Energy System Challenges in New England

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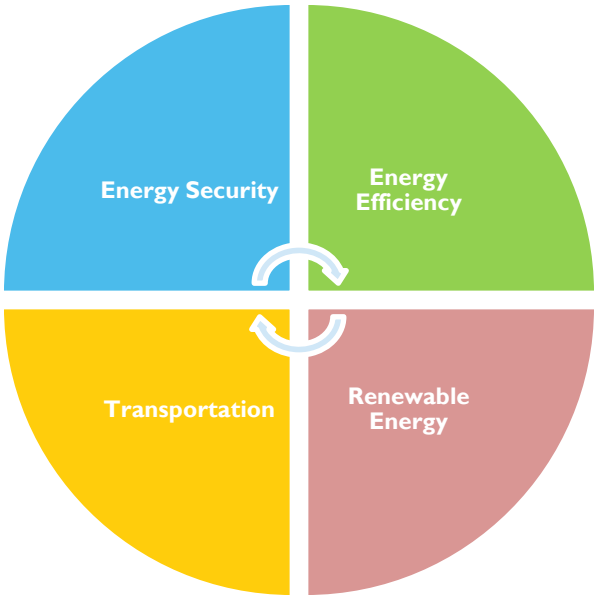
RI Office of Energy Resources (OER)

"Leading Rhode Island to a secure, cost-effective, and sustainable energy future."



The OER is the lead state agency on energy policy and programmatic matters

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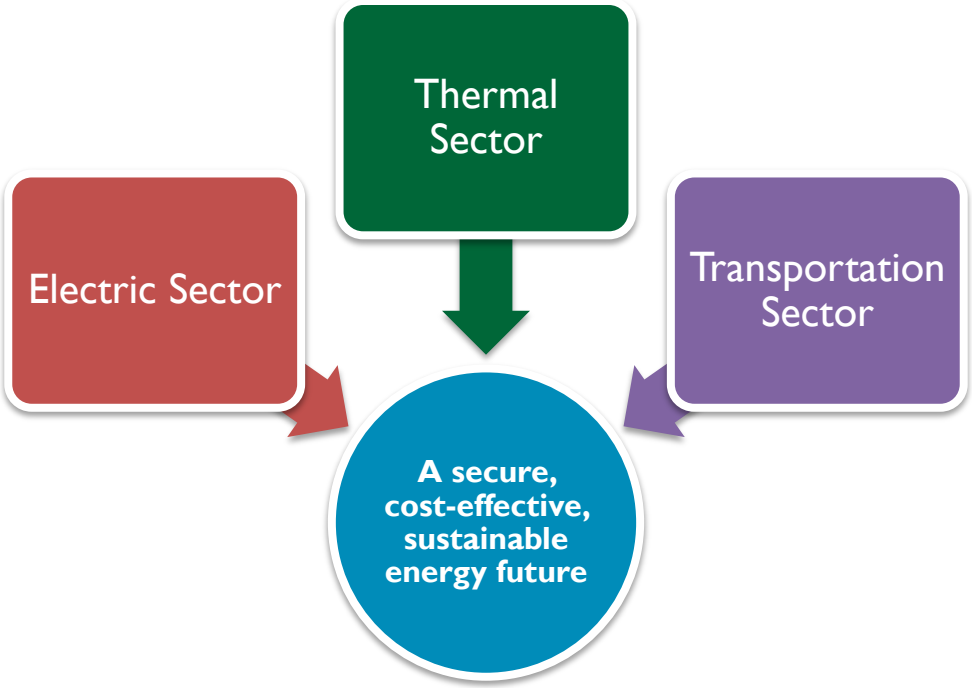
RI State Energy Plan



*"In 2035, Rhode Island provides energy services across all sectors—**electricity, thermal, and transportation**—using a **secure, cost-effective, and sustainable** energy system."*

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RISEP Targets

- **Scenario modeling shows Rhode Island can:**

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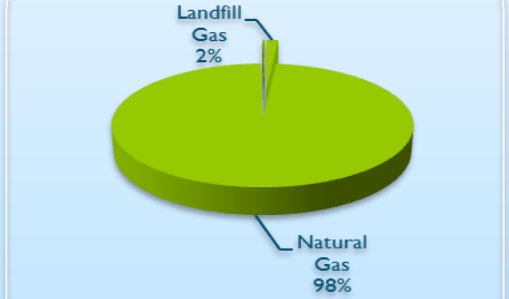
Rhode Island Energy Use Today

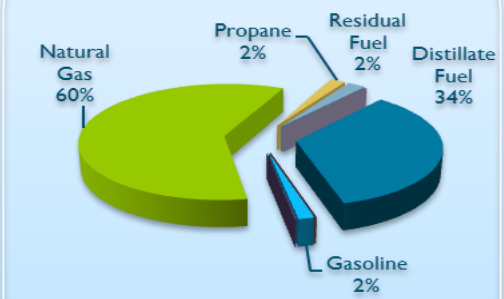


Electric

63 Trillion BTU

$1.1 Billion/Year

2.9 Million Tons CO_2

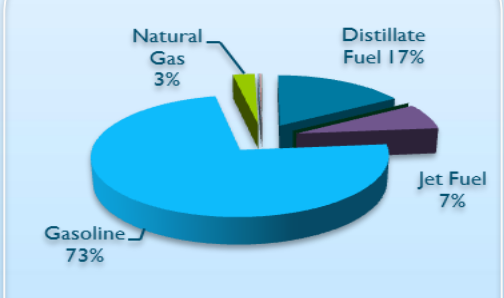


Thermal

63 Trillion BTU

$1.1 Billion/Year

3.9 Million Tons CO_2



Transportation

64 Trillion BTU

$1.4 Billion/Year

4.5 Million Tons CO_2

RI spends $3.6 billion annually on 190 trillion BTU of energy, emitting 11 million tons of CO2

Source: EIA SEDS, 2010 data

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Last winter…

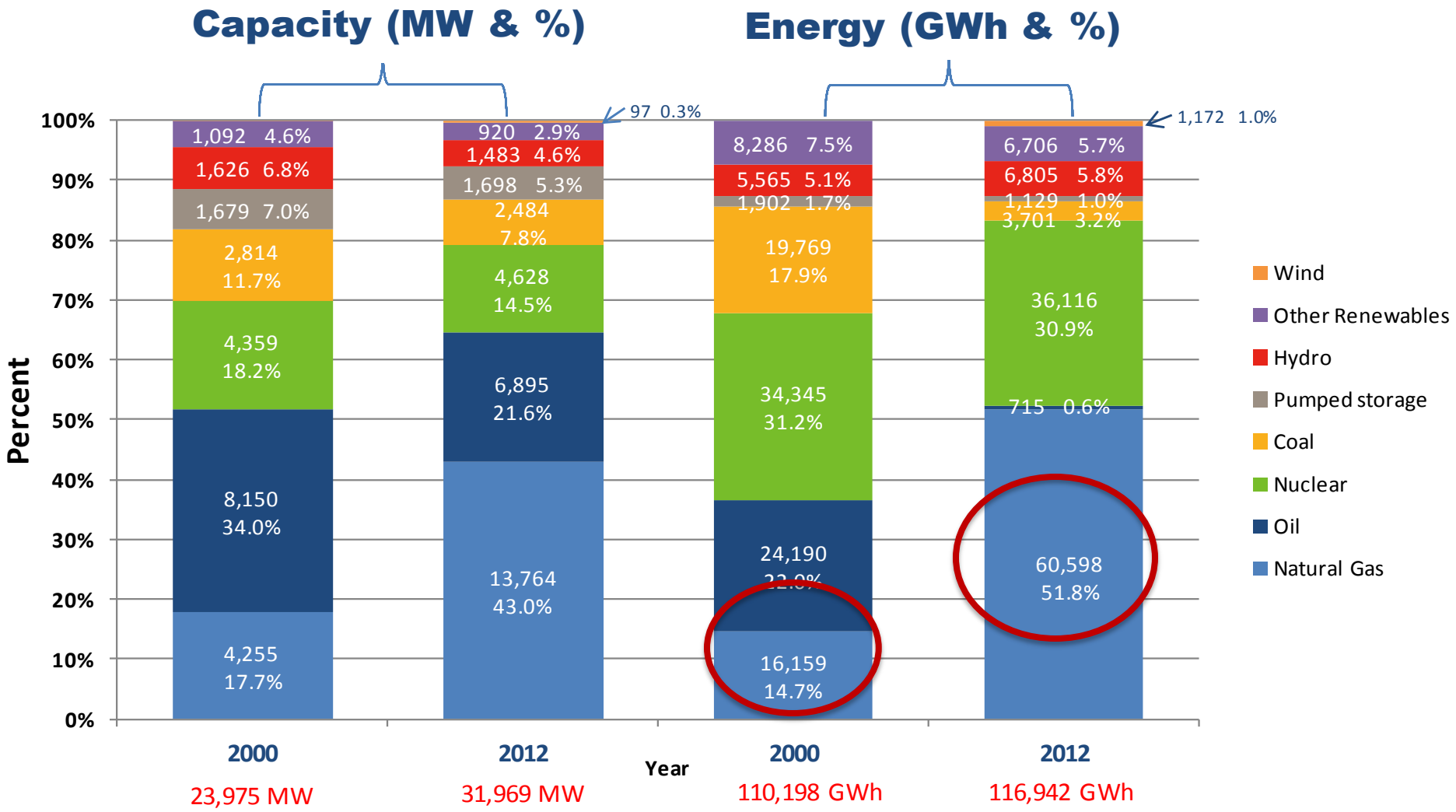
"The "overwhelming majority" of the increase, the utility said, is derived from a rise in the cost of wholesale production of electricity — costs that National Grid does not control…"

"Utilities panel approves 12.1 percent rate hike for National Grid electricity"

-G. Wayne Miller,
Providence Journal
December 20, 2013

http://www.providencejournal.com/breaking-news/content/20131220-utilities-panel-approves-12.1-percent-rate-hike-for-national-grid-electricity.ece

New England's Energy Supply Costs are driven by Natural Gas



Winter Gas Prices Nearly Doubled in a Year

* Algonquin Citygate price, December – February average

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Chart taken from ISO NE presentation on Winter 2013/14 to NEPOOL PC , 5/2/14, Boston, MA.

Electricity Prices Followed Gas Prices: Monthly Average Gas Price and RT Hub LMPs

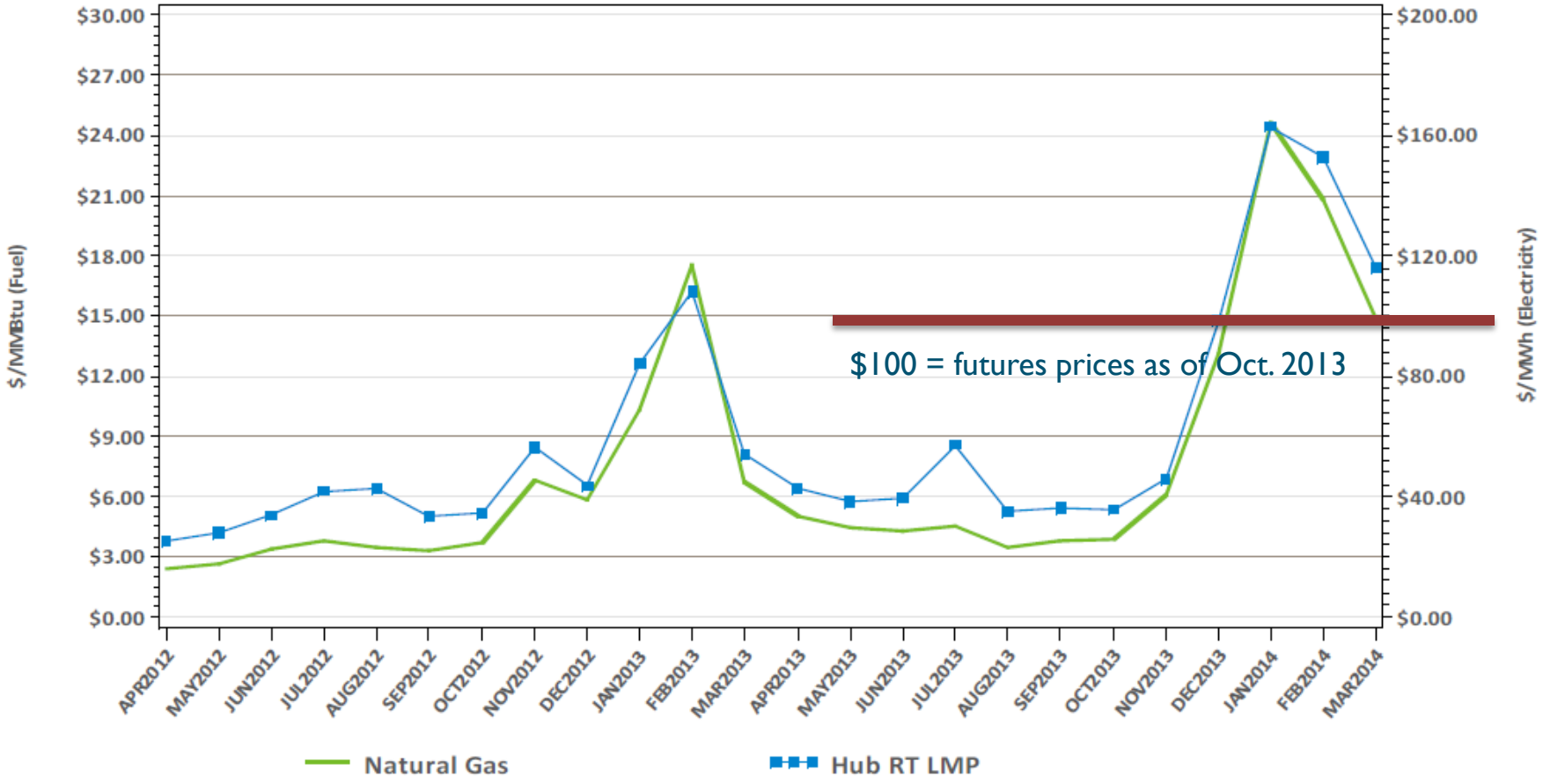

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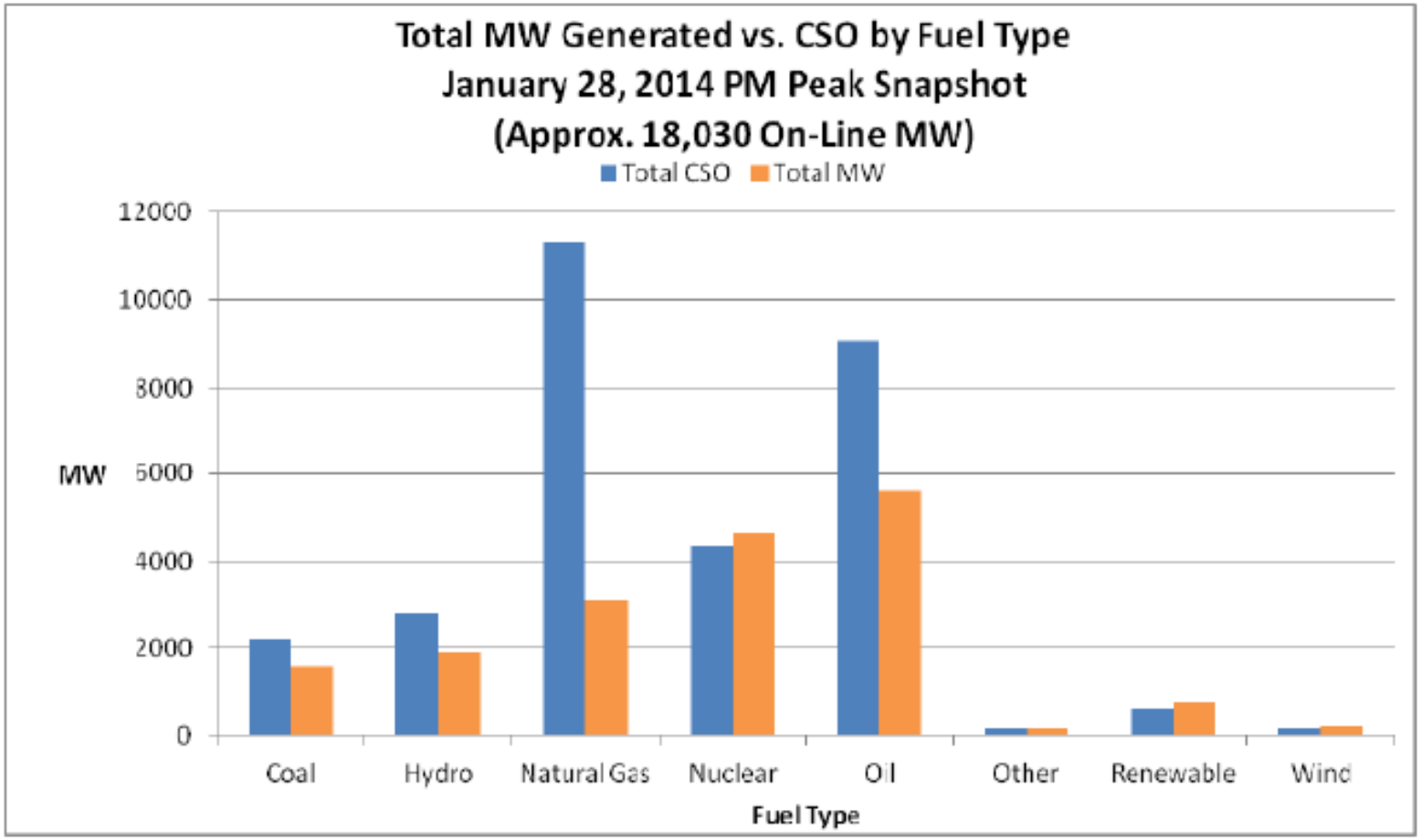
Chart taken from ISO NE presentation on Winter 2013/14 to NEPOOL PC , 5/2/14, Boston, MA.

Keeping the lights on



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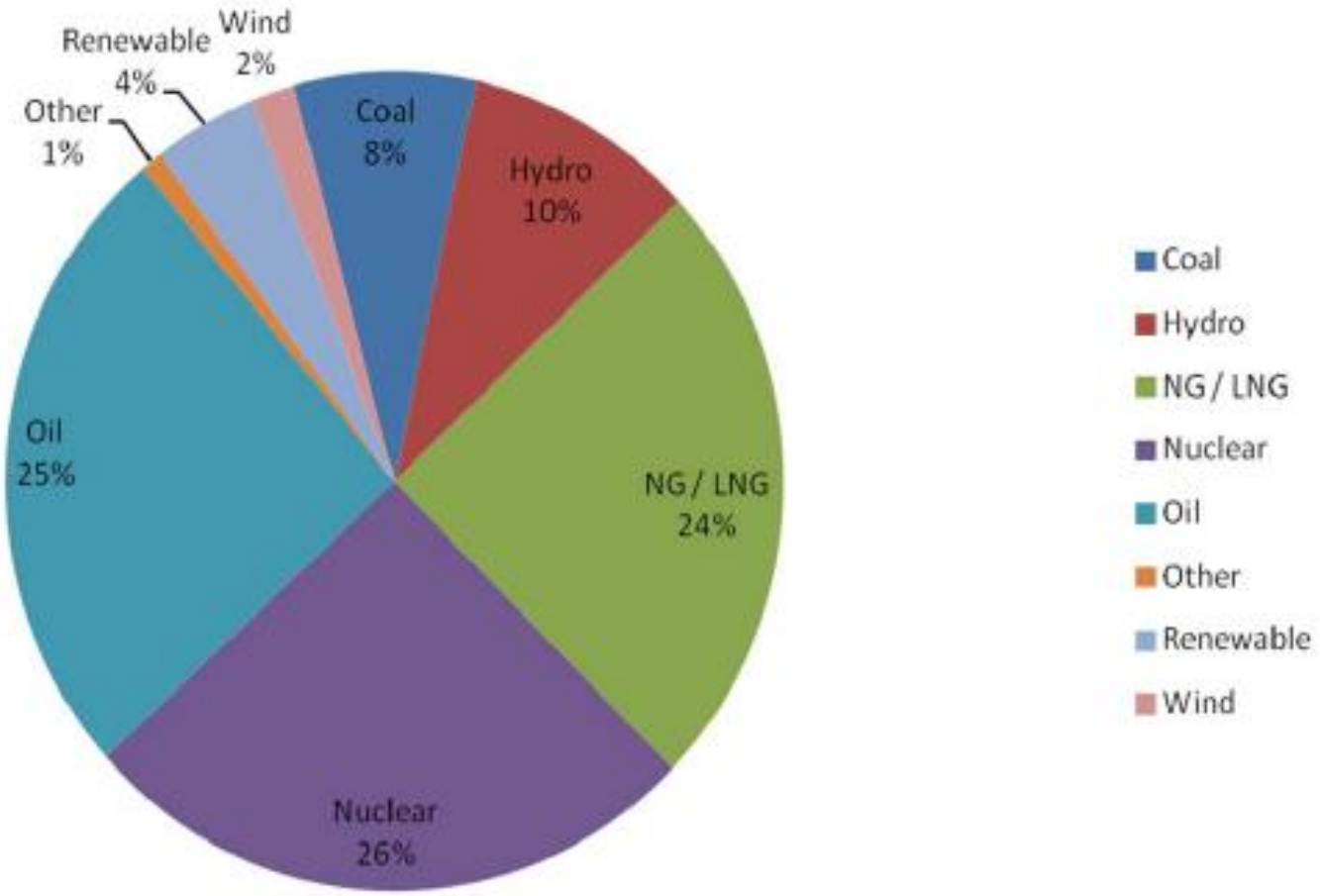
Oil and Gas Price Inversion

Average Fuel Use at 1800: 20 Jan-24 Jan 2014



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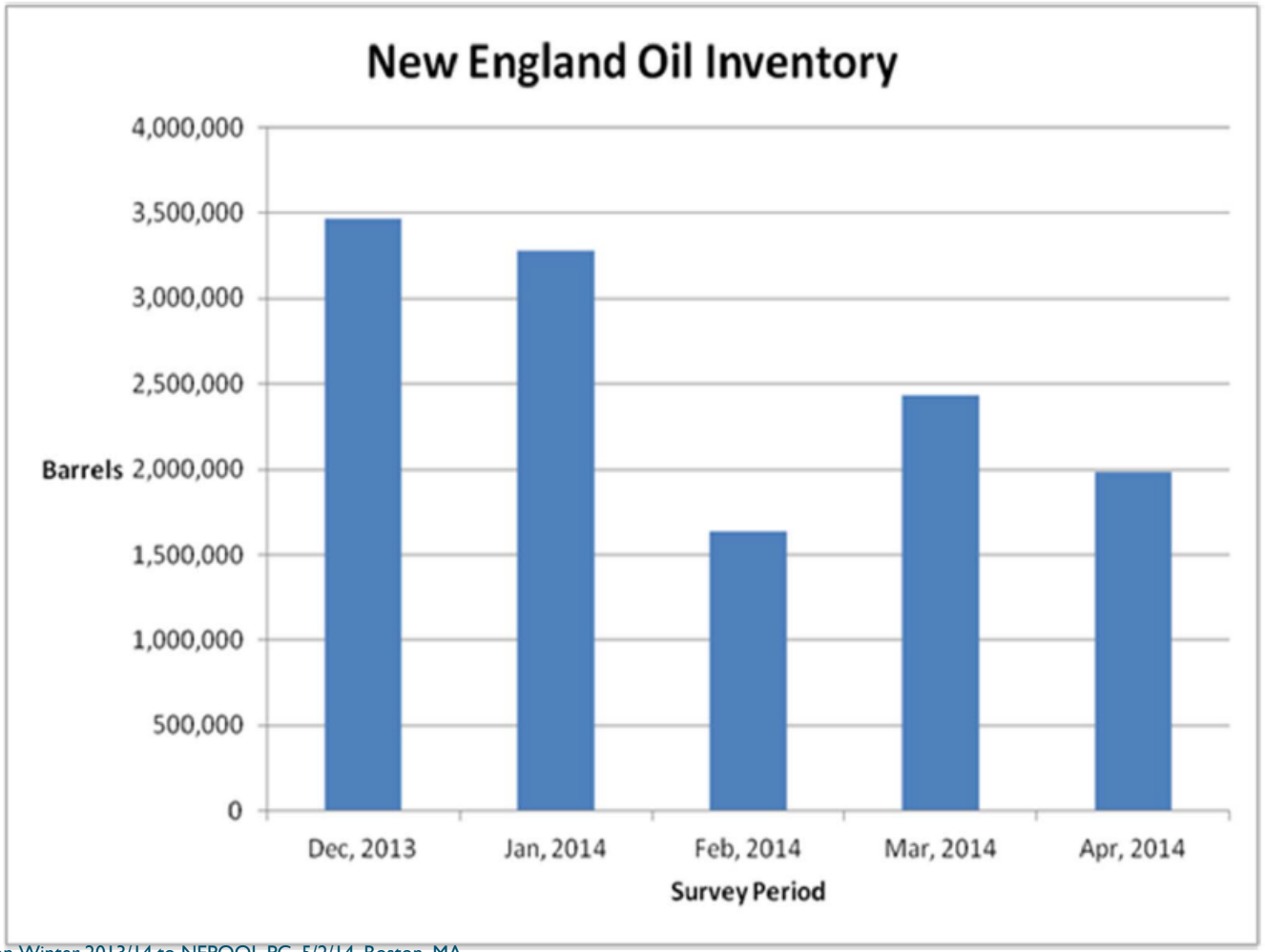
Data taken from ISO NE presentation on Winter 2013/14 to NEPOOL PC, 5/2/14, Boston, MA.

Keeping the lights on

By February, Oil Was Limited



Data taken from ISO NE presentation on Winter 2013/14 to NEPOOL PC, 5/2/14, Boston, MA.

At the wholesale level…

- Energy market costs exceeded $5 billion in the Winter of 2014

- Compared to $5.2 billion… for ALL of 2012

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Data and phrasing taken from ISO NE presentation on Winter 2013/14 to NEPOOL PC , 5/2/14, Boston, MA.

Was It The Weather?

- January, 2014 was among the coldest months in recent history - 9 days were in coldest 5% of days in past 20 years
- Yet, there was no prolonged, extreme cold snap
- Problem not exclusively the weather

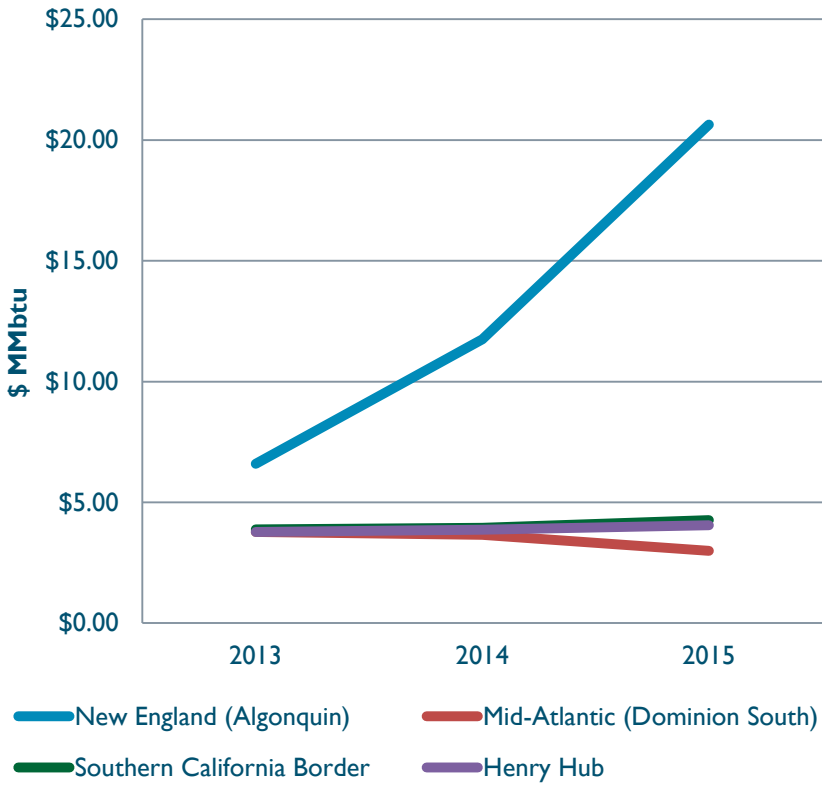
Data and phrasing taken from ISO NE presentation on Winter 2013/14 to NEPOOL PC , 5/2/14, Boston, MA.

Significant Prices Increases for Winter 2014/2015

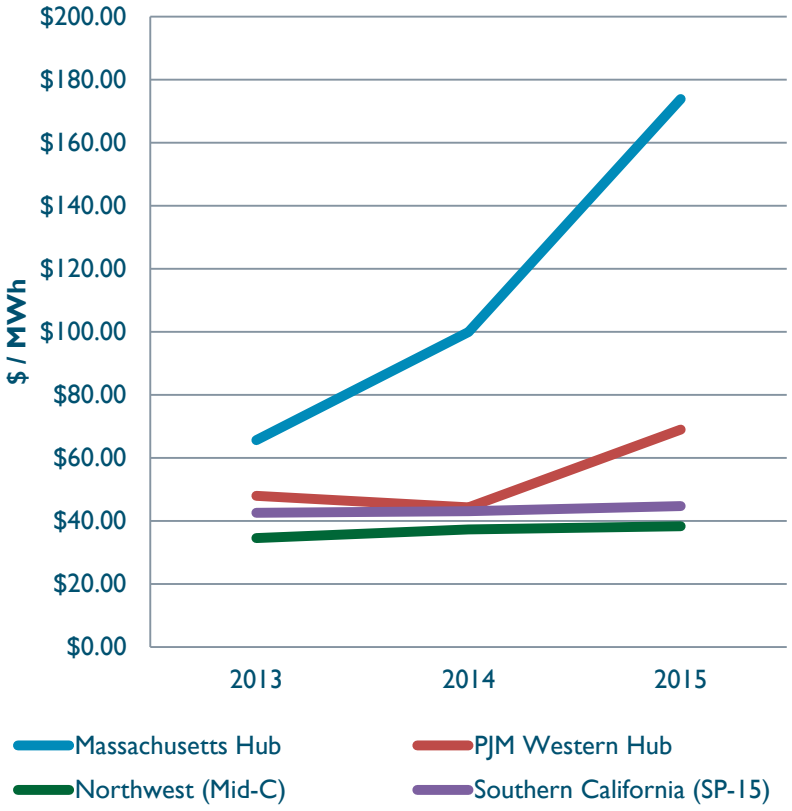
- Expectations are for residential standard offer service rates to increase by 30-40%
- Industrial rates will double from last November --- an over-the-year increase of 58%

Energy Futures for New England

Natural Gas



Electricity



Notes and Sources:
2013 and 2014 prices from October 17, 2013 FERC Division of Energy Market Oversight 2013-2014 Winter Energy Market Assessment, available at http://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2013/10-17-13.pdf.
2015 prices were calculated in a manner consistent with the FERC analysis. Electric prices are the average of January and February 2015 monthly peak day-ahead LMP futures and gas prices are the average of January and February 2015 basis futures quotes as of 3pm on September 10, 2014, available at http://www.cmegroup.com/trading/products/. Locational gas prices are the sum of the basis and Henry Hub futures.

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Challenges are Increasing

- Generation retirements place additional strain on natural gas system and available supply
- Many more MWs of older fossil fuel (oil and coal) plants are at risk of retirement by 2020 due to economic and environmental factors

Text taken from ISO's FERC filing on Winter Reliability program, July 11, 2014

What can we do about it?

Think *Locally…*

- RI is committed to continuing to robustly invest in clean energy and energy-alternative resources…
  - Energy efficiency
  - Distributed Renewable Generation
  - Renewable Energy Standard
  - Long-term Contracting Standard for Renewable Energy

…but also act *Regionally*

- The problem is much bigger than Rhode Island
- Our energy system crosses borders and is highly integrated
- A reliable bulk electric system is a necessity to local health and safety, and for our economy

New England Energy Infrastructure Initiative

- Make strategic, coordinated investments in regional energy infrastructure that will:
  - Improve energy system reliability
  - Strengthen economic competitiveness
  - Meet common energy/environmental policy goals
  - Mitigate energy price volatility

Achieve what no single state could on its own

Regional Efforts

- Expand pipeline capacity to increase natural gas supply into New England
- Expand electric transmission to facilitate utility-scale development and delivery of no-to-low carbon energy resources, such as hydroelectricity

Pipeline Investments

- Drive investment in pipeline infrastructure by allowing for recovery of costs through FERC electric tariffs
  - Costs shared appropriately across the six New England states
  - Ensure any new capacity will be made available in a manner that primarily benefits electricity customers

Pipeline Investments

- Proposed to have tariff & cost allocation managed through FERC process and requiring FERC approval
- Request proposals priced in increments of 200 mmcf/day to allow the evaluation of the cost of adding sufficient increments of additional capacity to achieve levels of at least 1bcf above 2013 levels
- Proposal on hold for now

Fall, 2014 - Next Steps

- **States/stakeholders now considering:**
  - Electric market modifications that may mitigate gas-electric challenges
  - Natural gas resources & infrastructure projects that may improve natural gas constraints
  - Consideration of market reforms that could improve the natural gas infrastructure situation in New England

Expanding Transmission to Facilitate Clean Energy

- Issue one or more coordinated RFPs to deliver at least 1000+ MWs of clean energy into New England
- Transmission infrastructure costs recovered through ISO-NE tariff or through merchant projects – ensure that costs are shared appropriately among the states
- Depending on procurement structure, a subset of states (directly or through their utilities) may procure the power to ensure its delivery into the region

Other Regional Efforts

- Ensure that state-level investments in EE and local renewables are appropriately accounted for in energy system planning

Regional Efforts

- Share best practices and jointly pilot innovative technologies and energy-saving solutions
- EE, Demand Response and Distributed Generation to Shave Peak Demand

Regional Efforts

- Get out in front of price increases: coordinated public messaging campaign centered around the importance of conservation and EE
- Joint effort – NASEO, NECPUC, NEEP, SEO and Utilities

Communications Strategy

nationalgrid
HERE WITH YOU. HERE FOR YOU.

- **Use press releases and traditional media** outreach to prepare customers for higher winter bills and explain how National Grid can help them (EE, billing options, etc.)
- Use **advertising** to generate awareness of issue, National Grid's concern for its customers and provide information on ways customers can mitigate price volatility
- Utilize owned assets (**web, social media, bill inserts, email, call center IVR messaging**) to drive further engagement
- **Leverage Energy Efficiency** in market activities to link high bills and benefits of EE program participation

Shared Vision of Energy Future

- New England is moving toward cleaner generation, improved energy networks, and additional customer-side choices and services at affordable prices
- A clear and coordinated set of state, regional, national energy policies will expedite progress:
  - Energy efficiency, new and integrated technologies
  - Renewable energy policies
  - Environmental policies (influencing generation mix)
  - **Cost sharing and collaboration for transmission/pipelines**

Thank You

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