

Federal Buildings Shedding Load

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General Services Administration
Public Building Service
National Capital Region

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Demand Response



- Buildings working together to shed a large load
- Ten buildings work collectively as a “virtual power plant” with an aggregate commitment reduction during grid “emergency” events.



Demand Response



GSA expects to:

- Earn revenue,
- Reduce “demand” charges,
- Save energy,
- Help prevent rolling blackouts,
- Mitigate power quality issues,
- Reduce the need for new power plants, and
- Lessen the need for utilities to operate inefficient “peaking” power plants during times of high grid demand



History of Demand Response at GSA National Capital Region



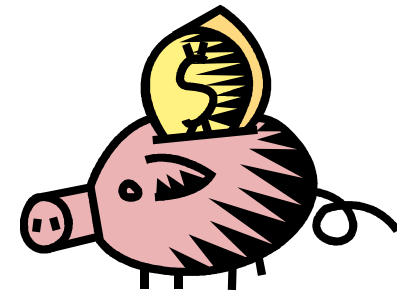
- Former programs punitive
- Current program requirements:
 - No financial risk to government
 - Minimal impact to customer
 - Positively impacts financial bottom line
 - Easy to manage



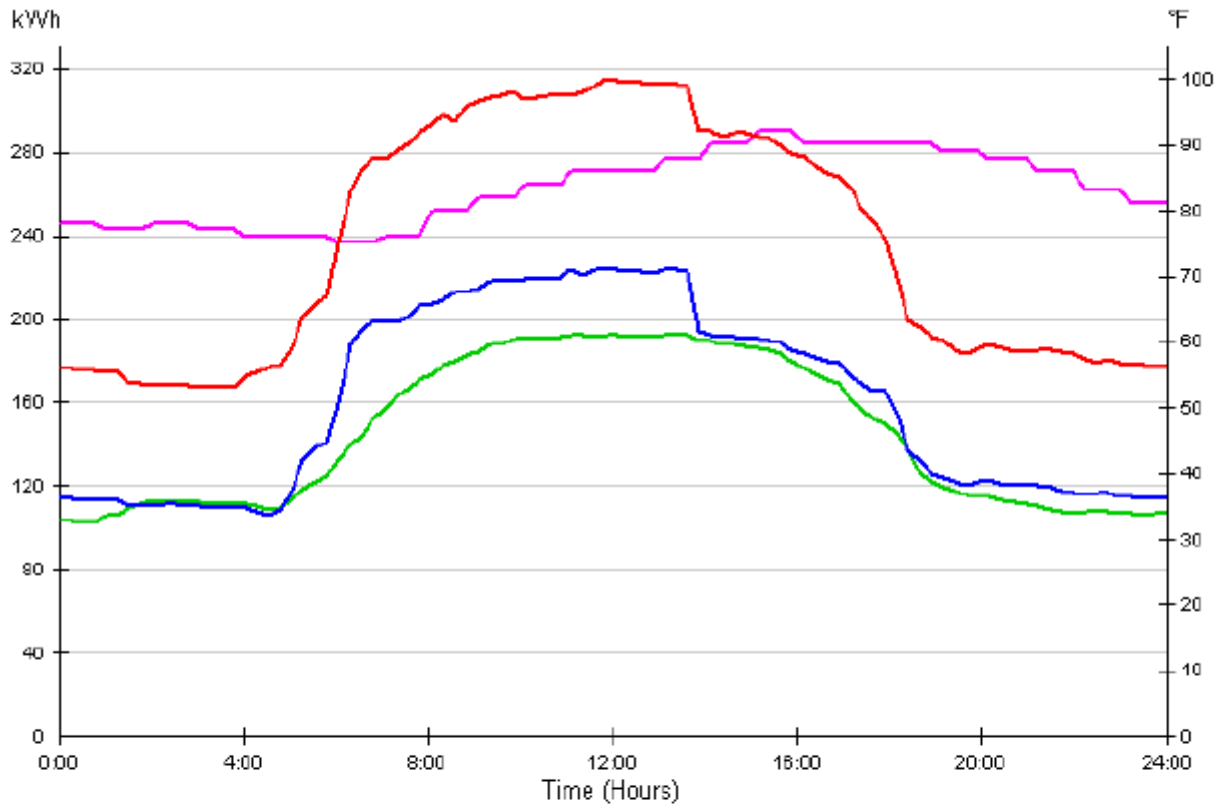
DR Program Recent Past



- 2009 – Single Building Pilot
 - Success
 - \$6,300 in Payments
- 2010 – 10 Building Portfolio
 - 1 MW Commitment
 - 4-5 MW actual performance per event
 - \$130,000 in Payments



Load Shaping Demonstration



- GSA NCR 3033 DC0031Z 025113901 1 (kWh)
- GSA NCR 3033 DC0031Z 025113901_01 1 (kWh)
- GSA NCR 3033 DC0031Z 025113901_02 1 (kWh)
- Washington DC (Fahren)

Current Year DR Program



2011 – 14 Building Portfolio

- 6 MW Commitment
- Projected payments of \$500,000+
- New funds allocation to reward individual buildings for successful participation



Demand Response Strategies

Occupants

- Use natural light on north and west exposures
- Lower blinds on south and east exposures
- Use task lights instead of overhead lights
- Turn down lights in common areas
- Turn all unnecessary business equipment off
- Dress for warm environment
- Partner with tenant agency



Demand Response Strategies

Operations

- Pre-cooling of building
- Raise chilled water temperature
- Reduce outside air infiltration
- Keep loading dock and under-building parking garage doors closed



DR Program Setbacks



- Technology
- Surprise events
- Demanding tenants
- Staff turnover and shortages
- Addback charge



DR Program Rewards



- Financial
- Demand Charge avoidance
- Energy tracking tools
- Energy consumption education
- Recognition



DR Opportunities



- Tenant education and cooperation
- More advanced DR programs
 - Real Time
 - Day Ahead
 - Synchronous Reserve



Thank you.



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