

Show Me the Numbers: Balancing Solar DG with Consumer Protection

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Section 1



1. DG Development

The development of DG resources under different policy options should be explicitly modeled

- Relatively straight-forward methods:
 - Payback periods
 - Customer adoption rates
 - Penetration rates
- The forecast penetration rates under different policy options can then be input into analyses of
 - cost-effectiveness and
 - cost-shifting

2. Cost-Effectiveness

Value of Solar studies use a variety of different tests:

Utility Cost: Impacts on utility revenue requirements

Total Resource Cost: Impacts on host customer and utility

Societal Cost: Impacts on society (value of solar)

Rate Impact Measure (RIM): Implications for cost-shifting

A Framework to Assess Policy Options

Illustrative Example:

Policy Options	1. Cost Effectiveness			2. Rate Impacts	3. DG Development	
	Utility Net Benefits (PVRR)	TRC Net Benefits	Societal Net Benefits	(Long-Term Average)	Customer Payback (years)	DG Penetration (10 years)
1. NEM: conventional	\$120	\$24	\$60	0.8%	10	12%
2. NEM: with reduced payment for excess	\$60	\$12	\$30	0.6%	14	8%
3. NEM: plus increased fixed charges	\$12	\$2	\$6	0.0%	20	2%

- This information can be used to balance the goals of:
 - allowing sustainable development of distributed PV, and
 - protecting customers.

Impacts of Solar DG Policies on Payback Periods

Initial, draft results:

State	Policy	Before Policy	After Policy
AZ	Mandatory demand charges	14	26
HI	Reduced payment for excess generation & higher fixed charge	6	7
MA	Increased fixed charge	4.5	4.7
NV	Increased fixed charge & reduced payment for excess	11	21

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Appendix

Related Ratemaking Elements

Cost of Service Studies

- Goal: cost