



# **Oil for Heating and Transportation Maine Per Capita Use is High A 2017 Perspective**

**Presented by Jamie Py**

October 2017

# Perspectives

- Maine Fuel Marketer Background
- 2017 Reducing Oil Use. The “Why” and “How” Per capita?
- Using Oil = Human Flourishing
- Big Story = Today’s price – Future?
- Technology advancements
- Liquid Bio-Fuels

Who are We?

***The Trade Association for Maine  
Energy Marketers***

Our Mission:

***Providing Advocacy, Education,  
Leadership and Support to Assure  
Member Success Since 1954***



# Who/What is MEMA?

- 300 energy distribution companies statewide (non-utility)
- 1000 Convenience Stores
- **Over 8,000+ employees**
- Excellent pay and benefits
- State of the art educational facility and programs MTEC
- Health, Workers Comp, Dental, Life, Disability Insurance programs for members
- Providing energy products to Maine people that Maine people want: Affordably, Efficiently, Reliably



# Investment in Maine?

## Billions

- People – good paying jobs
- Oil and Propane Delivery Trucks = \$125,000 each
- Transports (tankers) = \$250,000 each
- Service Van = \$100,000 each, equipped
- Storage facilities = \$100,000 - \$100,000,000 each
- Property taxes – annual Multi-millions
- Excise taxes – annual Millions to municipalities

# What has Changed in 50 years? Or for That Matter since 2011?

- Legacy Policies from 70's oil embargos to occasional price spikes
- 2011 Maine legislature goals. Massive Changes to energy markets since then. The US Shale market was just developing.
- Relative costs of energy to other everyday goods and services
- Why Look at downsides only without measuring the good
- Greenhouse gas emissions. Relative parity with other Fuels. CO<sub>2</sub>, methane.
- CAFÉ standards Do more to reduce and will not be repealed.

# Maine Energy Markets are Mature

## Demand is Falling

- **Energy demand** in Maine has not grown in nearly 20 years.
  - Demand for all forms of energy in all sectors is either stable or falling.
- **Demand for all petroleum products** has been falling since 2005 with the exception of LPG.
- **Electricity demand** in all sectors is stable or falling.
- **Residential energy demand** in Maine has fallen sharply since 2004 with all of the decline coming from heating oil. Demand for other residential energy has not grown since 2006.

# Oil = scalable, affordable, efficient,

“If oil didn’t exist, we would have to invent it. No other substance comes close when it comes to scale, energy density, ease of handling and flexibility. Those properties explain why oil provides more energy to the global economy than any other fuel. (It accounts for about 33 percent, compared with coal at 30 percent, natural gas at 24 percent and hydro at 7 percent.”



# The other oil equation

Without oil, life span was 40 years.

Without oil, no air travel, major food transportation, agriculture, medical advances,

Computers, cities, clothes, electric

Without oil, we could not control our living environment.

<http://www.foreignaffairs.com/articles/140750/robert-d-blackwill-and-meghan-l-osullivan/americas-energy-edge>



Maine per capita use of petroleum  
High. Why?

***Cold***

***Unconcentrated living***

NY state is #1. Why?

<http://www.foreignaffairs.com/articles/140750/robert-d-blackwill-and-meghan-l-osullivan/americas-energy-edge>



# US Energy Revolution

## *We've Gotten Off "Foreign Oil"*

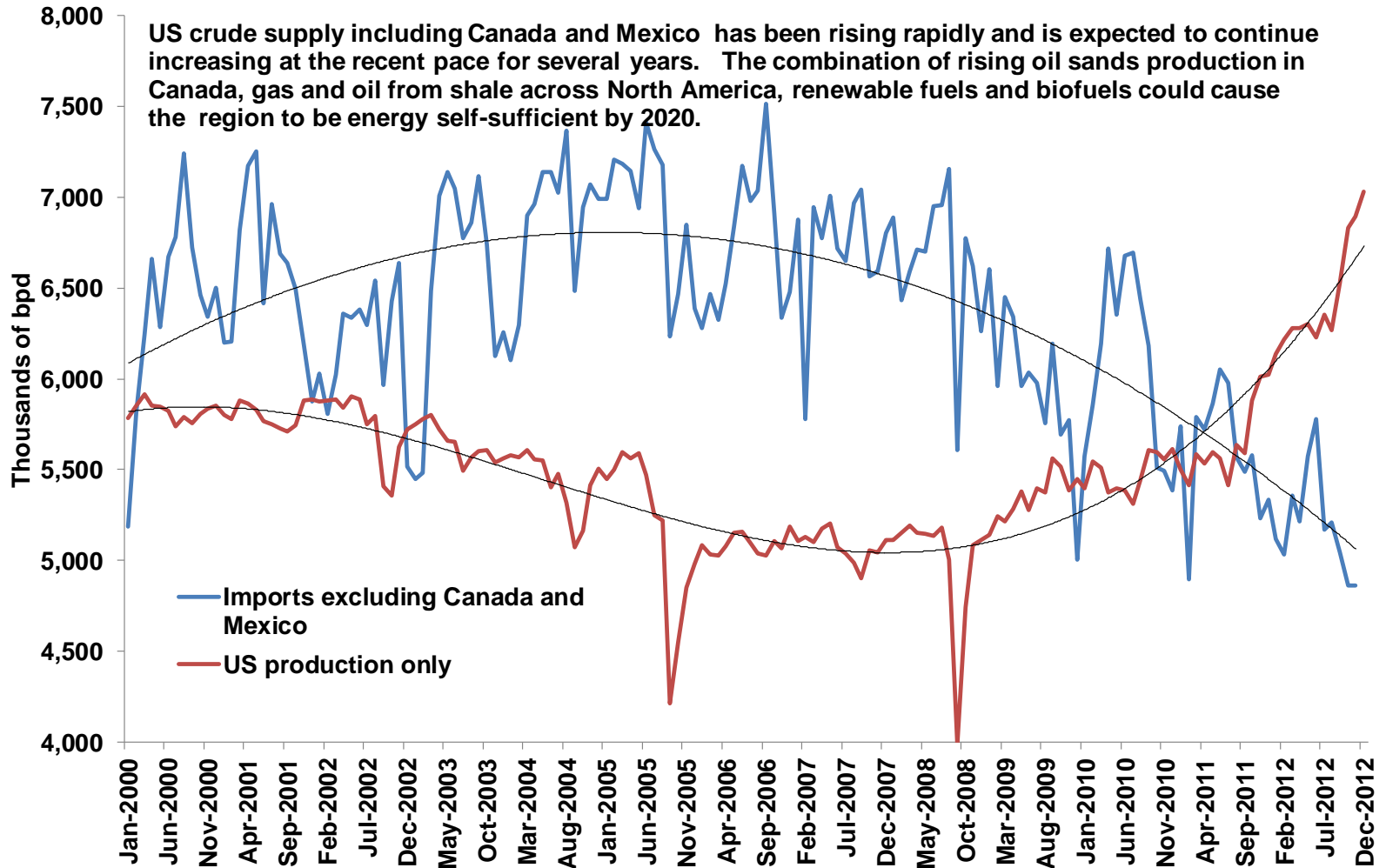
- *US Crude Production up 70% since 2010 (No one predicted this)*
- *By 2025 US production will eclipse Saudi Arabia*
- *2 million gals per day petroleum exports from US*
- *Natural gas export infrastructure catching up to production. NG will become world priced. Chenierre on line 4 others being built*
- *\*2011 energy goals built on this price fact*
- *Reduced volatility due to US influence in oil and natural gas markets*

# US Energy Revolution

## Part 2 - How will this effect Price?

- The U.S. Geological Survey says a deposit in West Texas is the largest continuous oil and gas deposit ever discovered in the United States.
- On Tuesday, Nov. 16, 2016 [the USGS announced](#) that an area known as the Wolfcamp shale contains 20 billion barrels of oil and 16 trillion cubic feet of natural gas.
- That is nearly three times more petroleum than the agency found in North Dakota's Bakken shale in 2013.

# US Crude Oil Supply: Moving Toward Independence?

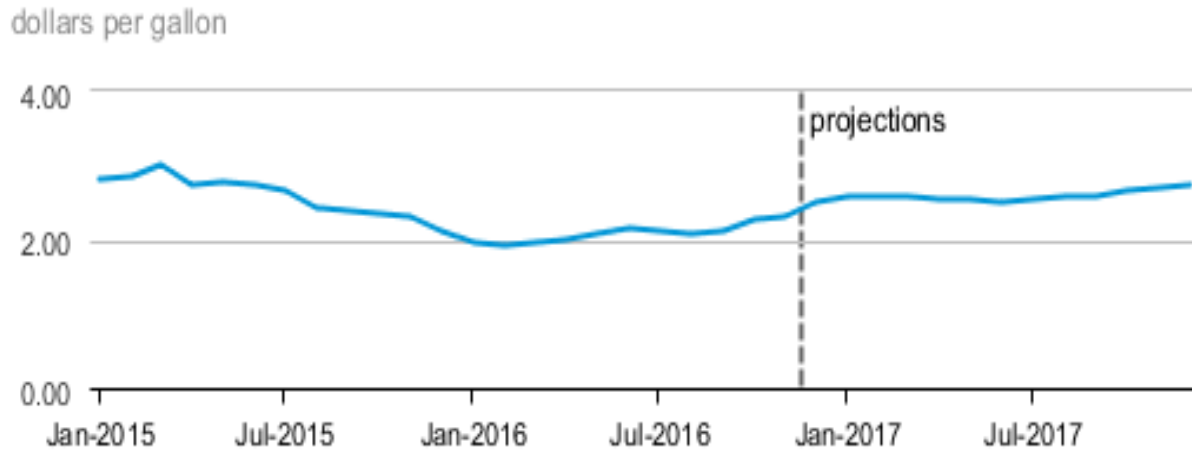


# Future price predictions?????



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Heating oil retail price incl taxes, U.S. average

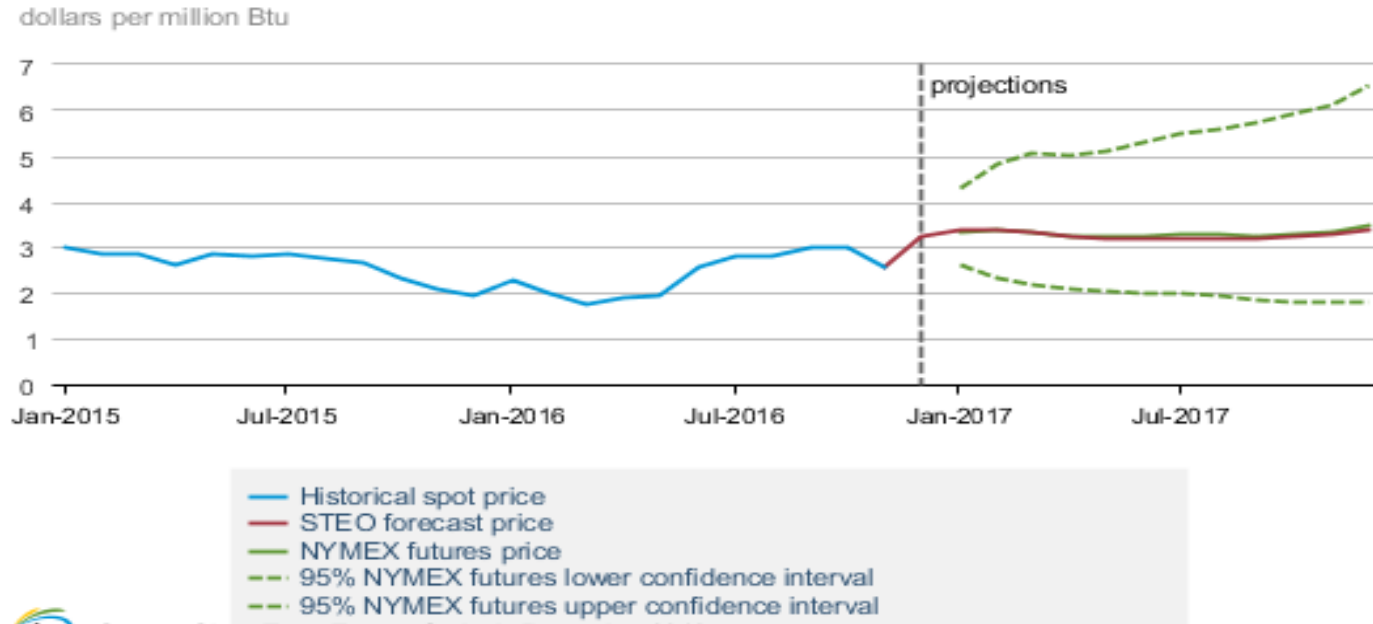


Source: Short-Term Energy Outlook



# Future price predictions?????

## Henry hub natural gas price



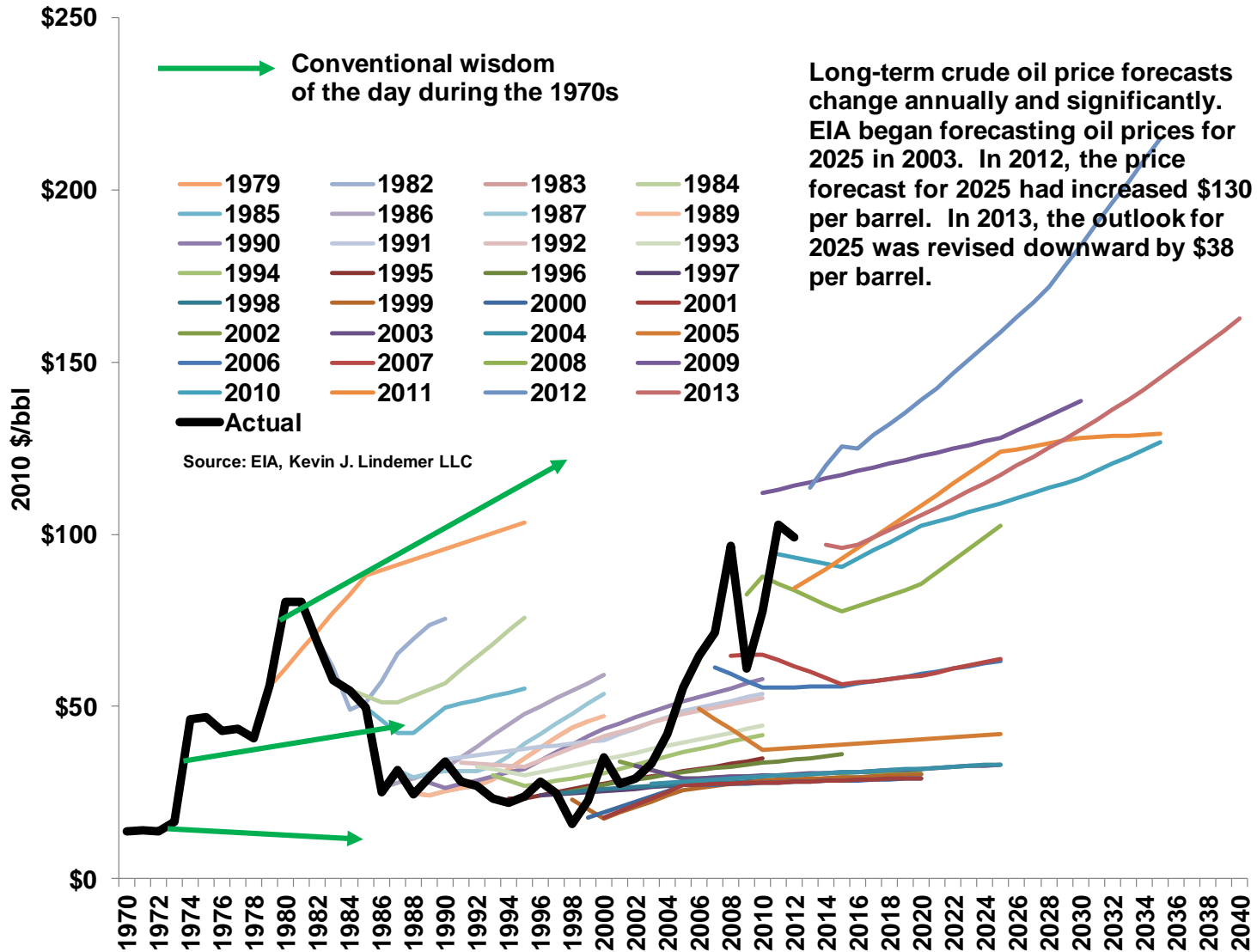
Source: Short-Term Energy Outlook, December 2016

Note: Confidence interval derived from options market information for the 5 trading days ending Dec. 1 2016. Intervals not calculated for months with sparse trading in near-the-money options contracts.

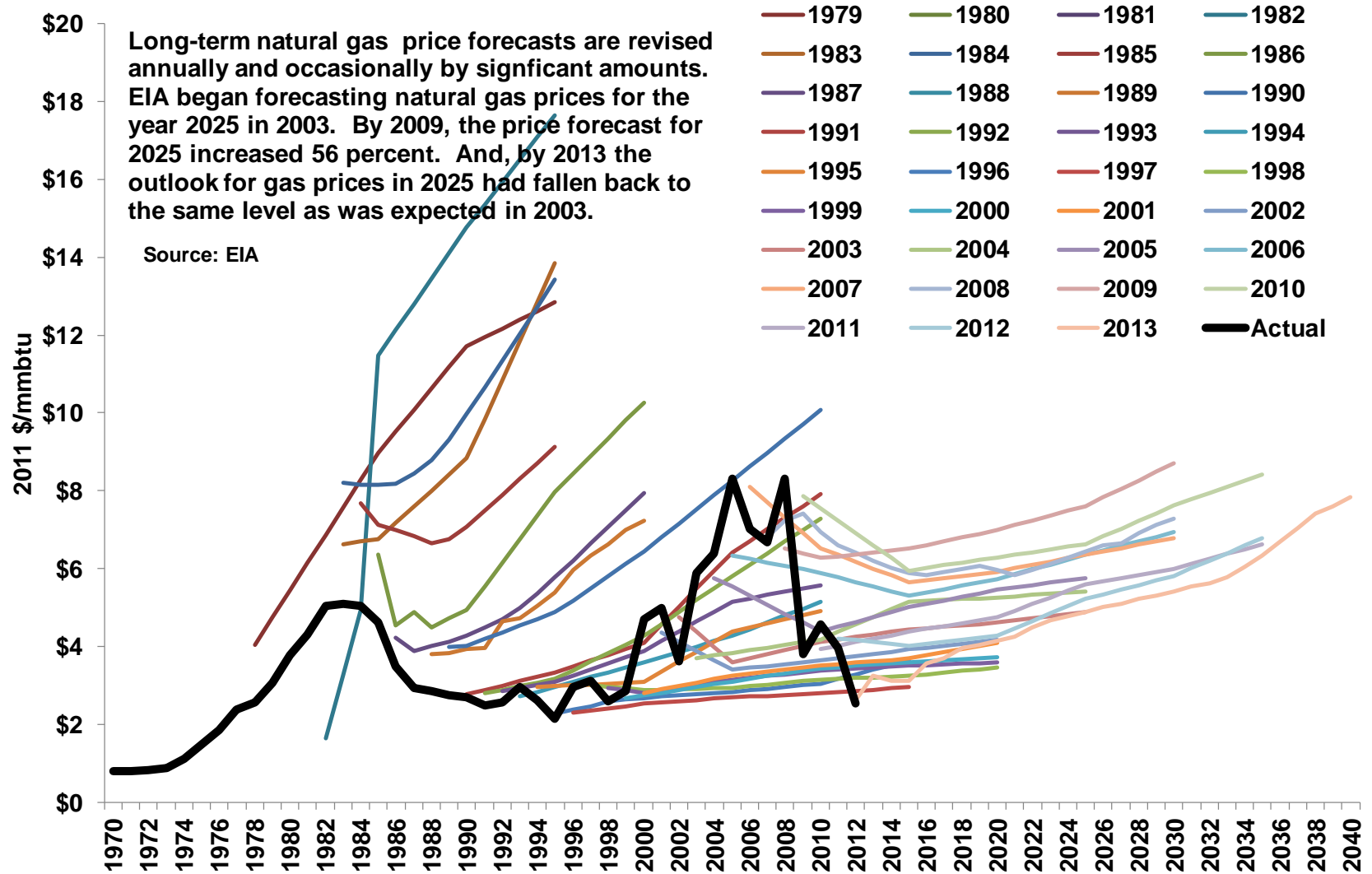




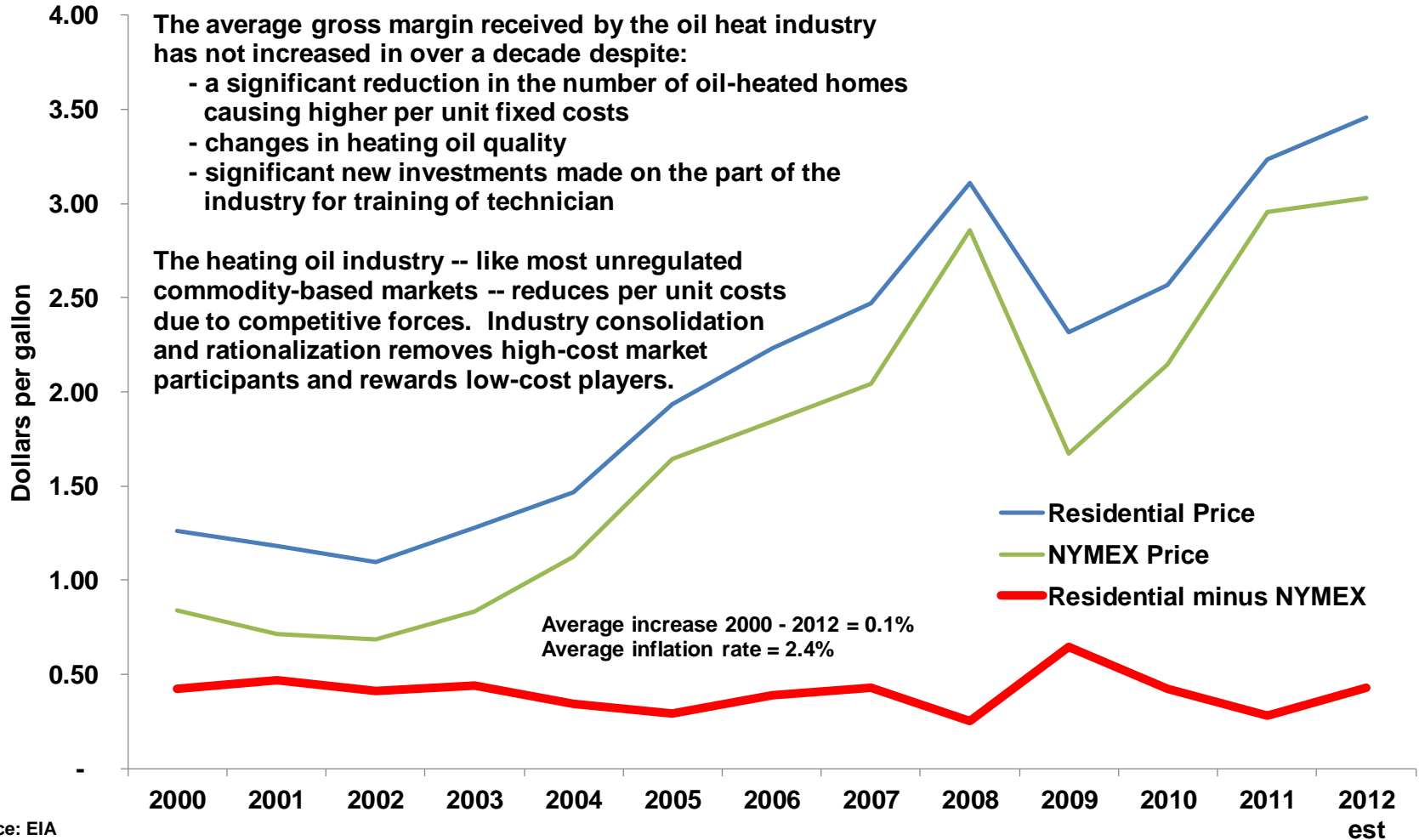
# Crude Oil Price Forecasts by Vintage



# EIA Long-term Natural Gas Price Forecasts Compared to History



# Heating Oil: Residential minus Spot Prices: the Margin Received by the Maine Industry has not Changed in Over a Decade



Source: EIA



# MEMA TECHNICAL EDUCATION CENTER

Brunswick, Maine

## MTEC Course Schedules

- [HVAC Professional Certification](#)
- [Oilheat](#)
- [Air Conditioning](#)
- [BPI & Advanced Training](#)
- [Propane & Natural Gas](#)
- **Plumbing 101 (new)**
- [Management Training](#)
- **Customer Service**



# Technology Advances

- **Ultra Low Sulfur Heating Oil - 15ppm**
- **Central oil and gas fired heat pumps 1.3 COP in winter**
- **Babington Burner**
- **IOT**
- **Controls**

**1500 gals to 600 to ??????**

**80 MPG cars**

# Biodiesel and Heating Oil

- At B7 Heating oil equal to natural gas for GHG equivalents
- Liquid Biodiesel production in Maine
- July 1, 2018 Heating Oil goes from 3000ppm sulfur to 15 ppm ULSHO
- Particulate emissions to almost zero and similar to propane and natural gas

**1500 gals to 600 to ??????**

**80 MPG cars**

# Average heating oil usage in Maine

- 30 years ago – 1300 gallons per household
- Today – generally 750 gallons

- EXAMPLE:

3,000 square foot house family of 6 w/4 children ages 8-20.  
heavy sports (showers).

Replaced 7 year old boiler with new boiler with indirect hot water and purge control August 2010.

Used 900+ gallons each previous 3 years, used **558**, 610, 600, 670 last year.

Used 30% less with only an upgrade.

# Relative Costs

- 700 gallons at \$2.20 gallon = \$1,540 per year
- Cell phone bill @ \$130/month = \$1,560
- Electric - \$100 per month = 1,200
- Cable, internet - \$150 month = \$1,800
- Food - \$200/week = \$10,400
- Set of 4 tires = \$800
- Health Insurance \$1,300/month = \$15,600
- Car payment -\$300 month (small) = \$3,600



# Future?

- In 1929, the economic historian Abbott Payson Usher wrote: *“The limitations of resources are relative to the position of our knowledge and of our technique.”*
- **Energy Policy to “Get Off Oil” based on legacy claims of Foreign oil; Peak Oil, volatility, cleanliness - Need to be rethought as the paradigm has changed.**