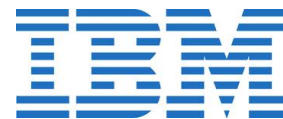




# SMART VERMONT

*Leveraging the Smart Grid  
in Vermont*

Presented by: **Jeff Chapman**  
Advanced Analytics  
IBM Burlington, Vermont



# What is Smart Vermont?

- Collection of VT businesses (hospital, college, manufacturing and commercial), electrical utility and technology providers. No residential consumers at this time.
- Committed to reducing energy usage utilizing Smart Grid data and energy management programs.
- Committed to socializing energy usage data and sharing reduction ideas.
- Founding members
  - IBM, OSIsoft, Green Mountain Power, Hallam-ICS



# **SMART GRID:** Socializing Data from a *Digitally Enabled Grid*

- Smart Grid underway in Vermont
  - Initial Investment - \$138M
  - Return on Investment – We plan to influence the ROI
- IBM History of Smart Metering
  - Real-time Data and Analytics
  - Reduced Power Usage and Data Driven Solutions
  - Share this knowledge in VT to help with ROI



# Vermont Businesses



*Owned by Dairy Farmers  
Since 1919*

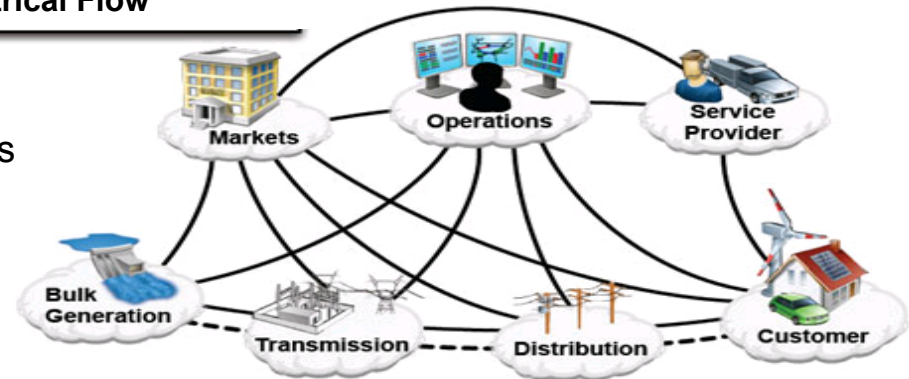


# Smart Vermont for a Smarter Planet



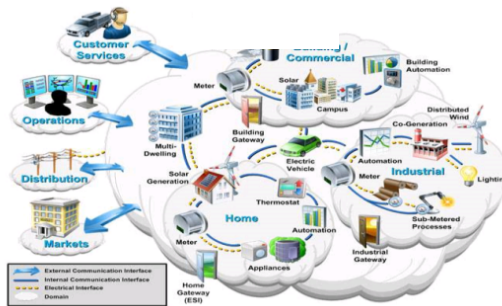
Data Flow ————  
Electrical Flow - - - -

- Customer Focus  
Conservation, Load Factor, Rate Structures
- Transmission & Distribution  
Reliability, Efficiency, Customer Service
- Generation  
Renewable and Purchase Forecasting

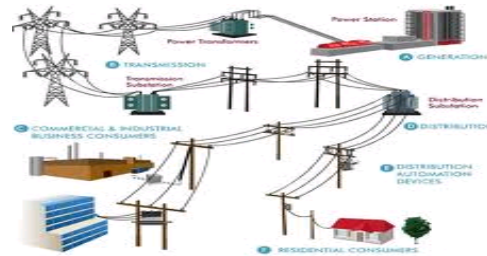


NIST Smart Grid Framework 1.0 January 2010

## Customer



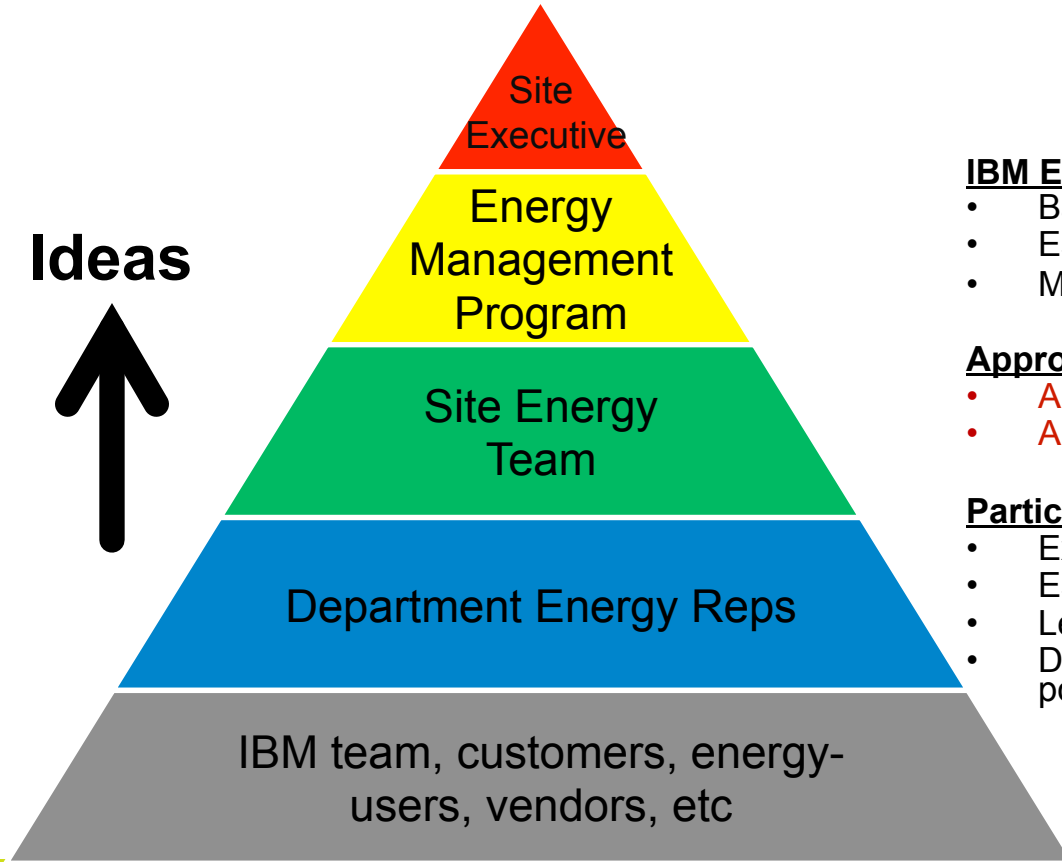
## Transmission and Distribution



## Generation



# Combine Enabling Data with an Energy Management Program



## IBM Energy Management Program:

- Based on an IBM commitment at many levels
- Established plan & strategy with owners identified
- Measurements, reviews and audits of the process

## Approach:

- **A Top-Down Commitment to Results**
- **A Bottoms-up approach to idea generation**

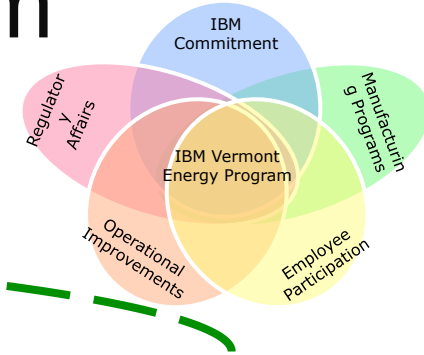
## Participation at all levels

- Extensive Communication Process
- Establish and reinforce Energy Culture
- Leverage opportunities with site-wide events
- Direct-charge groups for their energy use where possible.



# Site Energy Management Program

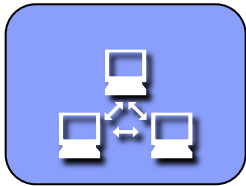
Culture Influences Behavior



## Energy Management Program Foundation

Establish and Deploy Goals ➤ Idea Generation ➤ Evaluate and Prioritize ➤ Implementation ➤ Performance Monitoring ➤ Report and Feedback

## Components to Our Team Success



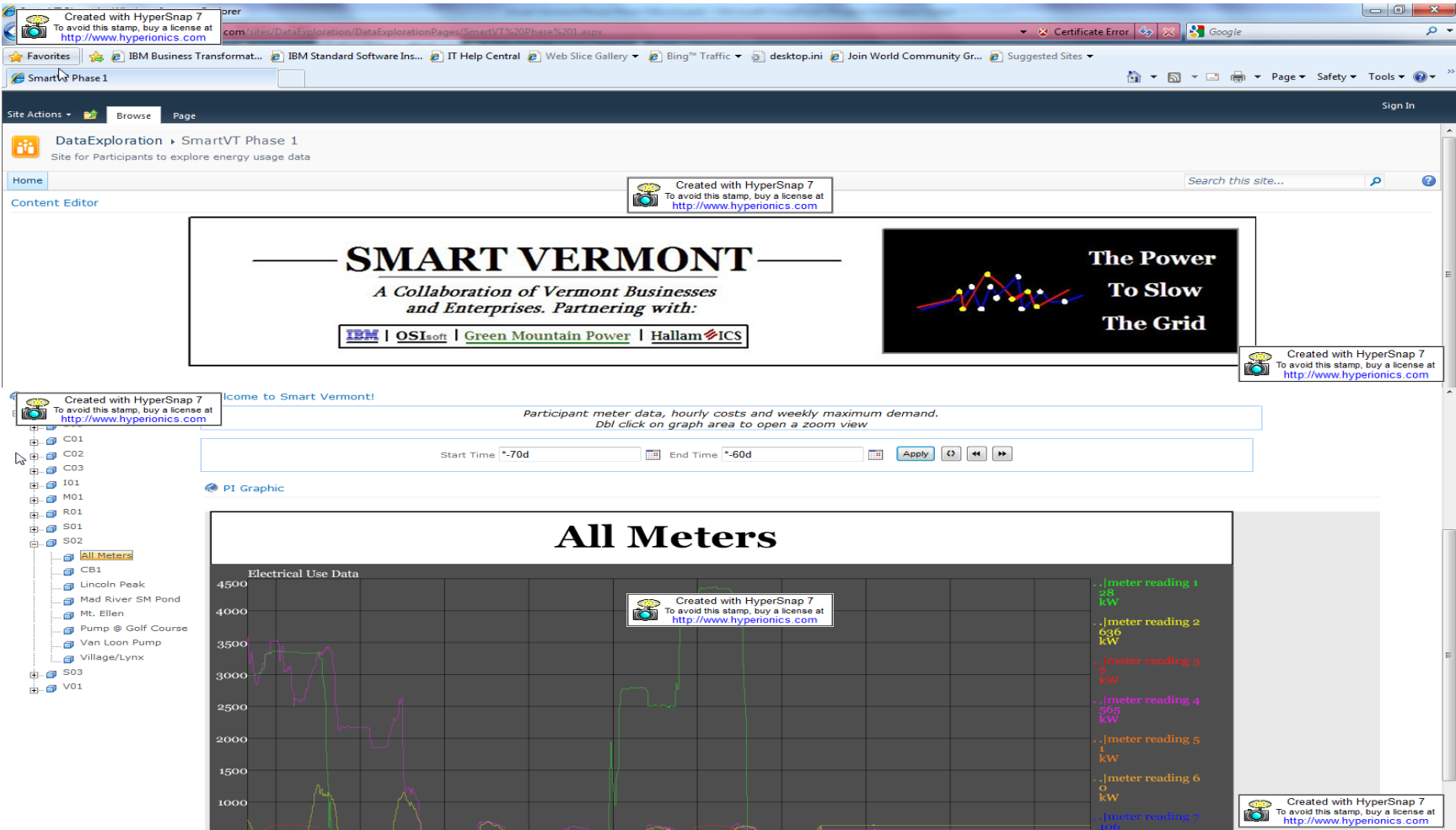
**Data-Driven Ideas**  
Advanced Analytics / Dashboards



**ROI-driven Prioritization**  
Department Expense Budget



**Monitoring and Feedback**  
Measure-Up Metrics



# Future of Smart Vermont

- Phase 1 – Customer Usage Focus
  - Visualize usage data
  - Combine data with energy management programs based on IBM's
  - Encourage energy awareness culture
- Phase 2 – Customer and Renewables
  - Monitor results: culture, program and use reductions
  - Enhanced analysis of usage data, benchmarking
  - Bring in utility renewable generation data
- Phase 3 – Transmission, Distribution and Generation Focus
  - Analysis of distribution efficiency
  - Renewable generation forecasting



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# THANK YOU

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