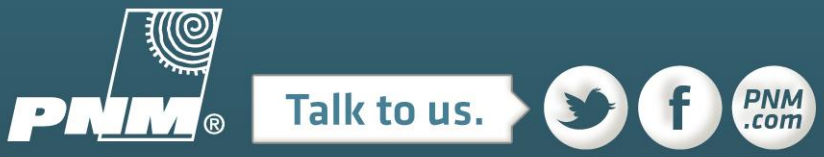
PNM 2014-2033 Integrated Resource Plan

SEPTEMBER 17, 2013



AGENDA

TODAY, SEPTEMBER 20TH, AND SEPTEMBER 26TH

- Tuesday, September 17th: Process
- Friday, September 20th: Assumptions
- Thursday, September 26th: Next Steps

Today's agenda

- Welcome, Introductions and Safety
- Ground Rules
- IRP Goals
- Describe IRP Process
- Illustrate Process
- Wrap Up and Discuss Next Meeting

Pat O’Connell

PNM Director, Planning and Resources

SAFETY AND LOGISTICS

- Fire escape routes via stairways at east and west ends of hallway; please let us know if you require special handicap egress or special assistance
- We must obey any fire or emergency alarm; even drills/test alarms
- Restrooms – Women's room at west end; Men's room at east end
- Must sign-in with security desk each time you enter the building

MEETING GROUND RULES

- Questions and comments are welcome; please be mindful of our time constraints
- Comments should be respectful of all participants
- Use name tents to indicate you have a comment or question
- Reminder; today's presentation is not PNM's plan or a financial forecast, it is an illustration of the IRP modeling process

DISCLOSURE REGARDING FORWARD LOOKING STATEMENTS

The information provided in this presentation contains scenario planning assumptions to assist in the Integrated Resource Plan public process and should not be considered statements of the company's actual plans. Any assumptions and projections contained in the presentation are subject to a variety of risks, uncertainties and other factors, most of which are beyond the company's control, and many of which could have a significant impact on the company's ultimate conclusions and plans. For further discussion of these and other important factors, please refer to reports filed with the Securities and Exchange Commission. The reports are available online at www.pnmresources.com.

The information in this presentation is based on the best available information at the time of preparation. The company undertakes no obligation to update any forward-looking statement or statements to reflect events or circumstances that occur after the date on which such statement is made or to reflect the occurrence of unanticipated events, except to the extent the events or circumstances constitute material changes in the Integrated Resource Plan that are required to be reported to the New Mexico Public Regulation Commission (NMPRC) pursuant to Rule 17.7.4 New Mexico Administrative Code (NMAC).

IRP GOALS

PNM'S 2014-2033 INTEGRATED RESOURCE PLAN

- 20-year resource planning horizon
- Revisit plan every three years
- Create a four-year action plan
- Improve plan through public advisory process
- File with NM Public Regulation Commission for review & acceptance

Legislation:

- New Mexico Public Utility Act – 62-3-1 et.seq. NMSA
- Efficient Use of Energy Act – 62-17 NMSA

NMPRC Rules:

- Integrated Resource Plans for Electric Utilities – 17.7.3 NMAC
- Renewable Energy for Electric Utilities – 17.9.572 NMAC
- Energy Efficiency – 17.7.2 NMAC

IRP GOALS

BALANCE

IRP PROCESS

Collect Assumptions

- Data
  - Existing System
  - Known Technologies
- Projections
  - Demand
  - Prices
  - Regulations

Plan to Understand Risks

- Define Scenarios
- Identify Sensitivities

Analyze

- Model Potential Solutions
- Identify best solutions using a range of criteria
- Test best solutions under range of assumptions

Evaluate

- What works best under most conditions?
- Which risks are easiest to mitigate?
- Most cost effective portfolio
- 4 year action plan

Report

- Document the process
- File with NMPRC by June 30, 2014

COLLECT ASSUMPTIONS

DATA EXAMPLE: LOAD AND RESOURCE TABLE

PUBLIC SERVICE COMPANY OF NEW MEXICO

Load and Resource Projections for Summer Peak - 2014 IRP PA Process

		2013	2014	2015	2016	2017	2018	2019	2020	2021
(1)	Current Forecasted System Peak Demands	2,000	2,022	2,042	2,054	2,082	2,096	2,108	2,116	2,138
(2)	Forecasted Incremental Customer Sited PV	(6)	(17)	(18)	(19)	(21)	(22)	(22)	(21)	(21)
(3)	Forecasted Incremental Energy Efficiency	(12)	(24)	(35)	(44)	(55)	(63)	(68)	(77)	(80)
(4)	**Net System Peak Demand (MW)**	**1,982**	**1,981**	**1,990**	**1,991**	**2,006**	**2,012**	**2,018**	**2,017**	**2,036**
(5)	Four Corners	200	200	200	200	200	200	200	200	200
(6)	San Juan	783	783	783	783	783	783	783	783	783
(7)	**Total Coal Resources (MW)**	983	983	983	983	983	983	983	983	983
(8)	Palo Verde	268	268	268	268	268	268	268	268	268
(9)	**Total Nuclear Resources (MW)**	268	268	268	268	268	268	268	268	268
(10)	Reeves	154	154	154	154	154	154	154	154	154
(11)	Afton	230	230	230	230	230	230	230	230	230
(12)	Luna	185	185	185	185	185	185	185	185	185
(13)	Lordsburg	80	80	80	80	80	80	80	80	80
(14)	Valencia (Purchase)	155	155	155	155	155	155	155	155	155
(15)	Delta-Person	132	138	138	138	138	138	138	138	138
(15)	*La Luz - (Pending)*				*40*	*40*	*40*	*40*	*40*	*40*
(16)	**Total Natural Gas Resources (MW)**	936	942	942	982	982	982	982	982	982
(17)	Total Demand Response Programs (MW, net of losses)	48	50	52	52	54	54	54	54	54
(18)	NM Wind Energy Center (Purchase)	10	10	10	10	10	10	10	10	10
(19)	Utility Scale Solar PV (22 MW in 2011 + 20 MW in 2013)	13	25	24	24	24	24	24	24	24
(20)	Utility Scale Prosperity Battery Demo (net of losses)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
(21)	PNM Sky Blue - 1.5 MW Solar		1	1	1	1	1	1	1	1
(22)	2013 Renewable Plan Resource - 10 MW Geothermal		6	6	6	6	6	6	6	6
(23)	*2014 Renewable Plan Resource - 102 MW Wind (Pending)*			*5*	*5*	*5*	*5*	*5*	*5*	*5*
(24)	*2014 Renewable Plan Resource - 23 MW Solar PV (Pending)*			*18*	*18*	*18*	*18*	*18*	*18*	*18*
(25)	**Total Renewable Resources (MW)**	23	41	65	65	64	64	64	64	64
(26)										
(27)	**Total System Resources (MW)**	**2,259**	**2,284**	**2,309**	**2,349**	**2,351**	**2,351**	**2,351**	**2,351**	**2,351**
(28)	**Reserve Margin (MW)**	**277**	**304**	**320**	**358**	**345**	**339**	**333**	**334**	**314**
(29)	**Reserve Margin (%)**	**14.0%**	**15.3%**	**16.1%**	**18.0%**	**17.2%**	**16.9%**	**16.5%**	**16.5%**	**15.4%**

COLLECT ASSUMPTIONS

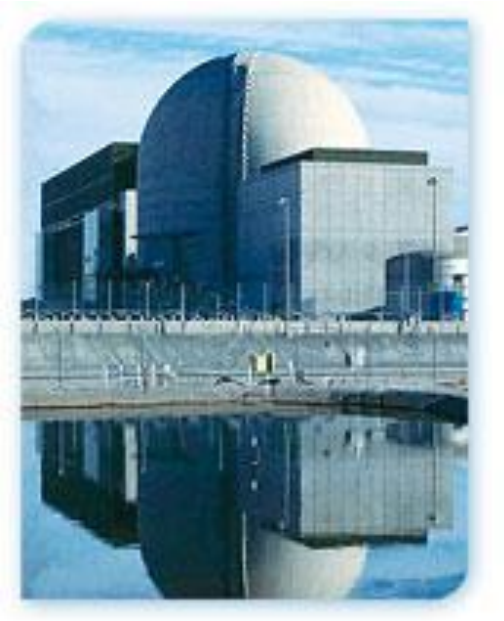
DATA EXAMPLE: KNOWN TECHNOLOGIES

2014 IRP: Generation Costs and Performance Data for New Alternatives - 1st Draft

	Gas Resources							Coal & Nuclear		Renewables						
Resource	**Aero Turbine**	**Gas Turbine (small)**	**Gas Turbine (large)**	**Gas Turbine (large)**	**Combined Cycle**	**Combined Cycle**	**Reciprocating Engines**	**Coal w/carbon capture**	**Nuclear**	**Solar Trough**	**Solar Trough (storage)**	**Solar PV**	**Solar PV**	**Wind**	**Biomass**	**Geothermal**
IRP Reference Year	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	See Data Below		
Construction Escalation, %	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%			
O&M Escalation, %	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%			
IRP Database (Adjusted for Reference Year)																
IRP Size, MW	40	85	143	177	204	250	93	200	200	50	50	20	20			
Total Plant Cost, $/kW	1,431	1,425	880	778	1,425	1,229	1,328	4,034	4,305	3,575	6,246	1,999	2,000			
AFUDC, $/kW	74	78	46	110	143	167	70	741	1,279	342	597	47	46			
Total Owners Costs, $/kW	104	140	78	90	173	114	90	330	439	242	416	-	-			
Total Capital, $/kW	1,609	1,643	1,004	977	1,741	1,511	1,488	5,105	6,023	4,159	7,259	2,046	2,046			
Year 1st Available	2017	2017	2017	2017	2018	2018	2017	2020	2020	2018	2018	2016	2017			
Total Capital, k$	$ 64,340	$ 139,692	$ 140,624	$ 172,972	$ 354,439	$ 376,955	$ 138,380	$ 1,021,020	$ 1,204,539	$ 207,974	$ 362,973	$ 45,560	$ 45,104			
IRP Performance and O&M																
IRP Size, MW	40	85	143	177	204	250	93	200	200	50	50	20	20			
Fixed O&M, $/kWyr	19.36	17.42	12.03	7.41	26.92	32.54	23.73	79.24	100.34	344.61	365.77	17.11	17.53			
Variable O&M, mills/kwh	4.77	3.63	9.69	8.23	2.55	3.94	1.05	9.30	5.64	3.22	2.04	-	-			
Equivalent Availability	95%	95%	95%	95%	95%	89%	98%	92%	94%	N/A	N/A	N/A	N/A			
Heat rate, Btu/kWH	9,800	9,150	10,142	9,790	7,104	6,946	8,900	13,250	10,510	No Fuel Conversion to Heat, so N/A						
PPA Alternative																
RFP Reference Year														2015	2015	2014
PPA Alternative - COE ($/MWh) @ RFP														$ 45.52	$ 113.23	$ 131.49
IRP Reference Year														2014	2014	2014
PPA Alternative - COE ($/MWh) @ IRP														$ 44.41	$ 110.47	$ 131.49
Emissions Data																
CO(lbs/MWh)	0.12	0.28	0.18	0.17	0.12	0.11	0.26	0.00							0.10	
NOx (lbs/MWh)	0.08	0.11	0.39	0.37	0.08	0.05	3.65	0.47							0.70	
Particulate (lbs/MWh)	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.27							0.23	
SO2 (lbs/MWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25							0.13	
CO2 (lbs/MWh)	1140	1115	1300	1245	845	820	980	280							2,728	
Mercury (lbs/kWh)																

COLLECT ASSUMPTIONS

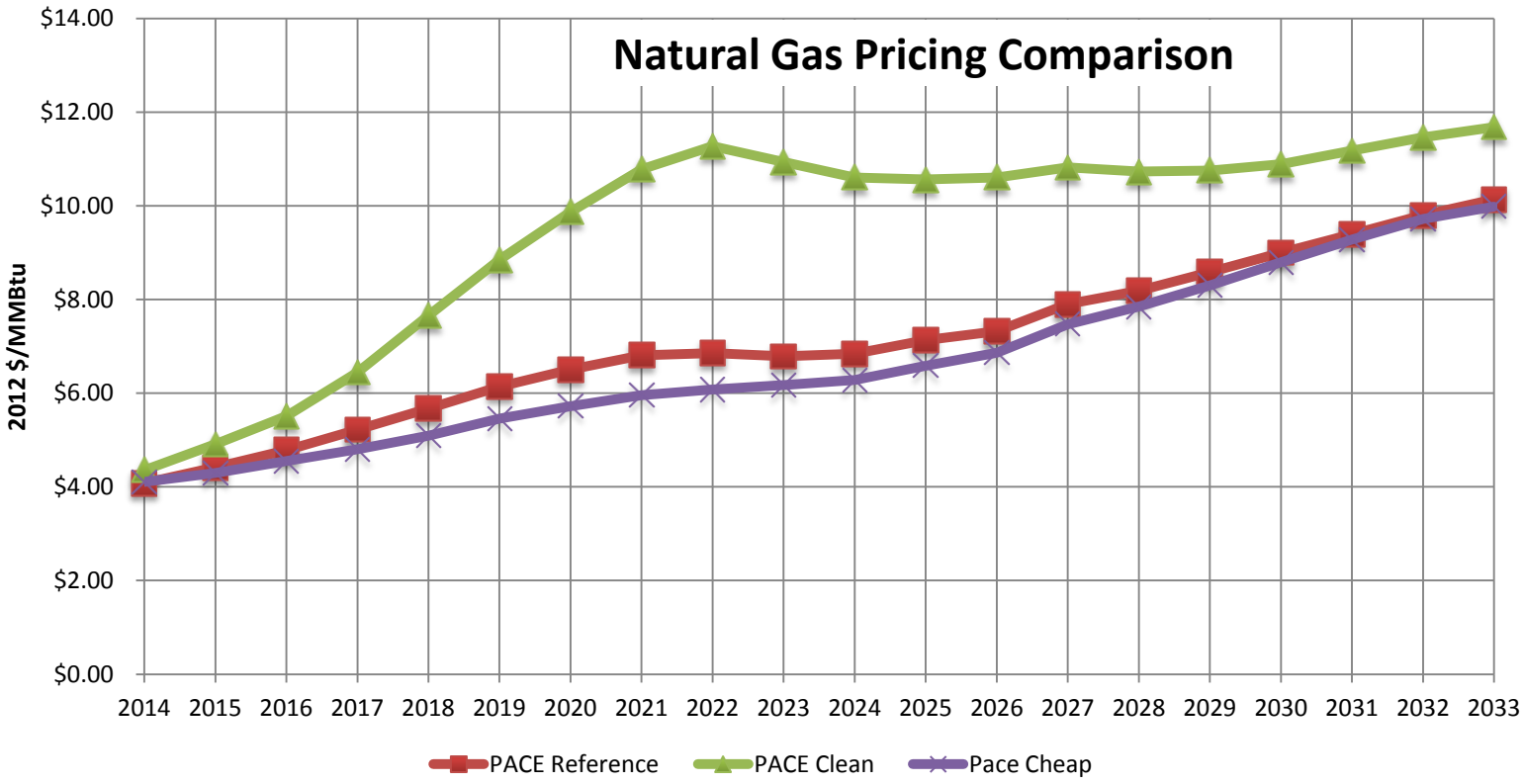
DATA EXAMPLE: KNOWN TECHNOLOGIES – PALO VERDE UNIT 3



- Newest unit of the three unit Palo Verde Nuclear Generating Station
- PNM owns or leases 10.2% of all three units
- On line in 1988, has a Nuclear Regulatory Commission license to operate through 2047
- PNM is exploring the possible inclusion of Palo Verde Unit 3 as part of the replacement portfolio

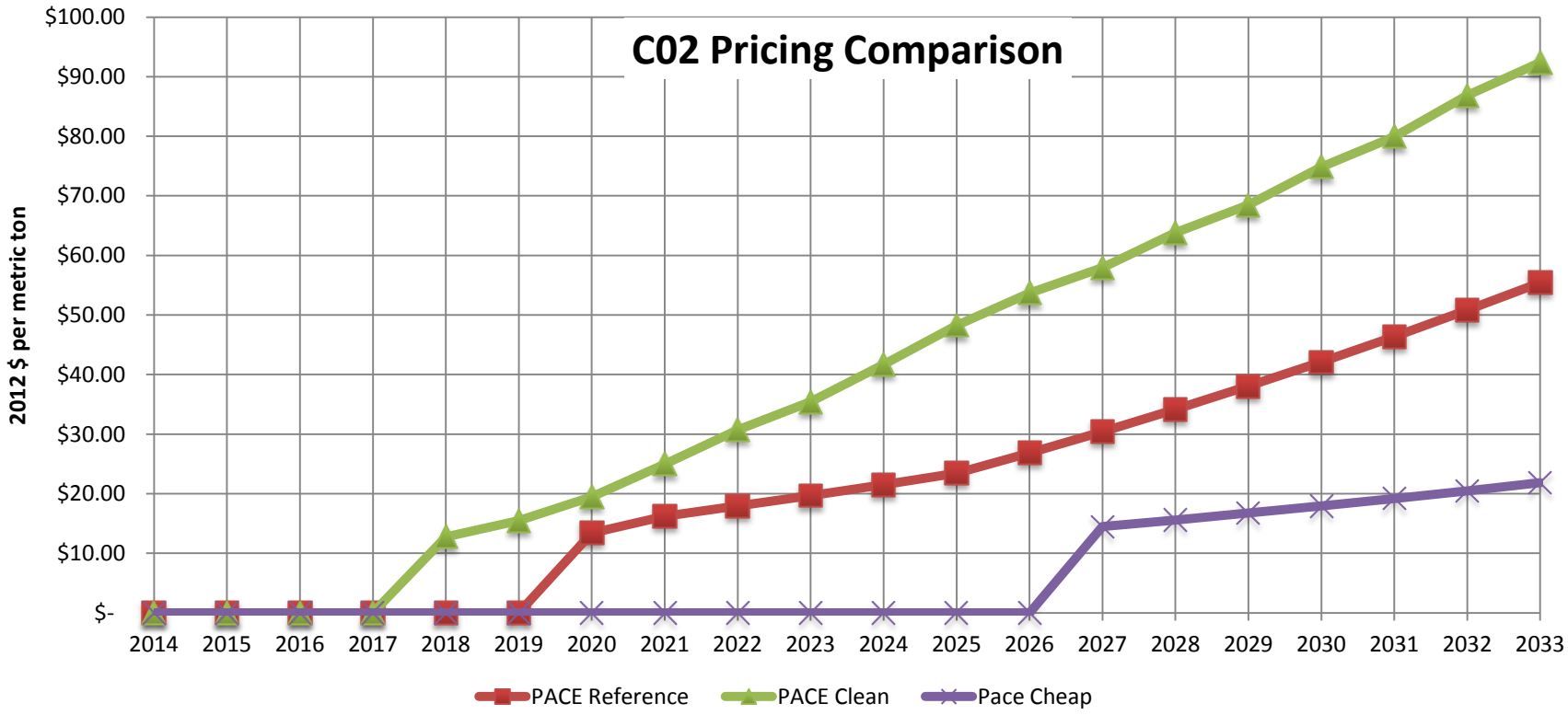
COLLECT ASSUMPTIONS

PROJECTIONS EXAMPLE: NATURAL GAS PRICES



COLLECT ASSUMPTIONS

PROJECTIONS EXAMPLE: CARBON PRICES



PLAN TO UNDERSTAND RISKS

SCENARIOS EXAMPLE: SJGS REGIONAL HAZE RULE SCENARIOS

Revised State Implementation Plan

- Approved by the New Mexico Environmental Improvement Board September 5
- Requires retiring SJGS Units 2 and 3 by end of 2017
- Requires installation of Selective Non Catalytic Reduction technology on SJGS Units 1 and 4 by January 31, 2016, assuming EPA approval by November 2014

Federal Implementation Plan

- Current requirement is Federal Implementation Plan
- Requires installation of Selective Catalytic Reduction technology on all four units
- Revised SIP is less expensive and will result in greater environmental benefits for same visibility improvement

PLAN TO UNDERSTAND RISKS

SENSITIVITY EXAMPLES: PVNGS UNIT 3 PRICE & SOLAR CONSTRUCTION COST

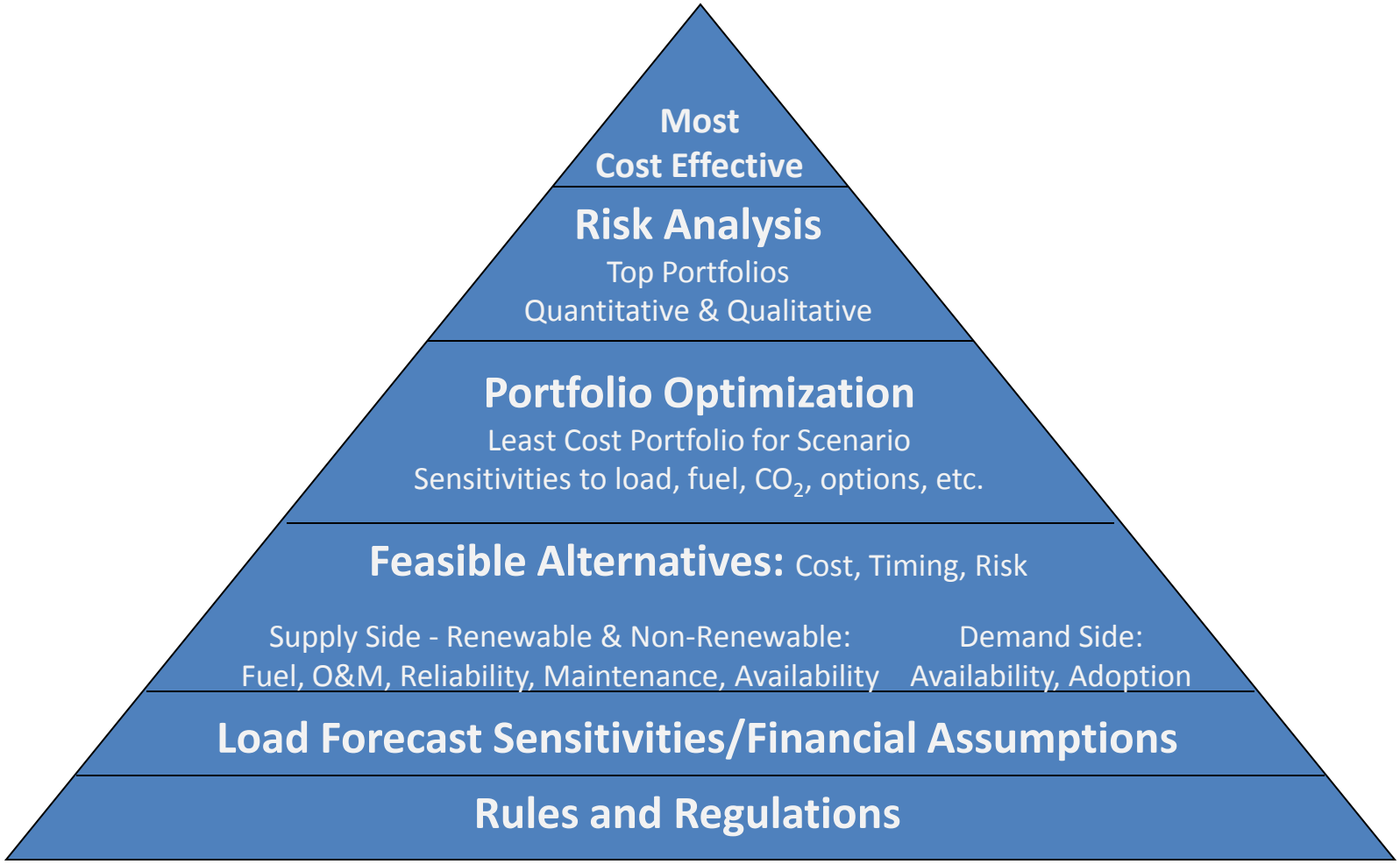
PVNGS Unit 3

- Currently a non-jursidictional resource
- Benefit to the portfolio depends upon cost

Single Axis Tracking Solar Photovoltaic

- Price of solar has declined over the past four years
- PNM's first single axis tracking systems are currently pending before the NMPRC
- Vary construction cost and capability to meet peak demand to determine benefits and risks

ANALYZE



ANALYZE

PORTFOLIO OPTIMIZATION: STRATEGIST®

- **The Strategist**® model is a proprietary software product of Ventyx, Inc. It is widely used in the electric utility industry as a comprehensive resource planning tool.

- Strategist® builds thousands of possible portfolio alternatives over a 20-year plan horizon. The model calculates cost for each. This includes determining which resources would be dispatched to meet demand.

- All portfolios are ranked by net present value cost. The top-ranked portfolio is the least cost resource mix for that scenario

ANALYZE

PORTFOLIO OPTIMIZATION ILLUSTRATION – REVISED SIP WITHOUT PALO VERDE UNIT 3

Revised SIP at SJGS

- Install SNCR on Units 1 and 4
- Retire SJGS Units 2 and 3 by December 31, 2017

New generation sources

- 40 MW Single Axis Tracking Solar PV in 2016
- Acquire additional capacity in SJGS Unit 4 (currently assuming 79 MWs)
- 177 MW Heavy Frame Gas CT online in Q1 2018
- 80 MW of Aeroderivative gas peakers in 2018
- 20 MW Single Axis Tracking Solar PV in 2018

ILLUSTRATE PROCESS

PORTFOLIO OPTIMIZATION ILLUSTRATION – REVISED SIP WITH PALO VERDE UNIT 3

Revised SIP at SJGS

- Install SNCR on Units 1 and 4
- Retire SJGS Units 2 and 3 by December 31, 2017

New generation sources

- 40 MW Single Axis Tracking Solar PV in 2016
- Acquire additional capacity in SJGS Unit 4 (currently assuming 79 MWs)
- 134 MW PVNGS Unit 3 to coincide with SJGS retirement
- 177 MW Heavy Frame Gas CT online in Q1 2018

ILLUSTRATE PROCESS

PORTFOLIO OPTIMIZATION ILLUSTRATION – FEDERAL IMPLEMENTATION PLAN

FIP at SJGS

- Install SCR at SJGS

New generation sources

- 40 MW Single Axis Tracking Solar PV in 2016

ANALYZE

SENSITIVITY AND QUANTITATIVE RISK RESULTS ILLUSTRATION

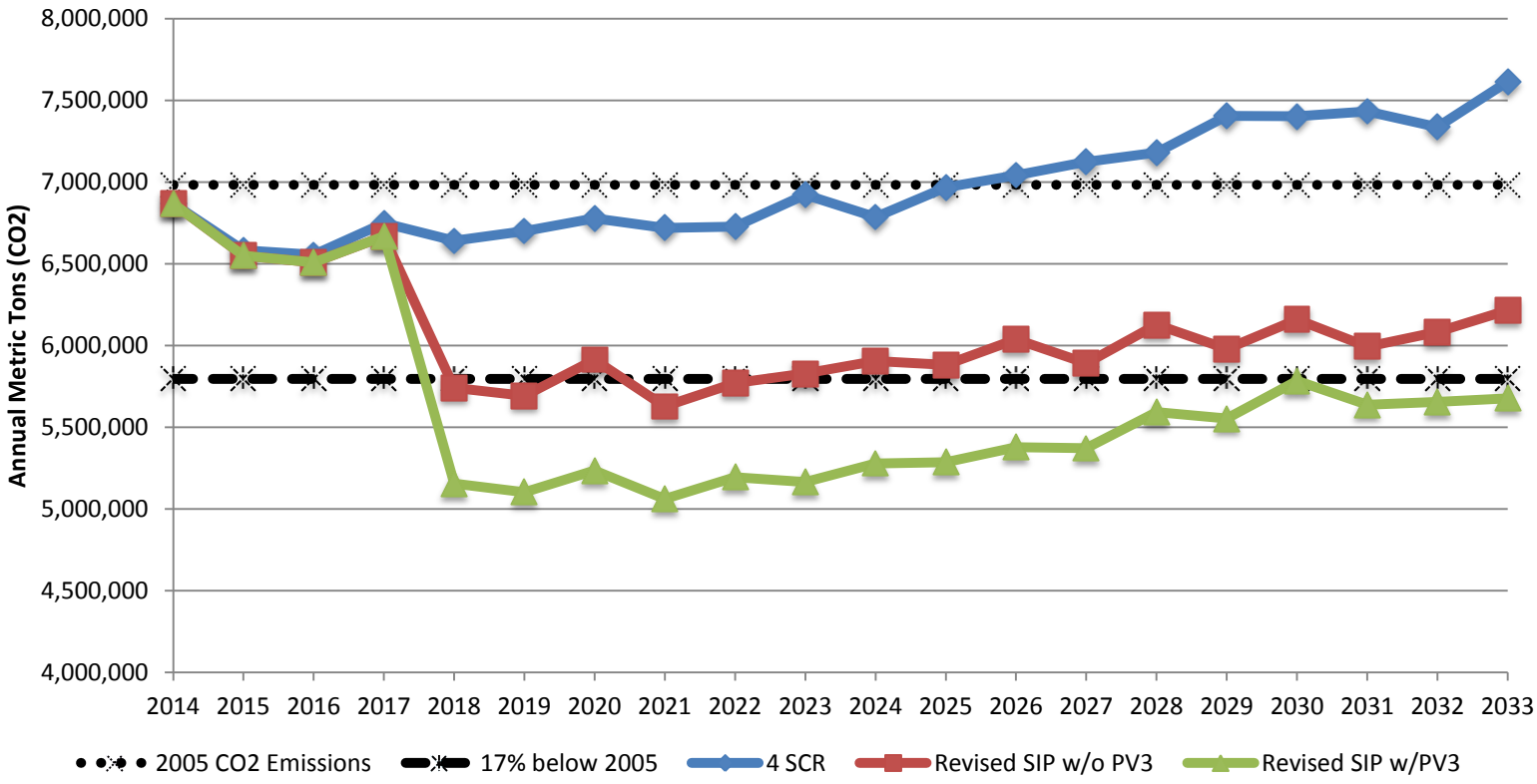
Item ($Ms)	RSIP w/ PV3	RSIP w/o PV3	4 SCR
Mean 20 Year NPV	$6,934	$6,934	$7,100
5% Risk Tail	$256	$310	$278

Notes:

- Gas and carbon prices based on PACE Global reference case
- All portfolios include La Luz and 2014 REPP resources
- PVNGS 3 in at $3,350/kW

ANALYZE

QUANTITATIVE RISK RESULTS ILLUSTRATION – CO2 REDUCTION IN PNM'S PORTFOLIO



ANALYZE

QUALITATIVE RISK RESULTS ILLUSTRATION – REDUCTIONS AT SJGS

Percent Reduction (%)

	NOx	SO2	Particulate Matter (PM)	CO	VOC	CO2	Mercury (Hg)
Revised SIP	62%	67%	50%	44%	51%	50%	50%
FIP	83%	0	0	0	0	0	0

In addition, there will be an estimated 50% reduction in fresh water consumption and an estimated 48% reduction in coal ash generation.
This does not include any impacts from replacement resources.

WRAP UP DISCUSSION

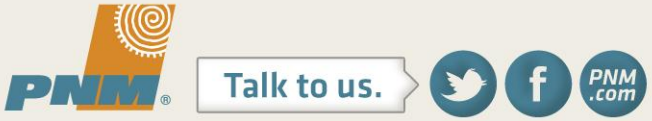
FUTURE MEETINGS

- Tuesday, September 17th: Process
- Friday, September 20th: Assumptions
- Thursday, September 26th: Next Steps

Friday, September 20th Agenda

- Welcome, Introductions and Safety
- Ground rules
- Assumptions
  - Price Curves
  - Energy Efficiency Resource
  - Demand Forecast
- Wrap Up and Discuss Next Meeting

Thank you



MAKE SURE WE HAVE UP TO DATE CONTACT INFORMATION FOR YOU

www.pnm.com/irp for documents

irp@pnm.com for e-mails

Register your email on sign-in sheets for alerts of upcoming meetings and notices that we have posted new information to the website.

Meetings Schedule:

Tuesday, Sept. 17, 2013, 8 a.m.- noon

Friday, Sept. 20, 2013, 8 a.m.- noon

Thursday, Sept. 26, 2013, 8 a.m.- noon