

# Existing System Information

---

2014-2033 INTEGRATED RESOURCE PLAN

---



Talk to us.



---

# INTRODUCTION

---

This document provides data about PNM's existing demand-side and supply-side resources that are important in the modeling and analysis performed in integrated resource planning. The information includes PNM-owned and purchased generating resources and the transmission system currently used by PNM to serve customers. Resources and their transmission paths, where applicable, are presented in the order of: (1) demand-side resources, (2) purchases through net-metering programs, (3) supply-side resources, and (4) transmission services.

# ENERGY EFFICIENCY

## ENERGY SAVINGS

Program Annual Energy Savings (MWH)	Oct. 2007 – Dec. 2008	2009	2010	2011	2012	Total
RESIDENTIAL LIGHTING	24,142	15,663	20,583	18,682	31,222	110,292
REFRIGERATOR RECYCLING	5,745	4,614	7,312	5,741	6,372	29,785
ENERGY STAR HOMES	158	839	831	391	275	2,493
LOW INCOME CFLS AND REFRIGERATORS	-	312	1,245	867	1,030	3,454
EASY SAVINGS	-	3,377	2,390	2,401	2,164	10,332
CFL EXCHANGE	1,942	877	342	-	-	3,161
COMMUNITY CFL				13	242	255
ENERGY SAVER KIT	130	-	-	-	-	130
ENERGY SMART FOR RENTERS				-	103	103
ADVANCED EVAPORATIVE COOLING	17	1	-	-	-	18
COMMERCIAL LIGHTING	2,043	6,594	-	-	-	8,637
COMMERCIAL COMPREHENSIVE	-	6,707	26,104	28,204	36,564	97,579
COMMERCIAL SELF DIRECT	1,034	243	-	253	168	1,698
DEMAND RESPONSE	-	665	-	1,046	1,181	2,892
TOTALS	35,211	39,892	58,808	57,598	79,321	270,830

# ENERGY EFFICIENCY

## CAPACITY SAVINGS

Program Annual Demand Savings (KW)	Oct. 2007 – Dec. 2008	2009	2010	2011	2012	Total
RESIDENTIAL LIGHTING	5,533	1,836	2,783	2,378	3,816	16,346
REFRIGERATOR RECYCLING	939	798	1,179	981	1,090	4,987
ENERGY STAR HOMES	93	494	596	280	197	1,660
LOW INCOME CFLS AND REFRIGERATORS	-	39	145	101	116	401
EASY SAVINGS	-	295	220	221	199	935
CFL EXCHANGE	445	101	39	-	-	585
COMMUNITY CFL				2	28	30
ENERGY SAVER KIT	22	-	-	-	-	22
ENERGY SMART FOR RENTERS				-	12	12
ADVANCED EVAPORATIVE COOLING	14	1	-	-	-	15
COMMERCIAL LIGHTING	322	1,136	-	-	-	1,458
COMMERCIAL COMPREHENSIVE	-	1,478	4,902	5,655	8,141	20,176
COMMERCIAL SELF DIRECT	129	125	-	121	22	397
DEMAND RESPONSE	47,365	53,410	67,032	56,900	57,413	NA
TOTALS	54,862	59,714	76,896	66,639	71,034	NA

# CUSTOMER SITED DISTRIBUTED GENERATION

## CUSTOMER SITED SOLAR PROGRAMS

Year	Cumulative Number of Participants	Cumulative KW <sub>AC</sub> Installed	Annual RECs MWh	Peak Hour Generation KW <sub>AC</sub> (55% of capacity)
2006	93	164	413	90
2007	187	348	1,593	191
2008	368	748	3,525	411
2009	708	2,124	7,132	1,168
2010	1,342	6,165	13,611	3,391
2011	2,192	14,208	26,767	7,814
2012	2,994	19,894	41,914	10,942
2013	3,292	21,411	TBD	11,776

# CUSTOMER SITED DISTRIBUTED GENERATION

## CUSTOMER SITED SOLAR PROGRAMS

Year	Cumulative Number of Participants	Cumulative KW <sub>AC</sub> Installed	Annual RECs MWh	Peak Hour Generation KW <sub>AC</sub> (55% of capacity)
2006	93	164	413	90
2007	187	348	1,593	191
2008	368	748	3,525	411
2009	708	2,124	7,132	1,168
2010	1,342	6,165	13,611	3,391
2011	2,192	14,208	26,767	7,814
2012	2,994	19,894	41,914	10,942
2013	3,292	21,411	TBD	11,776

# SUPPLY SIDE RESOURCES

---

## SUMMARY

---

Resource Name	Fuel	Owned or Contracted
PNM-Owned Solar	Solar	Owned
New Mexico Wind Energy Center	Wind	Contracted
Four Corners Power Plant	Coal	Owned
San Juan Generating Station	Coal	Owned
Palo Verde Generating Station	Uranium	Owned/Leased
Afton Generating Station	Natural Gas	Owned
Delta-Person Generating Station	Natural Gas/Oil	Contracted
Lordsburg Generating Station	Natural Gas	Owned
Luna Energy Facility	Natural Gas	Owned
Reeves Generating Station	Natural Gas	Owned
Valencia Energy Facility	Natural Gas	Contracted

# SUPPLY SIDE RESOURCES

## PNM-OWNED SOLAR

Resource Name	Location*	In-Service	Nameplate Capacity (MW)	Peak Contribution Capacity (MW)
<i>In-Service Solar, Approved in the 2012 Renewable Energy Procurement Plan</i>				
Albuquerque Solar Energy Center	NNM	4/8/11	2	1.1
Los Lunas Solar Energy Center	NNM	6/1/11	5	2.75
Deming Solar Energy Center	SNM	8/8/11	5	2.75
Las Vegas Solar Energy Center	NNM	12/15/11	5	2.75
Alamogordo Solar	SNM	10/15/11	<u>5</u>	<u>2.75</u>
Subtotal			22	12.1
<i>Solar Approved in the 2013 Renewable Energy Procurement Plan, Not Yet In Service</i>				
Manzano Solar Energy Center	NNM	10/11/13	8	4.4
Los Lunas Solar Energy Center	NNM	10/18/13	2	1.1
Deming Solar Energy Center	SNM	11/7/13	4	2.2
Otero Solar Energy Center	SNM	11/18/13	7.5	4.1
Subtotal			21.5	11.8
<i>Solar Pending Approval as part of the 2014 Renewable Energy Procurement Plan</i>				
Solar Energy Center 1	NNM	12/1/14	8	6
Solar Energy Center 2	NNM	12/15/14	8	6
Solar Energy Center 3	NNM	12/31/14	<u>7</u>	<u>5</u>
Subtotal			23	18
Total, In-Service, Approved, and Pending			66.5	42



# SUPPLY SIDE RESOURCES

## NEW MEXICO WIND ENERGY CENTER PPA HISTORIC PRODUCTION

	Actual/Project Generation kWh	Capacity Factor %
2003	212,758,650	25.3
2004	513,587,466	28.7
2005	513,068,170	28.7
2006	528,429,020	29.6
2007	500,560,130	28.0
2008	577,507,590	32.2
2009	533,288,970	29.8
2010	552,241,257	30.9
2011	579,899,880	32.5
2012	545,321,000	30.5

# SUPPLY SIDE RESOURCES

## PNM OWNED RATE-BASED GENERATION

Generating Resource	In-Service Date	Retirement Date	Location	Unit Capacity (MW)	PNM Capacity (MW)	Ownership Share %	Fuel Type	Duty Cycle	Comments
<b>CCN Granted/ Resources In Service</b>									
Palo Verde Unit 1	1986	2045	Wintersburg, AZ	1,314	134	10.20%	Nuclear	Base	30 MW owned 104MW leased
Palo Verde Unit 2	1986	2046		1,314	134	10.20%	Nuclear	Base	60 MW owned 74 MW leased
San Juan Unit 1	1976	After 2033	Waterflow, NM	340	170	50%	Coal	Base	--
San Juan Unit 2	1973			340	170	50%	Coal	Base	--
San Juan Unit 3	1979			497	248	50%	Coal	Base	209 MW PNM Operating Share
San Juan Unit 4	1982	After 2033		507	195	38.5%	Coal	Base	234 MW PNM Operating Share
Four Corners Unit 4	1969	After 2033	Fruitland, NM	770	100	13%	Coal	Base	--
Four Corners Unit 5	1970	After 2033		770	100	13%	Coal	Base	--

# SUPPLY SIDE RESOURCES

## PNM OWNED RATE-BASED GENERATION (CONTINUED)

Generating Resource	In-Service Date	Retirement Date	Location	Unit Capacity (MW)	PNM Capacity (MW)	Ownership Share %	Fuel Type	Duty Cycle	Comments
Afton CC	2007	After 2033	La Mesa, NM	230	230	100%	Natural Gas	Intermediate	--
Luna CC	2006	After 2033	Deming, NM	558	185	33%	Natural Gas	Intermediate	Approved rate base in 2008
Lordsburg Unit 1	2002	After 2033	Lordsburg, NM	40	40	100%	Natural Gas	Peaking	provides 40 MW fast-start
Lordsburg Unit 2	2002	After 2033		40	40				provides 40 MW fast-start
Reeves Unit 1	1960	After 2030	Albuquerque, NM	44	44	100%	Natural Gas	Peaking	53 years old
Reeves Unit 2	1959			44	44				54 years old
Reeves Unit 3	1962			66	66				51 years old
Solar PV	Various	2041-2044	Various	43.53	43.5	100%	Solar	Intermittent	--
<b>CCN Filed/Approval Pending</b>									
La Luz	2016	2046	Valencia County, NM	40	40	100%	Natural Gas	Peaking	Pending Approval Case
Solar PV	2015	2045	Various	23	23	100%	Solar	Intermittent	2014 REPP
<b>Total</b>					2,007				

# SUPPLY SIDE RESOURCES

## PNM CONTRACTED GENERATION

PNM Purchases	Contract Term	Contract Capacity (MW)	Reserve Margin Contribution (MW)	Fuel Type	Duty Cycle
<b>Resources In Service</b>					
Delta-Person Generating Station	Contract through June 2020	132	132	Natural Gas/Oil	Peaking
NM Wind Energy Center	Contract through July 2028	200	10	Wind	Intermittent
Valencia Energy Facility	Contract through May 2028	158	150	Natural Gas	Peaking
<b>Resources Pending Approval</b>					
Red Mesa Wind Energy Facility	January 1, 2015 – December 31, 2035	102	5	Wind	Intermittent
<b>Total</b>		<b>592</b>	<b>297</b>		

# SUPPLY SIDE RESOURCES

## O&M COSTS FOR EXISTING GENERATION

Resource	Units	PNM Share (MW)	Fuel Type or Source	Ave Heat Rate (Btu/kWh)	2012 Undepreciated Gross Cost of Plant* (\$/kW)	2012 O&M* (\$/MWh)	2012 Fuel (\$/MWh)	2012 Equivalent Availability (%)	2012 Forced Outage Rate (%)
<b>Owned Resources</b>									
PNM Owned Solar		22	Solar		3,966	11.17			
Palo Verde	1,2	268	Uranium	10,300	974	34.34	9.03	90.6%	1.4%
Afton		230	Nat. Gas	7,750	917	9.97	30.29	93.5%	4.4%
Lordsburg	1,2	80	Nat. Gas	9,600	690	67.89	171.97	98.3%	4.2%
Luna		185	Nat. Gas	7,450	338	12.17	39.31	91.2%	2.2%
Reeves	1,2,3	154	Nat. Gas	10,949	459	78.03	78.03	88.7%	1.0%
Four Corners	4,5	200	Coal	9,850	729	8.46	18.88	80.65%	15.2%
San Juan	1,2,3,4	783	Coal	10,750	1,202	10.66	34.69	81.70%	8.70%
Prosperity		.5	Battery		6,811	18.67			
<b>Contracted Resources</b>									
Resource	Units	PNM Share (MW)	Fuel Type or Source	Ave Heat Rate (Btu/kWh)	2012 Capital Charge* (\$/kWYr)	2012 O&M* (\$/MWh)	2012 Fuel (\$/MWh)	2012 Equivalent Availability (%)	2012 Forced Outage Rate (%)
Delta-Person		132	Nat. Gas/Oil	10,600	260	60.33	50.69	Unknown	Unknown
NM Wind Energy Center		200	Wind		27.25 \$/MWh				
Valencia		145	Nat. Gas	10,600	130	26.96	64.39	Unknown	Unknown

# SUPPLY SIDE RESOURCES

## EMISSION RATES FOR EXISTING GENERATION

Facility/Unit	2012 Net Generation MWh	2012 NO <sub>x</sub> lbs/kWh	2012 CO lbs/kWh	2012 SO <sub>2</sub> lbs/kWh
Afton Generating Station	466,725	0.0001293	0.0002189	0.0000047
Delta-Person Generating Station	8,795	0.0046390	Not Available	0.0000523
Four Corners Power Plant	1,214,786	0.0036070	Not Available	0.0011666
Lordsburg Generating Station	17,273	0.0013003	0.0010108	0.0000073
Luna Energy Facility	334,647	0.0001184	0.0002619	0.0000054
New Mexico Wind Energy Center	545,321	0.0000000	0.0000000	0.0000000
Palo Verde Generating Station	3,257,316	0.0000000	0.0000000	0.0000000
PNM-Owned Solar	51,876	0.0000000	0.0000000	0.0000000
Reeves Generating Station	64,642	0.0028879	0.0001151	0.0000081
San Juan Generating Station	4,937,050	0.0030532	0.0026578	0.0008799
Valencia Energy Facility	48,404	0.0004173	Not Available	0.0000072

# SUPPLY SIDE RESOURCES

## EMISSION RATES FOR EXISTING GENERATION (CONTINUED)

Facility/Unit	2012 Net Generation MWh	2012 PM lbs/kWh	2012 CO <sub>2</sub> lbs/kWh	2012 Hg lbs/kWh
Afton Generating Station	466,725	0.0000628	0.9346995	Not reported
Delta-Person Generating Station	8,795	Not Available	0.5009665	Not reported
Four Corners Power Plant	1,214,786	Not Available	1.4793649	0.000000008
Lordsburg Generating Station	17,273	0.0000812	1.4614717	Not reported
Luna Energy Facility	334,647	0.0000269	1.0494303	Not reported
New Mexico Wind Energy Center	545,321	0.0000000	0.0000000	0.000000000
Palo Verde Generating Station	3,257,316	0.0000000	0.0000000	0.000000000
PNM-Owned Solar	51,876	0.0000000	0.0000000	0.000000000
Reeves Generating Station	64,642	0.0000975	1.5922775	Not reported
San Juan Generating Station	4,937,050	0.0000581	2.2756163	0.0000000007
Valencia Energy Facility	48,404	Not Available	0.7142592	Not reported

# SUPPLY SIDE RESOURCES

## WATER USE RATES FOR EXISTING GENERATION

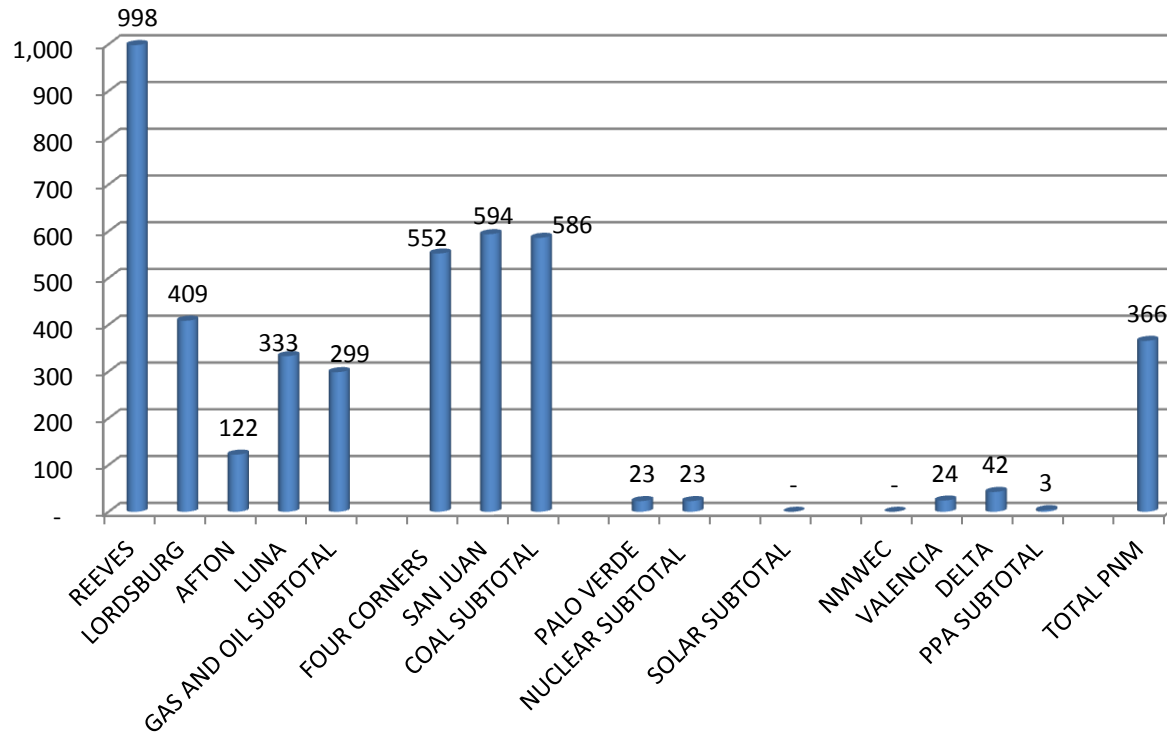
Facility	2011 – 2012 Average Water Usage gal/MWh
Afton Generating Station	122
Delta-Person Generating Station	42
Four Corners Power Plant	552
Lordsburg Generating Station	409
Luna Energy Facility	333
New Mexico Wind Energy Center	0
Palo Verde Generating Station	23
PNM-Owned Solar	0
Reeves Generating Station	998
San Juan Generating Station	594
Valencia Energy Facility	24



# SUPPLY SIDE RESOURCES

## WATER USE INTENSITY FOR EXISTING RATE-BASED GENERATION

### 2011 - 2012 Average Gal/MWh



# TRANSMISSION

## WECC PATH 47 AND PATH 48

