



**VERMONT ENERGY**  
INVESTMENT CORPORATION

# **The Community as Customer and Partner: An Approach to Deep Resource Acquisition**

**ACEEE 5<sup>th</sup> National Conference on  
Energy Efficiency as a Resource**

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September 28, 2009**

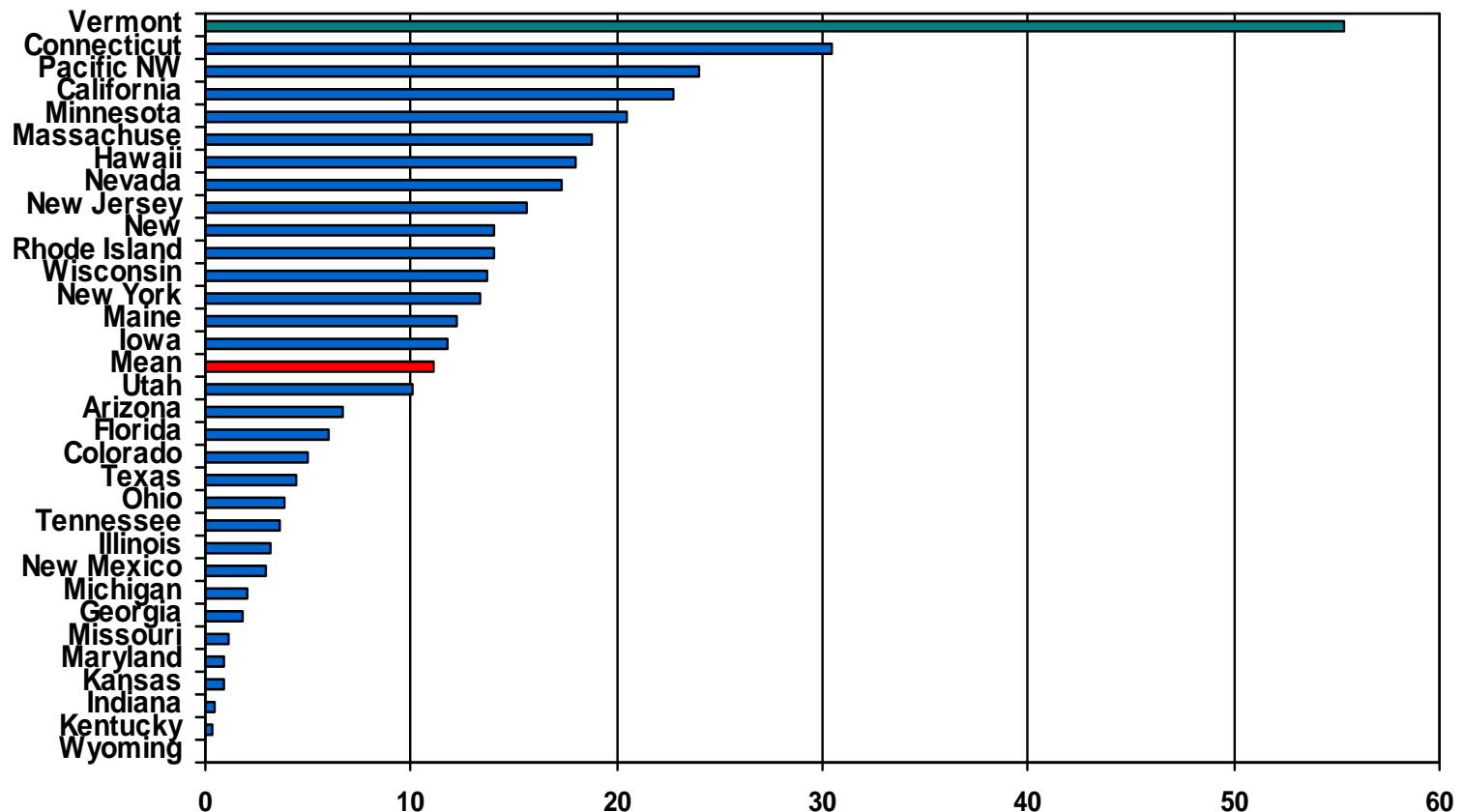
# Overview of Efficiency Vermont's Community Energy Initiatives

- Community efforts in context
- Different kinds of community-based efforts
- Costs and performance
- Conclusions
- Strategic guidance



# Vermont Is the Leader in Energy Efficiency Investment

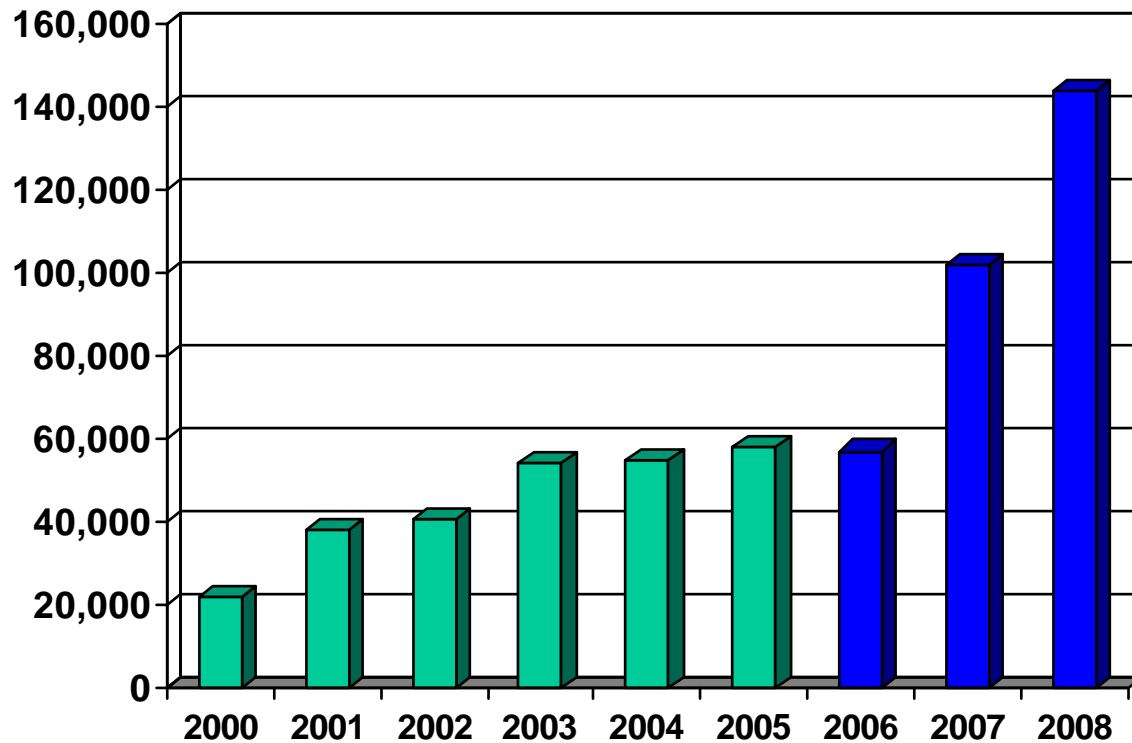
2008 per capita budgets, electric programs (excl. load mngmnt.)



"Reaching Higher: Annual Industry Report 2008," Consortium for Energy Efficiency, 2008

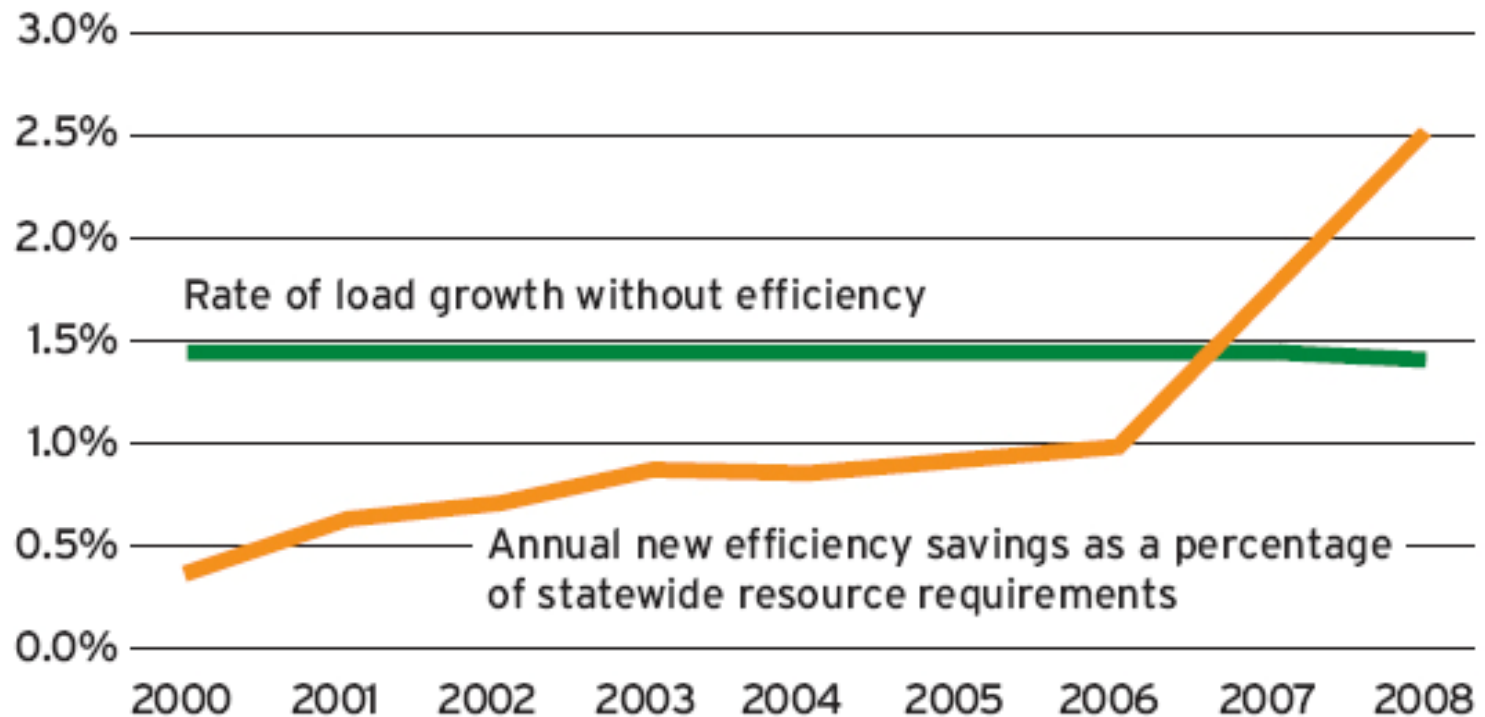
# VEIC Savings Performance

Incremental Annual MWh Savings



# Moving to Negative Load Growth

Energy Savings vs. Projected Load Growth



# Cost of System Wide Efficiency

Average rate of return on investments in efficiency for measures installed in *households* in 2008: **65%**

Average rate of return for measures installed in *businesses*: **50%** (in 2007, it was 36%).



Efficiency  
Vermont's  
approximate  
cost of  
electric  
efficiency  
3.1¢ / kWh



Approximate  
cost of  
comparable  
electric  
supply  
14¢ / kWh

# Potential Benefits of Targeted Programs

- Targeted energy savings; MWh, MW
- Transmission & distribution deferral or avoidance
- Potential for high participation / deep savings
- Tap into “social marketing” dynamic
- Demonstrate integration of services

## **Potential Benefits of Targeted Programs (continued)**

- **Change the way people think about / use energy**
- **Build community pride; respond to, facilitate, and promote community activism**
- **Promote delivery entity awareness and long-term relationship with community**

# Efficiency Vermont Efforts

- **Community Lighting Programs**
  - Community initiated
  - Focused on getting CFLs into homes and businesses
  - Relatively small campaigns with short durations
- **Geographic Targeting Campaigns**
  - Mandated under performance contract
  - Focused on T&D-constrained areas
- **Community Energy Initiatives (CEIs)**
  - Mandated under performance contract
  - Not focused on T&D constraint
- **Community Energy Mobilization Pilot Project to facilitate community **all-fuels** efforts**
  - Response to grassroots initiative
  - One-time effort based on high oil costs
  - RGGI funds

# Community-based Energy Projects



- Leverage interest and resources of Vermont communities
- Enhance public knowledge about actions to reduce individual energy use
- Increase local and statewide public awareness
- Secure energy savings in hard-to-reach markets
- **Generally one-time efforts**

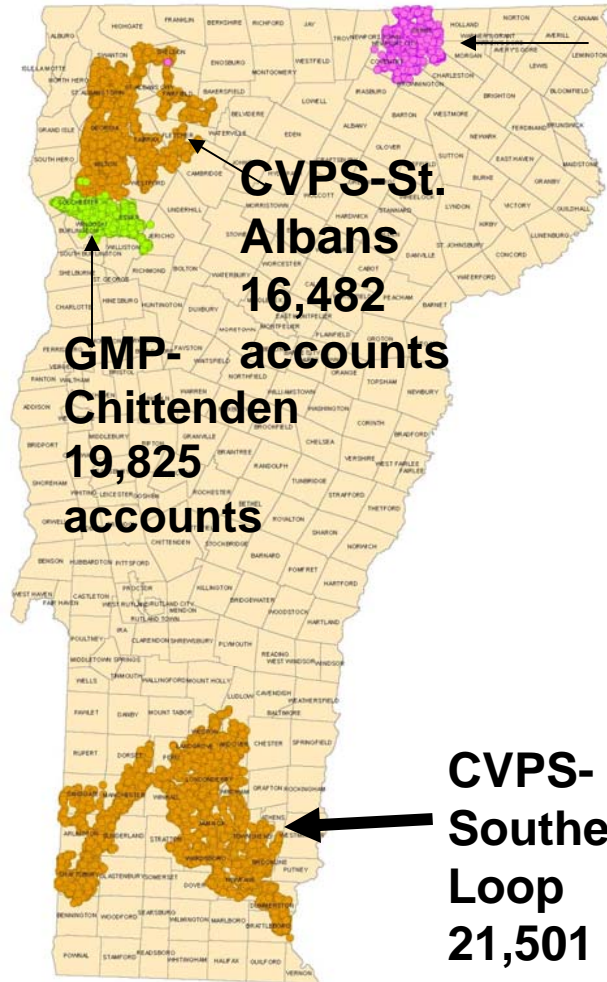
## Geographic Targeting in Vermont

- In 2006, Efficiency Vermont spent \$20.5 million on aggressive investment in selected areas identified as being T&D-constrained
  - Intended to help defer or avoid specific incremental T&D investments
- In comparison, the total initial 3-year budget was \$46 million
  - = approximately **70% increase** in the Vermont budget for the last 2 years of the contract (2007-2008)

## Geographic Targeted Campaigns

- **Geographically targeted – not community focused**
- Identified by utilities, but not part of a Distributed Utility Planning (DUP) effort
- Peak capacity goals regarding summer / winter MWs
- Planning and design consistent for multiple “targets”
- Relatively longer-term campaigns incorporating the following approaches:
  - Coordinated sub-market strategies
  - Intensified lighting efforts
  - More aggressive C&I efforts
  - Small commercial direct install program

- Accounts**
- Residential 54,500
  - Commercial 8,500
  - Large C & I 14



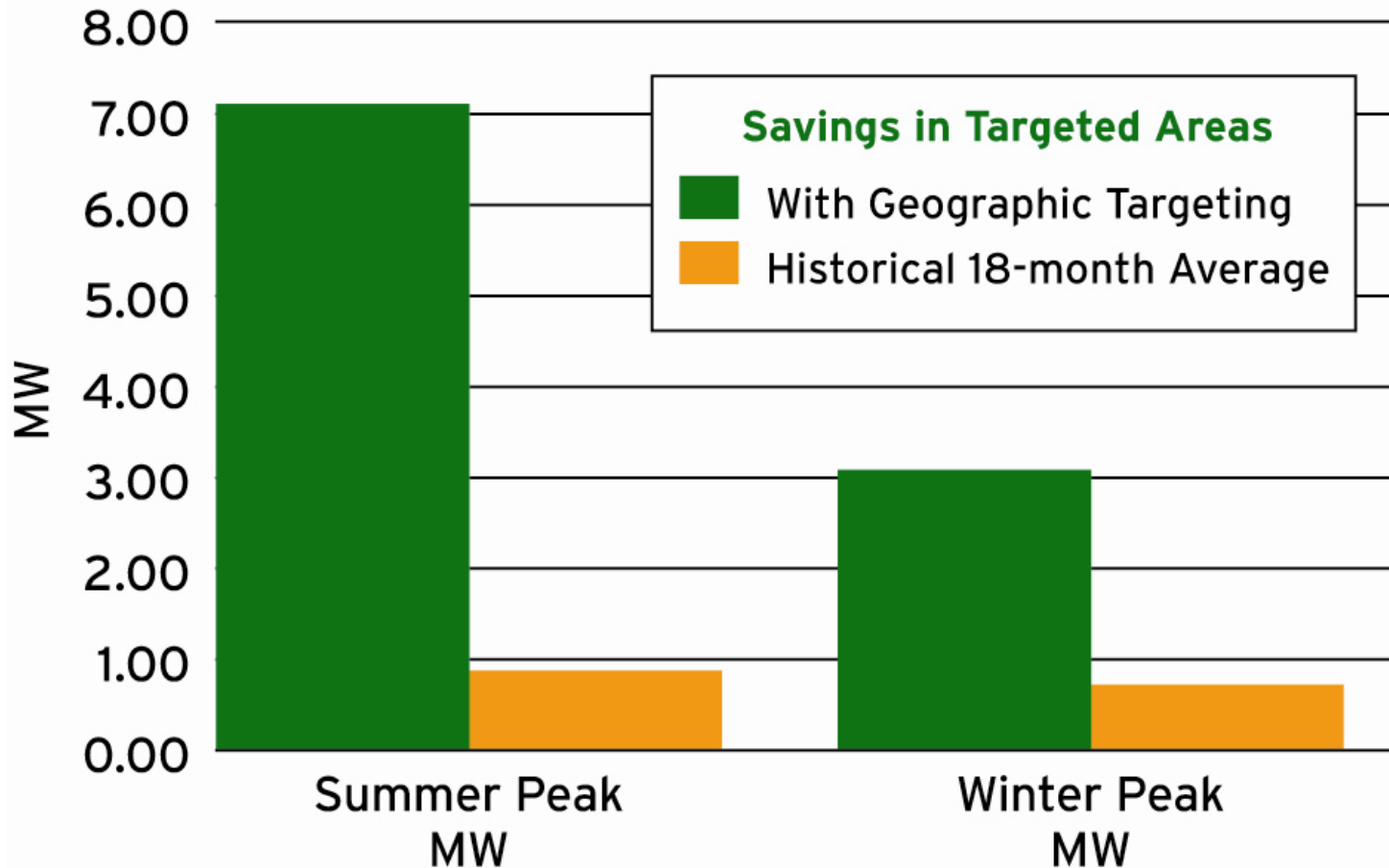
**VEC-Newport /  
Derby 5,231  
accounts**

**CVPS-  
Southern  
Loop  
21,501  
accounts**



# Geographic Targeting

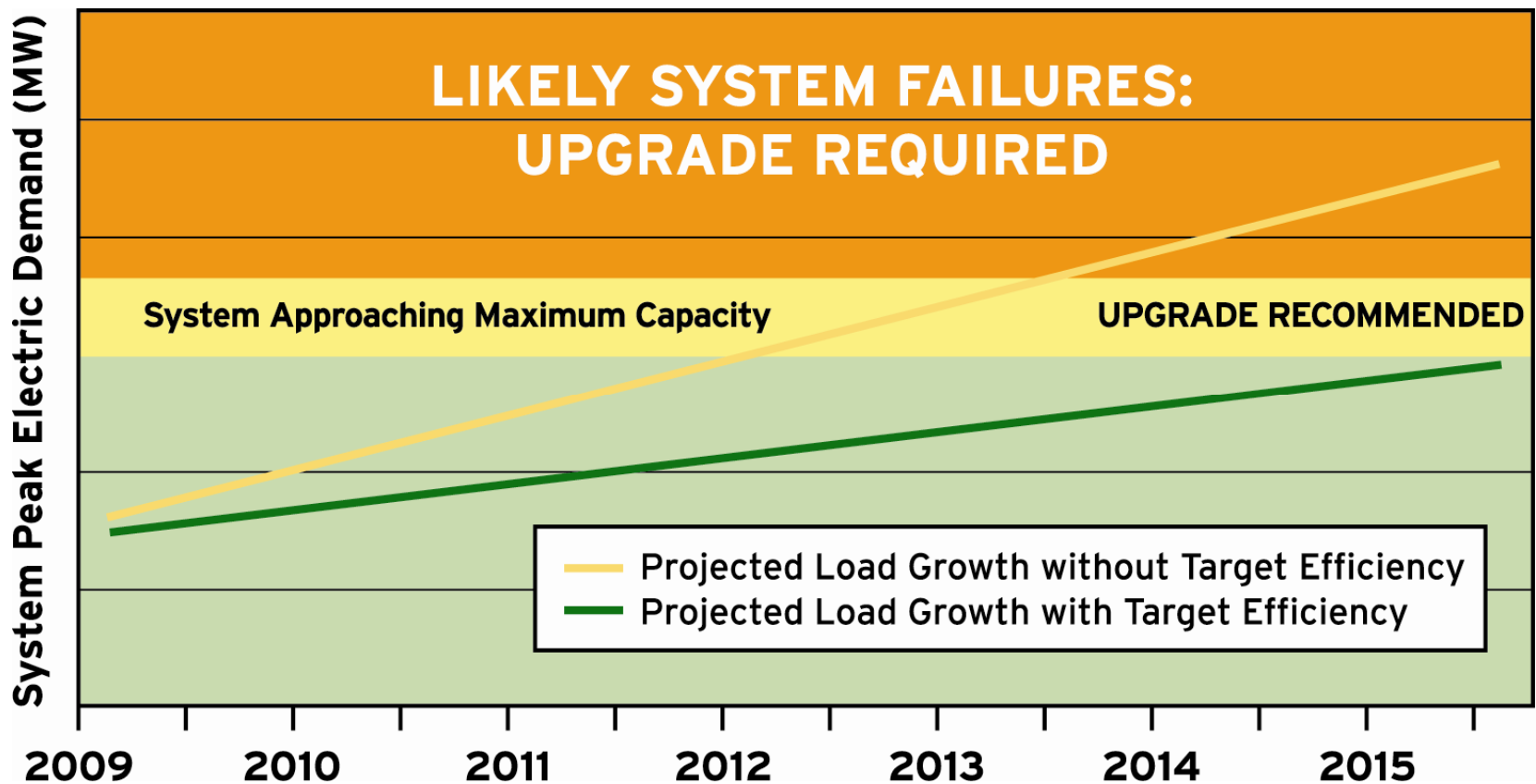
## More Savings with Geographic Targeting



# Geographic Targeted Area MWh Savings

	MWh Consumption (12 months)			MWh Savings (18 months)			Savings % of Consumption		
	C&I	Res	Combined	C&I	Res	Combined	C&I	Res	Combined
<b>Geographic Targeted Areas</b>	863,505	1.047 million	1.910 million	39,095	24,820	63,915	<b>4.5%</b>	<b>2.4%</b>	<b>3.3%</b>
<b>Non-Geographic Targeted Areas</b>	3.189 million	3.814 million	7.004 million	46,966	81,085	128,051	<b>1.5%</b>	<b>2.1%</b>	<b>1.8%</b>

# Geographic Targeting at Work



# Community Energy Initiatives

## “Average-Performing Communities”

- **Hardwick**
  - **Population 3,200**
  - **Median household income \$42k (State = \$50k)**
  - **40 square miles**
  - **Largest employer: Hazen Union High School**
- **Northfield**
  - **Population 3,100**
  - **Median household income \$40k**
  - **45 square miles**
  - **Largest employer: Norwich University**

# Overall Approach

- **Goals**
  - **3% overall energy savings and 35% participation**
  - **Negative load growth**
- **Duration: 2.5 years**
- **Public outreach:**
  - **Retailer lighting events**
  - **Existing town events**
    - Hardwick Spring Festival**
    - Northfield Labor Day event**
  - **Business outreach – Energy walk-throughs**
  - **Extensive measures in local schools**
  - **Mobile home outreach**
  - **Northfield Home Energy Makeovers**
    - First prize \$10,000. Two second prizes \$2,000**

## Goals Achieved

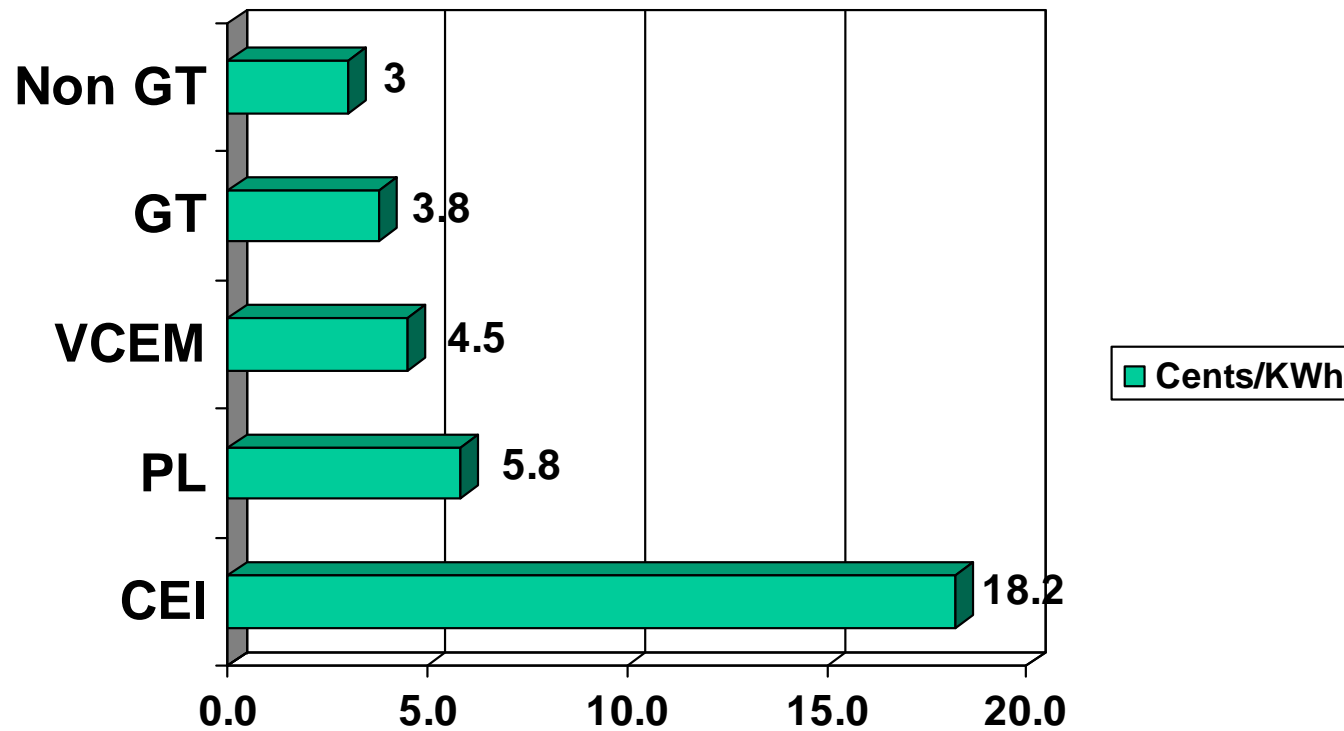
Community	Total participating electric accounts	Avg. annual community-wide reduced electrical energy use	Average annual energy reduction	Cumulative energy reduction over entire campaign
<b>Village of Northfield</b>	871 out of 2,155  (40% of total accounts)	1,783 MWh	<b>5.4%</b>	<b>13.6%</b>
<b>Town of Hardwick</b>	598 out of 1,340  (45% of total accounts)	828 MWh	<b>7.1%</b>	<b>17.7%</b>




# Vermont Community Energy Mobilization (VCEM)

- **5-month demonstration relying on community volunteers**
- **All-fuels**
- **9 active communities**
- **Trained volunteers for “visits” and “kitchen table energy discussions” (not “audits”)**
- **Minimum of 25 homes per community**
- **Targeted “vulnerable” populations**
- **709 homes overall**
- **Direct install: CFL, aerators, programmable thermostats, etc.**
- **Awareness increased, action not so much**

## Levelized Costs for EVT Initiatives



## Conclusions

- Put in the resources  aggressive savings fast
  - A real resource for targeted T&D least-cost planning
  - Higher investment can attain higher savings quite rapidly **at somewhat increased unit cost**
- Integration with Distributed Utility Planning is crucial to realize value

# Conclusions about Community Involvement

- Not a silver bullet
  - Does not appear to lower costs or dramatically increase savings
- These efforts are very early on the learning curve
- Most have been isolated projects. Could become templates
- May lend themselves to integrated approaches (all-fuels, renewable energy –e.g., Marshfield, MA)
- May work best when partnered with other strategies: PACE; Block Grant funds

# Identify Objectives

- Trying to defer or avoid T&D investment?
  - What is the target?
  - Plan on this basis
- Is community dynamic essential?
  - Immediate savings targets/participation
  - What long-term objectives?
  - Choose achievable interim goals to build confidence & capability
- Develop clear, concise, and consistent message
- Know what you are offering; be clear about it

## Steps to Success

- Clearly define objectives  
(long-term and short-term)
- Select communities based on objectives
- Organize and plan the effort
- Implement
  - Modify and adjust
- Evaluate

# Questions?

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