



peaksaver[®] in the DR Auction

Challenges to Implementing Residential DR in the Energy Market

About Rodan

- Ontario's largest Meter Service Provider and Demand Response Aggregator
- Recently acquired Energent a leading EMIS (Energy Management Information Systems) and data analytics company based in Kitchener, ON
- OEA 2013 Company of the Year Award
- Canada's Top 100 Small & Medium Employers 2015, 2016
- Metering Services
 - Design, installation and management of advanced metering infrastructure & smart grid technologies (metering, monitoring, protections and controls)
 - Meter Changes, Upgrades, X-Phase testing, S-S-06 Testing
 - Meter Data Management Systems
- Engineering & Technical Services
 - Connection Impact Assessments
 - Project engineering & design
 - Remote monitoring, RTU set-up
 - System optimization studies
- Demand Management
 - Design and implementation of utility programs
 - Distributed energy resource development

Pre-auction

- **Eligibility** – a household is less than the 1 MW direct enrollment limit for the auction, so aggregation would be required. About 2,000 devices per zone would be required to make the minimum (assuming 0.0005 MW per household)
- **Delivery Period** – current peaksaver population is highly seasonal (3 to 4 months at best).
- **Deposit** – who provides funds? Depends on ownership and aggregation model...

DR Auction

- **MW Valuation** – what is true cost of providing the resource, and what is the impact on other resources in the auction?
 - LDC conservation funding
 - Smartgrid funding
 - Other sources
- What happens to the resource if it does not clear the auction? Is it idle for that season?

Post-auction

- **Prudentials** – who posts them? Again, depends on ownership / aggregation model
- **Registration**
 - Current rules would require each residence (device) to be registered, and online IESO would require separate, one-at-time registration via the web interface.
 - MC approval information currently required for every meter:
 - If measuring curtailment using devices, MC approval is required for each device
 - If using residential meter, at least badge number and seal year will be required for each.
 - LDC device populations may cross IESO electrical zones.
 - If devices are treated as a single aggregate load via summation of meters, current market rules could require an SLD, since multiple meters reference a single load. Unclear if the SLD would need to be per residence; could become overwhelming.

Energy Market Participation

Performance

- The current peaksaver population is largely HVAC and as such is highly seasonal (summer) and completely tied to weather.
- Cool weather = zero load available.
- Current market rules employ a penalty factor that doubles during the projected peak months. If temperature peaks do not coincide, penalties will exceed revenues. Who pays?
- Test activations for each resource are not in-market activations and could lead to failures if not on peaking days (penalties)
- Current peaksaver design allows for dispatch if secondary triggers are met (temperature and demand). Under a market scenario, the only criteria would be price. This could result in fewer peaksaver activations in some circumstances
- Allowing customer opt-outs could result in either a derating of capacity or uncertainty at event time. Not allowing opt outs may reduce the appeal of the program

Other Considerations

Legal

- **Ownership** – who owns peaksaver devices – residents? LDCs? The IESO?
- **Right to Dispatch** – Current agreements specify a fixed number of hours of activation versus unlimited total hours in the market
- **Term** – current agreements have term limits (typically a couple of years)
- **Liability** – Who posts prudentials? Who bears the brunt of non-performance?

If existing devices are to be brought to market, new agreements will be required for most (if not all) participants.

Changes Required for peaksaver in DRA

- **Registration** – Bulk upload or streamlined aggregate meter registration
- **Metering** – relaxed requirements allowing all or some of the following:
 - **Longer recording intervals** (as found in most LDC residential meters)
 - **Acceptance of device metering** that may not be Measurement Canada approved, and head-end aggregation of same to provide measurement data
 - **More flexible acceptance of LDC equipment** without the need for badge and NOA information
 - **Non-punitive performance structure** – in terms of performance and availability

Questions ?



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