

Energizing America Facts for Addressing Energy Policy

Rayola Dougher API Senior Economic Advisor U.S. oil and natural gas production is increasing as a result of technological innovations

U.S. Crude Oil Production

U.S. Natural Gas Marketed Production (billions of cubic feet per day)



Note: Bars in red show EIA's Short-term Energy Outlook forecast. Source: Energy Information Administration.

(millions of barrels per day)

energy RP

SHALE ENERGY PROVIDES A NATIONAL OPPORTUNITY



Shale Resources, Lower 48 States



Current and prospective resources and basins in the continental US

U.S. shale gas production has increased rapidly in recent years





- Marcellus (PA & WV)
- Haynesville (LA & TX)
- Eagle Ford (TX)
- Fayetteville (AR)
- Barnett (TX)
- Woodford (OK)
- Bakken (ND)
- Antrim (MI, IN, & OH)
- Rest of US

Shale production is offsetting declining production from other U.S. oil and natural gas resources



U.S. Natural Gas Production by Source (trillion cubic feet per year) 40 35 30 Shale 25 Gas 20 15 **Tight Gas** Lower 48 Onshore 10 -Conventional 5 Lower 48 Offshore **Coalbed methane** Alaska

2010

2020

2030

2040

1990

2000

Source: EIA, Annual Energy Outlook 2014

The price of natural gas has fallen relative to crude oil



Changes in the price of crude oil and natural gas



Source: EIA

Rising US natural gas output pushed natural gas prices to record discounts against international gas prices



energy

Source: BP Statistical review of World Energy 2014.

EIA forecasts relatively low natural gas prices for decades



energy

Source: EIA

Shale energy revolution has pronounced impact on energy-intensive industries



Percent Increase to Industrial Production Indices due to the Unconventional Activity Value Chain

2012 2020 2025



Source: IHS Global, "America's New Energy Future, Volume 3: A Manufacturing Renaissance."



\$1,200

American consumers' annual savings due to lower gas prices resulting from shale energy development (IHS Global Insight)

9.8 million jobs are supported by the oil and natural gas industry





Construction Industry



Drilling Industry



Chemical Industry



Trucking Industry



Hospitality Industry



Steel Industry

Oil and natural gas jobs pay well (average annual wages)





Source: U.S. Quarterly Census of Employment and Wages, 2013.

Oil and natural gas operations rippling through the U.S. economy

\$1.2 trillion

energy

The industry contributes to the U.S. economy. This represents 8% of the value added to the economy (PWC)

Refineries and Fuels



energy RP

U.S. refining capacity continues to expand even as the number of refineries contracts



energy

*Operable as of January 1st of each year. Source: EIA

For the first time since 1949, the U.S. became a net exporter of petroleum products in 2011



energy

Source: EIA

Expanding alternative fuels for transportation: current laws



energy

Source: EIA and Energy Independence Security Act of 2007.



The Blend Wall

We are rapidly approaching the point when EPA's ever increasing alternative fuel mandates exceed what can be safely blended into the nation's vehicles.

2010

2011

2012

2013

The Congressional Budget Office predicts the price of diesel could rise by up to 51 cents per gallon and gasoline by up to 26 cents per gallon by 2017.

2015

2014

Factors Affecting Prices





Changes in gasoline and diesel prices mirror changes in crude oil prices



Average prices as of December 4, 2014



Sources: NYMEX (WTI crude oil) and AAA (gasoline and diesel)

Many factors affect the price of oil, but in the end it comes down to supply and demand





Growth in U.S. oil production has largely offset the growth in global oil supply disruptions



Growth in Global Oil Supply Disruptions (mmb/d)

Growth in U.S. Oil Production (mmb/d)



* Other liquids include of hydrocarbon gas liquids, biofuels, and refinery processing gains.

World crude oil and liquid fuels production growth energy



Non-OPEC crude oil and liquid fuels production growth



energy

EIA forecasts average consumer expenditures for heating fuels will be lower this winter



energy

Power and Politics





Crude oil and petroleum product imports have declined as a share of consumption



energy

Source: EIA



Crude oil exports yield economic benefit across all 50 states

- Save consumers up to \$5.8 billion a year in lower fuel costs
- > Add 300,000 jobs to U.S. economy in 2020
- Reduce America's trade deficit by \$22 billion in 2020



EIA projects U.S. will be net exporter of natural gas by 2017



Natural gas (quadrillion Btu)



Nine US facilities have been approved to export LNG, over 20 are awaiting approval and there are more than 60 competing sites planned or under construction in foreign nations

energy



Source: API LNG Export Facility Map

87% of federal offshore acreage is off-limits to development



U.S. Offshore Undiscovered Technically Recoverable Federal Oil and Natural Gas Resources (billion barrels - Bbl and trillion cubic feet - Tcf)



Source: The Bureau of Ocean Energy Management (BOEM), 2011.

Development of Canadian oil sands would benefit the U.S. economy



2011 Trade in Goods



Filling America's tank

Within 10 years Canada and U.S. can provide all our liquid fuel needs



Potential

energy

Sources: EIA; Wood Mackenzie

EIA Forecast

America's choice

energy



Source: Wood Mackenzie," "U.S. Supply Forecasts and Potential Jobs and Economic Impacts," September 7, 2011.

Voters voice strong support for increased domestic oil and natural gas development



Harris Poll Results on Increased U.S. Oil and Natural Gas Development

energy



For more information visit: www.api.org www.energytomorrow.org www.energycitizens.org

