternatives (NWA) assessments, including analysis of load patterns, modeling of DERs, optimization of resource mix, and benefit costs analysis (2015 to Present)**
  - NW Corridor transmission project – 10 MW of load relief (2015-ongoing)
  - Fishkill/Shenandoah distribution deferral – 5 MW of load relief (2015 – ongoing)
  - Merritt Park feeder circuit project – 1 MW of load relief (2015 – ongoing)
  - Ohioville substation project – 4 MW of load relief planned. Project aborted because Nexant analysis showed overages too large to successfully mitigate given timeline.
  - Coldenham feeder circuit project – 2 MW of load relief initially projected. Project was postponed because Nexant analysis showed natural adoption of solar and a load transfer deferred need for project.
- **PG&E: Demand Response for T&D Pilot Phase II (2017)** Reported on 10 demonstration projects for integration of demand response into T&D planning and operations.
- **PG&E: Demand Response for T&D Pilot Phase I (2014)** Study of PG&E needs for integration of load management into distribution, operations, and planning.
- **Orange & Rockland Demand Management programs cost-effectiveness, T&D marginal costs, and incentive design support (2015 and 2016)**
- **PG&E (2014)** Development of tools for modeling 8760 customer and end use load, including solar and EV's, for all PG&E's 2900 circuits and 800 substations
- **National Grid (2010)** Development of a tool for assessing non-wires alternatives to transmission and distribution investments.

Pennsylvania Act 129 Experience

- **PA PUC: Transmission and Distribution (T&D) Avoided Cost Study (2024)** Led the study to estimate the avoided or deferred T&D costs due to reductions in local demand peaks. Worked closely with EDC distribution planners to map upgrades to different overload types.
- **PA PUC: Phase IV Demand Response Potential Study (2019)** Estimated achievable potential separately for each of the state's seven electric distribution companies. The study included a wide range of DR technologies including curtailment agreements, connected thermostats, behavioral demand response, and battery storage.

Distributed Energy Resource Integration and Pilots

- **SCE: Distribution Level Demand Response (2025)** Designed a systematic test of residential AC Cycling and Smart Thermostat programs to identify distribution level impacts for use in planning.
- **CPUC: Integrated Resource Plan Electric Vehicle Forecast (2019- Present)** Analyzing the adoption patterns and geographic distribution of electric vehicles, plug-in electric vehicles, and hybrids. Developing California system-level forecasts of the level of electric vehicle, heat pump, and heat pump water heater adoption needed to meet regulatory goals. Developing granular, zip level forecasts of electric vehicle and heat pump adoption, including adoption propensity scores, and mapped the clustering of saturation over time.
- **PG&E: Tesla Virtual Power Plant Study (2021-2022)** Analysis of enrollment and load impacts from over 1,300 Tesla residential batteries. Evaluated the ability to use Tesla Powerwall home battery systems to create a virtual power plant to support state electric grid reliability in times of high electricity demand.

- **SCE: Market Access Program NMEC Settlement Contactor (2021- Present)** Designing, maintaining, and operating the population NMEC engine for contractor settlement and program reporting in response to the CPUC's authorization to develop two-year Market Access Programs to expedite the deployment of clean energy solutions.
- **SDG&E: Evaluation of Workplace and Multi-family Building Electric Vehicle Charging Patterns and Price Response (Power Your Drive)** Analysis of session data for over 3,000 chargers with 4 years of data.
- **SCE: Real Time Pricing Program Evaluation (2008- Present)** Quantifying how large commercial customer loads change in response to change in price and determining what a customer would have done had they been metered under the otherwise applicable tariff.
- **PGE: SmartAC Bring Your Own Thermostat Pilot (2021-2023)** A large-scale randomized control trial that focused on event and daily load shifting impacts from smart thermostats for residential customers. The study quantified thermostats automated daily TOU response and event-based responses. Mr. Bode designed the study, operation plan, and experiment, and wrote the seed code to analyze the impacts.
- **PSEG Long Island: Feeder level DER Potential and Non-Wire Alternative (NWA) Assessment and Optimization Tool (2020-2021) Assessment and Optimization tool (2020-2021)** DSA developed a tool to allow PSEG Long Island staff to estimate the optimal mix of DER resources to alleviate transmission and/or distribution projected overloads.
- **PG&E: Battery Storage DR Pilot (2021-2023)** A residential behind-the-meter battery storage pilot with 168 battery storage sites, which included multiple randomized control trials to assess impact of incentives and battery response to real-time pricing, time of use rates, and event-based load shaping.
- **PG&E: Battery Storage DR Pilot (2021- Present)** A residential behind-the-meter battery storage pilot with a track of 100 existing battery storage sites and 100 new battery storage installations. The study is designed to analyze how customers use battery storage on their own, test how enrollment rates vary with sign up and recurring incentives and assess incremental impacts of battery dispatch for time of use rate, real time pricing, load shed events, load building events, and targeted T&D deferral applications.
- **Central Hudson: Battery Storage Revenue Simulation Tool (2021-2022)** Developed model to assess utility scale battery storage bids. The model simulated battery storage dispatch in the NYISO market across energy and ancillary service products and calculated expected revenues from the marketplace, capacity payments, distribution deferral (if applicable). The model factored in the battery storage characteristics and constraints – round trip efficiency, usable MWh, max output, number of cycles per day, and maintenance outages –and identified by the bidder and was used to make decisions on battery storage contracted by Central Hudson.
- **SDG&E: Resource Adequacy and Effective Load Carrying Capacity Regulatory Support (2021-2022)** DSA conducted a detailed assessment of how net load patterns and market prices aligned with SDG&E demand response market bids, provided support in regulatory workshops, and developed a simplified, transparent model for estimating ELCC given load shapes, duration, availability, and frequency of dispatch limitations.
- **Con Edison: Peak Conditions Monitoring System (2019-2022)** To assist in monitoring peak conditions, developed a monitoring system to alert users of the conditions and provide recommendations for when to call demand response events.
- **SDG&E (2019-2021)** Analysis of impact of rates, solar, battery storage, and DR for all 150,000 non-residential customers, targeting analysis, and development of online tools. The project involved analysis of AMI data for all customers and simulation of battery storage operations.
- **AEE: Valuing DERs in ERCOT (2019)** Analyzed T&D expenditures and wholesale electric market prices in Texas. Quantified the benefits of better integration of DERs into T&D planning and the wholesale electric market price impacts of improved integration of DERs into markets.
- **State of Washington. Distributed Energy Resource Planning Assessment (2017)** Led an inventory of current utility distribution planning practices and capabilities in Washington and helped draft the report to the legislature. The project focused on gathering information from three Washington investor-owned utilities and nine public utilities on capital project planning, forecasting of T&D loads, locational valuation, DER valuation, and hosting capacity.

- Battery Storage Pricing, Payback Periods, and Bill Impacts. Interval data analysis for all 1,500 largest customers at Large Western Utility (2015-2016)
- Brooklyn Queens Demand Management Project - Framework and model for assessing bids and from demand and supply side resources with different operating characteristics (Con Edison 2014)
- REV Market design support – Designing and Unlocking Markets for Distributed Energy Resources (ConEd - 2015)
- IESO study of options for integrating DR programs into Ontario markets and grid operations (2014)

- ConEdison development of a tool and framework for assessing cost-effectiveness of demand response resources designed for transmission and distribution load relief (Con Edison 2013)

Time Varying Pricing Evaluations and Rate Design

- **Central Maine Power (CMP): Seasonal and Electric Technology Rates Evaluation (2024)** CMP developed two optional rates designed to lower the costs of building and transportation electrifications. DSA used AMI data from one year before and after the installation for both participants and a matched control to answer questions regarding annual consumption change, peak demand change, and bill impacts from the rate?
- **PSEG Long Island: Evaluation of Opt-in TOU rates** Long Island was one of the first utilities to install smart meter and launched four opt-in TOU rates. Mr. Bode led the evaluation using a matched control group and difference-in-differences AMI data for over 10,000 enrolled sites and 10,000 control candidates.
- **PSEG Long Island: Voluntary Time of Use Rate Evaluation (2022- Present)** Evaluating PSEG LI's Voluntary TOU Rate program for 900,000 residential customers using matched-control differences-in-differences for each hour of day.
- **PSEG Long Island: Locational Avoided T&D Cost Study (2019-2020)** Prepared a locational avoided T&D cost study for PSEG-LI based on analysis of 5 years of 8760 hourly SCADA data for about 1500 distribution assets.
- **PG&E: Emerging Technologies WatterSaver Program Pilot (2019-2021)** Estimated the change in daily energy use from the peak (4-9 pm) energy demand of smart control devices and smart hybrid heat pump water heaters to lower-cost hours, thus avoiding congestion on the grid and aligning with time of use (TOU) rates.
- **SCE: Smart Energy Program (SEP) (2019- Present)** The SEP program utilizes Wi-Fi connected smart thermostats to reduce air conditioning load in participating residential households during peak hours. DSA used AMI data, a matched control group, and difference-in-difference panel regressions to evaluate the 50,000 homes and 23 DR events for Summer 2019.
- **PSEG Long Island: Distributed Energy Resources Granular Forecasts (2019-2021)** Developed adoption propensities for 1.1M customers for electric vehicles, heat pumps, solar, battery storage, and energy efficiency.
- **PG&E: Real Time Pricing Conjoint and Focus Groups (2022-2023)** In addition to overseeing the research, DSA analyzed loads, modeled bill impacts and volatility for dozens of rate and support configurations across all three sectors, and designed and implemented the choice experiment (conjoint) survey to identify quantify relative customer preferences. (Piloted real time pricing rates across rate classes through a large-scale, multi-step research effort. Components included research question prioritization, 10 focus groups across three sectors, and a choice experiment (conjoint) survey study targeting 2,000 residential, 500 SMB, and 250 agricultural customers. Analyzed loads, modeled bill impacts and volatility for dozens of rate and support configurations across all three sectors and designed and implemented the choice experiment (conjoint) survey to identify relative customer preferences. The qualitative focus group interview findings were used to inform the choice experiment design and both research elements informed design recommendations to be tested in a field pilot the following year and beyond.)
- **PSEG Long Island: Time of Use (TOU) Rate Study (2023)** Long Island was one of the first utilities to install smart meters and launched four opt-in TOU rates. Mr. Bode led the evaluation using a matched control group and difference-in-differences AMI data for over 10,000 enrolled sites and 10,000 control candidates. Analyzed hourly changes in electrical usage for residential opt-in TOU customers. Created matched control group and estimated savings using differences-in-differences, including EV owners and balanced billing customers. Implemented billing analysis to understand bill impacts of the rate change.
- **SDG&E: Evaluation of Workplace & Multifamily Building EV Charging Patterns and Price Response (2021-2023)** Analysis of session data for over 3,000 chargers with 4 years of data. Power Your Drive Pilot was designed to create access to electric vehicle's charging infrastructure at workplaces and multi-unit dwellings for the residents of the San Diego region. The focus is on encouraging EV adoption by reducing barriers such as the expense and difficulty of installing charging equipment for key underserved customer segments.
- **SDG&E: Evaluation of Electric Vehicle Time of Use Rate Load Impacts (2021- Present)** Evaluation of over 25,000 sites on EV TOU rates and development of EV detection algorithms using AMI data.
- **Con Edison: Innovate Pricing Pilot Design, implementation support, and evaluation (2017 to 2022)** The pilot is focused on assessing innovative delivery rates and assessing customer acceptance, load impacts, and bill impacts of rates with time-of-use demand charges and demand subscription rates. Both opt-in and default enrollment are being tested for residential and non-residential customers.

- **Con Edison and O&R: SmartHome Pilot Design (2016 to 2022)** A prices-to-devices pilot designed to assess the ability of customers to respond through technology (battery storage, thermostats, EV's and home energy management systems) to location specific and time varying prices that better reflect all costs components including distribution and transmission.
- **PG&E: Payable Savings for On-Bill Financing and Residential Pay for Performance (2023)** Analysis of energy savings and load impacts (8760) for two of PG&E's program that rely on performance-based payments based on measurement at the meter: the Commercial On-Bill Financing Program and Residential Pay For Performance.
- **RG&E, NYSEG (2016-2017), and Central Hudson (2016 and 2025): AMI Businesses Cases** Initial model set up and analysis of time varying prices and valuation.
- California Statewide Impact Evaluation of Default Critical Peak Pricing for Medium & Large Customers, 2010, 2011, 2012, and 2013
- **PG&E: Evaluation of Non-Residential TOU Rates Evaluations (2010, 2011, 2012, and 2013)** Including the first implementation of mandatory TOU rates for small businesses.
- **SG&E (2015- Present)** Evaluation of SDG&E implementation of mandatory TOU and default CPP rates for small businesses, including impacts without and without automation technology.
- Sacramento Municipal Utility District Smart Options Pilot (2014)
- SMUD (2014) SMUD micro-simulation model for policy implications of time varying pricing, including automating rate design, deployment strategy and enrollment rates, changes to loads, and cost-effectiveness.
- Questar: Dominion Energy West: Peak Moment Valuation Frameworks (2017-2018)
- Development of Pricing Products Model for (PG&E, 2012) – rate design, bill impacts and load impact tool
- SDG&E residential and small and medium business time varying pricing bill impact calculators (2014)
- Load Impact Evaluation of PG&E's Residential TOU Tariffs, 2009, 2010 and 2011
- Load Impact Evaluation for PG&E's Residential SmartRate™ Tariff, 2008-2010
- Load Impact Evaluation for PG&E's Commercial SmartRate™ Tariff, 2008-2010
- Analysis of SDG&E's, SCE's and PG&E's Default CPP Customer Choices, 2010
- Ex Post and Ex Ante Analysis of SCE's Real Time Pricing Program, 2007, 2008 and 2009

Market Potential Studies

- **Consumers Energy: Demand Response Potential and IRP Planning Support (2020-2021)** Conducted a demand response market potential study for Consumers Energy to inform the expansion of existing program offerings and examine opportunities for new program offerings. The results of the potential study formed key inputs for Consumers Energy's 2021 Integrated Resource Plan (IRP).
- **Pennsylvania Statewide: Demand Response Potential Study (2019-2020, and 2023)** Estimated achievable potential separately for each of the state's seven electric distribution companies. The study included a wide range of DR technologies including curtailment agreements, connected thermostats, behavioral demand response, and battery storage.
- **AEE: The Value of Integrating Distributed Energy Resources in Texas (2019)** Quantified the benefits of better integration of DERs into T&D planning and the wholesale electric market price impacts of improved integration of DERs into markets.
- **AEE: Demand Response and Battery Storage Potential in Indiana (2017-2018)** Analysis of achievable potential from demand response and utility-scale batteries in Indiana.
- **Central Hudson: Hosting Capacity Assessment for State Renewable Goals (2020)**
- FERC National Assessment of Demand Response Potential (2009)
- California Statewide Demand Response Potential Study Support (LNBL- 2016)
- SMUD DR Potential from time varying pricing, peak capacity, ancillary services, flexible capacity, and energy products (2015)
- IESO Commercial and Industrial market potential study (2013-2014)
- City Power San Antonio Market Potential Study (2014)
- Pennsylvania Statewide DR Potential Study (advisor - 2015)
- PG&E SmartRate Market Potential and Targeting Optimization (2011-2013)

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Demand Response Evaluations

- **SCE: Demand Response Enhancement and Modernization (DREAM) Study (2024-2026)** Leading the design and operational planning for a novel whole home residential demand response study. Study is designed to assess drivers of cost-effective dispatch of batteries, EVs and smart thermostats. The study also includes development of vendor SOWs, operations plans, and a conjoint survey to understand drivers of cost-effective participation pathways.
- **Statewide CT: EV EM&V (2022-2025)** Led the analysis of market characteristics to identify and understand which customers adopted electric vehicles and which participated in managed charging programs for CT's statewide electric vehicle charging infrastructure program. Worked with Eversource CT and United Illuminating to evaluate the statewide charging infrastructure program Assessments of Accuracy of Evaluation and Settlement Methods. Evaluation activities included residential managed charging, a conjoint survey to assess the effect of the program on EV adoption, a benefit-cost analysis, and other qualitative and quantitative research.
- **PG&E: Smart AC BYOT Thermostat Pilot (2021- 2023)** The study quantified thermostats automated daily TOU response and event-based responses. Mr. Bode designed the study, operation plan, and experiment, and wrote the seed code to analyze the impacts.
- **HECO: Hawaii Demand Response Evaluations (2019- Present)** Assessing the load impacts, forecast accuracy, baseline accuracy, and performance of flexible load resources. Analyzing 5-minute water heater data utilized as a battery and analyzing six large non-residential sites with solar and battery storage that have commitments to deliver grid services to HECO.
- **Central Hudson: DSM Portfolio Evaluation (2019- Present)** Impact evaluation lead for Central Hudson's portfolio of DSM programs. The programs evaluated range from Residential behavioral, point-of-sales lighting, Small Business Direct Install, C&I prescriptive and custom program, and CenHud Online Store. The evaluation methods range from billing analysis and surveys to onsite M&V. DSA also completed a non-residential baseline study in October 2019 to support the potential study and planning and implementation of various residential and C&I programs.
- **SDG&E: Smart Thermostat Demand Response Baseline Evaluation (2019-Present)** Evaluating and reporting on aggregate baselines for smart thermostat enabled Technology Deployment (TD) programs, including Peak Shift at Work (PSW), CPP-D (medium and large CPP), and AC Saver Day Ahead for commercial and residential accounts.
- **SCE: Demand Response Evaluations (2019- Present)** Since 2019, evaluating SCE's demand response programs, including Summer Discount Program, Smart Energy Program, Agricultural Pumping Interruptible, and Real Time Pricing. Develop weather-standardized impacts for system planning and estimates for individual substation banks to incorporate into T&D planning.
- **PG&E: Agricultural Demand Response Conjoint Market Research Study and Program Design Optimization (2021)**
- SDG&E Small Commercial Demand Response Programs (2014-2020)
- Duke Energy Carolinas Power Manager Air Conditioner Cycling Evaluation (2016 – 2017)
- Duke Energy Ohio Power Manager Air Conditioner Cycling Evaluation (2016 – 2017)
- Duke Energy Indiana Power Manager Air Conditioner Cycling Evaluation (2016 – 2017)
- Ontario C&I Demand Response Program evaluations, including aggregator, demand bidding, and load shifting programs (2007-2014)
- California Statewide Baseline Interruptible Program (2008-2010)
- California Statewide Aggregator Program Evaluation (2011)
- SCE: AC Cycling Evaluation (2007-2009)
- SCE: Agricultural Pump Interruptible and Real Time Pricing Evaluations (2008-2009)

Energy Efficiency and Behavioral Studies

- **CA IOUs: Statewide Emergency Load Reduction Program (ELRP) Load Impact Evaluations (2021-Present)** Conducting baseline assessments summarizing program performance per the baseline rules for each Investor-Owned utility (IOU).
- **PG&E Energy Savings Assistance Pilot Deep and Pilot Plus (2022-2023)** Developed the methodology for the evaluation and assisted with targeting efforts.
- **PG&E ESA Pilot Plus and Pilot Deep Evaluations and Support (2023-Present)** PG&E's ESA Pilot is designed to test innovation for how to attain deeper more cost-effective savings among income qualified customers and to apply key findings to the ESA Main programs. It is an embedded evaluation with rapid feedback to the program team. The innovation include both gas and electric measures and an expanded portfolio of measures to attain deep saving, including

heat pumps. It is also testing new targeting techniques, use of performance based vendor payments, use of more detailed analysis of sites to attain deeper savings. Mr. Bode is the officer in charge of the project and coordinates the various analysis. He also led evaluability assessment of various innovations being tested ,the waterfall analysis, and the deployment of a randomized control trial of a new targeting algorithm.

- **Central Hudson: Behavioral Program Evaluation (2019- Present)** Produce both quarterly updates and an annual report. Savings are estimated using a randomized control trial with approximately 110,000 electric participants and 35,000 electric controls and 30,000 gas participants with 8,000 controls.
- **EE and Beneficial Electrification Portfolio Performance Evaluation (2020- Present)** Officer in charge of a gross impact evaluation of each program annually. The evaluation team also conducts cost-effectiveness analysis, economic modeling of job creation, and process evaluations.
- **Northeast utilities: Impact of Heat Pump Incentives on Adoption (2023-2024)** The study involved collaboration of three utilities and program administration in the Northeast to pool data on weekly volume and inventive levels in order to quantify the relationship between prices/incentives and heat pump sales volume (adoption). Mr. Bode designed the study, obtained collaboration from the utilities, and performed the initial analysis.
- **Central Hudson: Evaluation for Home Energy Report and Small Business Direct Install (2020)** The program delivers efficient lighting to small and medium businesses free of charge. The analysis included three components: verification of saving calculations, billing analysis with matched controls to quantify the impact, and verification of installations at sites.
- **Fortis BC: Smart Learning Thermostats Pilot (2017-2018)** Pilot which assessed smart thermostats and explored the potential for a new cost-effective residential electric and gas savings measure. Led the control group matching and the electric and gas savings analysis for the three included brands of SLTs – Nest, Ecobee, and Honeywell.
- Duke Energy Indiana and Carolinas Education Kit Program (2017)
- Duke Energy Carolinas and Duke Energy Progress Business Energy Report Pilot (2015-2017)
- Tendril's Orchestrated Energy Randomized Control Trial (2017)
- Energy Trust of Oregon: Nest Seasonal Savings Pilot Evaluation (2016-2017) Evaluation of seasonal savings RCT with thermostat runtime data for 6k units.
- Home Energy Report Multi-year Effects, Persistence, and Frequency: A Meta-analysis of Randomized Control Trials. Prepared for Questar Gas (2016)
- PG&E's Business Energy Reports Emerging Technology Evaluation (2014-2015)
- PG&E's Small Commercial EMS Pilot – Analysis using whole building data (2015)
- SDG&E's Smart Energy Solutions Pilot – small business direct install pilot (2012)
- Pennsylvania Low Income Programs evaluation on contractor performance (2014)

Low Income (LMI)

- **PG&E: Zonal Equity Electrification Pilot (ZEEP) (2025-2028)** Leading the evaluation of an equity-focused electrification pilot to fully disconnect residential and non-residential customers in low-income areas from the gas system. The evaluation is run concurrently with program implementation and is focused on rapidly identifying successful strategies for customer participation. Analysis included in the scope includes research prioritization, literature reviews, participant surveys, targeting analysis, and implementor collaboration.
- **PG&E: Multifamily Common Area Measures NMEC (2020-2024)** Implemented a Normalized Metered Energy Consumption (NMEC) analysis for low-income multi-family properties that received an energy efficiency installation through PG&E's Energy Savings Assistance initiative. The evaluation relied on individual customer regressions for participants and control sites to quantify impacts by sites, assess the effectiveness of different measure bundles, and quantify the realization rates.

Assessments of Accuracy of Evaluation and Settlement Methods

- **SDG&E: EV Time of Use Rate Load Impacts (2021-2023)** Evaluating the impact of the rates of charging patterns and energy use for electric vehicles in SDG&E's service territory. The analysis included hourly data for 25,000 EV TOU participants and 25,000 matched controls and the load impacts were estimated using a differences-in-difference panel regression design to quantify the treatment effect and the price elasticity of EV TOU rates on EV charging patterns.
- **SDG&E: Smart Thermostat Demand Response Baseline Evaluation (2019- Present)** Evaluated and reported on aggregate baselines for smart thermostat enabled Technology Deployment (TD) programs, including Peak Shift at Work (PSW), CPP-D (medium and large CPP), AC Saver Day Ahead for commercial and residential accounts, and Residential AC

Saver Day Ahead. Executed quickly and efficiently by leveraging code module developed in-house by Demand Side Analytics for applying baseline rules and calculating results in a single line of code.

- **SCE: CAISO Baseline Audits (2023-2027)** Conducted an audit of vendor-produced settlement baselines and reductions for all of SCE's CAISO market-integrated demand response programs.
- **SDG&E: Small Commercial TOU, CPP, and Smart Thermostat Evaluation (2016-Present)** Quantifying the demand impacts of three related interventions – time of use pricing with a critical peak pricing component, the shift in a time of use pricing window, and commercial and residential connected thermostats. SDG&E defaulted over 120,000 small commercial and agricultural customers from flat rates onto TOU-CPP rates with the ability to opt out to a TOU only rate.
- **SCE: CBP and DRC Baseline Audits (2023-2027)** Conducted an audit of vendor-produced settlement baselines and reductions for SCE's retail settlement for SCE's Capacity Bidding Program, and their demand response contracts with three separate vendors.
- **SCE: ELRP Baseline Audits (2023-2027)** Conducted an audit of vendor-produced settlement baselines and reductions for all of SCE's Emergency Load Reduction Program across all sub-groups.
- **PG&E: Accuracy Assessment of Normalized Energy Metering Consumption (NMEC) (2021)** Mr. Bode designed and worked with Adriana Ciccone to implement a large-scale accuracy assessment of residential and commercial electric and gas evaluation methods that relied on individual customer regressions using AMI data (NMEC). The study tested 526 different regression frameworks, including control groups, synthetic controls, and individual customer regressions each for more than 250,000 individual customers using hourly and daily AMI data. Specific attention was paid to the accuracy of individual models during the COVID-19 pandemic and other non-routine events, as well as to finding a fmodel that worked well for specific customer segments of interest.
- **ISO-NE: Baseline Accuracy Study (2017)** Baseline accuracy and performance accuracy were analyzed for the ISO NE's 557 large commercial and industrial assets at different levels of aggregation including the ISO NE as a whole, a total of 19 dispatch zones, individual resources and individual assets.
- **Central Hudson: Non-Pipes Alternative Evaluation Study (2018)** Potential and bid valuation for 5 non-wire alternative projects.
- **CAISO baseline accuracy assessment for market settlement, including weather sensitive, agricultural, and industrial loads (2017)** Assessed accuracy for over 6,000 baseline settlement alternatives for each of ten DR programs at SDG&E, PG&E, and SCE.
- Whole Building Energy Efficiency and Energy Savings Estimation - Does Smart Meter Data with Pre-screening Open up Design and Evaluation Opportunities? Accuracy assessment of the use of performance-based incentives for energy efficiency (2014)
- LBNL-PG&E study of accuracy of settlement methods for weather sensitive loads using SCADA, smart meter and end use data (2013-2014)
- Ontario aggregator programs assessment of settlement baseline accuracy (2008-2009)
- California Statewide Aggregator Programs assessment of settlement baseline accuracy (2012)
- Assessment of Peak Time Rebate settlement baseline accuracy at PG&E, SDG&E, OG&E and ComEd (2012-2014)

TRM

- **PSEG Long Island: Annual TRM Update (2021- Present)** DSA conducts an annual review and update of the PSEG Long Island Technical Reference Manual for all measures in the energy efficiency and beneficial electrification portfolio.

Protocol Development

- California Load Impact Protocols, with Steve George and Michael Sullivan (2008)
- Ontario Load Impact Protocols, with Steve George (2008)
- Ontario DR cost-effectiveness framework and models (2008)
- National DR Action Plan DR cost-effectiveness work group (2014)

Other

- **PSEG Long Island: Stata to Python Translation (2021-2022)** Translated existing Stata code into Python for a proprietary software tool related to PSEG LI's non-wires alternative investment strategies.

- **PG&E: DRET Smart Thermostat Load Control and Daily Automation Study (2021)** Produced estimates of the demand reductions for each date and hour using a difference-in-difference calculation with Advanced Metering Infrastructure data.
- Georgia Power – Commercial customer class forecasting models (2016)
- Development of algorithms to detect unauthorized and failing solar units (PG&E 2015-2016)
- Development of algorithms to detect failing load control devices (PG&E 2013, Duke 2017)
- NYSEG & RG&E Advanced Metering Infrastructure and Grid Automation Business Case (2016-2017)
- 2009 PG&E ancillary service pilot using direct load control (2009)
- Vermont Public Service Commission Advanced Metering Infrastructure Business Case for all utilities (2008).
- ComEd Advanced Metering Infrastructure Business Case – Pricing and Reliability Impacts (2009)

Representative Publications and Conference Presentations

Best Practices for Evaluating Use of distributed Energy Resources as Non-wire Alternatives. May 22, 2023. Webinars on integrated distribution system planning hosted by NARUC, Berkeley Lab and Pacific Northwest National Laboratory.

A Tale of Two Pilots: Residential Battery Storage as a Grid Resource. AEIC-WLRA 2023 Spring Conference. Vancouver, BC. May 18-20, 2023.

Using Thermostats for Daily Automated TOU Response and Event Based Response. PLMA 2022 Fall Conference, Scottsdale, AZ, Nov 16, 2022.

Simulation Based Power Analysis: Practical Lessons and Applications. AEIC-WLRA 2021 Fall Conference, October 28-29

Population NMEC and Commercial Buildings: Confronting COVID and Other Non-Routine Events. ACEEE Conference August 23, 2022.

Load Analysis for Distribution Planning Applied Examples. 2021 AEIC Load Research Spring Conference.

Performance During System Emergencies: What lessons can we learn? WLRA 2021 Spring conference, April 16, 2021

Opt-in and Default Time Varying Pricing Adoption Rates. Vermont Public Service Department Rate Design Initiative and DER Symposium. April 17, 2020.

DR + DER Targeting Analytics. 2020 AEIC Load Research & Analytics Annual Conference. September 23 - 24, 2020.

Gas Non-Pipe Alternatives: Assessing the Value and Potential of Deferring Gas System Capital Expenditures. Peak Load Management Alliance Conference. November 4-6, 2019. St. Petersburg, Florida.

Measuring Rate Impacts without Experiments: Changes in SDG&E TOU Peaks due to High Renewable Penetration. Western Load Research Conference. April 24-26, 2019. Austin, Texas.

Vermont Rate Design Initiative Symposium. Enrollment and Implementation Challenges of Optional and Default Rates, A National Perspective. April 16, 2020.

Estimating Battery Storage Potential and Identifying Likely Adopters. Western Load Research Conference. April 18-20, 2018. San Diego, California.

Washington Public Utilities Commission. Distribution Planning Workshop – Assessment of Current Utility Capabilities and Practices. Olympia, WA. November 20, 2017.

Making Full Use of Smart Meter Data: Randomized Control Trials and Diagnostics for Program Improvement. AEIC Annual Load Research an Analytics Conference. Nashville, TN. July 25, 2017.

Rhode Island Power Sector Transformation Forum. Distributed Energy Resources Integration and Planning. Providence, Rhode Island. May 2017.

More than Smart. Why and How Customers Choose DERs: Targeting customers and testing enrollment tactics. Oakland, CA. March 2017.

Location Specific Probabilistic Forecasting and Planning Methods for Transmission and Distribution: Applied examples and implications for DER integration. Southwest Forecasting and Customer Analytics Forum. September 16, 2016. Tucson, AZ.

Location Specific Probabilistic Forecasting and Planning Methods for Transmission and Distribution: Applied examples and implications for DER integration. Southwest Forecasting and Customer Analytics Forum. September 16, 2016. Tucson, AZ.

Valuation of PV and DER within Distribution Networks. InterSolar North America. July 13, 2016. San Francisco, CA.

Behind-the-Meter Energy Storage: Data's Role in Optimizing Investments and Speeding Deployment. Grid Edge World Forum. June 2016. San Jose, CA.

Addressing the Locational Valuation Challenge for Distributed Energy Resources: Establishing a common metric for locational value. Smart Electric Power Alliance. Beyond the Meters Series. September 2016.

Energy Efficiency as a Targeted Transmission and Distribution Resource. Presented at ACEEE Energy Efficiency as a Resource Conference. September 2015. Little Rock, AK.

Whole Building Energy Efficiency and Energy Savings Estimation – Does Smart Meter Data with Pre-screening Open up Design and Evaluation Opportunities? Presented at ACEEE Summer Study on Energy Efficiency of Buildings. August 2014.

Using Residential AC Load Control in Grid Operations: PG&E's Ancillary Services Pilot. (with Michael Sullivan, Bashar Kellow, Sarah Woehleke and Joseph Eto). Smart Grid, IEEE Transactions on (Volume: 4, Issue: 2). March 2013.

Incorporating Residential AC Load Control into Ancillary Service Markets: Measurement and Settlement (with Michael Sullivan, Joe Eto, and Dries Berghman). Energy Policy. Volume 56, May 2013, Pages 175–185.

Using Smart Meter Data to Identify Non-Performing Load Control Devices. Presented at the 2013 Proceedings of the International Energy Program Evaluation Conference. August 13-15, 2013. Chicago, Illinois.

Default Critical Peak Pricing for Non-residential Customers: Do Demand Reductions Persist? Are the Reductions Reliable? Presented at the 2013 Proceedings of the International Energy Program Evaluation Conference. August 13-15, 2013. Chicago, Illinois.

Performance and Reliability of Aggregator Resources in Ontario. Presented at the 2013 Proceedings of the International Energy Program Evaluation Conference. August 13-15, 2013. Chicago, Illinois.

M&V for Demand Response: Different Methodologies for Estimating the Counter Factual. Presented at the Advanced Load Control Alliance Conference. July 2013.

Dynamic Pricing for the Other Half of the Mass Market: Medium and Small Business Customers. Presented at EUCI Conference. Arlington, VA. November 7-8, 2011.

Using Customer Load Data in T&D Planning. Presented at the Western Load Research Association Spring 2012 Conference, Boise ID. Mar 7- 9, 2012.

How Time-Varying Rate Design Affects Customer Bill Impacts. Presented at the Western Load Research Association Spring 2012 Conference, Boise, ID. March 7-9, 2012.

Demand Response Evaluation, Cost-Effectiveness and System Planning. Presented at the 2011 Proceedings of the International Energy Program Evaluation Conference, Boston, MA. August 17, 2011.

Avoided Cost of Transmission and Distribution Capacity Study

PNM Exhibit JLB-2

Is contained in the following 82 pages.

Demand Side Analytics
DATA DRIVEN RESEARCH AND INSIGHTS

Final Report

Avoided Cost of Transmission and Distribution Capacity Study

Prepared for PNM
By Demand Side Analytics
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EXECUTIVE SUMMARY

A vital role of utilities is to ensure that the electricity supply remains reliable by projecting future demand and reinforcing the transmission and distribution (T&D) network at various levels – substations, transformer banks, feeders, and service transformers – so the capacity is available to meet local needs as demand evolves. The energy industry is experiencing rapid technological change, particularly with the introduction of distributed energy resources and the electrification of space heating and transportation. The shift affects (1) how, when, and where customers use electricity and (2) how, when, and where electricity is produced. Many factors can influence distribution planning processes, including:

- The adoption of electric vehicles.
- Building electrification initiatives.
- The adoption of distributed solar, including community solar.
- The introduction of battery storage.
- Customer growth and migration patterns.
- New appliance standards and building codes.
- Program-based introduction of energy efficiency.
- An increase in connected devices and flexibility in loads.

In this future electric system, where grid operators have less control over supply, load flexibility and load shaping will become increasingly valuable. Ultimately, PNM will need to either build out the capacity to serve the increased loads or develop strategies to manage loads to mitigate the need for load growth-driven distribution upgrades. The goal of this T&D avoided cost study is to develop values for load growth-related T&D costs that are avoidable by implementing mitigation strategies such as demand side management.

In addition, PNM must define the avoided T&D costs specific to EE for use in evaluating the cost-effectiveness of EE programs. Peak demand reductions from EE programs can avoid or defer capital upgrades to assets that are at or near capacity (i.e., highly loaded). Essentially, infrastructure upgrades can be temporarily avoided or deferred via load relief, but cannot be avoided indefinitely because equipment eventually ages and needs to be replaced. Further, the potential for such deferral value is a function of the EE savings load shape and its coincidence with the shape of overload risk. This study seeks to quantify the general deferral value and value of Energy Efficiency on PNM transmission and distribution investments. The study outputs are designed to inform planning activities and the evaluation of program cost-effectiveness.

The focus of the study is to quantify the T&D costs associated with an increase, or decrease, in coincident peak demand. The study employs methodologies that are novel for New Mexico but have been applied in New York, California, and Pennsylvania for load forecasting and distributed energy resource (DER) valuation. Local demand trajectories based on historical loads are inherently uncertain and those forecasts grow more uncertain further into the future. The probabilistic deferral methodology for estimating avoided distribution costs incorporates this uncertainty directly.

While the final study outputs are territory-wide average values for PNM, the granular forecasts can help identify locations and timing when demand reductions or injections of distributed generation are beneficial. However, the focus of this study is to quantify deferrable transmission and distribution costs. The analysis undertaken to quantify avoidable T&D costs is not a substitute for the engineering analysis required to inform decisions on transmission and distribution infrastructure investments. The planning engineering analysis is more comprehensive, updated more frequently, and supersedes the analysis undertaken as part of this study.

Table 1 shows the deferral of transmission and distribution capacity results for the twenty years of the study horizon, as well as the 10-year levelized value from 2028 to 2037. From 2026 to 2045, the total deferral value increases from $1.73/kW-year to $66.59/kW-year, peaking at $81.43/kW-year in 2039. The distribution value is consistently lower than the transmission value. Both components of the distribution value, the distribution feeder and the substation transformer values, as well as the transmission value show a steady increase initially but decreases towards the end of the study period. This trend may be attributed to the expectation that many sites will exceed their maximum deferral periods by around 2040, at which point these sites will be considered non-deferrable, thereby necessitating infrastructure investments.

Table 1: PNM Deferral Value (load-weighted average, nominal $/kW-year)

Year	Distribution		Transmission	Total
	Feeder	Substation Transformer		
2026	$1.73	$0.00	$0.00	$1.73
2027	$1.70	$0.82	$0.00	$2.51
2028	$2.51	$4.44	$28.96	$35.91
2029	$3.82	$7.72	$27.72	$39.26
2030	$4.80	$9.32	$27.60	$41.72
2031	$5.71	$10.23	$27.53	$43.48
2032	$6.54	$11.90	$48.17	$66.61
2033	$8.19	$13.73	$48.12	$70.04
2034	$9.17	$14.81	$47.03	$71.02
2035	$10.43	$15.86	$47.06	$73.35
2036	$9.83	$16.52	$50.78	$77.13
2037	$10.21	$16.46	$50.17	$76.85
2038	$10.62	$14.89	$45.43	$70.94
2039	$10.31	$14.31	$56.72	$81.34
2040	$10.49	$14.72	$46.47	$71.68
2041	$11.01	$15.31	$46.50	$72.82
2042	$10.55	$15.17	$47.73	$73.45
2043	$10.80	$15.82	$47.63	$74.25
2044	$9.63	$14.32	$47.60	$71.55
2045	$8.18	$12.69	$45.72	$66.59
10-year levelized value (2028-2037, $2025)	**$6.51**	**$10.89**	**$35.76**	**$53.16**

Notably, the most imminent investments, those with high risk in the next one to three years, are largely not deferrable. This means that the avoided cost is also a function of the period over which investment deferral is valued. Table 2 shows 10-year levelized deferral value as a function of the ten-year valuation period start year. Selecting a later start year means that there is more value in all ten valuation years, which translates to as much as double the value.

Table 2: PNM 10-Year Levelized Deferral Value Sensitivity to Valuation Start Year (load-weighted average, nominal $/kW-year)

Start Year for 10-Year Levelized Value	Distribution		Transmission	Total
	Feeder	Substation Transformer		
2026	$4.75	$7.46	$24.38	$36.58
2027	$5.59	$9.17	$29.83	$44.60
2028	$6.51	$10.89	$35.76	$53.16
2029	$7.42	$12.14	$37.87	$57.42
2030	$8.16	$13.09	$41.08	$62.34
2031	$8.83	$13.89	$40.43	$63.15
2032	$9.45	$14.59	$43.22	$67.26
2033	$9.95	$15.03	$45.41	$70.39
2034	$10.25	$15.26	$46.04	$71.55
2035	$10.36	$15.27	$46.54	$72.18

Based on discussions with PNM transmission and distribution planners and a review of the historic and projected investments, the DSA team selected the deferral approach for both transmission and distribution. The T&D deferral value approach focuses on quantifying the value of load relief on ratepayer costs (i.e., revenue requirements). The DSA team then applied the seasonal load shapes to allocate the deferral values across the 24 hours of both the summer and winter seasons. Summer peaks are generally a function of hot weather in June, July, and August. Winter peaks are caused by cold weather typically in December, January, and February.

The list below summarizes central study findings. The DSA team ultimately aggregated the granular results into system-wide values. Section 4 of the report includes a more detailed discussion of each finding and lays out some potential enhancements that would better reflect the variability in value across locations.

1. Load growth varies by location. Some pockets are experiencing load growth, and some are experiencing load decreases.
2. The locational dispersion of the EE forecast used for this study lacked geospatial granularity. Most EE rebates are point-of-sale transactions, and PNM has data on the stores where the transactions occurred but lacks data on the customers who purchased the equipment. Geospatial tracking of EE in the future would improve the precision of estimates of EE by location, deferral value, and Value of EE in future studies.
3. The T&D avoided costs are concentrated in locations that are more heavily loaded.
4. Most Individual locations are summer peaking, some are winter peaking, and only a few are dual peaking.

5. Resources that deliver load relief at the right location, in the right season, and at the right hours are more valuable.
6. The most imminent investments, those with high risk in the next one to three years, are largely not deferrable, so deferral value is sensitive to the deferral value period.

Based on the analysis, the DSA team recommends the proposed values shown in Table 3 for future incorporation into future cost-effectiveness analyses of PNM programs. The avoided cost of T&D reflects the value to the system of unconstrained resources. The Value of EE reflects the ability of EE resources to deliver T&D value given load shape constraints of the expected PNM EE portfolio. The 10-year levelized value shown summarizes annual values that will be in practice will be applied to useful life of modifiers being valued. The Value of LM reflects the ability of Load Management resources to deliver T&D value given the mostly summer capacity of the PNM LM portfolio.

Table 3: Recommended PNM Avoided T&D Values ($2025)

Type of Value	Description	Transmission	Distribution
Avoided T&D	10-year levelized value (2028-2037, $2025)	$35.76	$17.40
Value of EE	10-year levelized value (2028-2037, $2025)	$22.80	$9.71
Value of LM	9-year levelized value (2027-2035, $2025)	$30.88	$13.26

1 INTRODUCTION

This study focuses on the avoided cost of transmission and distribution (T&D) capacity. When loads grow, the available T&D capacity dwindles. If an energy efficiency (EE) or demand response (DR) program helps reduce coincident demand, the unused capacity can accommodate another customer's load growth, thereby helping to avoid or defer investments required to meet load growth. Avoided or deferred investments free up capital for alternate uses, improving the efficient use of resources. With deferral, infrastructure costs are not incorporated into the rate base and customer bills until a later date, leading to lower customer bills in the immediate years.

1.1 STUDY BACKGROUND AND OBJECTIVES

The Efficient Use of Energy Act (EUEA) currently requires PNM to use the Utility Cost Test (UCT) to evaluate the cost-effectiveness of PNM's energy efficiency and demand response programs. The UCT compares the net present value (NPV) of future utility benefits – namely, avoided generation capacity value and avoided transmission and distribution (T&D) capacity value (deferral value) – to the first-year cost of implementing the programs. Historically, PNM has used a proxy value for avoided T&D costs, but with recent directives from the New Mexico Public Regulation Commission (PRC) in the Final Order of Case 23-00138-UT, PNM sought to develop more accurate T&D cost figures based on PNM-specific data.[1] As such, PNM contracted with DSA to conduct this T&D avoided cost study, with a key objective of replacing the current regional proxy T&D avoided cost values with PNM-specific results. The findings from this study will ultimately be used as part of the annual cost-effectiveness evaluation of PNM's energy efficiency and demand response portfolio.

Since the focus of the study is on T&D avoided costs, the study was designed to meet the following objectives:

- Analyze load patterns, excess capacity, load growth rates, and the magnitude of expected infrastructure investments at a local level
- Model location-specific forecasts of growth inclusive of the inherent uncertainty in future growth projections
- Quantify the probability that infrastructure upgrades will be needed at specific locations
- Calculate avoided distribution costs (deferral value) by year and location
- Identify beneficial locations for demand reductions

Although not the primary study objective, the PRC and stakeholders might use the study outputs to understand the increased T&D costs associated with space heating and/or transportation electrification

[1] Additional background regarding the T&D avoided cost study directive is publicly available on the PRC's case lookup e-docket. Available at https://www.prc.nm.gov/case-lookup-e-docket/

policies. The granular location-specific deferral value estimates could also be used to explore the economics of Non-Wire Alternative (NWA) projects such as battery storage.

There are several aspects of the study that make it unique. First, separate avoided cost estimates are produced for each location on PNM's local distribution system. In areas with excess capacity or declining loads, the value of peak demand reduction can be minimal. In areas where a large, growth-related investment is imminent, the value of peak demand reduction can be quite substantial. Second, the study estimates historical year-to-year growth patterns and variability in growth for individual areas. Third, load growth forecasts and avoided cost estimates are developed using probabilistic methods rather than straight-line forecasts. This approach considers the reality that there is much greater uncertainty ten years out than a year out, and it accounts for the risk mitigation value of resources that manage local peak demand. The study approach is a departure from the current planning practices in use by PNM planners. As such, differences are to be expected in the overloads and projects identified by this study relative to the overloads and projects identified by the current PNM planning processes.

1.2 ABOUT PNM

As New Mexico's largest electricity provider, PNM provides electric service to more than 550,000 New Mexico residential and business customers in greater Albuquerque, Rio Rancho, Los Lunas and Belen, Santa Fe, Las Vegas, Alamogordo, Ruidoso, Silver City, Deming, Bayard, Lordsburg and Clayton. PNM also serves the New Mexico tribal communities of the Tesuque, Cochiti, Santo Domingo, San Felipe, Santa Ana, Sandia, Isleta and Laguna Pueblos.

1.2.1 SYSTEM DETAILS

The PNM system consists of approximately 504 feeders and 166 substation transformers according to the grid hierarchy data[2] that PNM provided to the DSA team. In the first half of 2025, solar resources in PNM's territory generated 570 GWh of electricity, with 58% coming from behind-the-meter systems and 42% from front-of-the-meter resources. The PNM system is historically summer peaking and had a summer peak of 1,954 MW in 2025. Table 4 shows historical annual peaks and Figure 1 shows a time series of daily peak loads between January 2020 and August 2025. Average daily temperatures in Albuquerque are shown in the background of the figure. The daily peak MW shows a strong relationship with average daily temperature. Over the past six years, 2023 recorded the highest peak at 2,000 MW. Peak demand increased steadily from 2020 through 2023, followed by a slight dip in 2024 and a subsequent uptick in 2025.

[2] Due to data availability the analysis included 503 feeders and 165 substation transformers. As reflected in subsequent report tables.

Table 4: Historical Annual Peaks

Year	Peak MW
2020	1,861
2021	1,854
2022	1,962
2023	2,000
2024	1,939
2025	1,954

Figure 1: Time Series of Daily Peak MW

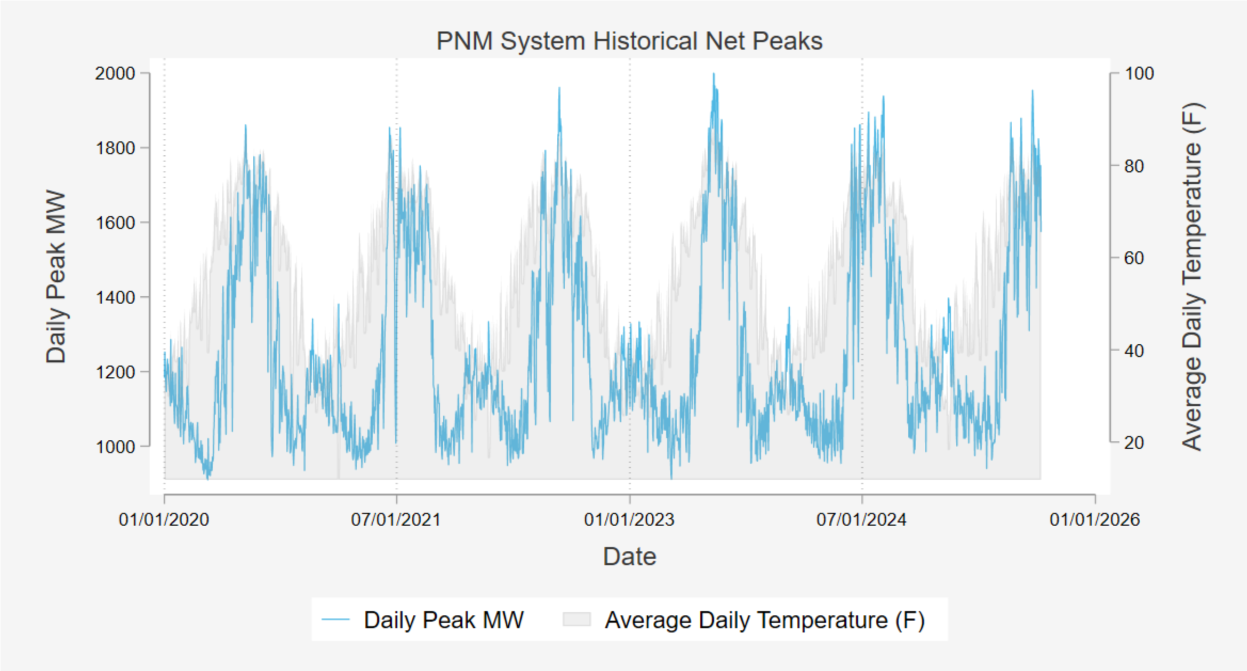
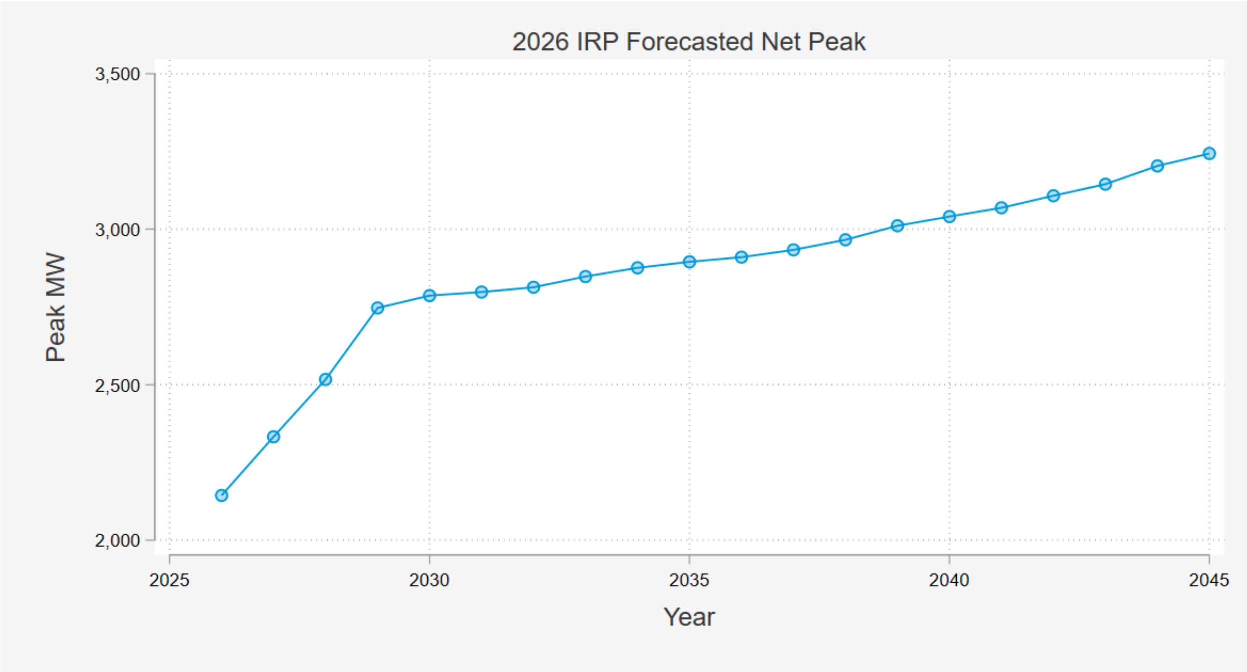


Figure 2 shows a 20-year peak forecast based on PNM's 2026 IRP. The system-level forecasted peak was converted to the transmission and distribution level by applying a 4.7% line loss factor reflecting demand losses during peak conditions[3]. The PNM system is summer-peaking and all forecasted peaks over the 20-year horizon occur in July. The forecast shows rapid peak growth through 2029, followed by a more gradual, steady increase thereafter.

[3] PNM Transmission Planning

Figure 2: Peak Load Forecast



1.2.2 CURRENT PLANNING PROCESSES

In June 2025, the DSA team met with PNM transmission and distribution planning teams to gather information on their current T&D planning processes. The key topic was to learn details on PNM's process such as their planning time horizon, distribution levels for planning, weather normalization, and location-specific growth rates. The meetings were intended to help the DSA team customize the data request and methods to fit the data available. Table 5 summarizes the key findings for each topic.

Table 5: Transmission & Distribution Current Planning Processes Summary

Topic	Key Finding
Supervisory Control and Data Acquisition (SCADA) coverage and availability of hourly or sub-hourly power readings by asset category	▪ 99% coverage of distribution substation transformer at a 15-min level across the past 5 years ▪ 99% coverage of distribution circuit feeder at a 15-min level across the past 5 years
Planning horizon and build lead time, or how far in the future PNM planners consider in their planning activities and how long development and	▪ Transmission zones: ○ 10-year is typical planning horizon ○ 2-5 years is typical build lead time ▪ Distribution substation transformers and circuit feeders: ○ Planning horizon is typically 10 years ○ Build lead time is typically 2-5 years

Topic	Key Finding
construction takes for new assets	
Share of investments driven by load growth	▪ Transmission zones: ○ 24% of investments were driven by load growth ▪ Distribution substation transformers and circuit feeders: ○ 37% of investments were driven by load growth
Weather conditions and planning scenarios	▪ Transmission zones: ○ Weather conditions: transmission planning uses coincident peak forecasts for substation transformers developed by distribution planning. These forecasts reflect recent loads and are not weather normalized. ○ Planning scenarios: PNM applies both N-1 and N-2 criteria across all transmission areas. Normal ratings and long-term emergency ratings are used for planning purposes. PNM does not currently allow operation above equipment ratings during emergencies. ▪ Distribution substation transformers and circuit feeders: ○ Weather conditions: PNM does not routinely weather-normalize historical loads or explicitly apply weather adjustments in planning. However, extreme conditions are considered on a case-by-case basis. 1-in-2 (50:50) weather conditions reflect the hot and cold weather extremes that the PNM territory would expect to occur once every two years. 1-in-10 (90:10) weather conditions reflect the hot and cold weather extremes that the PNM territory would expect to occur once every ten years. Peak loads are higher under 1-in-10 weather conditions. ○ Planning scenarios: PNM considers multiple criteria and equipment limitations in distribution planning, including thermal ratings, design criteria, equipment ratings (CTs, relay settings, substation transformer limits, switches, reclosers, and fuses), thermal limits of conductors, and distances between feeders. PNM's risk tolerance allows emergency ratings for conductors for up to 2 hours, and substation transformers may be operated at emergency ratings for up to 4 hours.
Load forecasts	▪ Forecasts are annual peak forecasts meaning the PNM forecast the magnitude of the peak hour but do not produce forecasts for all hours in the year (not an 8760 forecast) ▪ Feeder-specific growth rates are forecast without incremental DERs. Growth rates are for the peak hour of the substation transformer and feeder. ▪ PNM does not currently perform probabilistic forecasts.

1.2.3 HISTORIC AND PROJECTED T&D SPENDING

To better understand PNM's typical transmission and distribution investments, the DSA team requested historic and projected capital expenditure data in Fall 2025. Historical expenditures analyzed span from 2020 to 2025 and projected expenditures span from 2025 to 2030.

Figure 3 and Figure 4 show the historical and projected spend by investment reasons. In the historical period, investments were primarily associated with system expansion and reliability needs. Projects are often driven by multiple reasons. A substation transformer upgrade might be classified as motivated by reliability, but the project also replaces aging infrastructure near the end of its useful life and allows the area to accommodate new or growing loads due to the increased capacity of the new equipment. Across the projected period, aging or failed equipment and new loads are the most common drivers of investment. In contrast, the need to interconnect new generation is the primary reason for planned investment, which typically cannot be avoided by managing loads.

Total historical capital investment across the PNM service territory was approximately $1.8 billion for distribution and $1.2 billion for transmission. Of each, roughly $450 million in spend was driven by new loads. Over the next five years, projected capital investments are approximately $1.1 billion for distribution and $1.2 billion for transmission. Of each, $330 million in spend is expected to be driven by new loads. Fluctuations in spend are driven by investments needed to support reliability, new technology, and new generation. Investments to support new loads are relatively stable.

Figure 3: 2020-2025 Historical Spend by Investment Reason

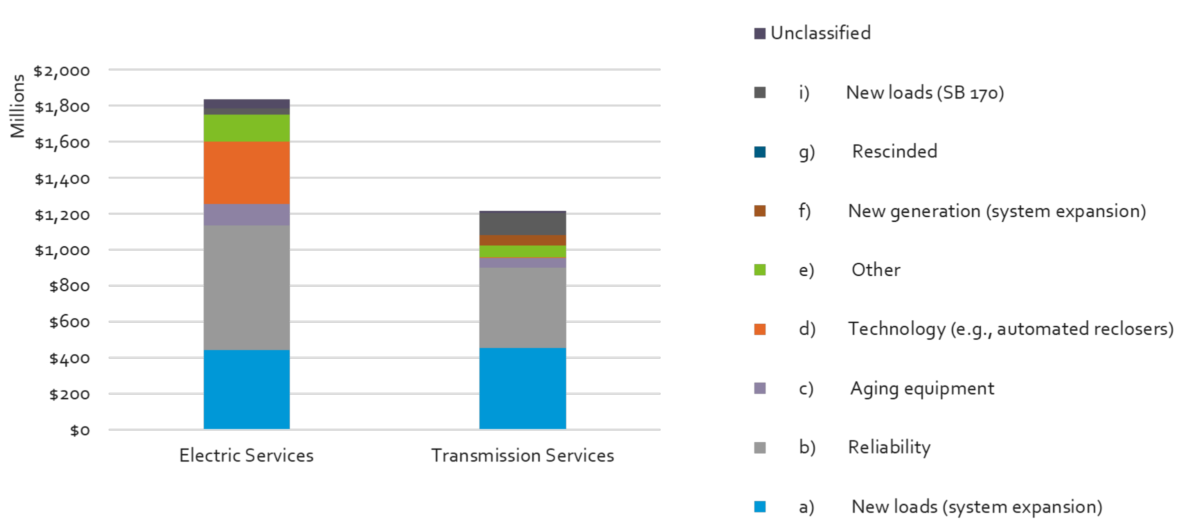
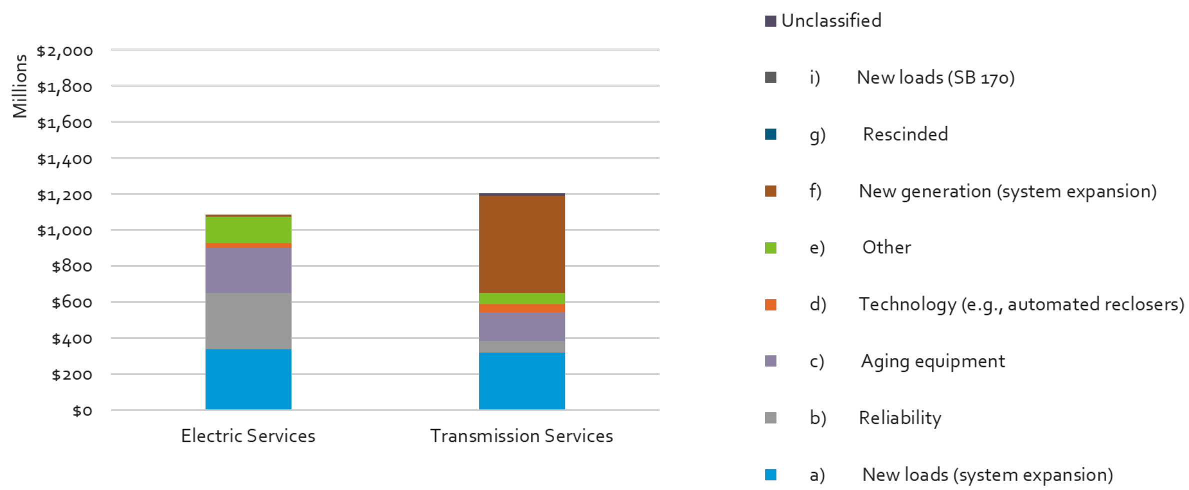


Figure 4: 2025-2030 Projected Spend by Investment Reason



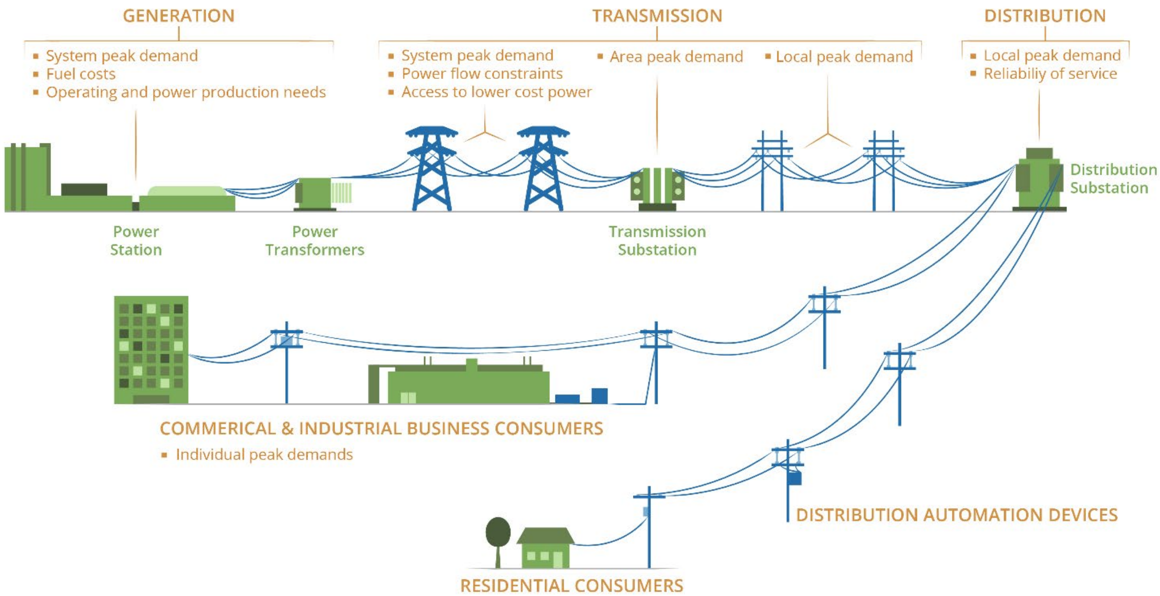
1.3 ELECTRIC GRID HIERARCHY

The electric grid is designed to deliver power from where it is generated to where it is consumed by commercial, industrial, and residential consumers. As power travels from generation to transmission to distribution, it passes through several levels of a hierarchy that adjusts voltage and ensures reliable flow to every site, building, and end use that demands power. The levels of this hierarchy include:

- **Transmission zones**, the broadest level and highest voltage. Utilities are typically split into large geographical regions called transmission zones to organize and coordinate the transfer of power long distances from its generation source to smaller area substations.
- **Bulk substations** (also known as area substations or transmission substations), which control the power flow of an area smaller than a transmission area but larger than a standard substation.
- **Substations** (also known as distribution substations), which control power flow for a smaller local area. Substations are physical locations usually made up of several terminals and several transformers.
- **Terminals**, which are typically located at substations and control power flow to one or more feeder circuits.
- **Transformers**, which are typically located at substations and lower voltage prior to dissemination of power to one or more feeder circuits.
- **Circuit feeders**, which are the smallest unit of analysis, and which provide power directly to wires that serve homes and businesses.

Figure 5 shows a simplified schematic of the electric grid from power plant to consumer.

Figure 5: Electric Grid Diagram



1.4 REPORT ORGANIZATION

The remainder of this report is organized into the following sections.

- Section 2 provides an overview of the methodology.
- Section 3 summarizes study results.
- Section 4 summarizes the key conclusions and recommendations.

2 METHODOLOGY

This section details the data sources used, lays out the modeling procedure, and explains how avoidable transmission and distribution costs were estimated. Notably, the methodology used represents a departure from the current planning practices in use by PNM. As such, differences are to be expected in the overloads and projects identified by this study relative to the overloads and projects identified by the current planning process. The focus of this study is to quantify deferrable transmission and distribution costs, not to directly inform planning for future transmission and distribution investments. The locational analysis in this study is not a substitute for and is superseded by the granular engineering analysis required for transmission and distribution planning.

2.1 SELECTION OF METHODS

A fundamental decision for the study was the T&D avoided cost paradigm. There are three general approaches used for T&D avoided costs, described below. The approaches and initial recommendations were presented to PNM planning teams for feedback at the project start. The DSA team recommended the deferral value approach for both distribution and transmission.

Figure 6: T&D Avoided Costs Methods Considered

Deferral Value	Marginal Cost of Service	Simplified System Wide Value
T&D Avoided Cost ($/kW) $= \frac{\text{Deferral Value}}{\text{kW needed to attain deferral}}$	Marginal Cost ($/kW) $= \frac{\text{NPV(Net Cost)}}{\text{NPV(Capacity Increase)}}$ Net Cost = Investment Cost – Replaced Asset Residual Value Capacity Increase = Capacity Increase at Contingency Ratings	T&D Avoided Cost ($/kW) $= \frac{\text{Growth related T\&D } costs}{\text{load growth } kW}$
▪ Value of load relief ▪ Estimate effect of flattening, reducing or shifting peak loads on timing of T&D investment ▪ More complex to implement and goes out more than 5 years ▪ Can be used to produce location specific or system wide values	▪ Cost of increasing T&D capacity ($/kW) ▪ Does not factor in actual demand ▪ May or may not reflect avoidable costs ▪ Produces stable values	▪ Approach does not work with low or no load growth ▪ May be possible to modify it to account for location specific growth (only count load growth from areas that are growing) ▪ T&D equipment ages and cannot be avoided indefinitely
USED		

The simplified system-wide value approach involves classifying T&D investments as growth-related or not and dividing the cost of the growth-related projects by the system-wide load growth.[4] However, the approach does not work when utilities experience flat or declining loads at a territory wide level.

[4] For a more detailed discussion on this approach see: Synapse Energy Economics (2021). Avoided Energy Supply Components in New England 2021 Report. Available at https://www.synapse-energy.com/sites/default/files/AESC%202021_20-068.pdf

The T&D deferral value approach focuses on quantifying the value of load relief on ratepayer costs (i.e., revenue requirements).[5] It effectively compares revenue requirements with and without load relief. While infrastructure upgrades can be temporarily avoided or deferred via load relief, they cannot be avoided indefinitely because some areas are high growth areas that will eventually need new infrastructure or equipment eventually ages and needs to be replaced.

The marginal cost of service study approach was initially used for rates and has since been applied to more granular components. It does not directly account for the T&D savings due to load relief. Rather, it quantifies the supply cost of additional distribution or transmission capacity on the system. At the simplest level, it involves cataloging the costs of various infrastructure investment and dividing the costs of those investments by the incremental transmission or distribution capacity added. The approach uses the cost of adding additional transmission capacity to the system as a proxy for the cost avoided by reducing peak demand.

A second critical decision was to use probabilistic methods to quantify the distribution avoided costs. No one knows in advance precisely how loads will grow or when peaking loads will violate planning standards, nor by how much. Linear forecasts, however, assume precise knowledge. In practice, growth trajectories are rarely linear, and growth follows cyclical patterns. Figure 7 contrasts a linear forecast against two simulated potential growth trajectories, all using the same 1.0% growth rate, with an autocorrelation and a random component. The linear forecast indicates loads will exceed the design rating in 15 years. Loads could exceed the design and risk tolerance far earlier, as shown by Path 1, or never at all, as shown by Path 2. A probabilistic forecast captures and incorporates this uncertainty.

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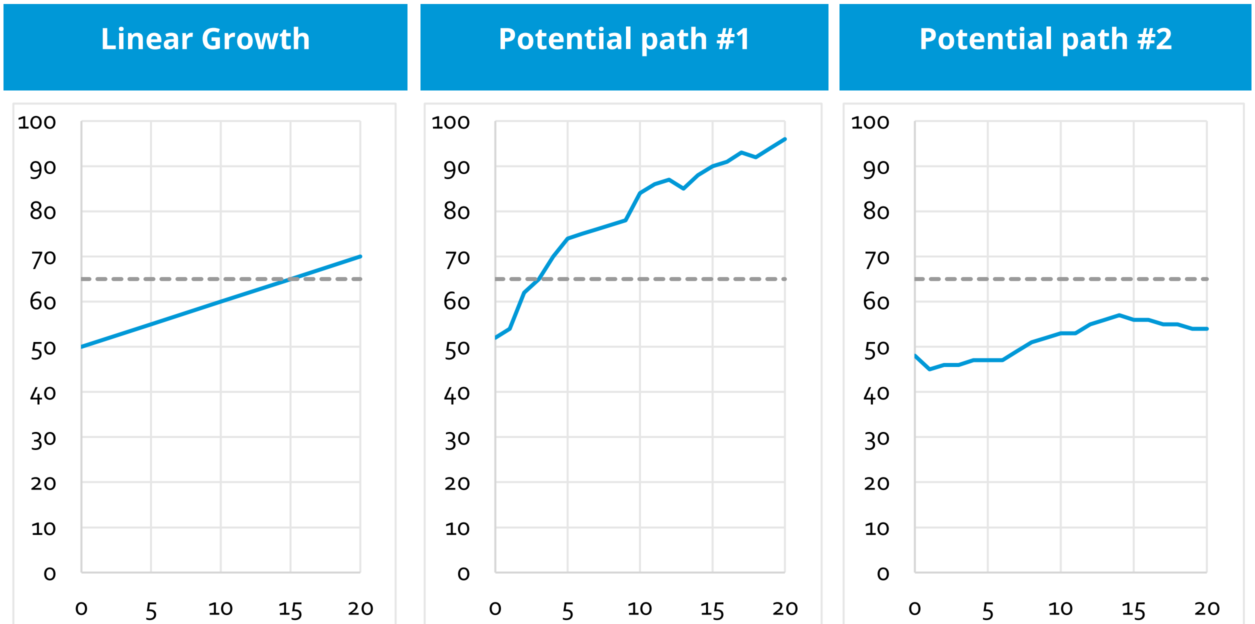
[5] The approach was introduced in the early 1990s as part of an initial wave of T&D deferral projects. Orans, R., Feinstein, C., et. al. (1993) Distributed Utility Valuation Study, submitted to the Electric Power Research Institute, the National Renewable Energy Laboratory, and PG&E.

Figure 7: Comparison of Linear Forecast and Potential Growth Patterns



Furthermore, forecasts are inherently uncertain and become more uncertain over time. Probabilistic methods reflect the reality that infrastructure investments could be triggered earlier or later than linear forecasts. The probabilistic method relies on a Monte Carlo simulation of load growth. For each simulation run, the DSA team assessed if the operating limits were exceeded and, if so, when. In addition, the DSA team assessed how much load relief can defer the upgrades, and the value of load relief. Thus, the expected T&D avoided costs are the average of potential load growth trajectories and the likelihood of loads that exceed operating limits. The values were developed for each distribution component and the system-wide distribution avoided costs are a load weighted average of more granular, location-specific values.

2.2 DATA SOURCES

The study relied on the following main data sources:

1) 15-min SCADA data by feeder and substation transformer from mid-2020 to mid-2025
2) Historical peaks and equipment ratings
3) Hierarchy of feeders, substations transformers, division, zone, and region
4) Hourly weather data for 2005-2025
5) Shape files for each location
6) Queue economic development and community solar
7) Historical front-the-meter (FTM) and behind-the-meter (BTM) PV capacity
8) Historical FTM and BTM generation profile
9) Billing data from July 2020 to June 2025
10) Residential electric vehicle (EV) load shapes
11) WHEV customer charging and rebate data

12) Energy Efficiency load shapes
13) Forecasted achievable potential savings for various EE measures
14) 2026 IRP hourly forecast
15) Capital costs for deferrable projects
16) Financial information (revenue requirement multiplier, fixed charge rate, etc.)
17) Discount rate, inflation rate, book life[6]

Except for weather data and Energy Efficiency load shape (items 4 and 12), all the data above was supplied by PNM. A few points are noteworthy.

- The quantity and time span of SCADA data varied based on data availability.
- EE load shapes were pulled from NREL End Use Load Profiles[7] which provides annual load shapes for common residential and non-residential end uses and building types, aggregated to the census tract level. Common end uses in the aggregated end use profiles include heating, cooling, ventilation, and lighting for a variety of residential and non-residential building types, which were averaged to create composite load shapes. Substations within the PNM territory were mapped to their corresponding census tract to produce a normalized EE load shape unique to each substation.
- All figures and charts reflect prevailing time (MST and MDT).

2.3 KEY ANALYSIS STEPS

Figure 8 describes the main steps in cleaning SCADA data and developing location-specific avoided T&D costs using probabilistic methods. Key elements of the approach include:

- **Use of a probabilistic approach**: Simulating 500 growth trajectories and conducting the entire valuation analysis for each trajectory produces a deferral value estimate incorporating overload likelihood (unlike a deterministic approach).
- **Granular analyses**: Both growth and available capacity vary by location. When assessing the potential value of deferring an investment at a specific location, it is critical to conduct the accompanying analysis at that location. Average system wide growth rates mask the variation detectable at a more granular level and cannot be used to identify and quantify locational deferral opportunities.
- **Quantify deferral value by comparing peak loads and costs, both with and without incremental demand reductions**: The locational value signals when and where demand reductions will be most beneficial and provides a way for EE programs to monetize the value.

[6] The book life of an asset guides the financial depreciation calculation and determines the number of years over which the utility adds cost to the rate base to recover its upfront equipment and construction costs. The book life is distinct from the useful life, which is the expected mechanical lifetime of the equipment. Book life is typically shorter than the useful life for a given component.
[7] https://www.nrel.gov/buildings/end-use-load-profiles

Incremental reductions in peak demand can change the timing of capital infrastructure upgrades and modify when revenue requirements are introduced into electric delivery rates. The value is simply the reduction in costs when incremental peak demand reductions are added.

- **Time-differentiate the value**: Particularly critical for assessing the extent to which peak demand reductions provide relief is to determine: when, for how long, and how much load relief is needed.

The process was implemented for each feeder and substation transformer. The 500 simulations of potential growth trajectories are critical to estimating the distribution deferral value of managing peak loads.

Figure 8: Key Steps in Estimating Location Specific Avoided Costs

1. CLEAN AND ANALYZE HISTORICAL DATA

- Identify load transfers
- Remove outages and meter recording issues
- Avoid mixing data issues such as load transfers with load growth/declines

2. ANALYZE HISTORICAL DATA

- Plot top 10 peak load days
- Plot load duration curves
- Sensitivity of loads to weather

3. ESTIMATE LOCATION SPECIFIC GROWTH RATES

- Goal is to produce location specific peak growth rates absent incremental load modifiers
- Add back historical solar production
- Use model to predict loads under planning conditions (normal weather years)

4. SIMULATE LOAD GROWTH TRAJECTORIES

- Use Monte Carlo simulation to reflect greater uncertainty in future years
- Factor in growth trend, uncertainty, and auto-correlation (random-walk)
- Forecasts do not include beneficial load modifiers that have not yet been built (otherwise undervalued

5. ESTIMATE THE LIKELIHOOD OF OVERLOADS

- Estimate the likelihood of overloads given current loading, uncertainty in growth and weather
- Identify the subset that are potentially deferable

6. GATHER COST DATA FOR LOCATIONS WITH OVERLOAD RISK

- For locations with an overload risk, gather data on: T&D solution, capital costs, O&M costs, fixed charge rates, useful life and book life, and deferral limits

7. ESTIMATE VALUE OF INCREMENTAL RESOURCES

- For each simulated trajectory, identify if an upgrade is needed, when it is needed, the magnitude of resource required, the deferral period, and the costs with and without deferral

8. PRODUCE 10-YEAR LEVELIZED VALUE AND SYSTEM VALUE

- Expected deferral value by year and location ($/kVA-year)
- Calculate 10-year levelized value
- For system value, calculate the load-weighted value

9. TIME-DIFFERENTIATE VALUE

- Allocate value by hour of day based on the load relief need

The following sub-sections provide greater details about key steps outlined in Figure 8.

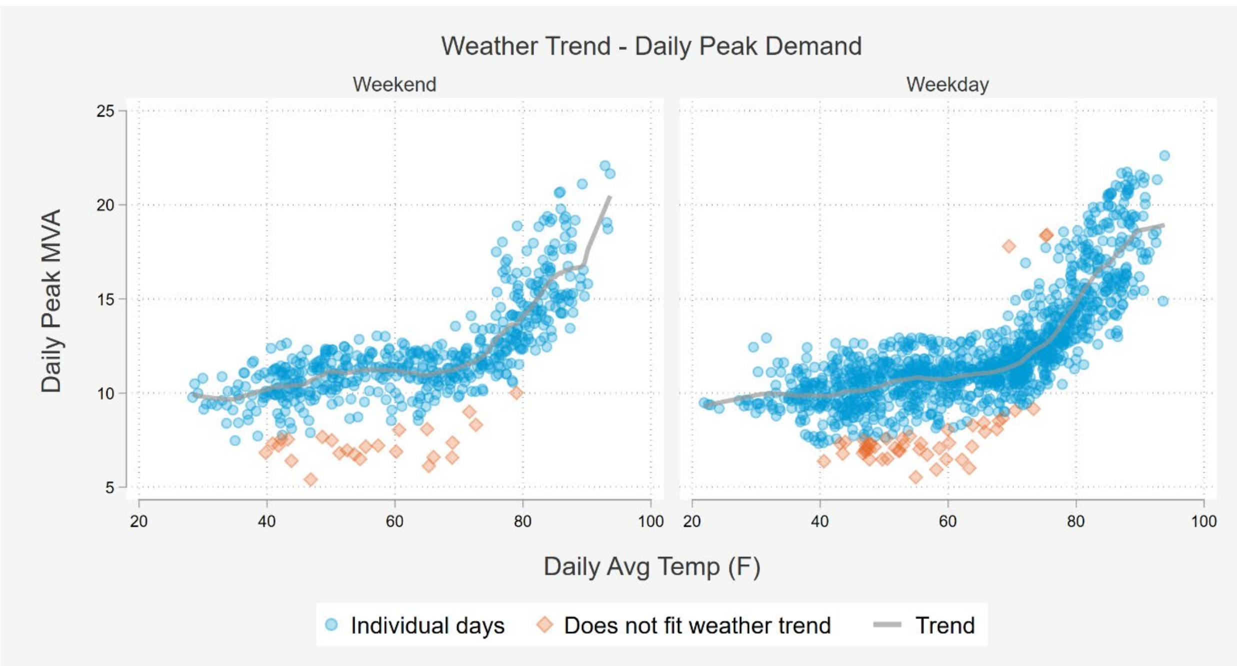
2.3.1 Clean and Fill Data

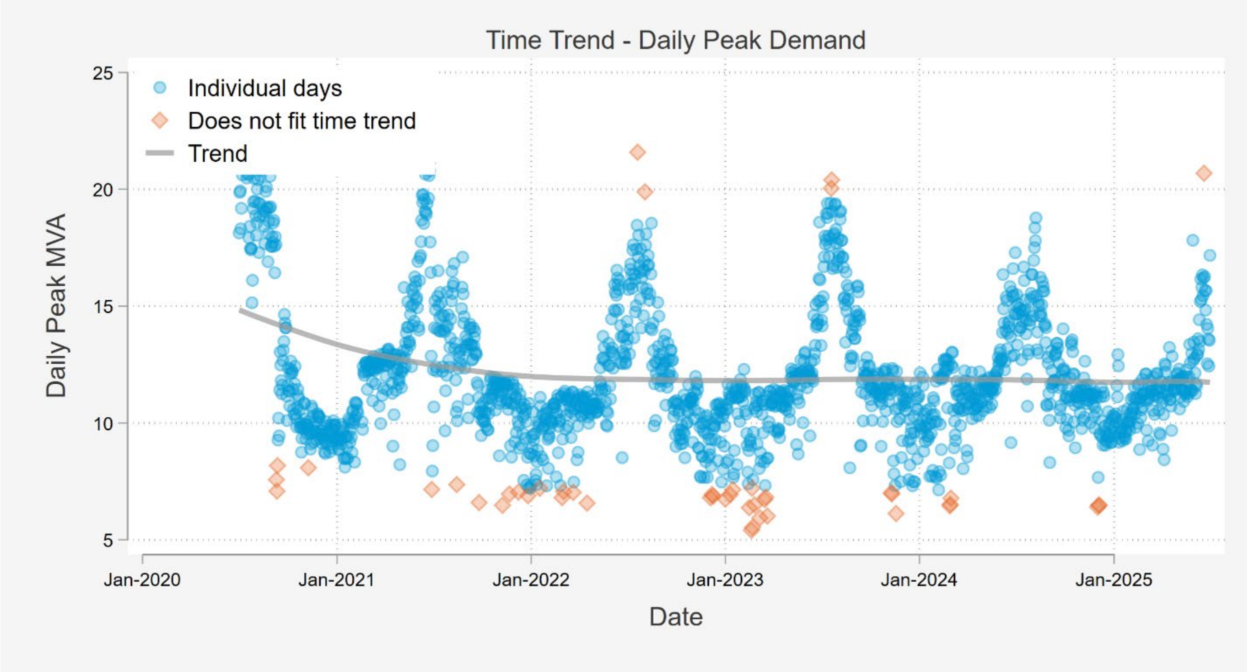
The DSA team aggregated the 15-minute SCADA data to an hourly level and added back FTM solar generation to capture native load. To address missing or invalid historical solar production data, the DSA team estimated hourly production for each site by regressing normalized solar output on sky conditions and month.

One of the key challenges in estimating electric demand patterns and growth at granular locations is the quality of data. It is important to identify and remove outages, data gaps, and other data recording errors to calculate growth rates that are unrelated to temporary load transfers or outages. The DSA team developed algorithms to identify loads with irregular patterns, load transfers, data gaps, and outages from substation transformer and feeder level data. Given the high correlation between loads within the same zone, load patterns from substation transformers or feeders in the same zone were used to fill in anomalous data. For a given location, the DSA team developed a regression equation relating the load at that location to the load at surrounding areas as well as day of week, month, and outdoor temperature.

Figure 9 illustrates an example of a location with anomalous data reads, which, unless detected, can be mistaken for a change in load and distort the sensitivity of the area's loads to weather.

Figure 9: Example of Data Cleaning



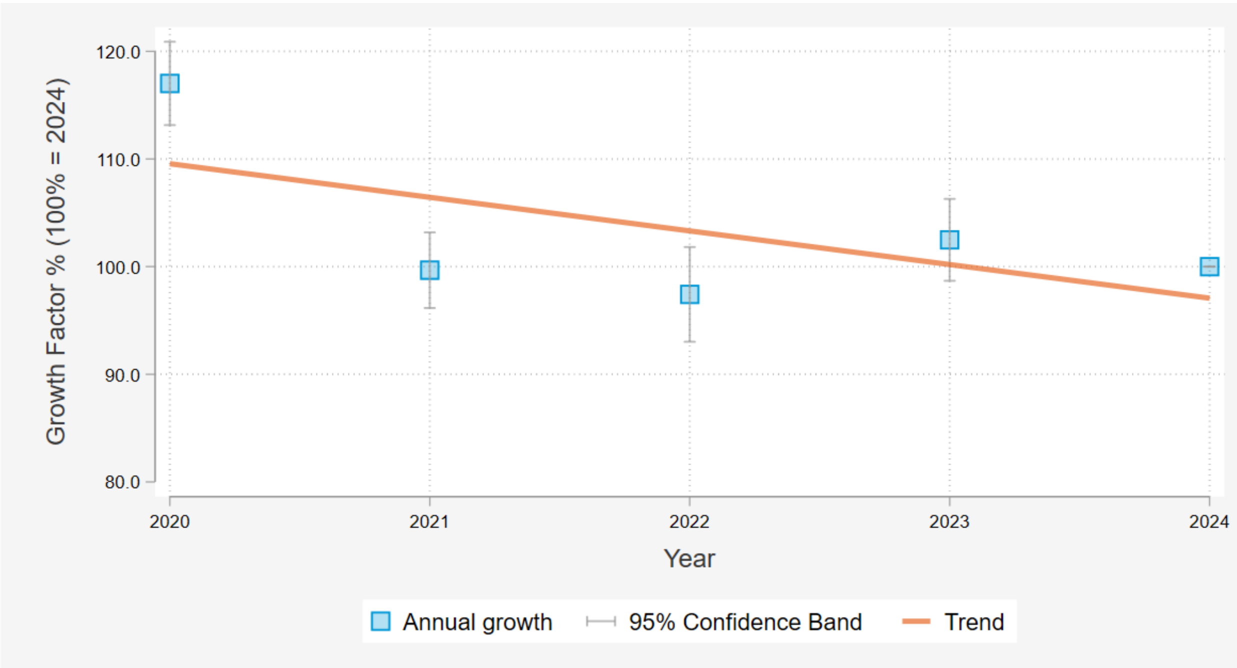


2.3.2 ESTIMATE HISTORICAL LOAD GROWTH

The objective of this step was to estimate historical load growth for each year in the analysis period in percentage terms. The available SCADA dataset spans mid-2020 through mid-2025 and does not include the 2025 summer peak period (June–August). To make full use of the available data and ensure that each year's peak was captured, the DSA team defined an "analysis year" as June through May rather than using a calendar year. The year-to-year (2020-2024 analysis years) growth patterns were then used to assess the growth trend and the variability of load growth patterns; the degree of growth each year was related to growth during the prior year— technically known as autocorrelation. The econometric models were purposefully designed to estimate gross historical load growth. The econometric models also allow us to weather normalize loads for 1-in-2 and 1-in-10 weather peaking conditions. The gross load growth accounts for native growth. By doing this, the DSA team added back historical BTM solar production based on location specific installed resources over time.

Figure 10 illustrates some of the key outcomes from this analysis. First, the analysis produces year-by year estimates of the historical growth or decline in loads after controlling for differences in weather, day of week, and season. Second, the year-by-year estimates allowed the DSA team to estimate the growth trend. In the example below, loads are declining at a rate of 0.3% per year. Third, the results enabled the DSA team to estimate the variability in year-to-year growth patterns (also known as the standard error of the forecast).

Figure 10: Year-by-year Estimates of Historical Growth (Single Substation Transformer Example)



2.3.3 SIMULATE LOAD GROWTH TRAJECTORIES

The native load growth forecasts were developed using probabilistic methods that produced the range of possible load growth outcomes by year. It simulates the reality that the near-term forecast has less uncertainty than forecasts ten years out. The DSA team implemented a total of 500 growth simulations for each feeder and substation transformer. Each simulation produced a distinct growth trajectory that considered the historical trend, variability in growth patterns, and the fact that growth patterns are autocorrelated.

The native growth rate simulations are based on historical growth patterns and a random component based on econometric modeling. As shown in Equation 1, each forecast year's growth is a combination of an independent growth component and the prior year's growth trajectory.

Equation 1: Annual Growth Calculation

$$Annual\ growth_t = Independent\ growth_t * (1 - autocorrelation) + Annual\ growth_{t-1} * autocorrelation$$

The independent growth component is based on a random draw that factors in the historical trend, the uncertainty around the trend, and the year-to-year variation at the location. The forecasts are cumulative, meaning that each simulation's forecast trajectory builds on the prior year, producing a path. The process was repeated 500 times for each feeder and for each substation transformers. The result is a full picture of the possible load growth outcomes by year. Each of the 500 simulated growth trajectories produces specific information about if, and when, the design rating would be exceeded, as well as the amount and timing of peak demand reduction required to maintain loads below the design ratings.

Figure 11 illustrates probabilistic forecasts. This type of forecasting requires estimating historical load growth patterns and simulating potential load growth trajectories repeatedly. The result of the repeated simulation is a distribution of outcomes. Some outcomes are far more likely than others. Figure 12 shows how this distribution of outcomes can be summarized in specific confidence bands.

Figure 11: Illustration of Location Specific Simulations and Probabilistic Forecasts

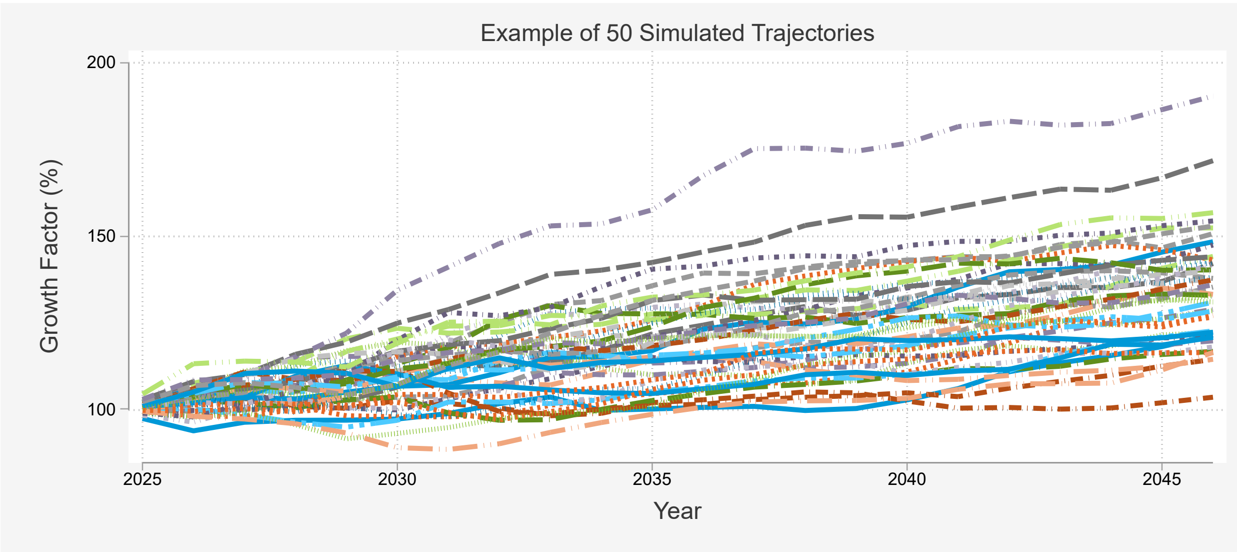
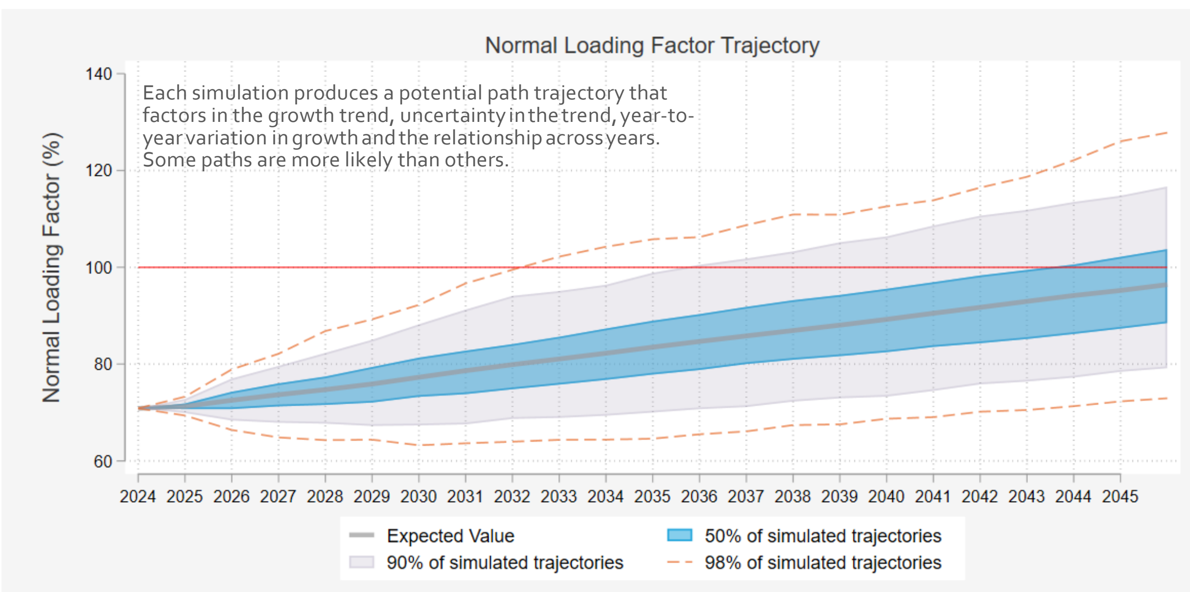


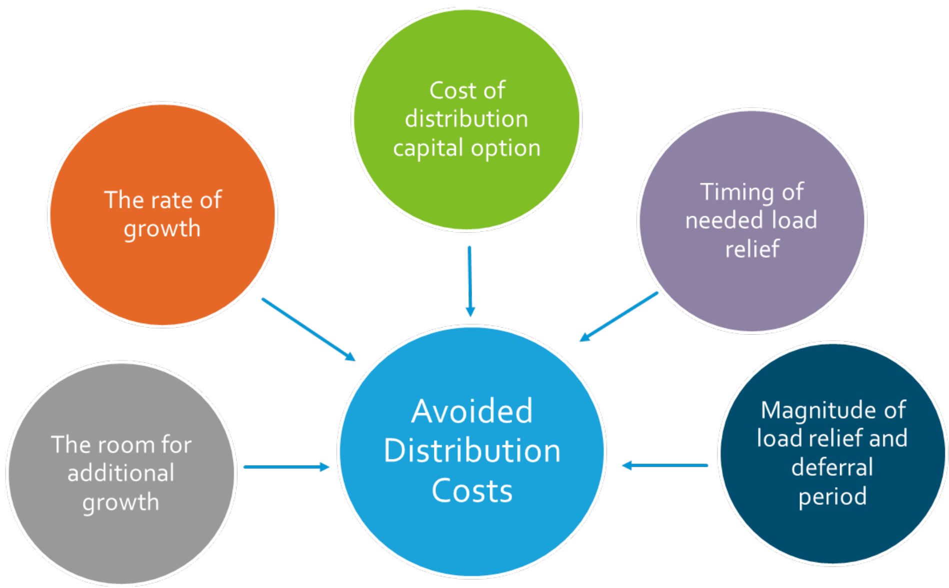
Figure 12: Annual Peak Forecast Confidence Bands



2.3.4 Estimate Costs With and Without Deferral

Figure 13 summarizes the five factors the DSA team considered when calculating distribution deferral value. These factors are key to identifying the magnitude of reductions at the right location at the right time and right season to delay upgrades. The calculation was implemented for each feeder and substation transformer that had a valid growth rate and operating limit. Next, the DSA team layered the two levels (feeder plus substation transformer) to get the total distribution avoided cost for each site. For system-wide values, the estimates consider the likelihood that reductions would be in locations with value due to random chance. The DSA team emphasizes that system-wide value is a load-weighted average of areas where reductions do lead to deferral of distribution investments.

Figure 13: Several Factors Affect Avoided Distribution Value



The estimated avoided distribution costs are based on the load forecast and the outcome of each simulation run. The process involved applying the four steps below to each of the 500 simulation runs for each location:

1. **Identify the timing of the upgrade for each simulation run, location, and year.** For each location, each simulation run produced a potential growth trajectory, which either exceeded the design rating or remained below it.

2. **Identify the magnitude of demand reduction needed to maintain loads below the design rating.** Once peak demand reductions were determined, the DSA team simulated demand reductions equal to the projected overload amount. Once introduced, the peak demand reductions were assumed to remain in place for the maximum deferral period (10 years) or until peak demand exceeded the operating limit by 20%, whichever came first. This reflects the reality that most projects cannot be postponed indefinitely, and the length of deferral may be shorter in areas with rapid growth.

3. **Model infrastructure costs with and without peak demand reductions for each simulation run, location, and year.** When the design ratings were exceeded, the costs of the infrastructure investments were triggered and allocated based on the revenue requirement of the upgrade. For example, equipment upgrade costs of $8.7 million with a 34-year book life would be spread out, or annualized, over 34 years. This approach replicates how capital costs are incorporated into the rate base. The DSA team implemented the same cost calculations but instead assumed the investment could be deferred for up to the maximum deferral period.

4. **Calculate the avoided costs per kW for each simulation run and location.** If loads were not projected to exceed the respective design rating, no costs are avoided since a growth-related infrastructure investment would not have taken place. If the loads in a particular simulation exceeded the design rating, reducing loads to levels below the design rating would avoid or defer growth related infrastructure investment. Thus, the avoided costs are the difference between the costs with and without the reduction in loads necessary to avoid or defer the upgrade. Distribution deferral value considered the capital costs and the magnitude of the required load reduction. Equation 2 reflects the deferral value calculations for each simulation run and location. In the equation, i reflects the inflation rate, r reflects the discount rate, and Δt reflects the deferral period. In practice, the DSA team implemented the calculations using revenue requirement multipliers[8], based on fixed charge rate[9] and asset booklife[10] assumptions provided by the PNM rates department. The share of capital cost was annualized over the book life with the revenue requirement multiplier.

Equation 2: Total Deferral Value Calculation

$$Total\ Deferral\ Value\left(\frac{\$}{kW}\right) = \frac{Capital\ Cost\ (\$)\ \cdot Revenue\ Requirement\ Multiplier\ \cdot \left(1 - \left(\frac{1+i}{1+r}\right)\right)^{\Delta t}}{Load\ Reduction\ Needed\ for\ Deferral\ (kW)}$$

The total deferral value was annualized over the deferral period for each simulation run and location using Equation 3, where r equals the discount rate, i is the inflation rate and n is the number of deferral years:

Equation 3: Annualized Deferral Value Calculation

$$Annualized\ Deferral\ Value = Total\ Deferral\ Value\left(\frac{\$}{kW}\right) \cdot \frac{(r-i)}{(1+r)} \cdot \frac{(1+r)^n}{[(1+r)^n - (1+i)^n}$$

The detailed calculations for each of the 500 simulations at each site were subsequently used to estimate the expected avoided costs per kW at each location for each year. As Equation 4 shows, the

[8] 1.62 assuming an after tax WACC of 6.90%
[9] 12.21% for transmission investments and 12.46% for distribution investments
[10] 37 years for transmission investments and 34 years for distribution investments

expected avoided cost is calculated by taking the average across all simulation runs (r) for each year (t) at an individual location (i).

Equation 4: Expected Avoided Cost Calculation

$$Expected\ Avoided\ Cost_{i,t} = \frac{\sum_{r=1}^{500} \$\frac{kW}{year}_{i,t,r}}{500}$$

Because the analysis relied on probabilistic methods, the avoided cost estimates reflect the risk mitigation value of managing loads to remain below the design rating. That is, the probabilistic method assigns avoided costs to locations and years with, for example, a 10% likelihood of an upgrade. A linear forecast would not assign any value to that year.

2.3.5 Allocate and Time-Differentiate Project Deferral Value

Distribution deferral value per kW-year is assigned to each substation transformer and feeder where load relief helps to avoid overloads (locational deferral value). The locational deferral values at each level of the distribution system are aggregated up the hierarchy to form the distribution deferral value. In practice, locational value can only be captured by acquiring load relief (reduction in peak demand) in the locations where deferral value exists. Value can be aggregated to the system level by taking the average value across locations with value. To account for variation in size across locations, value across locations was weighted by the coincident peak contribution of each location.

The time-differentiated value is based on when, for how long, and how much load relief is needed. For example, no amount of summer peak demand reduction will defer an upgrade to a substation with projected overloads in the winter. The normalized peak day load shape for each location was used to allocate value across hours. While relatively shallow load relief needs may only require load reductions in the top one or two hours, deeper load relief needs necessitate shaving load across more hours and results in a less concentrated value as it is spread across more hours.

2.3.6 Calculate Value of Energy Efficiency

Calculating the value of EE was the final step in the analysis. First, end-use load shapes[11] were weighted based on the expected end-use mix in the EE forecast and combined to produce an EE load shape for each site. The load shape was then normalized by dividing by the maximum annual MW of EE at that location, allowing the DSA team to compare shapes across sites with different EE magnitudes. The normalized EE load shape values were then multiplied by the deferral value to derive the locational value of EE.

[11] Water heating, space cooling, space heating, ventilation, lighting, other

To aggregate granular values to a system-wide metric, the granular value at each location was weighted by coincidence with the system seasonal peak, which is consistent with the technology-agnostic avoided cost approach.

2.3.7 Methodology Adjustments for Transmission Deferral Value

The approach for estimating avoided transmission costs was similar in many ways to the approach for estimating avoided distribution costs. Table 6 compares key methodological elements for distribution and transmission deferral valuation.

Table 6: Comparison of Approaches for Distribution and Transmission Deferral Valuation

Methodological Element	Distribution	Transmission
What type of loads were used for the analysis?	Local peak load forecasts for each feeder and substation transformer from 2026 through 2045.	System coincident peak load forecasts for each substation transformer from 2026 through 2045.
Was the analysis probabilistic?	Yes, avoided costs were estimated for each of 500 growth trajectory simulations for each location.	No, the avoided costs were estimated using expected growth trajectory for each location.
How were overloads modeled?	Overloads on each location for each simulation were defined as projected peak load surpassing the normal rating twice consecutively, or surpassing the emergency rating.	Load flow analysis was performed across substation transformers with load modifiers (planning load) and without load modifiers (valuation load) to identify the limiting element and projected future investments.
How was the deferral period determined?	The deferral period was calculated for each probabilistic forecast run. Deferral was assumed to start when the overloads occurred and remain in place for the maximum deferral period (10 years) or until peak demand exceeded the operating limit by 20%, whichever came first.	The first year of deferral was the projected in-service year under the without load modifiers scenario. The last year of deferral was assumed to be the year before the in-service year under the with load modifiers scenario.
How was deferral value calculated?	Equation 2 was used to calculate total deferral value and Equation 3 to annualize the value. As shown in Equation 4 expected value was the average across simulation runs.	Equation 2 was used to calculate total deferral value and Equation 3 to annualize the value. The analysis was not probabilistic and there was no need to take the expected value.
How was project deferral cost allocated across locations?	No allocation was needed given the locational nature of the analysis.	Load flow calculations were used to proportionally allocate deferral value to substation transformers where load reductions helped alleviate the transmission constraint.

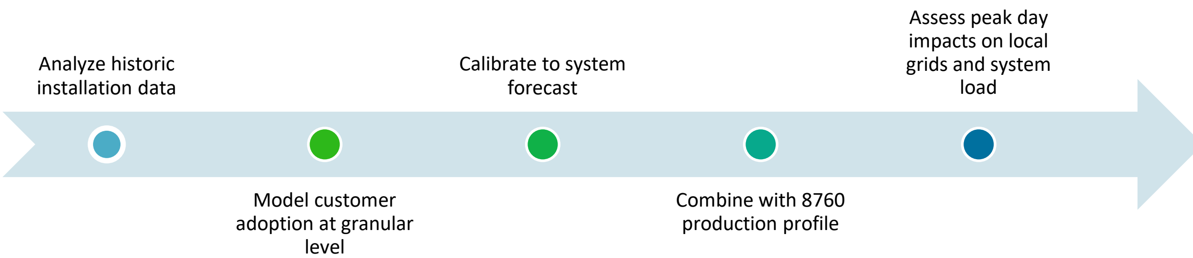
Methodological Element	Distribution	Transmission
What approach was used to quantify the magnitude of load relief required for a deferral?	Within each growth simulation, demand reductions were assumed to equal the projected overload amount.	For substation transformers where load reduction was deemed beneficial, the load relief to achieve deferral was quantified as the difference in projected loads in the final deferral year between the with and without load modifier scenarios.
How was annual deferral value time differentiated by hour and season?	The normalized peak day load shape for each location was used to allocate peaking risk and value across hours.	The system peak day load shape was used to allocate peaking risk and value across hours, by applying a 15% peak hour reduction to avoid concentrating value in a single peak hour and to avoid spreading the value among hours with no real peaking risk.
How was the value of EE calculated?	The value at each location was derated to reflect coincidence with the shape of EE forecast for that location.	The value at each location was derated to reflect coincidence with the shape of EE forecast the system.
How was the system average value calculated?	The system value was weighted by coincidence with the system seasonal peak.	The system value was weighted by coincidence with the system seasonal peak.

2.4 ADJUSTMENTS TO LOAD FORECASTS

Several adjustments were made to load forecasts to account for large load changes in the forecast that are not a part of native load growth. These adjustments come from projected load growth from (1) planned economic development, (2) electric vehicles, (3) existing energy efficiency, (4) behind-the-meter solar, and (5) economic development (lump loads). For community solar (CS), , all CS capacity in the queue was assumed to be built when developing the granular forecast. For economic development projects, which include data centers, warehouses, and public (DCFC/L2) charging stations, an economic development forecast provided by PNM was dispersed among the feeders.

A separate approach was taken for forecasting EVs and behind-the-meter solar, in which propensities were developed at the premise level, and subsequently calibrated to add to the total system-level forecast. Figure 14 provides an overview of the general methodology used for granular forecasting. This methodology is relevant in this study to only EVs and BTM solar.

Figure 14: General Overview of Granular Forecast Methodology



Customer-level usage and property characteristics, such as square footage, market value, and year built, were used to produce propensity scores for each premise in the territory, as these features are often predictive of whether or not a customer will adopt a technology in the future. The propensities were then adjusted for each forecast year so that the total consumption or generation from increased EV or BTM solar adoption equaled the top-down, system-level forecast provided by PNM. Because the system-level forecast was rate class-specific, the calibration process was done at the rate class level as well.

Finally, since there was little data on EE adoption at the premise level, propensity scores for EE were developed by using the gross annual usage of the customer as a proxy propensity. PNM's system-level EE forecast was then spread among the premises according to their usage.

In order to stack the load modifier forecasts on top of the hourly native load growth, the annual consumption and generation forecast produced from the calibration process needed to be converted into an hourly demand forecast. Load shapes for EVs and BTM solar were provided by PNM and applied to the annual forecast to achieve this. For EE, NREL's aggregated end-use load profiles were pulled for the counties that pertained to PNM's territory. These end-use load profiles were narrowed to the end uses relevant to the residential, commercial, and industrial sectors, and a composite load shape of these end uses was created. Weights were applied to each end use when creating the composite load shape, and were derived from the annual share of forecasted achievable potential, which was taken from PNM's potential study.

Table 7 summarizes the primary data sources, the forecasting method, and the load shape source for each of the load modifiers forecasted in this study. More detail on each step of the granular forecasting method can be found in Appendix A – Granular Forecasting Methods.

Table 7: Data Sources and Methods for Load Modifier Forecasting

Load Modifier	Primary Data Sources	Granular Dispersion Method	Load Shape Source
Energy Efficiency	Customer billing data (2020-2025)	Use annual gross usage as a proxy propensity score	NREL
Electric Vehicles	Customer billing data (those on whole-home EV rate)	Propensity model (random forecast classification)	PNM
Economic Development	IRP Economic Development forecast	Disperse IRP Economic Development forecast	IRP
BTM Solar	Customer billing data (monthly generation) Historical PV interconnections (2020-2025) Hourly generation for large solar sites	Propensity model (random forecast classification)	Large solar site hourly generation, de-rated to account for decreased efficiency for smaller customers
Community Solar	CS queue	Assume all queue CS is built	Large solar site hourly generation

The result of the granular forecasting is 20 years of hourly demand for each of the load modifiers. This forecast can be added to the native load forecast to understand how the planning load changes over time, and how the peak hour shifts as load modifiers such as solar and EVs become more prevalent across the territory. Table 8 shows the coincident peak demand by year for the entire system, and shows how the planning and valuation load are developed from the granular forecast. The table specifically shows the annual peaks based on the valuation load, which does not include load relief resources that have not been built and which are uncertain, specifically BTM solar and energy efficiency.

Table 8: Forecasted Peak Coincident Valuation Load, MW (2026-2045)*

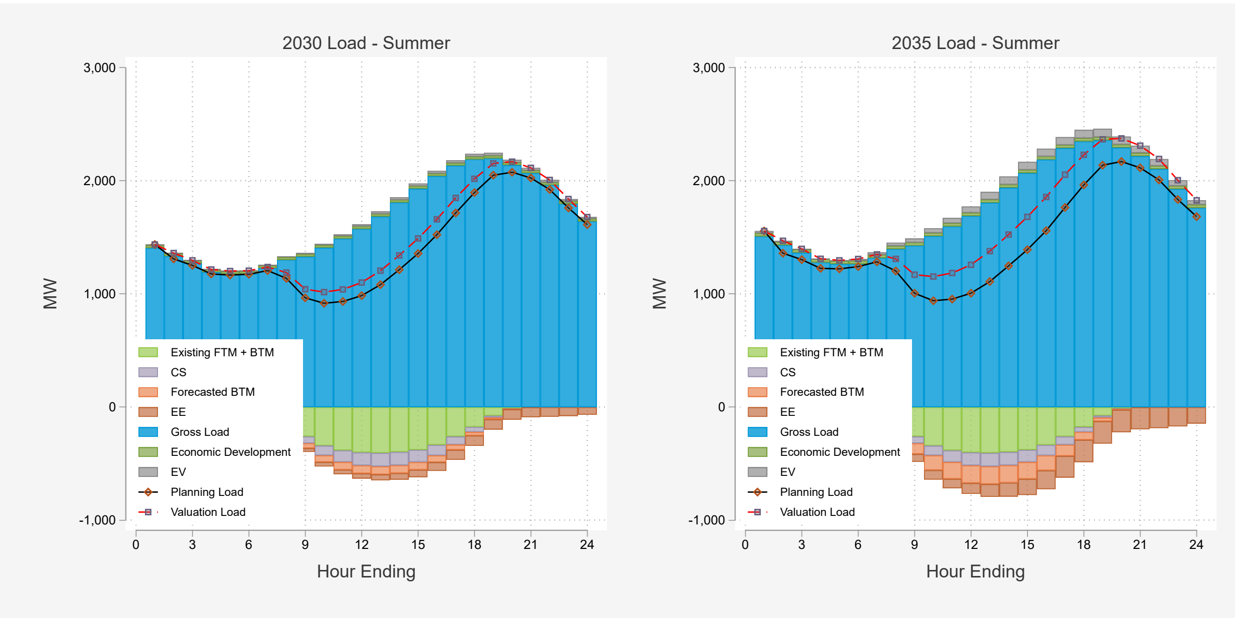
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)		
Year	Gross Load Forecast	Economic Development	EE	CS	Existing FTM	Existing BTM	Forecasted BTM	EV	Planning Load (a)+(b)+(c)+(d)+(e)+(f)+(g)+(h)	Valuation Load (a)+(b)+(d)+(e)+(f)+(h)
2026	2014	11	-17	-2	-4	-10	-1	3	1994	2012
2027	2057	15	-34	-3	-4	-10	-1	7	2027	2062
2028	2101	20	-49	-3	-4	-10	-2	13	2065	2117
2029	2118	21	-66	-3	-4	-10	-2	19	2073	2141
2030	2139	23	-91	-3	-4	-10	-3	26	2077	2170
2031	2158	24	-116	-3	-4	-10	-4	33	2079	2199
2032	2211	26	-139	-3	-4	-10	-5	42	2118	2262
2033	2242	27	-160	-3	-4	-10	-5	51	2138	2304
2034	2277	27	-180	-3	-4	-10	-6	61	2162	2348
2035	2294	27	-198	-3	-4	-10	-7	71	2171	2376
2036	2299	27	-215	-3	-4	-10	-7	83	2170	2392
2037	2333	27	-229	-3	-4	-10	-8	94	2200	2437
2038	2349	27	-243	-3	-4	-10	-9	107	2214	2466
2039**	2442	27	-254	-18	-29	-47	-45	130	2206	2505
2040	2480	27	-267	-18	-29	-47	-49	146	2244	2560
2041	2480	27	-279	-18	-29	-47	-52	162	2244	2575
2042	2510	27	-290	-18	-29	-47	-55	178	2276	2621
2043	2544	27	-300	-18	-29	-47	-59	193	2312	2671
2044	2572	27	-309	-18	-29	-47	-63	209	2343	2715
2045	2615	27	-317	-18	-29	-47	-66	224	2390	2774

*Since the study was performed at the distribution level, transmission level loads and load modifiers are excluded from this table and the distribution analysis. Transmission level loads and load modifiers were included in the transmission load flow analysis.

**The system peak day was modeled by summing the bottom up 8760 valuation load forecasts. Beginning in 2039 the peak hour of the 24-hour shape of the system peak day forecast shifted from HE 20 to HE 19, resulting in a modest increase in contribution from solar PV sources.

Once the valuation load is calculated, the peak days for each forecast year based on the valuation load can be determined. Figure 15 shows the summer system coincident peak day for years 2030 and 2035, and shows how the various components of the forecast add to the total planning and valuation load. The planning load in this study is the sum of the gross load and all the load modifiers, regardless if they have been built or not.

Figure 15: Forecasted Planning and Valuation Load on the Summer System Peak Day



3 AVOIDED COST RESULTS

This section of the report provides an overview of the study outputs.

3.1 HISTORIC LOAD PATTERNS

To focus the analysis on assets that need or may need upgrades due to load growth, the DSA team conducted a "loading and growth" analysis. The primary goal of the loading and growth analysis was to understand the magnitude of recent peaks relative to the maximum loads for which those assets are rated. This also provides the growth trend over time of both yearly and seasonal peaks.

A key topic was the kind of components that are the most important in making infrastructure upgrade decisions, e.g., feeders, terminals, transformers, substations, or bulk substations. An additional point was what equipment rating (operating limit) PNM uses to determine loading factor.

When examining historic loads, the DSA team looked both at load shapes on peak days, as well as the concentration of peak loads. Figure 16 illustrates the timing of peak day usage for a sample of PNM's substation transformers. The plot shows the weather normalized hourly loads top peak load day for each individual substation transformer, broken out by whether the substation transformer peaked in summer or winter. The plots were normalized to display the percentage of usage in each hour relative to the peak usage of the day (the highest point of each curve is 100%), allowing comparison of distribution networks of different sizes. Generally, the greatest usage on peak days occurs between 4 PM and 7 PM for locations that peak in summer, and between 7 AM-9 AM and 5 PM-7 PM for locations that peak in winter. Among the 165 substation transformers included in the analysis, 82% were summer-peaking, 13% were winter-peaking, and the remaining 3% peaked during shoulder months.

Figure 16: PNM Location Specific Peak Day Load Shapes – Substation Transformer

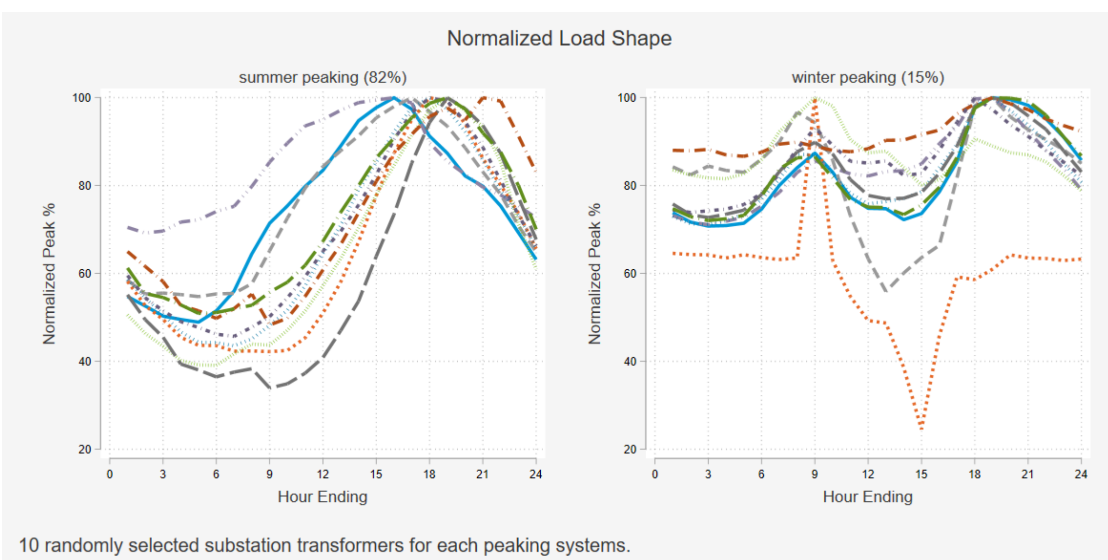
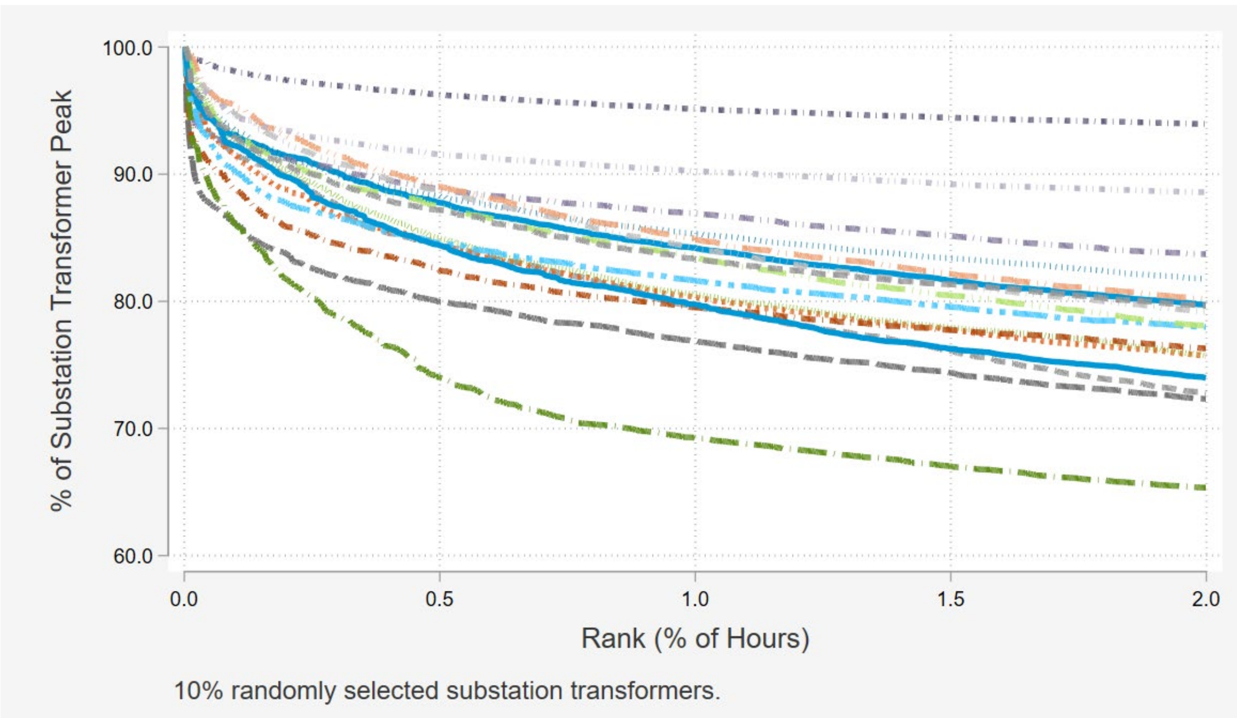


Figure 17 uses load duration curves to illustrate a fundamental feature of electric load. Load duration curves sort electric demand from highest to lowest and highlight how extreme loading conditions are concentrated in a limited number of time periods. The graphs reflect the load duration curves for PNM's distribution system. The graph shows only the top 2% of 60-minute periods in the analysis period for 10% randomly selected substation transformers. Each load duration curve shows load as a percentage of each substation transformer's largest load, allowing side-by-side comparisons for areas with a different magnitude of demand. For all locations, all loads within 10% of the peak occur in less than 2% of the periods over the analysis period. In some locations, all loads within 20% of the peak occur in less than 1% of the periods. These substation transformers have a higher concentration of peak loads than others. In other words, the highest peak loads occur in only a small fraction of periods for these substations. Substation transformers with these characteristics may be good candidates for dispatchable demand response or NWA projects because a relatively small number of hours need to be targeted to reduce a large portion of the peak load.

Figure 17: PNM Normalized Load Duration Curves – Percent of Peak Load



3.2 LOADING AND GROWTH RATES

Locations with potential infrastructure deferral value are areas where loads are growing and there is limited excess capacity to accommodate the growth. Areas with enough capacity to accommodate growth are less likely to trigger growth-related infrastructure upgrades. Similarly, areas where local peak demands are declining over time are less likely to require growth-related upgrades. Table 9 summarizes the 2025 weather normalized loading factor for substation transformers and feeders in

PNM territory. Most are not highly loaded, but a significant number of peaks exceeded operating limits for feeders.

Table 9: Overview of 2025 Weather Normalized Normal Loading Factors

Loading Factor	# of substation transformers	# of feeders
Less than 50%	65	251
50% to 60%	25	63
60% to 70%	26	42
70% to 80%	20	48
80% to 90%	13	31
90% to 100%	9	14
100% or higher	7	54
Total	**165**	**503**

Figure 18 displays the 2025 weather-normalized loading factor and geographical location for feeders and substation transformers in PNM territory. Figure 19 zooms in the three large zones: Albuquerque, Santa Fe, and Sandoval where high loading are concentrated. Darker orange colors indicate higher loading factors.

Figure 18: Heat Map of 2025 Normalized Loading Factors – PNM Territory

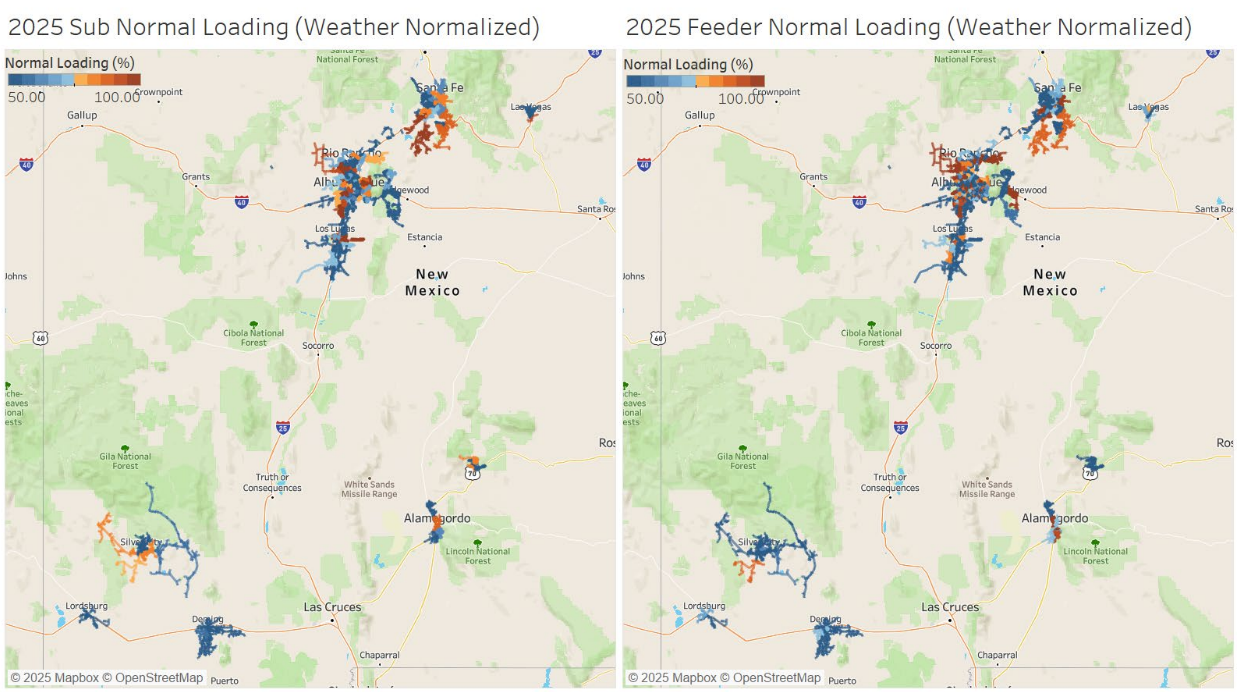
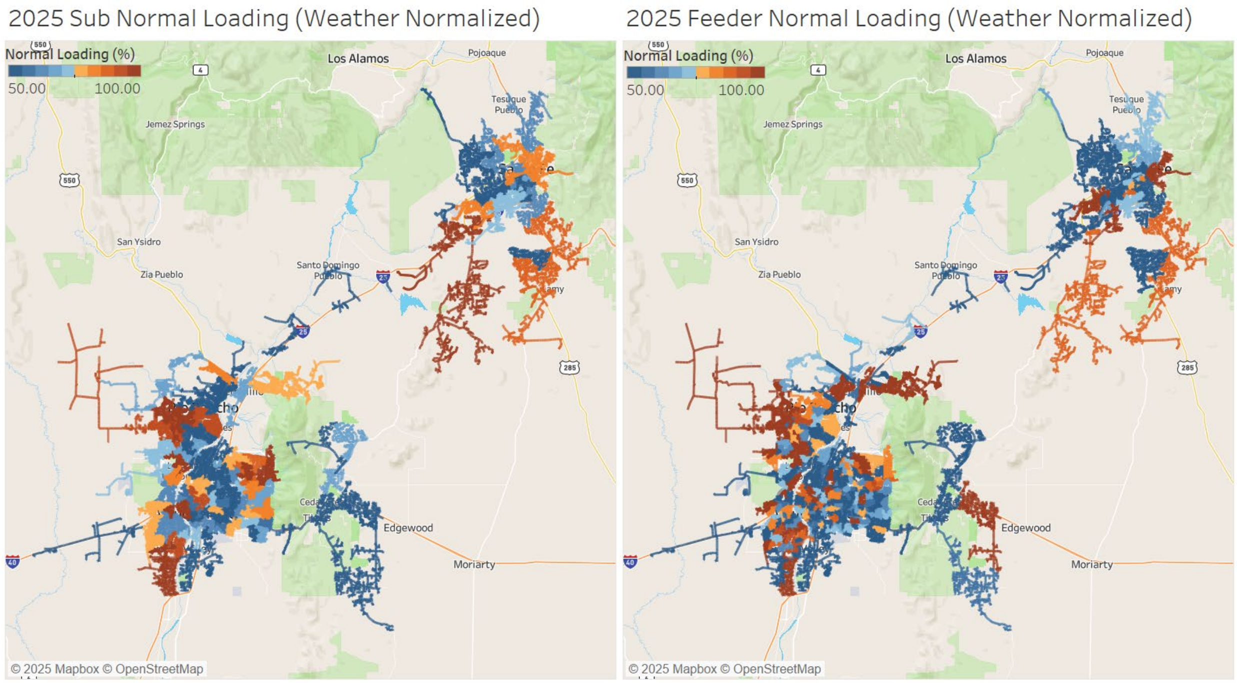


Figure 19: Heat Map of 2025 Normalized Loading Factors – Albuquerque, Santa Fe, and Sandoval



The DSA team estimated compound annual growth rate of each feeder and substation transformers. Table 10 summarizes the number of substation transformers and feeders falling into different bins of annual growth rate. Many feeders (306) and transformers (108) fall within the -2% to 2% growth rate category, indicating that they have experienced relatively flat growth. However, only a few feeders (34) and transformers (3) exhibited growth at a rate of 6% or higher.

Table 10: Overview of Weather-Normalized Annual Growth Rates

Annual Growth Rate (%)	# of substation transformers	# of feeder
Less than -6%	2	1
-6% to -2%	10	33
-2% to 2%	108	306
2% to 6%	41	129
6% or higher	3	34
Total	**165**	**503**

Figure 20 and Figure 21 show the growth rates estimated by the DSA team. Figure 20 shows results for the overall PNM service territory, while Figure 21 provides a focused view of the Albuquerque, Santa Fe, and Sandoval zones. Shades of blue indicate declining loads while orange and dark orange indicate load growth. Grey indicates a flat growth rate (e.g. close to zero). There is not a clear pattern of where growth and negative growth are happening, but rather positive and negative growth rates are interspersed throughout the territory. It is worth noting that most components are experiencing flat or slight growing shown as grey to light orange. The location-specific growth rates were used to develop probabilistic 20-year forecasts for each individual feeder and substation transformer. For each component, the location-specific growth rate was applied for the first five years and then converged to the PNM average growth rate by year ten. This approach was adopted since it can be unrealistic to project 20 years of trends based on five years of historical data for areas with high growth or rapid decline. A couple of components with extreme high or low growth rate were replaced with system level growth rate at 2.1%.

Figure 20: Historical Growth Rates – PNM Territory

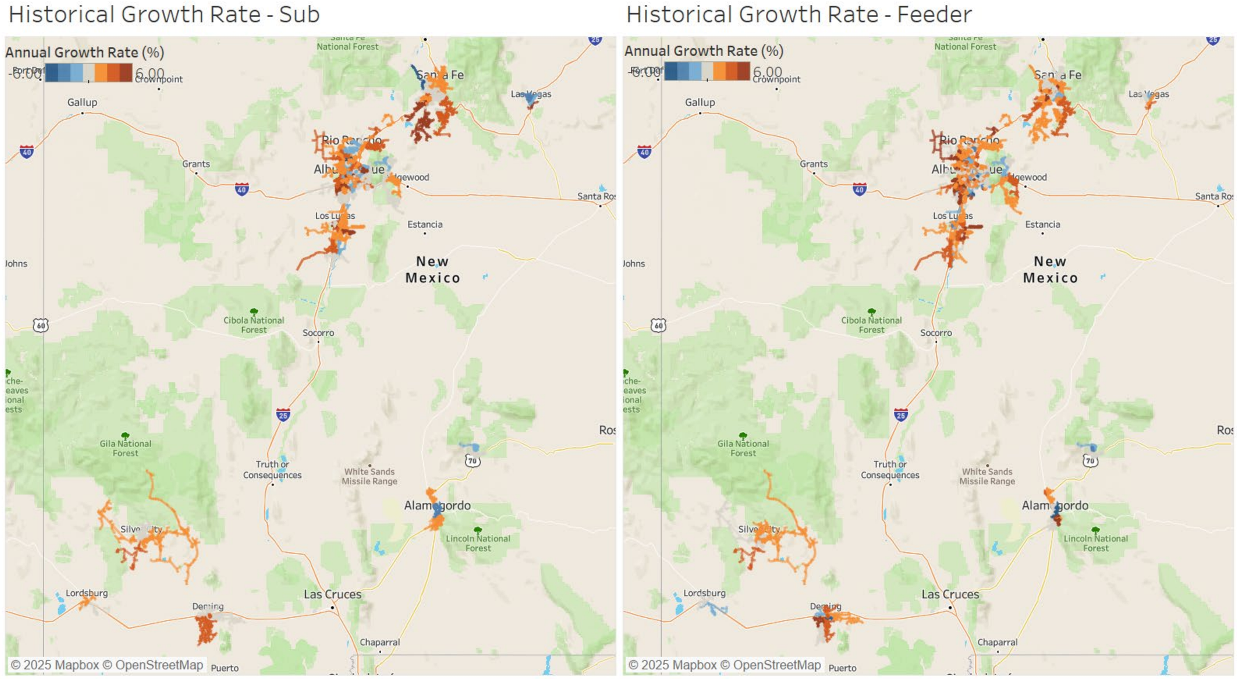


Figure 21: Historical Growth Rates – Albuquerque, Santa Fe, and Sandoval

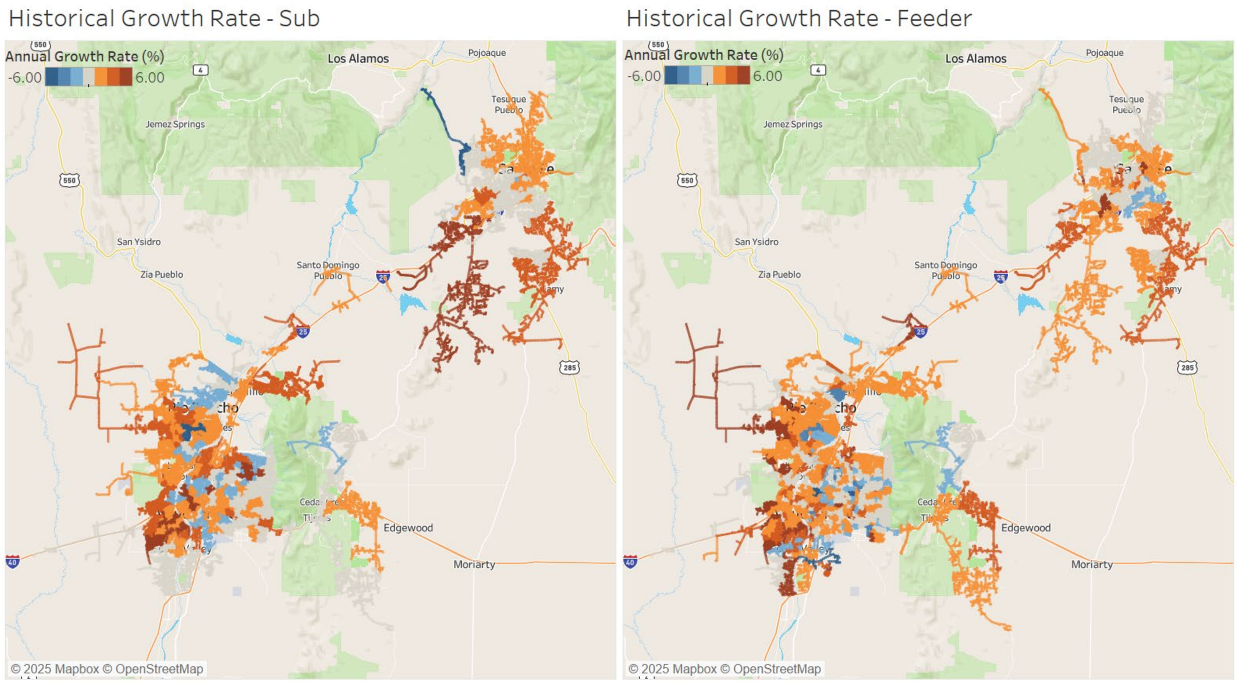
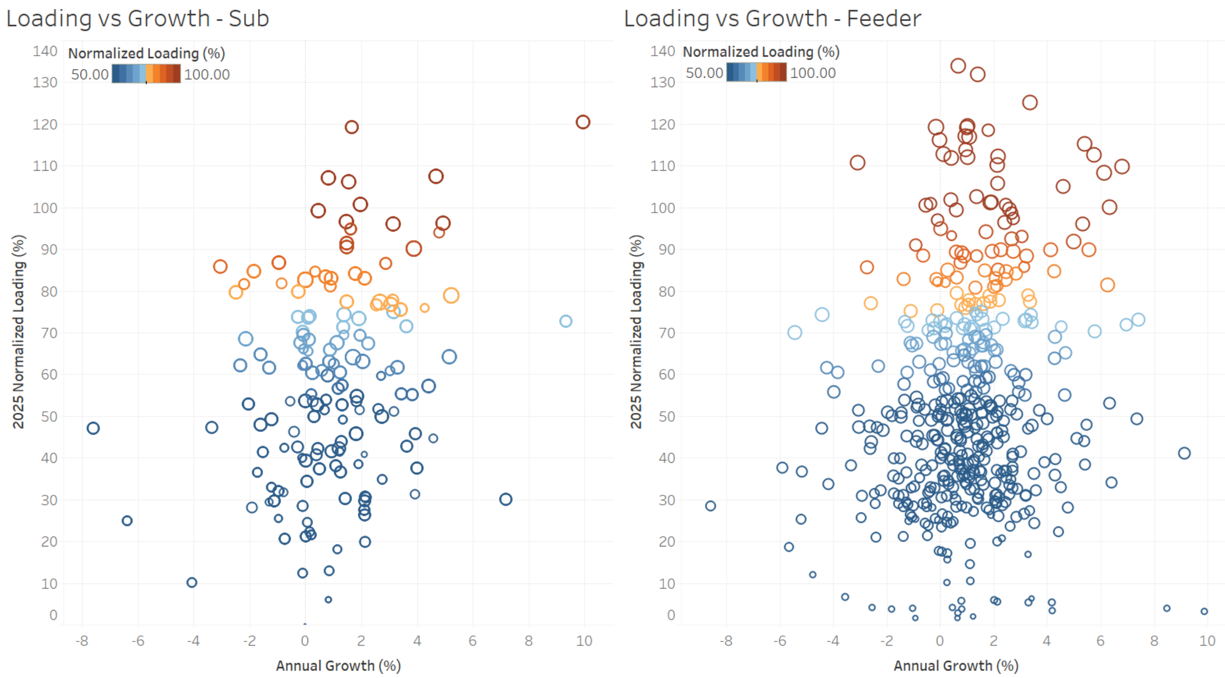


Figure 22 compares the annual load growth rate to the loading factor (weather-normalized peak divided by the location's normal rating) for each of PNM's feeders and substation transformers. Some are experiencing slowing growth or declining loads or have ample room for growth without having to upgrade them. Locations with a growth rate above 0% are experiencing growth, and locations where the loading factor is closer to 100% have less room for growth. Several feeders and substation transformers are highly loaded and growing, indicating a high likelihood of overloading. This chart, however, does not factor in the uncertainty of future growth patterns. For reference, the color reflects the loading factor, and the bubble size is proportional to the component's size (as defined by peak MVA). For the purposes of this study, the bubbles in the upper-right quadrant of the graph below are most important because they are locations that are both highly loaded and growing.

Figure 22: Growth Rates Versus Room for Growth

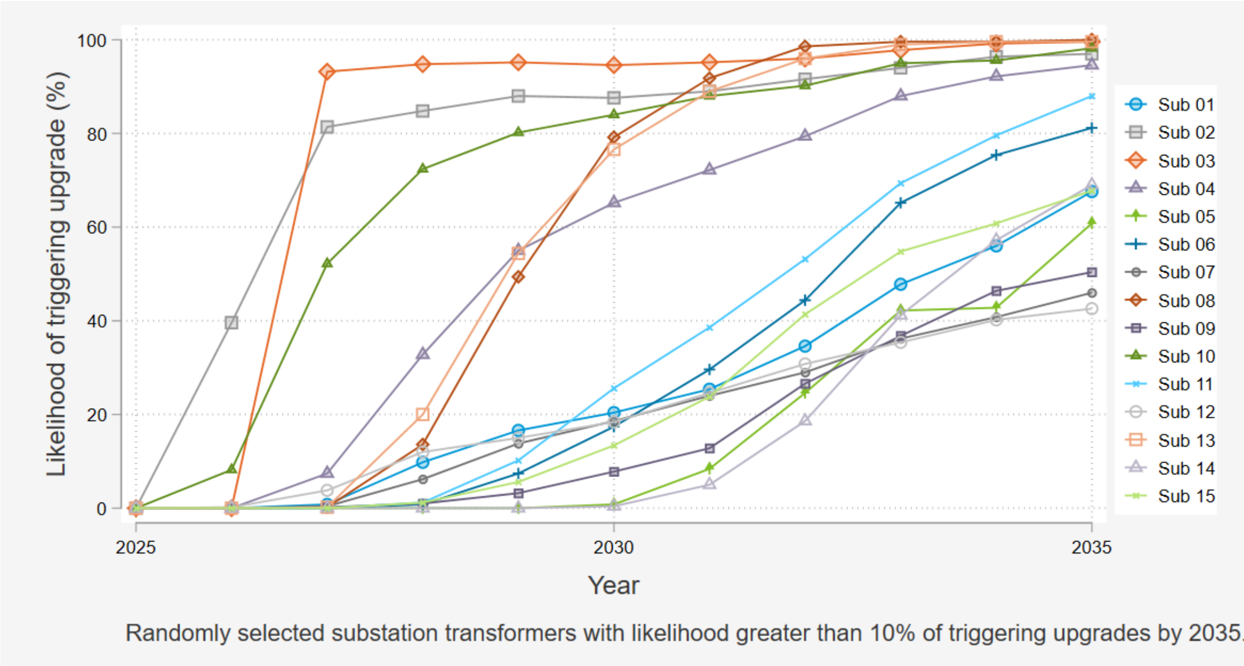


Bubble size is proportional to the annual peak MVA with weather normalization of the site. The color reflects the overall loading for each site based on 2025 data. A few outliers were removed from the figure.

3.3 DISTRIBUTION SYSTEM LIKELIHOOD OF UPGRADES

Figure 23 summarizes the likelihood of triggering an infrastructure upgrade if the historical load trends continue. This figure presents data for 15 randomly selected substation transformers with a likelihood greater than 10% of triggering upgrades by 2035. For Sub 3 in the figure, the likelihood of triggering an upgrade increases rapidly, approaching 100%, due to rising demand trends. In some cases, the likelihood of triggering an upgrade increases steadily over time. For those systems, peak demand reductions from EE programs lower the likelihood of triggering an upgrade, deferring capital investment, or potentially avoiding it entirely if native loads begin to decline.

Figure 23: PNM Likelihood of Triggering Upgrades



3.4 TRANSMISSION AND DISTRIBUTION DEFERRAL VALUE

Distribution costs are location specific. Locations with potential infrastructure deferral value are those where load growth is occurring and available capacity is limited. However, not all locations with a high likelihood of overload are considered deferrable. If the overload risk occurs too soon, the location is unlikely to yield deferral benefits.

The DSA team defined a "beneficial" location as one with (1) a violation risk greater than 10% within the next 10 years, and (2) a violation risk below 50% within the next three years. A violation is defined using a two-part criterion: peak load exceeding the normal rating for two consecutive years, or peak load exceeding the emergency rating. Based on these criteria, the DSA team compiled a list of beneficial locations at both the substation transformer and feeder levels. This list was reviewed with the PNM Distribution team to classify each hypothetical upgrade into four categories as shown in Figure 24. Most of the beneficial locations were classified as potentially deferrable for both substation and transformer and others spread into three other categories. It is worth noting that 16 substation transformers and 65 feeders exhibit overload risk too soon (defined as greater than 50% risk within the next three years) and therefore are not considered beneficial for deferral.

Figure 24: Beneficial Distribution Location Classification

Classification	Number of Substation Transformers	Number of Feeders
Already in the capital plan	1	3
Deferral not possible	4	6
Project not required (e.g., can be resolved through load transfer)	4	4
Potentially deferrable	18	44
Total	**27**	**57**

Similarly, 39 deferable transmission projects were identified and analyzed for deferral value using system coincident peak load on substation transformers. In contrast to the distribution projects which were specific to a single distribution feeder or substation transformer, each transmission project was specific to a transmission line. Load flow analysis was performed across substation transformers with load modifiers (planning load) and without load modifiers (valuation load) to identify the limiting element and projected future investments. The first year of deferral was the projected in-service year under the without load modifiers scenario. The last year of deferral was assumed to be the year before the in-service year under the with load modifiers scenario. Load flow calculations were used to proportionally allocate deferral value to substation transformers where load reductions helped alleviate the transmission constraint

For both distribution and transmission value to be realized by delaying upgrades, a sufficient magnitude of demand reductions at the right location, time, and season is necessary. For system-wide untargeted values, the estimates consider the likelihood that reductions would be in locations with value due to random chance. The DSA team emphasizes that system-wide value is a load-weighted average of areas where reductions do lead to deferral of distribution or transmission investments.

To calculate the total deferral value, the DSA team aggregated the deferral value at the feeder and substation transformer levels, then incorporated the deferral value of transmission. Table 11 shows the total deferral value for the PNM territory at the system level, as well as the 10-year levelized value from 2028 to 2037. From 2026 to 2045, the total deferral value increases from $1.73/kW-year to $66.59/kW-year, peaking at $81.43/kW-year in 2039. The distribution value is consistently lower than the transmission value. Both components of the distribution value, the distribution feeder and the substation transformer values, as well as the transmission value show a steady increase initially but decreases towards the end of the study period. This trend may be attributed to the expectation that many sites will exceed their maximum deferral periods by around 2040, at which point these sites will be considered non-deferrable, thereby necessitating infrastructure investments.

Table 11: PNM Deferral Value (load-weighted average, nominal $/kW-year)

Year	Distribution		Transmission	Total
	Feeder	Substation Transformer		
2026	$1.73	$0.00	$0.00	$1.73
2027	$1.70	$0.82	$0.00	$2.51
2028	$2.51	$4.44	$28.96	$35.91
2029	$3.82	$7.72	$27.72	$39.26
2030	$4.80	$9.32	$27.60	$41.72
2031	$5.71	$10.23	$27.53	$43.48
2032	$6.54	$11.90	$48.17	$66.61
2033	$8.19	$13.73	$48.12	$70.04
2034	$9.17	$14.81	$47.03	$71.02
2035	$10.43	$15.86	$47.06	$73.35
2036	$9.83	$16.52	$50.78	$77.13
2037	$10.21	$16.46	$50.17	$76.85
2038	$10.62	$14.89	$45.43	$70.94
2039	$10.31	$14.31	$56.72	$81.34
2040	$10.49	$14.72	$46.47	$71.68
2041	$11.01	$15.31	$46.50	$72.82
2042	$10.55	$15.17	$47.73	$73.45
2043	$10.80	$15.82	$47.63	$74.25
2044	$9.63	$14.32	$47.60	$71.55
2045	$8.18	$12.69	$45.72	$66.59
10-year levelized value (2028-2037, $2025)	**$6.51**	**$10.89**	**$35.76**	**$53.16**

Figure 25 provides a heat map of the distribution deferral value in 2030 and 2035. The distribution deferral value is concentrated in specific pockets rather than across the PNM service territory. Areas with relatively higher deferral value include Southwest, Belen, Albuquerque, Sandoval, and Santa Fe. Figure 26 shows an analogous heat map of the transmission deferral value in 2030 and 2035. The transmission deferral value is still concentrated but somewhat less so than the distribution deferral value because the system is somewhat networked and load reductions on multiple substation transformers can help reduce load on the limiting element for a given project.

Figure 25: Heat Map of PNM Distribution Deferral Value

Distribution Deferral Value ($nominal/kW-year) - 2030 | Distribution Deferral Value ($nominal/kW-year) - 2035

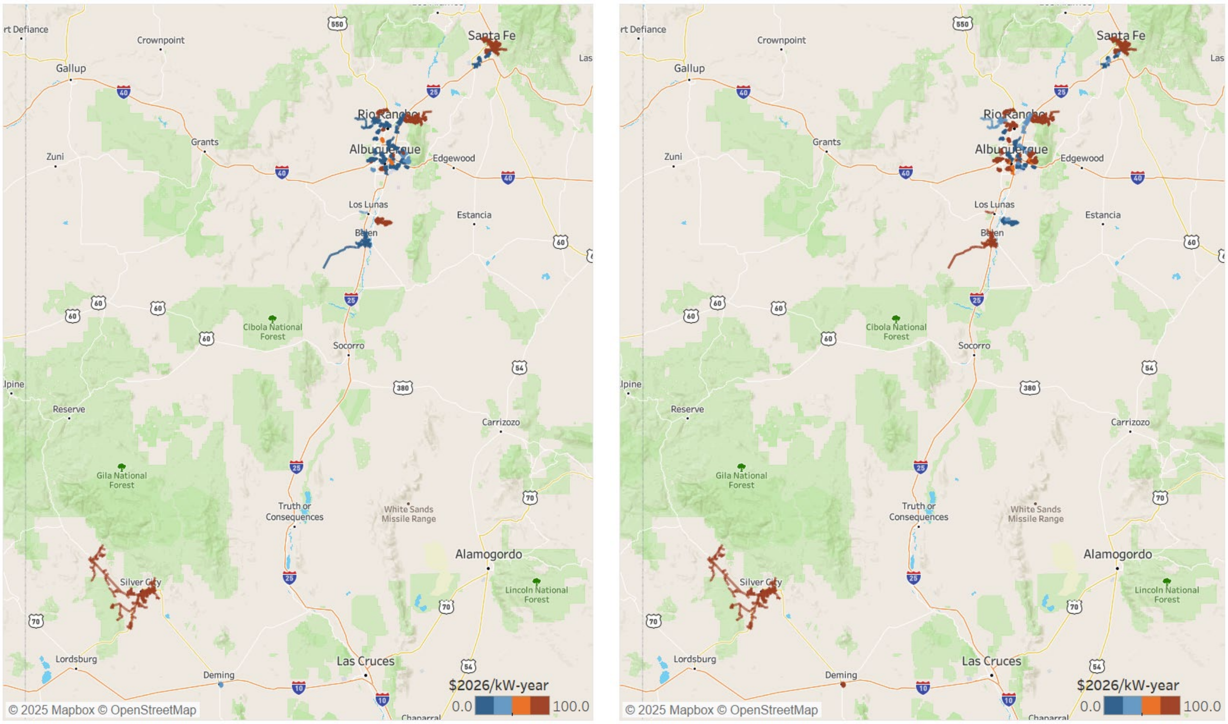
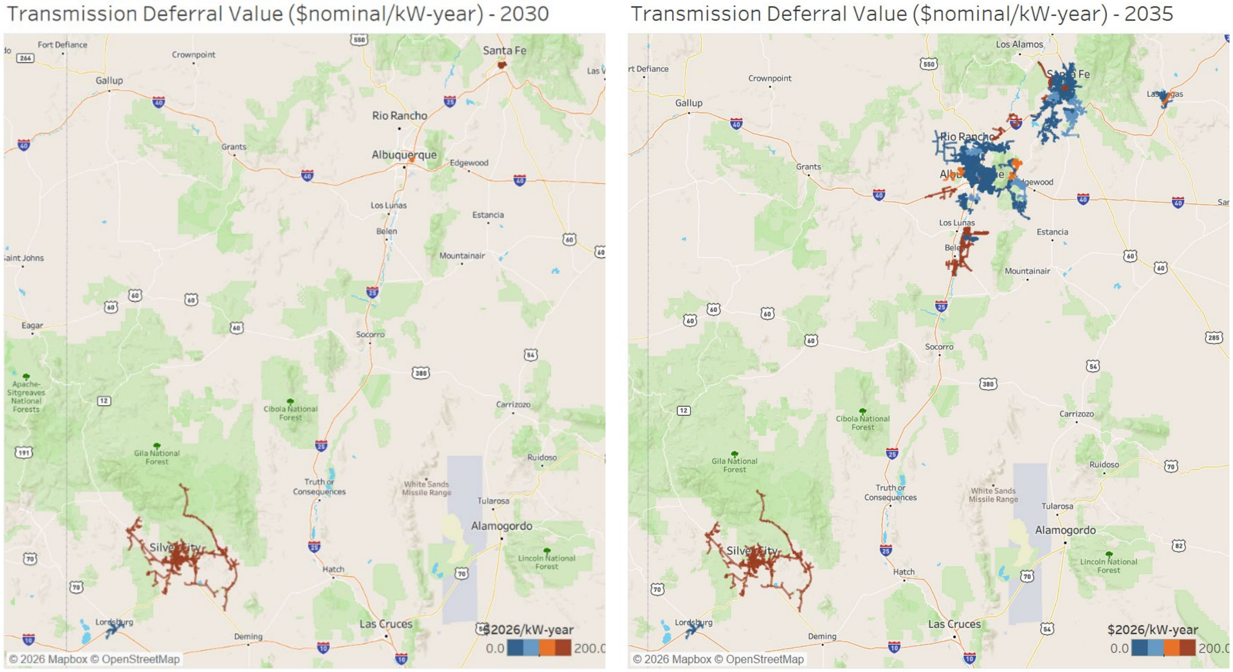


Figure 26: Heat Map of PNM Transmission Deferral Value

Transmission Deferral Value ($nominal/kW-year) - 2030 | Transmission Deferral Value ($nominal/kW-year) - 2035



Notably, the most imminent investments, those with high risk in the next one to three years, are largely not deferrable. This means that the avoided cost is also a function of the period over which investment deferral is valued. Table 12 shows 10-year levelized deferral value as a function of the ten-year valuation period start year. Selecting a later start year means that there is more value in all ten valuation years, which translates to as much as double the value.

Table 12: PNM 10-Year Levelized Deferral Value Sensitivity to Valuation Start Year (load-weighted average, nominal $/kW-year)

Start Year for 10-Year Levelized Value	Distribution		Transmission	Total
	Feeder	Substation Transformer		
2026	$4.75	$7.46	$24.38	$36.58
2027	$5.59	$9.17	$29.83	$44.60
2028	$6.51	$10.89	$35.76	$53.16
2029	$7.42	$12.14	$37.87	$57.42
2030	$8.16	$13.09	$41.08	$62.34
2031	$8.83	$13.89	$40.43	$63.15
2032	$9.45	$14.59	$43.22	$67.26
2033	$9.95	$15.03	$45.41	$70.39
2034	$10.25	$15.26	$46.04	$71.55
2035	$10.36	$15.27	$46.54	$72.18

3.5 TIME-DIFFERENTIATED VALUE

Deferral of an infrastructure upgrade requires sufficient magnitude of load reduction at the right location at the right time of day during the right season. For example, no amount of summer peak demand reduction will defer an upgrade to a substation with projected overloads in the winter. The DSA team broke out the avoided distribution costs into summer and winter categories and allocated them across 24 hours.

Although the peak load relief needed to defer upgrades is driven by the projected exceedance of the peak load relative to the available capacity for a site, load relief needs are not restricted to the single peak hour. Rather, load relief is required in all hours where load exceeds the available capacity on the limiting element for a given site. As such, analyzing all hours where load relief is needed can reveal the concentration of need by hour of day and for how long (peak window duration) load relief is needed. Understanding the need by hour is particularly critical for assessing the extent to which specific EE program offerings can provide the necessary load relief. For example, load reductions in a business that closes at 5 PM will provide limited value on a feeder with projected overloads at 7 PM. Similarly, PNM's load management (LM) resources offer very little available capacity in the winter and can therefore only capture summer value.

The seasonal peak day load shape for each component was used to allocate value across hours. This allocation was performed at a granular level and then aggregated to reflect a territory-wide perspective. Figure 27 shows the varying value allocation by hour of day for each year for the 1-in-2 weather normalized distribution peak day load shape weighed to the system level. Note that as load relief needs change year over year, deferral value changes and the allocation of that value across hours also changes. In the summer season, load relief need peaks at hour 19 (6 to 7 PM) for years 2026-2028 and shifts to hour 20 (7-8 PM) in 2029 and 2030. In the winter season, the need peaks at hour 8 (7 to 8 AM) but there is a second concentration of value in the early evening at hour 19 (6-7 PM).

Figure 27: Yearly Distribution Value Allocation by Hour

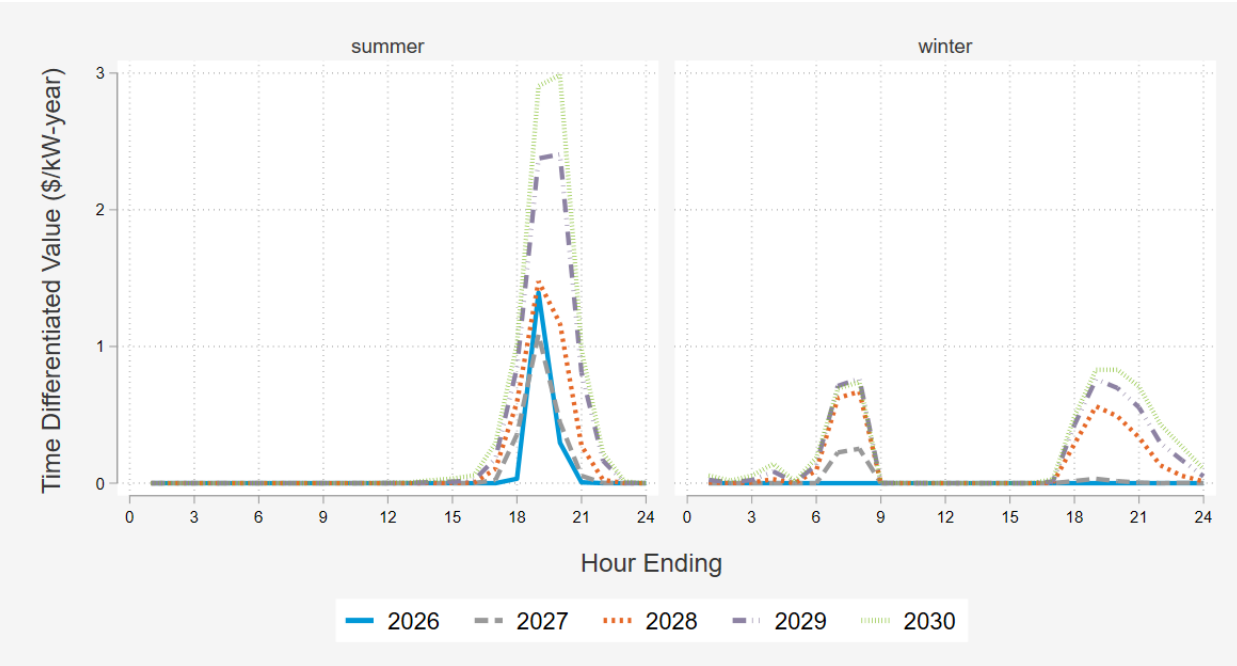


Figure 28 shows the varying value allocation by hour of day for each year for the 1-in-2 weather normalized system coincident peak day load shape, assuming it is concentrated in the hours that would be affected by a 15 % reduction in system peak. This approach is taken to reflect that system peaking risk is not entirely concentrated in a single hour, rather there is system peaking risk in adjacent hours. The consistency in hourly allocation across years reflects the relative consistency of the system peak day load shape across years. The increase in magnitude of the time differentiated value from year to year reflects the increase in annual transmission value over time. Because transmission projects are largely driven by PNM system peak conditions, which always occur in the summer, there is no transmission value in the winter.

Figure 28: Yearly Transmission Value Allocation by Hour

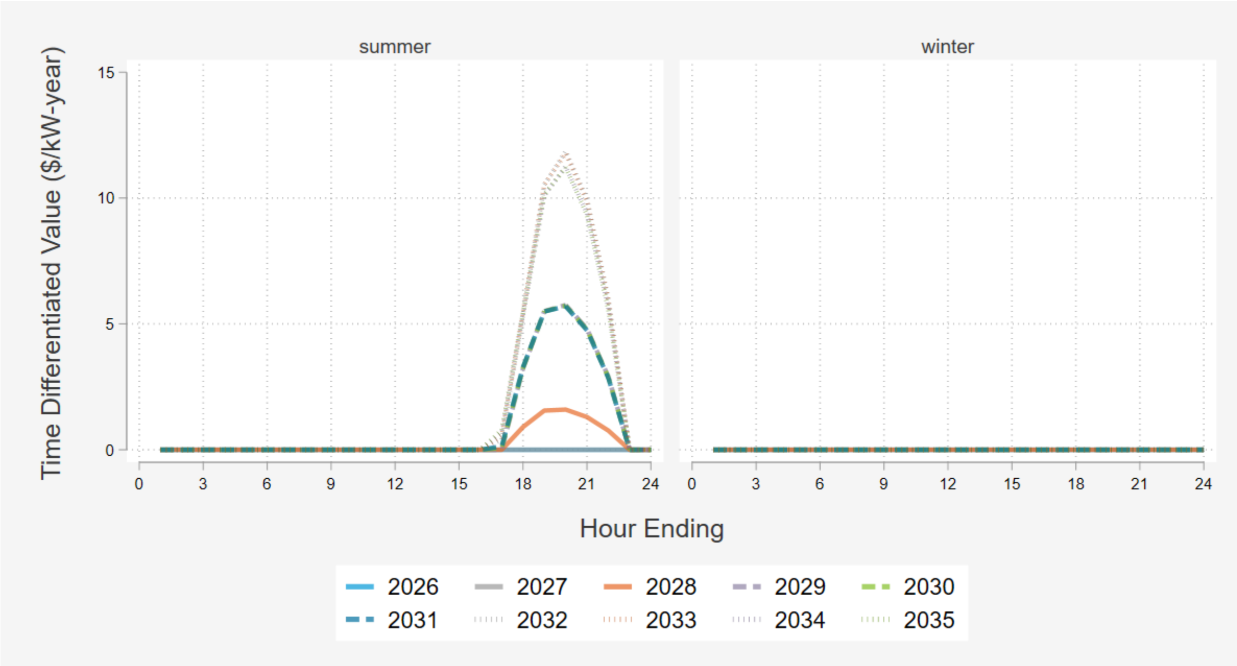


Table 13 shows the territory-wide time differentiated value by season and hour of day based on 10-year levelized value. Note that the value allocation is spread over a wide number of hours, reflecting the variation in load shape across the underlying systems. Most components peak in the summer, resulting in 70% of the deferral value being allocated to this season. The need for load relief peaks during HE19 (6-7 PM) in summer, while the load relief requirement shows two peaks in winter – One in the morning around HE8 (7-8 AM) and another in the evening around HE21 (8-9 PM).

Table 13: Time Differentiated Deferral Value – 10-Year Levelized Value

Season	Hour	Distribution		Trans-mission	Total
		Feeder	Substation Transformer		
summer	1	$0.00	$0.00	$0.00	$0.00
summer	2	$0.00	$0.00	$0.00	$0.00
summer	3	$0.00	$0.00	$0.00	$0.00
summer	4	$0.00	$0.00	$0.00	$0.00
summer	5	$0.00	$0.00	$0.00	$0.00
summer	6	$0.00	$0.01	$0.00	$0.01
summer	7	$0.00	$0.00	$0.00	$0.00
summer	8	$0.00	$0.00	$0.00	$0.00
summer	9	$0.00	$0.01	$0.00	$0.01
summer	10	$0.00	$0.01	$0.00	$0.01
summer	11	$0.01	$0.01	$0.00	$0.02
summer	12	$0.02	$0.02	$0.00	$0.03
summer	13	$0.03	$0.03	$0.00	$0.06
summer	14	$0.08	$0.05	$0.00	$0.13
summer	15	$0.09	$0.07	$0.00	$0.16
summer	16	$0.11	$0.11	$0.00	$0.22
summer	17	$0.28	$0.34	$0.97	$1.58
summer	18	$0.77	$0.83	$5.02	$6.63
summer	19	$1.76	$1.49	$8.64	$11.89
summer	20	$1.90	$1.28	$9.17	$12.35
summer	21	$0.94	$0.77	$7.50	$9.21
summer	22	$0.34	$0.34	$4.45	$5.13
summer	23	$0.06	$0.06	$0.00	$0.12
summer	24	$0.01	$0.01	$0.00	$0.01
10-year levelized value (2028-2037, $2025)		*$6.39*	*$5.44*	*$35.76*	*$47.59*

Season	Hour	Distribution		Trans-mission	Total
		Feeder	Substation Transformer		
winter	1	$0.00	$0.10	$0.00	$0.10
winter	2	$0.00	$0.07	$0.00	$0.07
winter	3	$0.00	$0.09	$0.00	$0.09
winter	4	$0.00	$0.13	$0.00	$0.13
winter	5	$0.00	$0.06	$0.00	$0.06
winter	6	$0.00	$0.20	$0.00	$0.20
winter	7	$0.00	$0.43	$0.00	$0.43
winter	8	$0.01	$0.51	$0.00	$0.51
winter	9	$0.01	$0.03	$0.00	$0.04
winter	10	$0.01	$0.00	$0.00	$0.01
winter	11	$0.01	$0.00	$0.00	$0.01
winter	12	$0.00	$0.00	$0.00	$0.00
winter	13	$0.00	$0.00	$0.00	$0.00
winter	14	$0.00	$0.00	$0.00	$0.00
winter	15	$0.00	$0.00	$0.00	$0.00
winter	16	$0.00	$0.02	$0.00	$0.02
winter	17	$0.01	$0.06	$0.00	$0.07
winter	18	$0.02	$0.32	$0.00	$0.34
winter	19	$0.02	$0.64	$0.00	$0.66
winter	20	$0.02	$0.79	$0.00	$0.80
winter	21	$0.01	$0.81	$0.00	$0.82
winter	22	$0.01	$0.65	$0.00	$0.65
winter	23	$0.00	$0.35	$0.00	$0.36
winter	24	$0.00	$0.16	$0.00	$0.17
10-year levelized value (2028-2037, $2025)		*$0.13*	*$5.45*	*$0.00*	*$5.57*

3.6 VALUE OF ENERGY EFFICIENCY

Table 14 shows the territory-wide 10-year levelized value of energy efficiency. EE is relatively more coincident with summer peak and less coincident with winter peaks, resulting in higher EE value in summer than in winter. In the summer, the value of EE is concentrated in the afternoon peaking at HE20 (7–8 PM) and reaches approximately $12.35/kW-year in that top hour. In the winter, unlike the load-relief requirement, which shows two distinct peaks, the EE value is more broadly distributed across the evening, midnight, and morning hours. The value is entirely comprised of distribution value since there is no transmission value in the winter. The highest winter values occur during the late evening from HE19 to HE23 (6-11PM), at roughly $0.10. These are the values that would be relevant for incorporation into future cost-effectiveness assessment of EE portfolio resources in PNM territory. This value reflects the load shape constraints of the expected PNM EE portfolio. However, individual EE measures will have different levels of coincidence with PNM need. For example, space cooling efficiency measures will be most coincident with summer resource needs and space heating measures will be most coincident with winter resource needs. Other measures, such as lighting, will be less "coincident" and therefore deliver less value. This should be considered when applying values to individual measures rather than at the portfolio level.

Table 14: Value of Energy Efficiency – 10-Year Levelized Value

		Distribution			
Season	Hour	Feeder	Substation Transformer	Trans-mission	Total
summer	1	$0.00	$0.00	$0.00	$0.00
summer	2	$0.00	$0.00	$0.00	$0.00
summer	3	$0.00	$0.00	$0.00	$0.00
summer	4	$0.00	$0.00	$0.00	$0.00
summer	5	$0.00	$0.00	$0.00	$0.00
summer	6	$0.00	$0.00	$0.00	$0.00
summer	7	$0.00	$0.00	$0.00	$0.00
summer	8	$0.00	$0.00	$0.00	$0.00
summer	9	$0.00	$0.00	$0.00	$0.00
summer	10	$0.00	$0.00	$0.00	$0.00
summer	11	$0.00	$0.00	$0.00	$0.00
summer	12	$0.00	$0.00	$0.00	$0.01
summer	13	$0.01	$0.01	$0.00	$0.02
summer	14	$0.03	$0.02	$0.00	$0.05
summer	15	$0.04	$0.03	$0.00	$0.07
summer	16	$0.06	$0.07	$0.00	$0.14
summer	17	$0.19	$0.26	$0.62	$1.08
summer	18	$0.55	$0.67	$3.37	$4.60
summer	19	$1.30	$1.19	$5.90	$8.39
summer	20	$1.44	$0.97	$5.90	$8.32
summer	21	$0.65	$0.52	$4.46	$5.63
summer	22	$0.21	$0.20	$2.54	$2.95
summer	23	$0.03	$0.03	$0.00	$0.06
summer	24	$0.00	$0.00	$0.00	$0.01
10-year levelized value (2028-2037, $2025)		***$4.54***	***$3.99***	***$22.80***	***$31.32***

		Distribution			
Season	Hour	Feeder	Substation Transformer	Trans-mission	Total
winter	1	$0.00	$0.01	$0.00	$0.01
winter	2	$0.00	$0.01	$0.00	$0.01
winter	3	$0.00	$0.01	$0.00	$0.01
winter	4	$0.00	$0.01	$0.00	$0.01
winter	5	$0.00	$0.01	$0.00	$0.01
winter	6	$0.00	$0.02	$0.00	$0.02
winter	7	$0.00	$0.05	$0.00	$0.05
winter	8	$0.00	$0.06	$0.00	$0.07
winter	9	$0.00	$0.00	$0.00	$0.01
winter	10	$0.00	$0.00	$0.00	$0.00
winter	11	$0.00	$0.00	$0.00	$0.00
winter	12	$0.00	$0.00	$0.00	$0.00
winter	13	$0.00	$0.00	$0.00	$0.00
winter	14	$0.00	$0.00	$0.00	$0.00
winter	15	$0.00	$0.00	$0.00	$0.00
winter	16	$0.00	$0.00	$0.00	$0.00
winter	17	$0.00	$0.01	$0.00	$0.02
winter	18	$0.01	$0.08	$0.00	$0.08
winter	19	$0.01	$0.19	$0.00	$0.19
winter	20	$0.01	$0.22	$0.00	$0.22
winter	21	$0.00	$0.22	$0.00	$0.22
winter	22	$0.00	$0.16	$0.00	$0.16
winter	23	$0.00	$0.07	$0.00	$0.07
winter	24	$0.00	$0.02	$0.00	$0.02
10-year levelized value (2028-2037, $2025)		***$0.04***	***$1.14***	***$0.00***	***$1.18***

The territory-wide 10-year levelized value of energy efficiency shown in Table 14 corresponds to the ten-year period from 2028 to 2037. In practice, the applicable years over which value would be levelized should correspond to the install year and measure life of the efficiency measure being installed. Table 15 shows the value of energy efficiency in individual years that should be used as inputs to this calculation.

Table 15: PNM Value of Energy Efficiency (load-weighted average, nominal $/kW-year)

Year	Distribution		Transmission	Total
	Feeder	Substation Transformer		
2026	$1.23	$0.00	$0.00	$1.23
2027	$1.19	$0.32	$0.00	$1.51
2028	$1.80	$1.60	$17.75	$21.15
2029	$2.74	$3.18	$17.73	$23.65
2030	$3.46	$3.92	$17.68	$25.06
2031	$4.09	$4.43	$17.67	$26.19
2032	$4.66	$5.46	$30.83	$40.96
2033	$5.84	$6.64	$30.78	$43.26
2034	$6.51	$7.31	$30.04	$43.86
2035	$7.39	$8.05	$30.02	$45.46
2036	$6.98	$8.57	$32.36	$47.91
2037	$7.20	$8.71	$31.94	$47.85
2038	$7.45	$8.57	$28.90	$44.92
2039	$7.19	$8.52	$36.10	$51.81
2040	$7.30	$8.91	$29.67	$45.89
2041	$7.65	$9.51	$29.69	$46.85
2042	$7.33	$9.59	$30.49	$47.41
2043	$7.62	$10.20	$30.43	$48.25
2044	$6.80	$9.30	$30.42	$46.52
2045	$5.78	$8.21	$29.22	$43.22
10-year levelized value (2028-2037, $2025)	**$4.58**	**$5.13**	**$22.80**	**$32.50**

While the values estimated for this study are specific to PNM, the avoided T&D values used previously by PNM for cost-effectiveness purposes were not specific to PNM or developed using PNM data. Table 16 compares the annual value of EE from this study to the previous EE avoided cost values, from the PNM 2020 Proposed Plan. Years are only included for which values were produced in both studies. Notably, the values from this study are higher than the values previously used by PNM.

Table 16: Comparison of Study Value of EE with PNM 2020 EE Proposed Plan (EE Avoided T&D)

Year	PNM 2020 EE and LM Proposed Plan (EE Avoided T&D)	PNM 2025 Avoided T&D Cost Study (Value of EE)
2026	$5.39	$1.23
2027	$5.47	$1.51
2028	$5.55	$21.15
2029	$5.63	$23.65

Year	PNM 2020 EE and LM Proposed Plan (EE Avoided T&D)	PNM 2025 Avoided T&D Cost Study (Value of EE)
2030	$5.72	$25.06
2031	$5.80	$26.19
2032	$5.89	$40.96
2033	$5.98	$43.26
2034	$6.07	$43.86
2035	$6.16	$45.46
2036	$6.25	$47.91
2037	$6.34	$47.85
2038	$6.44	$44.92
2039	$6.54	$51.81

4 CONCLUSIONS AND RECOMMENDATIONS

This study was designed to quantify the deferral value of peak demand reductions on PNM transmission and distribution investments. The study focused on quantifying the T&D costs associated with an increase or decrease of peak kW and season. A key outcome of the study was to highlight the fact that the avoided T&D costs associated with peak load reductions (load relief) vary widely within PNM territory. Table 17 presents some broad study findings, which are followed by potential enhancements to more precisely value EE program impacts at the local level.

Table 17: Key Study Findings

Finding	Detail
Load growth varies by location. Some pockets are experiencing load growth, and some are experiencing load decreases.	The DSA team estimated granular growth rates. In PNM service territory, growth trends varied by location. As a result, location specific growth-related T&D investments are required even when overall PNM loads are flat or declining.
The T&D avoided costs are concentrated in locations that are more heavily loaded.	A key component of distribution planning is the load factor: the weather-normalized peak demand divided by the operating limit. Not surprisingly, avoided costs are concentrated in more highly loaded locations. Conversely, locations with ample capacity to accommodate additional loads had lower avoided T&D costs.
Individual locations are generally winter or summer peaking, not both.	Most distribution locations – feeders and substation transformers – can be classified as winter or summer peaking except for a few feeders that are dual peaking. The implication is that the avoidable T&D cost for a specific location is concentrated in the summer or winter, but not both.
Resources that deliver load relief at the right location, in the right season, and at the right hours are more valuable.	The same energy efficiency resource can deliver different T&D benefits at two locations based on how well it coincides with the local peak load. To illustrate, a more efficient air conditioner does not provide T&D load relief on a winter peaking substation but does so on a summer peaking substation. Likewise, measures with load shapes that better coincide with the need for load relief are more valuable.
A valuation period further in the future produces higher deferral value.	The most imminent investments, those with high risk in the next one to three years, are largely not deferrable, so deferral value is sensitive to the deferral value period. A later valuation period produces higher deferral value because it excludes the imminent period with little deferral value.
The avoided T&D value and value of EE estimated for this study is specific to the PNM system.	Previously, the avoided T&D values used by PNM for cost-effectiveness purposes were not specific to PNM or developed using PNM data. The values estimated for this study are specific to PNM and are higher than the values previously used by PNM.

The study focused on developing PNM specific T&D avoided costs to inform the value of EE. Thus, the avoided T&D costs are presented as territory-wide value. To provide EE value for summer and winter, the DSA team separated avoided T&D costs by season. One of the main implications of the study is that avoided T&D costs estimates can be produced at a more granular level and differentiated by time and season. The added spatial and temporal granularity can help better target peak demand reductions in the locations, seasons, and hours where deferral value is highest. The DSA team recommends that PNM, the Commission, and stakeholders consider a more granular perspective on avoided T&D costs, as summarized below. The recommendations below may not be currently funded, and costs need to be considered alongside other research and program priorities.

1. **Explore separate T&D avoided costs for different locations.** For example, classify circuit feeders, transformers, terminals, and substations as winter or summer peaking and into one of three loading factor levels – low (<50%), medium (50-80%), and high (80% or more). Produce annual values by classification group and time-differentiate the value by hour and season. The approach would more accurately reflect where and when avoided T&D costs are concentrated while limiting the additional complexity.
2. **Update PNM tracking databases so the corresponding T&D classification group can be looked up based on the geospatial location.** This would allow PNM to assess if the energy efficiency measures are in areas with high or low T&D avoided cost value.
3. **Consider targeting energy efficiency at a highly loaded area.** The goal is to assess if energy efficiency resources with other resources such as batteries can cost-effectively help modify the load shapes, bend the growth, and defer upgrades.
4. **Track geospatial adoption of EE.** Dispersion modeling of the EE system forecast lacked locational granularity since premise level adoption data was not available to inform how adoption may vary by location, building characteristics, or premise usage patterns. Tracking of EE adoption by premise or at least by point of sale where efficiency measures were rebated would improve future modeling precision of the magnitude of locational EE. This would in turn improve the precision of estimates of deferral value and Value of EE.

Based on the analysis, the DSA team recommends the proposed values shown in Table 3 for future incorporation into future cost-effectiveness analyses of PNM programs. The avoided cost of T&D reflects the value to the system of unconstrained resources. The Value of EE reflects the ability of EE resources to deliver T&D value given load shape constraints of the expected PNM EE portfolio. The 10-year levelized value shown summarizes annual values that will be applied to the useful life of modifiers being valued. The Value of LM reflects the ability of Load Management resources to deliver T&D value given the mostly summer capacity of the PNM LM portfolio.

Table 18: Recommended PNM Avoided T&D Values ($2025)

Type of Value	Description	Transmission	Distribution
Avoided T&D	10-year levelized value (2028-2037, $2025)	$35.76	$17.40
Value of EE	10-year levelized value (2028-2037, $2025)	$22.80	$9.71

Type of Value	Description	Transmission	Distribution
Value of LM	9-year levelized value (2027-2035, $2025)	$30.88	$13.26

5 APPENDIX A – GRANULAR FORECASTING METHODS

5.1 ADJUSTMENTS FOR ECONOMIC DEVELOPMENT LUMP LOAD

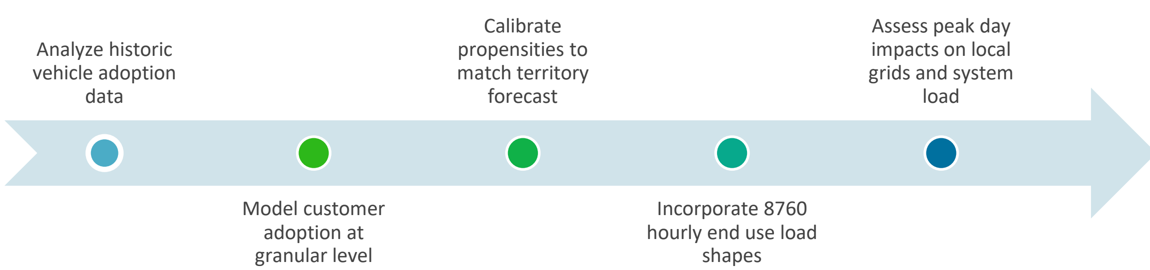
Economic development loads are simply new, large loads that do not appear each year at each location. These loads tend to concentrate in specific pockets and can potentially lead to transmission and distribution projects due to their relatively large size. However, the addition of economic development loads does not always necessitate transmission and distribution expansion projects. If the feeder or substation transformer serving the economic development has sufficient capacity to serve the additional load, no upgrade is required. PNM tracks expected large load additions through economic development efforts and initial discussions with customers considering construction of large new facilities. Typically, these scoping efforts include a projected facility size in MW.

For this study, the team assumes all planned economic development projects will be built as scheduled. The plan includes eight distribution-level economic development projects. Seven projects are associated with specific feeders, while one requires the construction of a new substation transformer. For projects with identified feeders, the DSA team allocated the expected load to the corresponding feeder using the projected MW magnitude and capacity factor, treating economic development load as flat across all hours and seasons. For the project requiring a new feeder or substation transformer, the load is included in the system-level forecast but is not assigned to specific distribution components.

5.2 ADJUSTMENTS FOR LOAD GROWTH FROM ELECTRIC VEHICLES

Figure 29 shows the methodology used to produce propensity scores for electric vehicle (EV) adoption at the premise level. Premises were identified as having at least one EV if the premise is on a whole-home EV rate (WHEV). Because only premises on the WHEV billing rate were classified as having an EV, this current penetration is likely an underestimate of the true count of premises in the PNM territory with an EV. Nevertheless, the property and billing characteristics of these premises can still be used to produce a likelihood of EV adoption for the remaining premises in the territory through the propensity modeling process.

Figure 29: EV Granular Forecasting Methodology



5.2.1 Propensity Score Development

Figure 30 details the methodology used to develop propensity scores for each premise. For light-duty vehicles, propensity scores were produced for each premise using the decision tree model XGBoost. XGBoost classifies a premise as either having an electric vehicle or not having an electric vehicle based on a set of premise features, such as the square footage of the home, the age of the home, the annual electricity usage at the premise, and whether the premise already has additional load modifiers, most notably solar.

Figure 30: EV Propensity Modeling Methodology Overview

STEP 1: Exploratory Data Analysis

- Analyze customers who have and have not adopted the DER/load modifier in question
- Explore relationship of all possible predictive variables for DER adoption
  - ✓ Correlation
  - ✓ Plots
  - ✓ Bivariate regressions
- Identify the key predictors of adoption
- Identify non-linear patterns

STEP 2: Machine Learning Model

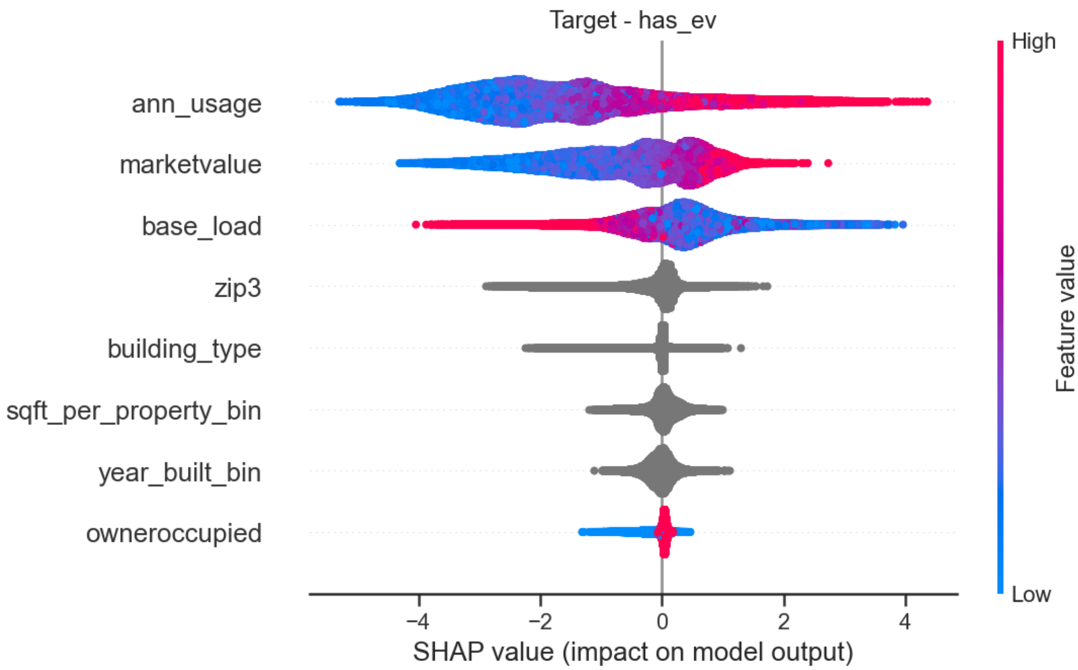
- Split data into training/testing data
- Train Model on predictive features
  - ✓ XG Boost
  - ✓ Model identifies what best predicts the outcome
  - ✓ Captures non-linear and linear relationships
  - ✓ The models iterates and learns, improving with each iteration
- Models are assessed using the testing data

STEP 3: Apply to all Customers

- Predict likelihood of adoption (today) for each premise and DER/Load Modifier – aka propensity score
- The predictions factor in customer specific information and helps us distinguish early adopters from late adopters
- The propensity scores are scaled so the sum of the adoption probabilities for each year equals the system level forecast (Calibration)
- When aggregated by feeder, it provides the expected adoption by year and DER for each feeder

Figure 31 shows the most important features in predicting EV adoption. Among these features are the gross annual usage of the customer, as well as property-specific features such as the zip code, the building type (e.g., single-family, multi-family, etc.), the square footage, the year built, and whether the property is owner occupied or not. Typically, higher gross annual usage, high square footage, and newer homes impact the propensity model positively.

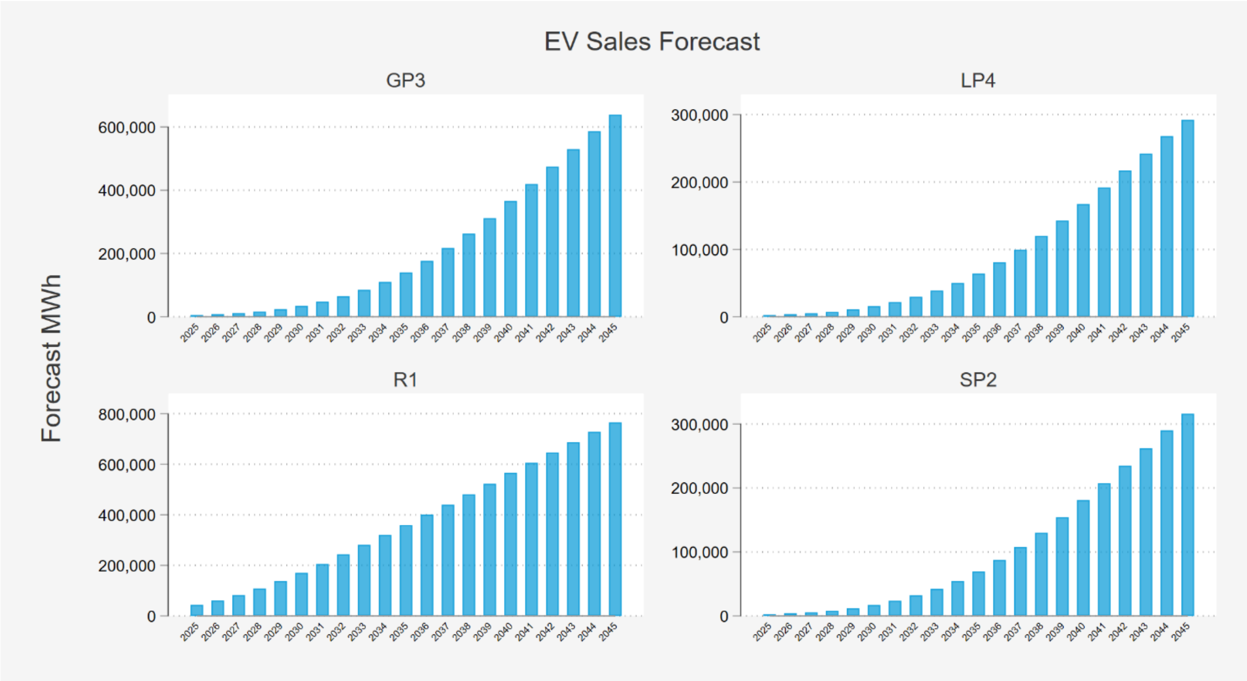
Figure 31: EV Propensity Model SHAP Feature Importance



5.2.2 CALIBRATION TO SYSTEM LEVEL FORECAST

While the propensity scores dictate where predicted, future demand from EV at-home charging occurs, the total magnitude of annual charging consumption is primarily driven by the system-level forecast. For this study, PNM provided the system-level forecast of sales (in MWh) by rate class. This forecast is shown in Figure 35. Although the forecast of EV charging sales is forecasted to grow at a steady rate over the next 20 years, the total residential sales is outpaced by non-residential sales by 2045. This reflects PNM's expectation that sales from non-residential EV charging will massively increase as New Mexico policies drive increased adoption.

Figure 32: PNM Territory-Wide EV Sales Forecast



There are several inputs for calibration. The primary input is sales (MWh), and additional inputs include the forecasted number of premises, as well as the market cap. In order to convert the provided sales forecast into a premise count, different sets of assumptions were used for the various rate classes in PNM. Table 19 shows the assumptions used for this process. In addition, Table 19 shows the market cap used for each of the rate classes, which is simply the total number of premises in each rate class.

Table 19: Assumptions Used to Convert Sales into Premise Counts

Rate Class	Annual Vehicle Miles Traveled	kWh per Mile	Fleet Size	Market Cap
R1	13,303	0.346	1	435,229
SP2	28,396	1.56	1	58,592
GP3	28,396	1.56	10	3,157
LP4	28,396	1.56	50	134

An average of 13,303 miles per year per premise was assumed for the residential (R1) rate class, as well as a charging efficiency of 0.346 kWh per mile. For the larger rate classes, specifically SP2, GP3, and LP4, the EV charging sales are assumed to come from medium and heavy duty (MHDV) rather than light-duty vehicles (LDV), and that customers within these rate classes have larger fleet sizes. This is reflected in the higher number of annual vehicle miles traveled, a higher number of kWh per mile needed to charge an MHDV, and a larger fleet size.

Propensity scores were then calibrated to sum to the system-level annual forecast by rate class. These propensities were developed at the premise-level, and subsequently rolled up to the feeder, substation, and zone levels. The feeder-level calibrated forecast is shown for all PNM territory and the Albuquerque, Santa Fe, and Sandoval zones for 2026 and 2031 in Figure 33 and Figure 36.

Figure 33: EV Penetration by Feeder: 2026 and 2031 - PNM Territory

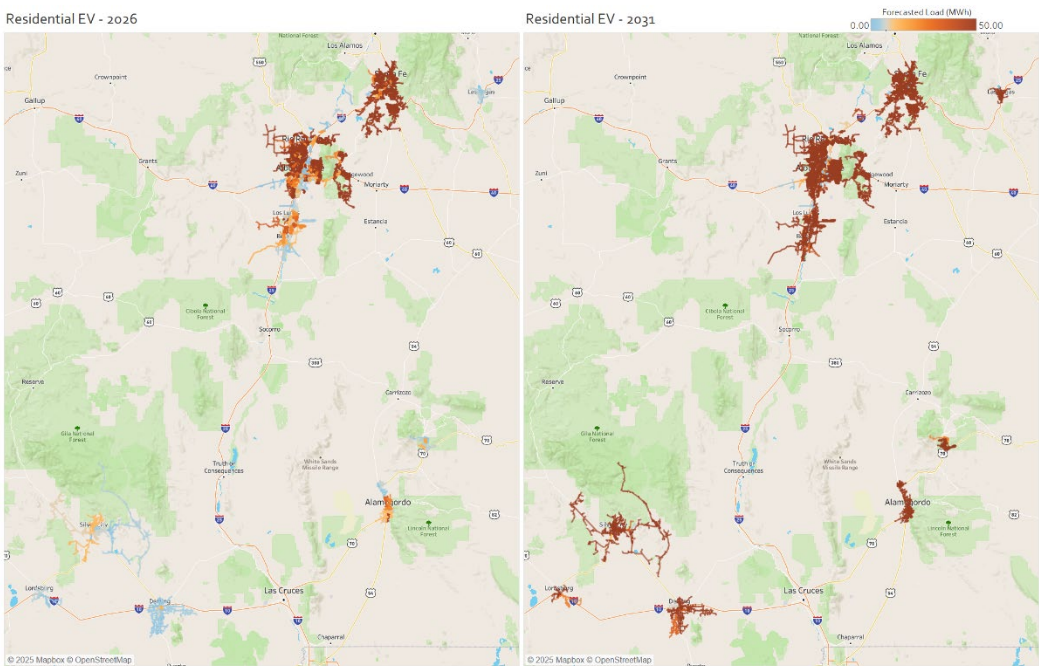
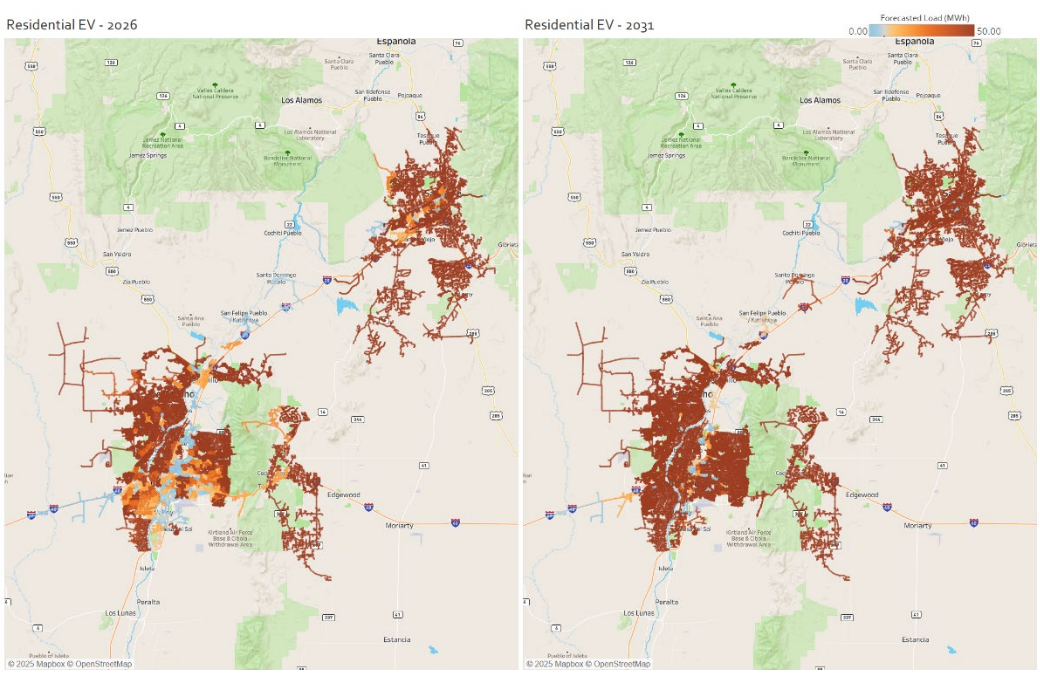


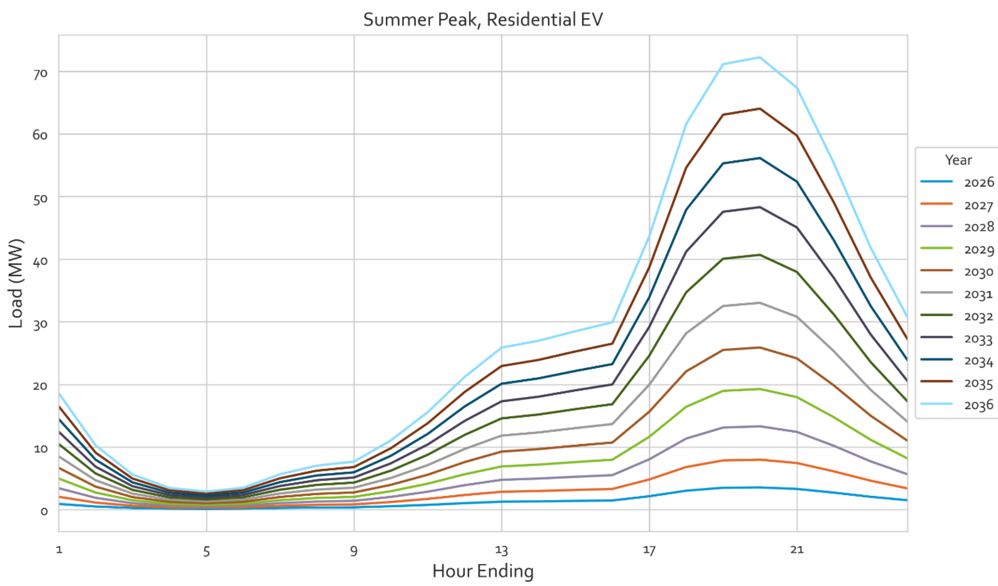
Figure 34: EV Penetration by Feeder: 2026 and 2031 - Albuquerque, Santa Fe, and Sandoval



5.2.3 HOURLY DEMAND FORECAST

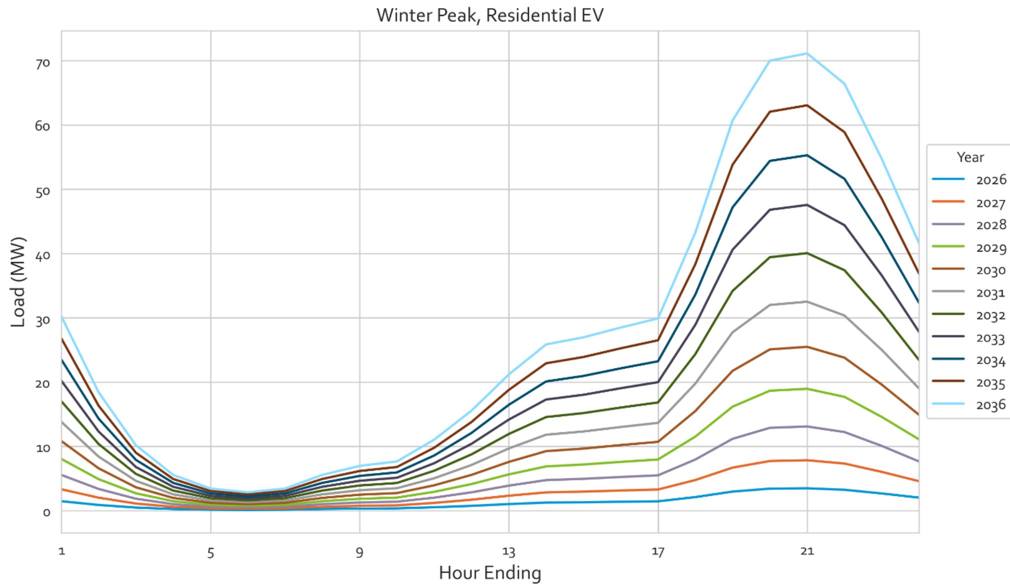
The forecasted annual consumption, given in MWh, was then converted into an hourly demand forecast by applying a normalized annual load shape. PNM provided an annual load shape for 20 forecast years[12], which was then collapsed into an average load shape by season and weekday. This average load shape was then applied to the annual forecast MWh to obtain the hourly forecasted demand from EV charging. The summer and winter peak day hourly forecast is shown in Figure 35 and Figure 36.

Figure 35: Forecasted EV – Summer Peak Day: 2025-2035



[12] The load shape was consistent with the PNM IRP and originated from participants in PNM's Whole Home Electric Vehicle rate. This could possibly evolve as AMI is rolled out and Time of Use and Critical Peak Pricing is incorporated into PNM's rate design. Benefits of AMI for future modeling include the ability to model EV propensity based on load shape signatures and the ability to develop unmanaged electric vehicle load shapes.

Figure 36: Forecasted EV - Winter Peak Day: 2025-2035



5.3 ADJUSTMENTS FOR LOAD GROWTH FROM EXISTING RESOURCES – EE

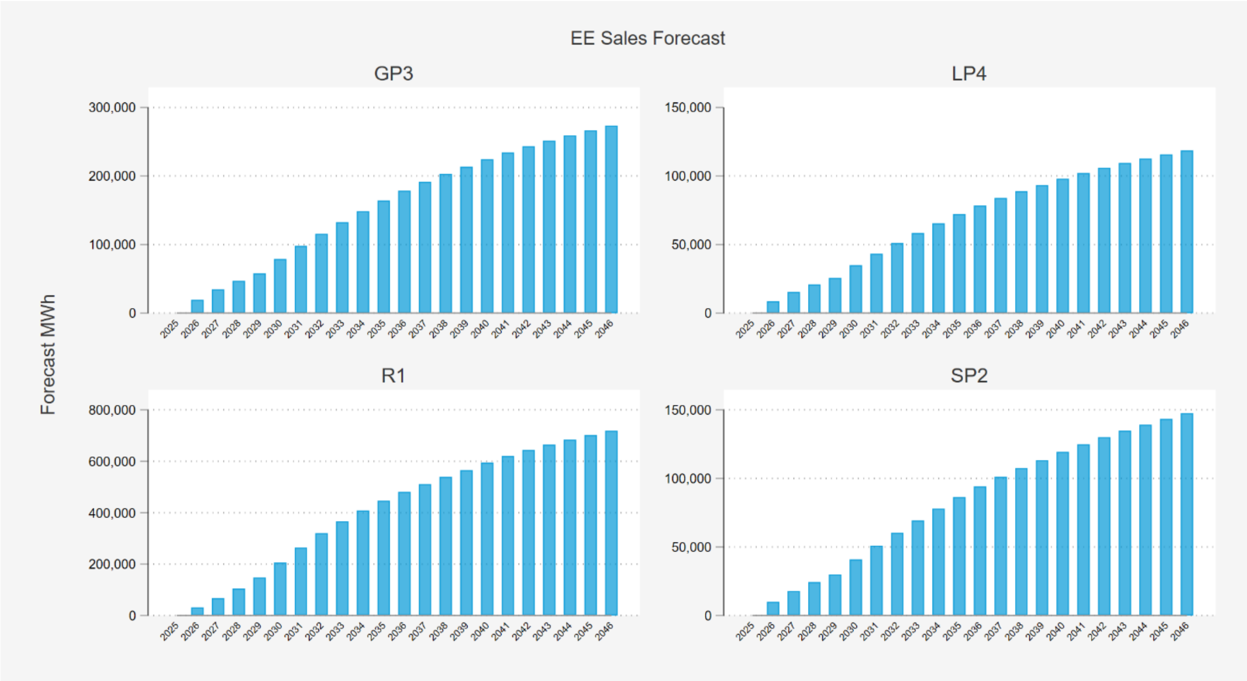
5.3.1 PROPENSITY SCORE DEVELOPMENT

Because there was little adoption data available for EE measures, propensities were developed for future EE measure adoption using premise-level annual gross usage. Within each rate class, the share of total annual gross usage was estimated for each premise, which serves as the propensity score. This was the most reasonable estimate given the granularity of the data available. In practice, EE adoption may be clustered in certain locations, more or less likely for premises with certain building or usage characteristics, etc. Future modeling precision would be improved with incorporation of premise level EE adoption data to better reflect these differences.

5.3.2 CALIBRATION TO SYSTEM LEVEL FORECAST

For this study, PNM provided the system-level forecast of sales (in MWh) by rate class. This forecast is shown in Figure 37, and is incremental to the EE currently installed in 2025.

Figure 37: PNM Territory-Wide EE Sales Forecast



The system-level forecast for each rate class was multiplied by the propensity score to produce the calibrated forecast, as the propensity scores developed are simply shares of total gross annual usage within rate classes. These propensity scores were subsequently rolled up to the feeder, substation, and zone levels. The feeder-level calibrated forecast is shown for all PNM territory and the Albuquerque, Santa Fe, and Sandoval zones for 2026 and 2031 in Figure 38 and Figure 39.

Figure 38: EE Feeder-level Penetration: 2026 and 2031 – PNM Territory

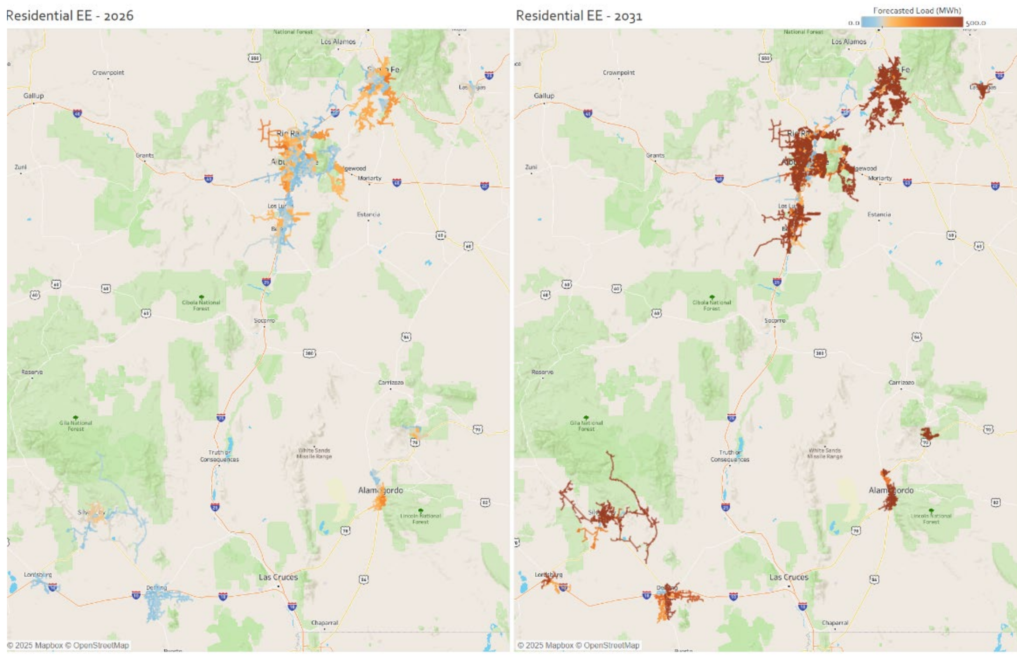
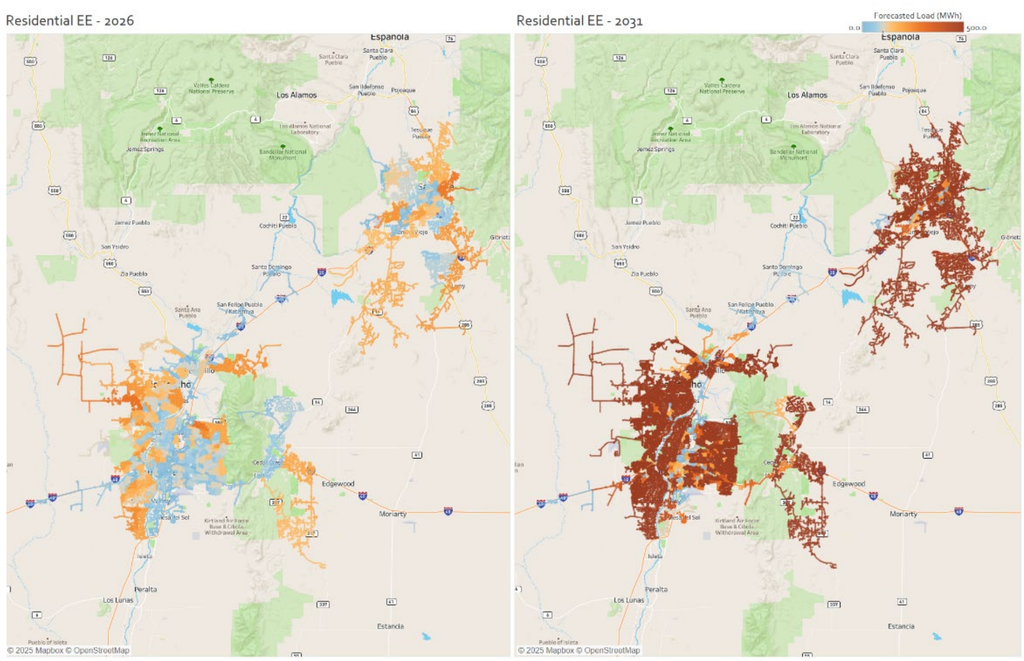


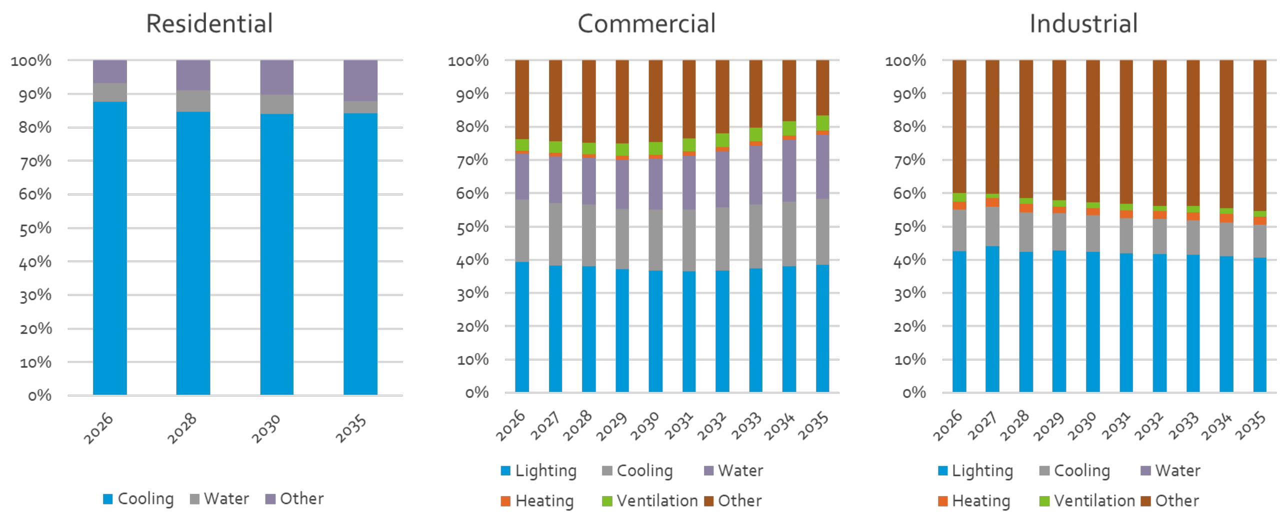
Figure 39: EE Feeder-level Penetration: 2026 and 2031 - Albuquerque, Santa Fe, and Sandoval



5.3.3 Hourly Demand Forecast

The forecasted annual consumption, given in MWh, was then converted into an hourly demand forecast by applying a normalized annual load shape. For EE, a composite, normalized load shape was developed primarily using NREL end use profiles, weighted for each rate class by the savings end use mix developed by the PNM Potential Study, a key input to the EE forecast for the PNM 2026 IRP. Figure 40 summarizes the end use share by year and rate class used to weight load shapes to derive portfolio weighted EE load shapes for the study.

Figure 40: EE Savings Forecast End Use Mix by Rate Class



NREL provides annual load shapes for common residential and non-residential end uses and building types, aggregated to the census tract level. Common end uses included in the aggregated end use profiles include heating, cooling, ventilation, and lighting for a variety of residential and non-residential building types. Substations within the PNM territory were mapped to their corresponding census tract in order to produce a normalized EE load shape unique to the rate class mix and building stock of each substation. The load shapes reflect the building stock in each census tract and the end use mix by rate class of the system wide forecast. As an example, Figure 41 shows the system level normalized residential load shape which reflects the end use mix in Figure 40. In practice the shape and magnitude of the EE modeled load shape for each location reflects:

1. the rate class and end use mix at that location,
2. the census tract end use specific load shapes corresponding to the location,
3. and the system level forecasted EE savings allocated to that location.

As described above, the locational dispersion of the system forecast lacks locational granularity since premise level adoption data was not available to inform how adoption may vary by location, building characteristics, or premise usage patterns. Future modeling precision of the magnitude of locational EE impacts would be improved with incorporation of premise level EE adoption data to better reflect these differences.

Figure 41: System Level Residential EE Load shape

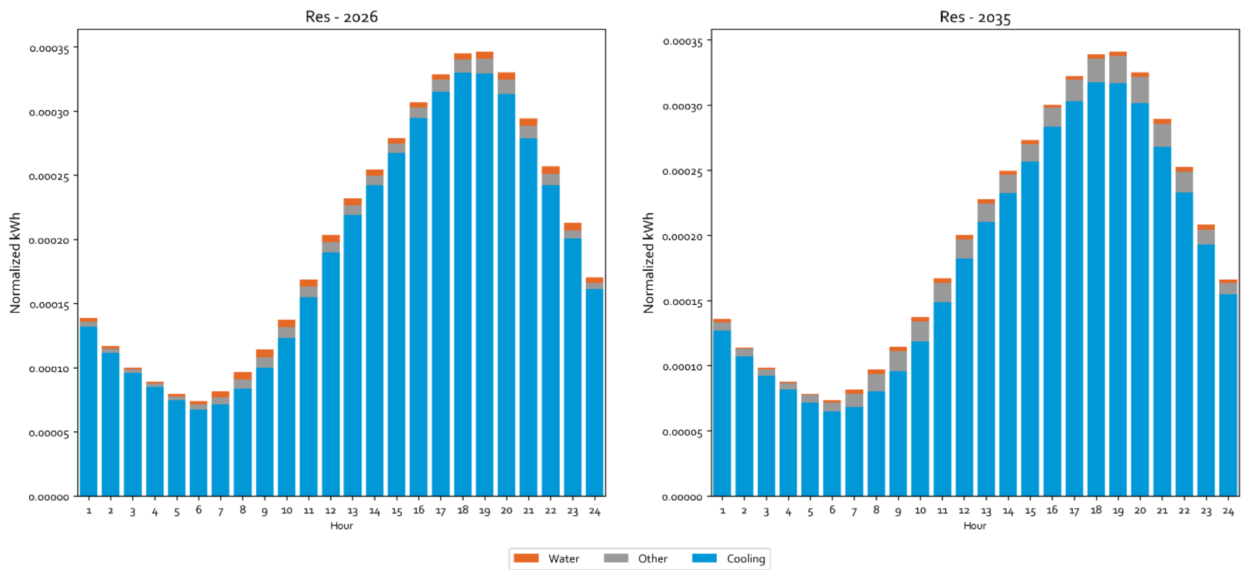


Figure 42: Forecasted EE - Summer Peak Day: 2025-2035

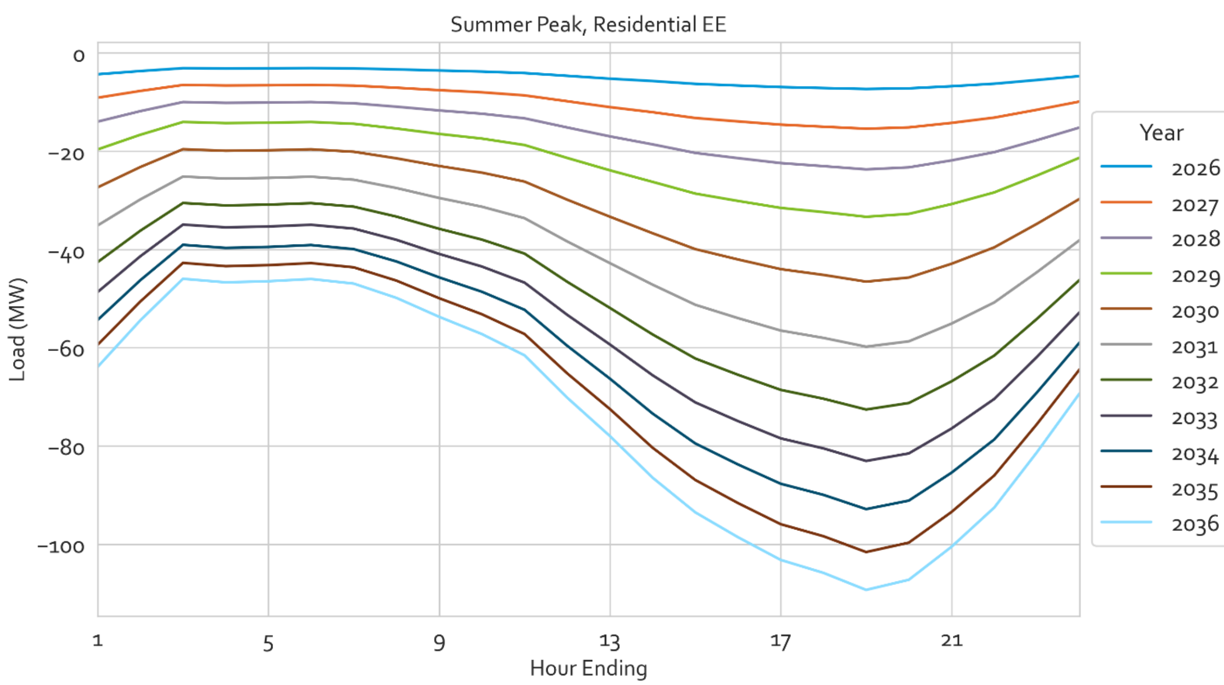
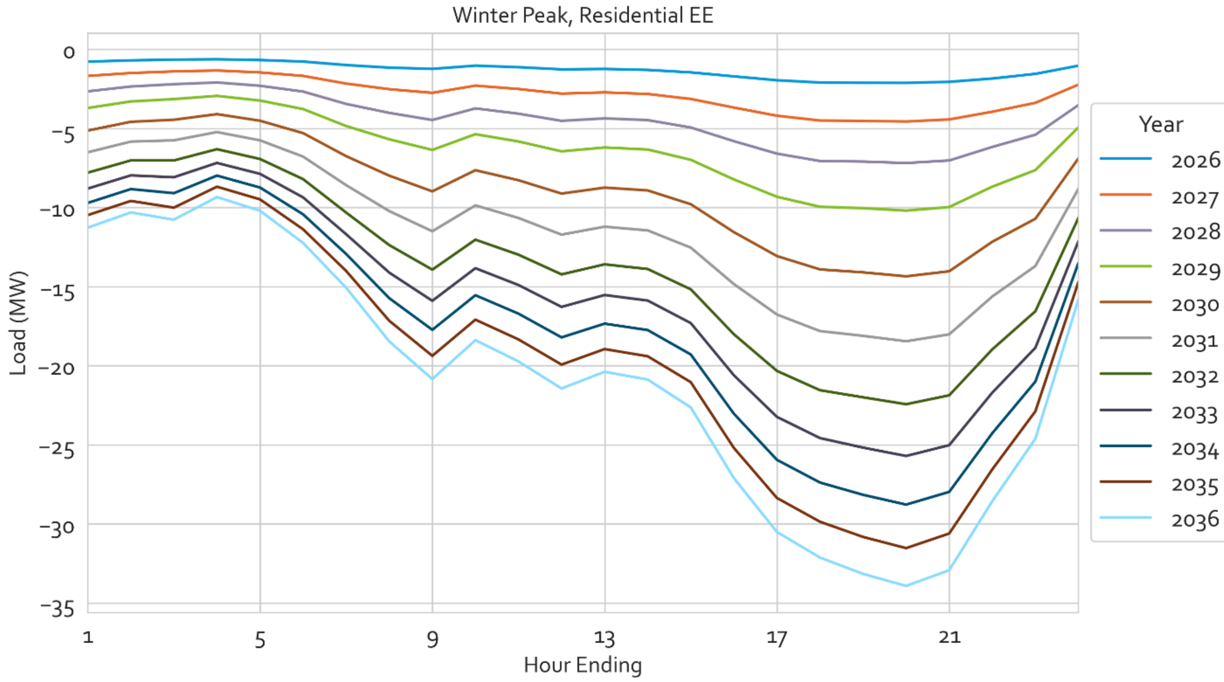


Figure 43: Forecasted EE- Winter Peak Day: 2025-2035



5.4 ADJUSTMENTS FOR LOAD GROWTH FROM EXISTING RESOURCES – BTM PV

Figure 44 shows the methodology used to produce propensity scores for behind-the-meter solar adoption at the premise level. There were several data sources used for BTM solar granular forecast. Historical Photovoltaic (PV) interconnections from 2020-2025 were provided by PNM, as well as front-of-the-meter and BTM solar production by zone for the same time frame. In addition, for the residential rate class, billing data with annual generation (kWh) was provided by PNM. The current penetration of premises with solar is displayed in Table 20.

Figure 44: BTM Solar Granular Forecasting Methodology

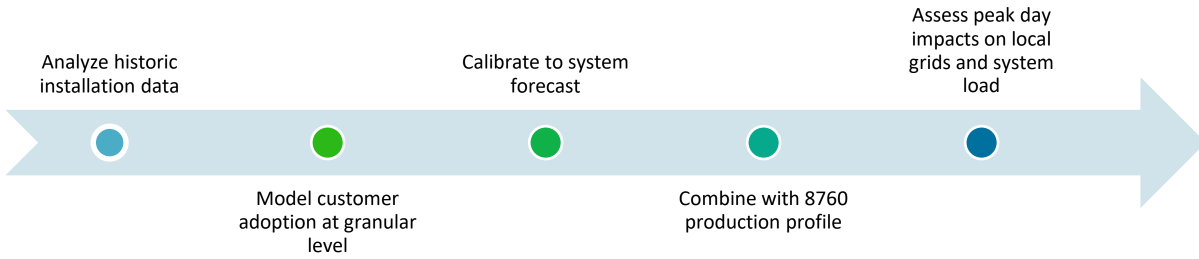


Table 20: Current Penetration of BTM Solar in PNM Territory

Year	Number of Sites	Installed MW
2020	22,793	205
2021	28,809	257
2022	34,807	305
2023	41,457	361
2024	45,106	396
2025 (Q1-Q2)	47,059	417

5.4.1 Propensity Score Development

Figure 45 details the methodology used to develop propensity scores. For BTM solar, propensity scores were produced for each premise using the decision tree model XGBoost. XGBoost classifies a premise as either having solar or not having solar based on a set of premise features, such as the square footage of the home, the age of the home, the annual electricity usage at the premise, and whether the premise already has additional load modifiers.

Figure 45: BTM Solar Propensity Modeling Methodology Overview

STEP 1: Exploratory Data Analysis

- Analyze customers who have and have not adopted the DER/load modifier in question
- Explore relationship of all possible predictive variables for DER adoption
  - ✓ Correlation
  - ✓ Plots
  - ✓ Bivariate regressions
- Identify the key predictors of adoption
- Identify non-linear patterns

STEP 2: Machine Learning Model

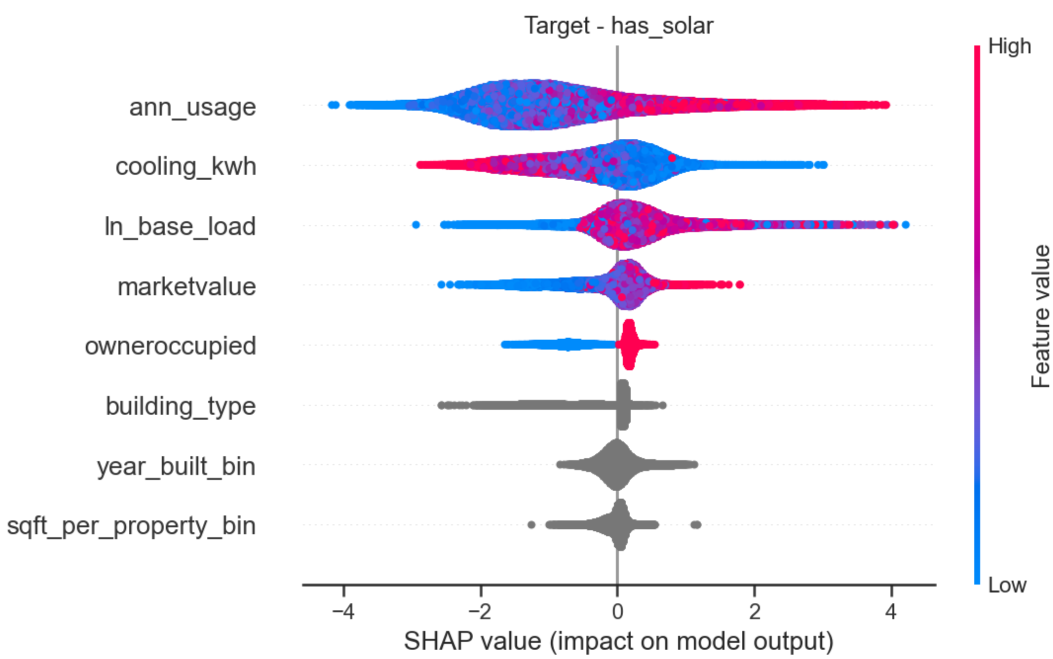
- Split data into training/testing data
- Train Model on predictive features
  - ✓ XG Boost
  - ✓ Model identifies what best predicts the outcome
  - ✓ Captures non-linear and linear relationships
  - ✓ The models iterates and learns, improving with each iteration
- Models are assessed using the testing data

STEP 3: Apply to all Customers

- Predict likelihood of adoption (today) for each premise and DER/Load Modifier – aka propensity score
- The predictions factor in customer specific information and helps us distinguish early adopters from late adopters
- The propensity scores are scaled so the sum of the adoption probabilities for each year equals the system level forecast (Calibration)
- When aggregated by feeder, it provides the expected adoption by year and DER for each feeder

Figure 46 shows the most important features in predicting BTM solar adoption. Among these features are the gross annual usage and cooling load of the customer, as well as property-specific features such as the building type (e.g., single-family, multi-family, etc.), the square footage, the year built, and whether the property is owner occupied or not. Typically, higher gross annual usage, high square footage, and newer homes impact the propensity model positively.

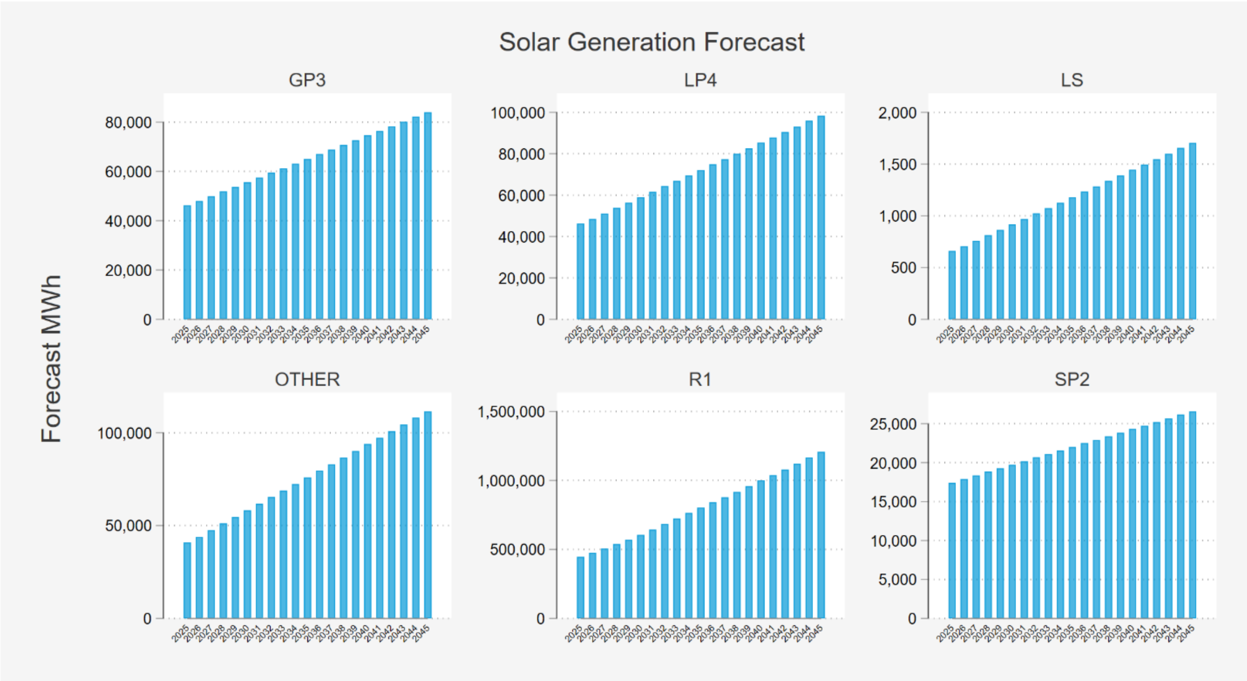
Figure 46: BTM Solar Propensity Model SHAP Feature Importance



5.4.2 Calibration to System Level Forecast

While the propensity scores dictate where predicted, future generation from solar occurs, the total magnitude of annual generation is primarily driven by the system-level forecast. For this study, PNM provided the system-level forecast of generation (in MWh) by rate class. This forecast is shown in Figure 47. Propensity scores were then calibrated to sum to the system-level annual forecast by rate class.

Figure 47: PNM Territory-Wide Solar Production Forecast



There are several inputs for calibration. The primary input is energy (MWh), and additional inputs include the forecasted number of premises, as well as the market cap. In order to convert the provided generation forecast into a premise count, different sets of assumptions were used for the various rate classes in PNM. Table 21 shows the assumptions used for this process. In addition, Table 21 shows the market cap used for each of the rate classes, which is simply the total number of premises in each rate class.

Table 21: Assumptions Used to Convert Production into Premise Counts

Rate Class	Average Capacity (kW)	MWh/MW	Market Cap
R1	5.15	1,225	435,229
Other	58.04	222	71,905
SP2	18.28	98	58,592
GP3	92.49	169	3,157
LP4	523.71	172	134
LS	200	172	6

In order to convert the forecasted generation into a count of premises with solar, the generation forecast was first scaled by the average annual generation (MWh) per MW of capacity to estimate the forecasted installed capacity. The average capacity installed per premise was calculated using historic interconnection data. For large solar, the solar production data was summed to estimate the annual production in MWh, and for small solar – both residential and non-residential – billing data was used to estimate the annual MWh.

Propensity scores were then calibrated to sum to the system-level annual forecast by rate class. These propensities were developed at the premise-level, and subsequently rolled up to the feeder, substation, and zone levels. The feeder-level calibrated forecast is shown for all PNM territory and the Albuquerque, Santa Fe, and Sandoval zones for 2026 and 2031 in Figure 48 and Figure 49.

Figure 48: BTM Solar Feeder-level Penetration: 2026 and 2031 – PNM Territory

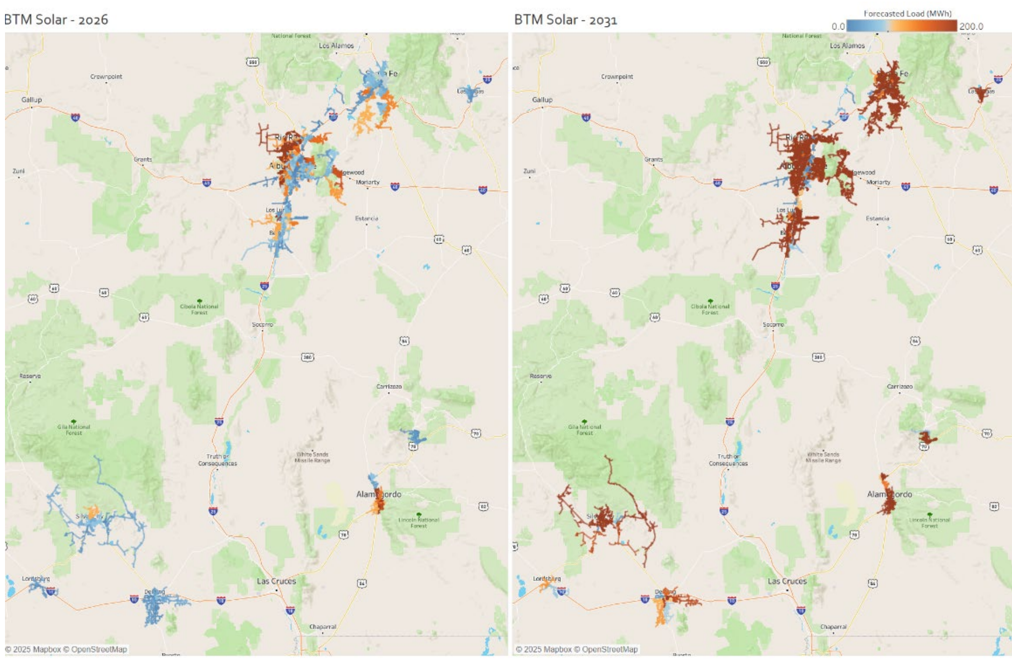
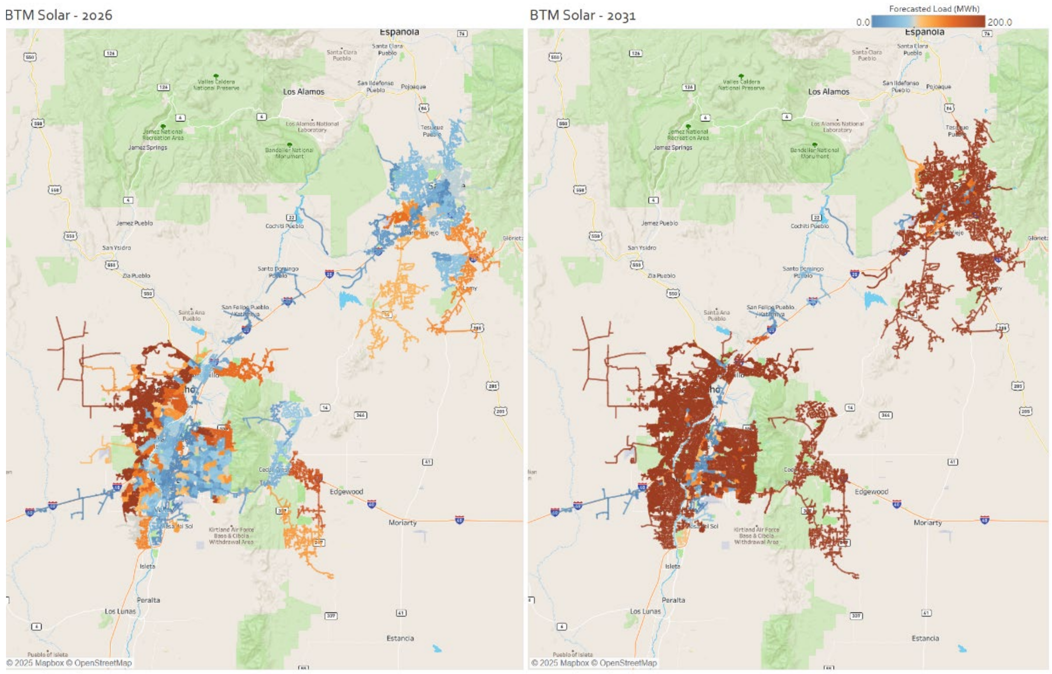


Figure 49: BTM Solar Feeder-level Penetration: 2026 and 2031 - Albuquerque, Santa Fe, and Sandoval



5.4.3 Hourly Demand Forecast

The forecasted annual generation from BTM solar, given in MWh, was then converted into an hourly demand forecast by applying a normalized annual load shape. For large solar, the historic generation profiles provided were weather-normalized and averaged, weighted by the respective nameplate capacities. The large solar normalized load shapes were de-rated to produce small non-residential and residential solar load shapes. The summer and winter peak day hourly forecasts are shown in Figure 50 and Figure 51.

Figure 50: Forecasted BTM Solar - Summer Peak Day: 2025-2035

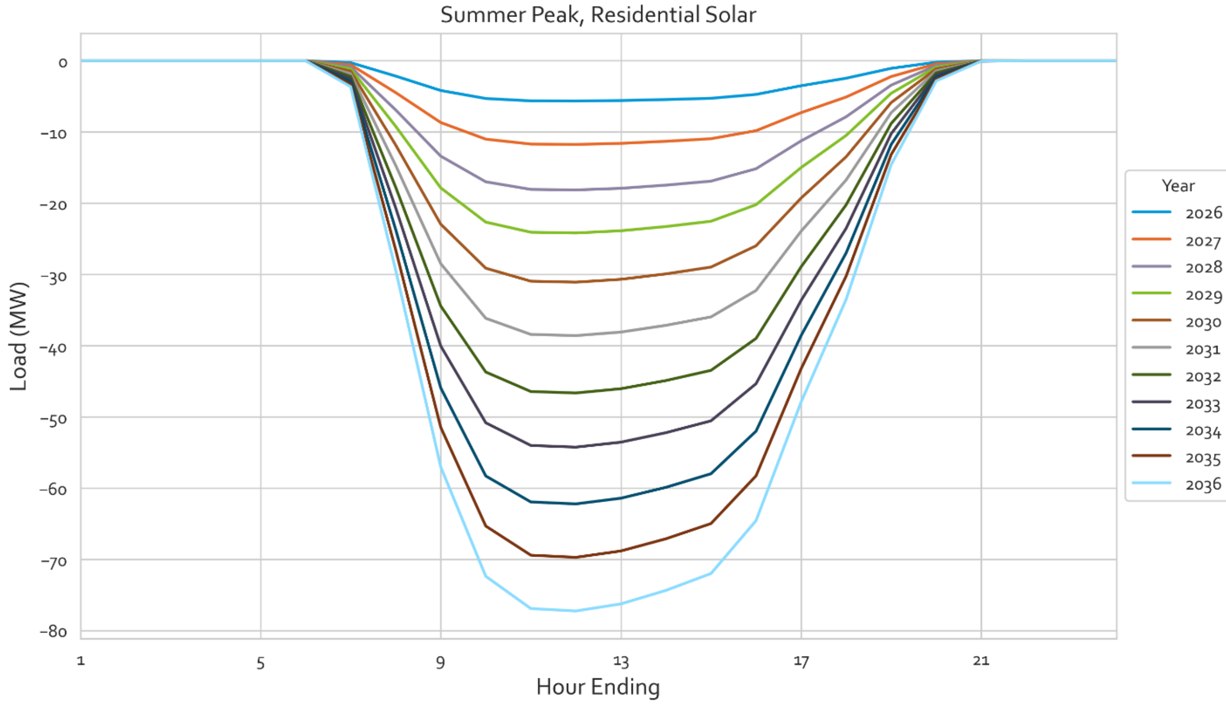
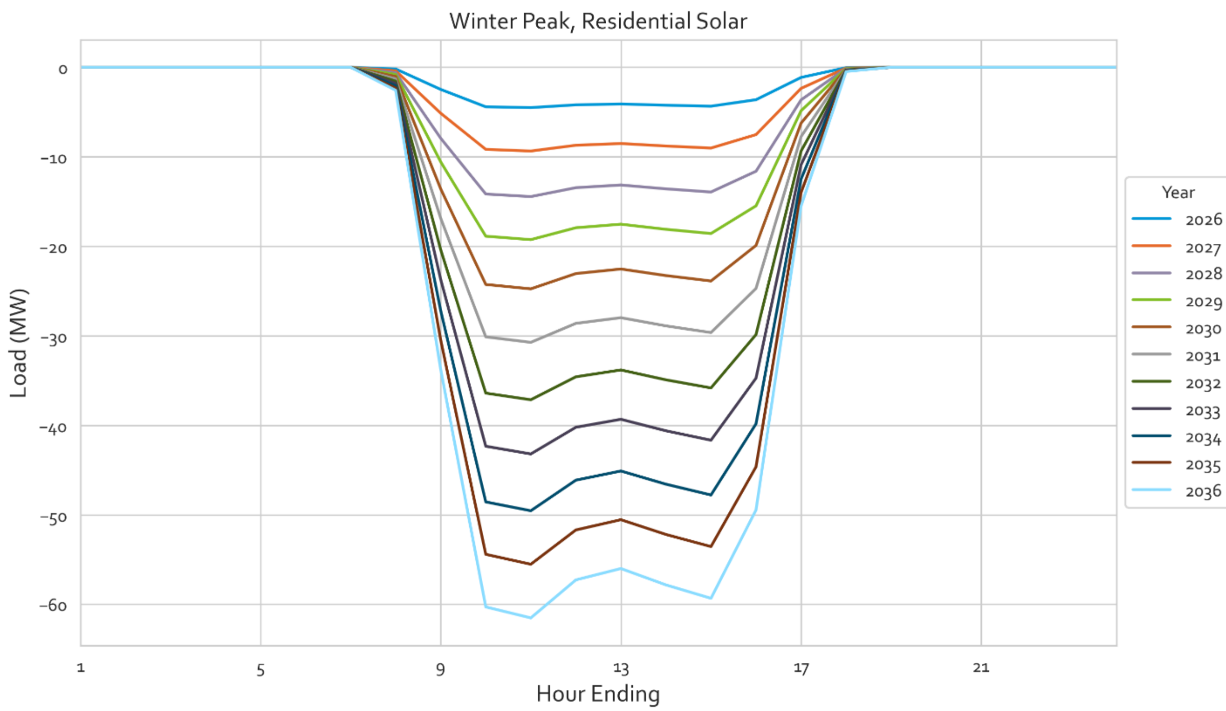


Figure 51: Forecasted BTM Solar - Winter Peak Day: 2025-2035



5.5 ADJUSTMENTS FOR LOAD GROWTH FROM EXISTING RESOURCES – FTM PV

Figure 52 shows the methodology used to produce forecasted Front-the-meter (FTM) solar at feeder level. The FTM forecast consists of two components: (1) existing FTM resources, which are assumed to continue operating throughout the forecast period, and (2) planned community solar. There were several data sources used for FTM solar granular forecast. PNM provided historical PV interconnection data for 2020–2025, as well as zonal FTM solar production for the same period. All 22 historical FTM sites were installed on or before 2019 and collectively total 188.32 MW of capacity. Additionally, PNM supplied a queue of community solar projects, including planned in-service dates and projected MW capacities. A summary of queue community solar projects is shown in Table 22.

Figure 52: FTM Solar Granular Forecasting Methodology

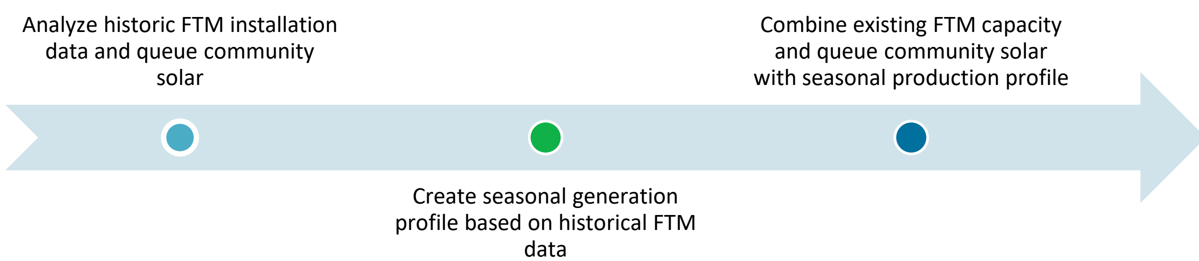


Table 22: Queue Community Solar in PNM Territory

Year	Cumulative Projects (Feeder-Level)	Cumulative Installed MW
2025	6	28.9
2026	30	124.4
2027	31	129.1

The historic generation profiles provided were weather-normalized and averaged, weighted by the respective capacities within each zone and for each season. The normalized load shapes are assumed to remain constant across years. Both the existing FTM capacity and the queue CS capacity were converted into an hourly forecast by applying the normalized seasonal FTM production profile. The summer and winter peak day hourly forecasts are shown in Figure 53 and Figure 54. Because there is no queue CS capacity after 2027, the 2027 profile and all subsequent years share the same shape.

Figure 53: Forecasted FTM Solar - Summer Peak Day: 2025-2035

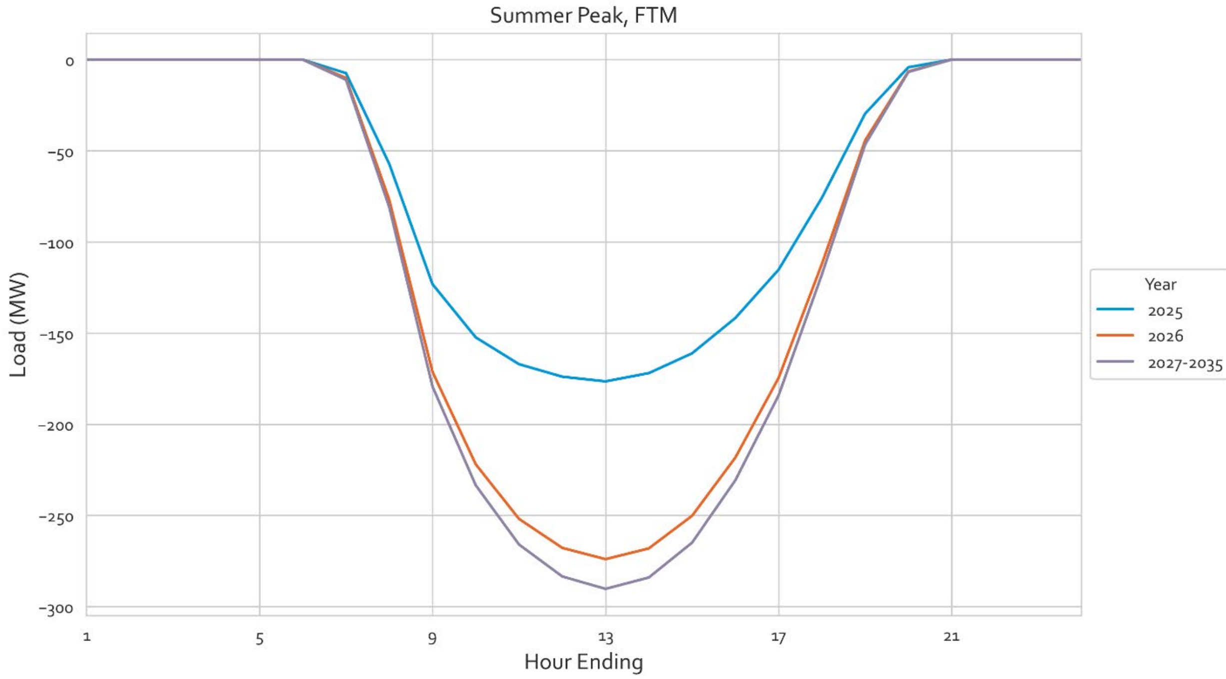
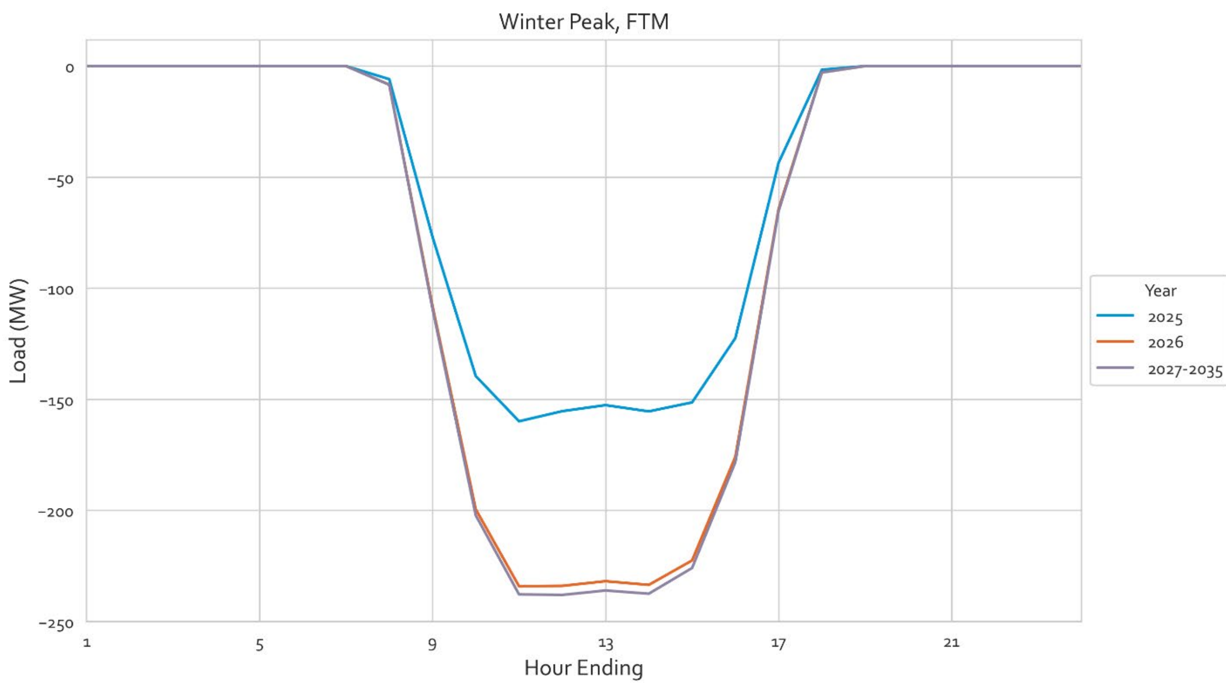


Figure 54: Forecasted FTM Solar - Winter Peak Day: 2025-2035



APPENDIX B – ECONOMETRIC MODELS USED TO ESTIMATE HISTORICAL GROWTH

The econometric models were purposefully designed to both estimate historical load growth in percentage terms and allow us to weather normalize loads for 1-in-2 and 1-in-10 weather peaking conditions.

The key to this process was to model the natural log of the daily peak loads as the dependent variable and include year-specific coefficients to estimate the percent change in loads, after controlling for other factors. By using the natural log as the dependent variable, all of the explanatory variables reflect the percent change in load associated with a unit change in the independent variable.

The regressions were estimated on the highest 150 local peak days for each analysis year in the 2020 to 2024 timeframe for each location. The goal was to include a sufficient number of days that reflected peaking conditions for each year. The number of observations by location varies slightly because of differences in the amount of data available and because peaks occurring on weekends or holidays were excluded. The model estimated daily peaks as a function of weather interacted with day of week, month, and historical year. Weather was included using a process that avoids assumptions about the type of relationship between weather and load. Rather than assume a constant linear relationship, the weather data is split into equally sized bins and a separate relationship is estimated for different temperature ranges, also known as a spline regression. All models were estimated using time series methods to take into account auto-correlation.[13]

Figure 55 illustrates the model output for one location. A separate model was estimated for each substation transformer and feeder. The model explained 98.8% of the variation and, more importantly, produced estimates of the percent change in loads—the load growth—relative to 2020, after controlling for weather, day of week, and other factors. The coefficient on the year term represents annualized percent growth (in this case of 0.2%). The growth trend and the amount of year-to-year variation differ by location and are central to developing the probabilistic load forecasts. In addition, the confidence bands for the historical growth estimates are linked to the explanatory power of the models. When explanatory power is high, confidence bands are tight. When explanatory power is lower, confidence bands are broader.

The estimates of year-to-year historical load growth also were used to assess the degree to which growth patterns are related to each other, that is, the degree to which growth in the prior year predicts growth in the following year, technically known as auto-correlation. Each individual site had a limited

[13] We relied on an iterative feasible GLS model with first order auto-correlation. Other time series options—such as ARIMA and the Newey-West model—do not handle gaps in the time series as easily. All options, however, produce consistent estimates.

number of individual year growth estimates—five years at most—so the estimate of auto-correlation was developed across all sites.

Figure 55: Example Load Growth Econometric Model

```
Prais-Winsten AR(1) regression with twostep estimates

Linear regression                               Number of obs     =        306
                                                F(13, 292)        =     263.49
                                                Prob > F          =     0.0000
                                                R-squared         =     0.9884
                                                Root MSE          =     .03622
```

lnload_gross	Coefficient	Semirobust std. err.	t	P>|t|	[95% conf.	interval]
year	-.0024092	.0018525	-1.30	0.194	-.0060552	.0012368
month						
7	.0783241	.0075638	10.36	0.000	.0634377	.0932106
8	.0812814	.0073455	11.07	0.000	.0668246	.0957382
dow						
2	-.0058029	.0060002	-0.97	0.334	-.017612	.0060063
3	-.0072096	.0067857	-1.06	0.289	-.0205647	.0061454
4	-.0106027	.0066188	-1.60	0.110	-.0236294	.0024239
5	-.0143679	.006533	-2.20	0.029	-.0272256	-.0015102
cdh60	.0050887	.0006359	8.00	0.000	.0038372	.0063401
hdh60	0	(omitted)				
bins_cdd						
2	-.1075583	.0449372	-2.39	0.017	-.1960002	-.0191164
3	-.0103202	.0334084	-0.31	0.758	-.0760721	.0554316
cdd60	-.008938	.0042769	-2.09	0.037	-.0173555	-.0005206
bins_cdd#c.cdd60						
2	.0234035	.0051118	4.58	0.000	.0133429	.033464
3	.0173512	.0043123	4.02	0.000	.0088641	.0258384
0.bins_hdd	0	(omitted)				
hdd60	0	(omitted)				
bins_hdd#c.hdd60						
0	0	(omitted)				
_cons	7.240259	3.749448	1.93	0.054	-.1391091	14.61963
rho	.3372035					

```
Durbin-Watson statistic (original)    = 1.012068
Durbin-Watson statistic (transformed) = 1.683364
```

APPENDIX C – TABLE OF ACRONYMS

Table 23 lists the acronyms used in this report and their meaning.

Table 23: Acronyms and Meanings

Acronym	Meaning
BTM	Behind-the-meter
CS	Community Solar
CT	Contingency
DCFC	Direct Current Fast Charging
DER	Distributed Energy Resource
EE	Energy Efficiency
EV	Electric Vehicle
FTM	Front-the-meter
HE	Hour Ending
IRP	Integrated Resource Plan
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt-hour
LDV	Light-Duty Vehicles
MHDV	Medium- and Heavy- Duty Vehicles
MVA	Megavolt-Amperes
MW	Megawatt
MWh	Megawatt-hour
NREL	National Renewable Energy Laboratory
NWA	Non-Wire Alternative
O&M	Operation and Management
PNM	The Public Service Company of New Mexico
PUC	Public Utility Commission
PV	Photovoltaic
SCADA	Supervisory Control and Data Acquisition
T&D	Transmission and Distribution
WHEV	Whole-Home Electric Vehicle

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

AFFIDAVIT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

JOSH L. BODE, Partner, Demand Side Analytics, upon penalty of perjury under the laws of the State of New Mexico, affirms and states: I have read the foregoing **Direct Testimony and Exhibits of Josh L. Bode** which are true and correct based on my personal knowledge and belief.

DATED 15th day of April, 2026.

/s/ Josh L. Bode
JOSH L. BODE

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICIENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

DIRECT TESTIMONY

OF

ABRAHAM CASAS

April 15, 2026

NMRC DOCKET NO. 26-00000XX
INDEX TO THE DIRECT TESTIMONY OF
ABRAHAM CASAS

WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

I. INTRODUCTION AND PURPOSE

Q. Please state your name, title and business address.

A. My name is Abraham Casas. I am a Lead Pricing Analyst for Public Service Company of New Mexico ("PNM" or "Company"). My business address is 414 Silver SW, Albuquerque, NM 87102. A description of my position and background is included in PNM Exhibit AC-1

Q. Please summarize your educational background and professional qualifications.

A. I graduated from New Mexico State University with a bachelor's degree in economics in 2016, and a Master of Arts degree in Economics in 2018. I was hired by PNM as a Pricing Analyst in March of 2019. Please see PNM Exhibit AC-1 for a statement of qualifications. Part of my duties is to provide pricing analyses in support of PNM's regulatory filings.

Q. Have you previously submitted testimony before the New Mexico Public Regulation Commission ("NMPRC" or "Commission")?

A. Yes. A listing of cases in which I have testified or filed testimony is included in PNM Exhibit AC-1.

Q. What is the purpose of your testimony in this case?

A. The purpose of my testimony is

i. To describe and support PNM's Advice Notice No. 656 and the 33rd Revised Energy Efficiency ("EE") Rider No. 16 ("Revised Rider"), filed concurrently herewith, through which PNM proposes to adjust the Rider No. 16 rate in accordance with the Efficient Use of Energy Act ("EUEA"), Section 17.7.2.13 NMAC and PNM's 2027 Energy Efficiency and Load Management Program Plan ("2027 Plan") addressed by PNM witness Reedin.

ii. To describe the mechanics of PNM's proposed Profit Incentive addressed in the testimony of PNM Witness Reedin.

iii. To provide customer bill impacts of the Revised Rider.

Q. Have you prepared any exhibits?

A. Yes. Attached to my testimony are:

PNM Exhibit AC-1: Statement of Qualifications.

PNM Exhibit AC-2: Program Costs and Rate Elements.

PNM Exhibit AC-3: A copy of the proposed Energy Efficiency Tariff Rider No. 16 effective for year 2027.

PNM Exhibit AC-4: Impact of proposed Rider by Customer Class.

PNM Exhibit AC-5: Proposed Energy Efficiency Plan Profit Incentive.

PNM Exhibit AC-6: Rider Impacts for Selected Customer Classes.

II. DERIVATION OF EE RATE ELEMENTS

Q. Please describe the rate elements included in PNM's current Rider No. 16.

A. At the time of the filing of this application the EE Rider ("Current EE Rider") includes a 2026 Program Cost rate element that is assessed as a percentage charge (3.931%) on PNM customers' monthly bills and was designed to recover approximately $36,479,038 in 2026 program costs on an annual basis. In addition, the current EE Rider has a 2026 Base Profit

Incentive rate element (0.260% of bills), which is designed to recover an estimated $2,590,012. The Current EE Rider elements were approved by the Commission in PNM's last EE program application in Case No. 23-00138-UT. PNM filed its Advice Notice No. 655 with its annual EE reconciliation filing on April 15, 2026, which provided reconciliation of the 2025 profit incentive in an EE Rider rate that will be in effect through the remainder of 2026, as well as the Current EE Rider rate that became effective with the first billing cycle of 2026. Therefore, the total Current EE Rider rate, inclusive of these rate elements, is 3.967% of customers' bills before taxes and franchise fees.

Q. Please describe the EE rider changes proposed in this filing.

A. In accordance with the amendments made to the EUEA in 2019, PNM is required to fund EE programs at a range of no less than 3% and no more than 5% of customer bills or $75,000 per customer per calendar year, whichever is less, for customer classes with the opportunity to participate in energy efficiency programs. Thus, PNM is requesting Commission approval of a Revised Rider designed to recover program costs of the 2027 Plan based on a program budget of $42,562,135 for calendar year 2027, $44,418,321 for calendar year 2028, and $45,611,509 for calendar year 2029, determined in compliance with the amendments to the EUEA.

PNM is also requesting a Base Profit Incentive of $3,021,912 for calendar year 2027, $3,153,701 for calendar year 2028, and $3,238,417 for calendar year 2029, representing 7.10% of the respective annual budget amounts.

Q. How did PNM project revenues to determine the plan year budgets?

A. PNM used 2024 Energy Efficiency revenues and forecasted billing determinants to project revenues to determine plan year budgets for 2027, 2028, and 2029.

Q. Please explain the derivation of the program cost element of the revised rider rate.

A. As shown on PNM Exhibit AC-2 pages 1 through 3, the Revised Rider is estimated to recover $42,562,135 in program costs in 2027, $44,418,321 in program costs in 2028, and $45,611,509 in 2029, through the rider rate elements.

A copy of the proposed Energy Efficiency Tariff Rider No. 16 effective for year 2027 is included as PNM Exhibit AC-3. PNM will modify the Rider No. 16 rate with its reconciliation filing each April to include the rate for the subsequent year, in addition to the reconciliation rate.

Q. What are the impacts of the proposed rider rate on the eligible customer classes?

A. The allocation of program costs to the various customer classes is shown on PNM Exhibit AC-4 pages 1 through 3. For 2027, the average impact for various customer classes range from -$0.24 to -$235.56 per bill. For 2028, the average impact for various customer classes range from -$0.13 to -$125.35 per bill. For 2029, the average impact for various customer classes range from -$0.07 to -$67.10 per bill.

Q. Please explain the derivation of the profit incentive element of the revised rider rate.

A. As more fully explained by PNM witness Reedin, PNM is proposing base Profit Incentives of $3,021,912, $3,153,701, and $3,238,417 in program years 2027, 2028, and 2029 respectively. The base profit incentive for each year is 7.1% of the requested plan annual budgets. As shown on PNM Exhibit AC-2 pages 1 through 3, this amount will be collected through rider rate elements of 0.228%, 0.236%, and 0.240% of customer bills in 2027, 2028, and 2029, respectively. As discussed later in my testimony, these base incentive amounts may be increased after measurement and verification if actual annual energy savings achieved by PNM exceed 80 GWh in a program year.

Q. What is the total revised rider rate that will be applied to customer bills in 2027?

A. The total Revised Rider rate requested to be approved in this case for calendar year 2027 is 3.904% of customer bills before taxes and franchise fees. PNM Table AC-1 below compares the Current EE Rider rate elements with those proposed in this case for calendar year 2027.

PNM Table AC-1: Energy Efficiency 2027 Plan Rider No. 16 - 2027 Rate Elements				
Rate Rider Element	Current Amount	Current Rate Rider Element	Proposed Amount	Proposed Rate Rider Element
Approved 2026 Program Plan Cost	$36,479,038	3.931%		
Approved 2026 Incentive	$2,590,012	0.260%		
Total (Current)	$39,069,050	4.191%		
Proposed 2027 Program Costs			$42,562,135	3.676%
Proposed 2027 Profit Incentive			$3,021,912	0.228%
Total (Proposed)			$45,584,047	3.904%

Q. What is the total revised rider rate that will be applied to customer bills in 2028?

A. The total Revised Rider rate requested to be approved in this case for calendar year 2028 is 4.040% of customer bills before taxes and franchise fees. PNM Table AC-2 below compares the Current EE Rider rate elements with those proposed in this case for calendar year 2028.

PNM Table AC-2: Energy Efficiency 2028 Plan Rider No. 16 - 2028 Rate Elements				
Rate Rider Element	Current Amount	Current Rate Rider Element	Proposed Amount	Proposed Rate Rider Element
Approved 2026 Program Plan Cost	$36,479,038	3.931%		
Approved 2026 Incentive	$2,590,012	0.260%		
Total (Current)	$39,069,050	4.191%		
Proposed 2028 Program Costs			$44,418,321	3.804%
Proposed 2028 Profit Incentive			$3,153,701	0.236%
Total (Proposed)			$47,572,022	4.040%

Q. What is the total revised rider rate that will be applied to customer bills in 2029?

A. The total Revised Rider rate requested to be approved in this case for calendar year 2029 is 4.111% of customer bills before taxes and franchise fees. PNM Table AC-3 below compares the Current EE Rider rate elements with those proposed in this case for calendar year 2029.

PNM Table AC-3: Energy Efficiency 2029 Plan Rider No. 16 - 2029 Rate Elements				
Rate Rider Element	Current Amount	Current Rate Rider Element	Proposed Amount	Proposed Rate Rider Element
Approved 2026 Program Plan Cost	$36,479,038	3.931%		
Approved 2026 Incentive	$2,590,012	0.260%		
Total (Current)	$39,069,050	4.191%		
Proposed 2029 Program Costs			$45,611,509	3.871%
Proposed 2029 Profit Incentive			$3,238,417	0.240%
Total (Proposed)			$48,849,926	4.111%

Q. What mechanism is PNM proposing for the calculation of the EE profit incentive?

A. PNM Exhibit AC-5 page 1, shows the operation of the Profit Incentive mechanism requested by PNM in this case, including the base level incentive and the proposed adjustment based on actual measured and verified energy savings. As explained by PNM witness Reedin, the Profit Incentive will increase by a sliding scale ranging from 0.125% to 0.225% of the annual Plan program costs for each annual GWh of savings PNM achieves in excess of 81 GWh of savings.

III. CALCULATION OF RECONCILLIATION/TRUE-UP

Q. How will PNM perform the reconciliation/true-up of the incentive based on actual performance of the 2027, 2028, and 2029 plans?

A. In its 2027, 2028, and 2029 Annual Reports, PNM will calculate the energy savings resulting from the implementation of the 2027 Plan based on the Measurement and Verification ("M&V") report. Based on this annual savings, PNM will apply the sliding scale percentage shown in PNM Exhibit AC-5. For example, if PNM achieves 84 GWh of annual Energy Savings, actual program costs would be multiplied by 7.475% to arrive at the total Incentive. For each GWh of actual annual savings above 81 GWh, PNM will multiply the actual program costs by the incentive as a percentage of total program costs and will add that amount to the base incentive amount (7.1% of actual program costs), up to a Profit Incentive percentage equal to PNM's pre-tax weighted average cost of capital ("WACC"), plus 2%,the limit provided in the EE Rule.

Mathematically, for each program year's annual energy savings in excess of 80 GWh the calculation of the additional Profit Incentive will be as follows:

$$API = M\&V\ AGWh\ Total\ Incentive\ Rate * APC$$

Where:

API =Additional Profit Incentive

M&V AGWh Total Incentive Rate= PNM Exhibit AC-5 Column C value corresponding to annual measured and verified energy savings (GWh)

APC= Actual Program Costs of Plan ($)

PNM will recover the additional Profit Incentive amount, if any, through the reconciliation of the EE Rider rate in the following plan year.

Q. Is PNM proposing a carrying charge on over- and under-collections of program costs?

A. Yes. As previously approved by the Commission, PNM proposes to continue assessing a symmetrical carrying charge on any over or under expended balance of program costs.

PNM proposes to continue using the customer deposit interest rate that is set by the Commission early each year. The rate for 2026 is 3.74% per annum.

IV. BILL IMPACTS OF PROPOSED EE RIDER RATE

Q. Have you calculated the impact of the revised rider rate on customer bills at different kWh usage levels?

A. Yes. PNM Exhibit AC-4 pages 1 through 3 show the impact of the Revised Rider rate at each customer class subject to the EE Rider as projected for each plan year. PNM Exhibit AC-6 pages 1 through 3 shows the projected impact of the revised EE Rider Rate for Residential and Small Power customers. In all three years of the plan, we project that the EE Rider Rate for these classes will result in a slight decrease in bills when compared to the existing charges in effect as of the date of this filing.

For 2027, projected bill impacts for rate Schedule 1A – Residential customers the bill change over existing bills ranges from -$0.03 to -$1.07 per month depending on usage; for Schedule 2A - Small Power customers the range of bill change is from -$0.08 to -$5.53 per month.

For 2028, projected bill impacts for rate Schedule 1A – Residential customers the bill change over existing bills ranges from -$0.02 to -$0.57 per month depending on usage; Schedule 2A - Small Power customers the range of bill change is from -$0.04 to -$2.92 per month.

For 2029, projected bill impacts for rate Schedule 1A – Residential customers the bill change over existing bills ranges from -$0.01 to -$0.30 per month depending on usage; Schedule 2A - Small Power customers the range of bill change is from -$0.02 to -$1.55 per month.

Rate Schedule 1A – Residential and Rate Schedule 2A - Small Power classes comprise over 99% of all PNM customers that are subject to the EE Rider.

Q. Does this conclude your testimony?

A. Yes, it does.

GCG#535145 v2

Abraham Casas: Educational and Professional Summary

Current Position: Lead Pricing Analyst, Strategic Marketing and Product Management. Public Service Company of New Mexico (PNM) (11/2025 – Present)

Education:

Master of Arts, Economics ("MA") – 2018

Bachelor's in Business Administration ("BA"), Economics – 2016

Experience:

Senior Pricing Analyst, Public Service Company of New Mexico (06/2023 – 11/2025)

Pricing Analyst, Public Service Company of New Mexico (03/2019 – 06/2023)

Project Manager, B and D Industries. (08/2016 - 08/2017)

Testimony: Filed before the New Mexico Public Regulation Commission:

- NMPRC Case No. 12-00007-UT. In support of PNM's 2025 Revised Renewable Energy Rider No. 36 Reconciliation.
- NMPRC Case No. 24-00089-UT. In support of PNM's 2024 General Rate Case.
- NMPRC Case No. 23-00138-UT. In support of PNM's 2024 Energy Efficiency and Load Management Plan.
- NMPRC Case No. 22-00270-UT. In support of PNM's 2022 General Rate Case.
- NMPRC Case No. 22-00276-UT. In support of PNM's 2022 Rio Rancho Underground Rider.
- NMPRC Case No. 17-00076-UT. In support of PNM's 2019, 2020, 2021, 2024, and 2025 Energy Efficiency ("EE") Profit Incentive Reconciliation.

PNM

2027 Energy Efficiency Plan - Program Costs and Rate Elements

Line N0.					
1	2027 Program Costs	$ 42,562,135	**2027 EE Rate Component**		
2	2027 Base Profit Incentive	7.10%	Program Cost Rate Element	3.676%	*($42,562,135 - ∑(G)) / ∑(D)*
3	2027 Base Profit Incentive	$ 3,021,912	Incentive Rate Element	0.228%	*(∑(H) / ∑(E))*
4			Total	3.904%	
5					

6	*(A)*	*(B)*	*(C)*	*(D)*	*(E)*	*(F)*	*(G)*	*(H)*	*(I)*
7				*(B) - (C)*	*(B)*	*(D) x 3.676%*	*$75k/ capped customer*	*(E) x 0.228%*	*(F) + (G) + (H)*
8	**Customer Class**	**Revenue ($)**	**Capped ($)**	**Net Revenue for Program Costs ($)**	**Revenue for Incentive ($)**	**Program Costs From Uncapped($)**	**Program Costs From Capped ($)**	**Energy Efficiency Incentive Recovery ($)**	**Total Revenue ($)**
9	1A/1B - Residential	$ 503,137,076	$ -	$ 503,137,076	$ 503,137,076	$ 18,495,275	$ -	$ 1,147,819	$ 19,643,094
10	2A/2B - Small Power	$ 152,199,532	$ -	$ 152,199,532	$ 152,199,532	$ 5,594,841	$ -	$ 347,217	$ 5,942,058
11	3B/3C/3D/3E/3F - General Power	$ 294,792,164	$ -	$ 294,792,164	$ 294,792,164	$ 10,836,534	$ -	$ 672,517	$ 11,509,051
12	4B - Large Power	$ 164,986,707	$ -	$ 164,986,707	$ 164,986,707	$ 6,064,897	$ -	$ 376,388	$ 6,441,285
13	5B - Large Service for Customers >=8,000kW	$ 4,430,929	$ 4,430,929	$ -	$ 4,430,929	$ -	$ 75,000	$ 10,108	$ 85,108
14	11B - Wtr/Swg Pumping	$ 26,403,434	$ -	$ 26,403,434	$ 26,403,434	$ 970,588	$ -	$ 60,235	$ 1,030,823
15	15B - Universities 115 kV	$ 10,813,998	$ 10,813,998	$ -	$ 10,813,998	$ -	$ 75,000	$ 24,670	$ 99,670
16	30B - Manufacturing (30 MW)	$ 136,546,737	$ 136,546,737	$ -	$ 136,546,737	$ -	$ 75,000	$ 311,507	$ 386,507
17	35B - Large Power >=3,000kW	$ 31,319,449	$ 31,319,449	$ -	$ 31,319,449	$ -	$ 375,000	$ 71,450	$ 446,450
18	**Customer Rate Class Totals**	**$ 1,324,630,026**	**$ 183,111,114**	**$ 1,141,518,912**	**$ 1,324,630,026**	**$ 41,962,135**	**$ 600,000**	**$ 3,021,912**	**$ 45,584,047**

PNM

2028 Energy Efficiency Plan - Program Costs and Rate Elements

Line N0.						
1	2028 Program Costs	$ 44,418,321		**2028 EE Rate Component**		
2	2028 Base Profit Incentive	7.10%		Program Cost Rate Element	3.804%	*($44,418,321 - ∑(G)) / ∑(D)*
3	2028 Base Profit Incentive	$ 3,153,701		Incentive Rate Element	0.236%	*(∑(H) / ∑(E))*
4				Total	4.040%	
5						

Line N0.	Customer Class	Revenue ($)	Capped ($)	Net Revenue for Program Costs ($)	Revenue for Incentive ($)	Program Costs From Uncapped($)	Program Costs From Capped ($)	Energy Efficiency Incentive Recovery ($)	Total Revenue ($)
6	*(A)*	*(B)*	*(C)*	*(D)*	*(E)*	*(F)*	*(G)*	*(H)*	*(I)*
7				*(B) - (C)*	*(B) or 0*	*(D) x 3.804%*	*$75k/ capped customer*	*(E) x 0.236%*	*(F) + (G) + (H)*
8									
9	1A/1B - Residential	$ 507,277,847	$ -	$ 507,277,847	$ 507,277,847	$ 19,296,803	$ -	$ 1,196,140	$ 20,492,943
10	2A/2B - Small Power	$ 154,117,573	$ -	$ 154,117,573	$ 154,117,573	$ 5,862,618	$ -	$ 363,403	$ 6,226,021
11	3B/3C/3D/3E/3F - General Power	$ 297,259,700	$ -	$ 297,259,700	$ 297,259,700	$ 11,307,732	$ -	$ 700,926	$ 12,008,658
12	4B - Large Power	$ 166,973,889	$ -	$ 166,973,889	$ 166,973,889	$ 6,351,671	$ -	$ 393,718	$ 6,745,389
13	5B - Large Service for Customers >=8,000kW	$ 4,443,198	$ 4,443,198	$ -	$ 4,443,198	$ -	$ 75,000	$ 10,477	$ 85,477
14	11B - Wtr/Swg Pumping	$ 26,274,941	$ -	$ 26,274,941	$ 26,274,941	$ 999,496	$ -	$ 61,955	$ 1,061,452
15	15B - Universities 115 kV	$ 10,824,792	$ 10,824,792	$ -	$ 10,824,792	$ -	$ 75,000	$ 25,524	$ 100,524
16	30B - Manufacturing (30 MW)	$ 136,920,839	$ 136,920,839	$ -	$ 136,920,839	$ -	$ 75,000	$ 322,854	$ 397,854
17	35B - Large Power >=3,000kW	$ 33,377,859	$ 33,377,859	$ -	$ 33,377,859	$ -	$ 375,000	$ 78,704	$ 453,704
18	**Customer Rate Class Totals**	**$ 1,337,470,639**	**$ 185,566,688**	**$ 1,151,903,950**	**$ 1,337,470,639**	**$ 43,818,321**	**$ 600,000**	**$ 3,153,701**	**$ 47,572,022**

PNM Exhibit AC-2
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PNM

2029 Energy Efficiency Plan - Program Costs and Rate Elements

Line N0.					
1	2029 Program Costs	$ 45,611,509	**2029 EE Rate Component**		
2	2029 Base Profit Incentive	7.10%	Program Cost Rate Element	3.871%	*($45,611,509 - ∑(G)) / ∑(D)*
3	2029 Base Profit Incentive	$ 3,238,417	Incentive Rate Element	0.240%	*(∑(H) / ∑(E))*
4			Total	4.111%	
5					

Line N0.	*(A)*	*(B)*	*(C)*	*(D)*	*(E)*	*(F)*	*(G)*	*(H)*	*(I)*
7				*(B) - (C)*	*(B) or 0*	*(D) x 3.871%*	*$75k/ capped customer*	*(E) x 0.240%*	*(F) + (G) + (H)*
8	**Customer Class**	**Revenue ($)**	**Capped ($)**	**Net Revenue for Program Costs ($)**	**Revenue for Incentive ($)**	**Program Costs From Uncapped($)**	**Program Costs From Capped ($)**	**Energy Efficiency Incentive Recovery ($)**	**Total Revenue ($)**
9	1A/1B - Residential	$ 511,827,144	$ -	$ 511,827,144	$ 511,827,144	$ 19,812,400	$ -	$ 1,227,915	$ 21,040,315
10	2A/2B - Small Power	$ 156,107,144	$ -	$ 156,107,144	$ 156,107,144	$ 6,042,777	$ -	$ 374,514	$ 6,417,291
11	3B/3C/3D/3E/3F - General Power	$ 299,870,865	$ -	$ 299,870,865	$ 299,870,865	$ 11,607,750	$ -	$ 719,415	$ 12,327,165
12	4B - Large Power	$ 168,978,549	$ -	$ 168,978,549	$ 168,978,549	$ 6,541,018	$ -	$ 405,393	$ 6,946,411
13	5B - Large Service for Customers >=8,000kW	$ 4,430,929	$ 4,430,929	$ -	$ 4,430,929	$ -	$ 75,000	$ 10,630	$ 85,630
14	11B - Wtr/Swg Pumping	$ 26,029,084	$ -	$ 26,029,084	$ 26,029,084	$ 1,007,564	$ -	$ 62,446	$ 1,070,010
15	15B - Universities 115 kV	$ 10,794,518	$ 10,794,518	$ -	$ 10,794,518	$ -	$ 75,000	$ 25,897	$ 100,897
16	30B - Manufacturing (30 MW)	$ 136,546,737	$ 136,546,737	$ -	$ 136,546,737	$ -	$ 75,000	$ 327,587	$ 402,587
17	35B - Large Power >=3,000kW	$ 35,272,070	$ 35,272,070	$ -	$ 35,272,070	$ -	$ 375,000	$ 84,621	$ 459,621
18	**Customer Rate Class Totals**	**$ 1,349,857,039**	**$ 187,044,254**	**$ 1,162,812,785**	**$ 1,349,857,039**	**$ 45,011,509**	**$ 600,000**	**$ 3,238,417**	**$ 48,849,926**

DESCRIPTION: This Energy Efficiency Surcharge is a mechanism for recovery of costs associated with energy efficiency programs approved by the New Mexico Public Regulation Commission. The surcharge may also include the costs associated with removal of disincentives to, and a provision of incentives for, expenditures on energy efficiency and load management measures.

APPLICABILITY: This Rider shall be applicable to all PNM retail customers receiving electric service, with an opportunity to participate in the energy efficiency programs approved by the Commission, except the following: 6, 10A/10B, 20, 33B, and 36B.

APPLICATION: The energy efficiency surcharge shall be added to each customer's bill. The surcharge shall be calculated by multiplying the total charges other than franchise fees and taxes by the surcharge rate approved by the Commission. The Program Plan Costs amount of the energy efficiency surcharge shall not exceed $75,000 per year.

RATES, TERMS AND PROCEDURES:

I. Purpose

This Rider establishes detailed procedures which will permit the Company to recover from its customers Rider No. 16 Amounts as determined and ordered by the Commission to be administered through this mechanism. This mechanism is specific as to Amounts pertaining to Affected Customer Classes.

II. Definitions

The following definitions shall apply to this Rider:

1. Affected Customer Classes: Customer classes subject to Rider No. 16.

2. Amortization Period: The Amortization Period for program costs approved by the Commission will comply with the period specified in the respective Commission Order for each Rider No. 16 Amount.

3. Annual Projected Sales Revenues: Revenues for the Company projected for the Amortization Period, which includes Revenue, excluding franchise fees and taxes, for Affected Customer Class.

4. Billing Cycle: A period of time employed by the Company's billing system and used by the Company to render bills for service to customers. The Company employs twenty-one (21)

billing cycles, which constitute a billing month and may or may not coincide with a calendar month.

5. M&V Report: The annual monitoring and verification report of the independent evaluator for the prior calendar year.

6. Rider No. 16 Amounts: The dollar amounts of Rider No. 16, shall be approved by the Commission, and will be collected from Electric Service Customers within the Affected Customer Classes. A separate pool of dollar amounts will be set up for each identified component of this rider identifying the dollars to be recovered compared to the actual Dollars recovered for each rider component.

7. Reconciliation Amounts: Consists of Rider No. 16 Amounts that were under-recovered/credited or over-recovered/credited during their respective amortization terms.

8. Electric Service Customer: A customer receiving electric service directly from the Company within the Company's New Mexico service territory.

III. Methodology for Developing and Administering the Rider No. 16 Amounts

1. Effective Date: The date specified by the Commission to begin billing this rate.

2. Rider No. 16 Amounts: The amounts to be collected are approved by the Commission. This mechanism is designed to accommodate only those amounts ordered for collection on a percentage of bill basis whereby the billing factors will be derived using Annual Projected Sales Revenue associated with Electric Service Customers within Affected Customer Classes adjusted for anticipated savings from the energy efficiency programs approved by the Commission.

3. Reconciliation Amounts: Reconciliation Amounts will be summed with and absorbed into existing Rider No. 16 Amounts by pool and will assume that respective amount's collection conditions and terms. This transaction will be specifically noted and identified in the next subsequent Energy Efficiency Surcharge Factor filing.

IV. Calculation of the Energy Efficiency Surcharge Factors

For purposes of determining the Energy Efficiency Surcharge Factors, each of the Rider No. 16 Amounts, is fully amortized (paid) over their respective periods commencing with the first Billing Cycle of the month following approval of any of the Rider No. 16 Amounts or any alternative effective date as determined by the Commission. The total combined Energy Efficiency Surcharge Factor is 3.904% of Affected Customer Classes bills in 2027. The total Factor is determined as follows: x

(A) Each Energy Efficiency Surcharge Factor for Customers is determined by dividing the annual recovery amounts by the combined total Annual Projected Sales Revenue for Affected Customer Classes;

(B) Reconciliation Amounts incapable of generating a factor out to five (5) decimal places are summed with and absorbed into existing Rider No. 16 Amounts and their disposition is recognized within the existing factor.

(C) The total combined Energy Efficiency Surcharge Factor is comprised of the following elements for bills beginning with the first billing cycle for January 2027:

Rate Element	Amount to be Recovered	Element Rate	
1) 2027 Total Program Costs	$ 42,562,135	3.676%	x
2) 2027 Base Level Incentive (1 x 7.1%)	$ 3,021,912	0.228%	x
Total (1 + 2)	$38,161,392	3.904%	x

The recovery period will be as specified in the Commission's Final Order approving PNM's energy efficiency plan. x x

The profit incentive may increase in accordance with the methodology approved by the NMPRC based on actual energy savings as verified by the M&V Report. x

V. Annual Reconciliation Filings

x

The Company shall file with the Commission an annual report on its energy efficiency programs. The initial report was due on April 1, 2009, and covered the period from the effective date of Rider No. 16 through December 31, 2008. Subsequent reports shall be filed as required by Commission rule or order. These reports will contain: x x x x

1. Energy Efficiency Surcharge Factor Report: Schedules shall contain sufficient information describing:

    a. A Summary of the Energy Efficiency Surcharge Factors;
    b. Calculation of each Energy Efficiency Surcharge Factor, for each package of programs and Incentive/Disincentive Adder Revenues and by each Affected Customer Class;
    c. Calculation of the Energy Efficiency Surcharge Factor to be applied for the subsequent 12

months;

d. A Summary of Annual Projected Sales Revenue, less anticipated savings;
e. A Summary consisting of the beginning balance of each Rider No. 16 Amount, the sum total of the annual transactions, and the ending balance; and
f. A detail listing of expenditures and collections for each Rider No. 16 Amount, for each package of programs and Incentive/Disincentive Adder Revenues, by Affected Customer Class.

2. M&V Report: The M&V Report shall be submitted with the annual reconciliation filing as a separate document.

3. Amounts Not Generating a Factor: If the sum of all Rider No. 16 Amounts have been depleted to the extent that an annual factor cannot be calculated out to five (5) decimals, the residual amount will be held by the Company until:

    a. Additional Rider No. 16 Amounts occur and these amounts can be combined with these existing amounts to create an annual factor; or
    b. The disposition of this amount is determined in conjunction with a subsequent proceeding before the Commission.

4. Other Annual Reconciliation Filings Content: The Annual Reconciliation Filings shall contain sufficient information describing:

    a. Any material change in Rider No. 16 Amounts and explanations of the sources of those changes;
    b. Any material difference in respective annual projected kWhs and anticipated savings, and the reasons for any proposed difference; and
    c. The addition/deletion of and to any individual Rider No. 16 Amounts due to accounting adjustments, the M&V Report or other reasons, including a true-up of the Incentive/Disincentive calculation for M & V and performance results.

Advice Notice No. 656

/s/ *Kyle T. Sanders*
Kyle T. Sanders
Vice President, Regulatory

PNM

2027 Energy Efficiency Rider - Impact of Proposed Rider by Customer Class

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
					(B) / (A) x (C) / 12		*(B) / (A) x (E) / 12*	*(F) - (D)*
Line No.	**Customer Class**	**2027 Average Number of Customers**	**2027 Revenues ($)**	**Current Energy Efficiency Rate ($/kWh)**	**Current Average Monthly Energy Efficiency Charge ($)**	**Proposed 2027 Energy Efficiency Rate ($/kWh)**	**Proposed 2027 Average Monthly Energy Efficiency Charge ($)**	**Proposed 2027 Change in Monthly Average Energy Efficiency Rider Charge ($)**
1	1A/1B - Residential	502,703	503,137,076	4.191%	$3.50	3.904%	$3.26	-$0.24
2	2A/2B - Small Power	55,611	152,199,532	4.191%	$9.56	3.904%	$8.90	-$0.65
3	3B/3C/3D/3E/3F - General Power	4,296	294,792,164	4.191%	$239.67	3.904%	$223.26	-$16.41
4	4B - Large Power	167	164,986,707	4.191%	$3,441.36	3.904%	$3,205.80	-$235.56
5	5B - Large Service for Customers >=8,000kW	1	4,430,929	4.191%	$6,250.00	3.904%	$6,250.00	$0.00
6	11B - Wtr/Swg Pumping	150	26,403,434	4.191%	$614.76	3.904%	$572.68	-$42.08
7	15B - Universities 115 kV	1	10,813,998	4.191%	$6,250.00	3.904%	$6,250.00	$0.00
8	30B - Manufacturing (30 MW)	1	136,546,737	4.191%	$6,250.00	3.904%	$6,250.00	$0.00
9	35B - Large Power >=3,000kW	5	31,319,449	4.191%	$6,250.00	3.904%	$6,250.00	$0.00

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2028 Energy Efficiency Rider - Impact of Proposed Rider by Customer Class

Line No.	Customer Class	(A) **2028 Average Number of Customers**	(B) **2028 Revenues ($)**	(C) **Current Energy Efficiency Rate ($/kWh)**	(D) *(B) / (A) x (C) / 12* **Current Average Monthly Energy Efficiency Charge ($)**	(E) **Proposed 2028 Energy Efficiency Rate ($/kWh)**	(F) *(B) / (A) x (E) / 12* **Proposed 2028 Average Monthly Energy Efficiency Charge ($)**	(G) *(F) - (D)* **Proposed 2028 Change in Monthly Average Energy Efficiency Rider Charge ($)**
1	1A/1B - Residential	506,733	507,277,847	4.191%	$3.50	4.040%	$3.37	-$0.13
2	2A/2B - Small Power	56,010	154,117,573	4.191%	$9.61	4.040%	$9.26	-$0.35
3	3B/3C/3D/3E/3F - General Power	4,308	297,259,700	4.191%	$241.01	4.040%	$232.32	-$8.70
4	4B - Large Power	168	166,973,889	4.191%	$3,474.29	4.040%	$3,348.93	-$125.35
5	5B - Large Service for Customers >=8,000kW	1	4,443,198	4.191%	$6,250.00	4.040%	$6,250.00	$0.00
6	11B - Wtr/Swg Pumping	150	26,274,941	4.191%	$611.77	4.040%	$589.69	-$22.07
7	15B - Universities 115 kV	1	10,824,792	4.191%	$6,250.00	4.040%	$6,250.00	$0.00
8	30B - Manufacturing (30 MW)	1	136,920,839	4.191%	$6,250.00	4.040%	$6,250.00	$0.00
9	35B - Large Power >=3,000kW	5	33,377,859	4.191%	$6,250.00	4.040%	$6,250.00	$0.00

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PNM

2029 Energy Efficiency Rider - Impact of Proposed Rider by Customer Class

Line No.	Customer Class	(A) 2029 Average Number of Customers	(B) 2029 Revenues ($)	(C) Current Energy Efficiency Rate ($/kWh)	(D) *(B) / (A) x (C) / 12* Current Average Monthly Energy Efficiency Charge ($)	(E) Proposed 2029 Energy Efficiency Rate ($/kWh)	(F) *(B) / (A) x (E) / 12* Proposed 2029 Average Monthly Energy Efficiency Charge ($)	(G) *(F) - (D)* Proposed 2029Change in Monthly Average Energy Efficiency Rider Charge ($)
1	1A/1B - Residential	510,629	511,827,144	4.191%	$3.50	4.111%	$3.43	-$0.07
2	2A/2B - Small Power	56,399	156,107,144	4.191%	$9.67	4.111%	$9.48	-$0.18
3	3B/3C/3D/3E/3F - General Power	4,319	299,870,865	4.191%	$242.48	4.111%	$237.84	-$4.64
4	4B - Large Power	168	168,978,549	4.191%	$3,507.67	4.111%	$3,440.57	-$67.10
5	5B - Large Service for Customers >=8,000kW	1	4,430,929	4.191%	$6,250.00	4.111%	$6,250.00	$0.00
6	11B - Wtr/Swg Pumping	150	26,029,084	4.191%	$606.04	4.111%	$594.45	-$11.59
7	15B - Universities 115 kV	1	10,794,518	4.191%	$6,250.00	4.111%	$6,250.00	$0.00
8	30B - Manufacturing (30 MW)	1	136,546,737	4.191%	$6,250.00	4.111%	$6,250.00	$0.00
9	35B - Large Power >=3,000kW	5	35,272,070	4.191%	$6,250.00	4.111%	$6,250.00	$0.00

Calculation of PNM's Proposed 2027, 2028, and 2029 EE Plan Profit Incentive

Line				2027	2028	2029
			Program Year	2027	2028	2029
1			**Program Costs**	$ 42,562,135	$ 44,418,321	$ 45,611,509
2			**Base Profit Incentive (%)**	7.10%	7.10%	7.10%
3			**Base Profit Incentive (L1 x L2) ($)**	$ 3,021,912	$ 3,153,701	$ 3,238,417
4						
5	(A)	(B)	(C)	(D)	(E)	(F)
6			*L2 + (B)*	*L1 x (C)*	*L1 x (C)*	*L1 x (C)*
7						
8	**Annual Energy Savings (GWh)**	**Sliding Scale Increment (%)**	**Incentive as a Percentage of Total Program Costs (%)**	**2027 Total Potential Incentive ($)**	**2028 Total Potential Incentive ($)**	**2029 Total Potential Incentive ($)**
9	81	0.000%	7.100%	$ 3,021,912	$ 3,153,701	$ 3,238,417
10	82	0.125%	7.225%	$ 3,075,114	$ 3,209,224	$ 3,295,432
11	83	0.250%	7.350%	$ 3,128,317	$ 3,264,747	$ 3,352,446
12	84	0.375%	7.475%	$ 3,181,520	$ 3,320,269	$ 3,409,460
13	85	0.500%	7.600%	$ 3,234,722	$ 3,375,792	$ 3,466,475
14	86	0.625%	7.725%	$ 3,287,925	$ 3,431,315	$ 3,523,489
15	87	0.800%	7.900%	$ 3,362,409	$ 3,509,047	$ 3,603,309
16	88	0.975%	8.075%	$ 3,436,892	$ 3,586,779	$ 3,683,129
17	89	1.150%	8.250%	$ 3,511,376	$ 3,664,511	$ 3,762,949
18	90	1.325%	8.425%	$ 3,585,860	$ 3,742,244	$ 3,842,770
19	91	1.500%	8.600%	$ 3,660,344	$ 3,819,976	$ 3,922,590
20	92	1.725%	8.825%	$ 3,756,108	$ 3,919,917	$ 4,025,216
21	93	1.950%	9.050%	$ 3,851,873	$ 4,019,858	$ 4,127,842
22	94	2.175%	9.275%	$ 3,947,638	$ 4,119,799	$ 4,230,467
23	95	2.400%	9.500%	$ 4,043,403	$ 4,219,740	$ 4,333,093
24	96	2.625%	9.725%	$ 4,139,168	$ 4,319,682	$ 4,435,719
25	97	2.850%	9.950%	$ 4,234,932	$ 4,419,623	$ 4,538,345
26	98	3.075%	10.175%	$ 4,330,697	$ 4,519,564	$ 4,640,971
27	99	3.300%	10.400%	$ 4,426,462	$ 4,619,505	$ 4,743,597
28	100	3.525%	10.540%	$ 4,486,049	$ 4,681,691	$ 4,807,453
29	101	3.750%	10.540%	$ 4,486,049	$ 4,681,691	$ 4,807,453

Pre-Tax WACC
10.54%

Sliding Scale
0.000%
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PNM
2027 Plan Energy Efficiency Rider No. 16
Rider Impacts Calculation for Selected Rate Classes

PNM
Residential Schedule 1A

Line No.	Usage (kWh)	Bill ($)	Current EE Rider Rate ($/kWh)	Current Monthly EE Rider Charge ($)	Proposed 2027 EE Total Rider Rate ($/kWh)	Proposed Monthly EE Rider Charge ($)	Proposed Change in EE Monthly EE Charge ($)
1	0	$12.70	4.191%	$0.53	3.904%	$0.50	($0.03)
2	50	$20.48	4.191%	$0.86	3.904%	$0.80	($0.06)
3	100	$26.41	4.191%	$1.11	3.904%	$1.03	($0.08)
4	150	$32.33	4.191%	$1.36	3.904%	$1.26	($0.10)
5	200	$38.26	4.191%	$1.60	3.904%	$1.49	($0.11)
6	250	$44.19	4.191%	$1.85	3.904%	$1.73	($0.12)
7	300	$50.12	4.191%	$2.10	3.904%	$1.96	($0.14)
8	400	$61.97	4.191%	$2.60	3.904%	$2.42	($0.18)
9	500	$76.01	4.191%	$3.19	3.904%	$2.97	($0.22)
10	600	$92.23	4.191%	$3.87	3.904%	$3.60	($0.27)
11	750	$116.57	4.191%	$4.89	3.904%	$4.55	($0.34)
12	800	$124.68	4.191%	$5.23	3.904%	$4.87	($0.36)
13	900	$140.90	4.191%	$5.91	3.904%	$5.50	($0.41)
14	1,000	$165.56	4.191%	$6.94	3.904%	$6.46	($0.48)
15	1,200	$206.82	4.191%	$8.67	3.904%	$8.07	($0.60)
16	1,600	$289.36	4.191%	$12.13	3.904%	$11.30	($0.83)
17	2,000	$371.89	4.191%	$15.59	3.904%	$14.52	($1.07)

PNM
Small Power Schedule 2A

Line No.	Usage (kWh)	Bill ($)	Current EE Rider Rate ($/kWh)	Current Monthly EE Rider Charge ($)	Proposed 2027 EE Total Rider Rate ($/kWh)	Proposed Monthly EE Rider Charge ($)	Proposed Change in EE Monthly EE Charge ($)
18	0	$29.60	4.191%	$1.24	3.904%	$1.16	($0.08)
19	500	$92.90	4.191%	$3.89	3.904%	$3.63	($0.27)
20	1,000	$156.20	4.191%	$6.55	3.904%	$6.10	($0.45)
21	1,500	$219.50	4.191%	$9.20	3.904%	$8.57	($0.63)
22	2,000	$282.80	4.191%	$11.85	3.904%	$11.04	($0.81)
23	3,000	$409.39	4.191%	$17.16	3.904%	$15.98	($1.17)
24	4,000	$535.99	4.191%	$22.46	3.904%	$20.93	($1.54)
25	5,000	$662.59	4.191%	$27.77	3.904%	$25.87	($1.90)
26	7,000	$915.78	4.191%	$38.38	3.904%	$35.75	($2.63)
27	9,000	$1,168.97	4.191%	$48.99	3.904%	$45.64	($3.35)
28	12,000	$1,548.76	4.191%	$64.91	3.904%	$60.47	($4.44)
29	15,000	$1,928.55	4.191%	$80.83	3.904%	$75.29	($5.53)

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PNM
2028 Plan Energy Efficiency Rider No. 16
Rider Impacts Calculation for Selected Rate Classes

PNM
Residential Schedule 1A

Line No.	Usage (kWh)	Bill ($)	Current EE Rider Rate ($/kWh)	Current Monthly EE Rider Charge ($)	Proposed 2028 EE Total Rider Rate ($/kWh)	Proposed Monthly EE Rider Charge ($)	Proposed Change in EE Monthly EE Charge ($)
1	0	$12.70	4.191%	$0.53	4.040%	$0.51	($0.02)
2	50	$20.48	4.191%	$0.86	4.040%	$0.83	($0.03)
3	100	$26.41	4.191%	$1.11	4.040%	$1.07	($0.04)
4	150	$32.33	4.191%	$1.36	4.040%	$1.31	($0.05)
5	200	$38.26	4.191%	$1.60	4.040%	$1.55	($0.05)
6	250	$44.19	4.191%	$1.85	4.040%	$1.79	($0.06)
7	300	$50.12	4.191%	$2.10	4.040%	$2.02	($0.08)
8	400	$61.97	4.191%	$2.60	4.040%	$2.50	($0.10)
9	500	$76.01	4.191%	$3.19	4.040%	$3.07	($0.12)
10	600	$92.23	4.191%	$3.87	4.040%	$3.73	($0.14)
11	750	$116.57	4.191%	$4.89	4.040%	$4.71	($0.18)
12	800	$124.68	4.191%	$5.23	4.040%	$5.04	($0.19)
13	900	$140.90	4.191%	$5.91	4.040%	$5.69	($0.22)
14	1,000	$165.56	4.191%	$6.94	4.040%	$6.69	($0.25)
15	1,200	$206.82	4.191%	$8.67	4.040%	$8.36	($0.31)
16	1,600	$289.36	4.191%	$12.13	4.040%	$11.69	($0.44)
17	2,000	$371.89	4.191%	$15.59	4.040%	$15.02	($0.57)

PNM
Small Power Schedule 2A

Line No.	Usage (kWh)	Bill ($)	Current EE Rider Rate ($/kWh)	Current Monthly EE Rider Charge ($)	Proposed 2028 EE Total Rider Rate ($/kWh)	Proposed Monthly EE Rider Charge ($)	Proposed Change in EE Monthly EE Charge ($)
18	0	$29.60	4.191%	$1.24	4.040%	$1.20	($0.04)
19	500	$92.90	4.191%	$3.89	4.040%	$3.75	($0.14)
20	1,000	$156.20	4.191%	$6.55	4.040%	$6.31	($0.24)
21	1,500	$219.50	4.191%	$9.20	4.040%	$8.87	($0.33)
22	2,000	$282.80	4.191%	$11.85	4.040%	$11.42	($0.43)
23	3,000	$409.39	4.191%	$17.16	4.040%	$16.54	($0.62)
24	4,000	$535.99	4.191%	$22.46	4.040%	$21.65	($0.81)
25	5,000	$662.59	4.191%	$27.77	4.040%	$26.77	($1.00)
26	7,000	$915.78	4.191%	$38.38	4.040%	$37.00	($1.38)
27	9,000	$1,168.97	4.191%	$48.99	4.040%	$47.22	($1.77)
28	12,000	$1,548.76	4.191%	$64.91	4.040%	$62.57	($2.34)
29	15,000	$1,928.55	4.191%	$80.83	4.040%	$77.91	($2.92)

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PNM
2029 Plan Energy Efficiency Rider No. 16
Rider Impacts Calculation for Selected Rate Classes

PNM
Residential Schedule 1A

Line No.	Usage (kWh)	Bill ($)	Current EE Rider Rate ($/kWh)	Current Monthly EE Rider Charge ($)	Proposed 2029 EE Total Rider Rate ($/kWh)	Proposed Monthly EE Rider Charge ($)	Proposed Change in EE Monthly EE Charge ($)
1	0	$12.70	4.191%	$0.53	4.111%	$0.52	($0.01)
2	50	$20.48	4.191%	$0.86	4.111%	$0.84	($0.02)
3	100	$26.41	4.191%	$1.11	4.111%	$1.09	($0.02)
4	150	$32.33	4.191%	$1.36	4.111%	$1.33	($0.03)
5	200	$38.26	4.191%	$1.60	4.111%	$1.57	($0.03)
6	250	$44.19	4.191%	$1.85	4.111%	$1.82	($0.03)
7	300	$50.12	4.191%	$2.10	4.111%	$2.06	($0.04)
8	400	$61.97	4.191%	$2.60	4.111%	$2.55	($0.05)
9	500	$76.01	4.191%	$3.19	4.111%	$3.12	($0.07)
10	600	$92.23	4.191%	$3.87	4.111%	$3.79	($0.08)
11	750	$116.57	4.191%	$4.89	4.111%	$4.79	($0.10)
12	800	$124.68	4.191%	$5.23	4.111%	$5.13	($0.10)
13	900	$140.90	4.191%	$5.91	4.111%	$5.79	($0.12)
14	1,000	$165.56	4.191%	$6.94	4.111%	$6.81	($0.13)
15	1,200	$206.82	4.191%	$8.67	4.111%	$8.50	($0.17)
16	1,600	$289.36	4.191%	$12.13	4.111%	$11.89	($0.24)
17	2,000	$371.89	4.191%	$15.59	4.111%	$15.29	($0.30)

PNM
Small Power Schedule 2A

Line No.	Usage (kWh)	Bill ($)	Current EE Rider Rate ($/kWh)	Current Monthly EE Rider Charge ($)	Proposed 2029 EE Total Rider Rate ($/kWh)	Proposed Monthly EE Rider Charge ($)	Proposed Change in EE Monthly EE Charge ($)
18	0	$29.60	4.191%	$1.24	4.111%	$1.22	($0.02)
19	500	$92.90	4.191%	$3.89	4.111%	$3.82	($0.07)
20	1,000	$156.20	4.191%	$6.55	4.111%	$6.42	($0.13)
21	1,500	$219.50	4.191%	$9.20	4.111%	$9.02	($0.18)
22	2,000	$282.80	4.191%	$11.85	4.111%	$11.63	($0.23)
23	3,000	$409.39	4.191%	$17.16	4.111%	$16.83	($0.33)
24	4,000	$535.99	4.191%	$22.46	4.111%	$22.03	($0.43)
25	5,000	$662.59	4.191%	$27.77	4.111%	$27.24	($0.53)
26	7,000	$915.78	4.191%	$38.38	4.111%	$37.65	($0.73)
27	9,000	$1,168.97	4.191%	$48.99	4.111%	$48.05	($0.94)
28	12,000	$1,548.76	4.191%	$64.91	4.111%	$63.67	($1.24)
29	15,000	$1,928.55	4.191%	$80.83	4.111%	$79.28	($1.55)

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

AFFIDAVIT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

ABRAHAM CASAS, Lead Pricing Analyst, PNMR Services Company, upon penalty of perjury under the laws of the State of New Mexico, affirms and states: I have read the foregoing **Direct Testimony and Exhibits of Abraham Casas** which are true and correct based on my personal knowledge and belief.

DATED 15th day of April, 2026.

/s/ Abraham Casas
ABRAHAM CASAS

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR APPROVAL OF ITS 2027 ELECTRIC ENERGY EFFICENCY PROGRAM PLAN, PROFIT INCENTIVE AND REVISED RIDER NO. 16 PURSUANT TO THE NEW MEXICO PUBLIC UTILITY ACT, EFFICIENT USE OF ENERGY ACT AND ENERGY EFFICIENCY RULE,	)	**Case No. 26-00000XX**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the **Public Service Company of New Mexico's 2027 Electric Energy Efficiency Program Plan, profit Incentive and Revised Rider No. 16** was emailed to parties listed below on April 15, 2026.

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Dated the 15th day of April, 2026.

By: /s/*Latoya Ferguson*
Latoya Ferguson, Project Manager II
PNM Regulatory Policy & Case Management
Public Service Company of New Mexico

GCG#535087