
A Generalized Approach to Assessing the Rate Impacts of Net Metering

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for the

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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 issued January, 2012

Rate Impact is Utility-Specific

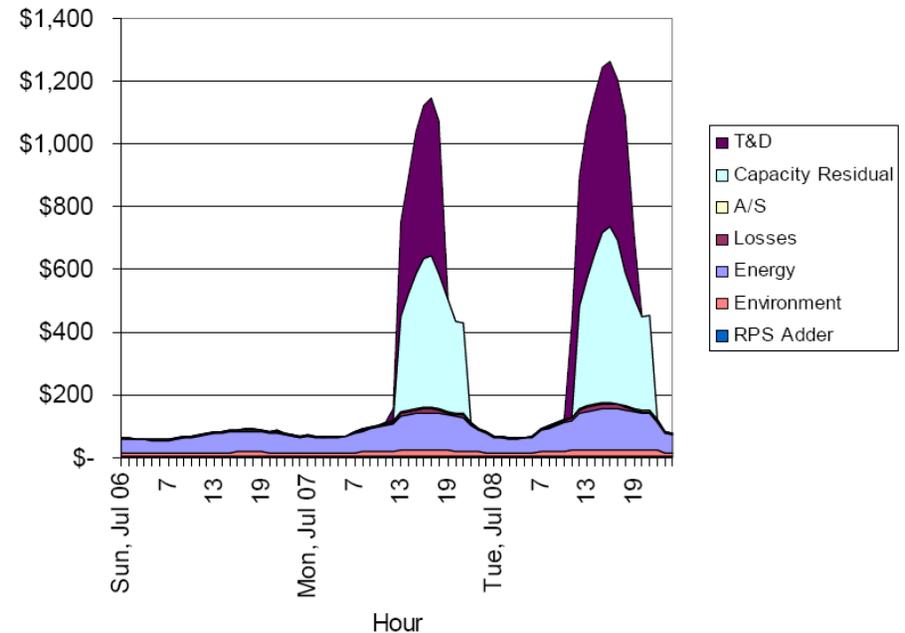
- Depends on state (or utility) net metering program
 - Program capacity
 - Facility size capacity
 - Rollover of excess generation
 - Standby charges and other fees
 - Applicability (all utilities, all customers)
- Depends on utility rates
- Depends on value of capacity benefits to a utility, as well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

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; subsequent rate flattening appears to have reduced impact to negligible levels
- CPUC study assumptions about costs and benefits are 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
Total	\$19,681	\$26,016,568	0.08%	0.00011

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
Total	\$137,497	\$36,288,415	0.38%	0.00064

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 did not attempt an anthology
- Further studies underway, with California embarking on a major review

Thank You!

Study available at www.solarabcs.org (publications)

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