Transactive Energy: Two-way Subscription Retail Tariff

NIST TE Challenge
December 3, 2015

Edward G. Cazalet, Ph.D.
CEO, TeMix Inc.
Parties automatically manage facilities and devices in response to Buy and Sell Tenders from TE Platforms.
Two-way Subscription Retail Tariffs

- Based on my typical usage/production, I automatically transact on a TE Platform with one or more suppliers for subscriptions for prescribed quantities of energy and transport in each hour of the year(s) for prescribed monthly payments.

- If I use less than I subscribed for in each hour then I am paid for the difference at an hourly or 5 minute spot price.

- If I use more than I subscribed for then I pay for the difference at an hourly or 5 minute spot price.

- At any time I can automatically buy or sell to modify my subscriptions at current tendered prices on a TE Platform.

Ref: [http://www.sgip.org/Publication-Retail-Tariff](http://www.sgip.org/Publication-Retail-Tariff)
A two-way Transport product delivers the Energy product.

Electric energy (at a place and time)

Example: Transmission
Connected Substation

Transport

Electric energy (at a different place and same time)

Example: Building

Two-way Tariff: Recover more of the cost-of-service when transport is heavily loaded in either direction
The four basic rules of Transactive Energy

- Forward transactions are used to coordinate investments and manage risk.
- Spot transactions are used to coordinate operating decisions.
- All parties act autonomously.
- There are two products: energy and transport.
Transactive Energy Market Structure

Energy Services Parties
- Consumers
- Producers
- Prosumers
- Storage Owners

Transactive Energy Platforms

Intermediaries
- Financial Investment
- Credit & Clearing
- (Automated) Market Makers

Transport Services Parties
- Transmission Operators (TO)
- Distribution Operators (DO)

Service Interface

Tenders and Transactions

Regulators