



CAPTURING THE FLEXIBILITY IN PRICE-SENSITIVE LOADS TO HELP MEET GRID NEEDS

Retail Electricity Pricing Can Be Used More Widely and Efficiently to Allow Flexible Demand to Respond to Grid Needs

Reston, Va. – The [Energy Systems Integration Group \(ESIG\)](#) has released three white papers from its task force on aligning retail pricing with grid needs, exploring ways that retail pricing may be used more widely and more efficiently to allow flexible demand to respond to grid needs.

In light of the growing contribution of flexible demand for grid reliability, this task force brings together experts in rate design and electricity markets, transmission and distribution planning and operations, consumer advocates, and others to explore current issues, potential solutions, and practical implementation challenges involved in utilizing the flexibility in price-sensitive loads. Carl Linvill, task force chair, described how “the task force examined retail pricing from many perspectives and has produced white papers investigating barriers to more effective retail pricing—treating demand as demand rather than a supply-side resource, transportation electrification, the effective integration of pricing and programs, and retail pricing for electrification.”

Three white papers were released today, with five more to come. “[Tapping the Mother Lode: Employing Price-Responsive Demand to Reduce the Investment Challenge](#)” by Michael Hogan discusses ways to access the potential of demand flexibility to significantly reduce the amount of infrastructure that must be built. The paper argues for a shift in focus from strategies that require flexible demand to mimic centrally dispatched generation, to strategies that empower consumers to save money by linking their consumption more dynamically to daily fluctuations in variable energy supply.

The paper “[Why Is the Smart Grid So Dumb?: Missing Incentives in Regulatory Policy for an Active Demand Side in the Electricity Sector](#)” by Travis Kavulla examines incentives for actively managing demand for two types of retailers, finding incomplete incentives throughout their business models. It proposes several reforms: for time-of-use rates to be the default retail product for regulated-utility customers, for all retailers to be exposed to and responsible for billing all relevant grid costs, and for public investment and standards for automated devices.

“[Heat Pump–Friendly Cost-Based Rate Designs](#)” by Sanem Sergici and co-authors explore how alternative cost-based electricity rate design does not need to penalize electrification, with a deep dive into heat pump adoption for space heating. The study’s model showed a decline in energy costs for a sample of residential customers who switched from natural gas heating equipment to heat pumps under three alternative rate designs.

“With high levels of variable renewables and limited-duration resources, the increasing electrification of loads having inherent flexibility, and enabling control and communication technologies, the time is now to be using retail pricing to better align demand with grid needs,” said Debra Lew, associate director of ESIG.

The set of white papers is intended for people across the energy industry: power systems engineering and grid operators, retail economists, consumer advocates, regulators, and others. The task force aims to advance understanding of the opportunities and challenges of using and enhancing retail pricing and programs to meet the changing grid needs of a changing energy paradigm.

ESIG is a nonprofit organization that marshals the expertise of the electricity industry’s technical community to support grid transformation and energy systems integration and operation. The white papers can be downloaded at <https://www.esig.energy/aligning-retail-pricing-with-grid-needs/>.

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