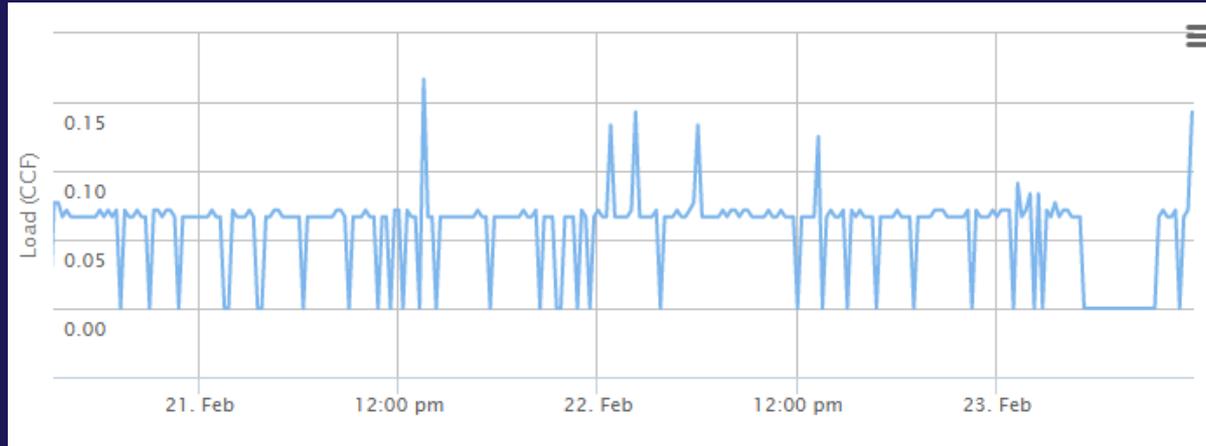


Gas Demand Response



Owen Brady
Product Management Specialist – Emerging Products



Program Overview

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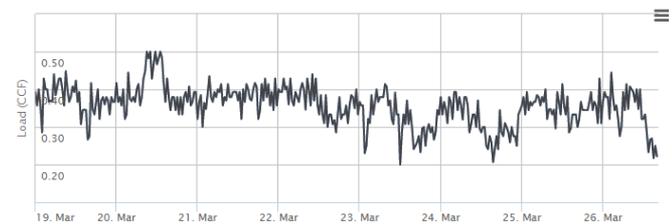
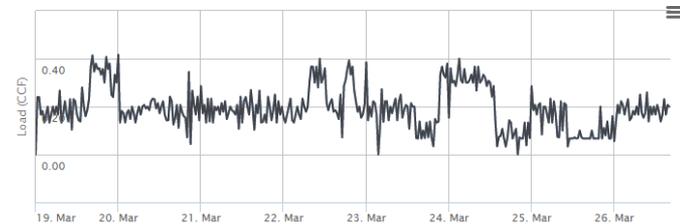
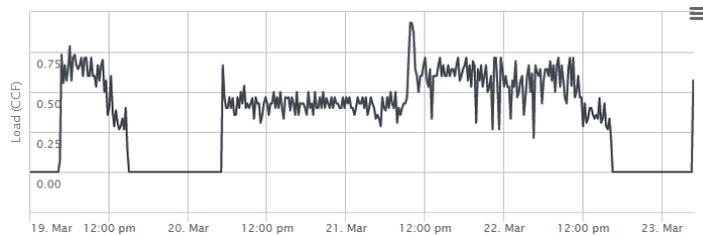
HERE WITH YOU. HERE FOR YOU.

- Determine
 - Firm C&I interest
 - Distribution system benefits and response
 - Scalability
- Design
 - Events coincident with system peak (6AM-9AM)
 - Max of 6 events per year
 - Direct Load Control (DLC)
 - Capacity commitment based on nameplate data
- Data
 - KYZ-pulse data
 - Site gas meter, not necessarily equipment level
 - 1-minute usage interval, uploaded every 5 minutes via cellular connection



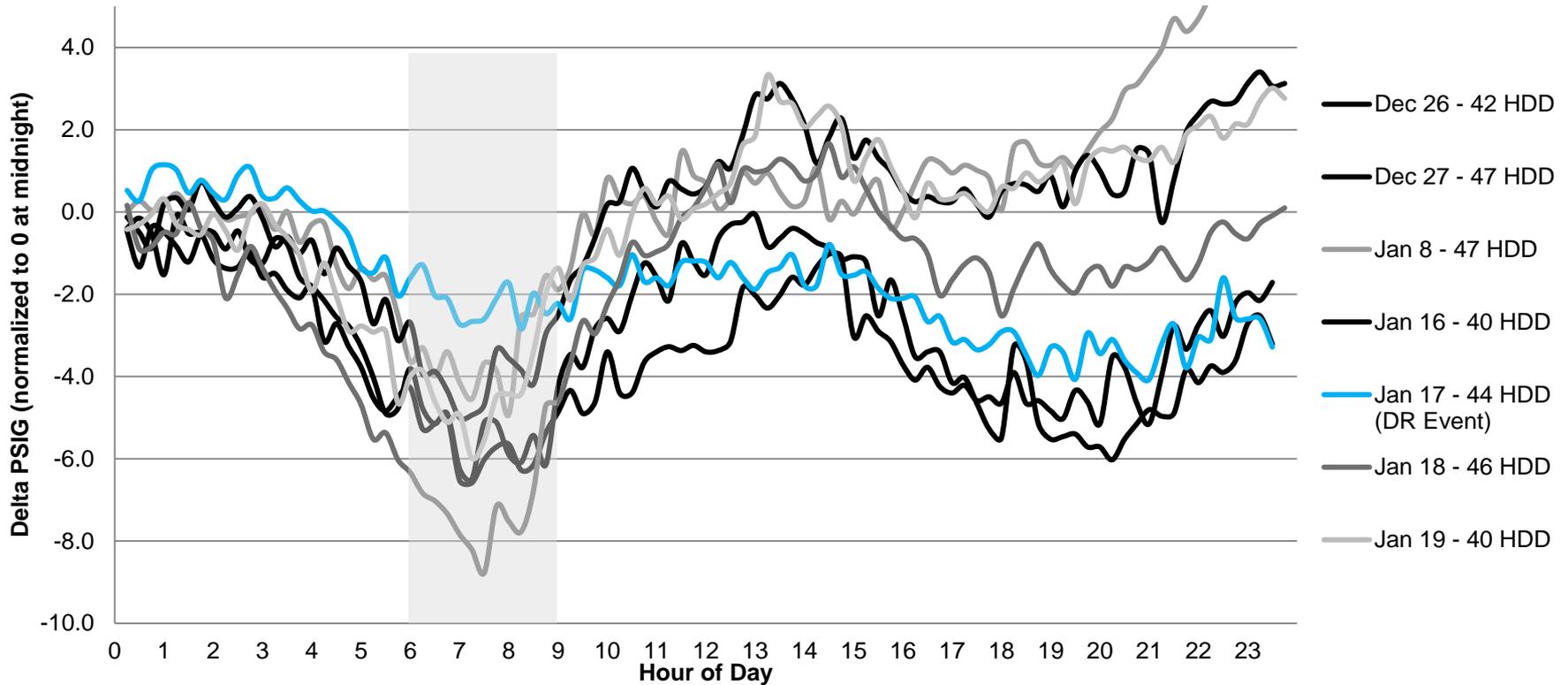
Results – Site-level Data

- Different customers have vastly different usage profiles
- Charts show usage (ccf) over a period of 1-week (3/19-3/26)
 - This data is from a period after the end of the DR season



Results – System Data

Pressure Governor



Business Model/Scalability

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- Healthy customer interest exists (within our pilot budget)
- Reduction of 25-50% of nameplate capacity is possible thanks to short event length
 - Initial results are encouraging that DR can positively impact system
 - Will use data from all programs to verify results
- Possible to use demand respond to create a more dynamic, flexible gas system to better serve our customers' needs
 - DR providing data and a new perspective for discussing system modeling and load planning

Business Model/Scalability

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HERE WITH YOU. HERE FOR YOU.

- Four programs underway
 - Massachusetts – Study of gas DR potential with Fraunhofer Center for Sustainable Energy
 - Rhode Island – EE program (5-10 sites for 50 DTh/hr. reduction)
 - Downstate NY – planning for year two of three year pilot (16 facilities, 192 DTh/hr.)
 - Upstate NY – reduce East Gate peak by 1% (20-40 customers, 200 DTh/hr.)

- Utilities can still add value for gas DR development
 - Value stack still not fully understood
 - BCA development ongoing
 - Gas utilities can capture additional value by embracing innovation