



Marin Clean Energy

California's First Community Choice Aggregation Program

March 21, 2014



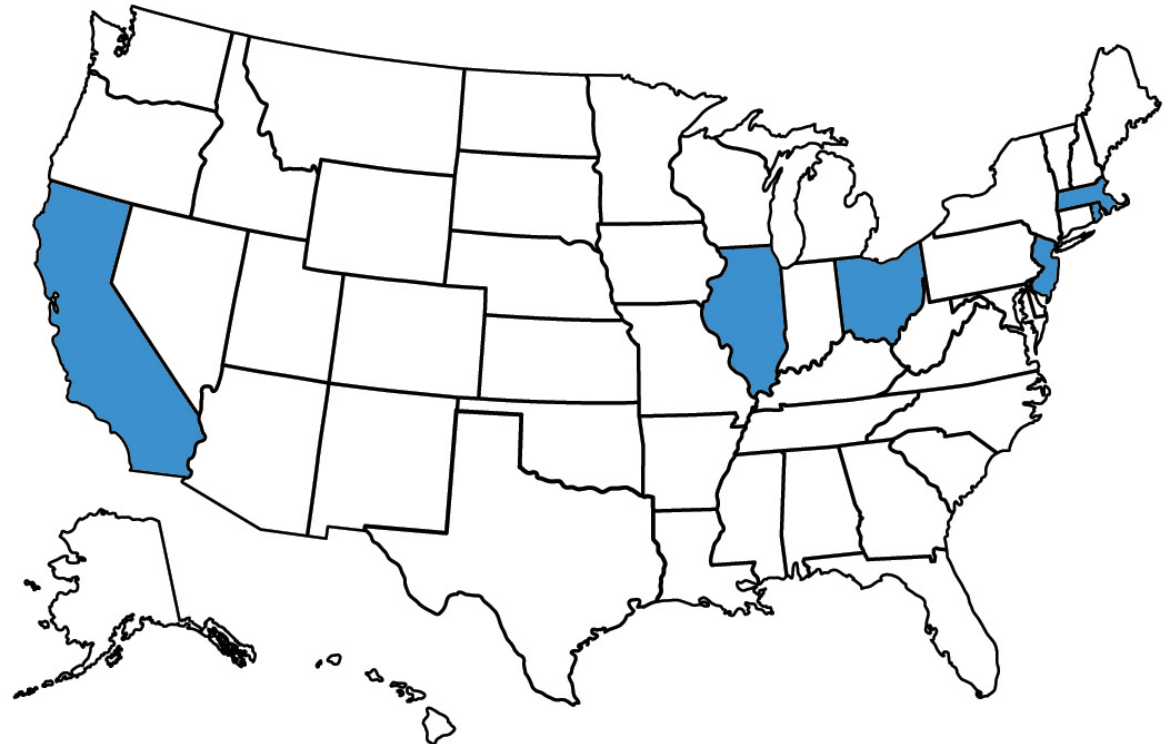
Community Choice Aggregation (CCA)

Assembly Bill 117, 2002

CCA allows communities to pool their electricity demand in order to purchase power on behalf of residents, businesses, and municipal facilities.

CCAs in 6 States

- California
- Illinois
- Massachusetts
- New Jersey
- Ohio
- Rhode Island



A Hybrid Approach



About MCE

Agency formed in 2008

May 2010 service start

125,000 MCE customers in Marin & Richmond
(approx. 77%)

+67,500 tons of GHG reductions



MCE Board of Directors

13-Member Board of Directors

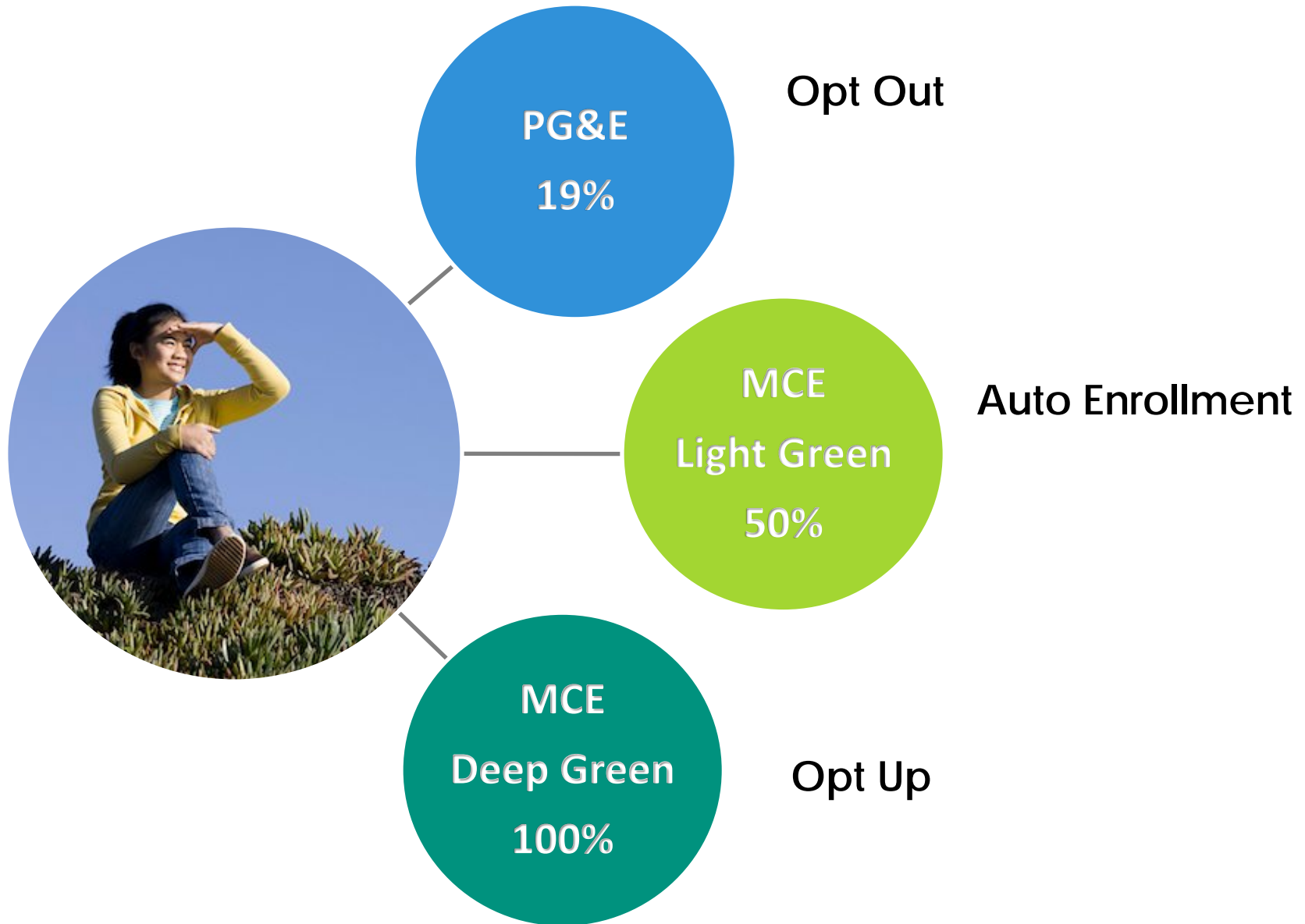
Government elected officials

Public oversight of rates, power sources and policies

Report to California Public Utilities Commission,
California Energy Commission, and customers



Customer Choice



MCE Power Sources 2010 - 2013

3 Degrees (wind)

Calpine (geothermal)

EDF Renewable Energy (25 MW new solar)

G2 Energy (3 MW new biogas)

GenPower (3 MW new biogas)

Middle Fork Irrigation District (small hydro)

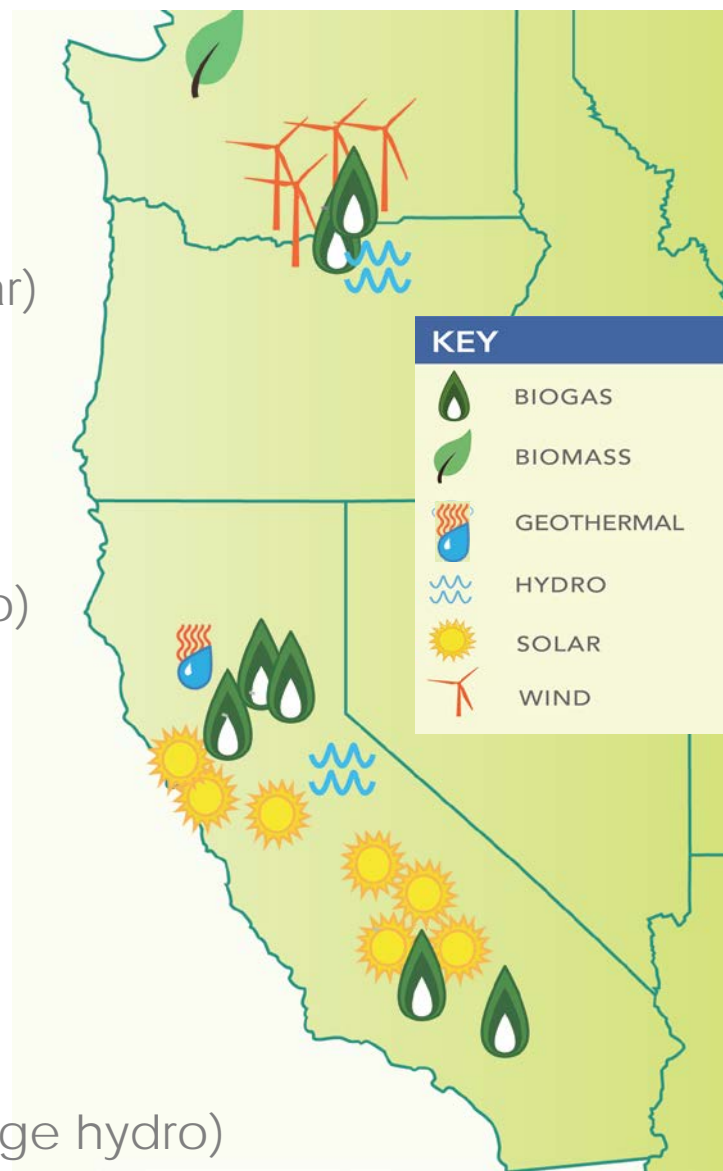
One Energy (wind)

Recurrent Energy (20 MW new solar)

San Rafael Airport (1 MW new solar)

Shell Energy North America

Western Area Power Administration (large hydro)



2012 Electric Power Content Mix

	PG&E	MCE Light Green	MCE Deep Green
Renewable	19%	53%	100%
Bioenergy	4%	12%	0
Geothermal	5%	0	0
Small hydroelectric	2%	2%	0
Solar	2%	1%	0
Wind	6%	38%	100%
Large Hydroelectric	11%	7%	0
Natural Gas	27%	0	0
Nuclear	22%	0	0
Unspecified	21%	40%	0
TOTAL	100%	100%	100%

Residential Cost Comparison

MCE proposed rates effective April 6, 2014

PG&E proposed rates effective May 1, 2014

	PG&E	MCE Light Green	MCE Deep Green
<i>508 kWh, E-1/Res-1</i>	19%	50%	100%
Electric Generation	\$46.74	\$40.13	\$45.21
Added PG&E Fees	-	\$5.89	\$5.89
Electric Delivery	\$36.26	\$36.26	\$36.26
Total Electric Cost	\$83.00	\$82.28	\$87.36

Commercial Cost Comparison

MCE proposed rates effective April 6, 2014

PG&E proposed rates effective May 1, 2014

<i>1,182 kWh, A-1/Com-1</i>	PG&E 19%	MCE Light Green 50%	MCE Deep Green 100%
Electric Generation	\$138.44	\$112.29	\$124.11
Added PG&E Fees	-	\$12.19	\$12.19
Electric Delivery	\$131.51	\$131.51	\$131.51
Total Electric Cost	\$269.94	\$255.98	\$267.81

Community Benefits



Local Build-Out

Solar rebates

Premium credits & payout for solar customers

Feed-In Tariff

- San Rafael Airport 1 MW solar project

Local Renewable Development Fund

- 50% of Deep Green revenues for local solar projects
- Planning 1 MW solar project at Richmond Port

1 MW solar shade parking structure in Novato

Local Programs

Electric vehicle charging stations

Tesla pilot program

Bidgley Home Area Network pilot program

Marin Green Business program



Local Jobs

Local renewable projects

Energy Efficiency program support:

\$50,000 Rising Sun Energy Center

\$45,000 RichmondBUILD

\$90,000 Marin City Community Development District



Ruben Pendroza, RichmondBUILD graduate



Jamie Tuckey
Communications Director

mceCleanEnergy.org | 1 (888) 632-3674

Santa Fe County Clean Energy Initiatives

**Craig O'Hare, Energy Programs Specialist
21 March 2014**



***Powering County Resilience →
Renewable Energy Solutions Forum
National Association of Counties***

Outline

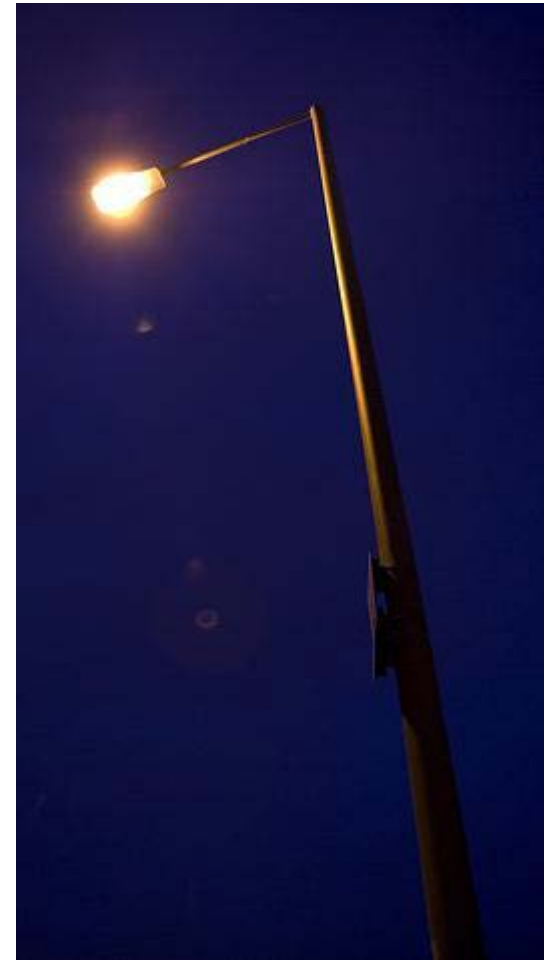
- **“Clean Energy” → Energy Efficiency & Renewable Energy**
- **Policy Foundation: 2010 Sustainable Growth Management Plan**
- **County Facilities and Operations**
- **Residential and Commercial Sectors: Economic Development**
- **2013 Land Use Code**
- **Pondering a City/County Electric Utility**

Policy Foundation: 2010 Sustainable Growth Management Plan

- **Aggressive Renewable Energy (RE) and Energy Efficiency (EE) Goals**
- **“Retrofit county facilities with EE and RE technologies”**
- **Reduce County greenhouse gas (GHG) emissions**
- **“Assess the potential to create a local power utility”**
- **Focus on clean energy-related economic development**

County Facilities and Operations

- Energy Efficiency Renovations
 - Lighting, HVAC
 - LED Street Light Replacements
 - Reduce electric use by 30-40%
 - Reduce maintenance costs



Solar Installations : Large and Small



New County
Courthouse
113 kW PV System –
20%
Of Electric Needs

Tesuque Fire Station:
9 kW system – 100% of
Electric Needs



Solar

- **Dramatic cost reductions → 60% less expensive than 7-8 years ago. 12 year paybacks**
- **Permanent price hedge against utility rate increases**
- **County pursued and obtained \$182K in capital outlay funds from 2014 NM Legislature to solarize fire stations**
- **“Power Purchase Agreements” - >200 kW systems**
 - **Gov’t purchases power from solar developer at or below utility rates. Option to buy.**

EE and RE as an Economic Development Tool

- **Energy Efficiency Renovations on Existing Buildings → stimulate still depressed building trades sector**
 - **Homebuilders Assn. cooperative outreach**
 - **Chamber of Commerce, SF Green Chamber of Commerce**
 - **Electric and gas utilities have EE incentives under state law**

Citizen-owned Solar:

Marketing

- Homeowners and businesses still don't realize how cost-effective solar is. 30% federal/10% state income tax credits
- Utility production incentives – net metering
- Favorable Financing Exists: 6% interest for 20-30 years
 - “Free Solar Power” – loan payments that are about the same as reduction to electric bill
- Appraisers have (finally!) caught on that solar systems significantly increase the building's re-sale value.
- “Community Solar” – solar gardens – utility opposition



Come to Free County Energy Forums!!

Learn how to cost-effectively reduce your utility bills!

HOMEOWNERS: Thursday, May 3rd
BUSINESSES: Monday, May 7th

Forums start at 6 p.m., County Admin. Building
 102 Grant Avenue, Santa Fe, NM

Info on: Solar Power, Energy Efficiency → Incentives, Rebates, Financing

More Info: 992-3044 • cohare@santafecounty.org • www.santafecounty.org/public_works/energy



Buying a home? Upgrade it with an FHA 203K loan!

- Kitchen & bath remodels, solar systems, windows, energy efficiency.

Selling a home? Market it as “203K loan home improvement ready”

Refinancing your existing home?

- Add a solar system or other improvements using a 203K loan!

More Info: Santa Fe County, 992-3044
 cohare@santafecounty.org

http://www.santafecounty.org/public_works/energy



Free Solar Power!

Just add one very affordable solar system!

- Santa Fe County offers free solar and energy efficiency advice for homes and businesses.
- “Zero cost” solar possible – loan payments that equal the reduction to your electric bill.
- Tax Credits, Incentives, Rebates, Financing

For More Info:

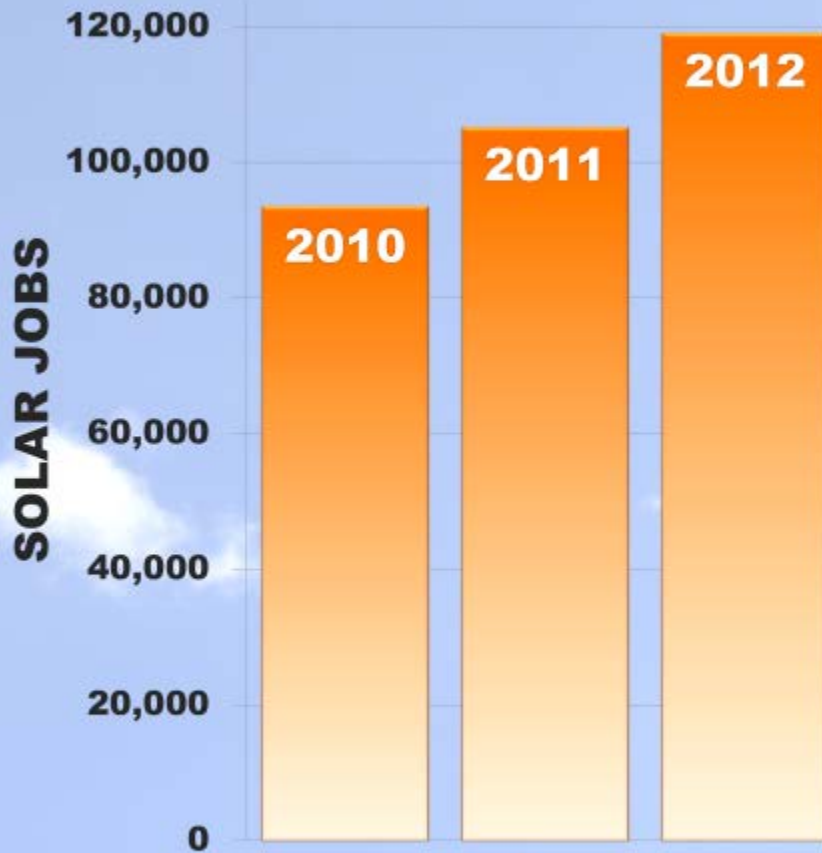
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NATIONAL SOLAR JOBS CENSUS 2012



OVER 119,000
AMERICANS
WORK IN THE
SOLAR
INDUSTRY

THE SOLAR FOUNDATION
Research and Education to Advance Solar Energy

2013 Sustainable Land Development Code

- **Codified the 2010 Sustainable Growth Management Plan**
- **Standards for Utility-Scale and Customer-scale Wind Turbine Facilities**
 - **Height limitations**
 - **Property-boundary set-backs**
 - **Noise**
- **Household-scale wind turbines can be as high as 90 feet!**

Land Use Code – Energy Efficient Building Standards

- **Commercial Buildings – EPA Energy Star standard – approx. 10% more efficient than standard c**



- **Residential Buildings: Home Energy Rating System (HERS) Index of 70**



- The lower the number, the more EE the home.
- NM state code is equiv. to a HERS 89

HERS 70 Std. → “You’re pricing people out of home ownership!”

- **NO!!**
- **Redefining what is meant by “home ownership affordability”**
 - **Not the upfront price of the home.**
 - **Monthly expenditures – mortgage payment + electric and natural gas or propane bills.**

HERS 70 Affordability Analyses

- 2300 sq. ft. “reference home” - \$300K cost under std. state building code
- \$3000 additional cost to reach HERS 70 EE std. (windows, HVAC, insulation, etc.)
- \$15/month increase to mortgage payment
- \$27/month decrease to electric and natural gas bills
- Net monthly benefit: \$12
- Net monthly benefit (propane): \$110

Pondering a City/County-owned Electric Utility → 2012 Study Evaluated:

- Costs of system acquisition, start-up, and annual operation and maintenance.
- Impacts on commercial and residential rates and bills, compared to status quo.
- Ability to meet City & County's adopted aggressive renewable energy, energy efficiency and greenhouse gas objectives.
- **Potential for stimulating job creation and economic development in the County.**
- City of Boulder, CO is pursuing.

State Laws Limit Ability to Achieve Aggressive Clean Energy Deployment in the County

- NM Efficient Use of Energy Act (EUEA)
 - 5% by 2014, 10% by 2020.
- NM Renewable Energy Act (REA) → “Renewable Portfolio Standard” : 15% by 2015, 20% by 2020
 - **No requirement for locally-sourced renewable energy projects.**
 - Law allows requirement to be met entirely with distant utility-scale projects (no local job creation).
 - Law has provisions that can be used to not meet targets.
- PRC (Utility Commission) Implements EUEA and REA
 - Aggressive or relaxed adherence to statutory requirements → uncertainty.
 - Rule: Only 3% customer-scale solar requirement.

Limitations of the Private Utility Regulatory Model

- Not conducive to achieving local greenhouse gas reduction and clean energy economic development goals.
- Private Utility Business Model: Profit motive for stockholders creates incentive to own all electric generation assets and sell as much electricity as possible.
 - Utility commission's regulatory model tends to reinforce this.
 - No "decoupling" in NM!
- Customer-owned solar and energy efficiency are in direct conflict with private utilities' profit objective



Status Quo: Coal likely to remain the dominant source of power for decades.

Scenario EE and Energy Source Comparison

Year 2028 Scenario Comparisons	SFPP Scenario 1	SFPP Scenario 2	PNM-Status Quo
% of energy efficiency savings	20	20	8
% of energy from renewable sources	45	45	20
% of energy from coal	0	0	60
% of energy sourced in Santa Fe County*	11.25	84	2
% of customer-scale renewable energy	11.25	11.25	0.6

Scenario Rate and Bill Comparisons

SCENARIO 1 - PERCENT SFPP RATES AND BILLS ARE LESS THAN STATUS QUO

	<u>2015</u>		<u>2022</u>		<u>2028</u>	
	<u>Base Case</u>	<u>+ \$100 Million</u>	<u>Base Case</u>	<u>+ \$100 Million</u>	<u>Base Case</u>	<u>+ \$100 Million</u>
SFPP vs PNM Rates	15%	11%	12%	9%	20%	18%
SFPP vs PNM Bills	17%	13%	21%	18%	31%	30%

SCENARIO 2 - PERCENT SFPP RATES AND BILLS ARE LESS THAN STATUS QUO

	<u>2015</u>		<u>2022</u>		<u>2028</u>	
	<u>Base Case</u>	<u>+ \$100 Million</u>	<u>Base Case</u>	<u>+ \$100 Million</u>	<u>Base Case</u>	<u>+ \$100 Million</u>
SFPP vs PNM Rates	17%	12%	8%	5%	18%	17%
SFPP vs PNM Bills	19%	14%	17%	15%	29%	28%

Local Job Creation and Economic Development Potential

- **SFPP 1: Medium**
 - 44 MW of customer-scale solar → creates more jobs per MW of installed power than any other type of electric generation.
 - EE renovations of homes and businesses stimulates construction sector
 - More community-generated income (\$\$) remains in the community.
- **SFPP 2: High**
 - Same as SFPP 1, plus 66 MW of locally-sited natural gas power plant and 60 MW of local utility-scale solar generation.
 - Highest rate of local job creation and keeping consumers' energy dollars in-region.
- **Status Quo: Low**
 - Minimal locally-sited power generation.
 - Less than 1% customer-scale solar by 2028.
 - Majority of consumers' energy dollar leaves region.

Customer-Scale Solar and Energy Efficiency Renovations of Buildings Create Jobs. Stimulating the Local E



Pole-Mounted PV



Ballasted (weighted) PV system.

Next Steps Options

- Community Education & Outreach – Public Opinion Assessment
- Detailed Refinement of Engineering Analyses and Costs
- City-County Financing Assessment
Municipalization would require a HUGE upfront dedication of resources and will be aggressively fought by the incumbent electric utility.

Not much occurred in 2013. Socio-political will to aggressively pursue is uncertain!