Opportunity, Policy, and Practice for Renewable Energy: New Mexico Case Study

Federal policy: RPS, RES, CES

Program Design Element	S 3813 Renewable Energy Promotion Act 2010 (Bingaman)	S. 1462 American Clean Energy Leadership Act (Title I Subtitle C) (Bingaman)	S 3464 Practical Energy and Climate Plan Act (Title III) (Lugar)	S 20 Federal Clean Energy Standard (Graham)
Type of Energy Standard	**Renewable Energy** Up to 26.7% of RES can be met with eligible energy efficiency savings	**Renewable energy** Up to 26.7% of RES can be met with eligible energy efficiency savings	**Diversified Energy Standard** **No specified limit on portion of standard that can be met by eligible energy efficiency savings.**	**Clean energy standard** Up to 25% of standard can be met with energy savings that qualify for federal energy efficiency credits.
Energy Standard Compliance Targets	2011-2013..... 3% 2014-2016.....6% 2017-2018.....9% 2019-2020.....12% 2021-2039.....15%	2011-2013..... 3% 2014-2016.....6% 2017-2018.....9% 2019-2020.....12% 2021-2039.....15%	**2015-2019.....15%** **2020-2024..... 20%** **2025-2029 .....25%** **2030-2049.....30%** **2050.....50%**	**2013-2014.....13%** **2015-2019..... 15%** **2020-2024.....20%** **2025-2029..... 25%** **2030-2034.....30%** **2035-2039.....35%** **2040-2044.....40%** **2045-2049.....45%** **2050.....50%**
Compliance Eligible Energy Sources	Solar Wind Geothermal Incremental geothermal and hydro Ocean (tidal....etc) Biomass per definition in Energy Policy Act 2005 Land fill gas Coal-mine methane Qualified waste- to- energy sources End use energy efficiency savings achieved by utility programs **and other end use entities** Incremental kWh output of CHP due to enhanced efficiency performance is eligible to be counted as energy efficiency savings.	Solar Wind Geothermal Incremental geothermal and hydro Ocean (tidal....) Biomass per Energy Policy Act 2005 definition Land fill gas Coal-mine methane Qualified waste- to- energy sources End use energy efficiency savings achieved by utility programs **and other end use entities.** Incremental kWh output of CHP due to enhanced efficiency performance is eligible to be counted as energy efficiency savings.	Advanced coal generation - coal-fired generation with CCS that captures at least 80% GHG Biomass Coal-mine methane **End use energy efficiency savings from utility programs** **Incremental increases in energy output due to fossil plant efficiency improvements** Geothermal Landfill gas and biogas Marine/hydro kinetic energy Qualified hydro including new dams New nuclear Waste-to-energy Solar Wind **Any energy technology or source that can achieve 80% GHG emissions reduction compared to average emissions of conventional sources**.	Solar Wind Geothermal Ocean energy Biomass Land fill gas Qualified hydro Marine and hydro- kinetic renewable energy (per EISA of 2007) Incremental geothermal Coal-mined methane Qualified waste-to-energy Qualified nuclear **Advanced coal** **Eligible "retired" fossil generation** Other clean energy technology as established by rule making. End use energy efficiency savings from utility programs **and other entities**.

Challenge: Business Planning Uncertainty - Will federal plan align with existing state plans?

FEDERAL POLICY: Tax Credits

- Production Tax Credit- Reduces the federal income taxes of qualified tax-paying owners of renewable energy projects based on the electrical output (kWh) of grid-connected renewable energy facilities. Currently expires 2012 (wind); 2013 (all other).

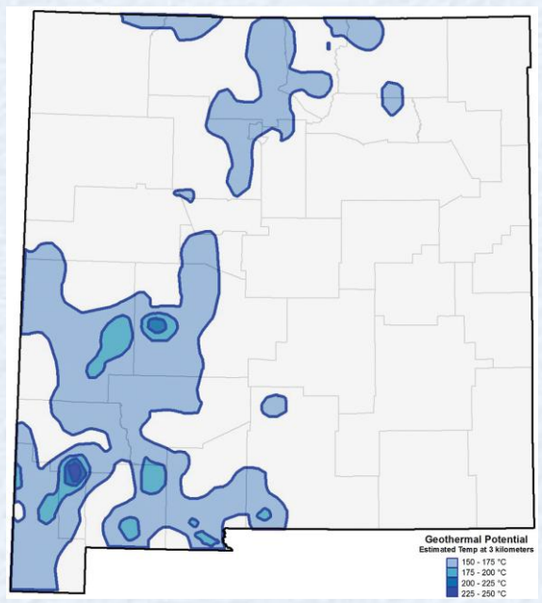
- Investment Tax Credit-reduces federal income taxes for qualified tax-paying owners based on capital investment in renewable energy projects ($). The ITC ends when the project is placed into service. Currently expires 2016 (except geothermal).

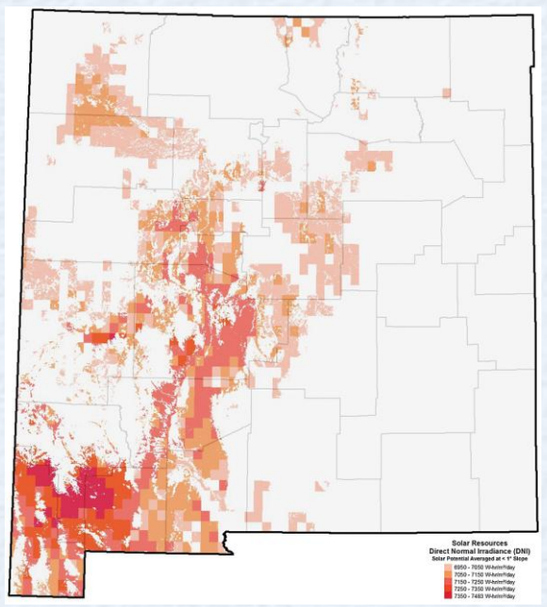
- Section 1603 cash grant program provided an alternative to the renewable energy production tax credit program that suddenly was useless amid the turmoil of the 2008-2009 financial crisis. Under the new program, renewable energy project developers who were eligible for the production tax credit but could not use it due to the crisis could instead elect to receive a cash grant for a similar value. This cash grant was critical for renewable energy development companies, particularly wind energy, and their employees and new job-seekers in the industry.

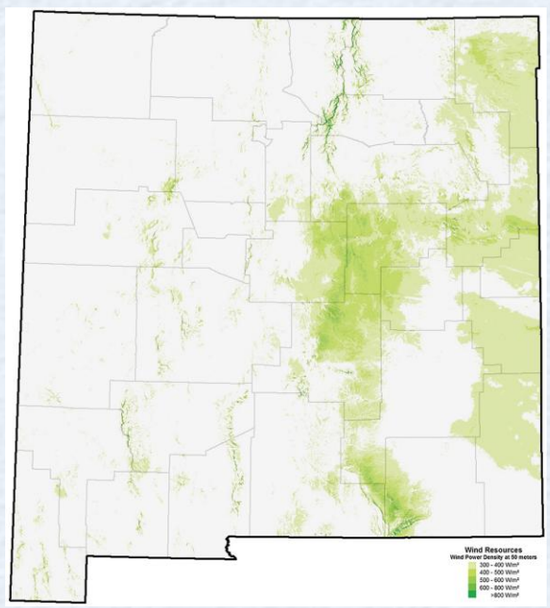
- The 1992 PTC has lapsed periodically, but it has been renewed before or shortly after each expiration date, typically for an additional 1- or 2-year period. (EIA)

Challenge: Business Planning Uncertainty and Higher Costs

NM RENEWABLE ENERGY RESOURCE POTENTIAL WITH EXISTING ENERGY TRANSMISSION LINES







Challenge: Transmission Lines Not Co-Located with Resources & Intermittency Issues

PNM Resources

★An energy holding company with 2009 consolidated operating revenues from continuing and discontinued operations of $1.6 billion.

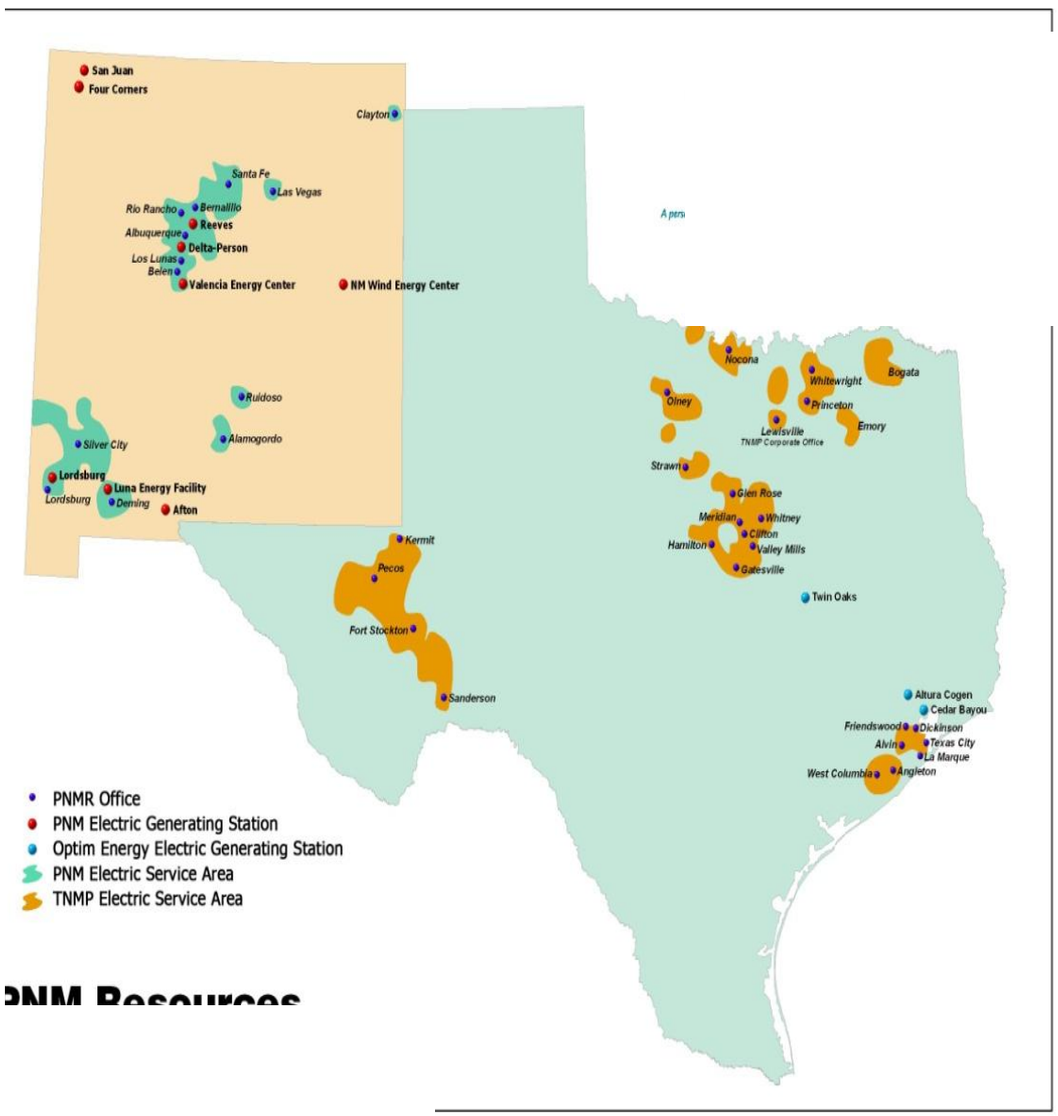
★Through its utilities - PNM and TNMP - and energy subsidiary First Choice Power - PNM Resources serves electricity to over 875,000 homes and businesses in New Mexico and Texas.

★generation resources of 2,711 megawatts reflect a balance mix of coal, natural gas, nuclear and wind generation.

★50-percent ownership of Optim Energy, which owns and markets nearly 1,200 megawatts of generation in the Electric Reliability Council of Texas market.

★PNM

- 1,146 employees
- 500,729 customers
- 14,608 transmission and distribution lines
- Average PNM customer bill is $61



PNM Resources Challenge

- The ratings reflect PNMR's high-debt-leverage relative to EBITDA (**Earnings Before Interest, Taxes, Depreciation and Amortization**), weak consolidated coverage ratios and low earned returns on equity at its core operating electric utility subsidiaries, PNM and TNMP.

- The ability of PNMR's core operating utility subsidiaries to recover their invested capital, related operating costs and a reasonable return on investment is fundamental to the maintenance of PNMR and its subsidiaries' credit ratings, in Fitch's opinion.

- The inability of PNMR to recover its prudent utility investment in rates with a reasonable return could result in future credit rating downgrades.

- *Challenge: Financial Status of Company and Impact of Renewable Costs.*

NM RES for IOUs

Three Components: % of sales, diversity, cost threshold

Year	IOUs (% of sales)	Diversity Requirements
2006	5%	
2010	6%	**20% - Wind** **20% - Solar** **10% - Other** **1.5% - Distributed Generation**
2011	10%	**20% - Wind** **20% - Solar** **10% - Other** **1.5% - Distributed Generation**
2012	10%	**20% - Wind** **20% - Solar** **10% - Other** **3% - Distributed Generation**
2015	15%	**20% - Wind** **20% - Solar** **10% - Other** **3% - Distributed Generation**
2020+	20%	**20% - Wind** **20% - Solar** **10% - Other** **3% - Distributed Generation**

Reasonable Cost Threshold

A public utility shall not be required to add renewable energy to its electric energy supply portfolio, pursuant to the renewable portfolio standard, above the reasonable cost threshold established by the Commission. The reasonable cost threshold for 2006 is one percent of all customers' aggregated overall annual electric charges, increasing by one-fifth percent per year until January 1, 2011, at which time it will be two percent.

Challenge: Tension among 3 different policy directives.

SKY BLUE PROGRAM

- Subscribing to PNM Sky Blue® is voluntary. Home and small business customers can choose to participate in one of two ways:

  - Purchase "blocks" of 100 kilowatt hours of electricity at $1.06 per month.

  - Subscribe for 90 percent of your monthly electric consumption, meaning your additional monthly billing amount for PNM Sky Blue® would rise or fall depending on your actual usage.

- Commercial and large business customers have several participation choices:

  - Purchase renewable energy at a level of your choice between 1% and 90% of monthly usage.

- ➡ Voluntary Tariff based on NM Wind Energy Center prices which are significantly lower than current market.
- ➡ New Mexico Wind Energy Center provides 525,000 MWH/year.
- ➡ Sky Blue purchases represent 185,000 MWH/year.

- *Note: Does not count toward meeting the state RPS.*

Solar Projects to Serve All Customers

- Approved Utility Scale Projects
- 22 MW
- Photovoltaic Fixed Tilt Solar Facilities
- First project planned for north ABQ
- Four Additional sites around the state

- DOE funded Solar Storage Project
- 500 kW
- Photovoltaic Fixed Tilt Solar Facility
- Located in Albuquerque
- Battery storage of ~1 MW

PNM SOLAR RENEWABLE ENERGY CREDIT

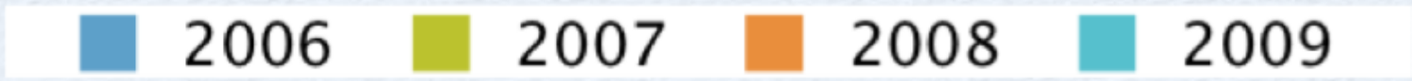
- **PNM Net Metering:** When customers' panels produce more electricity than they use in a given month, PNM credits that energy toward their future bills. They can then use this energy in a future month before they have to purchase more energy from PNM. This “bank” increases and decreases, depending on the amount of energy their solar system produces and their energy usage each month.

- **PNM REC Purchase**: Because the energy generated from a solar system comes from a renewable resource (sunlight), every kilowatt-hour of energy generated from the system generates a Renewable Energy Certificate. Because customers are adding renewable-fueled power to the PNM grid, we pay them for helping us meet our state requirements. The program will offer REC payments starting at 12¢ per kWh for systems smaller than 10 kW. REC payments for systems larger than 10 kW will start between 14¢ and 11¢, depending on the size. REC payments will decrease in steps as capacity thresholds are met.

- But: customers are irate that under current IRS regulations, these credits are considered Miscellaneous Income and PNM is issuing 1099s for the gross amount of the credits received. Last year we had the support of the entire NM delegation to change the law, exempting $2,000 in payments from federal taxes. It did not pass. We will continue to work with the delegation and Congress to fix this issue.

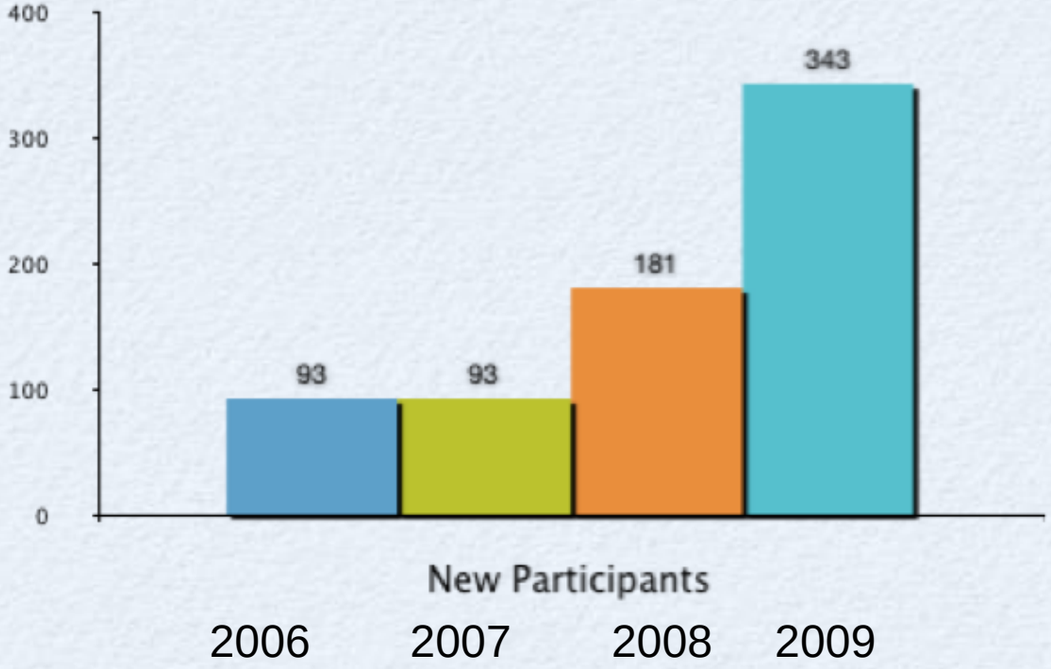
- *Challenge: IRS regulations surprise customers and increase cost to customers/owners.*

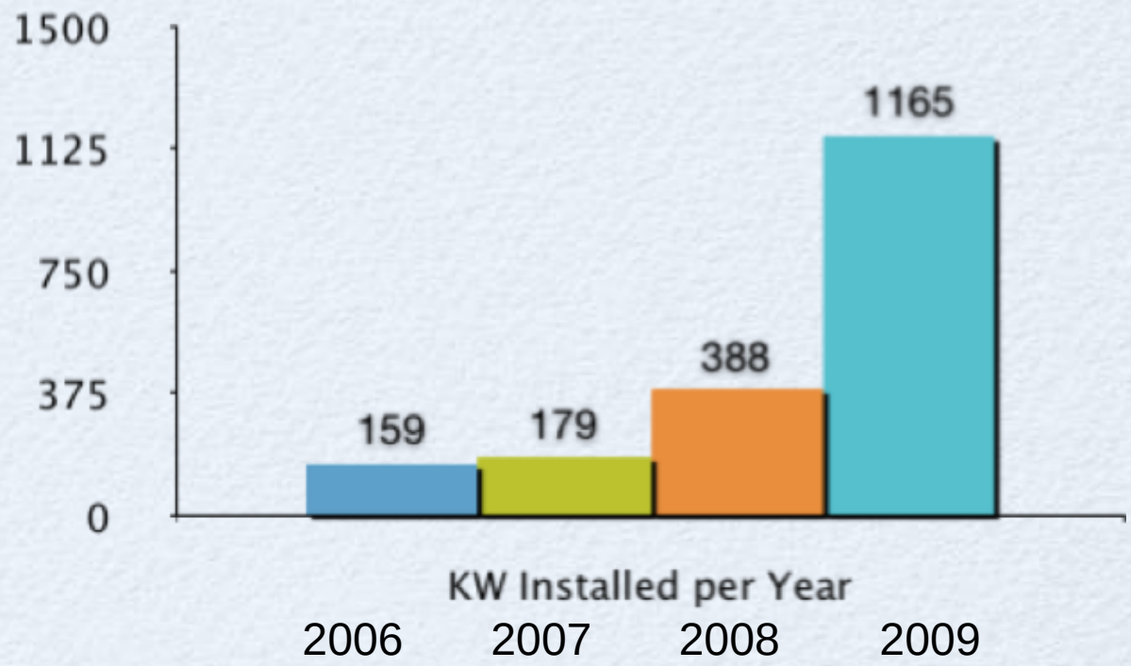
Rise In Customer-Owned Systems



Customers Cumulative Total: 710

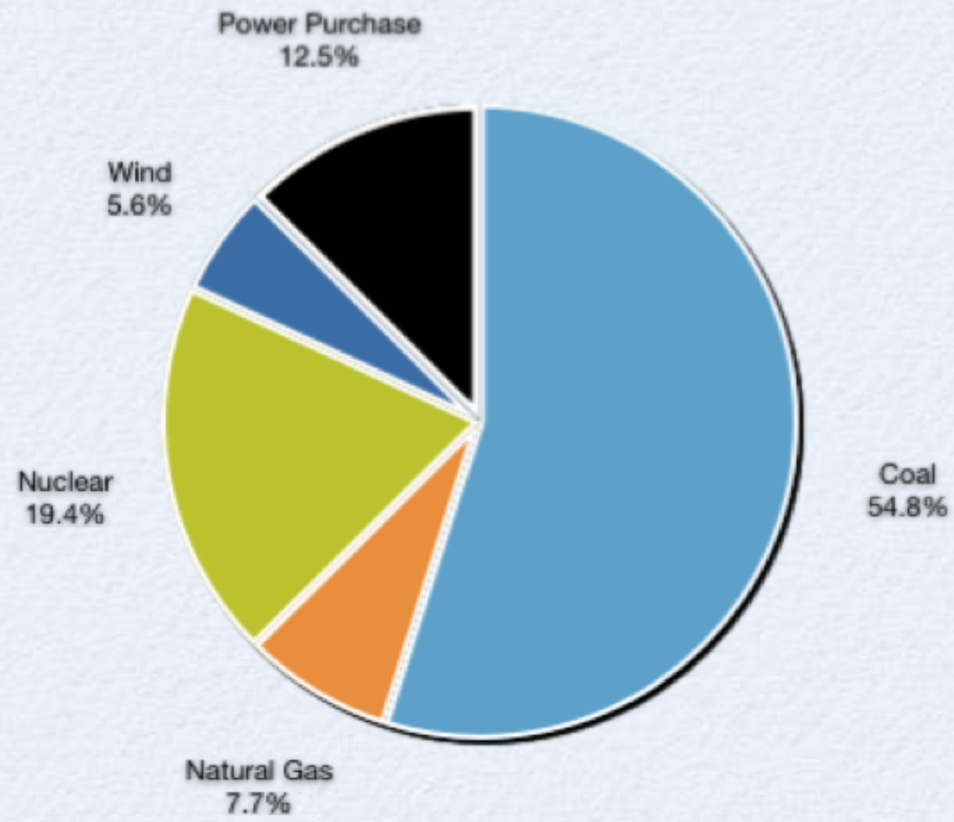
MW Cumulative Total: ~2MW



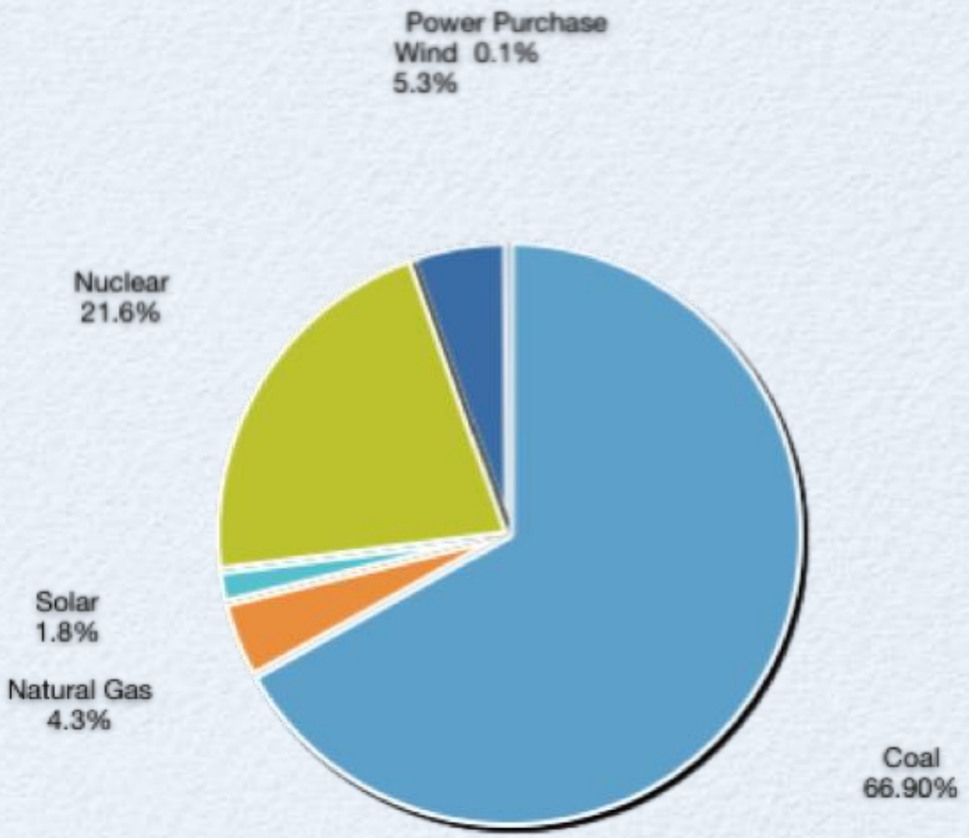


PNM Energy Sources

Energy Mix 2008

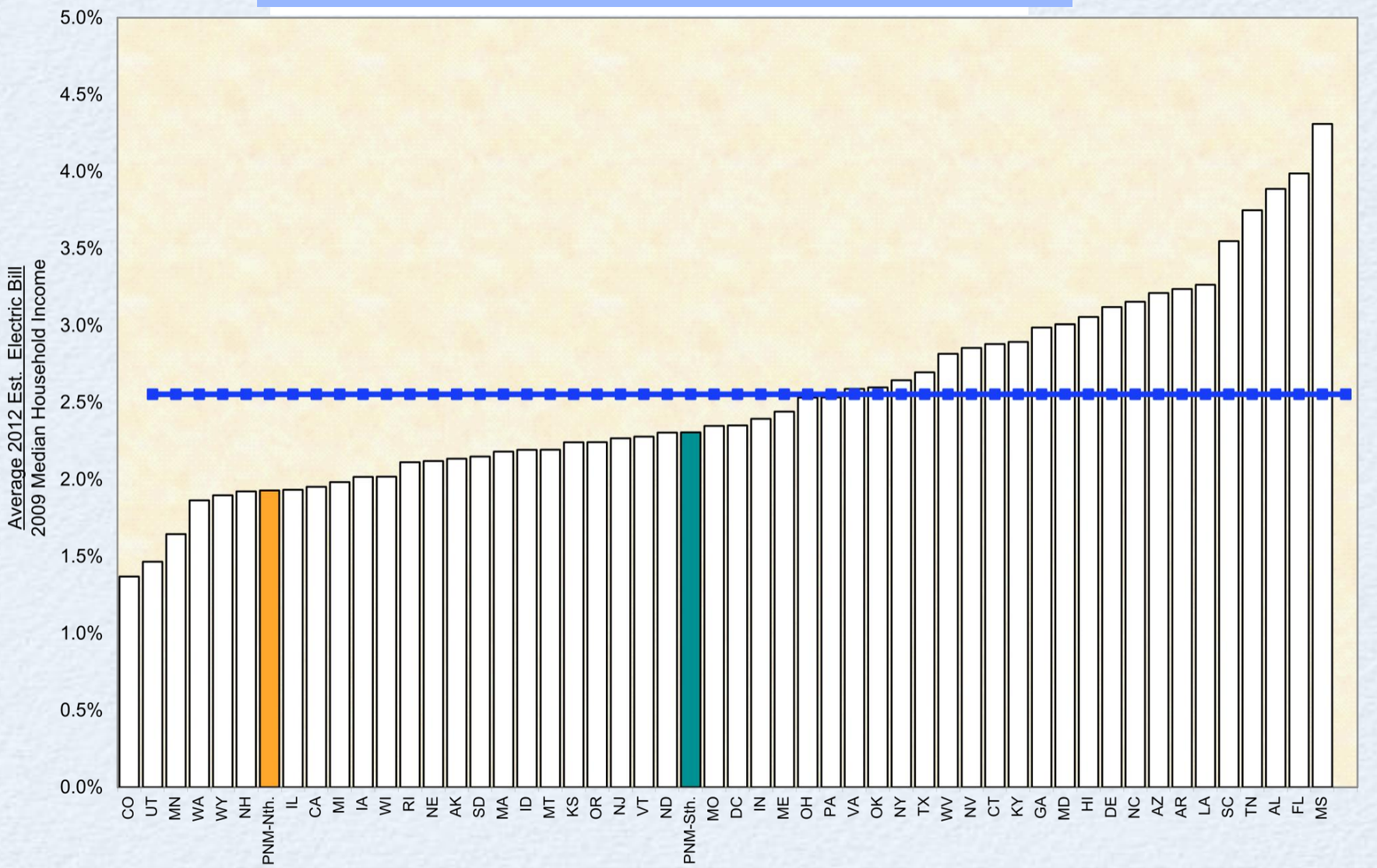


Energy Mix 2012



PNM RATE COMPARISON

Electric Affordability by State



PNM DOES NOT EXPECT TO MEET RPS TARGET FOR 2012

- PNM has asked the PRC to waive the state requirement that the utility obtain 10 percent of its electricity from renewable sources in 2012. PNM is also seeking a variance for the diversification requirement. We cannot meet either mandate without exceeding the RCT which aims to moderate the cost to consumers when utilities use more renewable resources.

- Part of the problem is that the cost for the 22 MW of utility scale solar and DG solar will rise from $14 million in 2011 to about $16 million in 2012 as more systems come online. The DG program represents a significant expansion of the current program and is more costly than utility-scale solar. Some of the costs of the 22 MW of utility-scale solar are included in 2011, but the full amount won't be realized until 2012.

- The RTC and the expense of solar compared to other renewable energy resources limits the amount of solar it can develop and still meet all of the mandates.

- As costs go up and distributed generation adoption grows, then our compliance goes down.

- Another issue is the limited availability of electricity generated by non-solar and non-wind sources. A biogas plant that PNM had hoped would be ready this year has been delayed.

- By 2012, PNM expects its renewable energy portfolio to include nearly 64 percent wind, about 9 percent solar and 2 percent biomass.

RENEWABLE RESOURCES

New Mexico Wind Energy Center (PPA)	200 MW	July 2003	$200 million
Reeves Solar Photovoltaic Facility	2 MW	April 2011	*$101.7 million total for 22 MW
Los Lunas - is this solar or biogas or both?	5 MW	June 2011	*
Las Vegas Solar PV	5 MW	August 2011	*
Deming Solar PV	5 MW	October 2011	*
Alamagordo Solar PV	5 MW	December 2011	*
Prosperity Energy Storage Project	0.5 MW	August 2011	$-4M from PNM & $2 M from DOE for battery; $3.3 M from PNM for solar ((PNM, UNM, NNMC, Sandia)

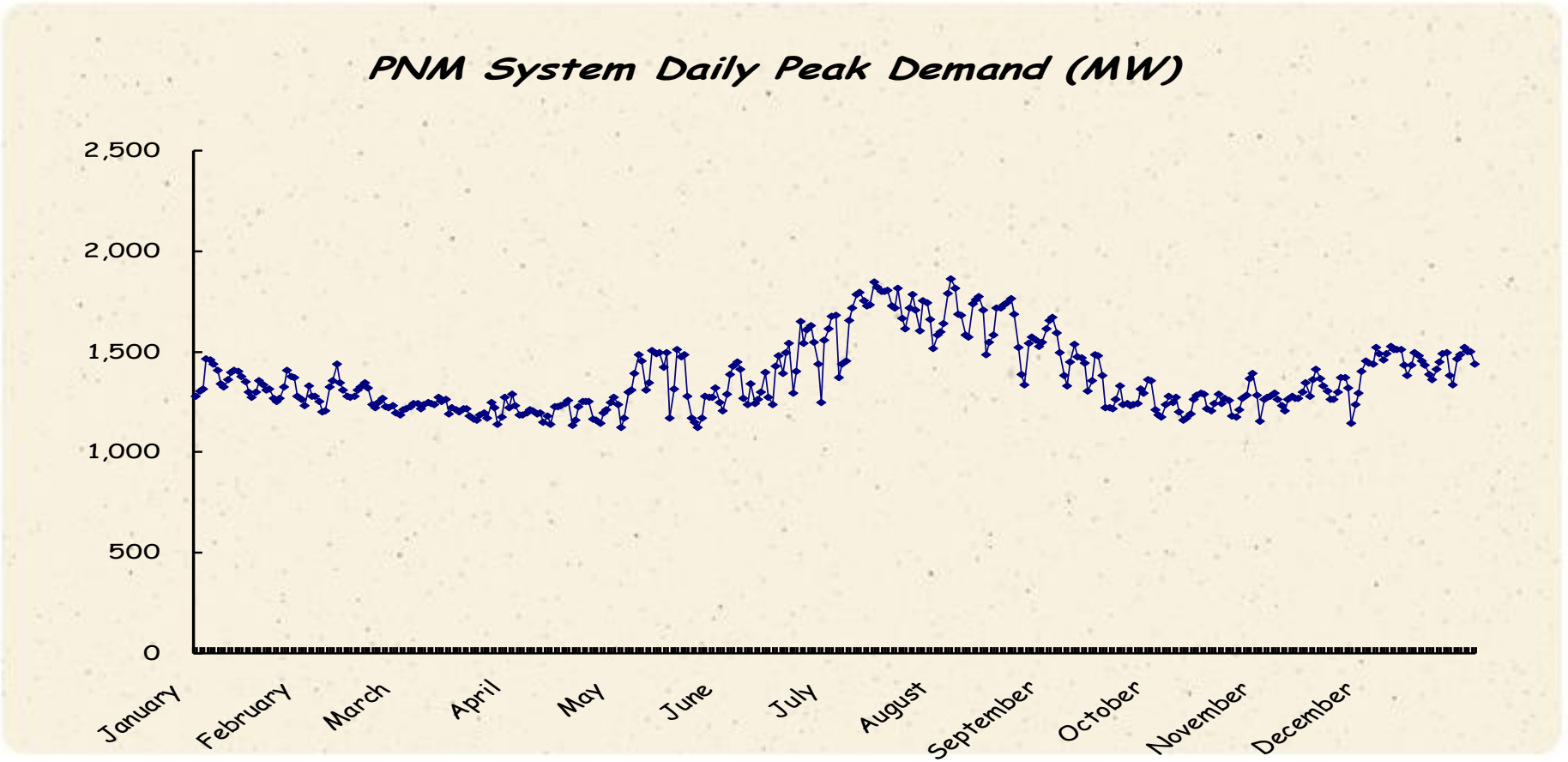
CHALLENGES

- *Challenge: Business Planning Uncertainty - Will federal plan align with existing state plans?*
- *Challenge: Business Planning Uncertainty and Higher Costs*
- *Challenge: Transmission Lines Not Co-Located with Resources & Intermittency Issues*
- *Challenge: Financial Status of Company and Impact of Renewable Costs.*
- *Challenge: Tension among 3 different policy directives: Price, Diversity, Total Percentage.*
- *Note: Voluntary Wind Program Does not count toward meeting the state RPS.*
- *Challenge: IRS regulations for solar “income” surprise customers and increase costs.*
- *Challenge: Consumers not the utility pay for generation sources. Keeping electricity affordable while meeting this policy priority is pancaked on top of increasing fuel prices and environmental compliance costs.*

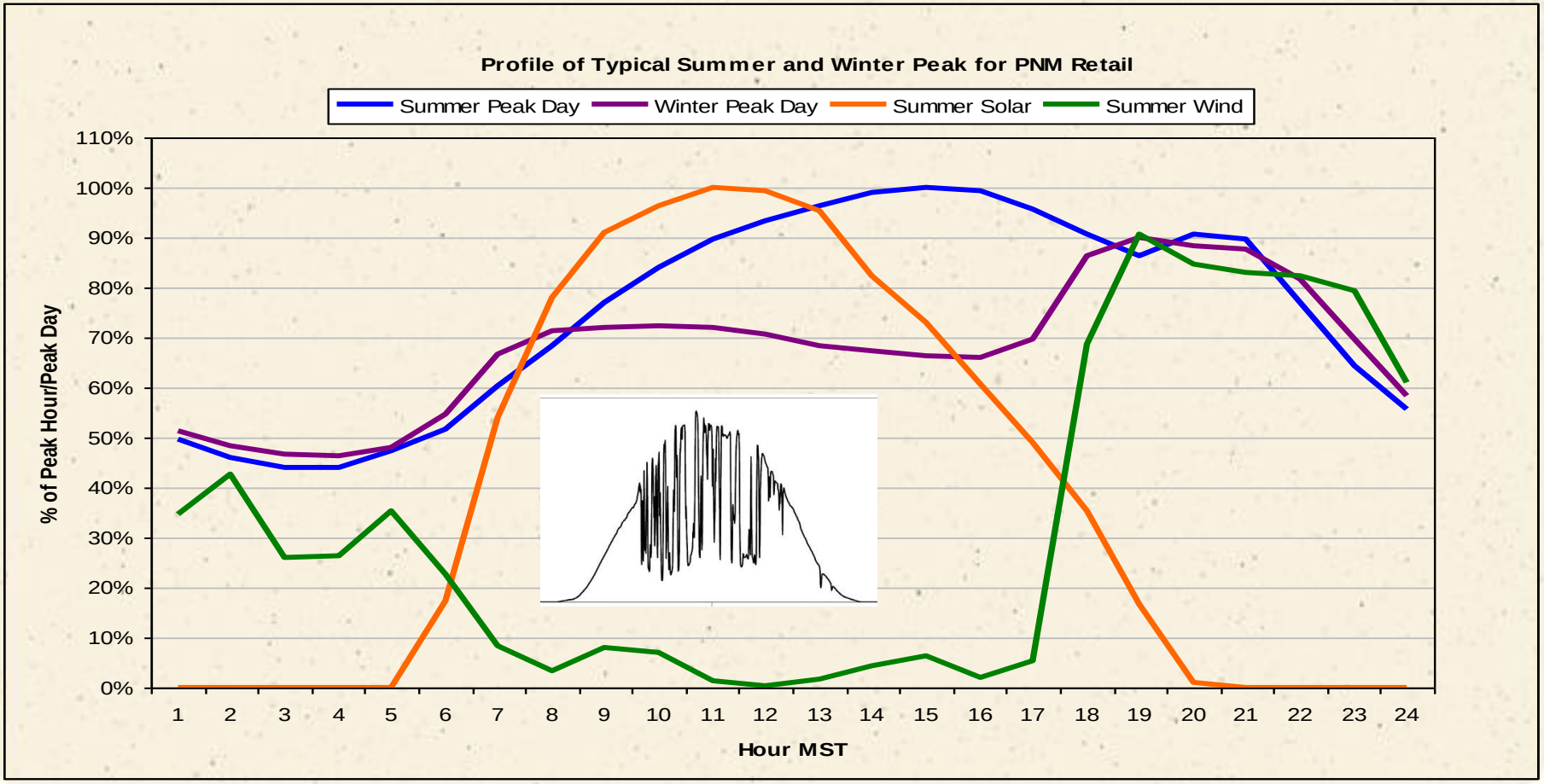
THANK YOU!

- Jeanette Pablo
- Director of Federal Affairs
- PNM Resources
- Jeanette.pablo@pnmresources.com
- 202-468-9688 T

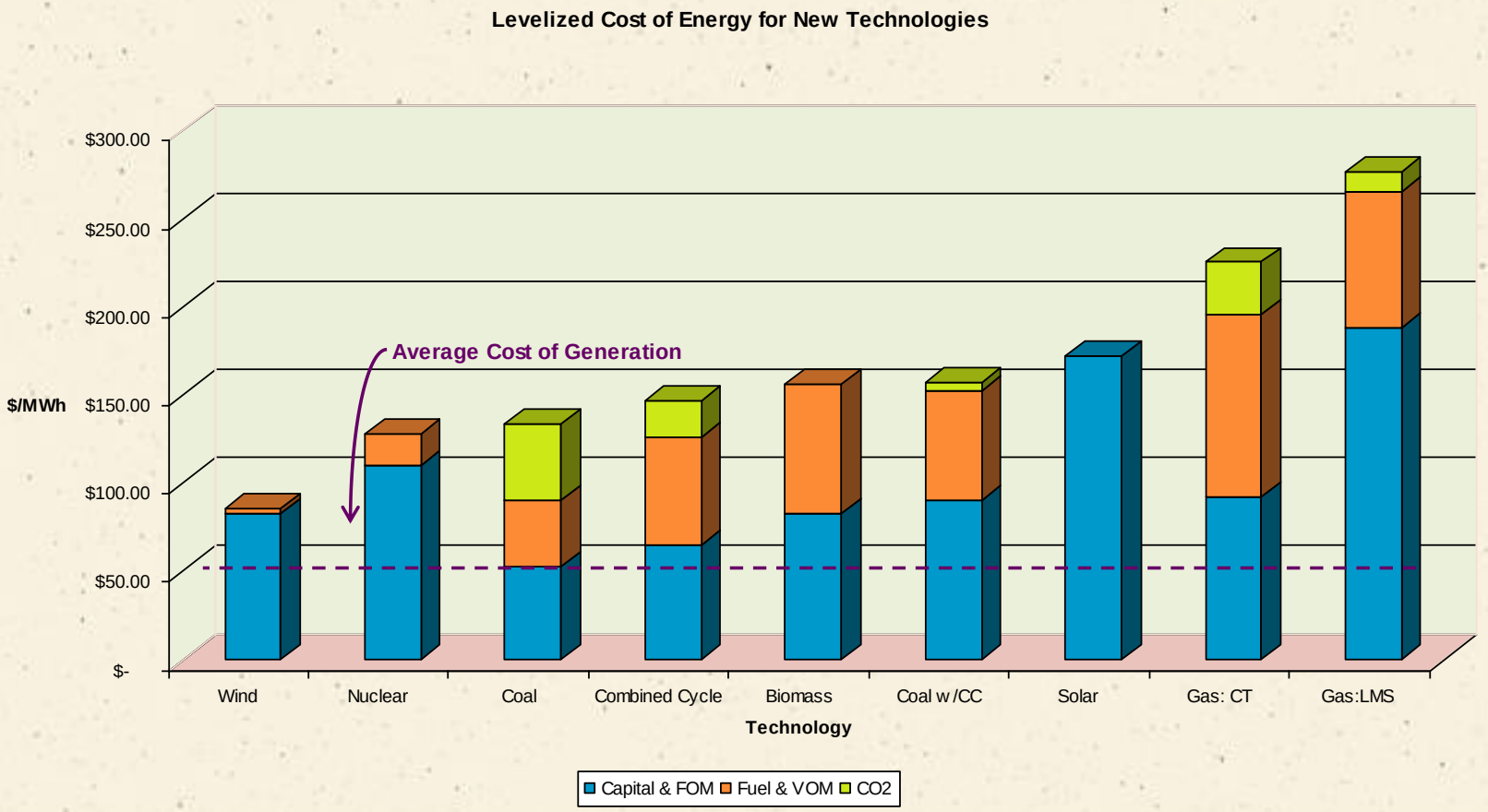
Annual Customer Load Profile



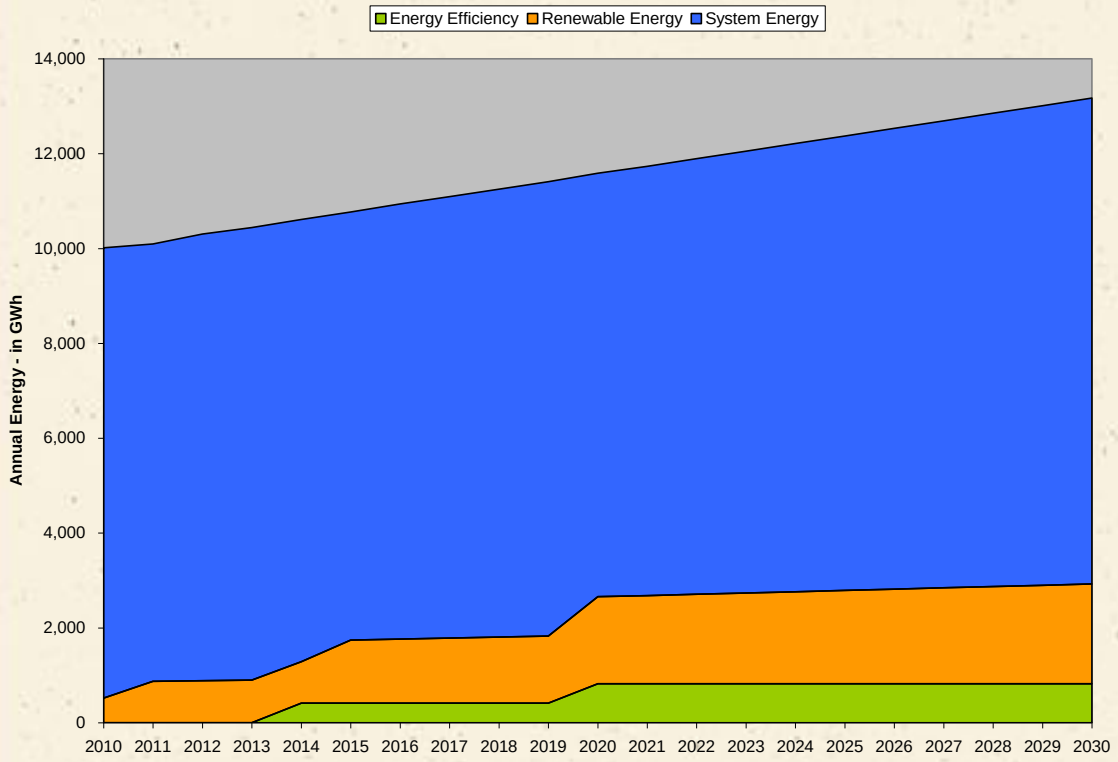
Managing Solar and Wind Energy



Cost Comparison of Options



Renewable and Energy Efficiency Resource Needs



Renewable Energy Act
6% - 2010
10% - 2010
15% - 2015
20% - 2020

Renewable Diversity
20% Solar
20% Wind
10% Non-wind, non-solar
3% Distributed Generation

Efficient Use of Energy Act
5% - 2014
10% - 2020