



Encouraging Smart Solar Development

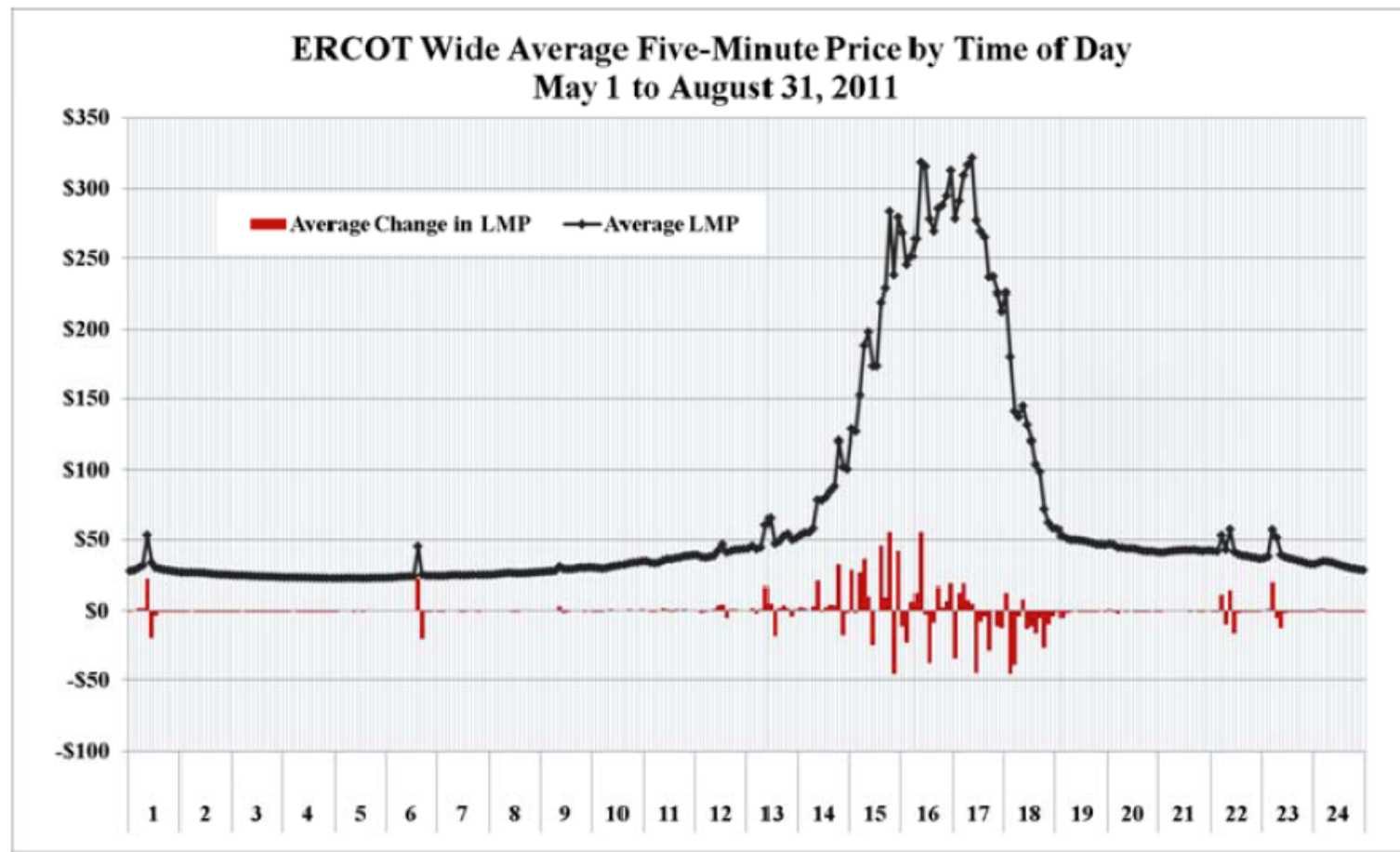
Presented by Trevor Lovell
Solar Austin Treasurer

- Residents are going to be angry
- Residents may direct their anger at “green” technologies
- Green technologies are out-performing expectations and are now highly competitive
- Specifically, solar costs are dropping
 - 2010 saw a 17% decline in installed cost of DG
 - 2011 saw an 11% decline in the first 6 months
 - New installations are priced at \$5.20/watt
 - Utility-scale has come in as low as \$2.90/watt

Context

ERCOT Real-time Price Volatility

May-August, 2011



- Webberville should have been a showcase for local solar, but it's been plagued with delays
- If the project had come online by summer
 - At projected cost of \$.16/kWh its still a very profitable venture
 - 100 hours at market cap of \$3,000/mWh this summer would have easily generated \$6M of the \$10M needed annually
 - Reduced justification for un-mothballing of retired fossil fuel plants

Case in Point: Webberville

- As the Lawrence Berkley study shows, DG costs are declining
- Because the utility only bears a portion of the cost (i.e. the rebate) this is an even more attractive option
- Austin Energy shows \$.08/kWh on rebate program
- Austin Energy show \$.14/kWh on PBI for 10 years (free after)

Distributed Solar in Austin

PV Rebate Level History

Year	Rebate Level (\$/Watt)	Rebate Level (\$/kWh)
FY04	\$ 5.0	\$ 0.17
FY05	\$ 4.5	\$ 0.15
FY06	\$ 4.0-4.5	\$ 0.13 - 0.15
FY07	\$ 4.5	\$ 0.15
FY08	\$ 4.5	\$ 0.15
FY09	\$ 4.5-3.75	\$ 0.15 – 0.13
FY10	\$2.5	\$0.08
FY11	\$2.5	\$0.08

* Assumptions: 1 kW produces 1500 kWh annually.

Commercial Incentive Program

- **Fy04 thru January 2010**
 - Rebate Program, \$ per watt
- **January 2010 – now**
 - Performance Based Incentive (PBI)
 - \$0.14 Per kWh of Solar Production
 - (Flat Nominal Rate, Not Deflated)
 - Term Is 10 Years
 - Quarterly review of incentive level
- **Maximum PV System Size: 20 KW**

- Paying a fraction of the total cost
- Rebate amount decreases over time
- No financing cost
- Jobs
- Benefits and engages customers

Benefits of DG

- Compel disclosure of revenue requirement by generation resource
- Build an ongoing commitment to solar into the AE rate case – current rebate expires in 2014
- Remove barriers to solar adoption
 - Reduce base charges unaffected by solar
 - Raise size cap on commercial installations
- Take the target off of green programs

What to Do?

The Proposed Rate Increase and The Austin Generation Energy Plan:

How can rates put Efficiency First, Mix our Resources and Control Our Coal Addiction

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Lone Star Chapter, Sierra Club
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Overview

- ♦ History of the Resource & Climate Protection Plan
- ♦ What's in the plan
- ♦ What remains to be done: three big studies
- ♦ What's in the rate increase – does it support the Generation Plan?
- ♦ A Fairer Plan for Austinites

A Rate Comparison

Rate Plan	300 KwH	1,000 Kwh	2,500 KwH	3,500 KwH
Current Rate	\$26.84	\$92.33	\$247.10	\$377.28
Option A	\$42.96	\$102.21	\$289.53	\$481.76
Option B	\$37.96	\$97.21	\$312.55	\$540.03
A Fairer Option	\$31.68	\$99.39	\$314.73	\$504.23

It all started back in 2007

- ♦ Austin Climate Protection Plan (2007)
- ♦ Establish a CO2 cap and reduction plan for all utility emissions
- ♦ Make Austin Energy the leading utility in the nation for greenhouse gas reductions
- ♦ 30% Renewable Energy by 2020
- ♦ 100 MW Solar by 2020
- ♦ 700 MW Energy Conservation by 2020

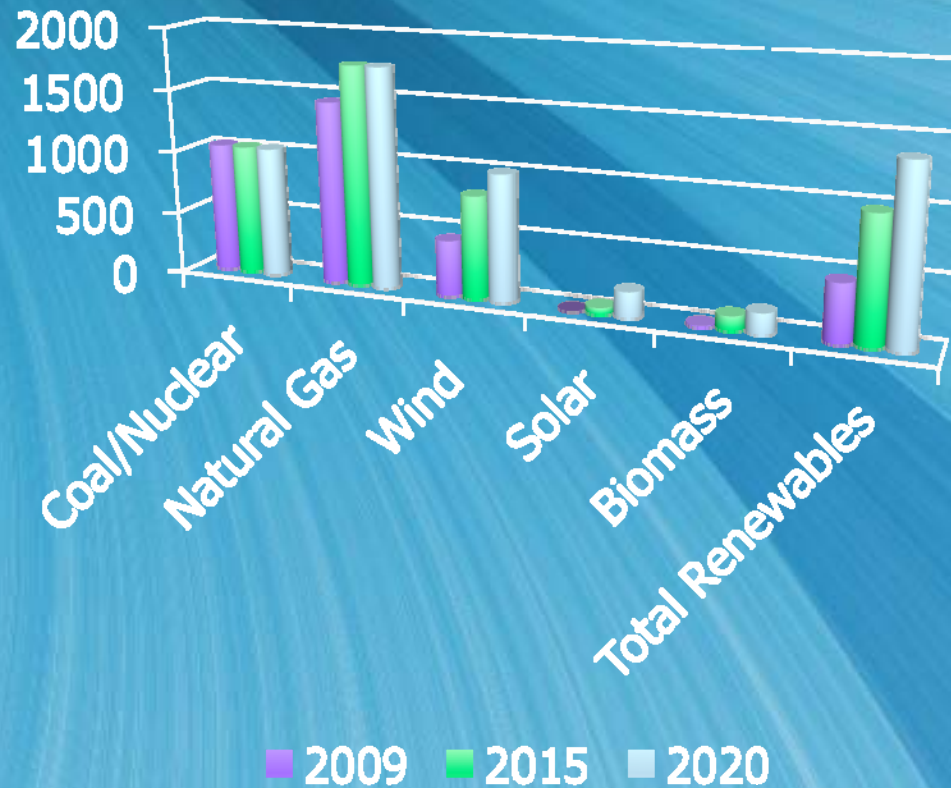
Fast forward to 2009/2010

- ♦ New mayor, Austin Energy releases draft strawman plan and begin public participation process.
- ♦ Mayor and council name nine-member Generation Task Force to review strawman, some 15 different proposals and comes up with our own;
- ♦ Generation task force, Utility Commission and Resources Management Committee all endorse revised version of Austin Energy Plan:
 1. 35% renewables by 2020
 2. 800 MWs of Efficiency by 2020
 3. Run Fayette less and study potential to shut it down
 4. 200 MW Solar Goal, including onsite solar

Fast forward to 2010/2011

- ♦ April, 2010 -- Mayor and council endorsed Clean Energy Plan and modified Task Force recommendationsbut demand “Affordability Matrix”
- ♦ December, 2010 - New General Manager Larry Weis unveils affordability matrix but Mayor and Council don't like it
- ♦ February, 2011 -- AE introduces two percent per year rule and Council unanimously endorses Clean Energy Plan

Austin's Generation Plan



Other Aspects of Plan

- Every major decision must pass through City Council twice
- Recommendation to continue weatherization at Stimulus levels
- Require AE to look at and develop efficiency programs for those between 200 and 400 percent
- Require AE to study an auction system for efficiency programs
- Look at storage technology
- Require Austin Energy to run coal plant less as wind and solar come on line

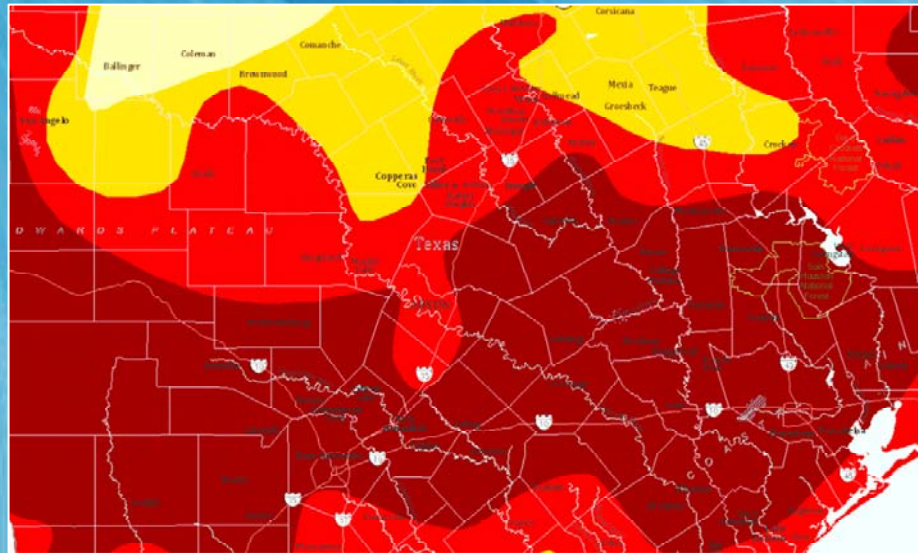
What's Happening Now

- ♦ Rate Case – Proposed on August 29th
- ♦ Three wind contracts – In process now which add 490 MWs of coastal wind
- ♦ We may get to 30% by 2013, about three years earlier than expected
- ♦ Three big studies required by Plan – we need to make sure they get done by summer of 2012
 - ♦ Getting out of Coal Plant by 2020 -- is it feasible?
 - ♦ Can we increase efficiency goal from 800 MW to 1,000 MWs
 - ♦ Setting an onsite renewable goal for Austin, whether owned, leased or not by Austin Energy

Water Needs for Electricity are Real But so too is Drought and other needs

- Water availability is expected to decline by 35%
- The current drought throughout Central Texas sets the trend for what we can expect in the future.
- Droughts are expected to get worse and thus energy sources that require little or no water will be far more viable
- Drought favors dry cool air technology, as well as solar pv and coastal wind

National Drought Mitigation Center



What's in the rate case

- ♦ One preferred option, four others, including cost of service
- ♦ All options favor a higher fixed cost for all residential ratepayers – separate volume from service
- ♦ Most options include a volumetric energy use charge that has three or five usage blocks
- ♦ All options include a new fixed “wire” charge
- ♦ All options include an energy efficiency charge, public lighting and customer benefit volumetric charge

Some big questions/issues

- ♦ The proposed rate increase hits residential higher than industrial, especially considering current favorable industrial contracts
- ♦ The Cost of Service Utilized – the AED method – leads to 20% higher residential rates than would have occurred with PIB method
- ♦ Thus, residential customers are being allocated 20 percent more costs and large businesses about 30 percent less cost under the AED method when compared to the results of the BIP method.
- ♦ Austin Energy should use PIB method and adjust residential vs. industrial rates accordingly

More issues

- ♦ Need to fund 50% of any capital investment is a heavy burden on new investments
- ♦ Debt ratio of 2-1 is significantly more than other utilities
- ♦ How you make decisions to fund future investments on dirty energy is unclear – new baghouses at Fayette? How will Austin Energy decide to invest \$250 million in pollution control equipment

High fixed costs has the impact of hurting low income and low energy users

- ♦ We would favor instead a basic service charge that would vary by volume (\$10 - \$25);
- ♦ We would prefer one service charge and not a separate wire and customer service charge

We like energy efficiency and customer benefit charge but..

- ♦ Given that we have a goal of 800 to 1,000 MWs demand reduction, making it clear that everyone pays for it and everyone gets the benefit is good
- ♦ Consider calling it Energy Savings Fund so that it can be used for energy efficiency broadly defined
- ♦ Consider fixed charge but charge by volume, ranging from \$2 to \$6;
- ♦ Fund weatherization, payment assistance and service through Customer Benefit and again consider a fixed \$1 to \$3 charge;
- ♦ Goals for weatherization should continue at ARRA levels

Inverted Blocks

- ♦ More you use the more you pay is appropriate;
- ♦ Either three or five rate blocks is acceptable
- ♦ Three is easier to understand than five; four might be good compromise

Other options

- ♦ Green Choice should continue, but be used to go beyond the 800 MW EE and 35% renewable goals that are part of the Austin Energy Generation Plan adopted by Council.
- ♦ A specific charge and program for those Austinites generating electricity through solar or other onsite renewables is appropriate and acceptable.
- ♦ Austin Energy should consider a service loan program to fund and lease for energy efficiency and solar and charge an appropriate monthly fee to pay back the capital investment.
- ♦ Initiate community solar program allowing customers to buy or lease solar panels at a central location and sell excess output to the utility. Could be owned by Austin Energy or private entity.

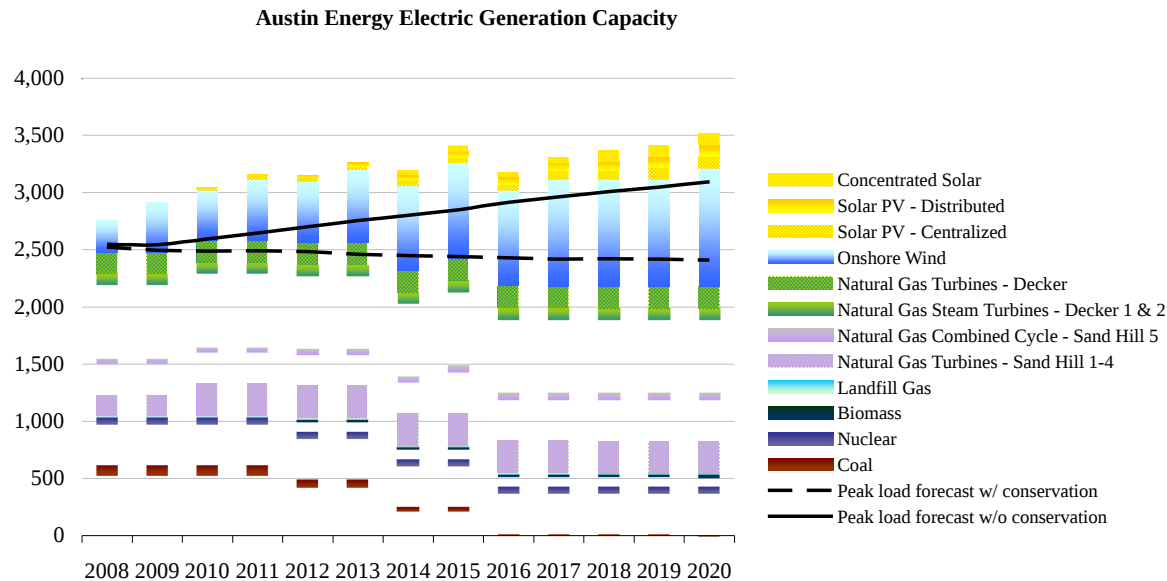
A Fairer Plan that Supports the Generation Plan

	Existing Rate	Five-Tier Option, Option A	Option B	Sierra Club Approach
Customer Charge	\$6.00	\$15.00	\$10.00	\$10.00 to \$25.00 based on volume of use
Electric Delivery	None	\$10.00	\$10.00	None
Energy Charge<500 KWh	6.948 cents	5.514 cents	5.514 cents	5.0 cents plus \$10.00 Charge
501-1000 kWh	11.218 cents	9.514 cents	9.514 cents	10.0 cents plus \$15.00 Charge
1001-1500 kWh	11.218 cents	12.014 cents	13.503 cents	10.0 cents plus \$15.00 Charge
1501-2500 KWh	11.218 cents	13.514 cents	16.003 cents	14.0 cents plus \$20.00 charge
>2500 KWh	11.218 cents	14.414 cents	17.503 cents	17.0 cents plus \$25.00 charge
Customer Assistance	Included above	0.065 cents	0.065 cents	\$1 to \$3 depending on volume
Service Area Lighting	None	0.114 cents	0.114 cents	\$1 to \$3 depending on volume
Energy Efficiency Charge	None	0.301 cents	0.301 cents	\$2.50 to \$7.50 depending on volume
Regulatory Charge	Included above	0.729 cents	0.729 cents	0.729 cents

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How we meet our energy needs: a more aggressive efficiency and renewable plan that gets us off coal



Recommendations

- Don't punish low energy users with high fixed costs
- Lower overall rate impact – examine high capital cost, debt ratio, methodology and industrial-residential split
- Make sure Customer Benefit covers customer assistance and weatherization
- Make sure Energy Savings fee covers all other energy savings programs designed to get to 800 to 1,000 MWs demand reduction
- Make sure solar option gets us toward 200 MW goal
- Make sure GreenChoice is used to go beyond 35% goal and reduce coal plant use
- Make sure the study regarding the costs and benefits of retiring the coal plant is completed and recommendations incorporated into future rate issues

Austin Energy Rates: Let's Do it Right

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Concerns With Proposed Rates

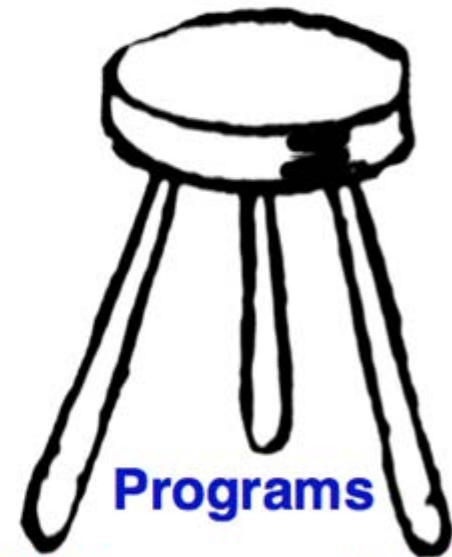
- Too steep of an increase for low energy users and low-income users
- Rates as proposed don't encourage efficiency, but reward those who use the most energy with lower electric rates
- Examine the amount of revenue needed to make sure it is accurate
 - Include high use and high revenues from the hot 2011 summer
 - Exclude hidden economic development transfers

Goals of Utility Pricing

- Recover costs equitably
- Encourage efficient use (and discourage inefficient use) of energy
- Simple enough to understand
- Align the customer's interest with the public interest
- Help achieve an economy-wide 80% reduction in CO₂ by 2050
- Provide for utility financial stability

Achieving Clean Energy Goals

- We must achieve an 80% reduction in greenhouse gas emissions by 2050.
- Getting there requires dramatic changes in the production and utilization of electricity.
 - Renewable Resources
 - Energy Efficiency
 - Smart Technologies
 - Coal retirement
- Three principal tools
 - **Policies:** IRP, RPS, EEPS
 - **Programs:** EE Funding, Smart Grid
 - **Pricing:** Today's topic



Policies

Pricing

Pricing Do's and Don'ts

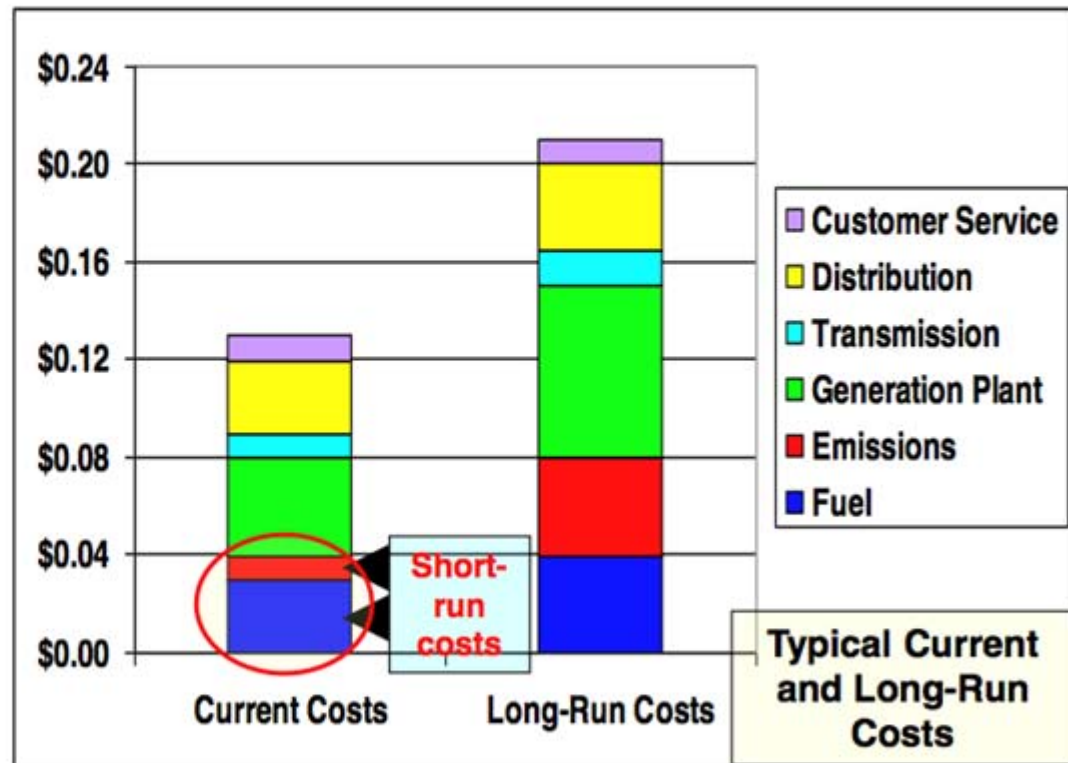
- Published in April, 2011
- Following up early next year with *Global Power Best Practices: Retail Pricing*
- Other publications on Decoupling, Smart Grid, and Energy Efficiency available at www.raponline.org

Pricing Do's: Residential

- **Do** focus on total system long-run marginal costs – including environmental costs.
- **Do** pursue inclining block residential rates (perhaps combined with TOU/CPP)
- **Do** let customers **choose** a more complex rate -- but make it EASY for them to respond
- **Do** print the rate (with all adders) on the bill so people know the total cost/kWh
- **Do** complement with efficiency programs
- **Do** consider revenue decoupling

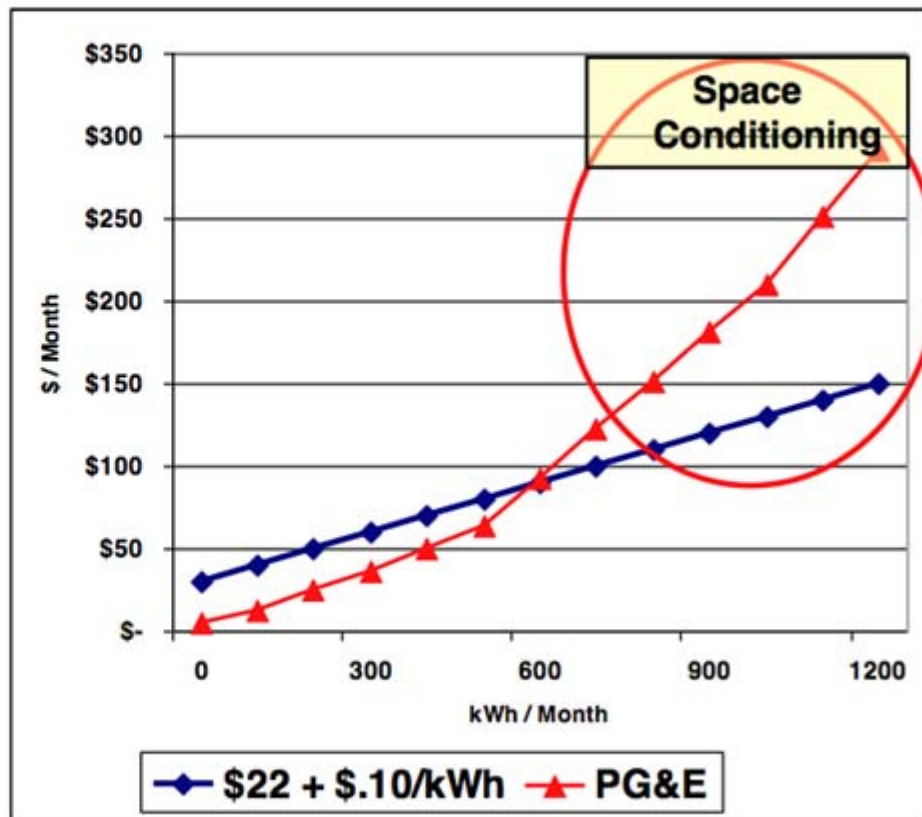
DO: Stay Focused On Long-Run Incremental Costs

- New power resources cost more than embedded resources.
- Customers make long-run decisions based on utility rates.
- Businesses make locational and investment decisions based on utility rates.



DON'T: Raise Fixed Charges

- High fixed charges distort usage rates away from LRIC
- Discourage investment in efficiency
- In competitive markets there are typically no fixed charges.



Both Of These Rates Generate The Same Average Revenue / kWh

High Fixed Charge			
Customer Charge		Per Month	\$ 30.00
Energy Charge		All kWh	\$ 0.100

Marginal Cost Based Endblock			
Customer Charge		Per Month	\$ 5.00
Energy Charge		First 500 kWh	\$ 0.100
		Next 500 kWh	\$ 0.150
		Over 1,000 kWh	\$ 0.180

Which rate makes it more likely a customer will invest in an Energy Star A/C Unit?

Bi-directional Distribution Rate

- Customer-specific costs are recovered from the customers causing them.
- **Customers pay for shared distribution facilities through a rate that applies in either direction.**
- Power supply rates are uniform TOU rates for power sold, or power purchased.
- A revenue stabilization mechanism is needed to assure utility financial strength.

Note: this is a discussion idea, not a “RAP Proposal”

Example Bi-directional Rate

Rate Element	What it Covers	Example Rate
Customer Charge	Bimonthly metering and billing	\$5.00
Facilities Charge	Customer-specific distribution facilities	\$1/kw/month
Shared Distribution Facilities & Service	All other distribution costs	\$.03/kWh coming or going
Power Supply (Competitive in Some States)	Generation / Transmission	\$.08 off-peak; \$.12 mid-peak; \$.20 on-peak, \$.50 Critical coming or going
Decoupling Adjustment	Revenue Stabilization	+ / - ~ \$.003 / kWh

Note: this is a discussion idea, not a “RAP Proposal”

Benefits of Bi-directional Distribution Rate

- Treats generating and non-generating customers equally
 - All users pay for all usage of the distribution network – down or up.
 - Distribution level generators are compensated for avoided transmission system costs
- TOU rate design is attractive to solar PV and Electric Vehicle owners
- Critical Period Pricing Option provides demand response capability and opportunity for EVs
- Decoupling assures financial stability for utility

Note: this is a discussion idea, not a “RAP Proposal”

Expert Team You Can Consult

About RAP

The Regulatory Assistance Project (RAP) is a global non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system costs and benefits fairly among all users

Learn more about RAP at www.raonline.org

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