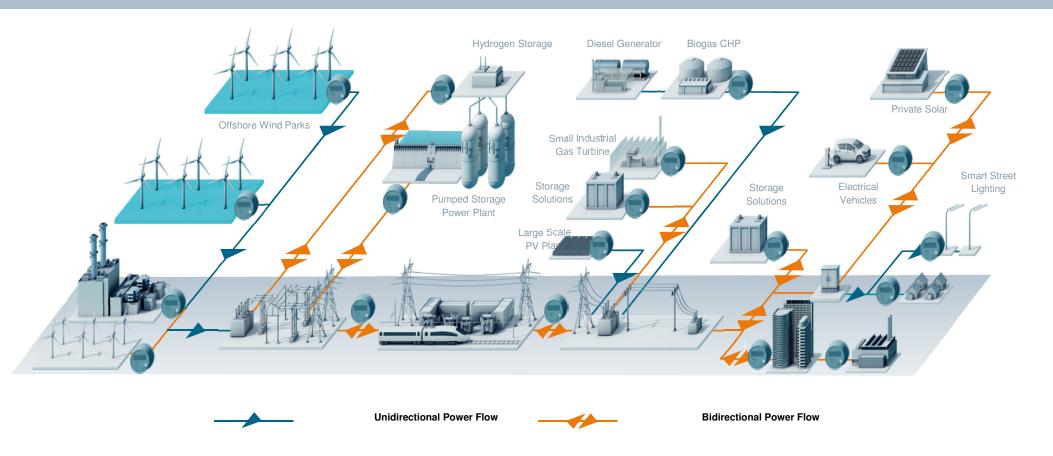


Siemens: "We make real what matters".



...to distributed energy and bidirectional energy balancing



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...to distributed energy and bidirectional energy balancing

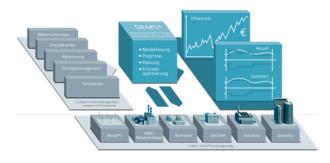
Traditional

- Peak reduction
- Forecasting load
- Monitoring and supervising

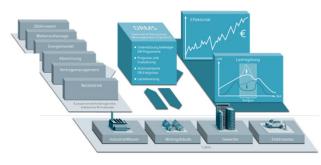
Distributed Energy Resources Smart Consumption

Future

- Balancing Against Renewable
- Storage for distributed generation balancing



- Open protocols
- Distributed and wide-ranged resources
- Customer satisfaction and loyalty





Smart Consumption

- No longer a passive consumer of electricity.
- Two-way communications with the utilities.
 - Execute events.

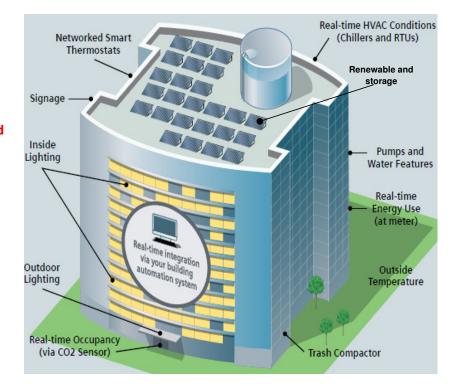
Traditional simple Signals and mandatory reports

- Performance reports.
- Balance between onsite generation storage and consumption.
 - Forecast flexibility

Custom reports

Ability to consume and not just shed load during events.

Enhanced Signals Targets





At the Utility

Automated Business Processes

- DER Offerings (Markets/Programs)
- Customer Enrollment
- Scalable DER Asset Management
- Resource Aggregation
- Automated Settlement Interfaces

Technical Enablement

- Downstream DER Monitoring & Contro
- Upstream TSO/ISO/Market Integration
- Scalable (closed-loop & message based protocols)

Customer Connection

- Utility Portal Integration
- Resource Monitoring, Management & Availability
- Nomination/Bidding
- Online Enrollment

Analytics & Optimization

- Forecasting
- Resource Optimization
- Scheduling
- Balancing / Regulation

One Platform to Leverage all Distributed Energy Resources

* Ref - Siemens Demand Response Platform

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Deployment Considerations*

- High energy usage and peak demand = high curtail-able load
 - Rule of thumb: 10% of peak load is curtailable.
 - More than 200kW curtailable load (2MW peak) is an attractive target.
- Large share of Non-Critical Loads
- Green and/or Sustainability Corporate Goals
- Restrictive covenants related to control
- Estimation of the shifting capacity of each segment

^{*} Ref – Siemens Building Performance & Sustainability, RCS, Intelligent Load Management (ILM)

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Program Phases*

Evaluation

Evaluate current demand

profile

Determination

- Evaluate current rate schedule and billing history
- Determine program options and other opportunities where the customer/site qualifies
- Determine financial viability of the project
- Create deliverable for Project Manager and/or Energy Engineer

- Perform site audit to determine response strategies
- Determine response strategies that will not negatively impact site operations
- Based on response strategies, determine most appropriate programs for customer/site participation
- Prepare customer proposal

Obtain customer approval of proposal

Implementation

- Install equipment as necessary at site.
- Program response strategies into customer/site Apogee building automation system
- Conduct mock event test at site.

Participation

- Complete enrollment of customer/site into response programs.
- Use Siemens Intelligent Load Management technology to manage program participation
 - Assist Utility to test performance

Follow-up

- Follow-up with customer for nomination strategies.
- Follow-up with customer for event performance
- After program season provide recap of performance and deliver a check for performance
- Annually determine changes in site operations and adjustment to program participation

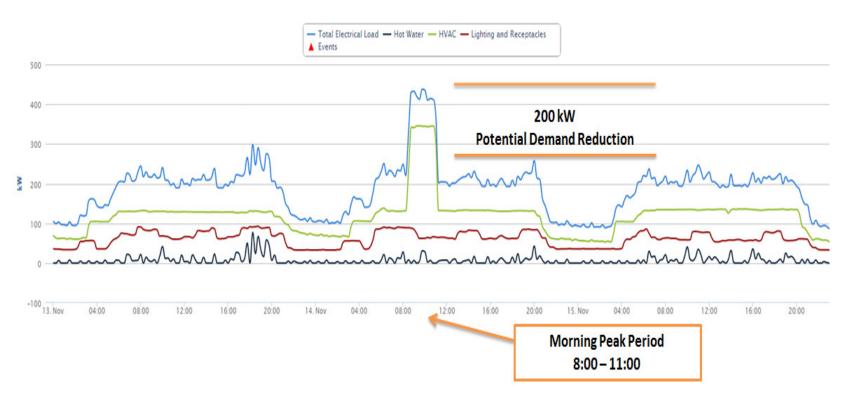
Intelligent Load Management (ILM)

Black text= RCS, Blue Text= Branch, Red Text= RCS and the Branch

Ref - Siemens Building Performance & Sustainability RCS,



Demand Management



Ref:**T4G** – Winter load profile report

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Questions & Answers



Aditya Aggarwal

Smart Grid Research & Development

Knowledge Park 4, 40 Crowther Lane E3C 0J1 Fredericton, NB Canada

Mobile: +1 (506) 292-6685

E-mail:

aditya.aggarwal@siemens.com

siemens.com/answers