

**PJA Energy Systems Design LLC**  
**720 Bachelder Road**  
**Pembroke, NH 03275**  
**pjaesd@comcast.net**  
**phone: 603-485-2559**

---

July 20, 2016

Re: DE 16-576 Electric Distribution Utilities  
Development of new alternate net metering tariffs and or other regulatory mechanisms and tariffs for consumer- generators

Following are some thoughts on tariffs for proper pricing of distributed generation.

#### Brief Discussion

The addition of distributed generation to a distribution system does not add costs that are not recovered in interconnection fees. The effects of distributed generation are essentially the same in character and scale as those of energy-efficiency, conservation and fuel choice. They appear as reduced load and revenue to both energy supply and distribution. Charging a solar system an additional fee is discriminatory as its impact on the system is no different than that of other load-reducing activities.

Competitive load-serving entities take the risk of variable demand. They have the ability to adjust procurement for existing customer generation systems and absorb some new generation that appears during contract term.

A primary concern is what to do about reduced revenue for distribution service. This is an ongoing problem because of efficiency improvements and other load-reduction. The expansion of distributed generation further exacerbates the problem. Although a utility's return on investment is not protected against changes in technology or in the economy, an insolvency based on insufficient revenue is not necessarily in the consumers' interest. In this case, some increase in distribution charges would be acceptable because of the economic benefits of

distributed generation. We should note that if the rate of load-reduction doesn't exceed depreciation of the existing distribution investment, prices may not have to rise.

Another way to control costs in the distribution system is to use rates that more accurately reflect the system status so that customers would see a reduced price for locations and times when loads are low, and higher prices at times of high-load. The intent is to increase revenue from customer investment in efficient electrical equipment such as heat pumps and vehicle chargers in low-load areas without adding to the peak load. These incentives would also guide generation investment to higher-load areas. If these cost-containment attempts fail, we may need to consider other forms of subsidy for the distribution company.

### Tariff design

With some modifications existing tariffs provide a reasonable basis for a bidirectional tariff until a more responsive approach can be adopted. The modifications to the existing tariffs would involve isolating the customer charges such as metering and administrative and customer specific costs such as the service drop or interconnection to a transformer. These costs can be appropriately recovered through fixed and some type of demand charge as they do not exhibit diversity. Other costs should be recovered with reversible/bidirectional kilowatt hour charges. Today's fixed per kilowatt hour pricing does not provide a good proxy for cost causation and includes much cross subsidization. Prices that vary with system state of both power supply and distribution/transmission in real time would provide a better representation of value. Customers would be able to take part in controlling system costs. In the near term, as we begin to explore alternate paths to real time pricing, metering systems would probably be best handled by third parties until we resolve the actual metering needs going forward.