



The Evolution of Net Metering, Utility Revenues & Rate Design

Perspectives on Net Metering

Overview

- What objectives should Solar DG policies hope to achieve?
- How to deal with the false precision of cost allocation and rate design.
- Unbundling the utility-DG generator relationship
- Is Net Energy Metering acceptable as “rough justice”?
- Some guiding principles

Policy Objectives

- Encourage solar deployment
 - Satisfies RPS requirements
 - Cleaner+Greener as a resource
 - “Infant industry” support for PV (cf., PURPA and U.S. nuclear investment in 60s,70s & 80s)
 - Responds to popular support
- Diversify generation supply
 - Viewed as a system resource
 - Cf. Germany
- Reinforce grid
 - Relieve distribution costs and pressures
 - Enables microgrids

Rate Design Issues

- Rate design sends the correct price signal when price equals marginal cost
- In a regulated environment, $P = MC$ may not correctly compensate a utility, i.e.,

$$\sum MC_i * Kwh_i \neq \text{Revenue Requirement}$$
- Thus, rate structures employing MC pricing must usually compromise somewhere.
- Complication arises when customer is both buyer and seller, or has competitive options.
- Complex rate structures are not accepted by consumers, at least in 2012.



Unbundling the DG-Utility Transaction

To isolate the DG payment from tariffed rates, consider this “buy-all, sell-all” model:

- Utility purchases DG output at full avoided cost price (including T&D effects and others)
- Utility bills customer for all electricity used under tariffed rates
- Separately, the utility pays incentive to promote DG production



What should each of these payments include?

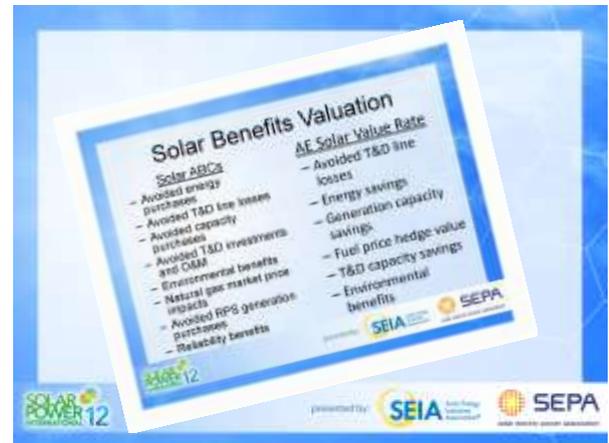
Avoided power costs, T&D savings, REC value, reliability benefits, etc. PLUS an incentive**

← \$\$ for solar output (FIT)

→ \$\$ for monthly utility bill

Same utility bill as all other consumers

**Recall our policy objectives



NEM as “Rough Justice”

- Unclear how DG solar benefits compare to cost-of-service rates.
- Unfair to isolate only on embedded distribution costs
- Given TOU pricing goals of many utilities, value of solar may be greater than average price avoided by the customer under net metering.

Conclusions

- The results of a new rate structure should be measured against the unbundled buy-all, sell-all model.
- The net energy metering debate is only incidentally about distribution cost recovery; the primary issue is the evolving utility business model.

Thank You

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