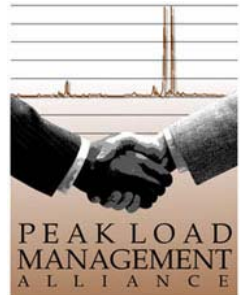


Demand Response: *Infrastructure and Design Principles*

***Global and Local Trends in Energy Efficiency –
Contributing to Profits and the Economy***

Friday, 11 April 2003

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Peak Load Management Alliance

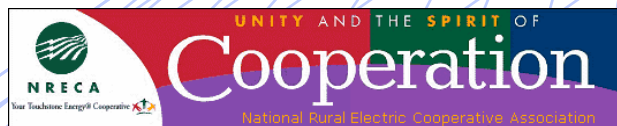
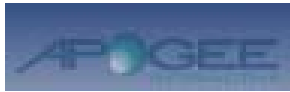
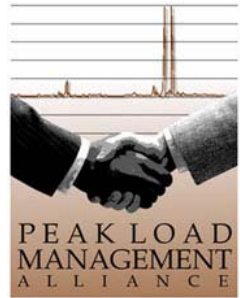
Mission Statement:

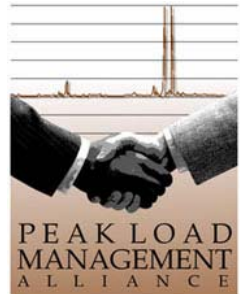
Create a community of expertise on demand response and its role in creating efficient electricity markets.

Through this community, the Alliance will bring forward useful information on price responsive loads, market structures and market rules.

This will include information on market participants' roles, customer needs and actions, enabling technologies, and specific programs as appropriate.

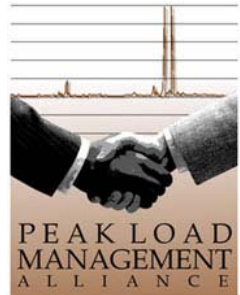
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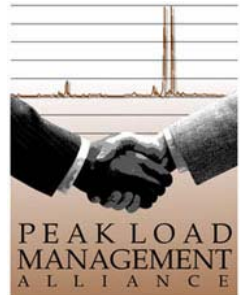
View of DRR in Liberalized Markets

- Electricity Restructuring and its effect on DRR investment
- Must have DRR for Competitive Markets to work
- Value of DRR has been proven (Reliability, Transmission Congestion, Market Power, Price Volatility, etc.)

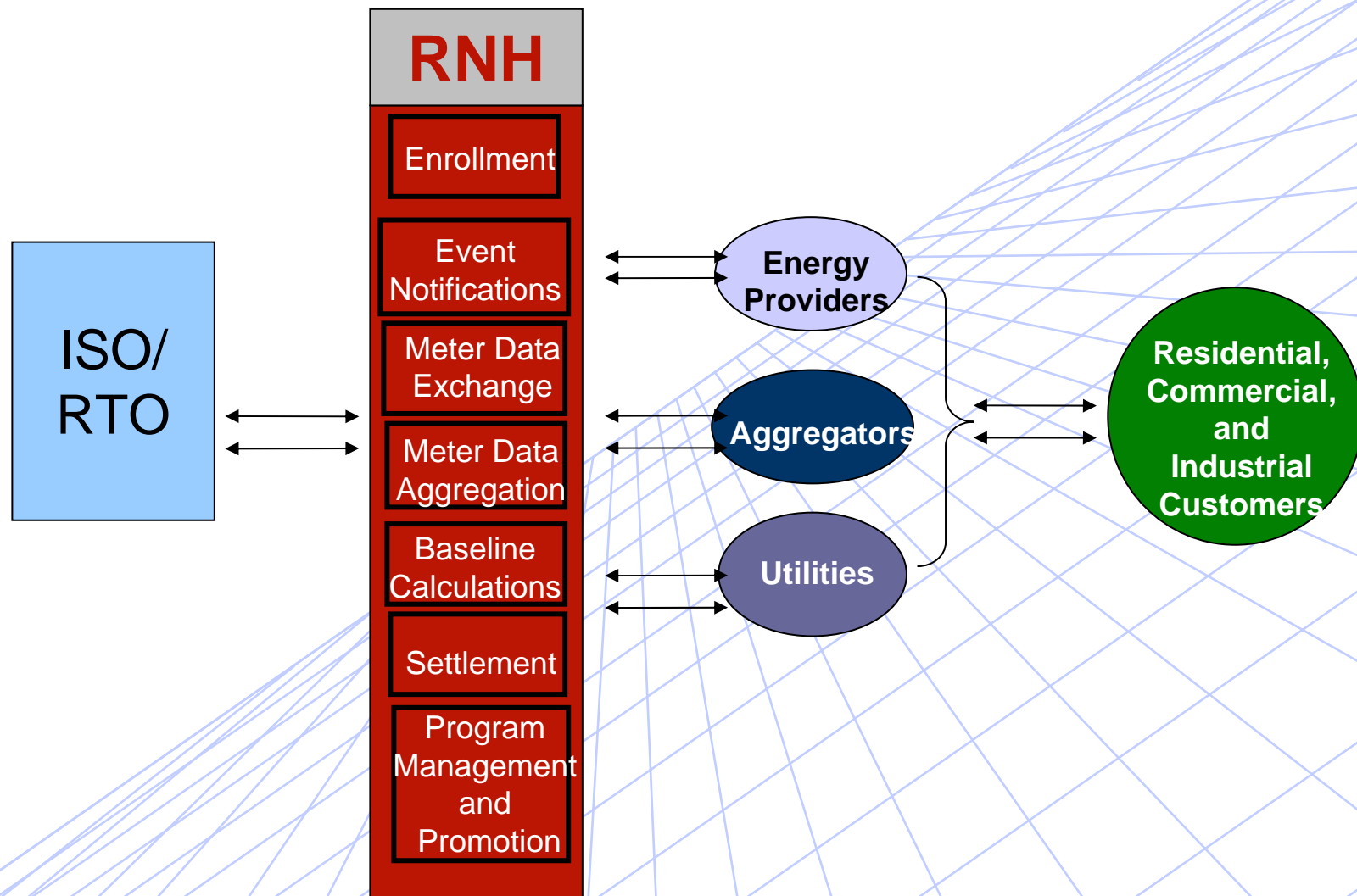


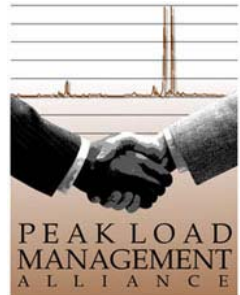
Strategic View of DRR

- DRR/ Electricity much like SPR/Oil
 - *Long Term Asset/Risk Management*
 - *Shock absorber on each end of value chain*
- Competitive Markets alone will not provide adequate investment in DRR resources
- Difference of SPR/DRR – Physical Supply Side vs. “Virtual Demand Side”



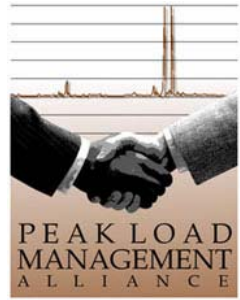
Demand Response Enabling Technology





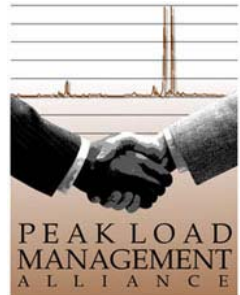
Proposed IEA DRR Project

- Define and build turnkey DRR infrastructure model including Business Model, Business Rules, Enabling Technology, Standards and Implementation Plan
- Deliver DRR into “Any” emerging or existing liberalized electricity market
- Not a Research Project but an Actionable Plan



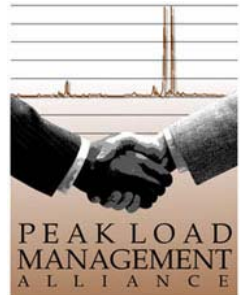
Project Methodology

- Determine “Availability of DRR in given market (Much like Proven Reserves in Oil)”
- Determine “Attributes”
 - *Market Segmentation*
 - *Asset Characteristics*
 - *Existing Technology*
 - *Retail Channels*
 - *Cost Curve*
- Analyze Wholesale and Retail Market Structure



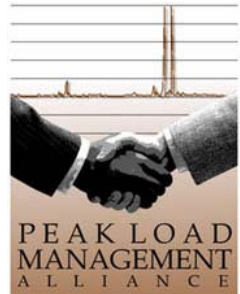
Establish Implementation Objectives

- Establish Objectives for DRR in given market
 - *Mitigate Market Power*
 - *Reliability*
 - *Price Volatility*
- Establish DRR Goals – MW or % DRR of total supply market to achieve Objectives
- Determine funding requirements and timeframes



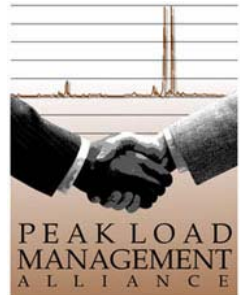
Project Implementation

- Identify Major Market Participants
 - *Market Operators*
 - *Wholesale Participants*
 - *Retail Channels*
 - *Regulatory Authorities*
- Establish Business Models and determine Resource Requirements, Funding Vehicles, Roles and Responsibilities



IEA Actions

- Approve “Interim Project”
- Determine Participating Countries
- Approve Interim Funding
- Appoint “Interim Operating Agent”
- Approve Phase 0 –
 - *Define Scope*
 - *General Outline*
 - *Establish Multinational Team*
 - *Organize first meeting*
 - *Define Deliverables*
 - *Milestones and funding Requirements (est. \$200-500K)*



PLMA Credentials as IEA Operating Agent for DRR

- Trade Association for DRR in North America
- Represented by approximately 30 companies (Associations, Consultants, Technology Companies and Energy Companies)
- Credible with US FERC/DOE and NARUC
- Delivering these systems in US today