

Energy Prices, Climate Change and Geopolitics: What Next?

Presentation – Plenary 4 at the Asia-Pacific Roundtable – APR @ 30:
'Cooperation and Contestation in a Changing Regional Landscape',
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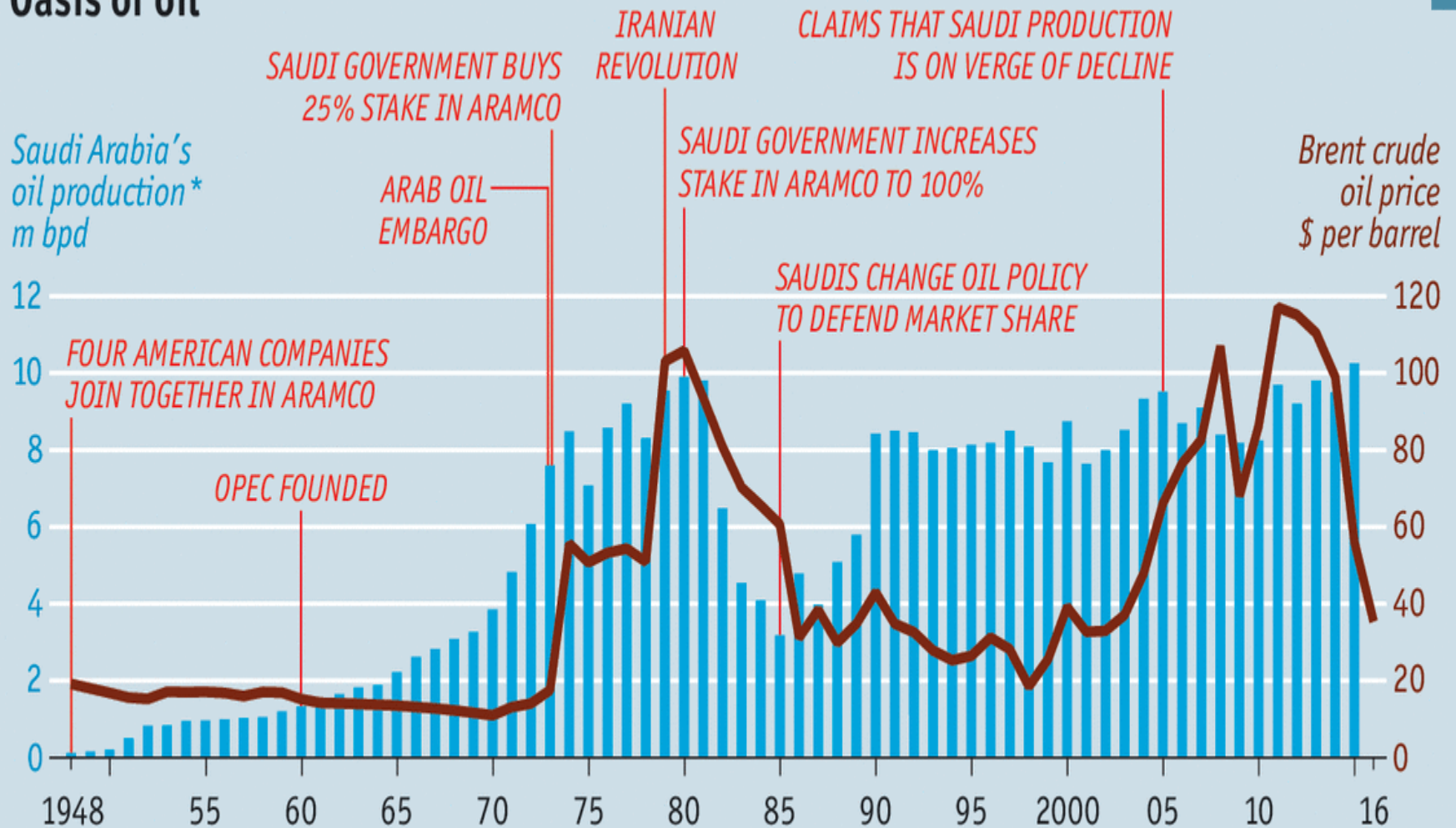
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Global Oil Price Development 1948-2016

1

Oasis of oil



Sources: Bloomberg; Thomson Reuters; IEA; press reports

*Estimates 1948-51

Introduction

- Dramatic fall of oil prices between summer 2014 and January 2016: -70% (from US\$115 to <US\$30);
- **Historical lesson of the mid-1980s:**
 - Fuelled the collapse of the Soviet Union and its socialist empire;
- „peak oil“ and „resource scarcity“ assumptions outdated;
- **Perspective 2040/50 and Core Argument:** As long as fossil fuels will dominate the world's energy mix, oil supply and prices will remain critical for geopolitical shifts and sustainable stability of the world economy;
- **Global energy supply security:** not guaranteed without political stability in oil and gas producing countries.
- By contrast: Russia's annexation of Crimea caused Western sanctions on its oil sector (as the world's largest non-OPEC producer in the past);
- **Long-term trend and strategic objective:** decarbonization of the world energy system:
 - Paris COP21 global change summit 12/2015;
 - Worldwide anti-fossil disinvestment movement;
 - 2012-2014: “green funds” outperformed “black funds”;
 - But: ongoing state subsidies to fossil fuels – some US\$550 billion in 2013.

Paris COP21 Summit

Achievements/Objectives

- mitigation targets, and information about adaptation;
- global warming in the range of 1.5-2.0° C by 2100;
- first half by 2050: hope based on new transparent rules and unified standards;
- zero emissions in the second half of this century.

Failings/Challenges

- final accord (mostly) unbinding (NDCs);
- Implementation process of NDCs uncertain (U.S., China, Brazil, EU-28 at al.);
- **Most oil and gas producing countries not prepared at all for a decarbonized world energy system!**

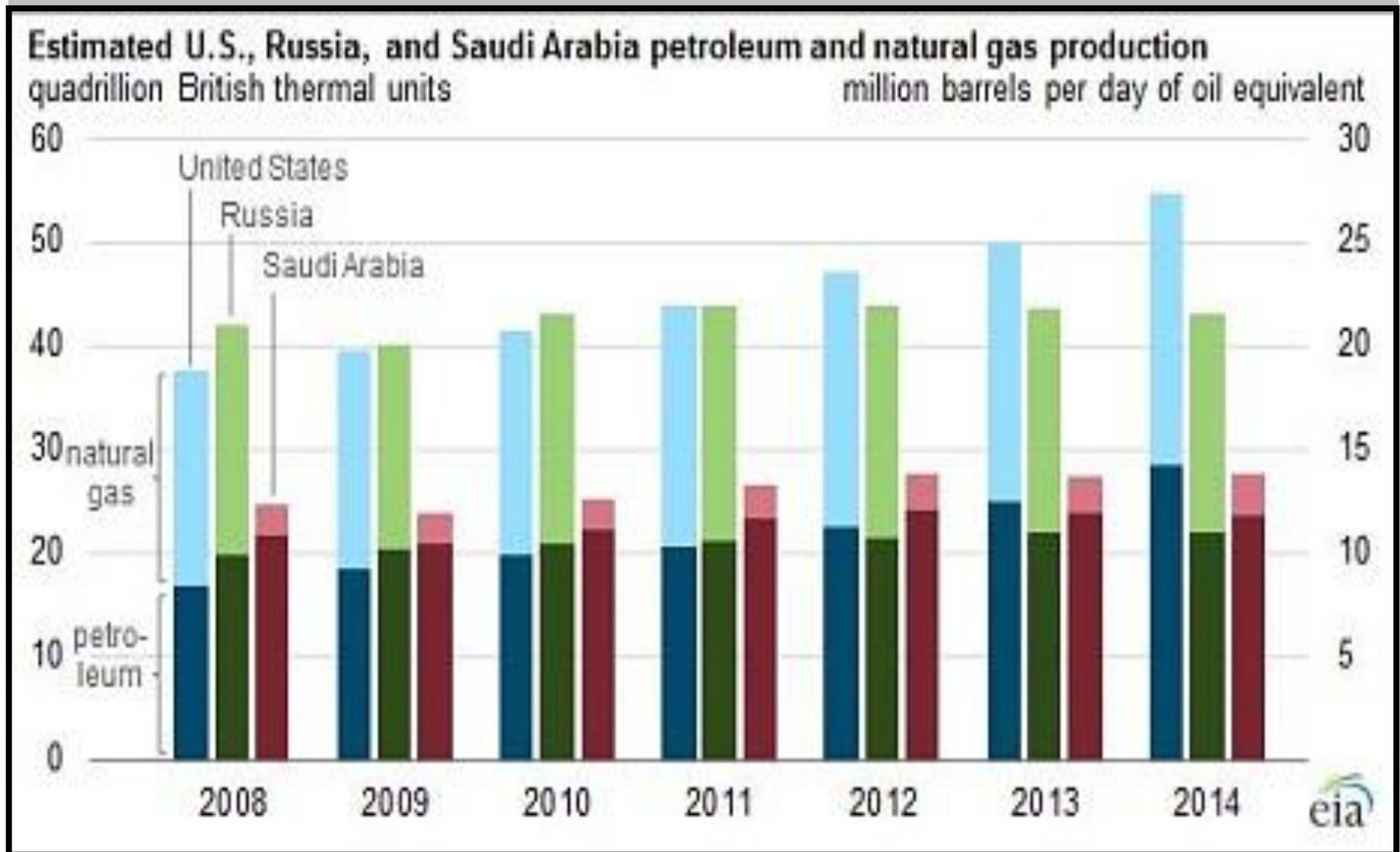


- COP21 agreement widened the gap between global environmental policies and present worldwide energy megatrends;
- new MIT study: having investigated the likely effects of commitments made under the Paris Agreement; concludes with a 95% predictability: the likely warming will be still in the range between 2.7-3.6°C (best-case scenario);
- ultimately far more drastic changes needed in the forthcoming years and decades prior to 2050 not just for the coal, but as well as oil and gas markets worldwide

Explaining the Dramatic Decline of Oil Prices

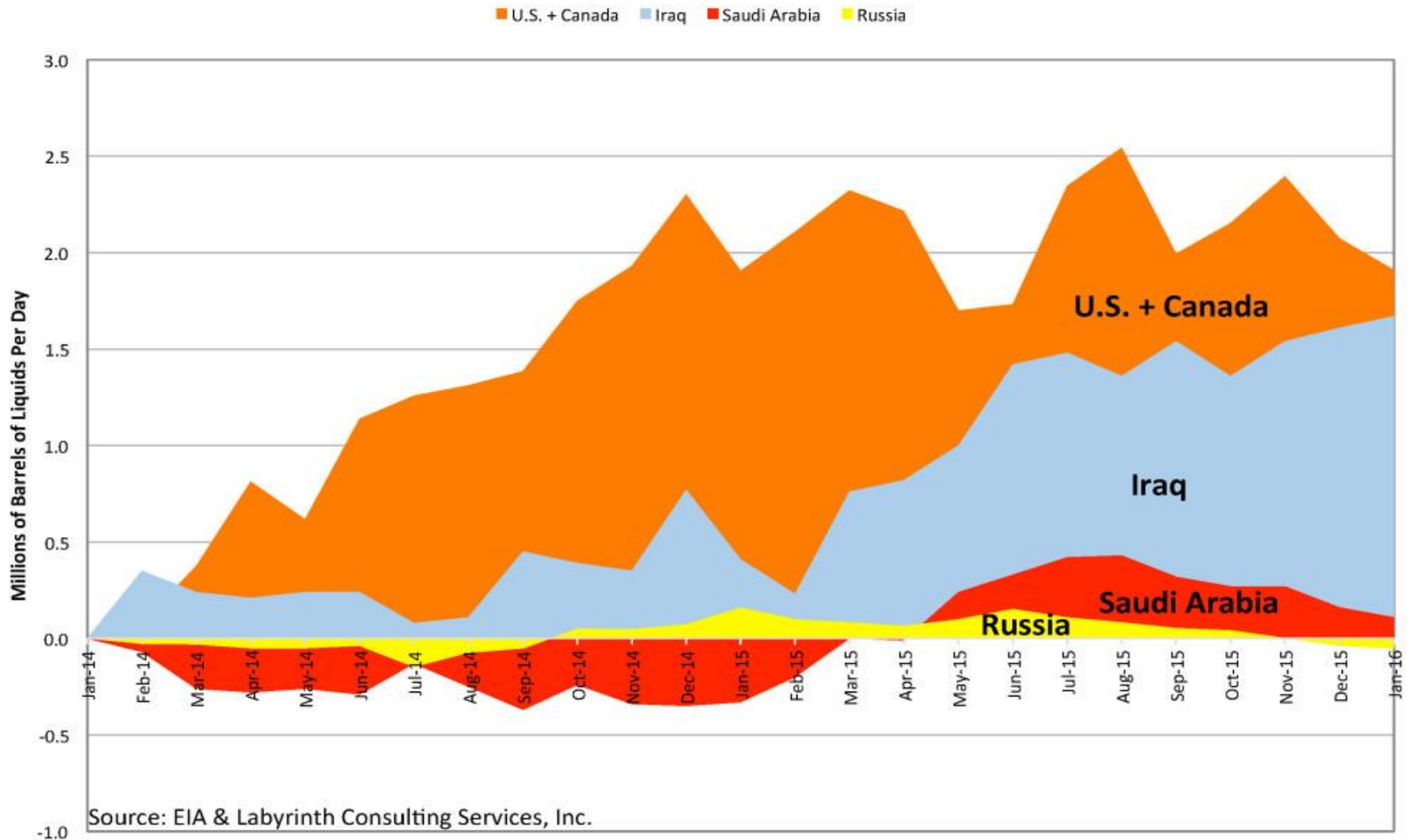
- **Remarkable:** many producer states in the Middle East, North Africa and Africa have faced rising unrest and political instabilities, which forced them to decrease their oil production;
- **Conspiracy theories:** new collusion between Saudi Arabia and the U.S. targeting Russia and Iran;
- **Real explanation for Saudi oil price policy:**
 - Riad underestimated rapidly changing world oil market due to a combination and interplay of (1) changing market conditions, (2) unrealistic expectations on the world's oil market and (3) the appreciation of the US-Dollar;
 - determined by its interest in maintaining its worldwide market shares (i.e. Asia-Pacific);
- **U.S. shale oil revolution:**
 - result of technological innovation: horizontal drilling, hydraulic fracturing ('fracking') and seismic surveying;
 - **during the last 4 years:** productivity and efficiency have increased by >25%.

U.S., Russian, Saudi Arabian Petroleum and Natural Gas Production 2008-2014



Global Incremental Oil Production 01/2014-01/2016

Incremental Oil Production Since January 2014



Global Oil Market

- Fracking of unconventional gas is not just adding oil to the market, but entirely overturns the economics of the worldwide oil markets; resources and technology will remain;
- **Daniel Yergin at Davos:** *„you can conduct a price war, and you can drive companies in a specific industry or sector into bankruptcy, but you cannot do that to a technology. ... groups with deep pockets such as Blackstone and Carlyle will take over the infrastructure when the distressed assets are cheap enough, and bide their time until the oil cycle turns.“*
- Indeed: hedge funds and private equity groups already wait with US\$60bn to overtake bankrupt US shale drillers and my re-start an expanded shale oil production beyond US\$60 per barrel.

Geopolitical Risk Factors

“TINDERBOX”

The juxtaposition of the world's largest retrievable fossil fuel reserves, the scene of the world's most dangerous conflicts and the emergence of some of the world's richest states points to the growing importance of the region.

ENERGY ELLIPSE

Over 70% of world's proven oil & over 40% of world's natural gas reserves concentrated here



Falling Oil Prices and Geopolitical Impacts

■ Four Geopolitical Implications of Falling Oil Prices:

➤ Technology Innovation Changes Geopolitical Landscapes:

- Falling oil production prices as the result of the technological revolution of the fracking drilling advances have expanded the shale gas and oil production.

➤ Decreased Energy Dependence on the Greater Middle East;

➤ Impacts of the Perceived U.S. Disengagement from the Gulf Region;

- Leaving a security and power vacuum – filled by Saudi and Iranian ambitions, leading to an escalating geopolitical rivalry

➤ Winners and Losers – the Demise of OPEC and High-Cost Oil Producers.

Falling Oil Prices and Geopolitical Impacts

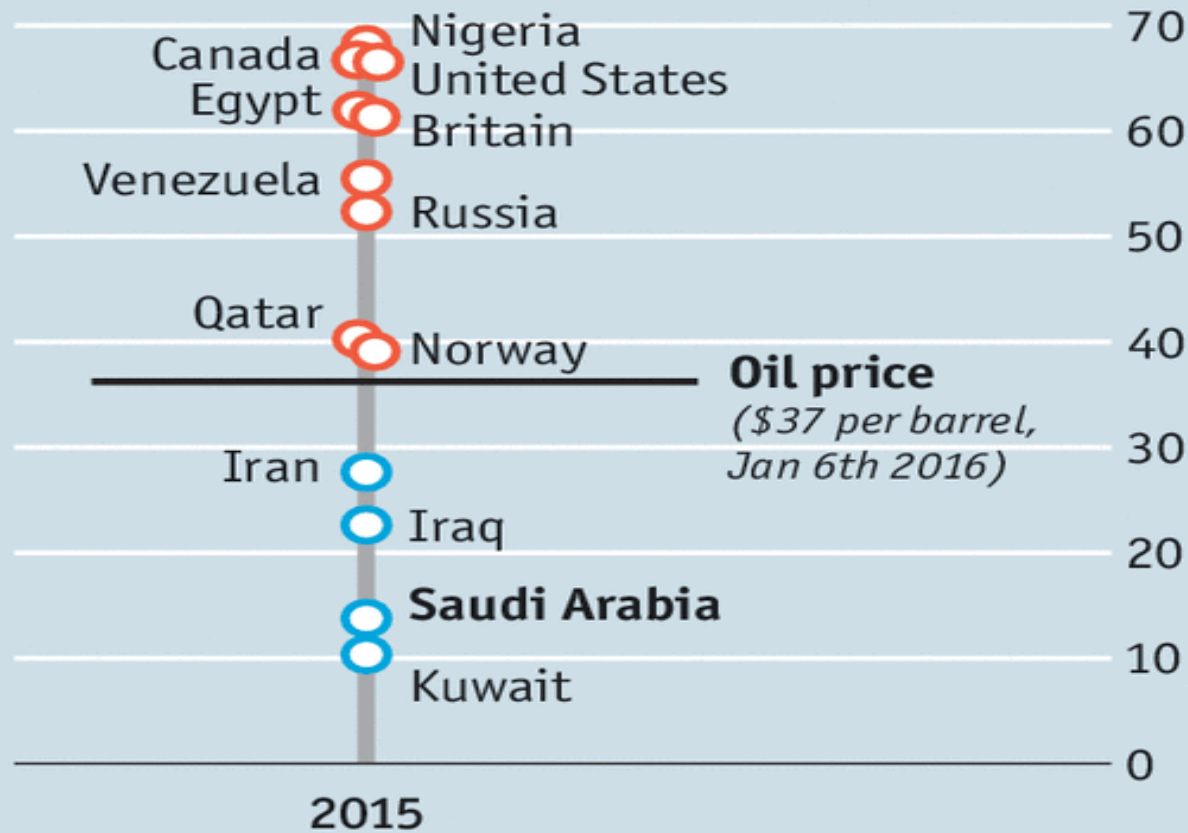
- **Share of the Gulf and Middle East Countries of Global Oil and Gas Production in 2013:**
 - Oil Production: 33% (peaked in 1975 with 37%);
 - Gas Production: 17%;
- **Global Share of Proven Oil Reserves of Gulf/Middle East Countries:**
 - 2013: 48%;
 - 2005: 56%;
 - 1993: 64%.
- **Larger Trouble for the US Oil Production and Having a Market Impact?**
 - Saudi Arabia forced to decrease oil prices over a longer period to >US\$50;
 - average cost of a US shale well is expected to decline by another 40% in the next years to better management of factors such as planning, logistics, and relationships with suppliers.
- A sustained lower oil price below US\$50 could jeopardize social-economic stability of producer states in the Middle East, which hitherto had not been affected up by the instability of the Arab spring.

Break-Even Oil Price 2015

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Straws in the sand

Break-even oil price*
2015, \$ per barrel

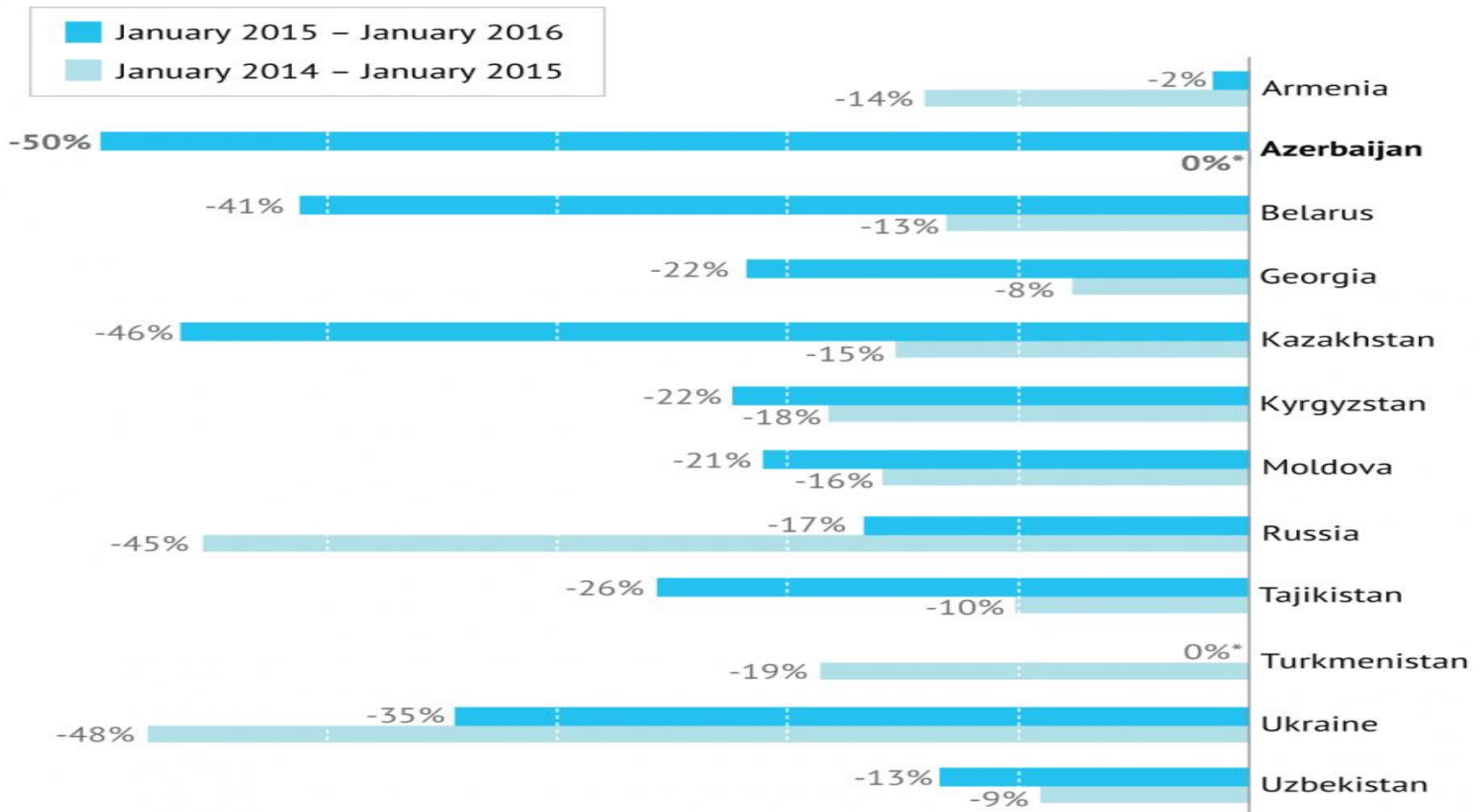


Source: Rystad Energy

*Price at which profit is made

Impact of Falling Oil Prices – Currency Devaluation (0116)

LOSS IN CURRENCY VALUE VS. U.S. DOLLAR



*Azerbaijan unpegged its currency from the U.S. dollar in late 2015.

Turkmenistan's is still pegged but it was devalued in 2015 for the first time since 2008.

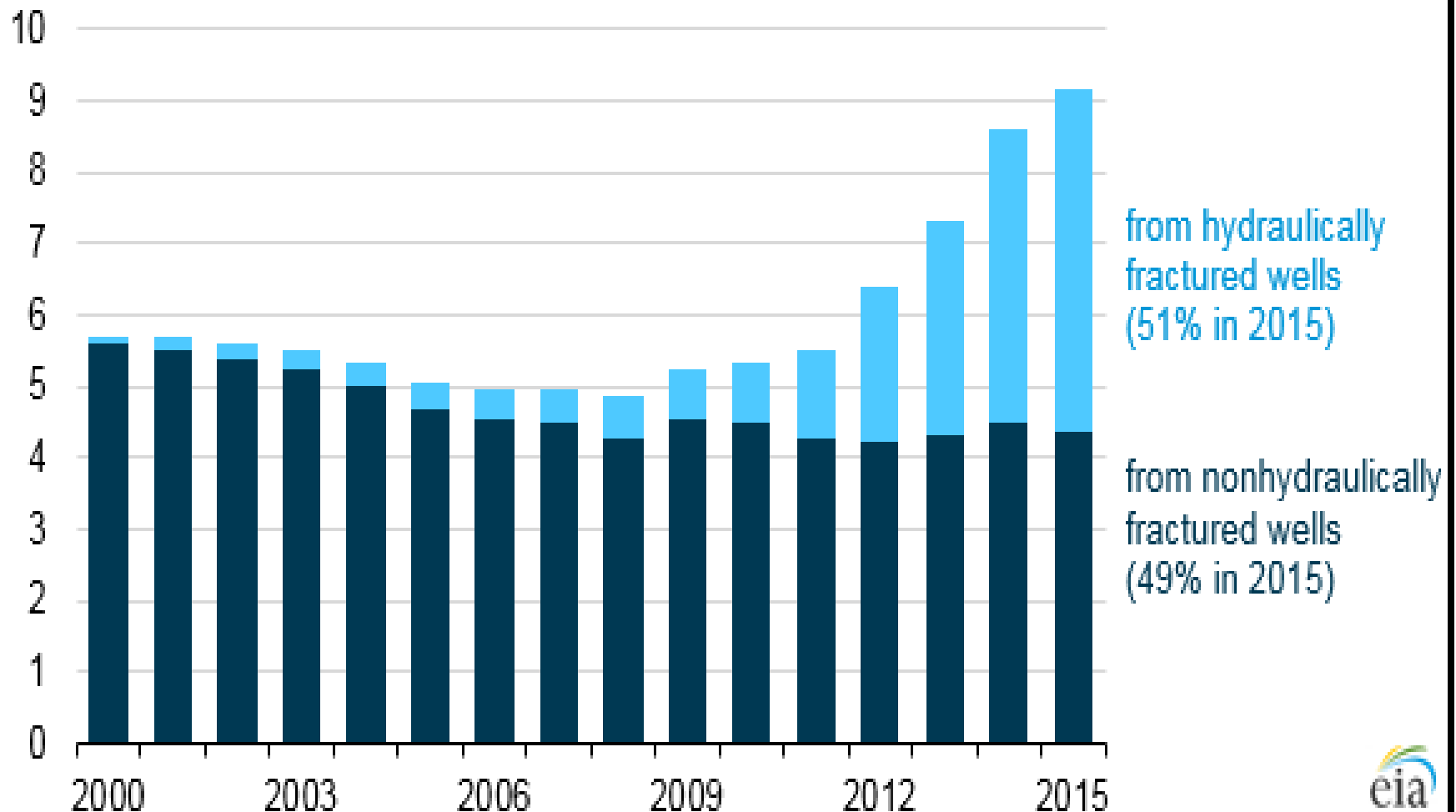
Source: Bloomberg

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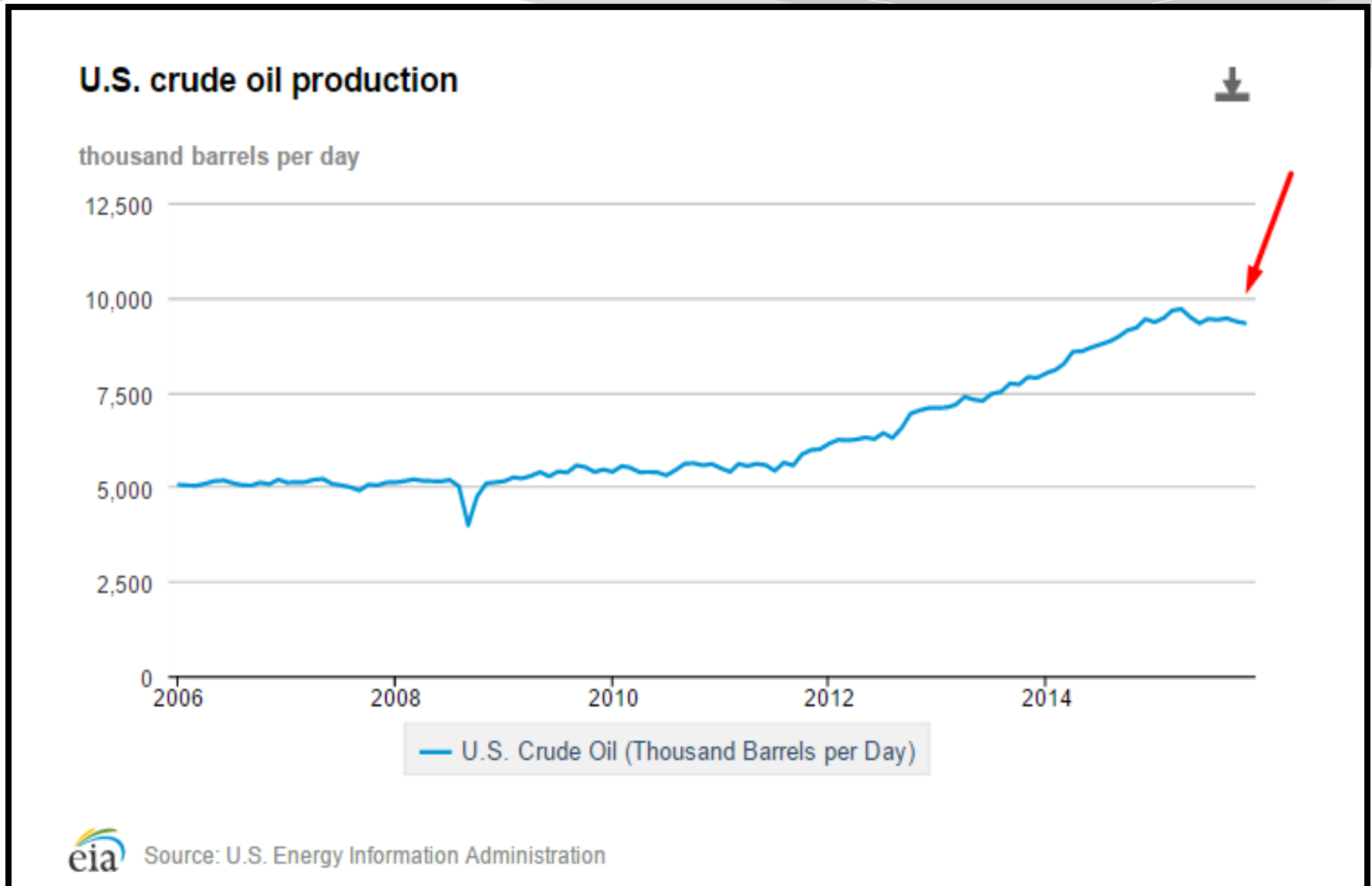
Oil Production in the U.S. 2000-2015

Oil production in the United States (2000-2015)

million barrels per day



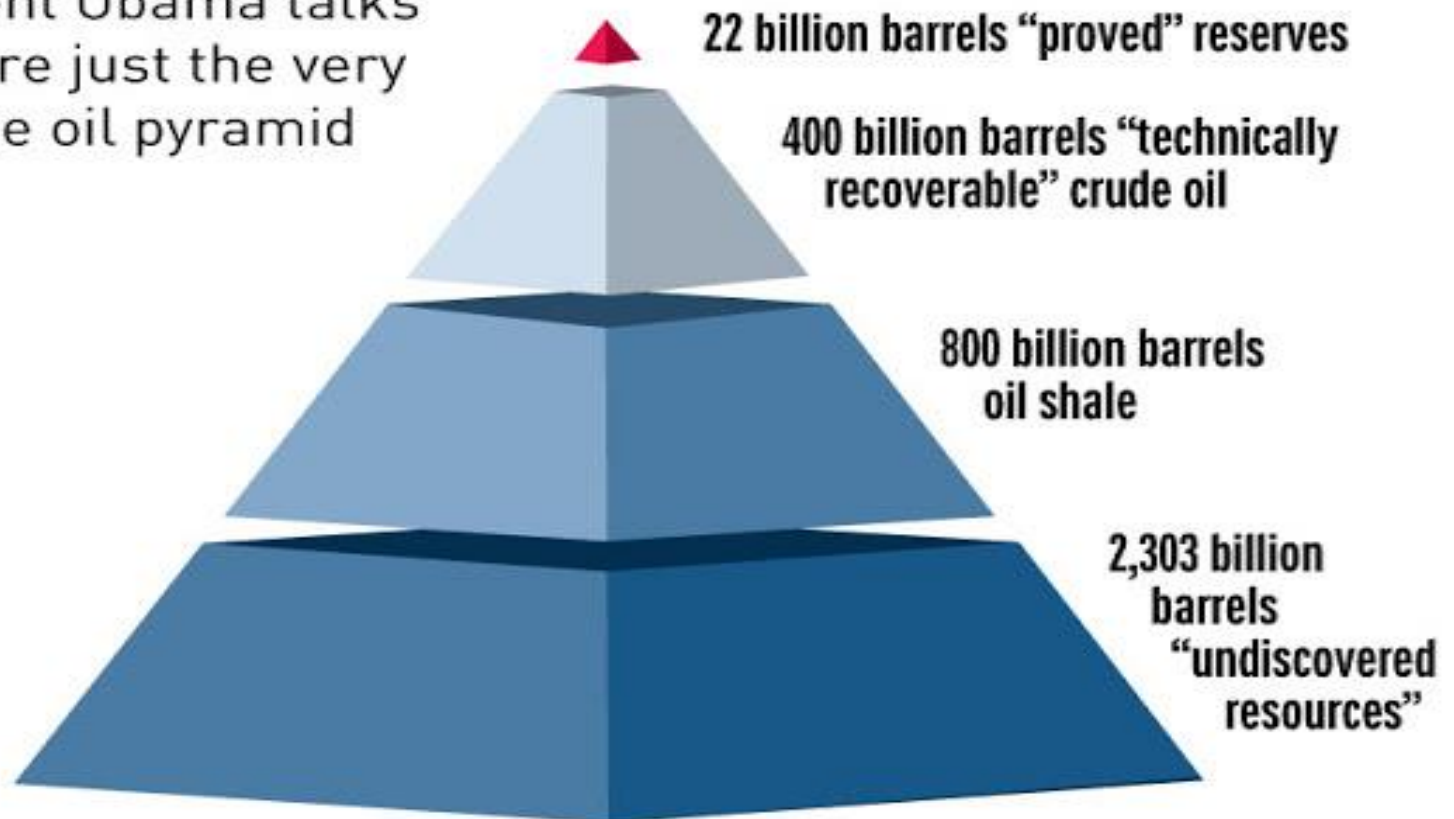
U.S. Crude Oil Production: Gradual instead of Drastic Decline in 2016



U.S.A: Oil Scarcity Myth

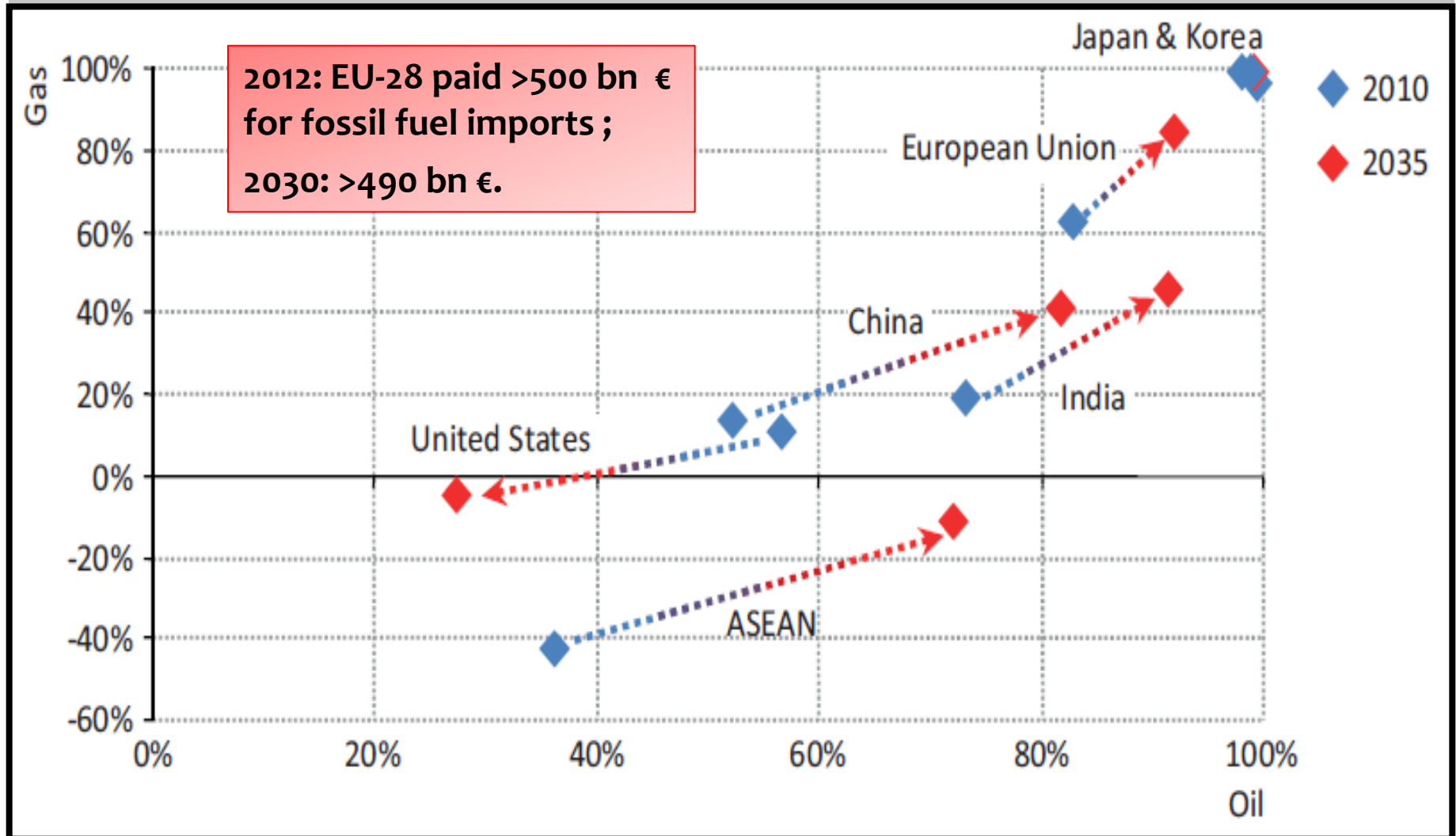
The Oil Scarcity Myth

The U.S. oil “reserves”
President Obama talks
about are just the very
tip of the oil pyramid



Sources: Energy Information Administration, Dept. of Energy, Rand Corporation, Institute for Energy Research

Net-Oil- and Gas Dependency of Different Countries and Regions 2010-2035





**Thank you very much
for your attention!**