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# *Rate Impact of Net Metering*

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Interstate Renewable Energy Council

Oct. 15, 2010



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# Scope

- Impact of net metering on utility rates for customers without distributed generation
- Proposes an approach for states or individual utilities to use, based on prior studies
- Reviews related studies, especially California PUC approach in Rulemaking 08-03-008
- Focuses on impact of net metered solar energy
- Does not consider impacts on the local economy, jobs or the environment
- Does not calculate impacts for specific state or utility
- Final report by end of 2010

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# Rate Impact is Utility-Specific

- Depends on state (or utility) net metering program
  - Program capacity
  - Facility size capacity
  - Rollover of excess generation
  - Standby charges and other fees
  - Applicability (all utilities, all customers)
- Depends on utility rates
- Depends on value of capacity benefits to a utility, as well as value of other benefits



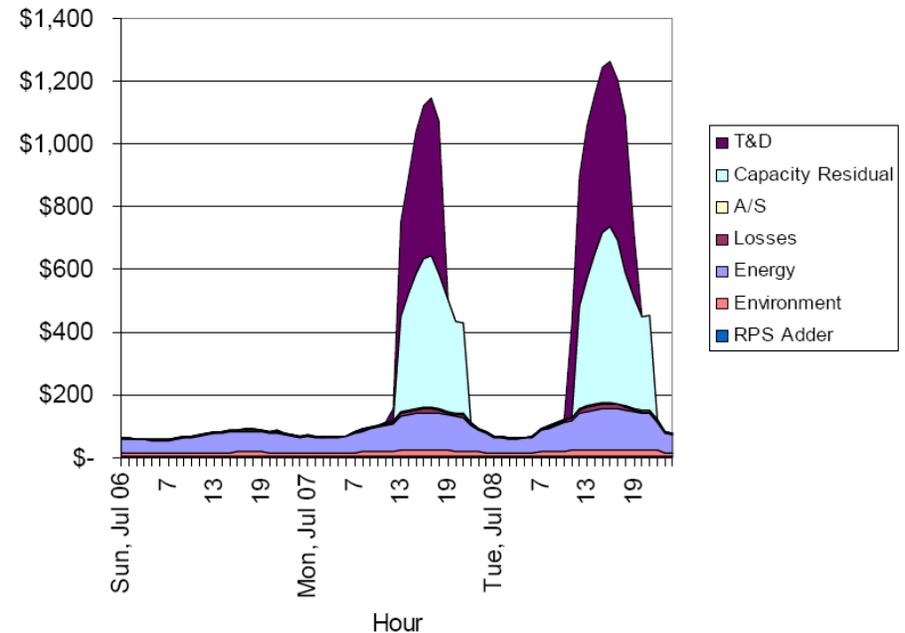
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# California PUC Rate Impact Study

- CPUC-commissioned study by Energy and Environmental Economics, Inc. (E3) released in March, 2010 in Rulemaking 08-03-008
- Splits rate impacts of on-site use of solar energy from net metering rate impacts
- CPUC report finds very minor rate impact, even with California's steeply tiered rates and more than 60% of the nation's installed solar energy
- Various assumptions about costs and benefits addressed in ABCs report (especially administrative costs, gas market impacts, capacity benefits given use of "balance year", division between solar and net metering benefits)

# CPUC Study Benefits

- Avoided Costs – components of hourly marginal cost
  - Energy Generation
  - Line losses
  - Ancillary services
  - System capacity
  - T&D capacity
  - Environmental benefits
  - RPS Adder



- Use components to produce hourly avoided costs for each climate zone for each year of analysis
- Apply the avoided costs to corresponding individual net-export shapes to calculate avoided costs for each load shape

# Annualized NEM Cost as percent of Utility Revenue

Through 2008, lifecycle annualized

	Net NEM Cost (Annualized \$000s)	Total Revenue (\$000s)	Percent	Implied Rate Increase (\$/kWh)
PG&E	\$14,380	\$11,373,950	0.13%	0.00018
SCE	\$3,745	\$12,107,743	0.03%	0.00005
SDG&E	\$1,556	\$2,534,874	0.06%	0.00009
<b>Total</b>	<b>\$19,681</b>	<b>\$26,016,568</b>	<b>0.08%</b>	<b>0.00011</b>

2020 forecast, assuming achievement of CSI program goals

	Net NEM Cost (Annualized \$000s)	Total Revenue (\$000s)	Percent	Implied Rate Increase (\$/kWh)
PG&E	\$100,463	\$15,921,596	0.63%	0.00106
SCE	\$26, 164	\$16,763,730	0.16%	0.00026
SDG&E	\$10,871	\$3,603,089	0.30%	0.00051
<b>Total</b>	<b>\$137,497</b>	<b>\$36,288,415</b>	<b>0.38%</b>	<b>0.00064</b>

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# Other Rate Impact Studies

- *The Value of Distributed Photovoltaics to Austin Energy and the City of Austin* (Hoff, Perez, Braun, Gerry, Kuhn, & Norris, 2006), and update in 2008 by Austin Energy
- *Distributed Renewable Energy Operating Impacts and Valuation Study* (R.W. Beck, Inc., 2009) - value of distributed solar generation for Arizona Public Service
- *Integration of PV in Demand Response Programs*, (Perez et. al. June, 2006) considering capacity benefits for Rochester Gas&Electric, ConEd & SMUD
- Other studies, but we're not attempting an anthology
- More coming, especially in the southwest – at order of utility commissions in NV, UT, CO, AZ and NM

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# Thank You!

Please send comments and study requests to:

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