GMP Rutland Area Energy Efficiency Assessment

Draft Final Report Highlights
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Vermont Energy Investment Corporation

Overall Project Objectives

- Quantify the amount of demand reduction available through untapped energy efficiency in two areas of Rutland (Core Area and Wide Area)

- Determine whether energy efficiency could deliver 4.2 MW within the Rutland Core Area and 8.4 MW in Rutland Wide Area, and if so, at what cost

Methodology

- Task 1: Quantify avoided annual energy use and avoided peak demand from past and current EE
- Task 2: Quantify efficiency potential
  - Savings as a percent of demand by premise
  - Percent target for remaining depth of savings
  - Savings achieved compared to area load
  - GT savings as a percent of load compared to statewide efforts
  - Savings expected from statewide efforts and remaining savings needed
- Task 3: Quantify cost to achieve efficiency potential in both areas
  - Amount of savings achievable in 3 years
  - Total incentive cost
  - Total program cost (incentive + non-incentive)

Highest kW During June, July and August 2013

		Premises	Percent with Demand Data	2013 Max Summer Peak
Core Area	Commercial	2,350	63%	35,200
	Industrial	4	100%	10,600
	Residential	10,760	0%	28
Core Area Total		**13,110**	**11%**	**45,830**
Wide Area	Commercial	4,730	52%	55,300
	Industrial	5	100%	11,600
	Residential	27,100	0%	70
Wide Area Total		**31,800**	**8%**	**66,900**

Demand Savings per Premise & Savings Target

		Cumulative 2009-2014 Summer Peak Demand Savings (kW)	Average Summer Peak Demand Savings – % of premise load[1]
Premises w/ Demand Data	**Commercial**	2,890	10.4%
	Industrial	1,140	8.1%
Premises w/o Demand Data	**Commercial**	50	13.9%
	Residential	50	17.6%
Grand Total		**4,130**	

[1]Excludes projects with improbably high savings (>70% total premise load)

- The target level of savings potential for each premise is equivalent to the average % savings achieved in the 2009-2014 period

Demand Savings Achievable in 3 Years

We sought to answer these questions:

- How much of the maximum achievable peak demand potential can be achieved in 3 years?
- If GT level of effort applied to both areas, what savings could we expect?

	Area Load	Max Achievable Coincident Summer Peak Demand Savings		Max Achievable Coincident Summer Peak Demand Savings (Task 2)
		Annual	3 Years	
GT-2009	50 MW	1,330 kW[1]	3,990 kW	
Core Area	67 MW	1,780 kW[2]	5,350 kW[3]	**5,030kW**
Wide Area	96 MW	2,550 kW[2]	**7,660 kW**	11,700kW

Notes:

1. Highest savings achieved in Rutland during GT, representing results from high effort.
2. GT savings scaled by area load, representing the same level of effort applied to a larger area.
3. Core Area 3 year savings calculated here exceed the total potential as identified in Task 2. The lower of the two (Task 2 result) was used to calculate costs.

Cost of Savings Achievable in 3 Years

	Core			Wide		
	DRP (Baseline)	Incentive: 80% Measure Cost	Incentive: 100% Measure Cost	DRP (Baseline)	Incentive: 80% Measure Cost	Incentive: 100% Measure Cost
3 year Achievable Savings	820 kW	3,770 kW	4,520 kW	1,090 kW	6,380 kW	7,660kW
Cost (Incentive)	$1.5M	$8.0M	$12.1M	$2.0M	$13.8M	$20.7M
Cost (Total)	$2.5M	$13.5M	$17.5M	$3.4M	$23.0M	$29.9M
Incentive Cost/kW	$1,800	$2,100	$2,700	$1,800	$2,200	$2,700
Total Cost/kW	$3,000	$3,600	$3,900	$3,119	$3,600	$3,900

Notes:

1. Demand Resources Plan (DRP) costs are total resource acquisition costs/Summer kW saved for Efficiency Vermont.
2. Total costs include incentive, program administrative costs, and marketing. Program administrative costs were calculated as 40% of total project cost when incentives = 80%. These costs did not change as incentive levels changed.

Summary of Findings

- By assuming the same level of effort employed and results achieved in 2009:
  - Summer peak demand savings of 4.52 MW are available in the Core Area (more than the target 4.2 MW)
  - Summer peak demand savings of 7.66 MW are available in the Wide Area (less than the target 8.4 MW)
- To achieve these savings in the Core Area over 3 years, we estimate a cost range of $16M-$18M
- VEIC concluded that GMP can include EE as a key measure as it considers how best to meet its needs for 4.2 MW in Rutland
  - Focusing on the Core Area with incentives that cover 100% of measure costs will deliver 4.52 MW