



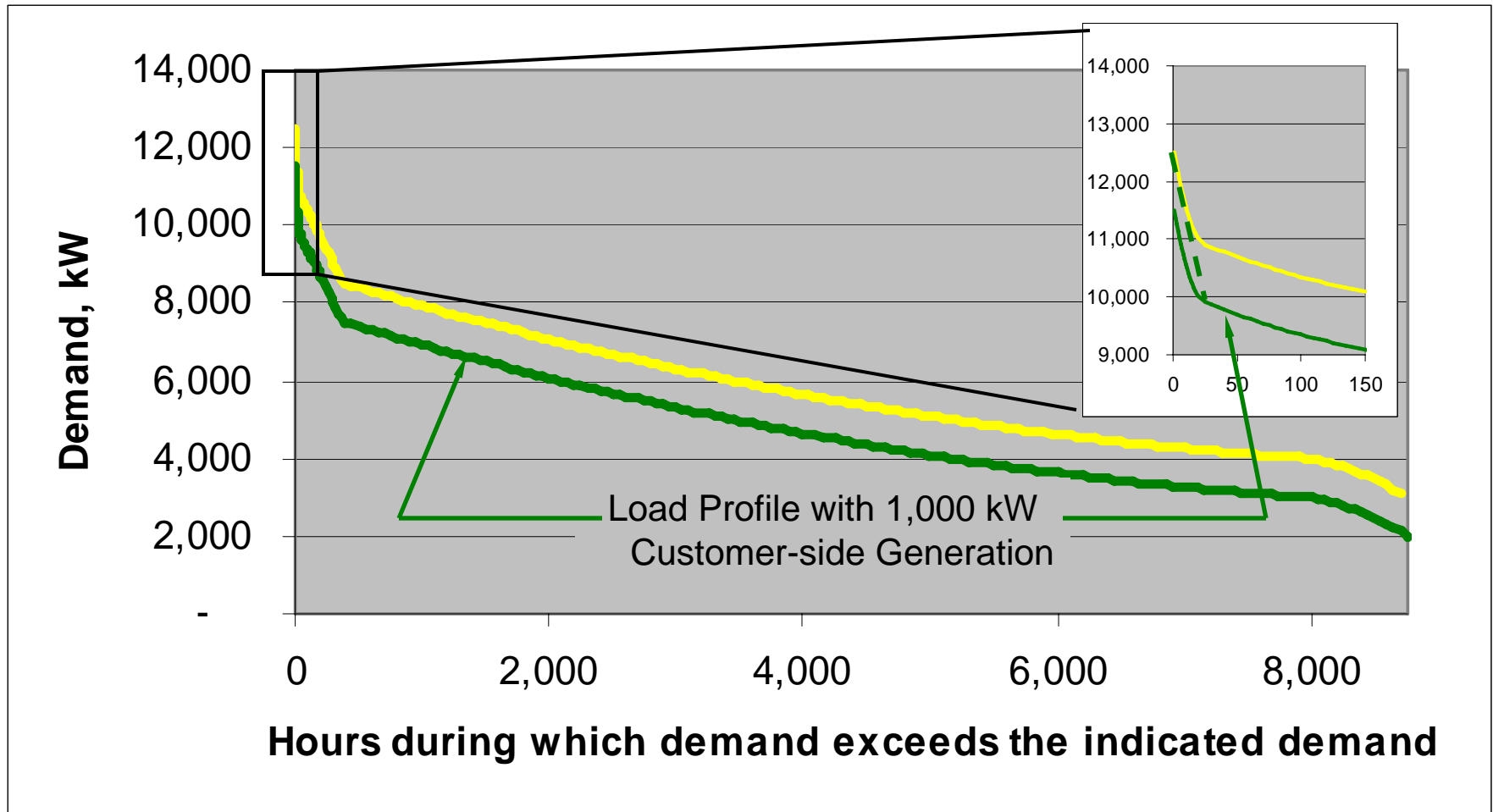
# **DER Market Integration: The Fundamental Challenge and Project Approach**

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# The Fundamental DER Problem for Electric Utilities



# Utility Growth Status is also Critical

## Assume 10% DER penetration in 10 years

### High Growth in Peak and Base Load (>2% per year)

- Revenue growth is unlikely to go south if DER/EE is 10% in 10 years.
- New Base Load Generation is likely to raise retail volume rates.

### High Growth in Peak, Modest Growth in Base Load

- Demand reduction is a primary concern.
- Reduction in base load revenue is likely with most DER/EE and will be a concern to the utility

### Modest or No Growth in Peak and Base Load (<1% per year)

- <1% load growth
- Any reduction in load (revenue) will be a concern to the utility.

Hence the critical eye that utilities cast to customer-side generation and/or energy efficiency when base load growth is modest.

# On the Other Hand

## Public Policy Objectives Tied to DER

- Maximize the use of combined cooling, heating and power (CCHP) installations to encourage efficient use of commercial fuels.
- Maximize the use of off-specification fuels normally wasted or flared.
- Maximize the use of renewable power generation technologies.
- Minimize the need for construction of new peaking or base load power plants or T&D infrastructure.
- Provide for increased power supply assurance and power quality.
- Manage emissions of CO<sub>2</sub> and pollutants
- Increase competition in electricity markets

# Joker in the deck

## Public Policy Directives May Dictate that Electric Utilities Accommodate DER

- Renewable Portfolio Standards
- Resource Planning Directives
- Loading Order Directives
- CCHP Integration Directives (recall Qualifying Facilities)

# DER Market Integration

**Are there utility business structures and regulatory templates under which utilities have an incentive to embrace DER at the same time that DER owners and non-participating ratepayers also receive net benefits?**

- Two-year program funded by:
  - USDOE/NASEO/Ma DOER through STAC program
  - Massachusetts Technology Collaborative
  - California Energy Commission
  - Over a dozen industry/utility collaborators

# DER Market Integration Phase 2 Project Objectives

- To create business models and regulatory approaches (through stakeholder collaboration) that reward electricity providers for integrating DER where there are societal benefits as well as customer and non-participant benefits.
- To demonstrate in pilot/demonstration projects the effectiveness of those business and regulatory approaches towards stimulating DER markets.

# DER Market Integration Project Outline/Schedule

## Two-Year Project Tasks:

1. Develop candidate business structures and regulatory templates with economic analyses – through January 2007
2. Select and flesh out business structure/regulatory template for use in pilot program – Spring 2007
3. Conduct pilot programs in **California** and **Massachusetts** – Summer 2007 through the first half of 2008.
4. Conduct Outreach Efforts for other states – last half of 2007-2008

## Task 1 events

- 1<sup>st</sup> Collaborators Workshop September 28-29, 2006 in Boston
- Collaborative winnowing of business structures and regulatory templates over three months
- 2<sup>nd</sup> Collaborators Workshop January 2007 (tentatively) in California

# General approach to the Problem

## Borrow Heavily from Similar Demand-Side Activities underway for:

- Energy Efficiency
- Peak Demand Reduction

## Exploit Unique DER Capabilities

- Dispatchability

# Pilot Applications

**A business case of some sort for DER/EE must precede any consideration of Market Integration. Possibilities to include:**

- Combined cooling, heating, and power (CCHP)
- Waste gas-fueled generation (landfill gas, digester gas, other flare gas, etc.)
- Solar photovoltaics, small wind energy, other small renewable generation
- Standby generators dispatched during peak demand periods
- Energy Efficiency and Demand Side Management

# 1<sup>st</sup> Workshop Objectives

- Put on the table candidate Utility Business Roles and Regulatory Templates under consideration.
- Facilitate discussions of pros and cons of Utility Business Roles and Regulatory Templates
- Do a quick winnowing of approaches that stakeholders agree are non-starters
- Identify and organize key issues requiring further development
- Assign issue groups to address key issues during Fall 2006.
- Set tentative dates for 2<sup>nd</sup> Workshop (January 2007) in California.

## Lights Please

# Are there Questions?

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