9th IEA-IEF-OPEC Symposium on Energy Outlooks
The View from the US

Jason Bordoff
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The US Is Now the World’s Largest Oil and Gas Producer

Top 10 Oil Producing Countries in 2017 (mn b/d)  Top 10 Gas Producing Countries in 2017 (Bcf/d)

Oil includes NGLs

Source: BP Statistical Review 2018
Oil Outlook
US Oil Production Growth Set to Continue for Some Time

US Crude Oil Production (million b/d)

Source: EIA AEO 2019
US Crude Exports Helped Meet the Energy Needs of More Than 50 Countries Since 2014

US Crude Oil Exports by Destination (thousand b/d)

Source: EIA
US Trade and Sanctions Policy Have Implications for Global Oil Flows and Prices
US Shale Is an Imperfect Market Balancer

Crude Oil Production in the US, Russia, and Saudi Arabia (mbpd)

Global Oil Supply / Demand Balance (mbpd)

Source: IEA

Source: Bloomberg
Short-Cycle Shale Raises Concern About Long-Cycle Investment

Global Investment in Upstream Oil and Gas (nominal $ billion)

Source: IEA World Energy Investment 2018
US OIL DIPLOMACY BY TWEET

US President Donald Trump's latest tweet aimed at OPEC comes after a sharp drop in oil prices have spurred the producers group to consider output cuts.

@realDonaldTrump 7:52 AM - 13 Jun 2018
"Oil prices are too high, OPEC is at it again. Not good!"

@realDonaldTrump 7:37 AM - 30 Jun 2018
"Just spoke to King Salman of Saudi Arabia and explained to him that, because of the turmoil & dysfunction in Iran and Venezuela, I am asking that Saudi Arabia increase oil production, maybe up to 2,000,000 barrels, to make up the difference...Prices to high! He has agreed!"

@realDonaldTrump 6:57 am - Apr 20
"Looks like OPEC is at it again. With record amounts of Oil all over the place, including the fully loaded ships at sea, Oil prices are artificially Very High! No good and will not be accepted!"

@realDonaldTrump 10:10 AM - 22 Jun 2018
"Hope OPEC will increase output substantially. Need to keep prices down!"

@realDonaldTrump 4:46 PM - 04 Jul 2018
"The OPEC Monopoly must remember that gas prices are up & they are doing little to help. If anything, they are driving prices higher as the United States defends many of their members for very little $. This must be a two way street. REDUCE PRICING NOW!"

@realDonaldTrump 7:13 AM - 20 Sep 2018
"We protect the countries of the Middle East, they would not be safe for very long without us, and yet they continue to push for higher and higher oil prices! We will remember. The OPEC monoply must get prices down now!"

@realDonaldTrump 1:21 PM - 12 Nov 2018
"Hopefully, Saudi Arabia and OPEC will not be cutting oil production. Oil prices should be much lower based on supply!"

Source: S&P Global Platts
Oil Price Volatility Is Harmful for the US Economy

“[Oil price] volatility has several damaging and destabilizing macro-economic impacts that will present a fundamental barrier to future sustainable economic growth if left unchecked”

OPEC Plays a Crucial Role in Mitigating Oil Price Volatility

Oil Supply Disruptions, OPEC Spare Capacity, and Crude Prices

“OPEC’s use of spare capacity has reduced price volatility, perhaps by as much as half”


Source: Bob McNally, Crude Volatility
The US Shale Gas Boom Shattered Notions of Scarcity...

US Dry Gas Production Under the EIA’s Reference Case Scenario (Bcf/day)

- History
- Projection

- Tight/shale gas
- Other Lower 48 onshore
- Lower 48 offshore
- Other*

* Other includes Alaska and coalbedmethane

Source: EIA Annual Energy Outlook 2019
...And Completely Turned the US Natural Gas Outlook Around

**AEO 2005 US Net Natural Gas Imports (Tcf)**

- **Net Pipeline Imports**
- **Net LNG Imports**

**AEO 2018 US Net Natural Gas Imports (Tcf)**

- **Net LNG Imports**
- **Net Pipeline Imports**

Source: EIA Annual Energy Outlook 2005 and 2019

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US LNG Exports Are Impacting Russian Gas Policy in Europe

- US LNG flexibility undermines the market power of established exporters
- US LNG can empower importers and create a buyers’ market for LNG
- US LNG can help create a more efficient gas markets based on gas-on-gas competition
- US LNG can export low US prices to the rest of the world and mitigate high prices elsewhere
- US LNG can improve European energy security, foster gas market integration and increase the negotiating leverage of European allies against Gazprom
Flexible US LNG Is Finding Markets Around the World

**US LNG Exports by Destination (cargoes)**

- South Korea: 104 cargoes
- Mexico: 100 cargoes
- China: 61 cargoes
- Japan: 51 cargoes
- Chile: 30 cargoes
- India: 26 cargoes
- Jordan: 25 cargoes
- Brazil: 22 cargoes
- Argentina: 21 cargoes
- Turkey: 14 cargoes
- Spain: 14 cargoes
- UK: 13 cargoes
- Kuwait: 11 cargoes
- Portugal: 10 cargoes
- Taiwan: 7 cargoes
- Italy: 7 cargoes
- Dominican Republic: 7 cargoes
- UAE: 6 cargoes
- Egypt: 5 cargoes
- Pakistan: 5 cargoes
- Netherlands: 5 cargoes
- France: 5 cargoes
- Colombia: 4 cargoes
- Lithuania: 2 cargoes
- Poland: 2 cargoes
- Malta: 2 cargoes
- Panama: 2 cargoes
- Israel: 1 cargo
- Thailand: 1 cargo
- Jamaica: 1 cargo

**US LNG Export Volume by Country (mtpa)**

- South Korea: 104 mtpa
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- Taiwan: 7 mtpa
- Italy: 7 mtpa
- Dominican Republic: 7 mtpa
- UAE: 6 mtpa
- Egypt: 5 mtpa
- Pakistan: 5 mtpa
- Netherlands: 5 mtpa
- France: 5 mtpa
- Colombia: 4 mtpa
- Lithuania: 2 mtpa
- Poland: 2 mtpa
- Malta: 2 mtpa
- Panama: 2 mtpa
- Israel: 1 mtpa
- Thailand: 1 mtpa
- Jamaica: 1 mtpa

**US LNG Export Volume by Region**

- Latin America: 31.5%
- Asia: 47.1%
- Europe: 12.5%
- MENA: 8.8%

Source: US Dept. of Energy

Note: all data from Feb 2016 to Nov 2018

Source: BNEF

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US LNG Export Capacity Is Ramping Up, Nearly Doubling Flexible LNG Volumes Worldwide

Source: CGEP based on company disclosures

Source: IEA Global Gas Security Review 2018
Permian Associated Gas Needs an Outlet Point

US Gas Production East of the Rockies* (Bcf/d)

Sources of Demand for US Gas Production East of the Rockies* (Bcf/d)

- Further LNG capacity will likely be needed to accommodate booming shale production East of the Rockies (Marcellus/Utica dry gas + Permian associated production)
- Infrastructure bottlenecks present downside risk to oil production
- Associated gas boom could lead to gas priced below Henry Hub flowing into global market

* Production includes Southwest region to account for Permian production in New Mexico

Source: CGEP based on EIA AEO 2018

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Implications of US Energy Revolution--Summary

• **Oil Markets**
  - Supply surge pressured prices, challenging producer economies
  - Short-cycle dynamic challenging OPEC ability to manage markets
  - Shift in dialogue from consumer-producer to producer-producer
  - More freedom to use sanctions as a weapon, including export embargo
  - New vulnerabilities, e.g., in trade war with China
  - Changed US perception, e.g., SPR sell-off
  - Reduced macroeconomic vulnerability to price shocks
  - BUT… US is still NOT ENERGY INDEPENDENT!

• **Natural Gas Markets**
  - Facilitate transition to more flexible, integrated, competitive, liquid gas market
  - E.g., Russia. US LNG has helped:
    - Reduce Russian revenue
    - Undermine oil-linked pricing model
    - Forced contract renegotiations
    - Accelerated domestic gas market liberalization and LNG development
Thank You

For more information contact

Jason Bordoff
Professor of Professional Practice in International and Public Affairs
Founding Director, Center on Global Energy Policy Columbia University

jbordoff@columbia.edu
(212) 851-0193