

NEW JERSEY ENERGY MASTER PLAN
Strategy Template
2005-2020

Real-Time Electricity Pricing

<u>SUBMITTED BY</u>	
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Objective

Reduce projected total electricity demand by 20% by 2020.
Reduce projected peak electricity demand by 20% by 2020.

Strategy

No matter which specific strategies are ultimately adopted to reduce total and peak electricity demand by 20% by 2020, the Retail Energy Supply Association (“RESA”) submits that *the* key to getting there is through expanded application of real-time energy pricing – whereby customers see prices that reflect the true cost of providing their power around the clock.

Real-time pricing gives customers the price signals they will need in order to take advantage of the load management and energy conservation and efficiency programs that will permit the State to meet its ambitious objectives. Real-time, market-reflective pricing – and, more specifically, hourly pricing – encourages customers to voluntarily conserve – particularly at times of peak demand and strain on the system.

Today, however, only about 2,000 out of 3.7 million electricity customers in New Jersey see hourly pricing. Most electricity customers in the State see electricity prices that are blended over several years into a fixed price, one that fails to adequately reflect high-cost periods of generation, one that is simply not market-reflective. Hence, most electricity customers in New Jersey lack a clear signal *and* a clear incentive to conserve energy, shift consumption patterns or look for energy-efficient alternatives.

Longer-term fixed electricity rates – like those experienced by the overwhelming majority of New Jersey’s electricity customers – do not contribute to objectives laid out by the Master Plan Committee. Instead they create a false signal – and a false sense of complacency – that electricity costs are fixed for substantial periods of time.

This proposed strategy for the expansion of real-time pricing will allow – and encourage – the development and adoption of the widest variety of market-based solutions for demand reduction from energy suppliers, energy management consultants *and* energy consumers.

Responsible Party

The Board of Public Utilities (“BPU”) has the authority to implement changes to the pricing of Basic Generation Service (“BGS”) to expand the application of real-time energy pricing.

Until such time as there may be competitive metering in New Jersey, the electric distribution companies have the responsibility to install the advanced meters needed to track real-time (*i.e.*, hourly) prices. *Cf.*, Strategies proposed by Public Service Enterprise Group (“Advanced Metering Infrastructure”) and Jersey Central Power & Light (“Advanced Metering and Energy Management Pilot”).

Timeline of Action

In order to meet the Master Plan’s objectives, a sufficient number of customers must receive the real-time price signals that will allow them to participate in demand-reduction and load-management programs and, thus, reduce demand consistent with the Plan. RESA recommends, therefore, that the BPU accelerate the expansion of real-time pricing.

The BPU can begin, for the BGS year that will commence on June 1, 2008, by expanding the Commercial and Industrial Energy Pricing (“CIEP”) BGS class to include all customers with a peak load factor of 500 kW and above. The following year (June 1, 2009) the CIEP class would include all customers with a peak load factor of 300 kW and above. The following year (June 1, 2010) the CIEP class would include all customers with a peak load factor of 100 kW and above, and so on until all commercial and industrial customers (and, ultimately, all customers) are included.

In parallel with the expansion of the CIEP class, the BPU should inaugurate pilot projects to implement real-time electricity pricing for residential customers and set a schedule to phase in the application of real-time pricing for all residential customers by 2020.

Given that the benefits of real-time pricing have been studied and recommended by the State since at least 1974, RESA submits that this is not an unrealistic strategy. See, *e.g.*, State Energy Office, *Energy: A Report to the Governor of New Jersey from the Task Force on Energy* (May 1974), pp. 98-99 and 118.

Strategy Outcome

Studies have shown that, as the bloc of customers that are exposed to hourly prices expands, the more *all* customers benefit from efficiencies gained in our regional electricity market, including the lowering of wholesale electricity prices.

Last year, Rutgers University’s Center for Energy, Economic and Environmental Policy (“CEEEP”) prepared two reports for RESA. In the first report, *Assessment of Customer Response to Real Time Pricing, Task 1: Literature Search* (June 30, 2005), CEEEP reviewed approximately 40 published academic and industry reports and studies to assess the extent to which real-time pricing influences decisions by commercial and industrial customers to curtail or shift load during hours of high prices or otherwise engage in conservation or demand-side management activities. CEEEP’s analysis confirmed that real-time pricing is the key to getting customers to take charge of their energy use. CEEEP reported that *all* customers will respond and that this customer responsiveness to accurate price signals also provided a range of benefits to the market as a whole.

CEEEP found that

“[t]he vast majority of the literature reviewed endorses real-time pricing as the most efficient approach to achieving demand response and recognizes that the performance of competitive wholesale markets is improved by providing customers with an incentive to respond to wholesale market prices. [Real-time pricing] could serve to improve market efficiency, mitigate market power, dampen wholesale price volatility, and bolster system reliability. Demand response would eliminate intra-class subsidies on the energy portion of customers’ bills by having each customer pay an amount for electricity exactly equal to the costs imposed on the grid.” CEEEP *Task 1* at 18.

Some of CEEEP’s findings come as no surprise, such as the fact that real-time pricing, for example, eliminates the intra-class subsidies that are inherent in average-price tariffs. CEEEP *Task 1* at 11. Similarly, it has long been

understood that, when customers are encouraged by proper price signals to reduce demand during high-price hours or to shift that demand to low-price periods, the overall efficiency of the wholesale market is improved to the benefit of all customers. *Ibid*

Less immediately obvious, perhaps, is the effect that real-time pricing in a competitive *retail* market can have on mitigating market power in the underlying *wholesale* market. Quoting other studies, CEEEP reported that “if a sufficient number of [retail] customers are exposed to and adjust their demand in response to [real-time] wholesale electric prices, the resultant reductions in demand will limit the ability of [wholesale] suppliers to increase spot and long-term market clearing prices above competitive levels.” CEEEP *Task 1* at 11.

On the other hand, CEEEP noted the economic inefficiencies that arise with fixed prices or rates:

“Average price tariffs, such as the fixed price default tariff currently used in New Jersey [*i.e.*, Basic Generation Service-Fixed Price], result in all customers paying the same price for electricity. ... Customers do not receive accurate price signals that reflect the costs they are imposing on the system at times of high prices and therefore do not receive the information they need to make a decision as to whether they would continue purchasing electricity at specific price points or would choose to reduce demand at certain prices.” CEEEP *Task 1* at 16.

CEEEP’s review went on to note that “[a]ll of the literature ... endorses the theory that [real-time pricing] will, over the long run, result in lower system costs and reduced prices.” *Ibid*.

For the second report, the *Assessment of Customer Response to Real Time Pricing, Task 2: Wholesale Market Modeling of New Jersey and PJM* (September 13, 2005), CEEEP ran a computer model of the expanded PJM day-ahead market to determine the effect that varying levels of real-time pricing in New Jersey would have on demand and price in that PJM market. The benefits of real-time pricing to New Jersey that CEEEP found as a result of its analysis confirm the findings of the other studies reviewed in *Task 1* and are profoundly instructive to this Master Plan proceeding.

CEEEP’s analysis showed that, as more and more customers are transitioned to real-time pricing, all customers in the PJM market would benefit from downward pressure on wholesale prices. RESA notes, parenthetically, that this would aid in achieving the Master Plan’s objectives for rate and price stability.

CEEEP found, first, not surprisingly, that “[i]ncreasing the amount of load on [real-time pricing] reduces demand and wholesale prices during peak hours and increases demand and prices during off-peak hours.” CEEEP *Task 2* at 6. But CEEEP also found that “[a]s the amount of load on [real-time pricing] increases, *all* customers pay on average less for their electricity, not just those on [real-time pricing].” *Ibid*. Emphasis in the original. In other words, the greater the number of customers that have real-time, hourly pricing – and, thus, are motivated to respond to real-time price signals – the greater the price benefits for *all* customers in New Jersey.

These reports concluded that knowledge of real time price signals – simply being able to see these market-reflective prices – leads to choice and action and will yield meaningful load reduction, more efficient utilization of regional generation assets and system-wide cost reduction. RESA has submitted copies of the two CEEEP reports to the Energy Master Plan Committee with its Initial Filing dated November 1, 2006.

Implementation Cost

Inasmuch as the BPU already undertakes an annual review of BGS, there is no incremental cost to the BPU to pursue an expansion of the application of real-time electricity pricing. RESA is not able, at this time, to estimate the cost of installation of advanced meters but recommends the reader to the metering strategies noted above and to the discussion of source of funding, below.

Source of Funding

RESA notes that there already exists a group of customers that have advanced meters in place but that are not yet on hourly pricing. Pursuant to BPU order all customers in ACE-AGS Primary, JCP&L-GST, PSEG-LPL Secondary and Rockland-SC-2 and SC-7 have had advanced meters installed. See, *I/M/O the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act*, Dkt. Nos. EX01110754 and EO02070384 (December 18, 2002), p. 14.

RESA has suggested in previous BGS filings with the BPU that accumulated (and accumulating) retail margin funds should be more than adequate to pay for the installation of additional meters.

Indicators

The indicators for this strategy are simple: a count year-by-year of the number of customers that purchase electricity based on real-time pricing (and a count of the meters installed that enable them to do so) in order to measure progress toward the goal of all customers on real-time pricing by 2020.