



A 'Full Value' Tariff for New York State: Rate designs for the new electricity grid

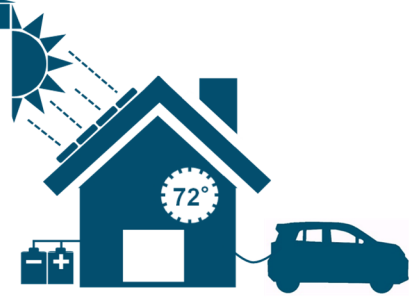
Energy and Environmental Economics, Inc (E3) developed the 'full value' retail electric tariff (FVT) to take advantage of new technologies to fully reflect the benefits of distributed energy resources and underlying marginal costs of the grid. The FVT is described in E3's new report, *Full Value Tariff Design and Retail Rate Choices*, sponsored by NYSERDA and the New York Department of Public Service.

E3's Smart Home Model

E3's Smart Home model simulates customer and utility system benefits from controllable, flexible loads under any retail rate scheme.

A 2,500 ft², 3-bedroom New York home is modeled with a home energy control device that:

- Sends & receives data to/from the electricity grid
- Learns customer preferences & behavior
- Controls electricity use & generation from home appliances



Bill savings, location with high T&D value (\$/year)
Bill savings, location with zero T&D value (\$/year)

Con Edison	Rate Option	Solar PV (75% Usage Offset)	Energy efficient A/C (25% Savings)	Price-induced load shifting	Smart HVAC	Battery storage	Smart electric vehicle
	Existing Rates	\$1,253 / \$1,253	\$112 / \$112	No Savings	No Savings	No Savings	No Savings
Full Value Tariff	\$1,179 / \$742	\$146 / \$93	\$274 / \$(74)*	\$236 / \$151	\$430 / \$305	\$141 / \$133	
Full Value Tariff + Societal Signal	\$1,300 / \$863	\$142 / \$89	\$260 / \$(74)*	\$229 / \$144	\$404 / \$280	\$123 / \$122	

The FVT is comprised of three parts: a customer charge, a size-based network subscription charge, and a varying kWh dynamic price. The FVT also accommodates variations in network subscription charges by location, which allows dynamic prices to reflect local transmission and distribution costs while maintaining revenue neutrality. **The result is a smart rate that when combined with smart devices can save both customers and the utility money, without troublesome cross-subsidizations.**

To assess the effects of a FVT, E3 used its **Smart Home model** to evaluate customer behavior and the value proposition of technologies that can respond to dynamic prices, as well as current technologies like Solar PV and standard energy efficiency. The analysis shows that the FVT can yield savings from measures that are not encouraged under existing rates, while still compensating solar PV and energy efficiency measures in high value locations.

As with any rate design, **transition path is critical to successful implementation.** The FVT is designed to accentuate positive and limit negative consequences for the public and key stakeholders. These stakeholders include New York ratepayers foremost, but also distribution utilities, environmental and local interests, technology innovators, and ESCOs.

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