

Policy in Action: *How Rhode Island Drives Large Investments in Energy Efficiency*

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Groundbreaking Policy

1996

- RI created nation's first public benefits fund
- Demand side management & renewable energy
- Generated \$15M/yr for EE

2006

- Still spending 60 times more on energy supply that was 6 times more expensive than energy efficiency
- Comprehensive Energy Efficiency, Conservation, and Affordability Act passed unanimously



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3 Key Elements of LCP

1. **Least Cost Procurement** – Requires National Grid to invest in all cost-effective energy efficiency that is less expensive than supply; Decoupling
2. **Energy Efficiency and Resource Management Council (EERMC)** – Guides and oversees the implementation of LCP
3. **Targets & Plans** – EERMC sets savings targets; National Grid develops annual and 3-year plans



Energy Efficiency Council

- 13 member council; 9 voting members
- Appointed by State Senate; Voluntary
- OER Commissioner serves as Executive Director
- OER provides administrative staffing
- Funded through public benefits fund
- Council budget is separate from state budgeting process
- Strive for consensus - otherwise, simple majority vote



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Council Members

Voting Members

- Large commercial & industrial users
- Small commercial & industrial users
- Residential users
- Low-income users
- Environmental issues pertaining to energy
- Energy design and codes
- Energy efficiency education and employment
- Municipal energy users
- Energy regulation and law

Non-voting Members

- Energy Commissioner, Executive Director of EERMC
- Electric distribution utility, gas distribution utility
- Fuel oil or heating fuel industry



EERMC Consultant Team

Core Team Members



Data & Analysis

Sam Huntington
(OEI)

Kate Desrochers
(VEIC)

Craig Johnson
(OEI)

Residential

Sean Bleything
(VEIC)

Richard Faesy
(EFG)

Glen Reed
(EFG)

Commercial

George Lawrence
(OEI)

Zoe Dawson
(VEIC)

Jennifer Chiodo
(Cx Associates)

Project-Specific Subject Area Experts:

- Eric Belliveau (OEI) – C&I, Policy
- Jeff Loiter (OEI) – Regulatory
- Phil Mosenthal(OEI) – C&I
- Gretchen Calcagni (OEI) – Cross-Cutting
- Peter Adamczyk (VEIC) – Financing, PACE
- Elizabeth Chant (VEIC) – Income-Eligible
- Sam Dent (VEIC) – TRM
- Karen Glitman (VEIC) – Transportation
- David Hill (VEIC) – Renewables
- Nick Lange (VEIC) – Behavioral
- Brian Pine (VEIC) – Financing
- Michael Russom (VEIC) – Retail Products
- Pierre van der Merwe (VEIC) – EM&V
- Ralph Prah (Prah Consultants) – EM&V
- Chris Kramer (EFG) – Financing, PACE
- Chris Neme (EFG) – Regulatory

The Collaborative

- **National Grid** – program administrator
- **Division of Public Utilities and Carriers** – ratepayer focus
- **TEC-RI** - large C&I
- **People's Power & Light** – residential, small business, oil
- **Office of Energy Resources** - energy policy & strategy
- **Acadia Center** – sustainable economies
- **Green & Healthy Homes Initiative** – residential, low income
- **EERMC & Consultants** – Least Cost Procurement legislation



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The Collaborative



Rhode Island Successes

Efficiency
investments

Lower
energy bills

Economic
growth &
job creation

Since 2008, Rhode Island has:

- Invested **\$558 million** in energy efficiency
- Realized **\$1.99 billion** in benefits to consumers
- Created **25,000+ job-years** of employment

In 2014 ACEEE Scorecard, Rhode Island ranked:

- **#1** in utility and public benefits programs and policies
- **#3** across all categories



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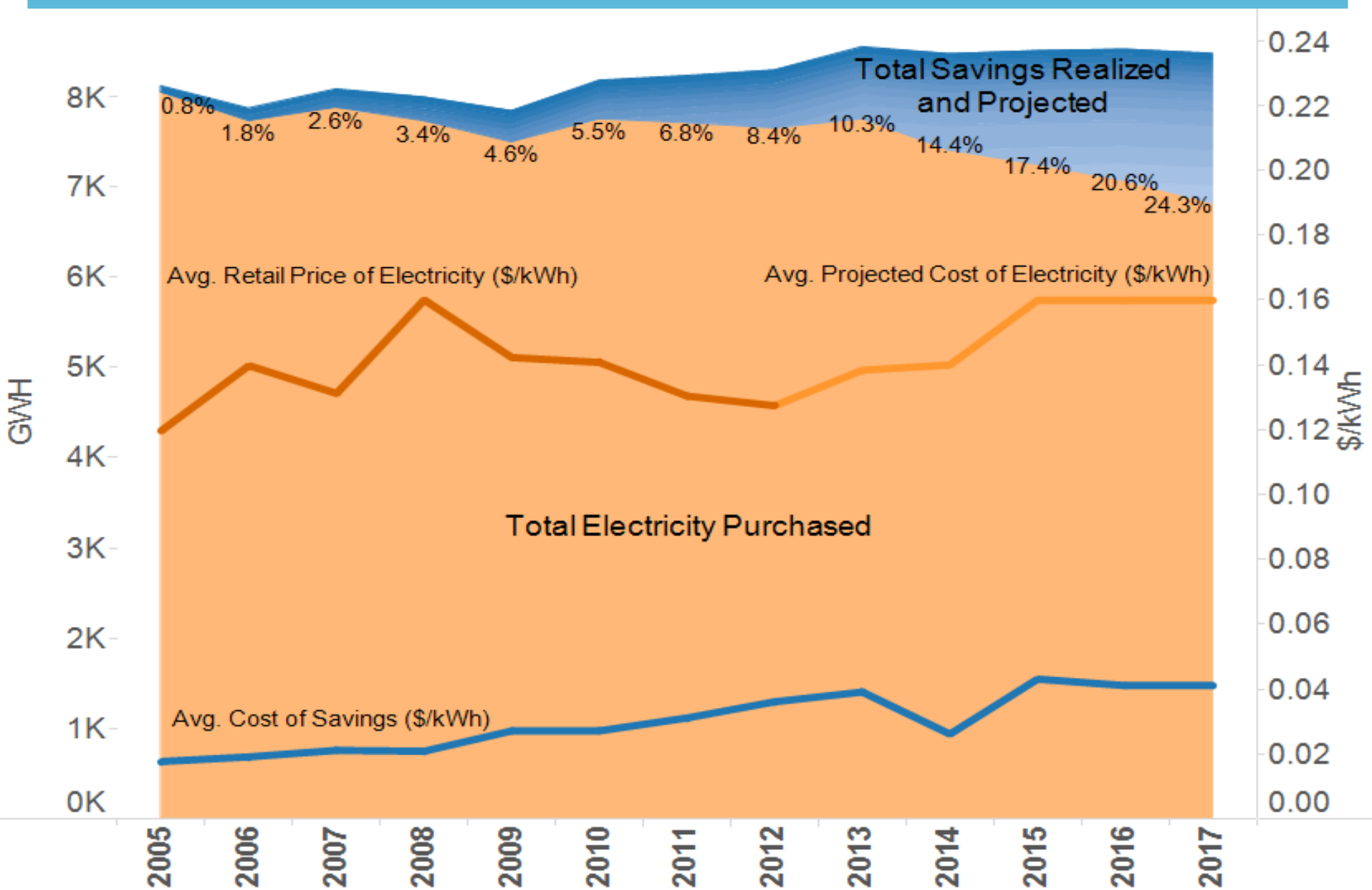
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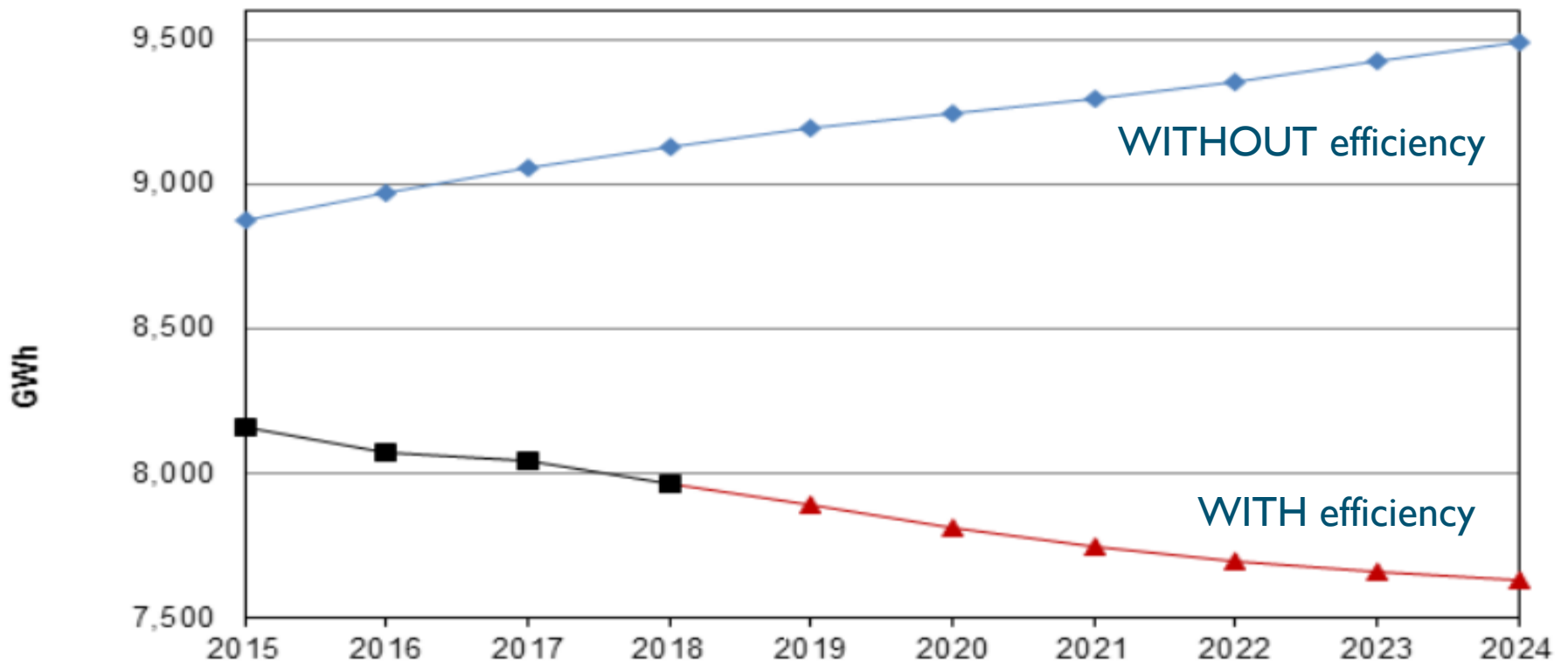
Savings Are Adding Up



Impacts to Load Forecast

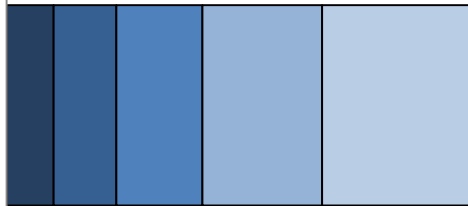
ISO-NE's recent load forecast for Rhode Island

Source: ISO-NE



Growing Avoided Costs

EE
Programs
(2010-
2014)



Electric energy efficiency measures installed over the last five years will save over **8,100 GWh** over their lifetime, at a cost of about **\$249 million**

Delivering the same amount of electricity at the average Standard Offer Service rate over the same time period would cost about **\$633 million**, which represents a savings of about **\$384 million** to ratepayers

SOS Rate



\$0

\$200

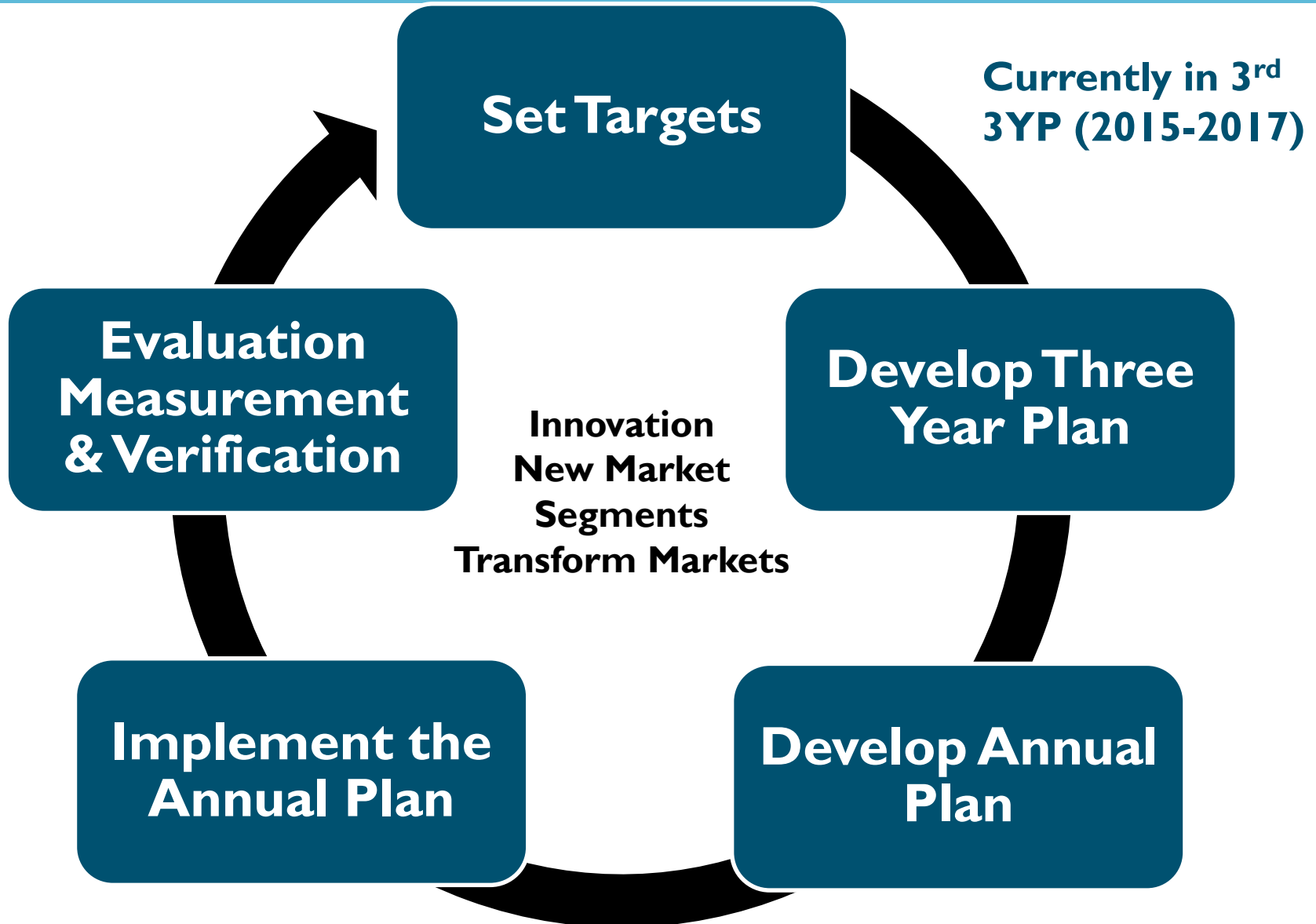
\$400

\$600

\$800

Millions

The Process



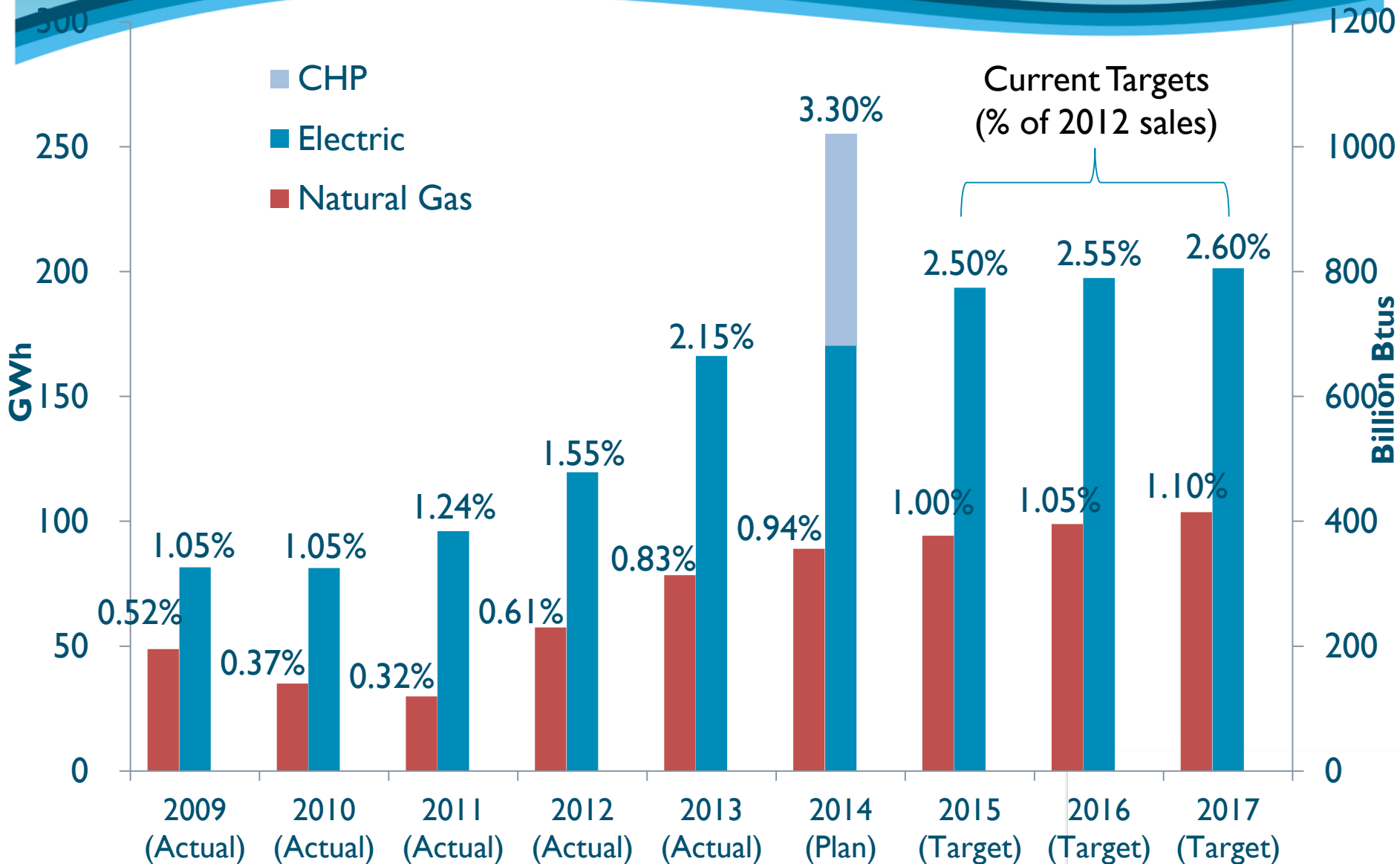
Set Targets



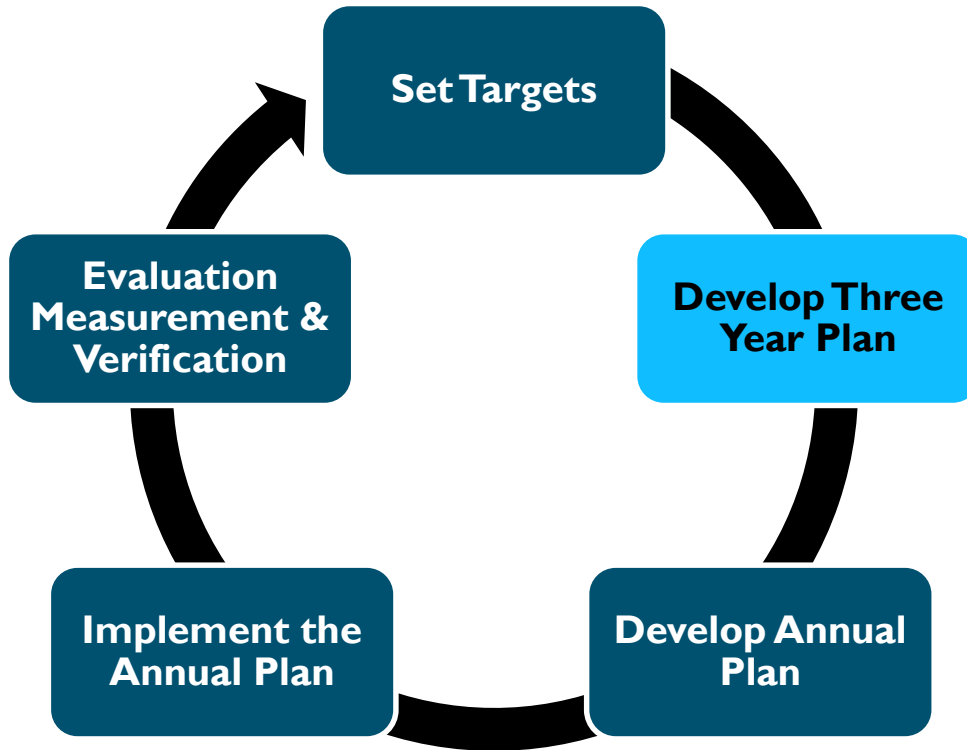
EERMC identifies cost-effective potential and proposes energy savings targets to PUC

Targets = levels of EE that are cost-effective and *less than the cost of supply*, and *prudent and reliable* based on assessment of *achievable potential*

Aggressive Savings Targets



Develop Three-Year Plan

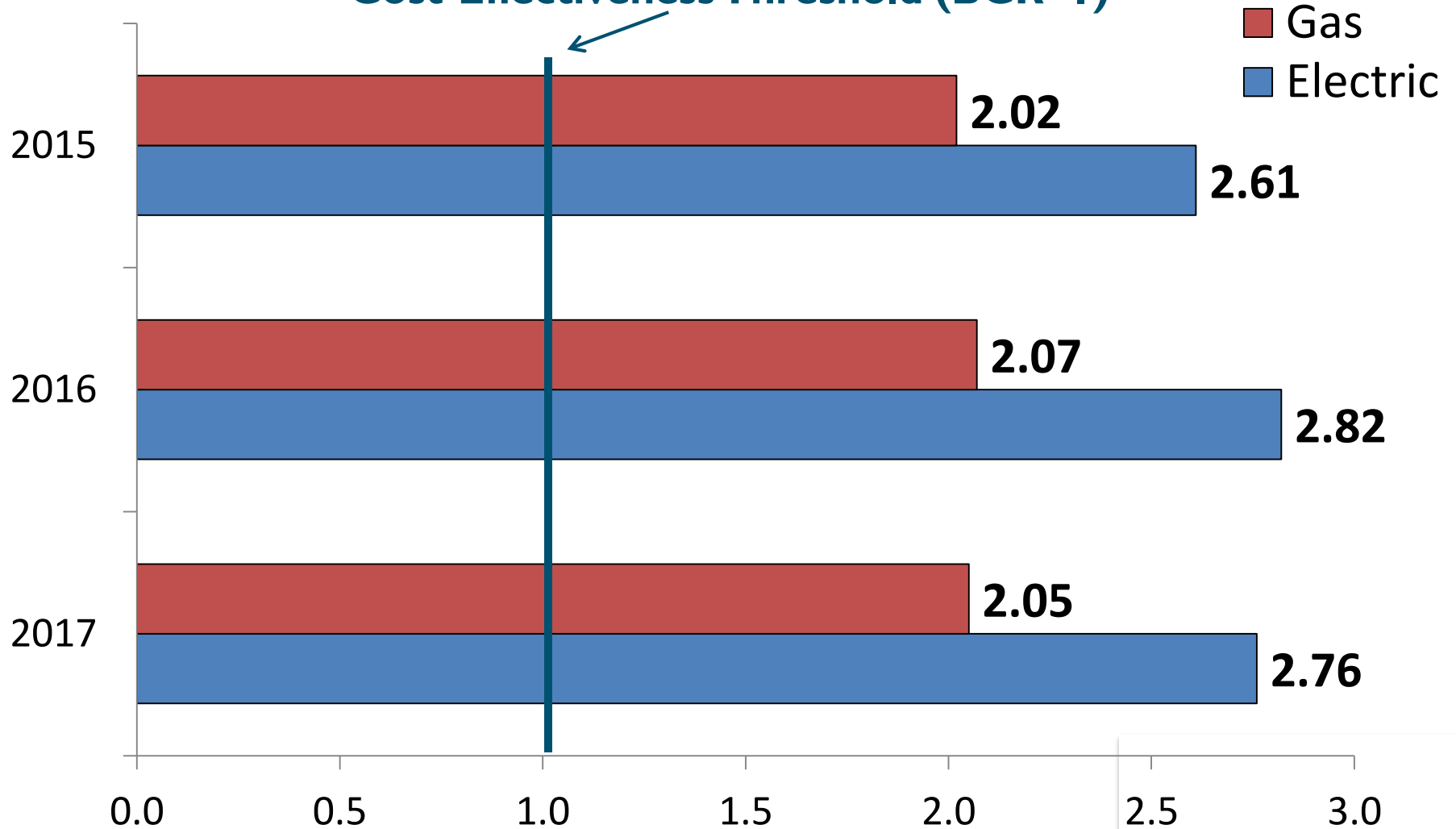


National Grid develops Three-Year Energy Efficiency Procurement Plans with stakeholder input

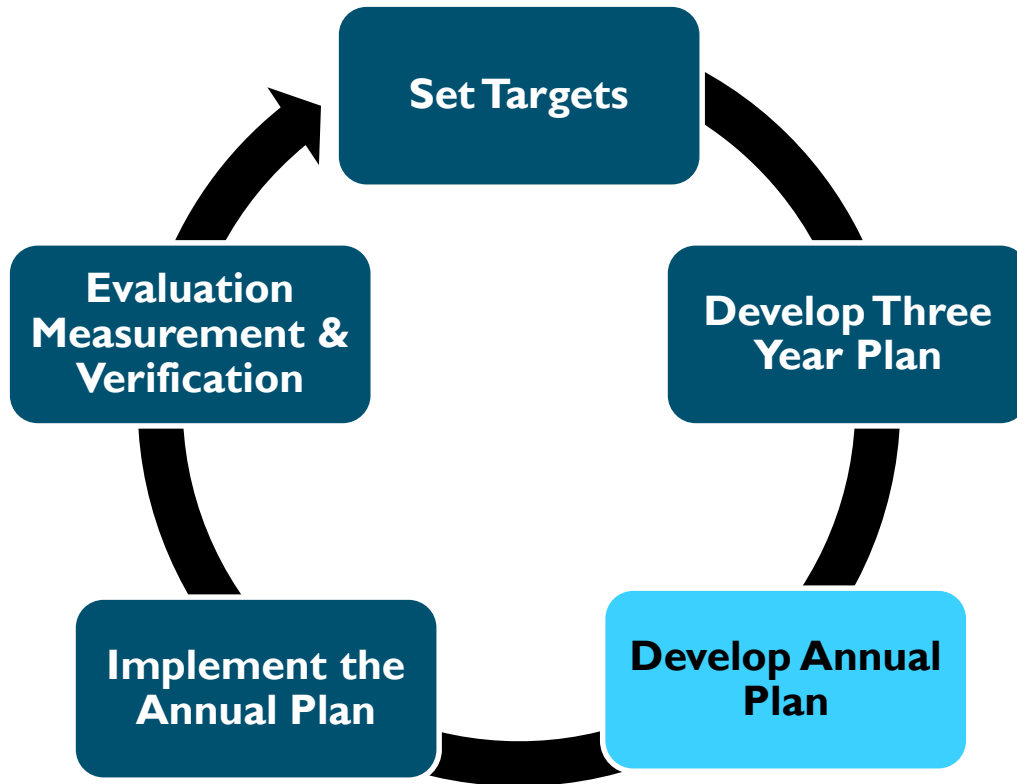
EERMC verifies the cost-effectiveness of Plans and submits to PUC

Cost-Effectiveness

Cost-Effectiveness Threshold (BCR>1)



Develop Annual Plan



National Grid develops annual implementation plans with stakeholder input

The EERMC verifies the cost-effectiveness of the Plans and submits findings to PUC

Robust Array of Programs

Non-Income Eligible Residential

Residential New Construction

ENERGY STAR® HVAC

EnergyWise

EnergyWise Multifamily

ENERGY STAR® Lighting

ENERGY STAR® Appliances

Home Energy Reports

Energy Efficiency Educational Programs

Residential Products Pilot

Community Based Initiatives - Residential

Comprehensive Marketing - Residential

Residential Shareholder Incentive

Income Eligible Residential

Single Family - Income Eligible Services

Income Eligible Multifamily

Income Eligible Shareholder Incentive

Commercial & Industrial

Large Commercial New Construction

Large Commercial Retrofit

Small Business Direct Install

Community Based Initiatives - C&I

Commercial Pilots

Comprehensive Marketing - C&I

Finance Costs

Commercial & Industrial Shareholder Incentive



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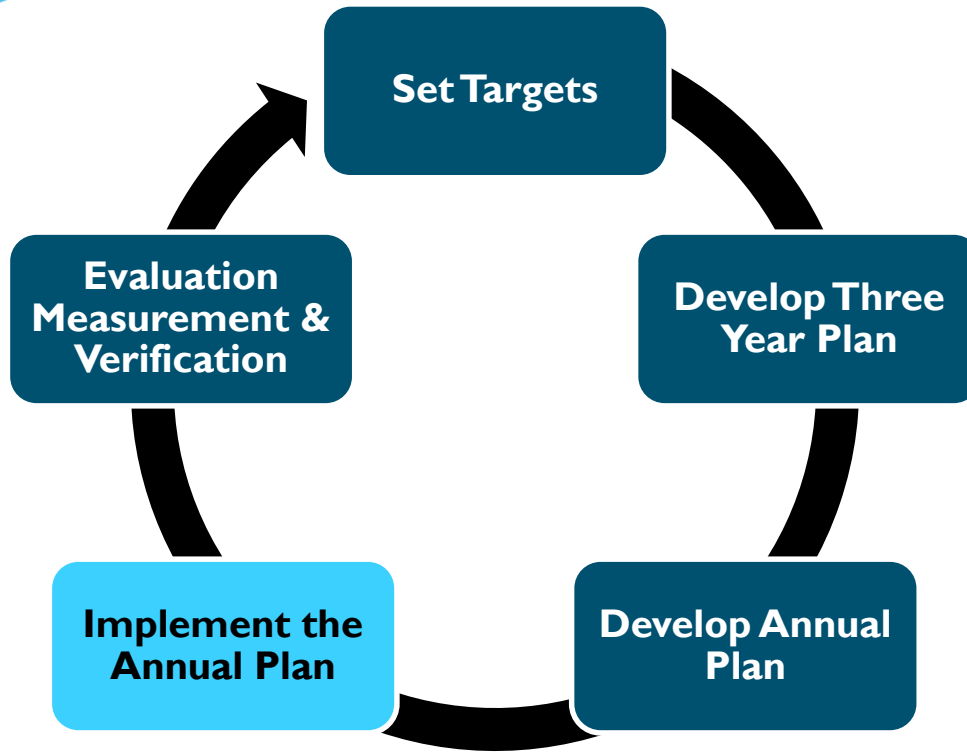
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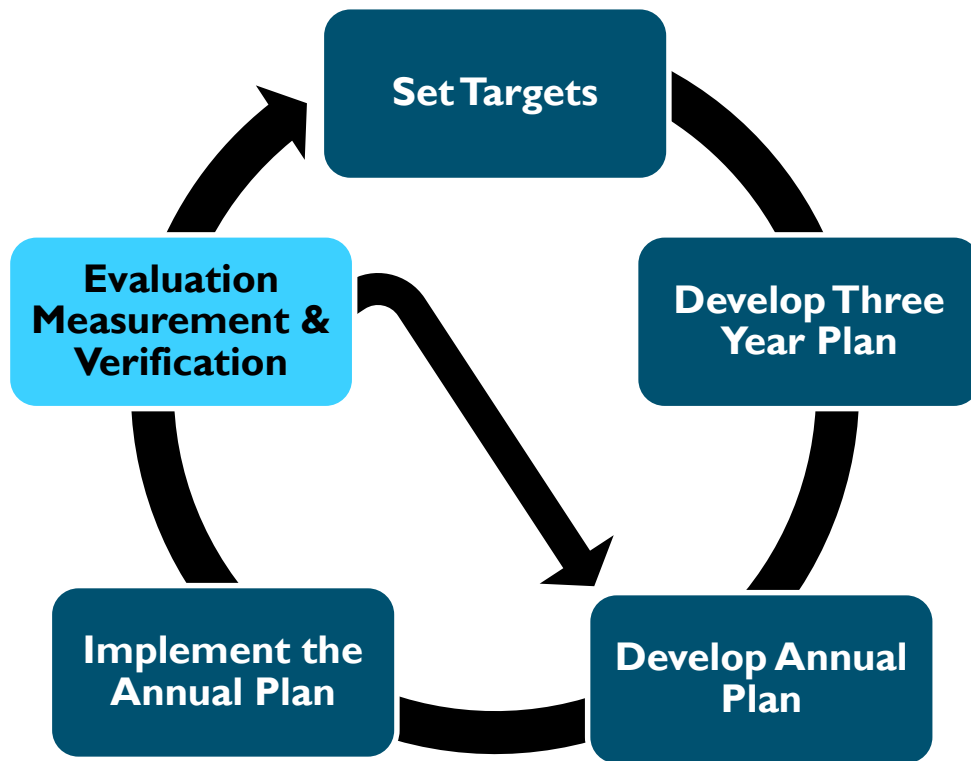
Implement the Annual Plan



National Grid implements all components of annual plan and reports to stakeholders monthly

EERMC & OER provide feedback on implementation and program design

EM & V



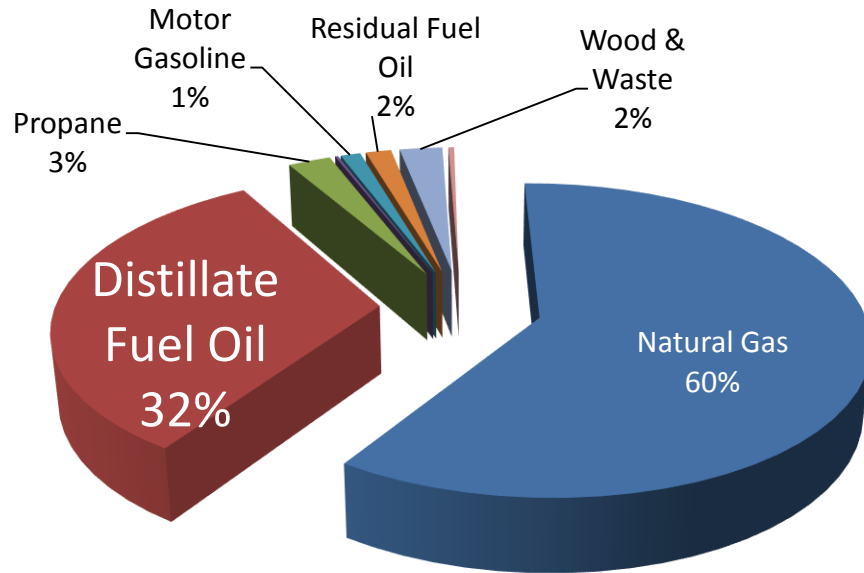
Evaluation and verification by National Grid improves program design and delivery

- Impact evaluations
- Process evaluations
- Market assessments

National Grid applies evaluation results prospectively in annual and three-year planning

Delivered Fuels Efficiency Policy

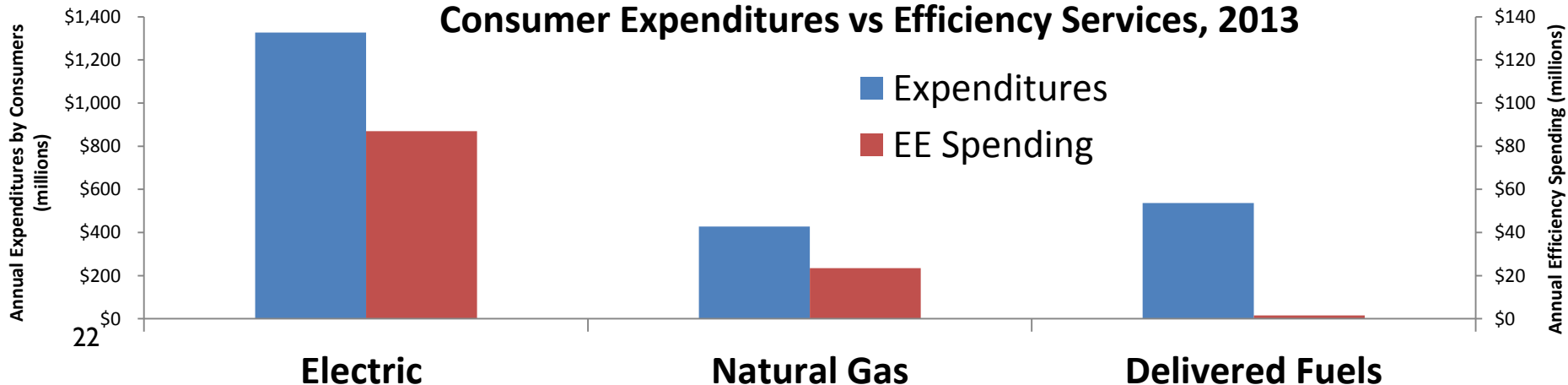
Thermal Sector Fuel Consumption, 2011



Remaining gap – very little available for oil customers

Working group will propose policy solutions

Consumer Expenditures vs Efficiency Services, 2013



Annual Expenditures by Consumers (millions)

Annual Efficiency Spending (millions)

\$1,400
\$1,200
\$1,000
\$800
\$600
\$400
\$200
\$0

\$140
\$120
\$100
\$80
\$60
\$40
\$20
\$0

Electric

Natural Gas

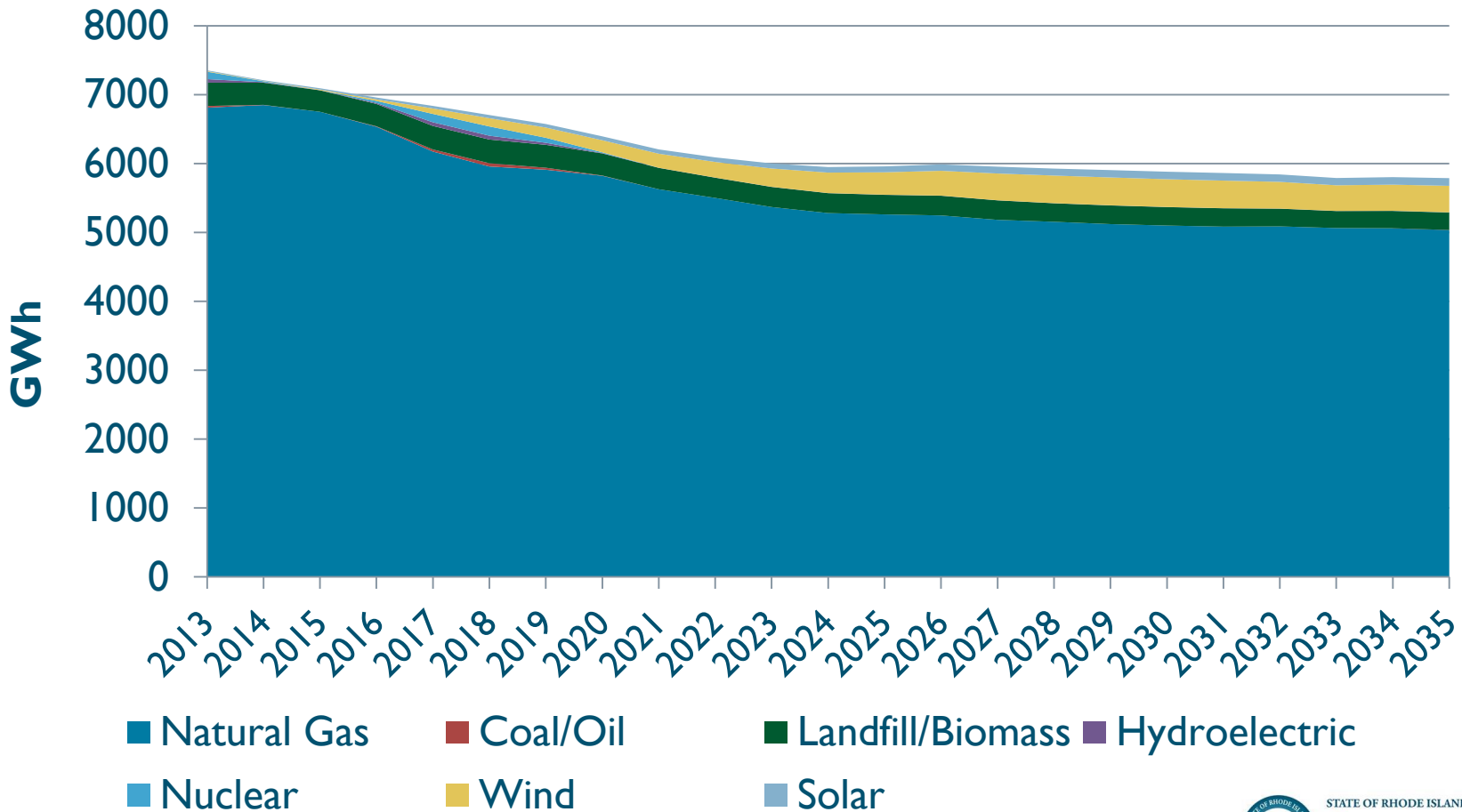
Delivered Fuels

Expenditures

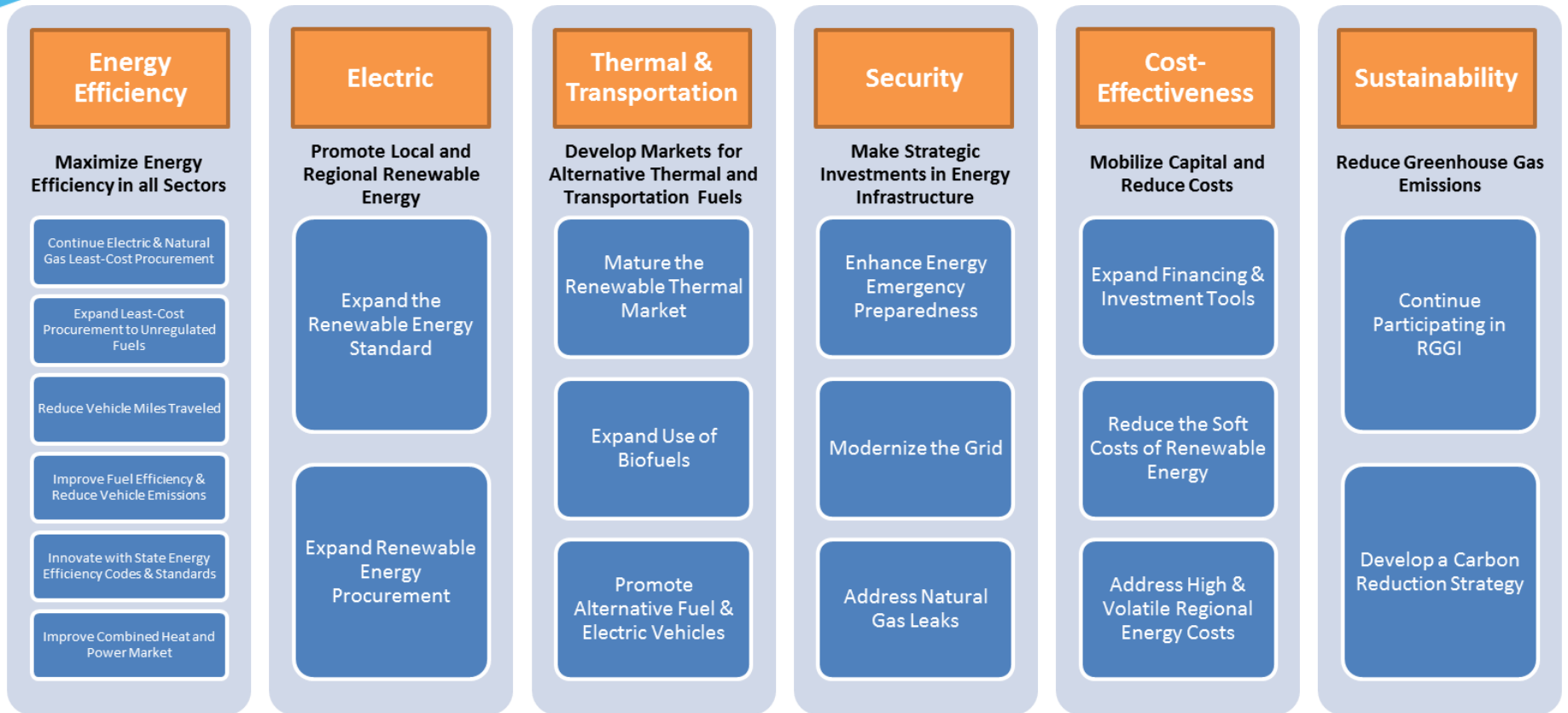
EE Spending

RI State Energy Plan

RI Electric Demand - Business As Usual



Policies and Strategies



Lead by Example

Energy Efficiency: RI's "First Fuel"

Modeling conducted for energy plan reaffirmed value of energy efficiency as a least-cost fuel source

- Savings can be achieved at fraction of cost of traditional supply
- Mitigates customer impact of wholesale volatility
- Lowers cost of entire energy system
- Drives economic activity and growth in local jobs which cannot be outsourced
- Keeps energy dollars in state

RI Infrastructure Bank

- Clean Water Finance Agency > Infrastructure Bank
- Hub for existing and new green infrastructure financing
- Efficient Buildings Fund
- Commercial PACE
- Residential PACE
- Brownfields program
- Storm water program
- Long-term loan length allows for deeper savings



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Why is RI good at EE?

- **One utility; High energy prices**
- **Least cost procurement law**
 - Significant investments in cost-effect efficiency
 - Decoupling
- **Educated, cooperative stakeholder structure**
 - Policy makers on board
 - EERMC & consultant team
 - OER engagement & RGGI funds
 - EE Collaborative



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Thank You

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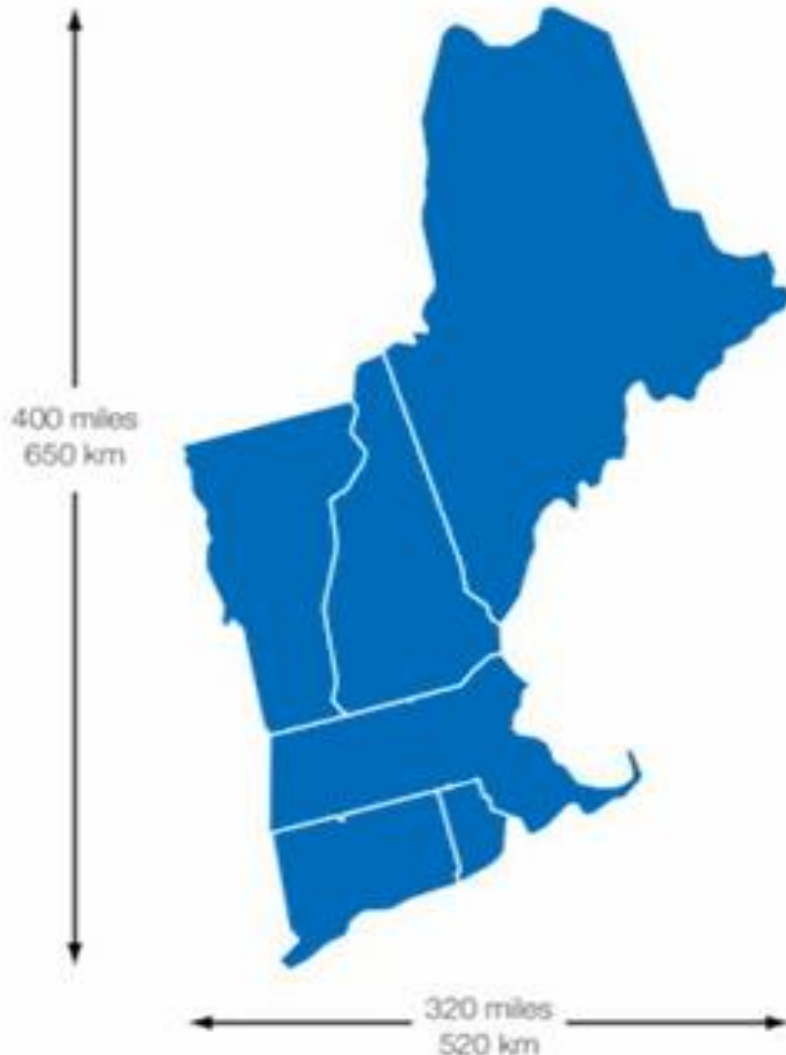


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Back Up Slides

Regional Energy System

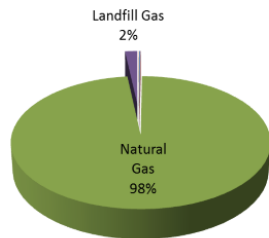


- 6.5 million electricity customers; population 14 million
- 8,000+ miles of high-voltage transmission lines
- 350+ generators
- 12 interconnections with systems in New York and Canada
- 31,000+ megawatts of total supply (includes 500+ megawatts of demand response)
- Peak demand: approximately 28,130 megawatts on August 2, 2006 (after approximately 450 megawatts of load reduction from demand-response programs)
- 280+ participants in the marketplace
- \$11.2 billion energy market

Part 1: Overview of Energy in Rhode Island

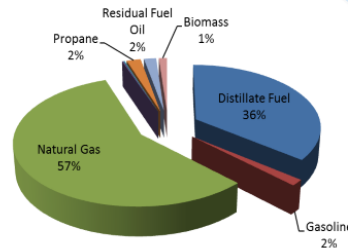
- Energy Use and Historical Trends

Electricity



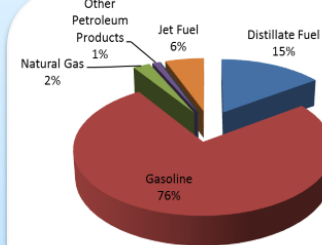
63 Trillion BTUs
\$1.1 billion / year
2.9 million tons CO₂

Thermal



63 Trillion BTUs
\$1.1 billion / year
3.9 million tons CO₂


Transportation



64 Trillion BTUs
\$1.4 billion / year
4.5 million tons CO₂

In 2010, RI spent \$3.6 billion on 190 trillion BTU of energy, emitting 11 million tons of CO₂

Rhode Island's Balanced Approach to Addressing Energy System Challenges

In-State Policies & Initiatives	Regional Efforts
 Least-cost Procurement and nation-leading Energy Efficiency Programs	Regional collaboration on cost-effective energy infrastructure (via ACES)
Renewable Energy Growth Program supporting 160 MW of DG (thru 2019)	Multi-state Clean Energy RFP (w/ CT & MA)
RI Infrastructure Bank, including residential and commercial PACE programs (proposed)	Ensure that local investment in clean energy solutions are accounted for in regional system planning (EE, DG)
Long-term Renewable Contracting	Multi-state Collaboration on Off-shore Wind (w/ MA, ME, NY; proposal pending)
Renewable Energy Standard (14.5% by 2019)	
Nation's first Off-shore Wind Project (operational ≈ 4Q 2016)	