Retail Automated Transactive Energy System (RATES)
Funded by California Energy Commission (CEC)
EPIC Grant GFO-15-311

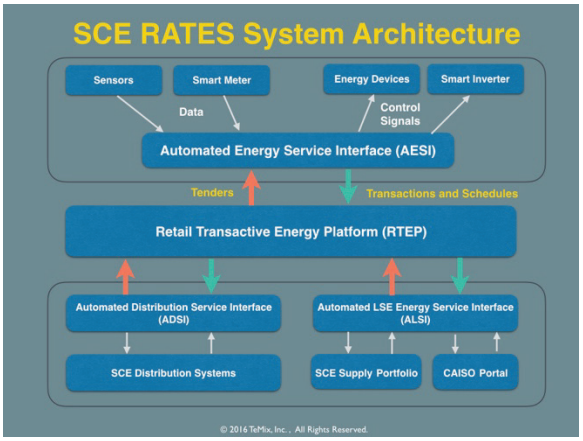
The CEC's purpose for this grant is

- to develop and pilot-test behind-the-meter load management systems, operational strategies, and retail tariff options that minimize the cost and complexity of customer participation in electricity markets, and
- engage participants from any customer sector, but focus on residential and small commercial customers.

Universal Devices Inc.(UDI) and TeMix Inc., were competitively awarded this grant for approximately $3.2 million for the period June 2016 to March, 2019. Non-financial support letters were provided by Southern California Edison (SCE), the California Independent System Operator (CASIO) and the OpenADR Alliance.

UDI and TeMix will develop and pilot (1) a retail transactive energy platform, (2) automated end device controls, and (3) an innovative two-way subscription tariff. The pilot is with about 200 SCE residential and small commercial customers.

The transactive platform interfaces with the SCE distribution and energy service providers and the CASIO market.

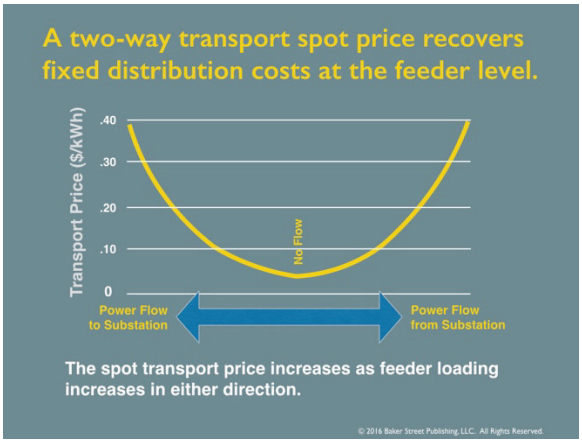


The subscription retail tariff provides customers with fixed amounts of electricity shaped to their typical hourly usage and a fixed monthly bill. When customers use less than subscribed in an hour they are paid a spot price for the difference; if they use more they pay a spot price for the difference.

Customers in the pilot are provided UDI automated controls for HVAC, electric water heaters, pumps and other devices. The controls decrease usage when spot prices are high and increase usage when spot prices are low. Customers benefit financially while preserving comfort and convenience.

The subscription revenues stabilize SCE revenues and reduce SCE costs to purchase energy when wholesale prices are high and sell excess solar and wind at low prices rather than wasting it.

The two-way tariff for SCE distribution recovers more of the regulated distribution cost when a distribution feeder is more heavily loaded in either direction. This reduces distribution grid congestion and provides price signals that discourage over investment in solar on a feeder without a corresponding investment in storage.



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