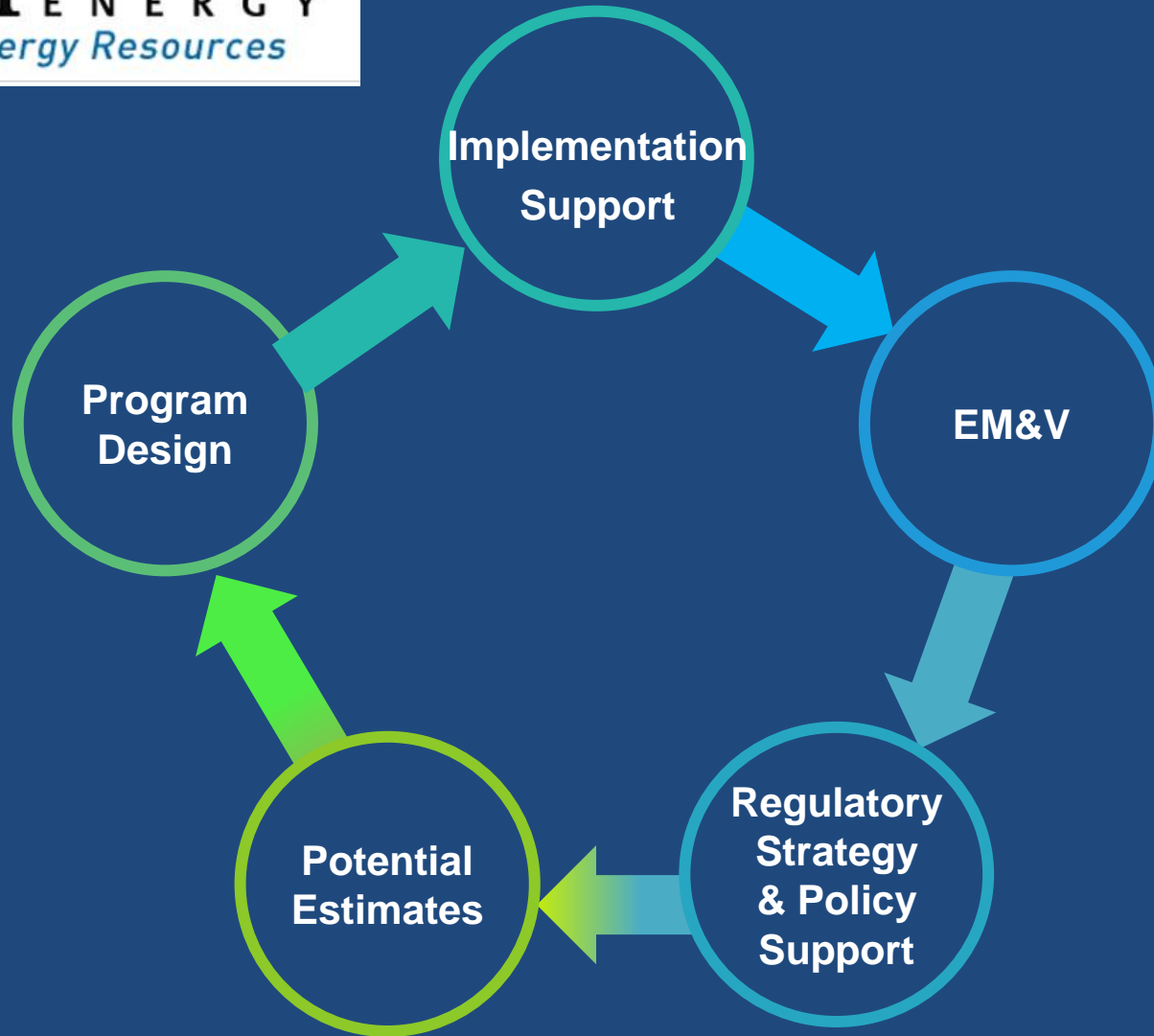


Session 3E

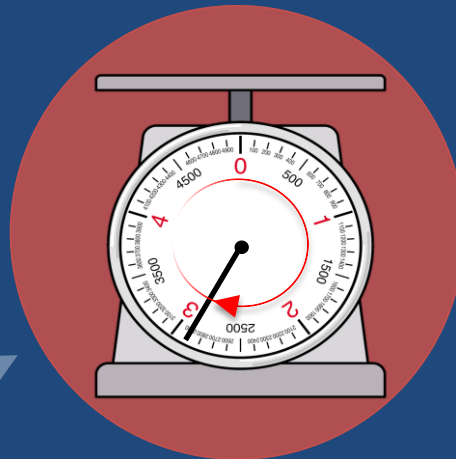
**An Integrated Strategic Planning
Tool for a Municipal Electric Utility**

Jeffrey Loiter, Optimal Energy, Inc.

Presented at the 2017 ACEEE
National Conference on
Energy Efficiency as a Resource
November 1, 2017









Industrial Economics, Inc. has three decades of experience in environmental and economic consulting, serving federal agencies, state and local agencies, non-governmental organizations, tribes, and private entities.

- Natural Resources
 - Policy
 - Strategic Services
 - Decision Support
 - Objective Analysis
 - Finance and Accounting
-

Client



THE TOWN OF
CONCORD
MASSACHUSETTS



Client and Problem Statement



THE TOWN OF
CONCORD
MASSACHUSETTS

- Make changes to business model
 - Seek carbon-free power supply
 - Invest in strategies that promote customer satisfaction
-

Solution – Create a Strategic Plan

- Enjoin team
- Set Goals
- Explore Initiatives
- Test Alternative Plans against Goals



Setting Goals for Competing Outcomes

	<i>Goal</i>	<i>Target Value</i>
01	Maintain System Reliability	No change in customer rating (95.2%)
02	Maintain or Increase Customer Satisfaction	≥ 85.8%
03	Provide Energy Related Services to as Many Customers as Possible	25% Residential Participation 50% Commercial Participation
04	Increase Revenue	0% to 5%
05	Increase Net Operating Income	0% to 5%
06	Reduce GHG Emissions	100% of 35% goal for 2025

Explore Initiatives

Relevance Criteria

Feasibility Criteria

<i>Initiative</i>	<i>Increase Revenue</i>	<i>Increase NOI</i>	<i>Reduce GHG</i>	+	<i>Capital Intensity</i>	<i>Risk</i>	<i>Timing</i>	+
Time of use rates	Bad	Good	Unsure		Good	Good	Good	
Electric vehicles	Good	Good	Good		Unsure	Unsure	Good	
DG and storage	Bad	Bad	Good		No Effect	No Effect	Good	
EE products	Bad	Unsure	Good		No Effect	Good	Good	
Smart devices	Bad	Good	Unsure		Good	Good	Good	
Fuel switching	Good	Good	Unsure		Bad	Good	Good	

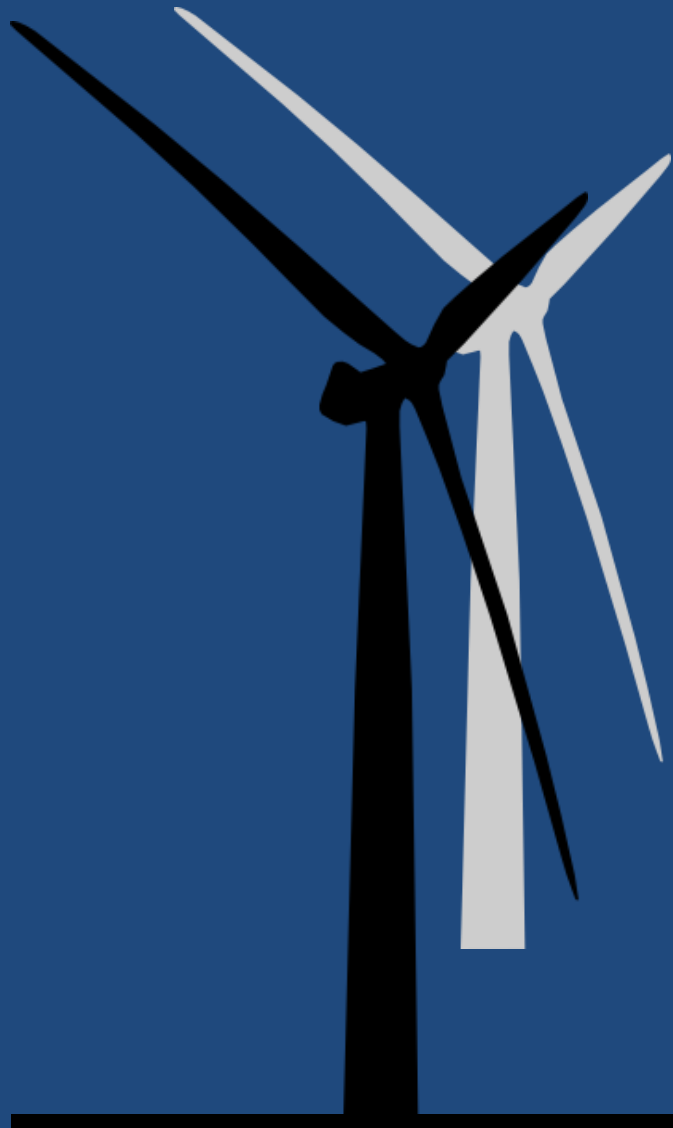
Bad

Good

Unsure

No Effect

Define Scenarios



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Strategic Planning Tool



Strategic Planning Tool

Scenario 4: Balanced									
Impact Compared to Goal for Year				2025	(2018-2025)				
Net Income Target			2%	Initiative Difference from BAU					
				INCLUDED?	1	2	3	4	5
				See below	TRUE	TRUE	TRUE	FALSE	
Goals	Goal (%)	Actual Scenario Impact (%)	Business as Usual	Total Scenario Change (Difference from BAU)	Rate Design	Fuel Switch	Electric Vehicles	CMLP Storage	Distributed Energy Resources
Net Income (\$)	0-5% (Increase)	17.4%			-	755,000	196,453	-	-
	5% (Increase)	2.0%			157,481	(181,004)	(8,645)	(278,089)	-
	35% (Decrease)	-83.0%	73,638,364	(61,103,132)	-	(2,237,397)	(1,912,825)	-	-
Satisfaction	86% (Absolute)								
	0% (?)								
Conserved (res)	25-50% (Absolute)	140%	N/A	10,675	6,389	2,340	320	-	-
Conserved (comm)	25-50% (Absolute)	97%	N/A	1,404	973	103	-	-	-
Other Outputs	Sales (MWh)	-3%	178,632	(5,247)		4,136	1,430	-	-
	Operating Expenses (\$)	16%				936,004	205,098	278,089	-
	Residential Rate (¢/kWh)		16.99 ¢	. ¢					
	Small GS Rate (¢/kWh)		20.75 ¢	. ¢					
	Medium GS Rate (¢/kWh)		13.45 ¢	. ¢					
	Medium GS Rate (\$/kW)		\$11.43	\$24.53					
Large GS Rate (¢/kWh)		13.45 ¢	. ¢						
Large GS Rate (\$/kW)		\$11.80	\$26.34						

Outcomes of Scenario Planning

- 6 of 9 initiatives reduce GHG
 - DER and behavioral have small impacts: not incl.
 - Increased costs = increased revenue
 - Peak demand reduction = decreased revenue
 - Effect on rates is complicated
-

Findings

- Time of Use Rate
- Higher Fixed Charges
- Fuel Switch
- Electric Vehicles
- Utility Scale Storage
- PPAs & RECs for Non-emitting Power
- Smart Thermostats
- Energy Efficiency Programs

REV	NET INC	GHG
Grey	Green	Yellow

REV	NET INC	GHG
Grey	Grey	Yellow

REV	NET INC	GHG
Green	Red	Green

REV	NET INC	GHG
Green	Red	Green

REV	NET INC	GHG
Grey	Green	Yellow

REV	NET INC	GHG
Green	Grey	Green

REV	NET INC	GHG
Grey	Green	Yellow

REV	NET INC	GHG
Red	Green	Grey

Lessons

- Defining the goals
 - Finding similar utilities and comparable programs
 - Defining the baseline
 - Dealing with interactions
 - Value from identifying data gaps
-

Thank You!

Questions?
