Net Energy Metering & Rate Design Guiding Principles

As distributed generation (DG) solar energy systems and energy efficiency applications continue to become more accessible and affordable, increased adoption of grid-energy reducing technologies is likely. However, as currently structured in many states, electric rate design may stymie growth of energy reducing technologies. Vote Solar proposes the following rate design principles that would allow for a high penetration DG future.

Rate Design Guiding Principles

1. **Non-discriminatory practices:** Utility rates should treat reductions in utility revenues and energy sales due to net metered distributed solar in a manner that is fully comparable to, and non-discriminatory relative to, reductions due to consumer behaviors including energy efficiency and demand response.

2. **Cost Recovery:** Rates for customer classes should recover the utility’s cost of providing service, based on commonly accepted cost-causation principles, and should provide an opportunity (not a guarantee) for the utility to recover its cost of service and earn an adequate return for shareholders, while minimizing cost shifts among and within customer classes.

3. **Rates are designed to recover costs to be incurred during the time they are in effect, and should more closely reflect costs**
   a. Rates should be based on marginal costs vs. average embedded costs, so that increases or reductions in customer loads, and thus revenue more accurately reflects the marginal costs to serve the marginal kW or kWh.

   b. The calculation of marginal cost-based rates should emphasize a long-run perspective in which a utility gradually replaces its current energy infrastructure with cleaner and more efficient technologies. From a rate design perspective, this perspective more closely aligns customer demand or consumption reductions with the costs that are avoided. Over the long run, one can consider certain traditionally categorized costs such as generation as “variable” in the sense that they can be avoided with a strategic balance of efficiency and demand response measures, coupled with customer-sited generation. Thus, when considering the necessity of fixed charges, the Commission should be mindful that, in the long-run, there are few costs that are truly fixed.

   c. Rates should include time-of-use (TOU) pricing that sends more accurate price signals for peak, shoulder, and off-peak energy usage. Any use of dynamic pricing for critical peak periods (as an overlay on TOU rates) should be well-defined, and transparent to the customer.

   d. Commissions should strive to add real-time pricing (specifically day-ahead hourly pricing) and other mechanisms as options for all customer classes that enable consumers to take maximum advantage of energy information, renewables, energy storage, automated devices, and other smart grid technologies in concert with utility costs.
e. Rates should provide an incentive to customers to reduce demand during peak and off peak hours (higher cost hours).

f. Rates should be simple enough for consumers to understand to take actions to reduce or shift usage, and lower costs.

4. **Transparency, access to data:** Stakeholder participants in formal proceedings should have access to all data necessary to ensure that the economic and rate design implications of adopting onsite renewable energy technologies can be understood and analyzed. Any claims of confidentiality must be fully rationalized by the host utility.

5. **Consistency across the state** - To the extent possible, there should be consistency and predictability across the state by implementing any changes uniformly across IOUs, cooperatives and municipal utilities.
Net Energy Metering Guiding Principles

1. **Right to self-generate and connect to the grid:** Every retail electricity customer has the right to install solar generation equipment at the customer’s site, and interconnect to the utility grid without discrimination. ¹

2. **Right to reduce electricity use:** Reductions in a customer’s grid energy consumption due to onsite solar generation (or any other reason) should not be imputed as creating a stranded cost to the host utility.

3. **Properly valuing solar electricity, and adequately compensating solar customers:** Customer-sited solar generation offers many benefits to the electric grid system and by extension to non-solar customers, including but not limited to: reduction in utility energy and generation capacity requirements, reduction in system losses; avoidance or deferral of distribution and transmission investments; localized grid support including increased reliability benefits; fuel-price certainty; and reductions in air emissions and water use. The benefits should be quantified, and solar customers should be adequately compensated for the value their solar energy is delivering to the grid.

4. **Non-discriminatory practices within cost of service recovery:** Utilities must rationalize the singling out of solar net-metering customers for any special rate treatment not generally applied to all similarly situated customers. Any utility charges created specifically for the purpose of recovering embedded fixed costs from net-metering customers must be cost-based, and should only recover net fixed costs, after accounting for all utility benefits and offsetting cost reductions due to the distributed solar. Similarly, any utility credits created for the purpose of assuring that economic benefits resulting from the deployment of net-metered solar systems are properly assigned back to the net-metering customer(s) should only reflect net benefits, after accounting for all utility costs.

5. **Statewide application:** Net metering rules, regulations, and practices should be standardized statewide.

6. **Transparency, access to data:** Customers, or solar companies on customers’ behalves, should have access to customer load data (including hourly profiles) with the permission of the customer to ensure that customers can understand the economic implications of adopting onsite renewable energy technologies. Customers should have access to data regarding their own electricity consumption, with transparency into the tariffs available to them. Billing statements from utilities should clearly show the net energy consumed from the utility, and any energy or dollar credits carried forward as a result of solar generation in previous billing periods.

7. **Specific net metering best practices:**
   a. **Total program/state capacity limits:** There should be no aggregate or statewide capacity limit for net metering.
   b. **Individual System Capacity:** Any individual system size limitation should be based only on the host customer’s load or consumption (e.g. AZ & CO).
   c. **REC ownership:** The owner of a net-metered system should retain ownership of renewable-energy credits (RECs) produced by their system, unless transferred to the utility or another party in exchange for acceptable compensation.
   d. **Restrictions on “rollover”:** Indefinite rollover, effectively or actually credited at retail rate, should be an option for net-metered customers. The only exception is allowing for payments for annual net excess generation at a price no lower than the average daytime wholesale price for the prior year.

e. **Metering equipment:** Retail electric customers utilizing net metering must not be required to purchase new metering equipment. Smart metering and other digital technology for energy management should be made available by the utility to solar and other customers on a non-discriminatory and open-access basis.

f. **Customer classes:** All customers should be able to participate in net metering in their existing classes based on similarly situated customers.

g. **Aggregation:** Virtual net metering and meter aggregation options should be available.