Allocation of Costs for Renewable Energy

A Policy Brief of the Electricity Consumers Resource Council

Renewable energy resources have traditionally been a small fraction of electric utilities' supply portfolio. This is changing. The North American Electric Reliability Corporation (NERC) is projecting that approximately 260,000 MWs of new renewable capacity (biomass, geothermal, hydro, solar, and wind) may be added by the year 2018. Roughly 96% of this total is likely to be comprised of wind (229,000 MWs) and solar (20,000 MWs). The current trend in the design of retail electric rates to recover the fixed costs of renewable energy resources on a variable or volumetric basis (kWh) is unduly burdensome for industrial customers and inconsistent with historical regulatory practices. As a result, this cost allocation method is unnecessarily eroding America's industrial competitiveness. Large industrial customers recommend that it is time to allocate the costs in rates of renewable energy resources just like other supply resources. It is critical to the competitiveness of US manufacturers that this principled rate making solution be employed.

> **Cost Allocation Principle:** *Cost causation is the central principle of all cost allocation. This principle means that costs should be allocated on the basis of factors that cause the cost to be incurred. There is a causal relationship between customer peak demand and investments in capacity. Therefore, the fixed costs of all the components of electricity supply infrastructure – generation, transmission and distribution – should be charged to retail customers based on each customer or customer class contribution to system peak demand.*

This "coincident peak allocation" principle rewards customers who consume less power during system peak periods, especially during hot summer days, and provides a strong incentive to all end-use customers to shift consumption away from these high peak periods and towards off-peak periods.

This cost allocation principle supports multiple policy objectives:

- Sends appropriate price signals for encouraging energy efficiency and for maintaining reliability.
- Improves the utility's asset utilization and reduces the need for new natural gas-fired peaking and coal-fired baseload generation.
- Reduces the need for transmission and distribution (T&D) system upgrades to accommodate system peak demand, and reduces T&D losses.
- Promotes clean air and reduces greenhouse gas emissions.

Retail rates based on the cost causation principle help make US industry more competitive. This is accomplished by rewarding ratepayers (all rate classes, residential, commercial and industrial will benefit from this approach) for efficiently using electricity. This can improve their operating margins, which in the long run saves existing jobs and attracts investments that create new jobs. Failure to adopt the cost allocation principle gives ratepayers the message that their usage patterns and consumption of electricity are unimportant.

The rate at which electrical energy is used, otherwise known as demand or capacity (kW), is a critically important measure of energy usage. In the utility planning process, the normal practice is to plan transmission and generation capacity additions to meet the system's coincident peak demand (kW). This is especially necessary given the recent trend in utility load profiles to a more peak-based load (*i.e.,* declining load factor) due mainly to expansion of air conditioning and electronic loads in the residential and commercial sectors. Long-term supply and associated costs are driven primarily by forecasts of peak demand, and therefore, utilities must allocate those costs on the basis of a customer's demand at the time of system peak demands.

Historically, rate regulators have adopted time-varying rate designs and interruptible tariffs (and other forms of demand response) for large price-responsive customers to encourage the customers to reduce consumption during on-peak periods (week days) and to shift consumption to off-peak periods (nights, holidays and weekends), resulting in significant cost savings for manufacturers and their utilities. The value of price responsiveness is greatly reduced when fixed costs are allocated in energy or volumetric charges—in fact it acts as a penalty. This is causing a significant and unjustified cost burden on US manufacturers and other utility customers who try to manage their loads to control costs. In fact, those that fail to manage their loads are being subsidized by those that do.

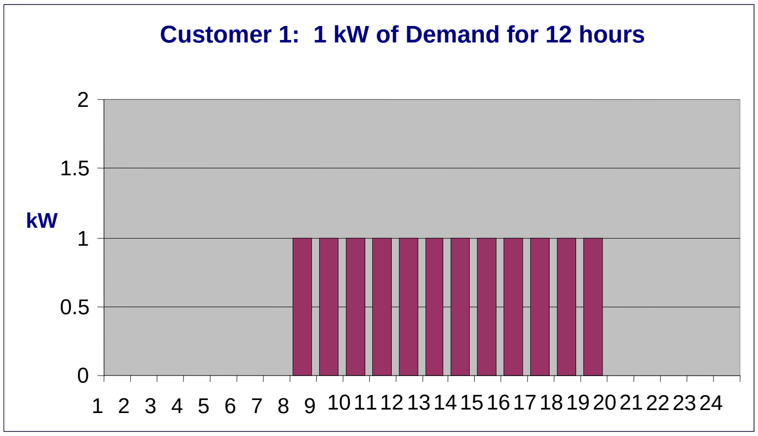
The problem is solved by recovering the fixed costs of generation, transmission and distribution infrastructure from ratepayers based on each customer or customer class contribution to peak demand. This principle was applied historically and applying this principle to the collection of costs to support additional renewable capacity will immediately place a higher value on load shifting and peak load reduction, reward appropriate customer behavior, and reduce system costs. For large industrial ratepayers this can go a long way toward helping level the competitive playing field with their global competitors.

For additional information, contact:

ELECTRICITY CONSUMERS RESOURCE COUNCIL
1111 – 19TH Street, NW, Suite 700
Washington DC 20036
Voice: 202.682.1390
www.elcon.org

An Illustrated Example of the Consequences of Allocating Fixed Costs in the Energy Component of Rates

In this example two customer facilities with identical energy (kWh) requirements incur significantly different capacity costs to satisfy their distinct load patterns.



Customer 1 operates its facility only during On-Peak hours, and 12 kWh of energy was consumed over the 24 hour period (1kW x 12 hours)

Customer 2 also consumes 12 kWh of energy over the 24 hour period (0.5kW x 24 hours), however only half of the capacity (generation) was required to supply the load.

If costs to build new renewable generation are charged on an energy basis, both facilities would pay the same amount, when in reality Customer 1 requires twice the generation and transmission resources to serve its load. In effect, Customer 1 is being subsidized by Customer 2, and is receiving an economic incentive (i.e., distorted price signal) to be wasteful.