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Energy Policy Options - 2015

FOLLOWING OIL
Four Decades of Cycle-Testing Experiences and What They Foretell about U.S. Energy Independence
Thomas A. Petrie
Topics

- America’s Transformed Outlook
- A Path To Petroleum Flexibility
- The Oil Price Supercycle
- Oil Export Issues
- Keystone XL Pipeline
- Acceleration of LNG Exports
- Concluding Observations
America’s Transformed Outlook
U.S. OIL PRODUCTION BY TYPE IN NEW POLICIES SCENARIO

Note: The World Energy Model supply model starts producing yet-to-find oil after it has put all yet-to-develop fields into production. In reality, some yet-to-find fields would start production earlier than shown in the figure.

A Path to Petroleum Flexibility

**Total US Demand**

**2010**
- US Production: 7.0 MMBpd
- US Imports: 10.5 MMBpd
- Canadian Oil Supplies: 2.5 MMBpd
- Non North American Imports: 8.0 MMBpd
- Total US Demand: 16.9 MMBpd

**2018**
- US Production: 10.0 MMBpd
- US Imports: 6.9 MMBpd
- Canadian Oil Supplies: 3.0 MMBpd
- Non North American Imports: 3.9 MMBpd
- Total US Demand: 16.9 MMBpd

**2025**
- US Production: 11.0 MMBpd
- US Imports: 4.2 MMBpd
- Canadian Oil Supplies: 3.5 MMBpd
- Non North American Imports: 0.7 MMBpd
- Total US Demand: 15.2 MMBpd

**Oil Equivalent of Gas Exports**
- 0.6 MMBpd (2010)
- NA (2018)
- 1.5 MMBpd (2025)

**Increase in Production Combined with Decrease in Demand Signals the Likelihood of Domestic Surplus**

**Demand Reduction from 2010 to 2018**
- Result from fuel efficiencies and hybrid vehicles

**Demand Reduction from 2018 to 2025**
- Result from fuel efficiencies and gas/electric vehicles

Source: IEA, World Energy Outlook 2012 and Thomas A. Petrie’s Following Oil.
The Oil Price Supercycle

WORLD EVENTS AND OIL PRICES – NOMINAL PRICING (1971 – 2013)

1973 Arab Oil Embargo

Iran-Iraq War begins; oil prices peak

Iranian Revolution shah deposed

OPEC agrees to quotas

Gulf War ends

Iraq invades Kuwait

OPEC agrees to quota increase

Prices rise sharply on OPEC cutbacks, increased demand

Prices spike on Iraq war, rapid demand increases, constrained OPEC capacity, low inventories, etc.

Fiscal Cliff fallout concerns

Syrian civil war escalates

ISIS on the rise

Russia challenges Ukraine

Ebola outbreak?

Back from the abyss

Fear of global economic meltdown


Source: EIA.
Oil Export Issues

- Bakken
- Niobrara
- Permian
- Eagle Ford
Oil Export Issues

Brent-WTI Differential ($/Bbl)

10 Year Average: $4.90

(1) Market data per FactSet as of November 14, 2014.
Oil Export Issues

“U.S. Set to Export First Oil Since ‘70s”

“America’s Oil Export Policy is Stuck in the ’70s”

“Oil Export Decisions Roil Industry”

“Energy Industry Buzzes at Oil-Export Opening”

“Reforming Impact of Oil Exports”

“Fracked Oil Proves a Volatile Variety”

“Pioneer’s Sheffield is ‘Cautiously Optimistic’ on Lifting of Export Ban”

“China Motorists Drive Oil Market”

“Oil Producers Plan Push to Loosen U.S. Ban on Oil Exports”

“Putting America’s Energy Leverage to Use”

“Why Tension is Rising Between U.S. and Israel”
Oil Export Issues

Historical view: To US and West

New view to east
Keystone XL Pipeline
EXISTING INFRASTRUCTURE AND PROPOSED EXPANSION

Keystone XL Pipeline

Keystone Wood River-Patoka Pipeline

Keystone Cushing Pipeline

Keystone XL Steele City Pipeline (proposed)

Bakken Shale

Athabasca Oil Sands
Acceleration of LNG Exports

Proposed LNG Export Terminals

1. Freeport LNG Expansion LP
2. Lake Charles Exports LLC
3. Cameron LNG liquefaction
4. Gulf LNG
5. Sabine Pass LNG terminal
6. Golden Pass Products LLC
7. Gulf Coast LNG Export LLC
8. Excelerate floating terminal
9. Corpus Christi Liquefaction LLC
10. Main Pass Energy Hub LLC
12. Oregon LNG
13. Dominion Cove Point
14. Elba Island terminal
Concluding Observations

- For somewhat different reasons than in prior cycles, Saudi Arabia’s inclination to replay parts of the 1985 – 1986 market share competition is now apparent.
- U.S. oil’s fungibility, likely improving ease of transport, and absolute size all argue for its having a role in world petroleum trade.
- The “distilled condensate” exemption has important but limited utility for absorbing new shale liquids.
- U.S. oil refining configurations underscore the need for light oil exports balanced by imports of medium/heavier foreign crude oils.
- U.S. oil export policy affords the potential on the margin to impact Russian/Middle East geopolitics.
- Accelerated expansion of US LNG Exports is a US job creating, trade deficit reducing, compelling strategy.