

Leading the Way in Electricity™



## Edison SmartConnect™



*Building a Cleaner, Smarter Energy Future with Our Customers*

# EVS-23

December 2, 2007

# Energy Policy Makers Promoting Smart Metering

Leading the Way in Electricity™



## Support for Smart Meters

The policy of the U.S. is to encourage time-based pricing and other forms of demand response and that deployment of devices to enable consumers to participate in these programs be facilitated.

(2005 Federal Energy Policy Act)



## Advanced Metering Goal

“Issue decisions on the proposals for statewide installation of Edison SmartConnect™ for all small commercial and residential customers by early 2006”

(EAP II Approved, October 6, 2005)



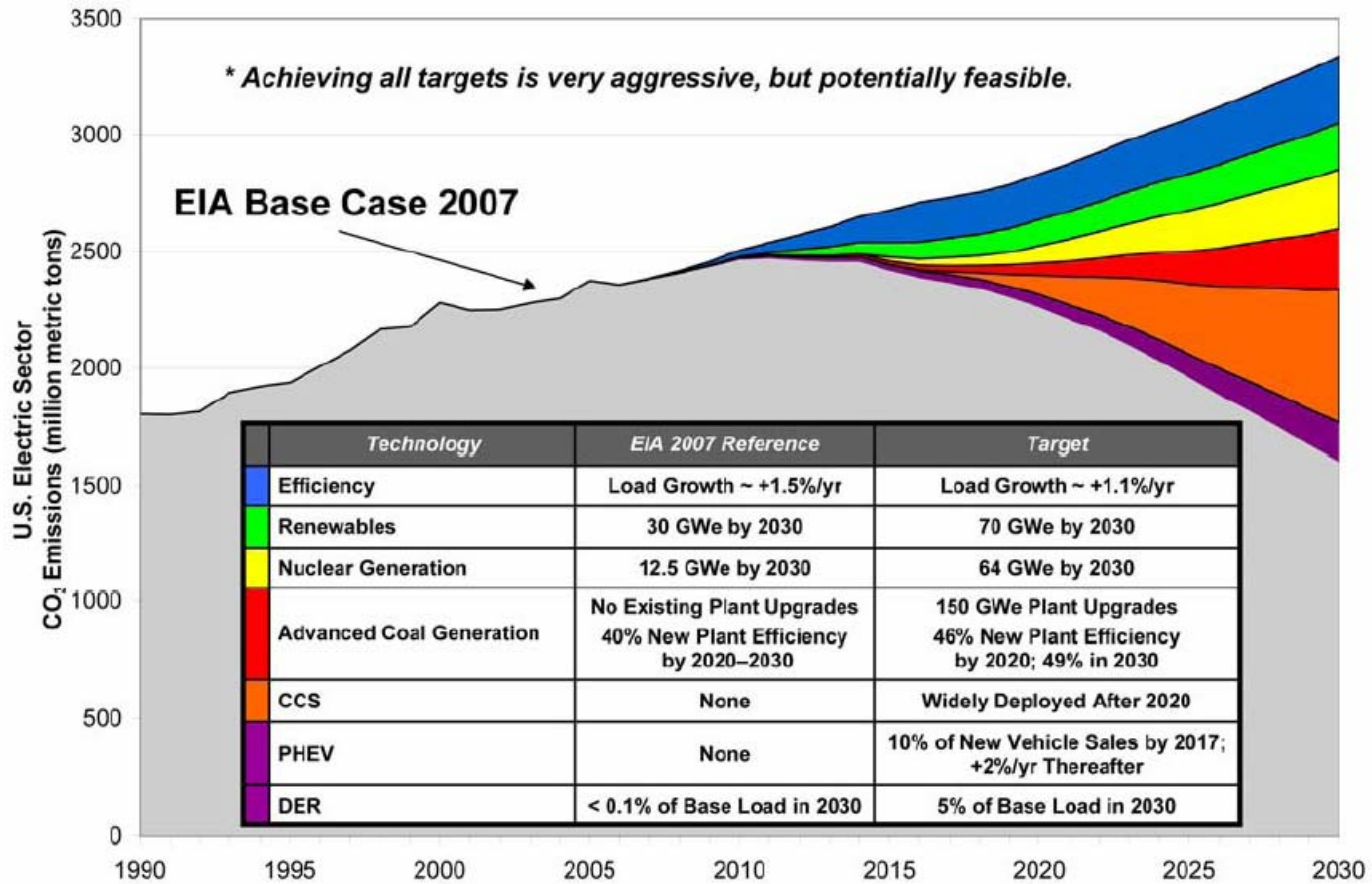
## Demand Response

“...begin implementing a large-scale rollout of advanced metering systems for smaller customers, targeted first to areas of the state with the highest peak demand.”

(2004 Integrated Energy Policy Report Update)

# EPRI “PRISM” Analysis

## Potential US Electric Sector Carbon reduction strategies

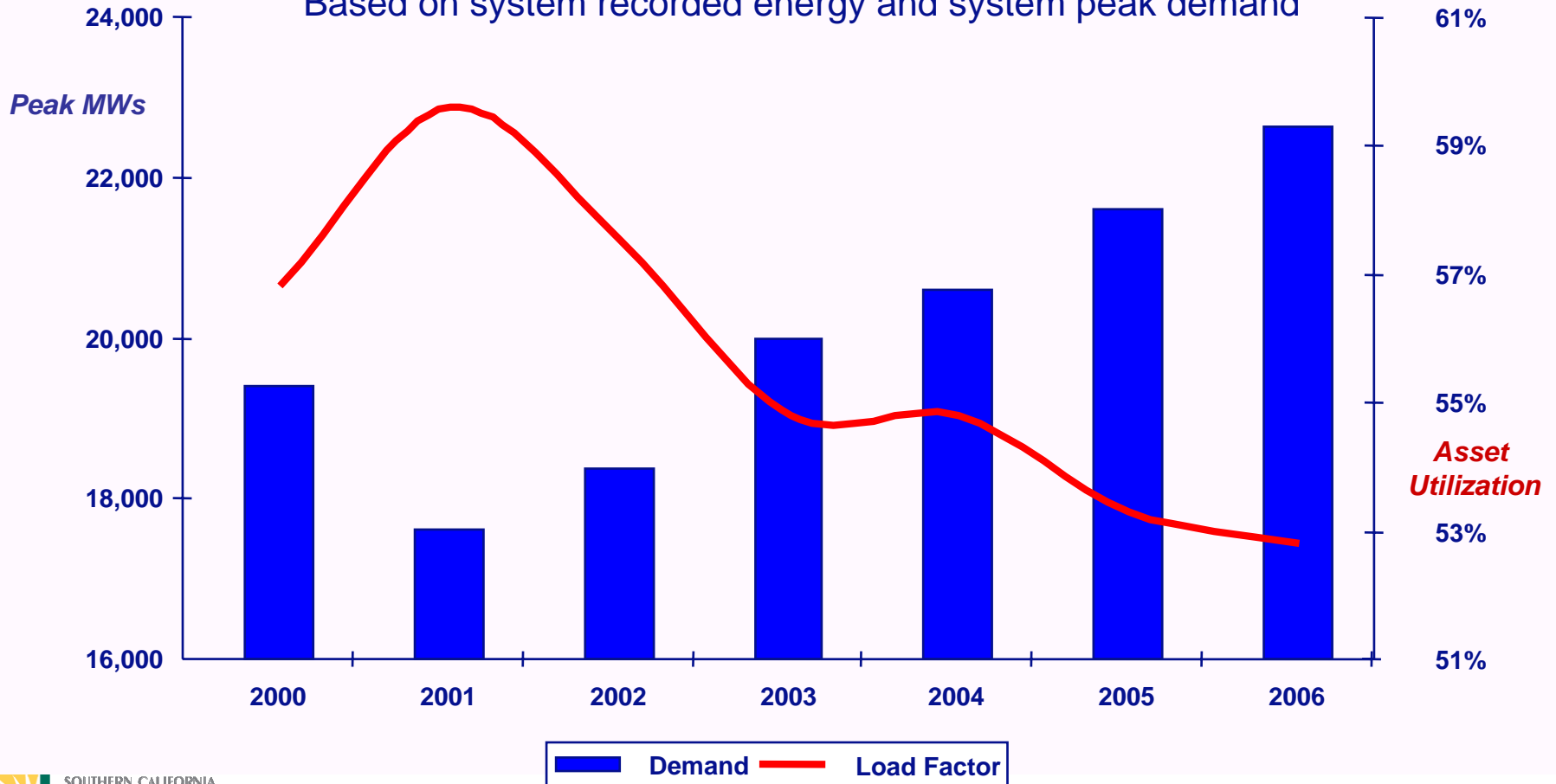


**But significant investment requirements and uncertainty**

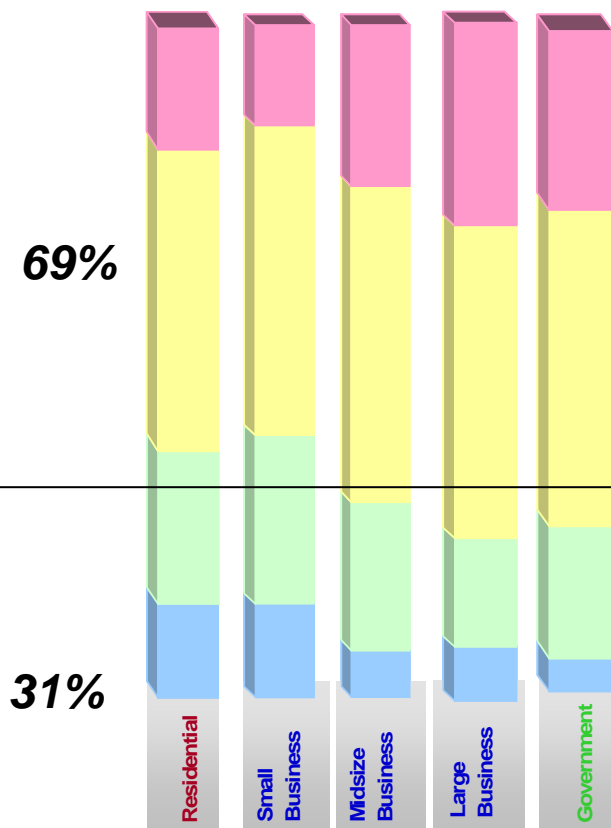
# Peak Demand & Load Comparison

## Peak Demand Is Growing & Load Factor is Declining

Based on system recorded energy and system peak demand



# Customer Service Expectations Have Changed



## Personalized Service Redefining Customer Experience

**To provide personalized service to our diverse customer base by:**

- Create personalized bundled solutions for customers
- Enable interactivity with and between customers
- Enable automated energy optimization
- Providing personalized energy management tools

**To demonstrate care for our customers by:**

- Delivering proactive energy / cost saving communications
- Fulfilling the role of energy advisor for our customers
- Making a positive impact in our communities

## Utility Service Excellence

**To make it easy to do business with us by:**

- Developing web content / functionality, leading to self-serve capabilities
- Providing multiple, seamless channels for customer to interact with SCE
- Providing customer-friendly service requests and billing & payment options

**To deliver reliable service at a fair cost with superb recovery by:**

- Managing customer service requests, expectations, & fulfillment
- Timely, accurate responses to billing inquiries and service status updates
- Performing exceptional service & power outage/fluctuation recovery
- Influencing a simplified & equitable rate structure

## **Empower customers to manage their energy costs and provide new services through smart technology**

- *Create lasting customer value through cost-effective advanced metering technology solutions*
- *Design to support Federal and State Energy Policy Objectives*
- *Support SCE's strategy of modernizing our infrastructure with smart technologies toward an intelligent grid*
- *Provide a catalyst for continuing industry innovation to leverage the capabilities of Edison SmartConnect™ technology to achieve energy management, environmental and customer experience objectives.*

# Enabling a Smart Energy Future

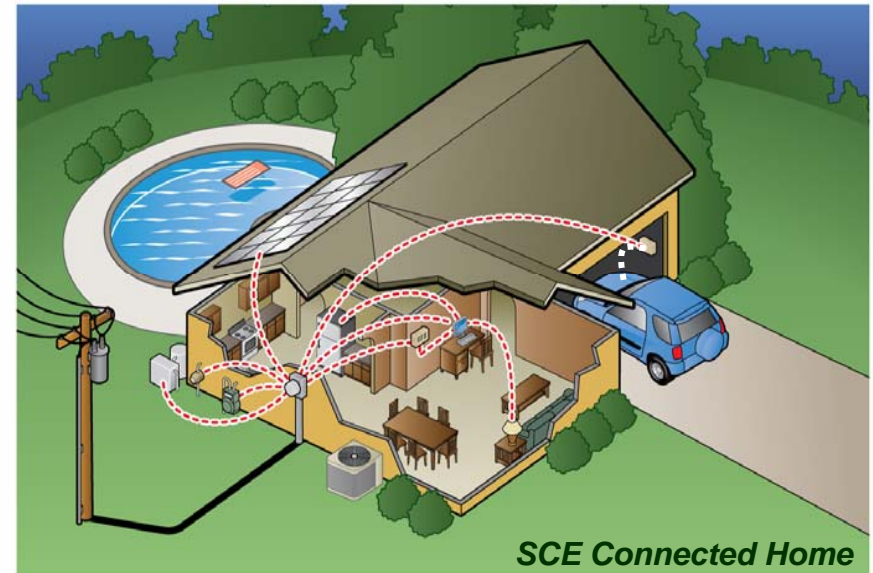
***Demand Response and Energy Conservation are critical to meeting our energy needs in an environmentally friendly way - smart meters are a key component***

- **Empower Customers**

- Rate choices to manage costs
- Energy information and analysis
- Service automation (remote turn-on)
- Billing & Payment options

- **Engage Customers**

- Enable smart thermostats & lighting
- Solar & DG metering
- Interface with PHEV controls & metering
- Interface with Home Automation
- Enable energy smart appliances



**2007 Smart Grid Leadership Award**

US Dept of Energy

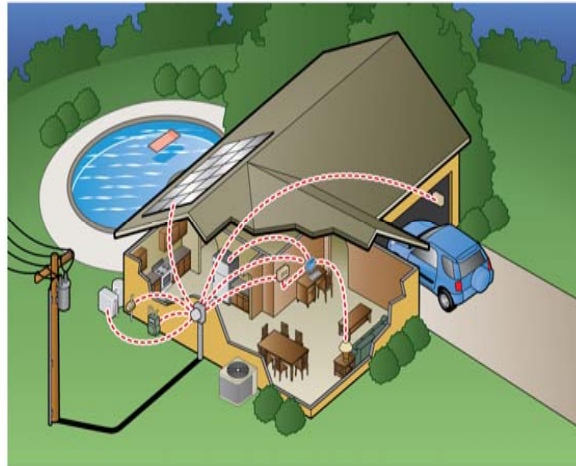
# Enabling a Clean Energy Future

## Exploring New Battery Based Electricity Storage Applications For The Home

### PV with Home Energy Storage



Address PV intermittency  
Smaller PV + Storage = Low cost?



### Stand Alone Home Energy Storage



Emergency back-up  
Home Peak shaving  
Integration w/Energy Mgmt  
Future building codes

### PHEV Bi-directional Connection



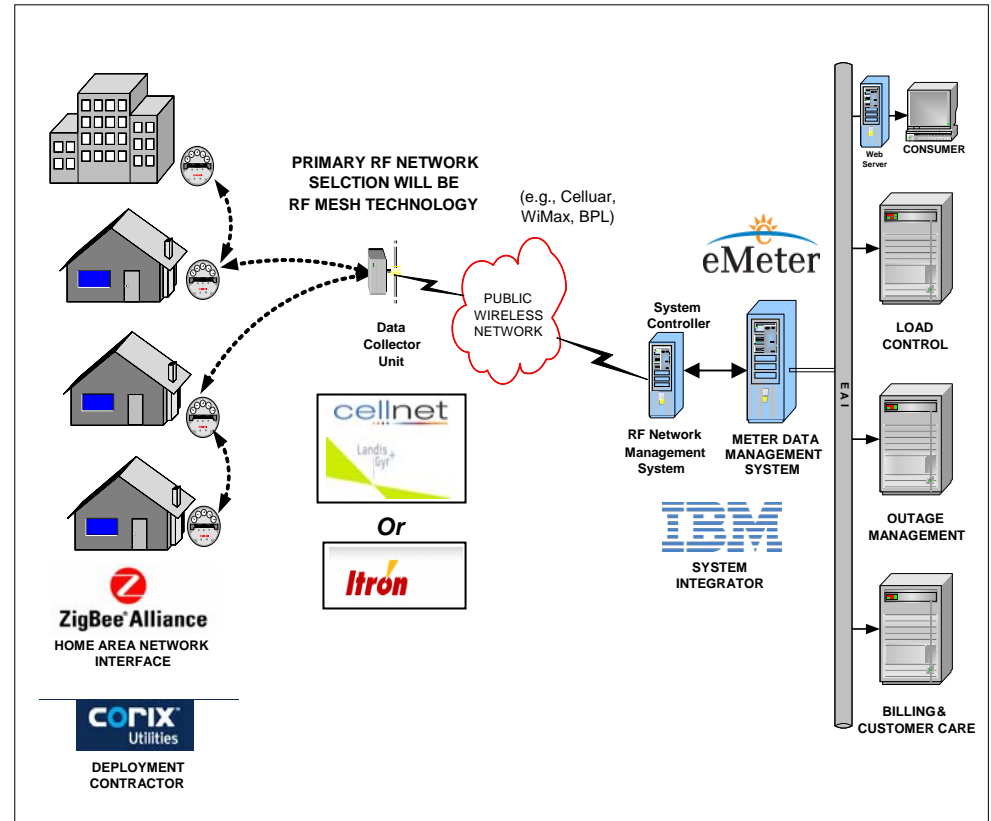
Emergency back-up  
Home Peak shaving  
Electric rates/incentives  
Integration w/Energy Mgmt

# Technology Overview

**Replace meters on SCE's 5 million small commercial and residential customers**

## Technology & Vendor Map

- 3<sup>rd</sup> Gen Electronic meters:
  - 200A integrated service switch
  - Home Area Network interface
  - Energy & Voltage measurement
  - Outage detection & service status
  - Theft/tamper detection
  - Remote firmware upgradability
  - Robust security
  
- Multi-Tier Telecom Network
  - Designed for flexibility & security
  - 2-way narrowband 900MHz RF LAN
  - Open standard ZigBee 2.4GHz HAN
  - Public or Private IP based WAN



# Program Cost Effectiveness

***New system functionality creates significant value for customers & SCE***

## Customer Benefits

- **Conservation creates GHG Reduction of 365,000 metric tons/year**
- Provides energy information to manage costs
- Provides service automation capability like remote service turn-ons
- Improves billing accuracy
- Provides better outage response and information for customers

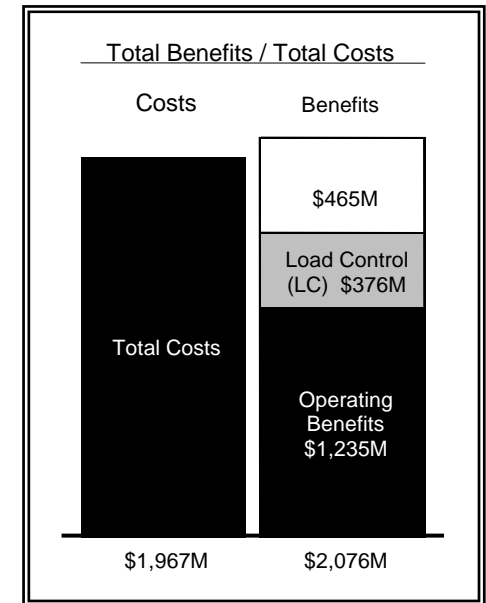
## System Benefits

- **Demand response provides 1,000 MW of estimated peak load reduction from dynamic rates and A/C load control**
- Reduced operational expense related to automating meter reading and service connections
- Edison SmartConnect™ System creates incremental benefits for meter to cash processes
- Outage management enhancements and distribution asset management benefits

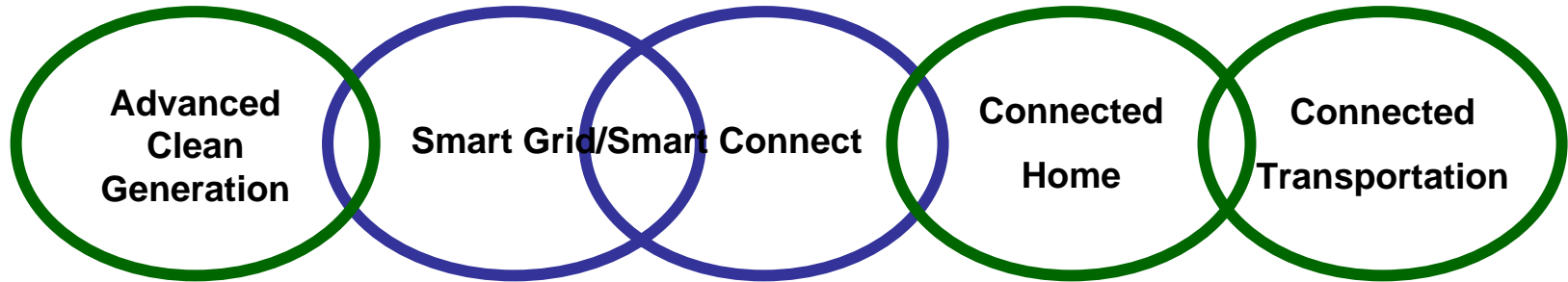
## Shareholder Benefits

- **\$1.3 billion in rate based capital plant thru deployment**

### Project Financial Summary

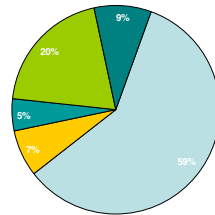


# EIX Vision for Technology Response



## Technology Advancement Delivers Required GHG Responses

Low Carbon Fuel Mix



Energy Management & Efficiency

- Reduced Cost & Rate Pressures
- Meeting Customer Expectations for Value & Environment