



Atlantic Council

GLOBAL ENERGY CENTER

Geopolitics and a Changing Energy System

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The Big Disruption: Three Drivers

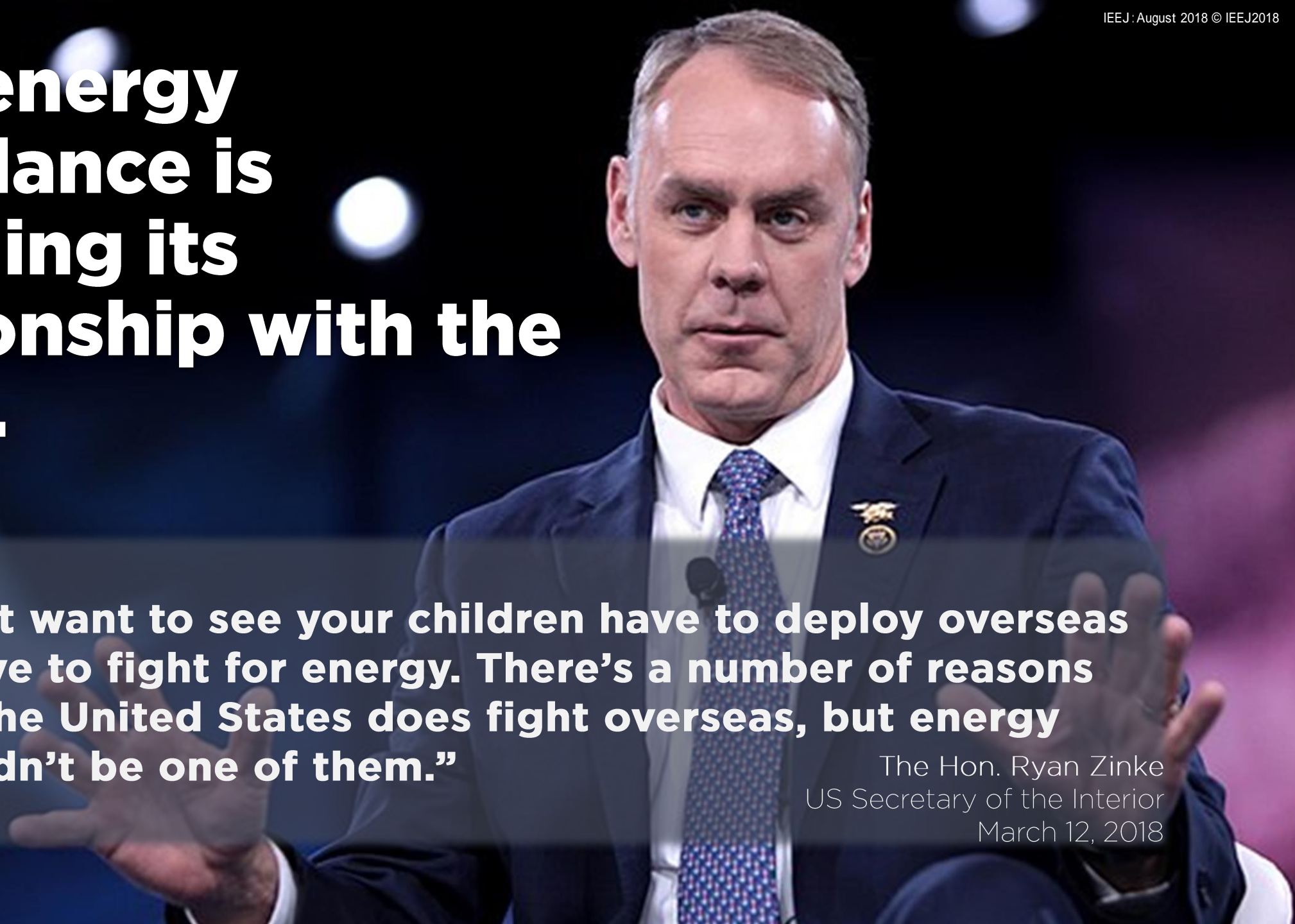
1. US energy abundance is profoundly changing Washington's geopolitical calculus, at best triggering a re-evaluation of traditional relationships, at worst encouraging it to withdraw from the world.
2. The global race for technological leadership – including in AI, blockchain, robotics, biotechnology, and green energy – is dramatically altering the geopolitical and geoeconomic landscape. 'Geotechnology' will be a pillar of the international system in the 21st century.
3. Peak oil demand will destabilize the geoeconomic order, creating winners and losers, undermining many already-fragile states.

1. US energy abundance is changing its relationship with the world.

“

I don't want to see your children have to deploy overseas to have to fight for energy. There's a number of reasons why the United States does fight overseas, but energy shouldn't be one of them.”

The Hon. Ryan Zinke
US Secretary of the Interior
March 12, 2018



Waning Security Guarantee

The shale revolution is one of a number of drivers causing the US to rethink its role in the world. At 74 years old, the 'Bretton Woods' international system insured by active US participation is weaker now than its entire history.

Disengaged United States

An Evolving and Emerging China

No Other Natural Global Leader

Key Risks to the International System

Increased US Risk-Taking with Energy Producers

Reduced Investment in Insecure Regions

De-Dollarization of the Global Economy

Militarization of Supply Choke Points

2. Geotechnology is the new geopolitics.

“

Geotechnology today is what geopolitics were to the nineteenth and twentieth centuries. A cluster of new technologies...will do more than just transform science. They will determine how we all live and function. Geotech – the race for technological leadership among the world's powers – will remake the global order.”

Frederick Kempe

President and CEO, Atlantic Council

June 26, 2018

The Geopolitics of Technology

AI, Blockchain, Biotechnology, robotics, and clean technology all enhance military capabilities and provide opportunities for geoeconomic power.

Hard Power

“4th Offset”

New Priorities &
Opportunities

Economic Leadership

Industrial Policy

Resource Challenges

Evolving Trade
Relationships

Soft Power

Technology and
Society

Gov-Public Relations

Tech Leadership by ‘Going Green’

Energy security concerns and a desire for economic leadership are driving efforts by Japan, South Korea, and China, among others, to seize technological leadership in the green energy revolution.

China

40% of new vehicle fleet to be an EV or plug-in hybrid by 2030

Japan

Target for 800,000 hydrogen fuel cells in operation by 2030

South Korea
2% of GDP Spent on ‘Green Growth’ Initiatives

Geopolitics of Renewables

The decline of fossil fuels doesn't mean the end of energy geopolitics, renewables will make some geopolitical challenges sharper, while bringing new challenges into the fold.

Critical Minerals

Sensitivity, Scarcity,
and Strategic Control

Cross-Border Energy Trade

New Hubs, New
Transit Points, New
Interconnectors

New Security Challenges

IoT and the Grid,
Developing World left
out

Source: Reed Blakemore, et. Al "Energy Source Explains: The Rush for Battery Resources"

Atlantic Council, February 2018;

Meghan O'Sullivan, et al. "The Geopolitics of Renewable Energy", Harvard University, June 2017

3. Peak oil demand will further destabilize the geoeconomic order.

“

We initiated a program in Mubadala called ‘lower for better.’ We introduced very aggressive cost efficiency and optimization into the system, and I can say proudly now: we are ready for any oil price scenario.”

MUSSABEH AL KAABI

CEO, Mubadala Petroleum and Petrochemicals

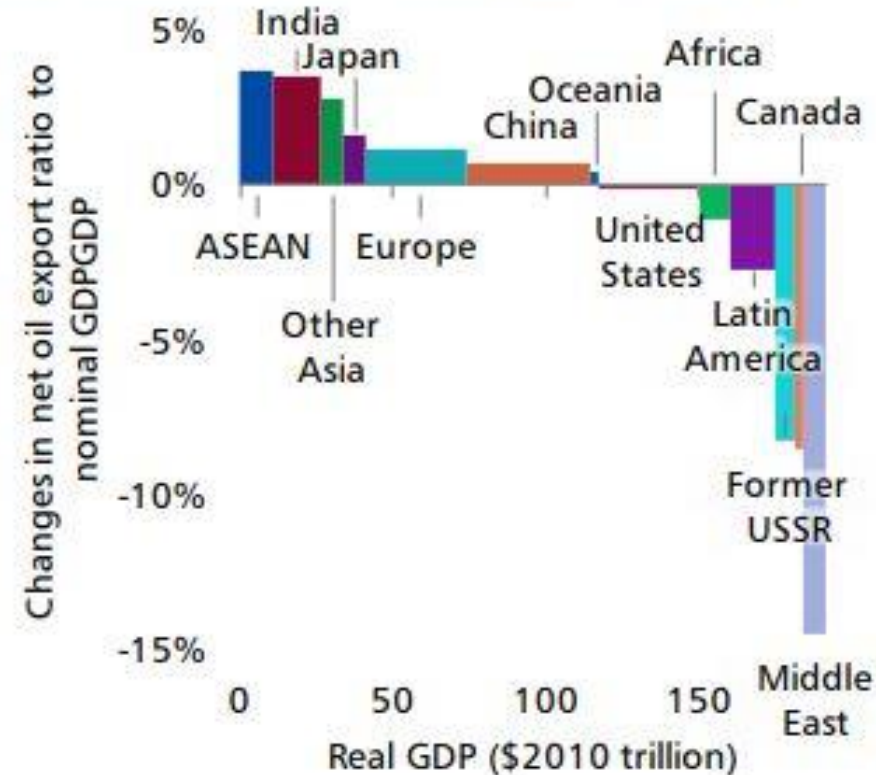
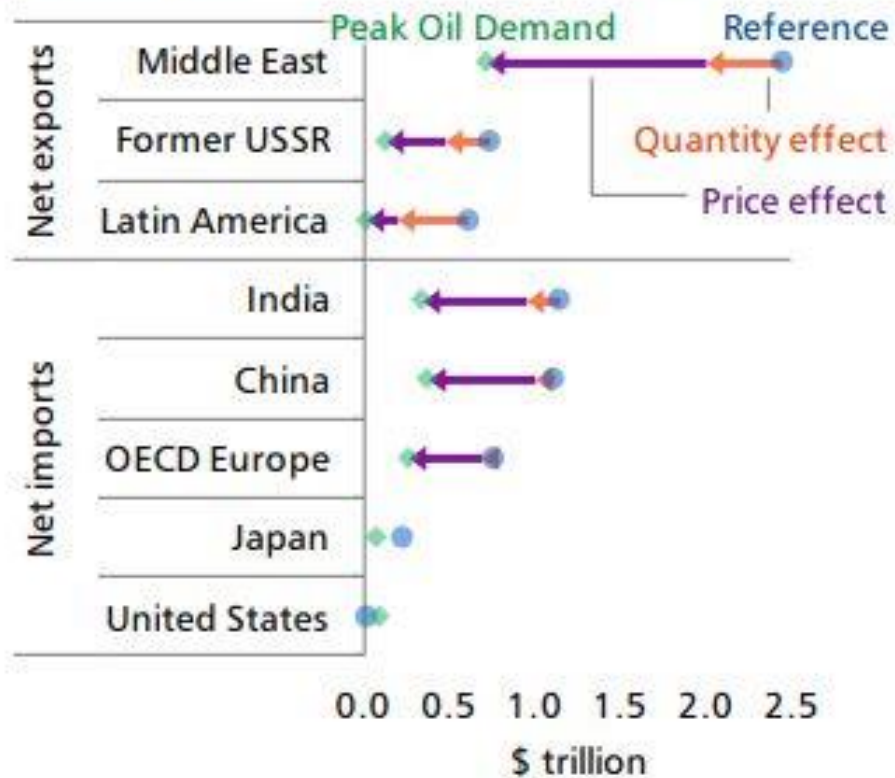
January 13, 2018





Winners & Losers of Peak Demand

Changes in net oil exports/imports and ratios to nominal GDP [2050]



Note: Europe excludes the former Soviet Union



Winners & Losers of Peak Demand

Key Themes

High-cost producers no longer economically viable

Fiscal deficits and internal instability

Diversification challenges of “connectedness”

Market inefficiencies and stranded assets



Peak Oil Demand *Predictions* Are Already Impacting the Market

Focus on Short-Cycle Investments

OPEC Price Concerns

**Opportunities for natural gas and clean tech
exporters**

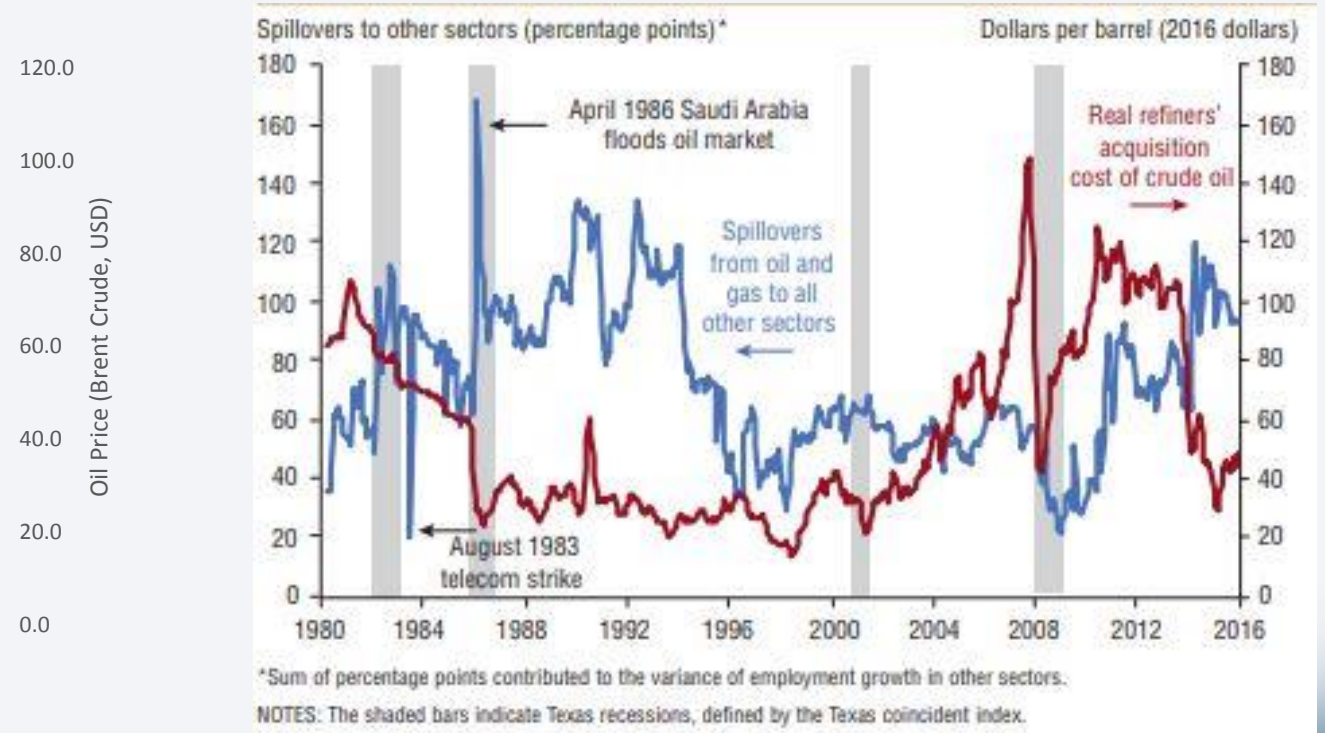
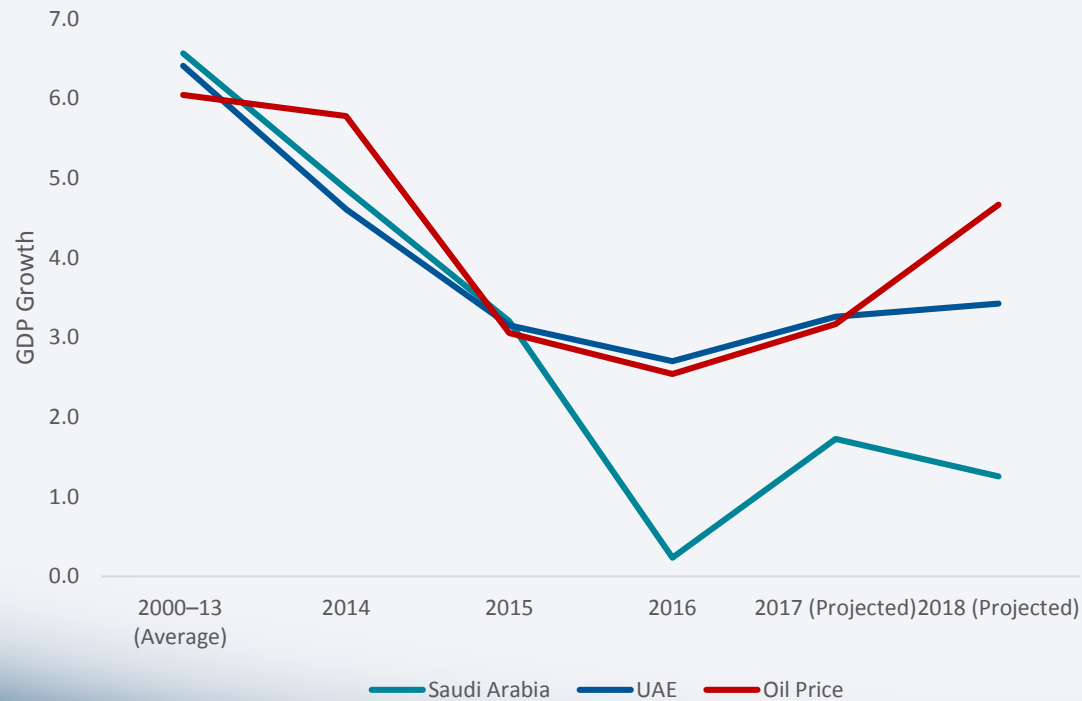


The Diversification Challenge

Lessons from Texas

Saudi Arabia & UAE Non-Oil Real GDP Growth x Oil Price

Expressed as a Percentage of GDP



*Sum of percentage points contributed to the variance of employment growth in other sectors.
 NOTES: The shaded bars indicate Texas recessions, defined by the Texas coincident index.

Source: Dallas Federal Reserve Bank; Randolph Bell, "GCC Economic Diversification, Lessons From Texas". Atlantic Council, February 2018



The Diversification Challenge

So what does this tell us about true diversification?

The metric of oil to non-oil GDP is not the whole story

“Connectedness” matters

New industry needs to be separate from oil demand



The Big Disruption: What it Means

1. Oil importers are the winners. For China, it is a win-win given its geotechnological leadership.
2. The US is economically ok, but continues to disengage.
3. Instability in oil producing states demands a new security framework because of the continue need for oil regardless of a 'peak demand' scenario. But who fills the void remains uncertain.



Key Questions for Leaders

1. What does a “Bretton Woods 2” look like?
2. How does a new international system manage technological competition, particularly new technologies with significant potential negative impacts?
3. How do we make sure the benefits of the green energy revolution – and the benefits of other new technologies – are shared widely while at the same time rewarding those who created the technologies?
4. How do we support the diversification efforts of countries like Saudi Arabia and the UAE while still working to ensure our own technological leadership?
5. What do we do with states that aren’t even beginning to diversify?