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NWGA Members:

Avista Corporation

Cascade Natural Gas Co.

FortisBC Energy

Intermountain Gas Co.

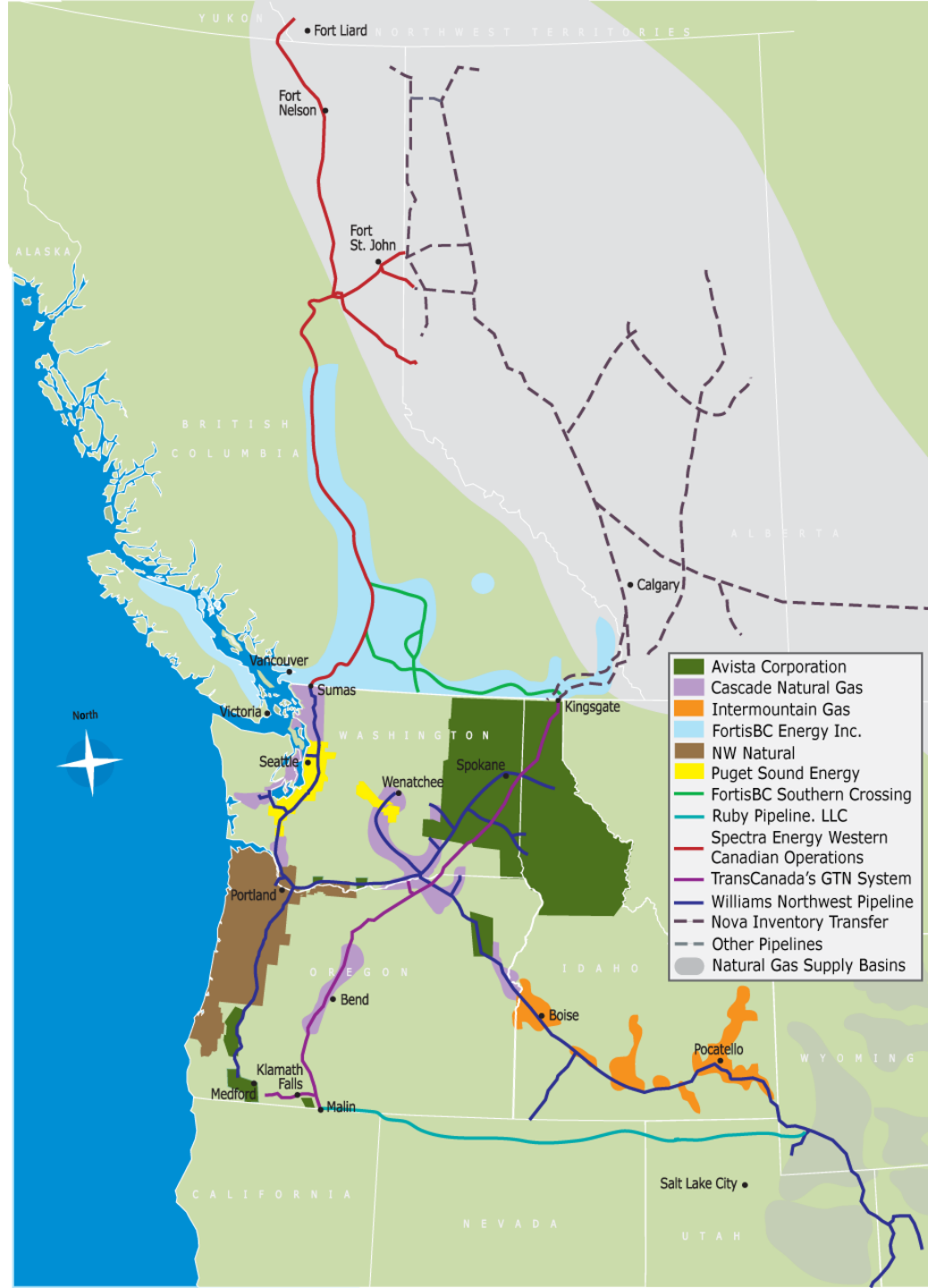
NW Natural

Puget Sound Energy

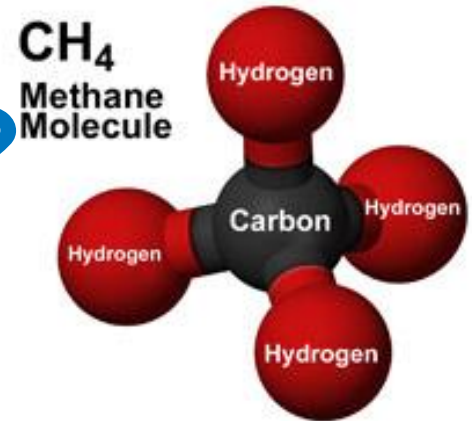
Spectra Energy Transmission

TransCanada GTN System

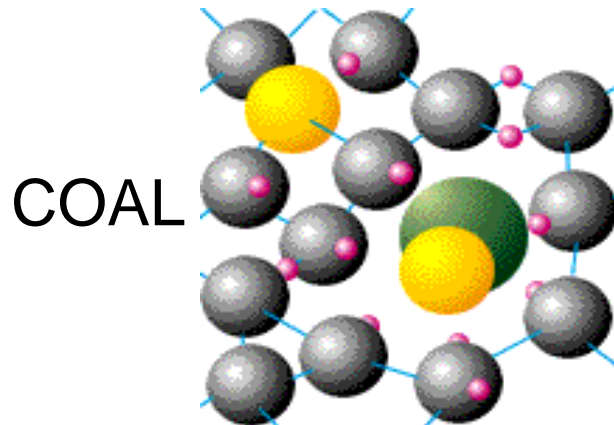
Williams NW Pipeline

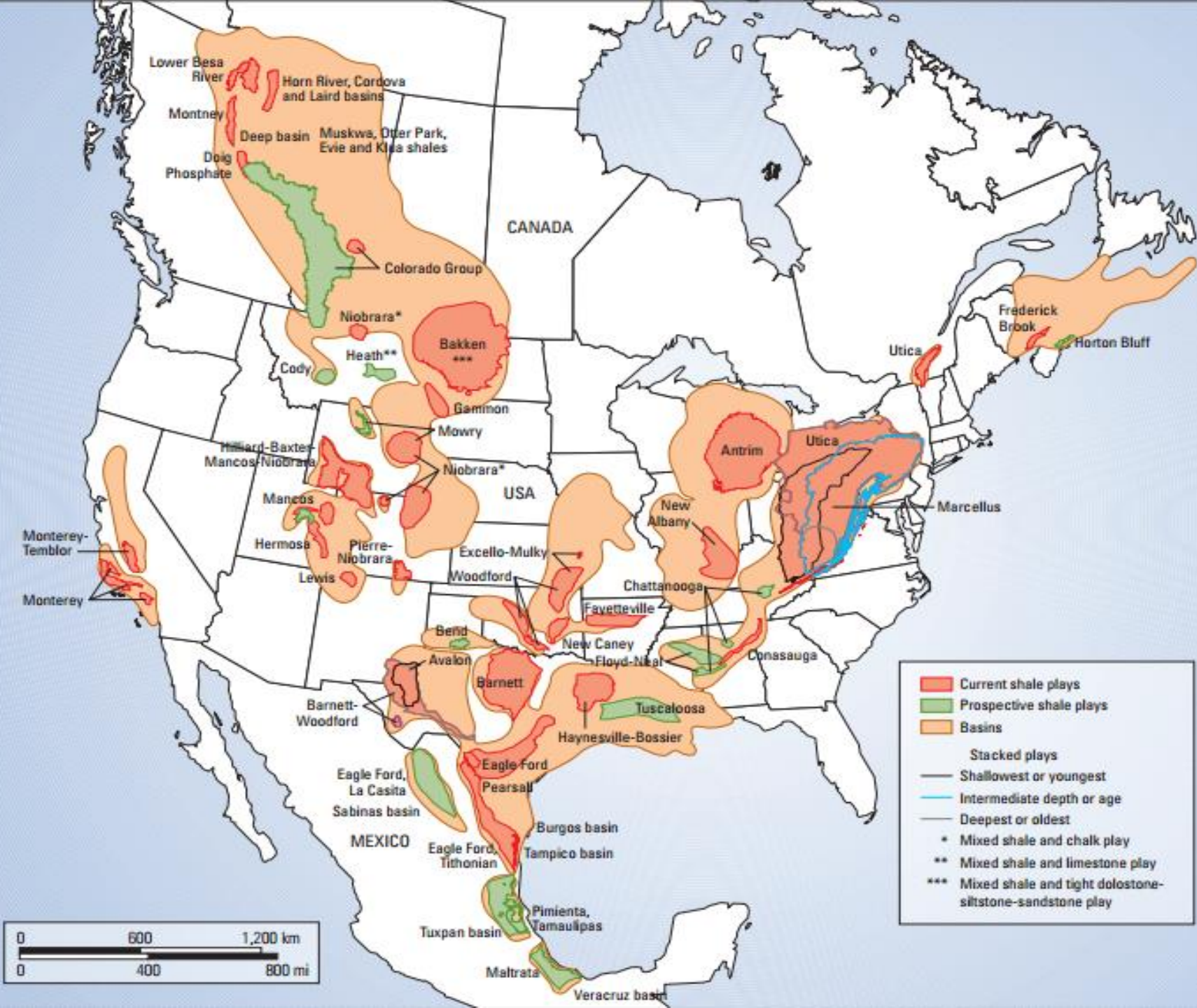


What is “natural gas”?

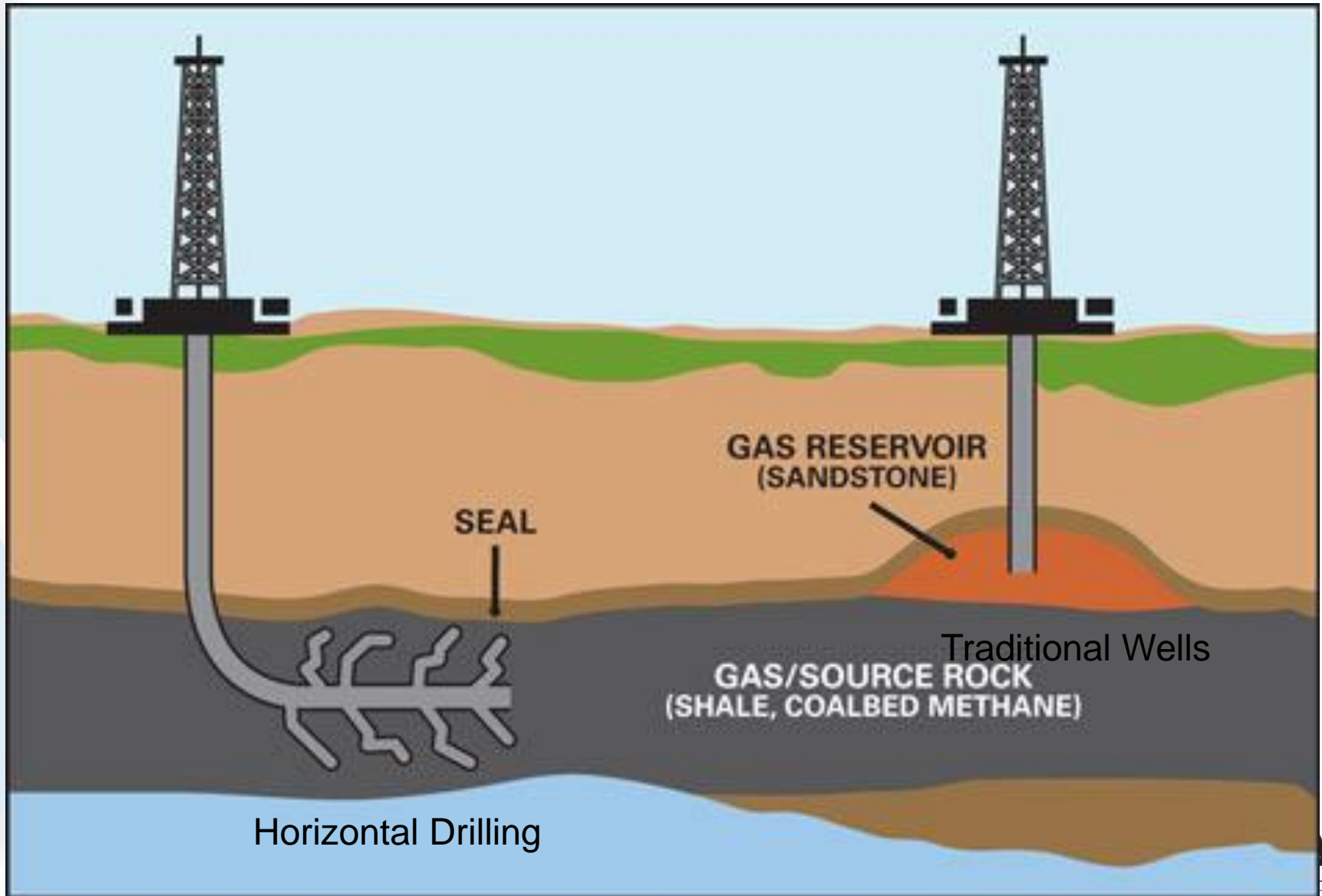


- Naturally occurring
 - Fossil fuel = formed from organic deposits
- Mostly methane (CH₄)
- More energy (hydrogen) per carbon atom
- Can be burned directly for a variety of uses





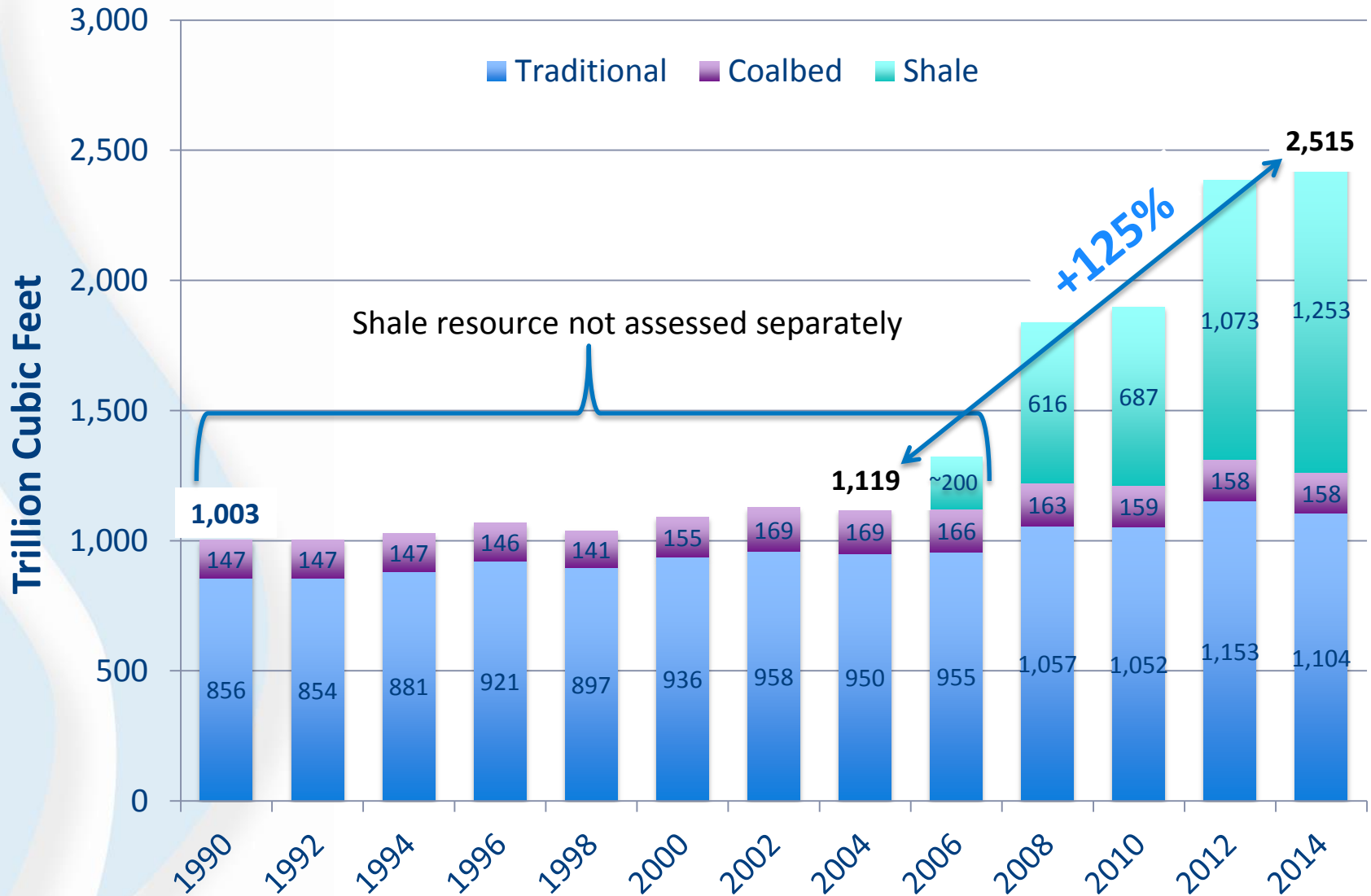
“Unconventional” vs Conventional



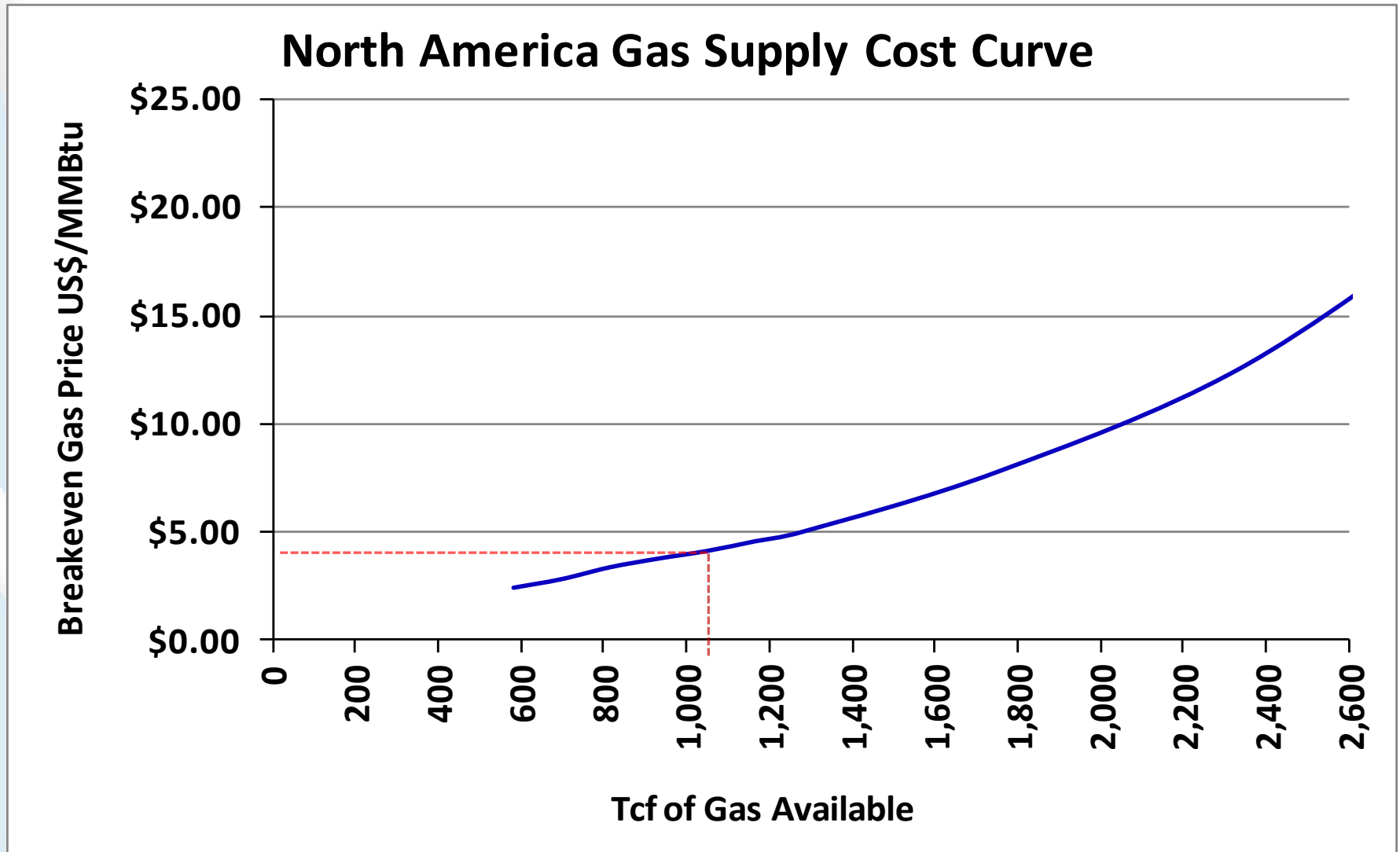
Shale Production Issues

- Drinking Water
- Water Use
- Water Disposal
- Air

Total Available Resource

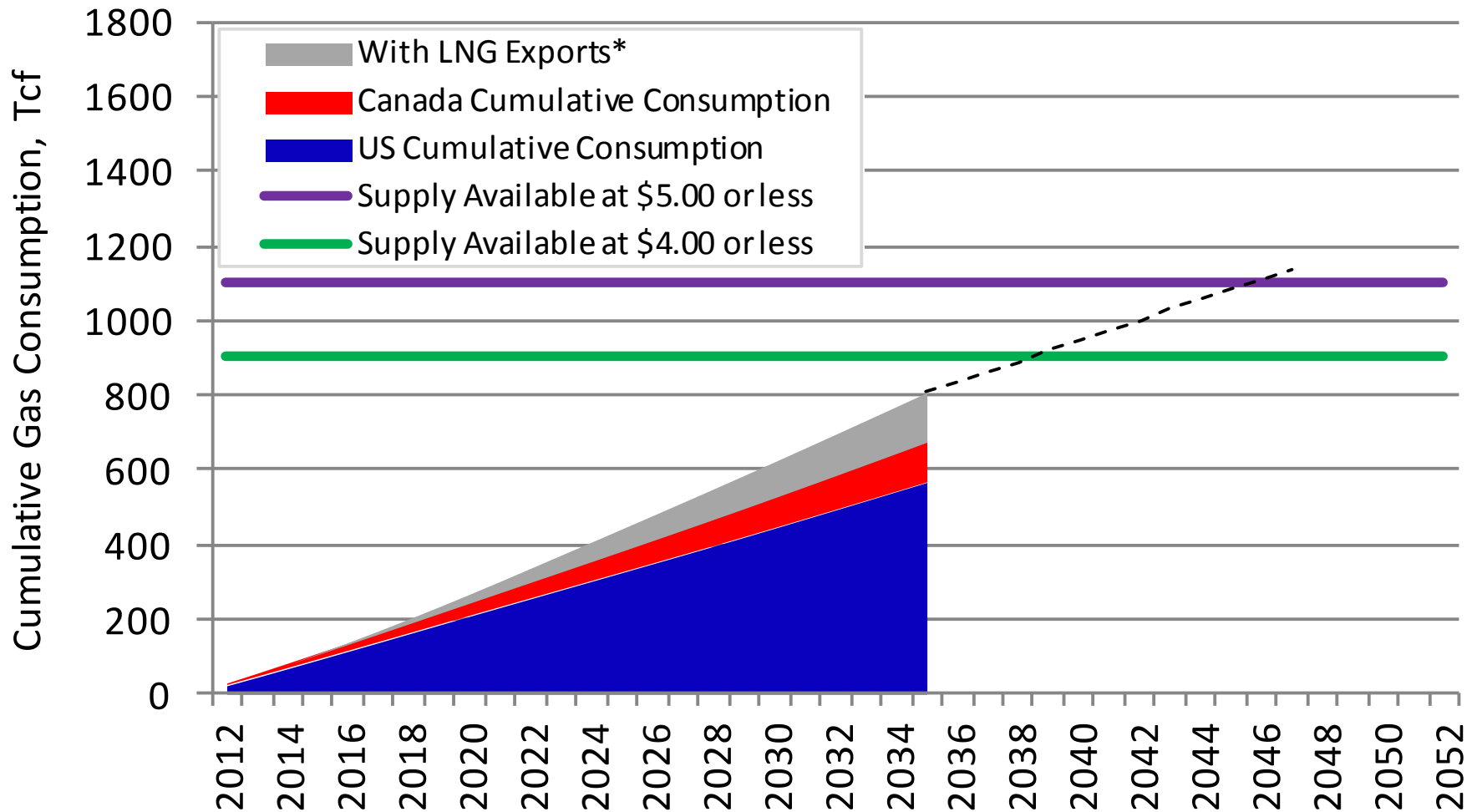


Gas Price vs. Gas Supply



Source: MIT Study on the Future of Natural Gas, Figure 2.10 upgraded for recent Montney and Utica additions.

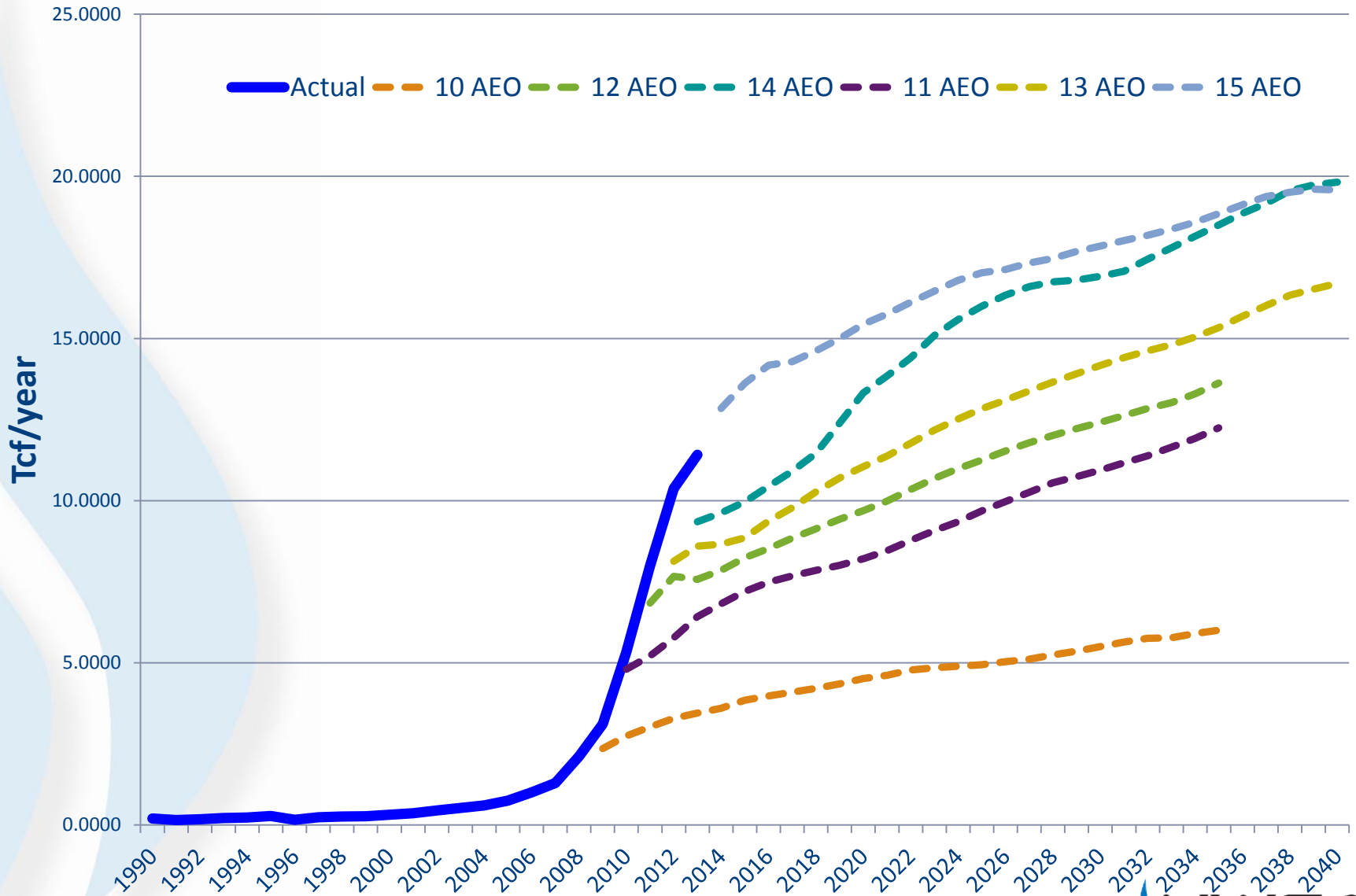
How Much Is 900 Tcf?



* LNG exports assumes first exports of 6 Bcf/day in 2015, increasing to 20 Bcf/d in 2022, then flat

Source: U.S. Energy Information Administration website and Canadian National Energy Board 2011 Forecast

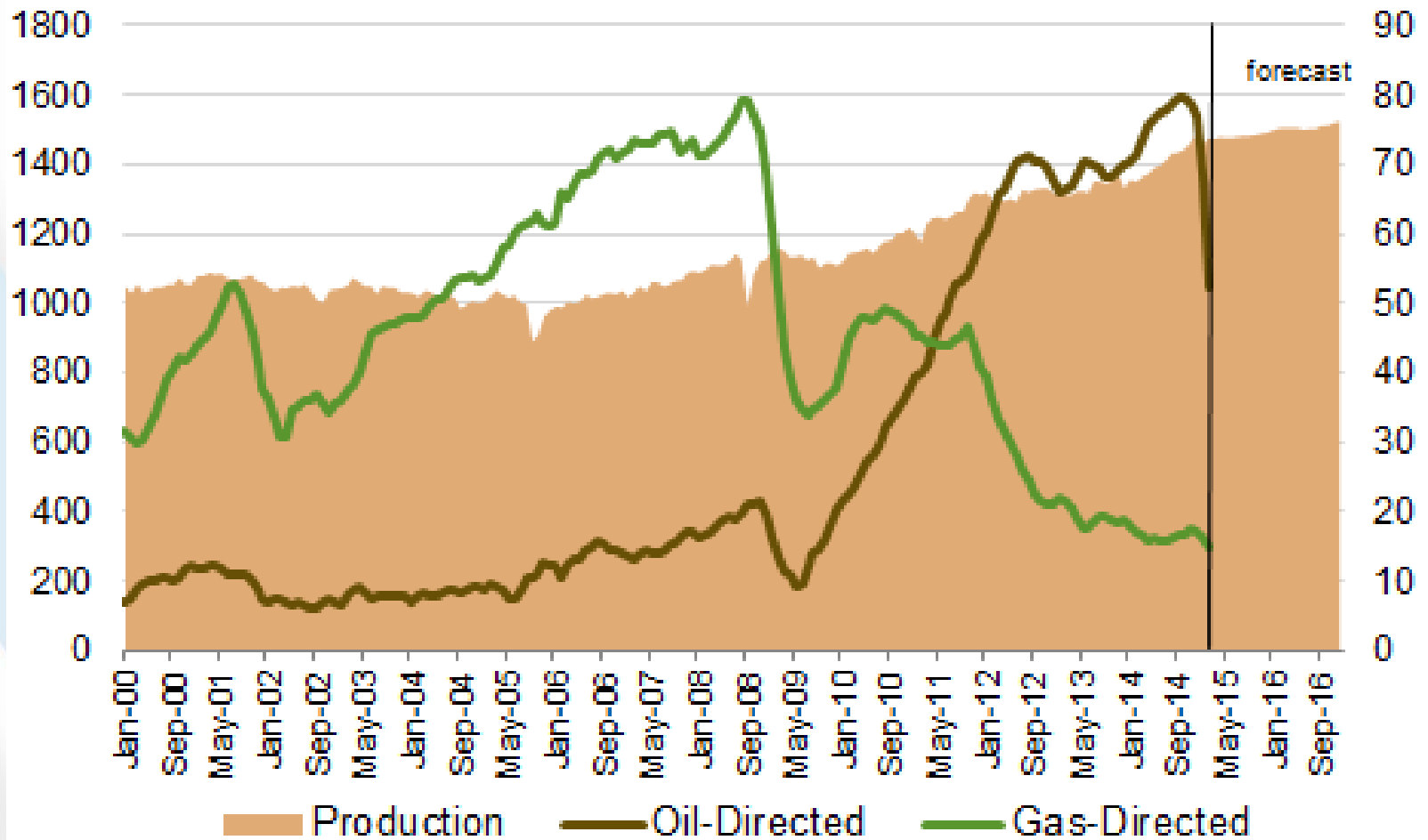
“Learning Curve”



Source: EIA Annual Energy Outlook

rig counts

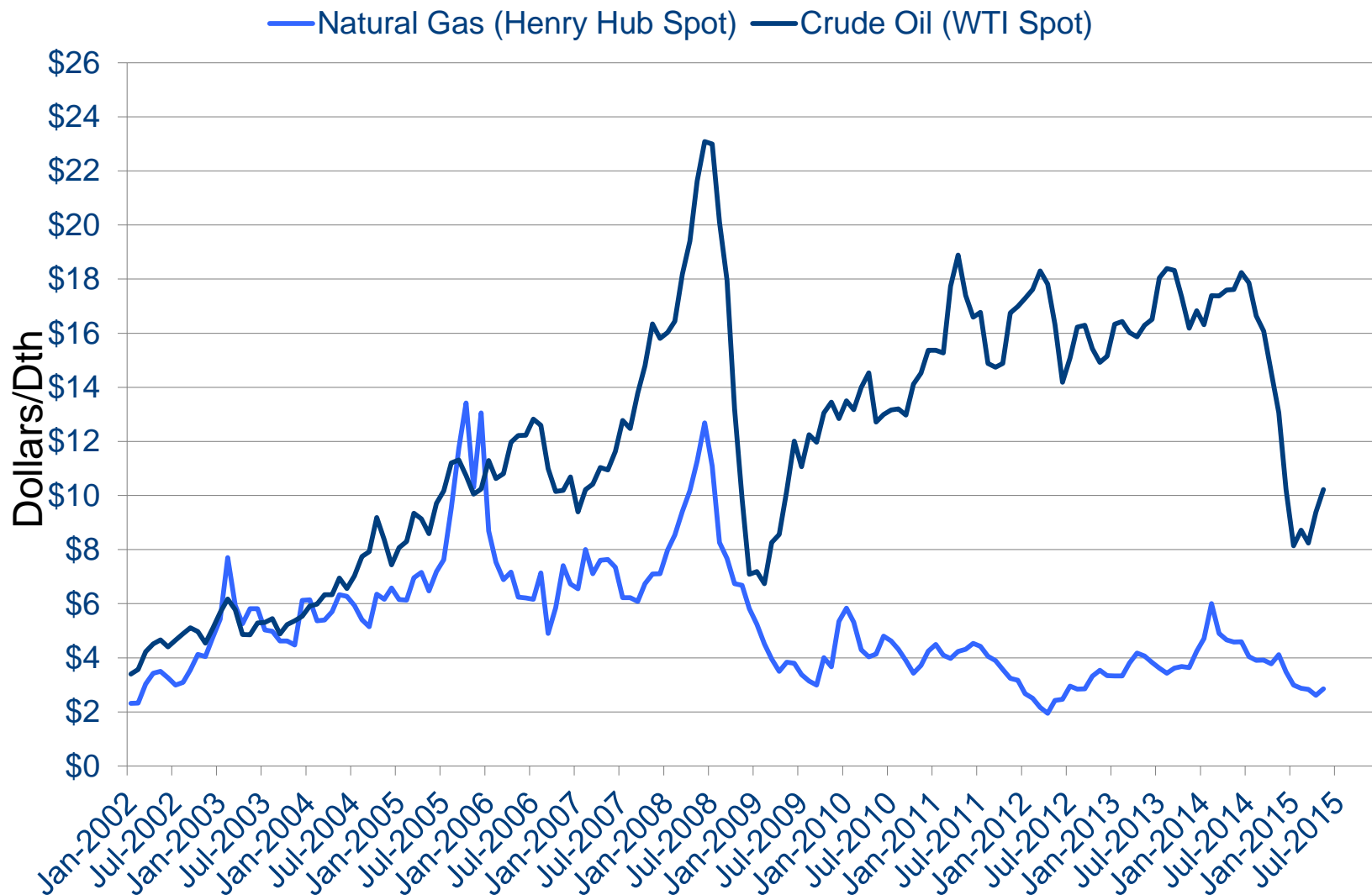
billion cubic feet per day



Source: U.S. Energy Information Administration, based on data from EIA *Short-Term Energy Outlook* (March) and Baker Hughes, Inc.

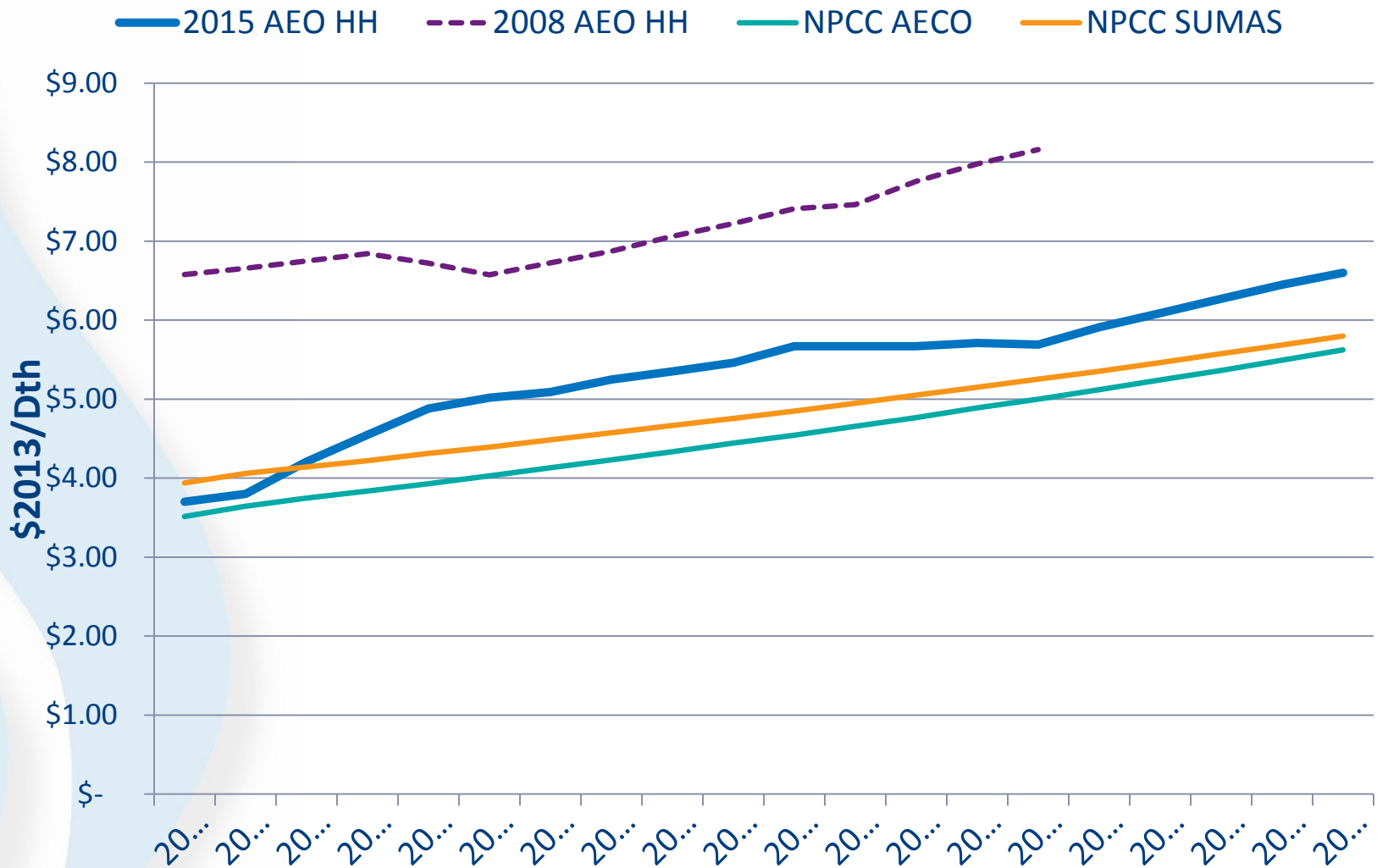


Historic Oil:Gas Spot Prices



Source: EIA Monthly Spot Prices through May, 2015

Projected Natural Gas Spot Price

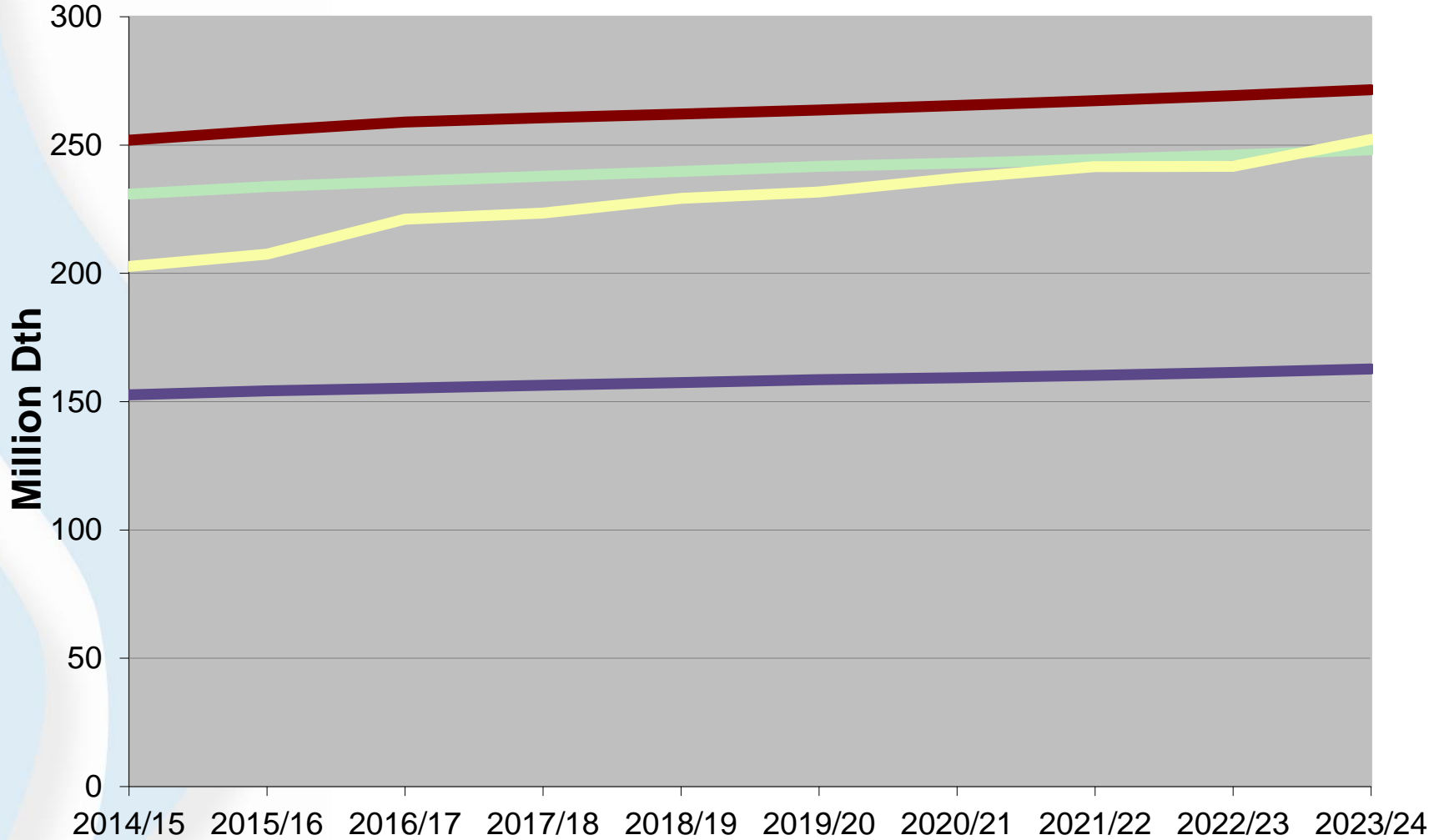


Source: EIA 2008/2015 AEO

NW Power Council 6th Power Plan Fuel Price Forecast

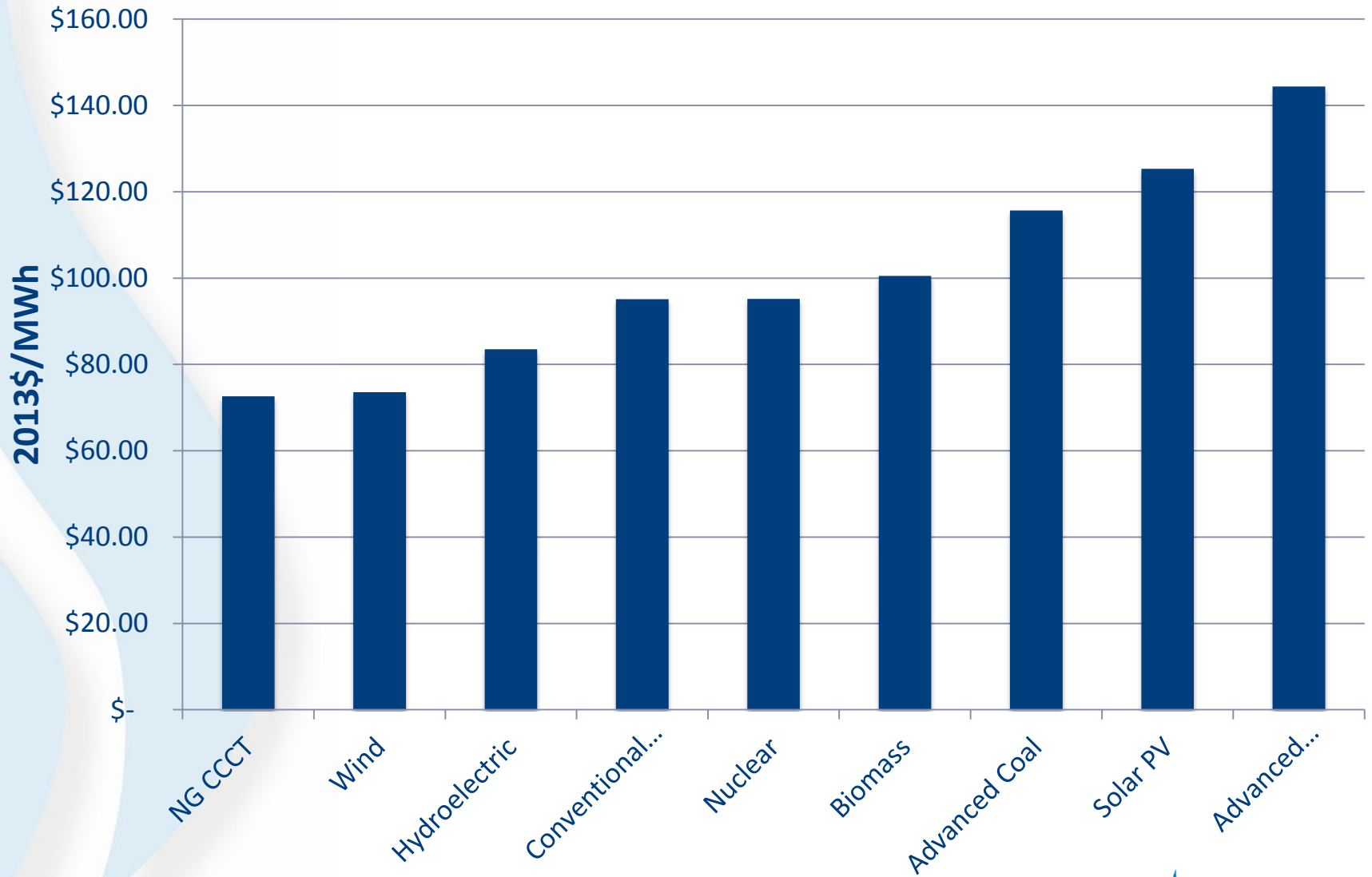
2015 Outlook Forecast

Residential Commercial Industrial Generation

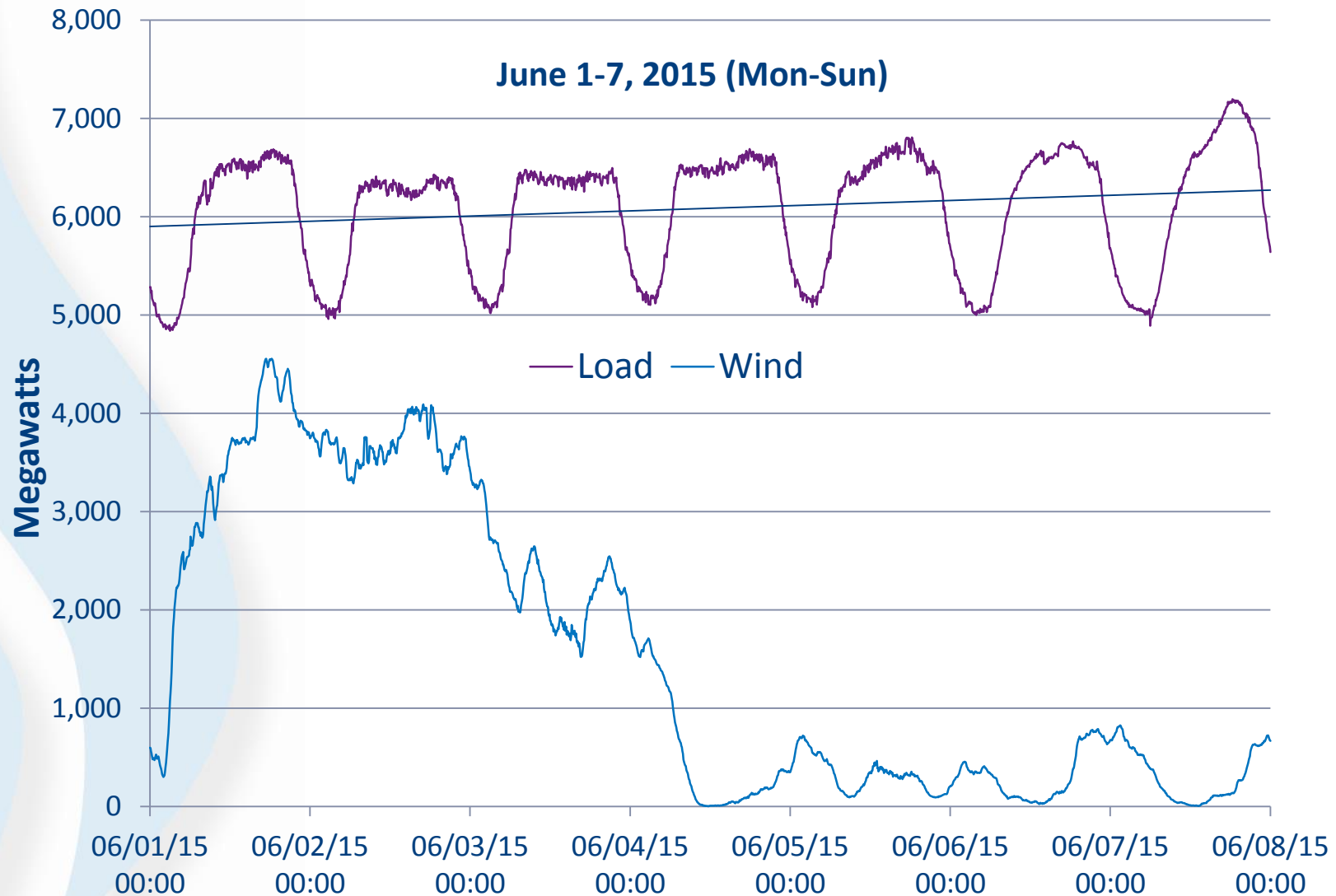


Why Generation?

It's Economic



Supports Renewable Energy



Source: BPA

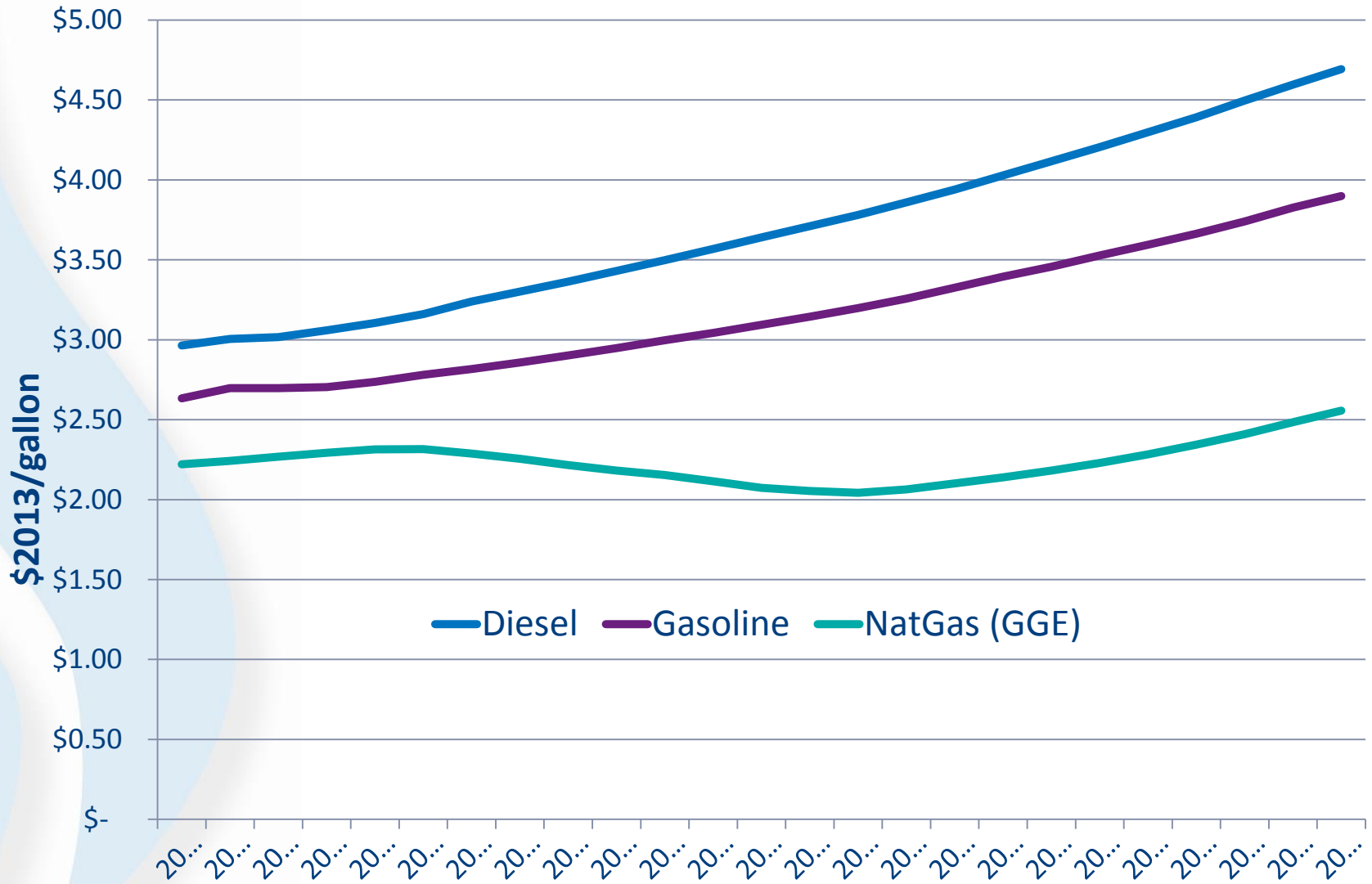
Replace Existing Resources



Natural Gas Transportation



Fuel Price Differentials



Source: EIA 2015 AEO

Natural Gas Use Is Versatile

Plastics
Panty hose
Paints
Photographic film
Beer
Safety glass laminate
Adhesives
Solvents
Carpeting
Insulation
Refrigerants
Windshield washer fluid
Particle board
Pigments and dyes

Frozen french fries
Pool liners
Food Packaging
Metals and recycling
Glass and recycling
Bricks
Lumber
Paper
Cardboard
Fertilizer
Antifreeze
Medicines
Aircraft parts
Chewing gum



Questions?

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