

DDER

Massachusetts Department
of Energy Resources

Using the TRC: A look into costs and benefits

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MA Department of Energy Resources

Creating a Cleaner Energy Future for the Commonwealth

- Ensure deployment of all cost-effective energy efficiency
- Maximize development of clean energy resources
- Create and implement energy strategies to assure reliable supplies and improve the cost of clean energy relative to fossil-fuel based generation
- Support Massachusetts' clean energy companies and spur Massachusetts' clean energy employment



Policy Drivers in Massachusetts

Green Communities Act (GCA)

Requires the acquisition of all cost effective energy efficiency

Global Warming Solutions Act (GWSA)

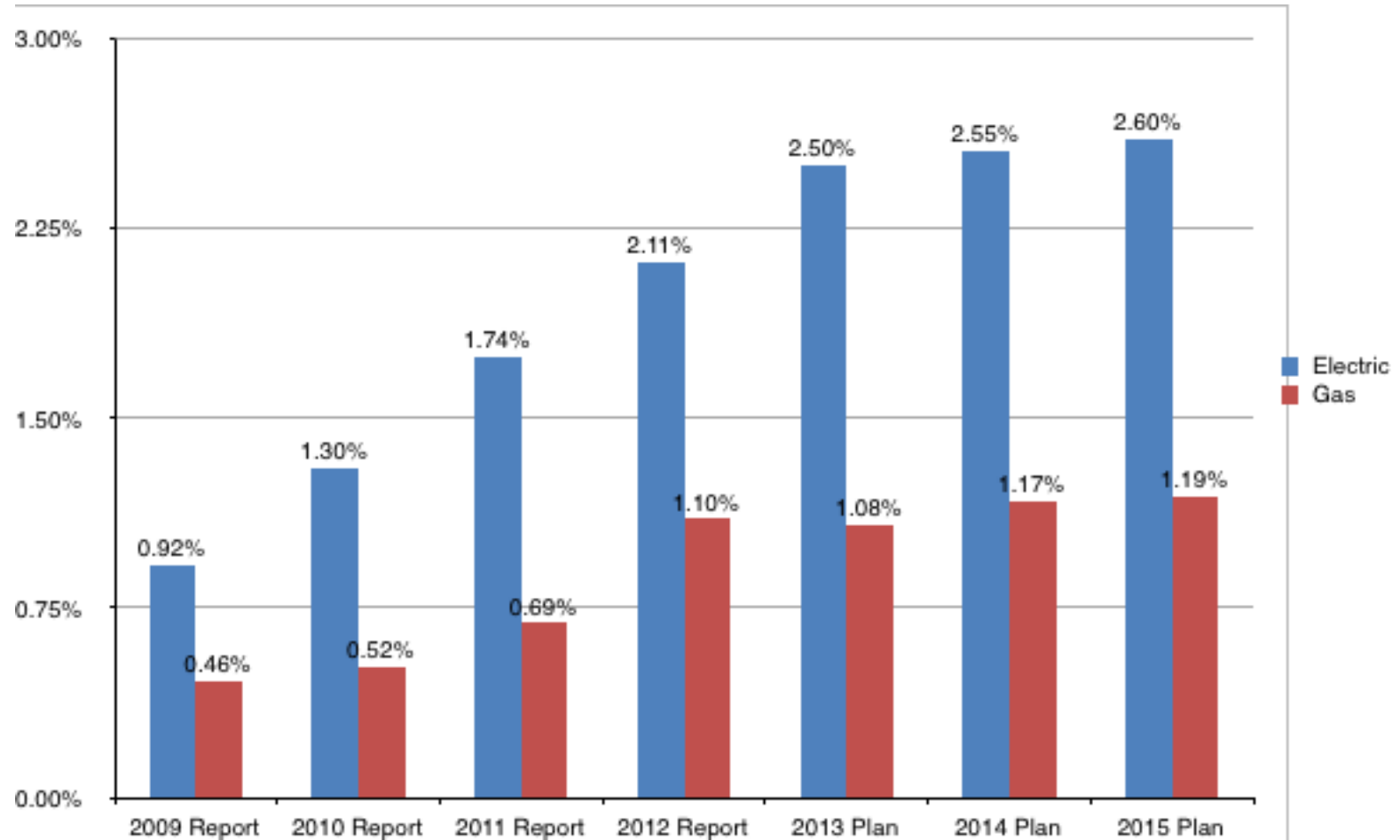
25% by 2020; 80% reduction by 2050 below 1990 baseline

Clean Energy and Climate Plan: 7% reductions from all cost effective energy efficiency



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Savings as a Percent of Retail Sales



2013-2015 numbers DPU Order 12-100-12-111



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Total Resource Costs

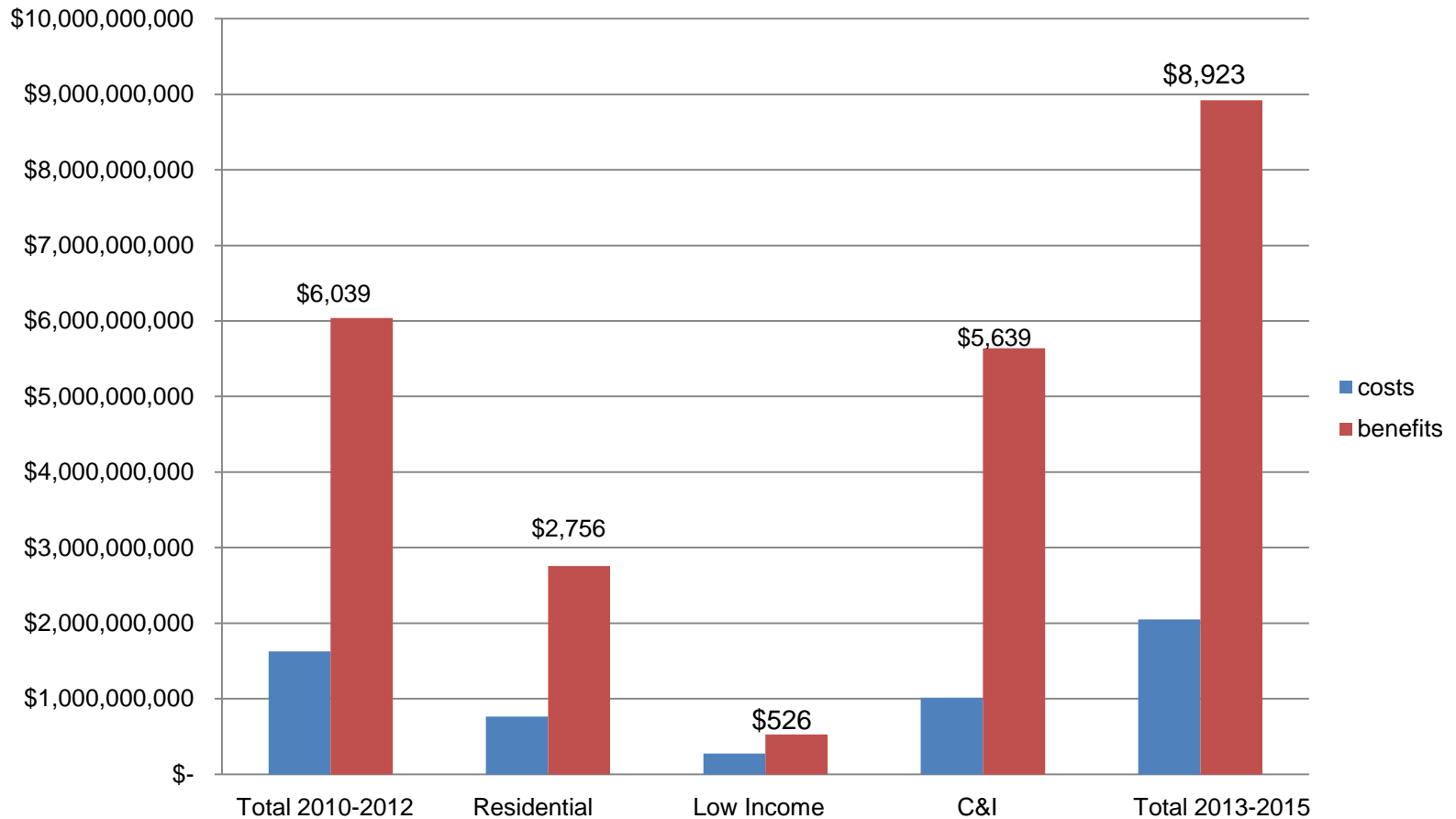
Investments for 2013-2015: **\$2,785B**

Benefits: **\$8,923B**

~a 63% increase over actual
performance in 2010-2012



Sector View of Energy Efficiency Investments & Benefits (2013-2015)



Statewide electric and gas



What are Benefits?

Benefits = net savings*avoided costs of supply

Energy Savings

Peak

Off peak

DRIFE

Energy Capacity

Generation

Transmission

Distribution

DRIFE

Resource

Avoided natural gas

No2 oil

No4 oil

Propane

Wood

Water

Kerosene

Non Resource (NEBs)



Non Energy Benefits

C&I New Construction and Retrofit

- Operations and Maintenance costs

- Administrative Costs

- Material Handling

Low Income

- Utility Savings

 - Arreages

 - Rate Discounts

 - Bad Debt Write off

 - Terminations and Reconnections

 - Collections and Notices

Residential New Construction and Retrofit

- Customer Perceived Savings

 - Thermal Comfort

 - Noise Reduction

 - Property Value Increase

 - Lighting Quality

 - Home Durability

 - Equipment Maintenance

 - Health benefits

 - Rental marketability

 - Reduced Tenant complaints

National Security, Economic Development, Reduced Waste: NOT APPROVED



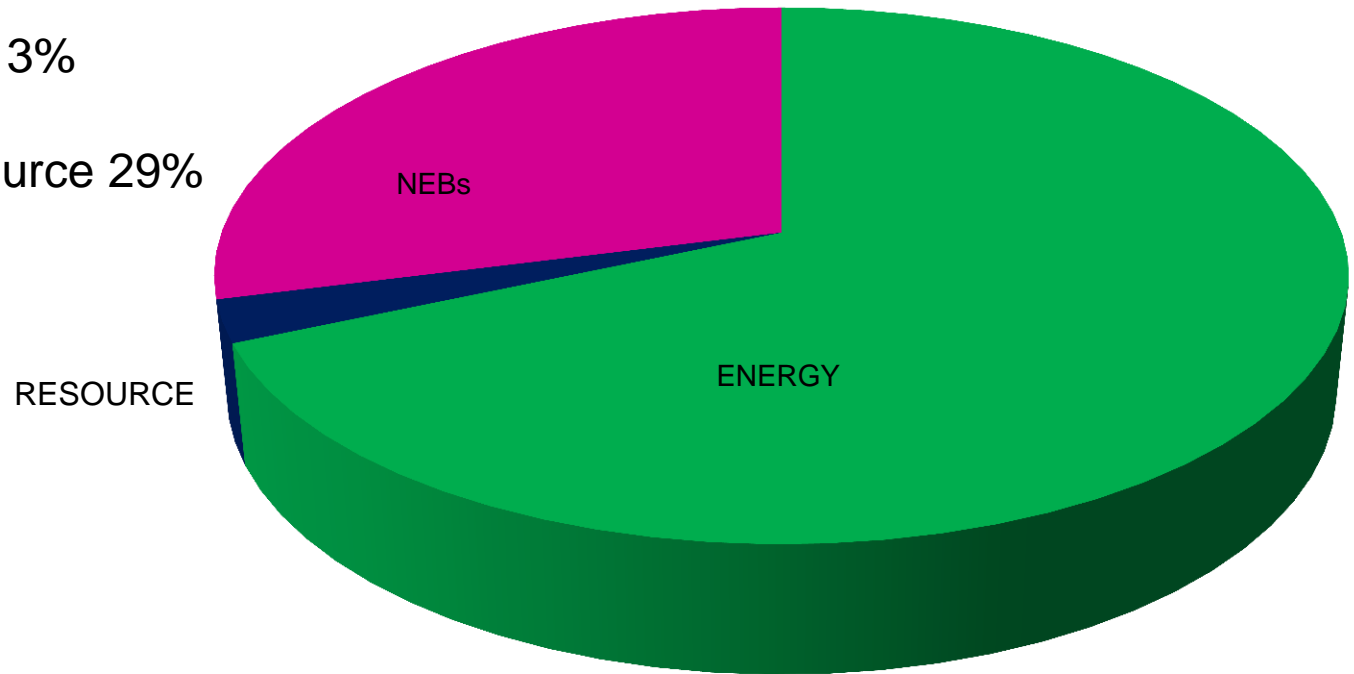
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Gas Benefits 2013-2015

Energy 68%

Resource 3%

Non Resource 29%
(NEBs)



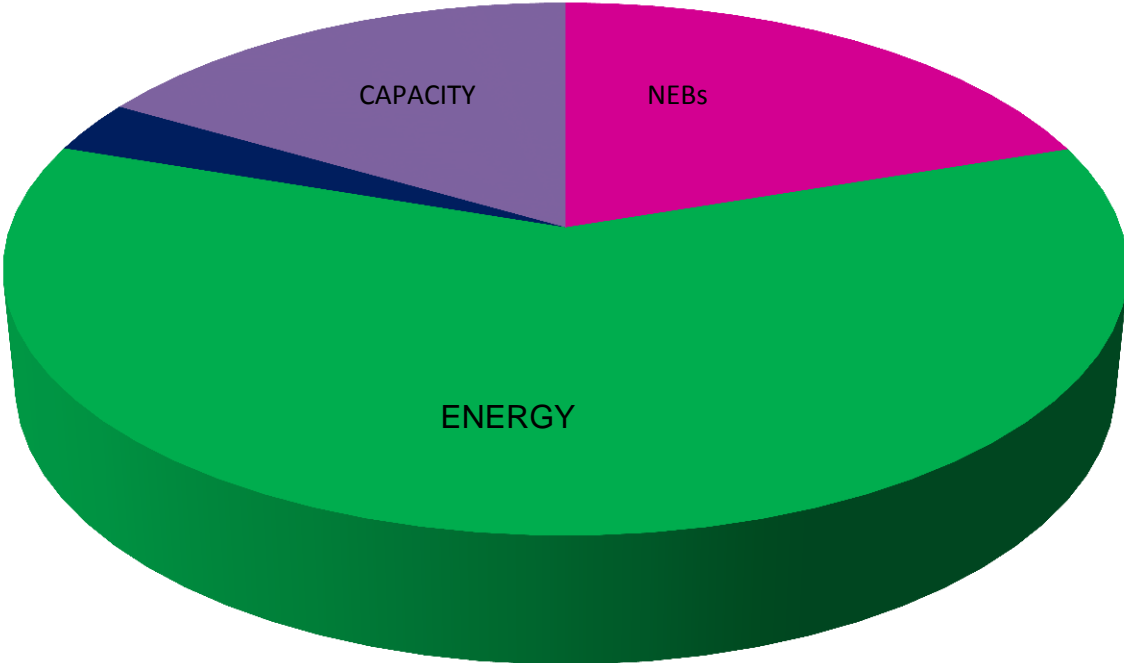
Electric Benefits 2013-2015

Capacity 20%

Energy 60%

Resource 3%

Non Resource 17%
(NEBs)



Valuing Energy Efficiency as a Resource

Economic Resource

Avoided Energy Costs

avoided energy and capacity costs  12.9% since 2011

AESC 2013 quantified gas DRIPE and cross fuel DRIPE

Energy Resource

ISO New England Regional System Planning

Environmental Resource

GWSA : 25% reductions

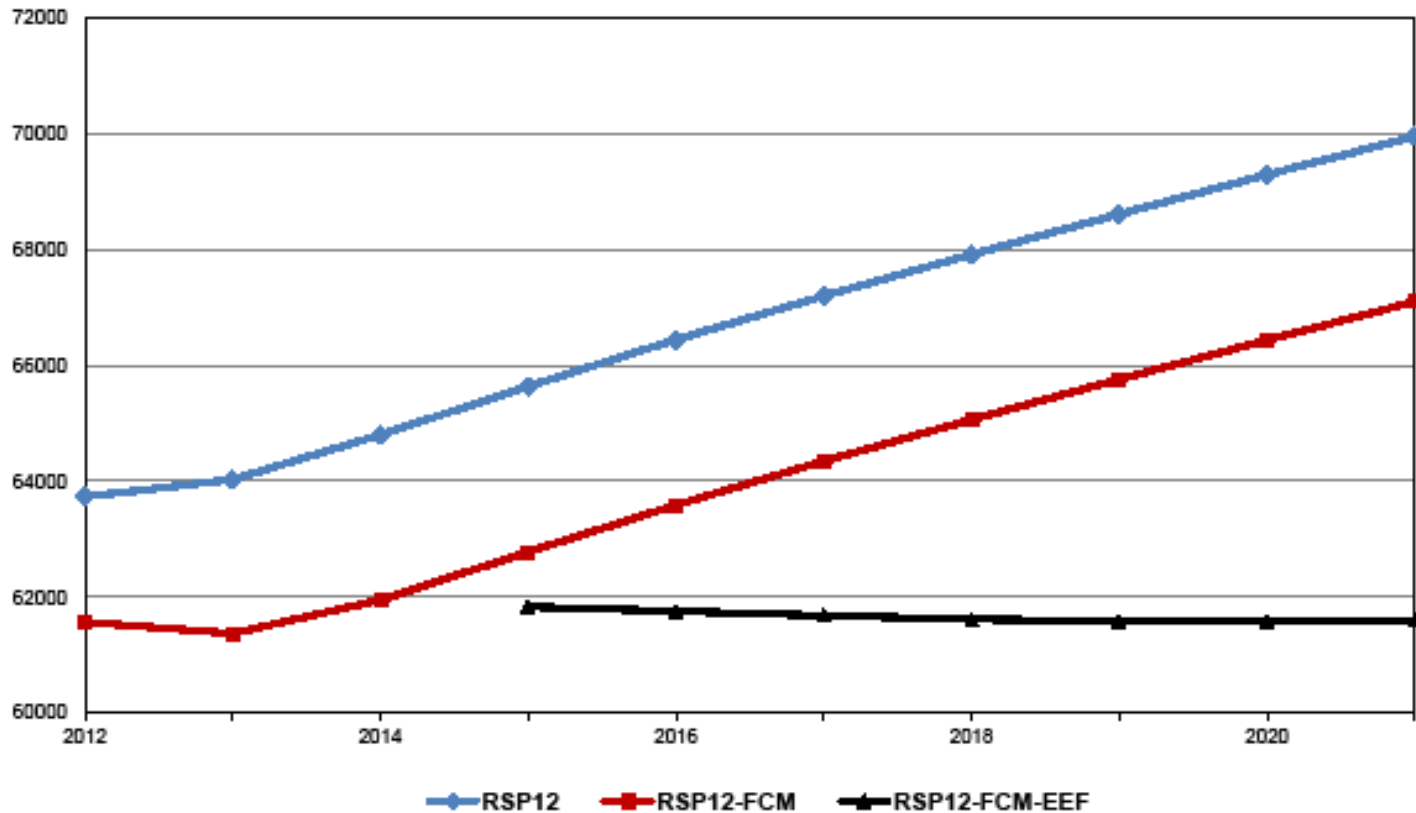
CECP : 7% efficiency emission reductions

AESC quantified non embedded CO₂ price



ISO-NE RSP Forecast

MASSACHUSETTS Annual Energy: RSP12 Forecast (GWh)



Use NEBs

We need to value the returns gained from the investment

Identify participant benefits

Long term equilibrium

Better understanding of customer perception

No valuation of environmental benefits

Use them better

Make NEBs regional

Clarify the methodology for better transparency

Find ways to cost share



Thank You

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Breakdown of Benefits

TOTAL BENEFITS	Electric Benefits (capacity and energy)	Gas Benefits	Resource benefits (oil, water, propane)	Non Resource benefits	Total Benefits
<i>Electric Plan</i>	\$6,070,508,898	\$(431,740,166)	\$671,033,530	\$1,261,864,939	\$7,571,667,203
<i>% of total</i>	80%	-6%	9%	17%	100%
<i>Gas Plan</i>	\$73,785,518	\$851,566,091	\$34,336,614	391,165,139	\$1,350,853,362
<i>% of total</i>	5%	63%	3%	29%	100%