

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF PUBLIC SERVICE)
COMPANY OF NEW MEXICO'S)
APPLICATION FOR APPROVAL OF ITS)
RENEWABLE ENERGY ACT PLAN)
FOR 2021 AND PROPOSED 2021 RIDER)
RATE UNDER RATE RIDER NO. 36,)
)
PUBLIC SERVICE COMPANY OF NEW)
MEXICO,)
)
)
Applicant.)
_____)

Case No. 20-00__-UT

DIRECT TESTIMONY

OF

NICHOLAS L. PHILLIPS

June 1, 2020

NMPRC CASE NO. 20-00 ____-UT
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WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

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SELF AFFIRMATION

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I. INTRODUCTION AND PURPOSE

1

2 **Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.**

3 **A.** My name is Nicholas L. Phillips. I am the Director of Integrated Resource Planning
4 for Public Service Company of New Mexico (“PNM”). My business address is 414
5 Silver Avenue SW, Albuquerque, New Mexico 87102.

6

7 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
8 **PROFESSIONAL QUALIFICATIONS.**

9 **A.** My educational background and relevant employment experience are summarized
10 in PNM Exhibit NLP-1 attached to my testimony.

11

12 **Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS DIRECTOR OF**
13 **INTEGRATED RESOURCE PLANNING.**

14 **A.** As director of PNM’s Integrated Resource Planning, I supervise the team that is
15 responsible for developing PNM’s resource plans and the regulatory filings to
16 support those resource plans, including the annual renewable energy act
17 procurement plans to comply with the renewable portfolio standard (“RPS”) and
18 the triennial Integrated Resource Plan (“IRP”).

19

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1 **Q. HAVE YOU PREVIOUSLY TESTIFIED IN PROCEEDINGS BEFORE THE**
2 **NEW MEXICO PUBLIC REGULATION COMMISSION**
3 **(“COMMISSION”)?**

4 **A. Yes. Cases in which I have testified before the Commission are identified in PNM**
5 **Exhibit NLP-1.**

6

7 **Q. ARE YOU SPONSORING ANY OTHER EXHIBITS?**

8 **A. Yes, PNM Exhibit NLP-2, which is the 2021 Renewable Energy Act Procurement**
9 **Plan (“2021 Plan” or “Plan”).**

10

11 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

12 **A. My testimony addresses several matters:**

13 1. I describe the approvals requested in this case and identify the other
14 witnesses who are presenting direct testimony on behalf of PNM;

15 2. I provide an overview of the 2021 Plan;

16 3. I describe how PNM is positioned to meet future increases in the RPS
17 requirements;

18 4. I provide information required under Section 62-16-4(G) of the Renewable
19 Energy Act, NMSA 1978, §§ 62-16-1 to -10 (“REA”) and Commission
20 Rule 572;

21 5. I provide information on PNM’s intentions regarding future recovery of its
22 REA plan costs through the Renewable Energy Rider, as required by the
23 Final Order in Case No. 19-00159-UT;

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1 6. I describe the variances from Commission rules and orders PNM is seeking
2 in this case; and

3 7. I respond to certain reporting requirements PNM agreed to in Case No. 18-
4 00158-UT regarding the Lightning Dock Geothermal Facility (“Lightning
5 Dock”) and explain that PNM is willing to continue to report if the
6 information is of value to the Commission’s Utility Division Staff (“Staff”).

7
8 **Q. WHAT COMMISSION APPROVALS IS PNM REQUESTING IN THIS**
9 **CASE?**

10 **A.** PNM is requesting the following:

- 11 1. Approval of PNM’s 2021 Plan;
- 12 2. Approval to reset the rate for PNM’s Renewable Energy Rider, Rider No.
13 36 (“Rider 36” or “Renewable Energy Rider”) to \$0.0085525/kWh,
14 effective January 1, 2021, for recovery of RPS procurement costs
15 anticipated to be incurred during 2021, including costs for registering and
16 retiring renewable energy certificates (“RECs”) in the Western Renewable
17 Energy Generation Information System (“WREGIS”);
- 18 3. Approval to begin collecting the balance as of December 31, 2020 of the
19 regulatory asset approved by the Commission in Case No. 10-00018-UT for
20 PNM’s Sky Blue voluntary renewable program (“Sky Blue”) through Rider
21 36; and
- 22 4. Approval of certain variances from Commission rules.

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1 **Q. PLEASE INTRODUCE THE OTHER PNM WITNESSES WHO ARE**
2 **PRESENTING DIRECT TESTIMONY IN THIS CASE.**

3 **A.** The following witnesses are filing direct testimony on behalf of PNM:

- 4 • Mr. Shane Gutierrez, Engineer IV, provides the RPS projections for the
5 2021 and 2022 plan years;
- 6 • Mr. Thomas S. Baker, Manager, Cost of Service, presents the revenue
7 requirements that support PNM's proposed new rate for Rider 36;
- 8 • Dr. Heidi Pitts, Sr. Pricing Analyst, presents PNM's proposed new rate for
9 Rider 36, to be effective as of January 1, 2021, and explains the customer
10 benefits that support continued use of PNM's RPS Rider as well as Sky Blue
11 Rider 30 revenue allocation processes; and
- 12 • Mr. Alaric Babej, Program Manager, Product Development, presents the
13 customer survey required by the Final Order in Case No. 19-00158-UT,
14 describes PNM's future intentions regarding the Sky Blue program, as well
15 as describes the elements of the Sky Blue regulatory asset PNM is seeking
16 recovery of in this case.

17

18 **II. ELEMENTS OF PNM'S 2021 PLAN**

19

20 **Q. PLEASE DESCRIBE PNM'S REQUIREMENTS UNDER THE REA.**

21 **A.** The REA, as amended in 2019, establishes the following RPS requirements for
22 public utilities in New Mexico:

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- 1 • No later than January 1, 2020, renewable energy shall comprise no less than
2 twenty percent of each public utility's total retail sales to New Mexico
3 customers;
- 4 • No later than January 1, 2025, renewable energy shall comprise no less than
5 forty percent of each public utility's total retail sales to New Mexico
6 customers;
- 7 • No later than January 1, 2030, renewable energy shall comprise no less than
8 fifty percent of each public utility's total retail sales to New Mexico
9 customers;
- 10 • No later than January 1, 2040, renewable energy shall comprise no less than
11 eighty percent of all retail sales of electricity in New Mexico, provided that
12 compliance with this standard until December 31, 2047, shall not require
13 the public utility to displace any zero carbon resources in the utility's
14 generation portfolio on the effective date of the 2019 amendments; and
- 15 • No later than January 1, 2045, zero carbon resources shall supply one
16 hundred percent of all retail sales of electricity in New Mexico.

17

18 The REA places some limits on achievement of these requirements, including the
19 need to "maintain and protect the safety, reliable operation and balancing of loads
20 and resources on the electric system" and to "prevent unreasonable impacts to
21 customer electricity bills, taking into consideration the economic and
22 environmental costs and benefits of renewable energy resources and zero carbon
23 resources." NMSA 1978, Sections 62-16-4(A) and (B). The REA requires a utility

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1 to “generate or procure renewable energy at or below the reasonable cost threshold
2 . . . to the extent necessary to meet the applicable renewable portfolio standard.” §
3 62-16-4(E). The REA defines the reasonable cost threshold, or RCT, as “an
4 average annual levelized cost of sixty dollars (\$60.00) per megawatt-hour at the
5 point of interconnection of the renewable energy resource with the transmission
6 system, adjusted for inflation after 2020.” § 62-16-3(E).

7
8 **Q. PLEASE DESCRIBE PNM’S 2021 PLAN.**

9 **A.** The 2021 Plan, which describes how the Company intends to meet the RPS
10 requirement in 2021, is attached as PNM Exhibit NLP-2 to my testimony.

11
12 PNM’s 2021 Plan projects to be in excess of the 2021 RPS requirement by 331,995
13 RECs. Of course, the actual surplus or deficit of RECs will depend on actual
14 generation levels at PNM’s various renewable facilities, actual retail sales, and
15 participation in PNM’s voluntary renewable energy programs. As shown by PNM
16 witness Gutierrez, PNM is projecting that it will have more than sufficient RECs
17 generated from existing resources, with the addition of the 140 MW La Joya II
18 Wind Facility that was approved in Case No. 19-00159-UT (“La Joya II”), to meet
19 the RPS requirement for 2021.

20
21 The Plan also proposes a change in the Rider 36 rate effective January 1, 2021. This
22 change reflects the recovery of the costs of renewable procurements during 2021,
23 as well as the costs associated with the registration and retirement of RECs through

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1 WREGIS. The costs that make up the Rider 36 rate are discussed in Mr. Baker's
2 Direct Testimony, and the derivation of the new Rider 36 rate is explained by Dr.
3 Pitts.

4
5 **Q. IS PNM REQUESTING ANY NEW PROCUREMENTS AS PART OF ITS**
6 **2021 PLAN?**

7 A. No. As explained by Mr. Gutierrez, PNM is projecting that it will meet the 2021
8 RPS requirements with its existing resources, as well as with energy and RECs
9 from La Joya II.

10
11 **Q. CAN YOU COMMENT ON THE AMOUNT OF RENEWABLE ENERGY**
12 **THAT CAN BE ADDED TO PNM'S SYSTEM IN THE PLAN YEAR**
13 **WITHOUT ADDING OTHER GENERATING RESOURCES TO SUPPORT**
14 **THOSE RENEWABLES, AS REQUIRED BY 17.9.572.14(B)(9) NMAC?**

15 A. Yes. In the 2021 plan year PNM's ability to add renewable resources would be
16 limited mostly due to the lead time to develop new renewable resources and place
17 them into commercial operation. Prior to PNM abandoning San Juan units 1 & 4
18 in June 2022, PNM's system does lack the flexibility required to economically
19 integrate large amounts of incremental renewable resources but to a limited degree
20 this can be overcome by committing additional generating assets and carrying a
21 larger amount of operating reserves, albeit at an increased cost to the system.
22 Moving beyond 2021, the answer depends on the San Juan Generating Station
23 replacement portfolio that the Commission will approve later this year. PNM will

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1 be able to add more renewable resources going forward if PNM's increases the
2 flexibility of its portfolio which in turn will facilitate PNM's ability to integrate
3 additional renewable resources without excessive increases in cost. Flexible
4 generation resources will allow PNM to provide the necessary operating reserves
5 and back up capacity to optimize the dispatch of PNM's system to support
6 renewable resources and reduce potential curtailments. This statement should not
7 be interpreted to mean that the entire portfolio needs to change overnight, nor that
8 reliable baseload capacity is unnecessary. The requirement for reasonable and
9 consistent progress towards meeting the increased RPS and zero carbon resource
10 standard of the REA as amended, coupled with the requirement to "maintain and
11 protect the safety, reliable operation and balancing of loads and resources on the
12 electric system" requires balance. PNM must move quickly enough to meet the
13 requirements, but not so fast it jeopardizes the reliability of the system or burdens
14 its customers with excessive cost increases. In order to maintain reliability, flexible
15 generation resources will need to be added alongside renewable resources,
16 especially when traditional generation resources are retired, and investments to
17 strengthen PNM's transmission system to ensure reliable delivery of renewable
18 resources to PNM's customers will likely need to be made. PNM will continue
19 to perform prudent resource planning through its IRP and other planning functions
20 as well as operate its system consistent with the REA and Public Utility Act to
21 ensure reliable electric service and minimize the possibility of excessive cost
22 increases as PNM's system evolves towards meeting the zero carbon standard.

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1 **Q. IS THE 2021 PLAN CONSISTENT WITH PNM'S INTEGRATED**
2 **RESOURCE PLAN, AS REQUIRED BY 17.9.572.14(B)(10)?**

3 A. Yes. PNM's most recent IRP was issued in 2017, so it pre-dates the 2019
4 amendments to the REA. However, PNM considered several high renewable
5 penetration scenarios in that IRP that would meet the increasing RPS in the short
6 term. PNM's resource planning group constantly plans for how PNM can continue
7 to meet customers' energy needs and comply with legislative mandates such as the
8 RPS into the future. This is demonstrated by PNM's resource planning related to
9 the abandonment of the San Juan coal plant; PNM is actively planning to meet the
10 higher renewable mandates and zero carbon standard through San Juan coal plant
11 replacement resources. PNM is currently in the process of developing its 2020 IRP;
12 the 2021 Plan will be consistent with the 2020 IRP when it is complete.

13

14 **Q. PLEASE PROVIDE A STATUS UPDATE ON THE LA JOYA II**
15 **PROCUREMENT.**

16 A. The commencement of construction of the La Joya II wind farm was announced on
17 May 12, 2020 and the La Joya II project is expected to be in-service by the end of
18 this year. Construction of the wind turbines is currently estimated to be complete
19 by November 1, 2020 and associated transmission and interconnection facilities are
20 estimated to be complete by November 30, 2020.

21

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1 **Q. IS PNM REQUESTING VARIANCES FROM COMMISSION RULES AND**
2 **PRIOR COMMISSION ORDERS AS PART OF THIS FILING?**

3 **A.** Yes. PNM is requesting variances from certain requirements of Rule 572 that are
4 inconsistent with the 2019 amendments to the REA. The Commission has opened
5 a docket, Case No. 19-00296-UT, to consider amending Rule 572, but the rule has
6 not yet been amended to account for those changes in the law. PNM is also
7 requesting a variance from the data filing requirements of 17.9.530 NMAC (“Rule
8 530”). Please see Section VI below for further discussion of the requested
9 variances.

10

11 **III. REASONABLE AND CONSISTENT PROGRESS TOWARDS BEING**
12 **CARBON FREE**

13

14 **Q. HOW IS PNM POSITIONED TO MAKE REASONABLE AND**
15 **CONSISTENT PROGRESS TOWARDS MEETING THE ZERO CARBON**
16 **RESOURCE STANDARD IN 2045?**

17 **A.** The first step to meeting these requirements was realized when the Commission
18 approved PNM’s application to abandon the remaining two units at the San Juan
19 coal plant. While a decision on the replacement portfolio is still pending at the time
20 I wrote this testimony, if PNM’s proposed replacement portfolio is approved, PNM
21 will have sufficient renewable resources to meet its RPS requirements through at
22 least 2024 and potentially into 2025/2026 depending on PNM’s retail load,
23 renewable generation during the 2021-2024 timeframe, and its ability to bank REC’s

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1 for use in the future. PNM does not anticipate any barriers to meeting the RPS
2 requirements in the near term. However, as time progresses and the RPS
3 requirements increase to 50% and 80% in 2030 and 2040 respectively, PNM will
4 continue to assess the reliability of its portfolio to determine if and when additional
5 flexible resources/storage are needed to manage renewable integration and/or
6 expand its transmission system in order to ensure PNM can geographically
7 diversify renewable resources as well as increase its ability to access markets. PNM
8 is also in the process of preparing its 2020 IRP. Through the IRP process, PNM
9 will be identifying when additional renewable procurements will likely need to
10 occur in order to meet the increased RPS requirements as well as other factors
11 required in order to reliably manage the increased volume of renewable resources.

12
13 **Q. HAVE THERE BEEN ANY CHANGES TO THE EXPECTED**
14 **COMMERICAL OPERATION DATES OF ANY RESOURCES EXPECTED**
15 **TO SUPPRT RPS COMPLIANCE DURING THE PLAN YEAR?**

16 **A.** Yes. As I described in the preceding answer, PNM has assumed for the purposes of
17 this filing that the renewable energy resources proposed as a part of PNM's
18 proposed replacement portfolio for the San Juan coal plant presented in Case No.
19 19-00195-UT are approved, even though PNM is still awaiting a Final Order in that
20 docket. Because project in-service dates are necessarily impacted by the timing of
21 the receipt of a final order, the commercial online date ("COD") of the Jicarilla 1
22 solar facility has been pushed back by the developer by approximately five months,
23 from November 30, 2021 to April 30, 2022. If approved by the Commission, PNM

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1 anticipates the resource will be available to aid in meeting PNM's summer peak in
2 2022.¹ The effects of this new COD on the 2021 RPS Plan are minimal and PNM
3 still expects a surplus of RECs in 2021 as presented by PNM Witness Gutierrez.
4

IV. NEW REPORTING REQUIREMENTS UNDER THE REA

5
6
7 **Q. THE 2019 AMENDMENTS TO THE REA ADDED NEW REPORTING**
8 **REQUIREMENTS FOR UTILITIES. DOES PNM'S 2021 PLAN ADDRESS**
9 **THESE NEW REQUIREMENTS?**

10 **A.** Yes, NMSA 1978, Section 62-16-4 (G) requires certain information to be filed by
11 a utility by July 1, 2020. Specifically, Paragraph (G) (2) requires:

12 the capital, operating and fuel costs on a per-megawatt-hour basis during the
13 preceding calendar year of each nonrenewable generation resource rate-based by
14 the utility, or dedicated to the utility through a power purchase agreement of one
15 year or longer, and the nonrenewable generation resources' carbon dioxide
16 emissions on a per-megawatt-hour basis during that same year;

17
18 The required information can be found in Section V of PNM's 2021 RPS plan
19 (Exhibit NLP-2).
20

¹ The new COD is predicated upon PRC approval by August 31, 2020.

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1 **Q. HOW WOULD YOU RECOMMEND THE COMMISSION AND OTHER**
2 **USERS TREAT THE INFORMATION PROVIDED IN RESPONSE TO**
3 **THE NEW REPORTING REQUIREMENT?**

4 As explained in more detail in the Plan, the information has limited applicability
5 and value when comparing resources and it should generally not be used to compare
6 one resource to another resource except for specific circumstances as discussed in
7 the Plan.

8

9 **Q. DID THE 2019 AMENDMENTS TO THE REA IMPOSE ADDITIONAL**
10 **REPORTING REQUIREMENTS?**

11 A. Yes. NMSA 1978, Section 62-16-4(G)(4) states that a utility must describe
12 “strategies used to minimize costs of renewable energy integration, including
13 location, diversity, balancing area activity, demand-side management and load
14 management.” These strategies are described in more detail in Section V of PNM’s
15 2021 RPS Plan, but generally include things such as bid diversity, resource
16 geographic diversity, transmission expansion, demand-side management, and
17 energy storage.

18

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1 **Q. ARE THERE ADDITIONAL NEW REPORTING REQUIREMENTS THAT**
2 **ARE NOT APPLICABLE TO THIS FILING?**

3 A. Yes. Paragraphs 62-16-4(G) (1) and (3) contain reporting requirements for new
4 renewable procurements. They are not applicable to this case because PNM is not
5 proposing any new procurement.

6

7 **V. REQUIREMENTS FROM CASE NO. 19-00159-UT**

8

9 **Q. PLEASE DESCRIBE THE REQUIREMENTS FROM THE FINAL ORDER**
10 **IN CASE NO. 19-00159-UT SPECIFIC TO THE 2021 PLAN.**

11 A. The Recommended Decision in Case No. 19-00159-UT, which was approved by
12 the Commission, states three requirements for PNM's 2020 RPS filing. First,
13 Decretal Paragraph D states:

14

15 The reset of PNM's 2020 Renewable Energy Rider No. 36 rate from
16 \$0.0066138 per kWh to \$0.0070504 per kWh, effective upon the date of the
17 Final Order in this case, filed under Advice Notice No. 562 as 16th Revised
18 Rider No. 36 is approved. The revenues recovered in excess of the \$8.7
19 million for the 2019 PNM owned solar facilities shall be accounted for in a
20 regulatory liability the disposition of which shall be determined in PNM's
21 next annual Renewable Energy Plan filing.

22

23 Mr. Baker addresses the revenue requirements for the 2019 solar facility in his
24 direct testimony.

25

26 Second, Decretal Paragraph G states:

27

28 With regard to the Lightning Dock PPA and the Consent Agreement, PNM
29 shall continue to comply with the reporting requirements established in

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1 Case No. 18-00158-UT. The need to continue the reporting requirements
2 shall be evaluated in PNM's next annual renewable energy plan filing in
3 2020.

4 I discuss these requirements in Section VII of my testimony.

5 Finally, Decretal Paragraph H states:

6 PNM shall include in its next Renewable Energy Plan filing a description
7 of PNM's future intentions regarding the recovery of its REA plan costs
8 through the Renewable Energy Rider. The description should include
9 PNM's intentions for renewable energy resource acquisitions through
10 traditional CCN and PPA approvals versus annual Renewable Energy
11 Plans and its intentions for cost recovery through base rates, the FPPCAC
12 and the Renewable Energy Rider. The description should consider the
13 increases in RPS requirements mandated in Senate Bill 489 of 2019 and
14 describe the reasonableness of PNM's approach.

15
16 I discuss this requirement below, and PNM witness Dr. Pitts describes the benefits
17 of PNM's continued use of Rider 36 in her Direct Testimony.

18
19 **Q. PLEASE DESCRIBE PNM'S CURRENT INTENTIONS REGARDING**
20 **RECOVERY OF ITS REA PLAN COSTS IN FUTURE YEARS.**

21 **A.** As discussed in more detail by PNM Witness Dr. Pitts, it is in PNM's customers'
22 best interest to continue to recover RPS-related costs through the existing
23 Renewable Energy Rider. PNM will be providing comments related to this issue
24 in the pending Rule 572 rulemaking docket as required by the order issued in that
25 docket on May 7, 2020.

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1 **Q. HOW WILL PNM DECIDE WHETHER A RENEWABLE RESOURCE**
2 **SHOULD BE PRESENTED FOR COMMISSION CONSIDERATION**
3 **THROUGH TRADITIONAL CCN OR PPA APPROVALS OR THROUGH**
4 **AN RPS FILING?**

5 A. Whether a renewable resource should be presented for Commission consideration
6 though an RPS filing or through traditional CCN/PPA filings will depend on
7 whether the resource acquisition is needed to comply with RPS requirements
8 (including timing of RPS increases and the legal requirement to make reasonable
9 and consistent progress over time toward the zero carbon goal by 2045); or whether
10 the resource was selected as a system resource by PNM portfolio modeling based
11 on superior economics and/or other characteristics.² If the former, the resource
12 should be considered via an RPS filing. If the latter, the resource should be
13 considered in a traditional CCN/PPA filing.

14

15 **VI. REQUESTED VARIANCES**

16

17 **Q. PLEASE DESCRIBE PNM'S REQUESTED VARIANCES FROM**
18 **SECTIONS OF COMMISSION RULE 572.**

19 A. As discussed above, some sections of the current version of Rule 572 are
20 inconsistent with recent amendments to the REA that took effect in 2019. PNM
21 requests a variance from the following sections:

² NMSA 1978, Section 62-16-4 (A)(1)(6)

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- 1 • Sections 17.9.572.7(C), 17.9.572.12, and 17.9.572.14(C) NMAC, which
2 provide a calculation of the RCT that is inconsistent with the RCT
3 described at Sections 62-16-3(E) and 62-16-4(E) of the REA, equal to “an
4 average annual levelized cost of sixty dollars (\$60.00)” per MWh;
- 5 • Sections 17.9.572.7(G) and 17.9.572.11 NMAC, which require utilities to
6 diversify the types of renewable energy resources in their portfolios
7 consistent with Section 62-16-4(A)(4) of the pre-2019 REA. Section 62-
8 16-4 of the REA no longer contains a diversity mandate;
- 9 • Sections 17.9.572.7(L) and (M), 17.9.572.12, and 17.9.572.16 NMAC,
10 which provide for adjustments to the RPS and RCT for certain exempt
11 governmental and large capped non-governmental customers consistent
12 with Section 62-16-4(A)(2) and (3) of the pre-2019 REA. Section 62-16-
13 4 of the REA no longer contains provisions relating to exempt customers
14 and large capped customers; and
- 15 • Section 17.9.572.17(C)(2) NMAC, which provides that RECs used for RPS
16 compliance “do not require physical delivery of the electric energy
17 represented by the certificate to a public utility,” consistent with Section
18 62-16-5(B)(1) of the pre-2019 REA. Section 62-16-4(A) of the REA now
19 provides that a “public utility shall meet the renewable portfolio standard
20 requirements... as demonstrated by its retirement of renewable energy
21 certificates; provided that the associated renewable energy is delivered to

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1 the public utility and assigned to the public utility's New Mexico
2 customers.”

3
4 **Q. WHY IS PNM REQUESTING A VARIANCE FROM THESE SECTIONS?**

5 **A.** PNM is requesting a variance so the current law can be properly applied to this
6 case without a corresponding update to Rule 572. PNM is requesting the variances
7 only to the extent the Commission deems them necessary to apply the REA to this
8 proceeding. As I mentioned above, a docket to consider revisions to Rule 572 has
9 been opened but the Rule has not been updated as of the date of this filing³.

10
11 **Q. WHY IS PNM REQUESTING A VARIANCE FROM THE DATA FILING
12 REQUIREMENTS OF RULE 530?**

13 **A.** Rule 530 requires the filing of extensive data schedules that are unnecessary for
14 review and approval of the Rider 36 rate PNM seeks approval of here. PNM is
15 requesting that the Commission grant a variance from the data filing requirements
16 of Rule 530 to the extent that it is required. The Commission has granted similar
17 variances from Rule 530 in the past, including PNM’s 2019 RPS filing. See *Final*
18 *Order Adopting Recommended Decision*, Case No. 19-00159-UT (January 29,
19 2020) and *Order Granting Variances*, Case No. 12-00007-UT (February 3, 2012).

20

³ Case No. 19-00296-UT.

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**VII. LIGHTNING DOCK REPORTING REQUIREMENTS PURSUANT
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**Q. PLEASE DESCRIBE PNM'S REPORTING REQUIREMENTS RELATED
TO LIGHTNING DOCK.**

A. Lightning Dock is a facility located near Lordsburg, New Mexico that generates electricity from geothermal resources. In Case No. 18-00158-UT, the Commission approved PNM's 2019 RPS Plan, which included an agreement between PNM and Staff to make certain reports regarding Lightning Dock in future REA plan filings.

These reporting requirements are to:

- State the annual energy output by the facility for the prior calendar year and the first three months of the following year;
- Identify any change or supplement, including assignments, to the Lightning Dock PPA or the Consent Agreement, and explain whether PNM believes the change or supplement is material;
- Report any seller Events of Default in the prior calendar year and up until the filing date of the testimony;
- Report any future bankruptcy proceeding related to the Lightning Dock procurement during the prior calendar year and up until the filing date of the testimony; and
- Report about changes, if any, to PNM's credit analysis of Lightning Dock and Cyrq Energy and, if no credit analysis was performed that year, include a simple explanation of why no new credit analysis was required.

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NICHOLAS L. PHILLIPS
NMPRC CASE NO. 20-00 ____-UT**

1 The Recommended Decision in Case No. 19-00159-UT continued these
2 requirements for PNM's 2020 RPS filing but stated that "the need to continue these
3 reporting requirements [shall] be evaluated in PNM's next annual renewable energy
4 plan filing in 2020."

5
6 Mr. Gutierrez addresses the first reporting requirement in his direct testimony; I
7 address the remaining requirements below. I will also address whether PNM should
8 be required to continue making this reporting in future RPS filings.

9
10 **Q. HAS THERE BEEN ANY CHANGE OR SUPPLEMENT, INCLUDING**
11 **ASSIGNMENTS, OF THE PPA OR THE CONSENT AGREEMENT SINCE**
12 **JUNE 4, 2018, THE DATE PNM ENTERED INTO THE CONSENT**
13 **AGREEMENT?**

14 **A.** No. Like last year's reporting, in which PNM Witness Thomas Fallgren reported
15 that there had been no changes to the PPA or the consent agreement, there have
16 been no changes or supplements, including assignments, in the past year.

17
18 **Q. WERE THERE ANY LIGHTNING DOCK EVENTS OF DEFAULT IN THE**
19 **PRIOR CALENDAR YEAR AND TO DATE IN 2020?**

20 **A.** No. Like last year's report, there were no events of default in 2019 or in 2020 to
21 date.

**DIRECT TESTIMONY OF
NICHOLAS L. PHILLIPS
NMPRC CASE NO. 20-00 ____-UT**

1 **Q. HAVE THERE BEEN ANY BANKRUPTCY PROCEEDINGS RELATED**
2 **TO THE LIGHTNING DOCK PROCUREMENT IN THE PRIOR**
3 **CALENDAR YEAR AND TO DATE IN 2020?**

4 **A.** No. As with last year's reporting, there were no bankruptcy proceedings in 2019
5 or in 2020 to date.

6

7 **Q. HAVE THERE BEEN ANY CHANGES TO PNM'S CREDIT ANALYSIS OF**
8 **LIGHTNING DOCK OR CYRQ ENERGY?**

9 **A.** No. PNM has not performed a new credit analysis of Lightning Dock or Cyrq
10 Energy as there have been no identified events, operational concerns, or other issues
11 that indicate potential changes in the previous credit analysis.

12

13 **Q. WERE THERE ANY OTHER DEVELOPMENTS RELATED TO**
14 **LIGHTNING DOCK THAT MAY BE OF INTEREST TO THE**
15 **COMMISSION?**

16 **A.** On March 30, 2020 Cyrq Energy informed PNM via a letter of a force majeure
17 event that would prevent them from being able to meet the forecasted output of the
18 plant for calendar year 2020 due to the current global Novel Coronavirus (COVID-
19 19) pandemic.

20

**DIRECT TESTIMONY OF
NICHOLAS L. PHILLIPS
NMPRC CASE NO. 20-00 ____-UT**

1 **Q. PLEASE EXPLAIN THE IMPACTS OF PANDEMIC ON THE OUTPUT OF**
2 **THE LIGHTNING DOCK FACILITY.**

3 A. Cyrq Energy has informed PNM that they are unable to perform required
4 maintenance on equipment at the plant as well as equipment associated with the
5 geothermal wells. The manufacturers who were expected to perform maintenance
6 during a prescheduled outage in early 2020 are located in Italy and France and are
7 facing travel restrictions due to COVID-19. In addition, Lightning Dock has also
8 seen domestically a reluctance of companies to perform other scheduled
9 maintenance due to the guidelines regarding social distancing and travel
10 restrictions. These conditions may impact the plant's generation.

11

12 **Q. PLEASE EXPLAIN WHAT THE RESULTS OF THIS FORCE MAJEURE**
13 **EVENT WILL BE ON ITS OUTPUT?**

14 A. Cyrq anticipates that the geothermal facility will experience a derate of
15 approximately 2 to 3 MW capacity for the remainder of calendar year 2020. This is
16 expected to result in a 25% decrease in overall generation and RECs (~19,000) from
17 the facility considering the deferment of the outage to the fourth quarter of 2020.
18 At this point, Cyrq is expecting the pandemic to impact only 2020 and anticipates
19 normal production once the maintenance has been performed.

20

**DIRECT TESTIMONY OF
NICHOLAS L. PHILLIPS
NMPRC CASE NO. 20-00 ____-UT**

1 **Q. DOES PNM BELIEVE THE REPORTING REQUIREMENTS**
2 **ESTABLISHED IN CASE NO. 18-00158-UT SHOULD BE CONTINUED?**

3 A. The concerns that gave rise to the reporting requirements appear to have abated,
4 with two consecutive years of no information to report. As such, continued
5 reporting may be unwarranted. However, the reporting requires relatively little
6 resources. PNM can continue to provide the requested information if Staff finds it
7 valuable. PNM will update the Commission on the impact of the COVID-19
8 pandemic on the Lightning Dock procurement in 2020 regardless of any decision
9 about the reporting requirements from Case No. 18-00158-UT.

10

11 **VIII. CONCLUSION**

12

13 **Q. PLEASE SUMMARIZE THE REASONS WHY PNM'S 2021 PLAN IS IN**
14 **THE PUBLIC INTEREST AND SHOULD BE APPROVED.**

15 A. The 2021 Plan is in the public interest because it satisfies the policy goals
16 established in the REA and the applicable requirements of Rule 572. All the
17 existing renewable resources and those under construction that are used to meet
18 PNM's RPS are located in New Mexico, deliver energy to PNM, and have been
19 previously approved by the Commission. For these reasons, PNM's 2021 Plan is in
20 the public interest and therefore should be approved.

21

22 **Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?**

23 A. Yes.

GCG#526920

NICHOLAS L. PHILLIPS

EDUCATIONAL AND PROFESSIONAL SUMMARY

Address: Public Service Company of New Mexico
414 Silver Avenue, SW, MS-0915,
Albuquerque, New Mexico 87102

Position: Director, Integrated Resource Planning, June 2019 to present

Education: Bachelor of Science in Electrical Engineering, Washington University in St. Louis/University of Missouri - St. Louis Joint Engineering Program

Master of Engineering in Electrical Engineering, Electric Power and Energy Systems, Iowa State University of Science and Technology

Master of Science in Computational Finance and Risk Management, University of Washington Seattle

Employment: Employed by Public Service Company of New Mexico since 2019.

Principal with Brubaker & Associates, Inc. ("BAI"), a consulting firm specializing in public utility regulation, energy and economics.

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

Testimony/Affidavits Presented Before:

Kansas Public Service Commission
Michigan Public Service Commission
Missouri Public Service Commission
Wisconsin Public Service Commission
Wyoming Public Service Commission
California Public Utilities Commission
Nevada Public Utilities Commission
Idaho Public Utilities Commission
Federal Energy Regulatory Commission
New Mexico Public Regulation Commission

Case No. 13-00390-UT	PNM's SJGS Units 1 and 4 Abandonment
Case No. 15-00261-UT	PNM's 2015 General Rate Case
Case No. 15-00312-UT	PNM's AMI Application
Case No. 16-00276-UT	PNM 2016 General Rate Case
Case No. 17-00044-UT	SPS Application for Wind CCN & PPA
Case No. 19-00018-UT	PNM's SJGS Units 2 and 3 Abandonment
CaseNo. 19-00195-UT	PNM's SJGS Replacement Resources Application
CaseNo. 20-00087-UT	PNM's Energy Efficiency 2021 Plan Application

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF PUBLIC SERVICE)
COMPANY OF NEW MEXICO'S)
APPLICATION FOR APPROVAL OF ITS)
RENEWABLE ENERGY ACT PLAN)
FOR 2021 AND PROPOSED 2021 RIDER)
RATE UNDER RATE RIDER NO. 36,)
)
PUBLIC SERVICE COMPANY OF NEW)
MEXICO,)
)
Applicant.)
_____)

Case No. 20-00____-UT

PUBLIC SERVICE COMPANY OF NEW MEXICO'S
RENEWABLE ENERGY ACT PLAN
FOR 2021

June 1, 2020

I. INTRODUCTION

Public Service Company of New Mexico (“PNM” or “Company”) files this Renewable Energy Act Plan for 2021 (“2021 Plan” or “Plan”) pursuant to the Renewable Energy Act (“REA”), NMSA 1978, §§ 62-16-1 to -10, as amended through 2019, and 17.9.572 NMAC (“Rule 572”) of the rules of the New Mexico Public Regulation Commission (“NMPRC” or “Commission”). The Plan is supported by the testimony and exhibits of PNM witnesses Nicholas Phillips, Shane Gutierrez, Thomas Baker, Heidi Pitts, and Alaric Babej.

II. SUMMARY OF 2021 PLAN

The 2021 Plan shows that PNM expects to fully comply with its Renewable Portfolio Standard (“RPS”) requirements in 2021 and 2022 using existing resources approved by the Commission, as well as through the La Joya II wind project, expected to begin production in late 2020. PNM will recover the costs of implementing the 2021 Plan, including costs for registering and retiring renewable energy certificates (“REC”) in the Western Renewable Energy Generation Information System (“WREGIS”) through an adjusted rate for PNM’s Renewable Energy Rider, Rider No. 36, effective January 1, 2021.

III. RPS AND RCT CALCULATIONS

PNM’s projected RPS requirements and the corresponding portfolio procurement costs and net compliance costs for 2021 are shown in Table 1.

In summary, Table 1 shows the following:

- RPS Requirement: PNM’s projected Net RPS Goal, after taking into account adjustments for voluntary tariff sales, is 1,584,892 MWh in 2021 and 1,585,466 MWh in 2022.
- RPS Compliance: PNM projects that it will meet the RPS requirements in 2021 and 2022.

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RENEWABLE ENERGY ACT PLAN FOR 2021**

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- Resource Diversity: PNM has requested a variance from Rule 572's diversity requirements on the ground they are not consistent with the 2019 amendments to the REA.

PNM 2021 RPS Plan- Table 1

RPS Requirement	2021
Annual Retail Sales (MWh)	8,894,850
(-) Voluntary Tariff Sales (MWh)	970,388
Net Annual Retail Sales (MWh)	7,924,462
RPS (%)	20%
RPS (MWh)	1,584,892
RPS Compliance & Diversity	2021
Portfolio RECs	1,584,892
Portfolio REC Shortfall	0
Portfolio Percent of Annual Sales (%)	20.0%
Portfolio Percent of RPS Goal (%)	100%
Wind Diversity (%)	71%
Solar Diversity (%)	20%
Other Diversity (%)	4%
DG Diversity (%)	5%
Portfolio Cost	2021
Net Portfolio Cost (\$)	\$40,788,444

IV. RENEWABLE ENERGY RESOURCES

PNM's renewable energy portfolio consists of the resources shown below, all of which have been presented to the Commission in previous cases. The costs associated with registering and retiring RECs with WREGIS is currently \$0.008 per MWh-REC.

Existing Wind:

- New Mexico Wind Energy Center ("NMWEC"): This is a 200 MW wind generation facility located in eastern New Mexico that is owned and operated by NextEra Energy Resources. Under a 25-year purchased power agreement ("PPA"), PNM purchases all of the energy and MWh-RECs produced by NMWEC. The NMWEC was declared in-service in October 2003. As part of

the approvals in Case No. 17-00129-UT, the NMWEC was re-powered with new wind turbine blades and nacelles in 2018 and the term of the PPA was extended to 2045. A portion of the NMWEC output is used to supply energy and MWh-RECs for the Sky Blue program (“PNM Sky Blue”) that PNM offers pursuant to Rule 572.18. MWh-RECs used for PNM Sky Blue sales are not used for RPS compliance, consistent with Rule 572.10(A). The projected number of NMWEC MWh-RECs available for RPS compliance, excluding those MWh-RECs retired for PNM Sky Blue, is 606,106 MWh-RECs in 2021 and 606,661 MWh-RECs in 2022. The gross cost for NMWEC generation and MWh-RECs is projected to be \$16.5 million in 2021 and 2022.

- Red Mesa Wind Energy Center: This is a 102 MW wind facility located in Cibola County, about 50 miles west of Albuquerque. PNM has a 20-year PPA to procure energy and MWh-RECs from this facility. Purchases under the PPA began in January 1, 2015. The energy is delivered to PNM at the Red Mesa station on the Kermac-West Mesa transmission line. Annual production is expected to be 208,223 MWh in both 2021 and 2022 and the gross cost is projected to be \$6.5 million in 2021 and \$6.6 million in 2022.

- La Joya Wind Facility, Phase 2 (“La Joya II”): This is a new 140 MW wind facility 18 miles east of Estancia, New Mexico in Torrance County. PNM has a 20-year PPA to procure energy and MWh-RECs from this facility beginning in 2021. Annual production is expected to be 537,163 MWh in 2021 and 2022. The gross cost for La Joya II generation and MWh-RECs is projected to be \$9.4 million in both 2021 and 2022.

Existing and Proposed Solar:

Table 2 summarizes the PNM-owned solar facilities previously approved by the NMPRC and included in the Plan. PNM anticipates that the generation from PNM’s solar facilities will total 386,239 MWh in 2021 and 875,126 MWh in 2022. The 2022 number includes the Jicarilla I and

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RENEWABLE ENERGY ACT PLAN FOR 2021**

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Arroyo solar facilities for which PNM is seeking Commission approval as part of its San Juan coal plant replacement resources case, Case No. 19-00195-UT. While the cost of the 2015 solar facilities is collected through base rates rather than Rider 36, the Commission authorized PNM to use the MWh-RECs for RPS compliance. While the costs of the 2015 solar facilities themselves are recovered in base rates, not through Rider 36, the cost of registering and retiring the associated MWh-RECs in WREGIS is included the 2021 Rider 36 rate. Similarly, PNM intends to retire the cost of registering and retiring the MWh-RECs associated with the Jicarilla 1 and Arroyo solar facilities through Rider 36, and to recover the remaining costs through base rates.

PNM 2021 RPS Plan- Table 2

Year Constructed	Facility Size in MW	NMPRC Case Reference	Generation in MWh For RPS Compliance		Gross Cost (millions)	
			2021	2022	2021	2022
2006 or earlier	0.03 ^a	05-00356-UT	80	79	\$0.0	\$0.0 ^b
2011	22.5 ^c	10-00077-UT	46,469	46,234	\$4.9	\$4.7
2013	20 ^d	12-00131-UT	45,314	45,087	\$3.2	\$3.1
2014	23	13-00183-UT	59,959	59,659	\$3.6	\$3.5
2015	40	14-00158-UT	95,468	94,752	\$0.00	\$0.00
2019	50	17-00129-UT	138,950	137,908	\$7.5	\$7.2
2020	50	19-00195-UT ^e		96,809		\$0.00
2021	300	19-00195-UT ^e		394,598		\$0.00
Totals						
			386,239	875,126	\$19.2	\$18.4

- a. MWII-RECs from these facilities are weighted at 3-to-1 for RPS compliance purposes.
- b. Compliance cost each year is a savings of approximately \$1,000.
- c. Includes a 0.5 MW solar generation/storage facility.
- d. Excludes a 1.5 MW solar facility dedicated to supplying PNM's Sky Blue Program.
- e. Approvals pending.

Existing “Other”:

- **Geothermal:** The Dale Burgett Geothermal Facility (also known as the Lightning Dock geothermal facility) generates electricity using geothermal resources and is located in the Animas Valley in Hidalgo County, about 20 miles southwest of Lordsburg, New Mexico. PNM purchases the energy and associated MWh-RECs from this facility under a PPA with a term of 20 years. The plant went into service in January 2014. Based on projections by the plant operator, the amount of energy and MWh-RECs to be delivered to PNM from this facility is 77,000 MWh-RECs in both 2021 and 2022. The projected gross cost for MWh-RECs from this facility is approximately \$7.4 million in 2021 and \$7.6 million in 2022.

Existing Distributed Generation:

PNM purchases MWh-RECs generated by customer-sited DG solar energy systems under several Customer Solar Purchase Programs as described in Table 3. These include the Small Photovoltaic (“PV”) REC Purchase Program (“Small PV Program”), Large Photovoltaic REC Purchase Program (“Large PV Program”), Solar REC Incentive Programs (“SIP”), the Customer Solar REC Purchase Program (“CSPP”), and Capacity Reservation Program.

PNM projects that customer-sited solar DG facilities collectively will generate 102,156 MWh-RECs in 2021 and 105,765 MWh-RECs in 2022, for an annual gross cost of \$6.4 million in 2021 and 2022.

The current status of PNM’s solar MWh-REC purchase programs is shown in Table 3:

PNM 2021 RPS Plan- Table 3

PROGRAM:	SMALL PV REC PURCHASE PROGRAM
<u>Program Start:</u>	Initially approved in Case No. 05-00356-UT. Implemented as of March 1, 2006.
<u>Term:</u>	12 years; first year contracts begin expiring in 2018
<u>Project Size:</u>	Solar systems sized up to 10 kW _{AC}

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Participation: 721 participants
Installed Capacity: 3,227 kW_{AC}
Program Status: Closed to new participants per the Final Order Partially Adopting Recommended Decision in Case No. 10-00037-UT, issued on August 31, 2010. The first 295 customers rolled off this rate after the termination date of 12/31/2018. The second round of customers rolled off this rate

PROGRAM: LARGE PV REC PURCHASE PROGRAM
Program Start: Initially approved in Case No. 08-00221-UT. Implemented as of March 1, 2009.
Term: 20 years; first year contracts begin expiring in 2029
Project Size: Solar systems sized above 10 kW_{AC} up to 1 MW_{AC}
Participation: 71 participants
Installed Capacity: 7,990 kW_{AC}
Program Status: Closed to new participants per the Final Order Partially Adopting Recommended Decision in Case No. 10-00037-UT, issued on August 31, 2010.

PROGRAM: SOLAR REC INCENTIVE PROGRAM (INCLUDES INTERIM SIP)
Program Start: Initially approved in Case No. 10-00037-UT. Implemented as of November 6, 2010.
Term: 12 years for systems up to 10kW_{AC}; first year contracts begin expiring in 2022
Term: 20 years for systems sized above 10kW_{AC} up to 1 MW_{AC}; first year contracts begin expiring in 2030
Project Size: Solar systems sized up to 1 MW_{AC}
Participation: 1,829 participants
Installed Capacity: 18,988 kW_{AC}
Program Status: Closed to new participants per the Final Order 11-00265 UT.

PROGRAM: CUSTOMER SOLAR REC PURCHASE PROGRAM
Program Start: Initially approved in Case No. 12-00131-UT. Implemented as of January 1, 2013.
Term: 8 years; first year contracts begin expiring in 2021
Project Size: Solar systems sized up to 100 kW_{AC}.
Participation: 2,445 participants
Installed Capacity: 13,151 kW_{AC}
Program Status: Open to new participants.

PROGRAM: SOLAR REC PURCHASE PROGRAM (CASE NO 13-00390-UT STIPULATION)
Program Start: Initially approved in Case No. 13-00390-UT Stipulation.
Project Size: Solar systems sized up to 10 kW_{AC} (Small) and sized above 10 kW_{AC} to 100 kW_{AC}.
Contract Term: 8 years. First contracts start to expire 1/1/2025

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Participation: 265 participants
Installed Capacity: 2,496 kW_{AC}
Pending: 25 applications are currently pending (as of 12/31/18)
Program Status: 3 year program, applications were accepted through 2019.

PROGRAM: **CAPACITY RESERVATION PROGRAM**
Program Start: Initially approved in Case No. 11-00265-UT.
Project Size: Solar systems sized above 100 kW_{AC} up to 1 MW_{AC}.
Contract Term: Until December 31, 2020.

2012 Capacity Reservation

Program Start: Approved in Case No. 11-00265-UT for calendar year 2012.
Participation: 0 participants
Installed Capacity: 0 kW_{AC}
Pending: 0 applications are pending
Program Status: Closed to new participants.

2013 Capacity Reservation

Program Start: Approved in Case No. 12-00131-UT for calendar year 2013.
Participation: 1 participant
Installed Capacity: 147 kW_{AC}
Program Status: Closed to new participants.

2014 Capacity Reservation

Program Start: Approved in Case No. 13-00183-UT for calendar year 2014.
Participation: 4 participants
Installed Capacity: 1,336 kW_{AC}
Pending: 0 applications are pending project completion and interconnection
Program Status: Closed to new participants.

2015 Capacity Reservation

Program Start: Approved in Case No. 14-00158-UT for calendar year 2015.
Participation: 6 participants
Installed Capacity: 1,243 kW_{AC}
Pending: 0 applications are pending project completion and interconnection
Program Status: Closed to new participants.

2016 Capacity Reservation

Program Start: Approved in Case No. 15-00166-UT for calendar year 2016.
Participation: 7 participants
Installed Capacity: 854 kW_{AC}

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Pending: 0 applications are pending project completion and interconnection
Program Status: Closed to new participants.

There was no 2017 Capacity Reservation Program per the Final Order in Case No. 16-00148-UT, due to RCT constraints.

2018 Capacity Reservation

Program Start: Approved in Case No. 17-00129-UT for calendar year 2018.
Participation: 5 participants
Installed Capacity: 861 kW_{AC}
Pending: 4 applications are pending project completion and interconnection (as of 12/31/18)
Program Status: Closed to new participants.

2019 Capacity Reservation

Program Start: Approved in Case No. 18-00158-UT for calendar year 2019.
Participation: 0 participants
Installed Capacity: 0 kW_{AC}
Pending: 7 applications are pending project completion and interconnection (as of 5/17/19)
Program Status: Closed to new participants.

2020 Capacity Reservation (YTD)

Program Start: Approved in Case No. 19-00159-UT for calendar year 2020.
Participation: 0 participants
Installed Capacity: 0 kW_{AC}
Pending: 7 applications are pending project completion and interconnection (as of 5/17/19)
Program Status: Open to new participants.

V. SECTION 62-16-4 (G) REQUIREMENTS

NMSA 1978, Section 62-16-4 requires certain information to be filed by a utility as part of a procurement plan by July 1, 2020. Specifically, Sections 62-16-4 (G) (1) and (3) require:

- (1) the cost of procurement for new renewable energy required to comply with the renewable portfolio standard;
-

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RENEWABLE ENERGY ACT PLAN FOR 2021**

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(3) information, including exhibits, as applicable, that demonstrates that the proposed procurement:

- (a) was the result of competitive procurement that included opportunities for bidders to propose purchased power, facility self-build or facility build-transfer options;
- (b) has a cost that is reasonable as evidenced by a comparison of the price of electricity from renewable energy resources in the bids received by the public utility to recent prices for comparable energy resources elsewhere in the southwestern United States; and
- (c) is in the public interest, considering factors such as overall cost and economic development opportunities;

PNM is not requesting any new resources as a part of this Plan, therefore sub-sections (1) and (3) are not applicable to this Plan.

62-16-4 (G)(2) requires:

the capital, operating and fuel costs on a per-megawatt-hour basis during the preceding calendar year of each nonrenewable generation resource rate-based by the utility, or dedicated to the utility through a power purchase agreement of one year or longer, and the nonrenewable generation resources' carbon dioxide emissions on a per-megawatt-hour basis during that same year;

Please see Appendix A for the information on PNM's nonrenewable generation resources.

Section 62-16-4(G)(4) states that a utility must describe "strategies used to minimize costs of renewable energy integration, including location, diversity, balancing area activity, demand-side management and load management."

PNM has implemented several strategies to minimize the cost of renewable integration. A key aspect of minimizing the cost of renewable integration is by obtaining a large diversity of bids from a competitive, all-source RFP and enhancing the flexibility of PNM's system to better manage renewable generation resources. Additional steps will be needed going forward, including increasing the geographical diversity of renewable resources and decrease the volatility of

renewable energy output. In order to realize geographical diversity, PNM will be required to expand its transmission system. Expansion of the transmission system will allow PNM to provide geographic diversity in renewable resources and could also allow increase ability to access neighboring markets and facilitate purchases in times of need. PNM will also be looking for the most economic and strategic places to site energy storage resources and other technologies that will be required as PNM increases to a carbon free system. Storage and low or zero-carbon emitting flexible capacity resources will be critical to integrate high levels of renewable resources. Storage will likely go beyond lithium ion batteries as many different forms and durations of storage will be needed to fully transition to a carbon free system along with other technologies. This is why PNM formed a technology advisory committee and conducted a Request for Information regarding new technologies in order to help inform PNM's upcoming 2020 Integrated Resource Plan ("IRP"). PNM will continue to explore new technologies beyond the 2020 IRP as well. PNM will continue to pursue economic demand-side programs ("DSM"). As the PNM system transitions to 80% RPS and 100% carbon free, however, the value proposition of DSM programs will change due to the low (or zero) variable cost of renewable resources and periods when the system will have renewable energy production in excess of load. PNM's upcoming IRP will explore many of these issues in detail as PNM charts its course for a carbon-free future. Finally, PNM will also be joining the California Independent System Operator Western Energy Imbalance Market ("EIM"). In order to participate in the EIM, PNM will have to demonstrate that it can be self-sufficient entering into each hour, meaning PNM cannot rely on the EIM to provide reliability and operating reserves PNM could not provide for itself. However, once PNM demonstrates that it can be self-sufficient, PNM is then allowed to participate in intra-hour redispatch that can potentially reduce the costs of operating reserves and its ability to integrate renewable resources.

Increasing the flexibility of PNM's system will increase the benefits realized from participating in the EIM.

VI. RENEWABLE RIDER RATE FOR 2021

In Case No. 12-00007-UT the Commission authorized PNM to implement Rider 36 to recover the costs of renewable resources approved by the Commission for RPS compliance, including the costs of WREGIS registration. In Case No. 15-00261-UT the Commission authorized PNM to continue using Rider 36. The Rider 36 rate is adjusted annually, effective each January 1st to account for new Commission-approved procurements, changes in estimated revenue requirements for previously-approved procurements and projections of kWh sales. Rider 36 is "reconciled" or "trued-up" in a filing, made by February 28th annually, to account for actual revenue requirements and sales during the prior year and updated projections for the then-current year. Costs that are recovered in base rates or through PNM's Fuel and Purchased Power Cost Adjustment Clause are not included in the Rider 36 revenue requirement, nor are revenue requirements for any facilities that are not yet in service.

PNM projects that the revenue requirement to be recovered during 2021 through Rider 36, including WREGIS fees, will be \$67,769,085 To recover these costs, PNM is requesting approval of a Rider 36 rate to be effective January 1, 2021 of \$0.0085525 per kWh.

GCG#526918

2021 Renewable Portfolio Plan Appendix A
Non-Renewable Facilities
Required Reporting Under Section 62-16-4 (G) (2)

		2019				
		Generation (MWh)	Emissions CO2 lbs/MWh (Note 1)	Fuel \$/MWh (Note 2)	Operating \$/MWh (Note 2)	Capital \$/MWh (Note 3)
San Juan Generating Station	Owned	3,059,337	2,577	\$30.71	\$14.20	\$10.05
Four Corners Power Plant	Owned	1,205,885	2,084	\$31.59	\$10.13	\$11.40
Palo Verde Nuclear Generating Station	Owned	3,255,777	-	\$6.65	\$18.25	\$14.28
Afton	Owned	876,416	964	\$11.72	\$6.13	\$10.27
Luna	Owned	383,389	844	\$13.57	\$10.40	\$15.29
Lordsburg	Owned	19,906	1,312	\$107.59	\$61.67	\$79.90
La Luz	Owned	19,460	1,236	\$67.04	\$27.21	\$85.53
Reeves	Owned	188,048	1,535	\$27.58	\$24.41	\$24.73
Rio Bravo	Owned	269,483	1,394	\$21.36	\$9.60	\$18.33
Valencia	PPA	83,547	1,331	\$275.89	N/A	N/A

Note 1: PNM's Response for EEI Electric Company CO2 Emissions and Resource Mix Reporting

Note 2: Generation (MWh), Fuel and Operating costs are based on PNM's FERC Form 1, page 402-403. Valencia fuel costs are from PNM's general ledger and include demand charges.

Note 3: Capital costs include depreciation expense and capital additions during 2019 based on PNM's general ledger

Note 4: PNM has provided the "capital, operating and fuel costs on a per-megawatt-hour basis" as required by NMSA 1978, Section 62-16-4(G)(2). However, this data is of limited utility and is generally not valid in comparing resources to each other except in specific circumstances. The per-megawatt-hour costs in this table is not indicative of the value of the associated resources to PNM's system and customers. Comparing resources on a per-megawatt-hour basis is only valid when comparing like-for-like resources, and best suited for non-capacity resources that incur costs solely as a function of providing energy, such as PPAs that only include a \$/MWh charge. Consider, for example, an energy storage resource such as a battery. A battery does not produce any energy itself, it only stores energy produced by another resource. The cost of that energy is a function of the other resources that actually produce the energy used to charge the battery. Consequently, the \$/MWh cost of the battery would be infinite since it produces no energy on its own. But the battery does provide capacity value. Non-renewable resources like a combined cycle or gas peaking plant also provide capacity value. The value of capacity is typically related to the fixed costs of a resource, or in the context of a PPA/ESA, the demand or capacity charge. In order to maintain reliability, PNM must have enough installed, accredited capacity to meet the highest instantaneous customer demand plus a reserve margin. Once PNM makes an investment in these facilities, the costs continue to be incurred, irrespective of the number of kilowatt hours generated and sold or the number of customers taking service. This translates to fixed cost investments/obligations that do not vary with energy production but allow PNM to meet its customer demands (net of renewable generation) in the hours throughout a year when net demands are at peak. It is not valid to lump these types of investments into a \$/MWh representation and then compare them to other \$/MWh costs that do not provide the same reliability and firm capacity.

Furthermore, because fixed costs do not vary with energy production, differences in energy production from year to year will cause the \$/MWh costs to vary, even if the total fixed cost dollars themselves do not change. The required increase in renewable energy production to serve PNM's customers and comply with the increasing RPS will cause energy production from existing traditional carbon emitting resources to decrease over time. However, the fixed costs associated with those existing resources will not decrease proportionally with the reduction in energy production because many fixed costs are sunk costs that cannot be avoided with a reduction in energy production. Furthermore, those existing traditional resources provide additional capacity and reliability benefits that cannot be measured or deduced by analyzing a single \$/MWh cost. This is why PNM does not use a simplistic leveled cost of energy (\$/MWh) approach when evaluating system resources. Instead, PNM utilizes complex system modeling tools that examine fixed and variable costs of resources on a net present value basis when determining the lowest reasonable cost to reliably meet customer requirements.

GCG#526919

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF PUBLIC SERVICE)
COMPANY OF NEW MEXICO'S)
RENEWABLE ENERGY ACT PLAN)
FOR 2021 AND PROPOSED 2021 RIDER)
RATE UNDER RATE RIDER NO. 36,)
)
PUBLIC SERVICE COMPANY OF NEW)
MEXICO,)
)
)
Applicant.)
_____)

Case No. 20-00 ____ -UT

SELF AFFIRMATION

NICHOLAS L. PHILLIPS, Director, Integrated Resource Planning upon penalty of perjury under the laws of the State of New Mexico, affirm and state: I have read the foregoing **Direct Testimony of Nicholas L. Phillips** and it is true and correct based on my personal knowledge and belief.

GIVEN AND SIGNED this 30th day of May, 2020.

/s/ Nicholas L. Phillips
NICHOLAS L. PHILLIPS