



TJX Demand Response

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Program Development

- 2008
 - Phase 1 Pilot
 - 6 stores evaluated
 - Phase 2 Pilot
 - 100 Stores enrolled
- 2009-
 - 300 stores enrolled



Program Assessment

- **Criteria** for Participation
 - Payment Amounts
 - Historic frequency of events
 - Penalties
 - Aggregation



Expertise Through Partnership

Constellation Energy provided One-Stop-Shopping

- General Project Management
- Strategic Development
- Tactical Development & Implementation
 - Engineering
 - Interaction with Novar
 - Interaction with ISO
 - Program administration
 - » Enrollment
 - » Payments
 - Data management
 - » Pre & Post Event
 - Event Notifications & Communications



Development Process

1. Evaluate/Prioritize programs
2. Evaluate/Prioritize facilities
3. Enroll
4. Develop program scripts
5. Testing
6. Ready, set...
7. Count\$\$\$\$\$



Load Reduction Strategies

Phase 1- HVAC Load Reduction

- Shed back-office rooftop units (RTUs)
- Shed sales floor RTU cooling stages on a rotating basis, fans remain on, OA dampers at minimum position
- Temperature limits trigger automated overrides to mitigate comfort issues



Load Reduction Strategies

Potential Phase 2- Lighting

- Higher visibility than HVAC
 - Impact on sales?

- Option 1-“Employee” lighting settings?
 - Sales floor to half pattern
 - Turn off non-critical lighting
 - (spots, perimeter valence, gondolas, etc)
 - Potential 15kw
 - No capital\$\$ required

- Option 2- Dimmable ballasts?
 - Requires capital\$\$



Implementation

- Program automation sequences set up in advance
 - Pre-scripted event-start and event-stop subroutines
 - Event day pre-cooling
- Document Scripts & Procedures
- Training



Roles & Responsibilities

- Constellation
(Curtailment Provider)
 - Research & Education
 - Financial proformas
 - Pilots
 - Assist & Verify load shedding
 - Enroll with ISO
 - Monitor & Track
 - Baseline measurement
 - Performance verification
 - Payment
 - Reporting
- TJX
 - Site select and prep
 - Scripts & procedures
 - Event management
- Novar
 - Assist/Support scripting
 - Assist/Support Communications



Payment Schedules

- PJM
 - Capacity- \$3.10 - \$6.63/kw/mo
 - Energy- \$1.00/kwh per event

- ISONE
 - Capacity- \$3.75 - \$4.74/kw/mo
 - Energy- \$0.35 or LMP/kwh per event



Results

- 2008
 - Pilot successful
 - Payments:
- 2009
 - 300 Stores enrolled
 - Projected Payments:
- Valuable experience & learning sets stage for enhanced demand management, RTP, etc



Demand Response Benefits

- \$\$Payments\$\$
- Experience*
 - RTP
 - Smart metering
 - Demand management
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