

# Resources and Geopolitics

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**CHATHAM  
HOUSE**

The Royal Institute of  
International Affairs

# Presentation outline (1)

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- **Questions 1 - 3**

- Q 1. How do we forecast future changes in supply and demand and consider long-term price trends from a long-term perspective stretching out to 2050 for crude oil, gas, and coal? What are the important factors in this respect? **(I will focus mainly oil and gas)**
- Q 2. What are the factors that determine the structural geopolitical changes over the long-term?
- Q 3. What are our views of the geopolitical structural changes in the Middle East? How do they affect Japan's energy security?

- **Problems forecasting long term energy markets**

- **Simultaneity problem**
  - Price = f(S, D); Demand = f(price); Supply = f (price)
- **Value of forecasting to 2050? Role of discontinuities**
  - Trends, bends in trends, discontinuities
  - Best option to consider the journey, not the end point

## Presentation outline (2)

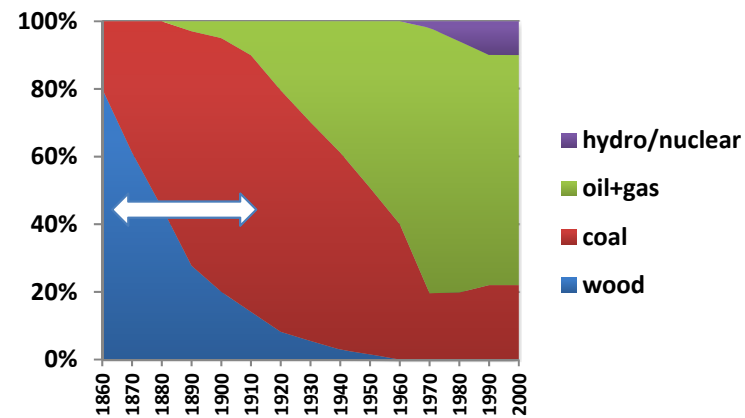
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- My main narrative: There is a coming “energy transition”
- Transition underestimated by the “energy establishment”
- Within this narrative I will focus on a few specific issues if only to illustrate complexities.
  - Three technical economic issues
    - Is long term oil demand being over stated?
    - Prospects for oil supply
    - What is the future of LNG markets?
  - Two geopolitical issues
    - The potential for a renewal of the “cold war”?
    - Potential serious instability in the MENA region notably Saudi Arabia?

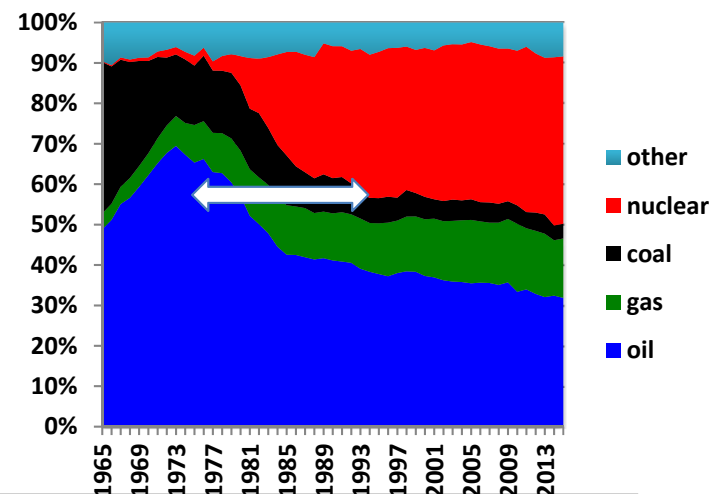
# What is an “energy transition”?

- An economy switches from one major source of energy to another
- Many lessons from history
  - For example: US 1865-1910; France 1974-90
- An “energy transition” has trigger(s) and reinforcing factors. Key to the process is technical change
- Current “energy transition” is from hydrocarbon molecules to electrons

United States' primary energy consumption by fuel 1860 - 2000



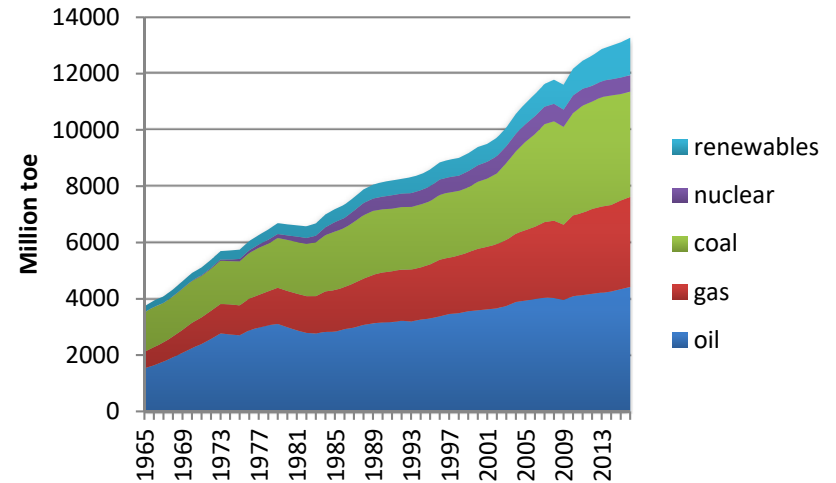
France primary energy consumption 1965-2015



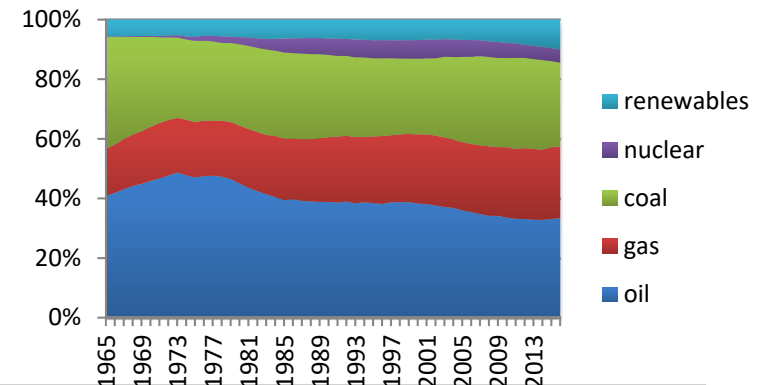
# The current energy transition

- The main trigger is climate change, Paris and COP21 and the need to decarbonize
- Reinforcing factors:
  - Falling costs of renewables
  - The rise of electric vehicles

Global primary energy consumption  
1965-2016



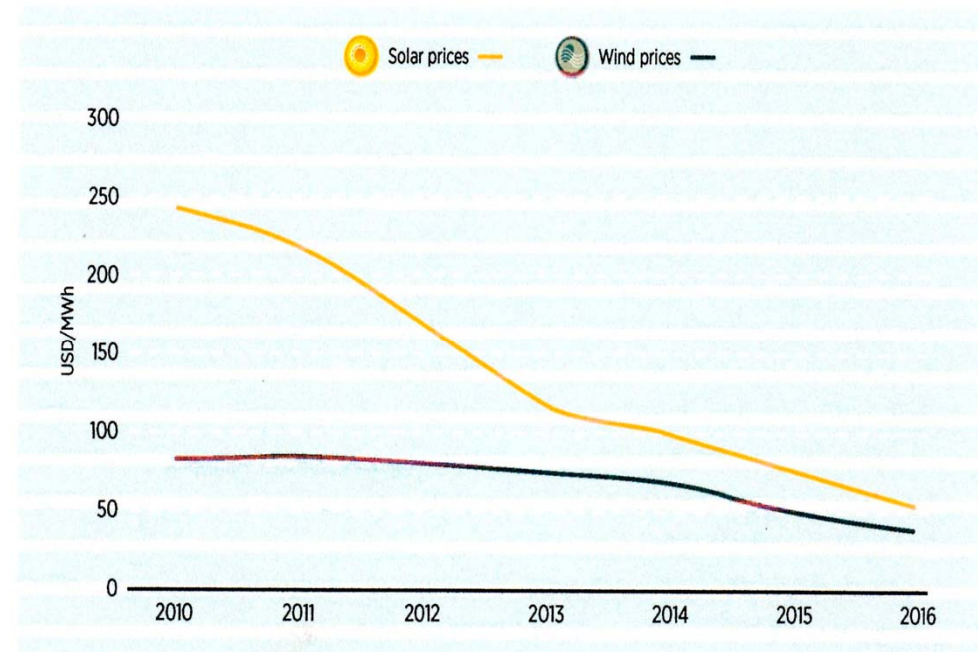
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# Reinforcing factors?: Falling cost of renewables

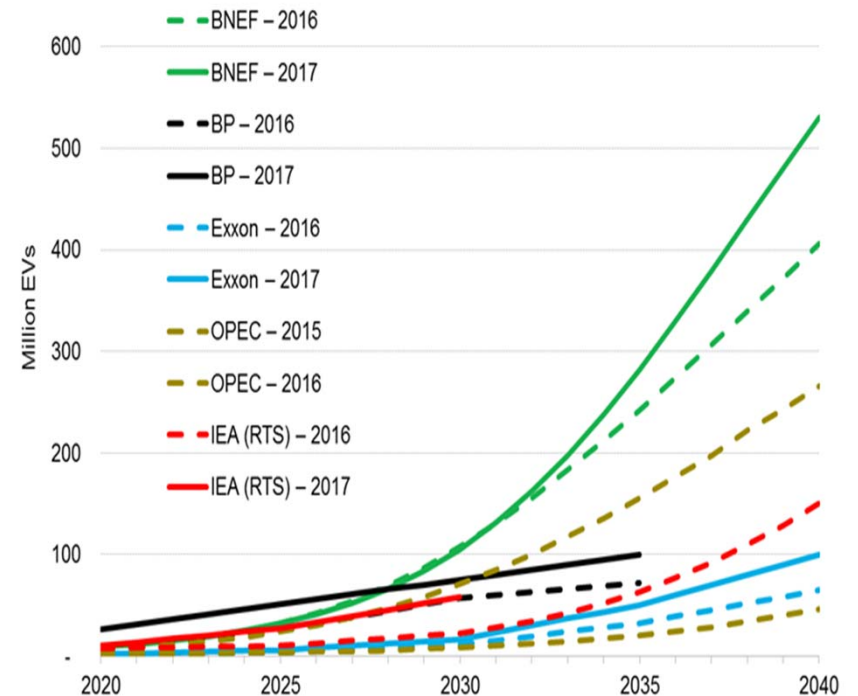
Average auction price 2010-16 (Irena)

- Already started and accelerating



# Reinforcing factors?: Electric vehicles (EVs)

- Being underestimated in many “energy establishment” forecasts
- EVs tick all the right boxes
  - Security of supply
  - Climate change (given renewables)
  - Potential storage for renewable intermittency
- Clear policies to phase out Internal Combustion Engines (ICEs): France, UK, China, Automobile companies



Graph collated by Dan Quiggin, Chatham House

# Current “energy transition” underestimated by the “energy establishment”: All very much ‘business as usual’

Annex

## Comparison with other energy outlooks

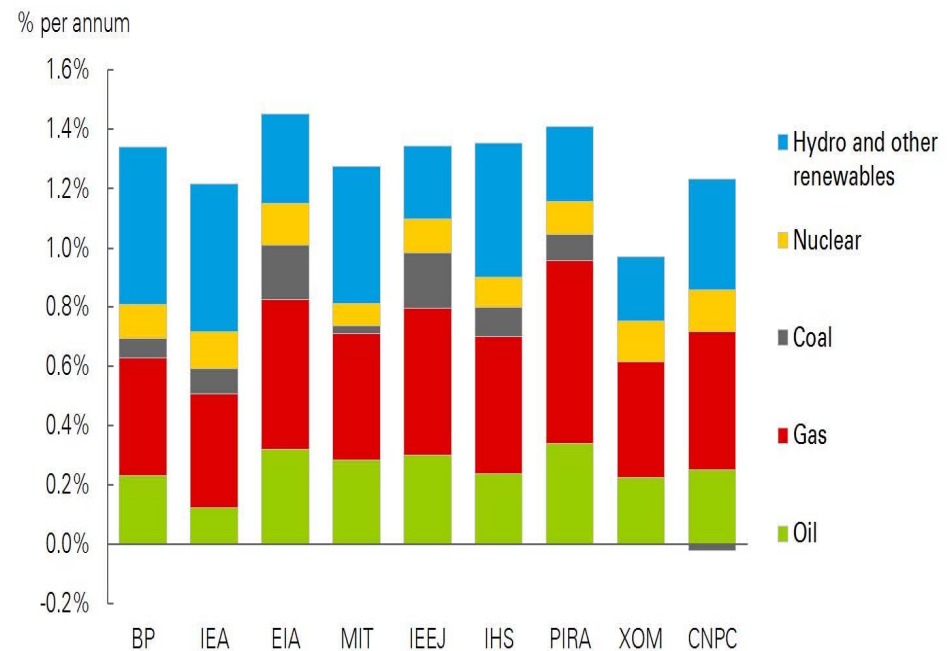


### Why are they ignoring it?

#### Strong vested interests

- IEA’s original agenda
- Safety in numbers
- International Oil Companies (IOCs) face shareholders

Contributions to growth of energy consumption, 2015-2035



For a key to the outlooks and details of sources see page 102



## Presentation outline (2)

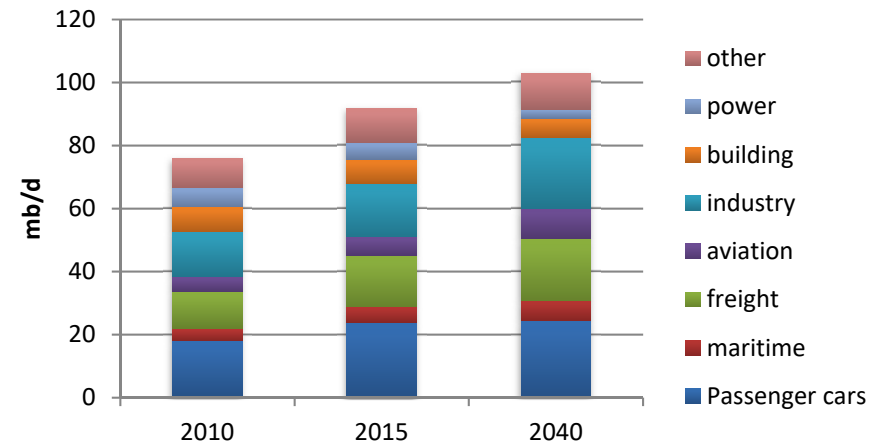
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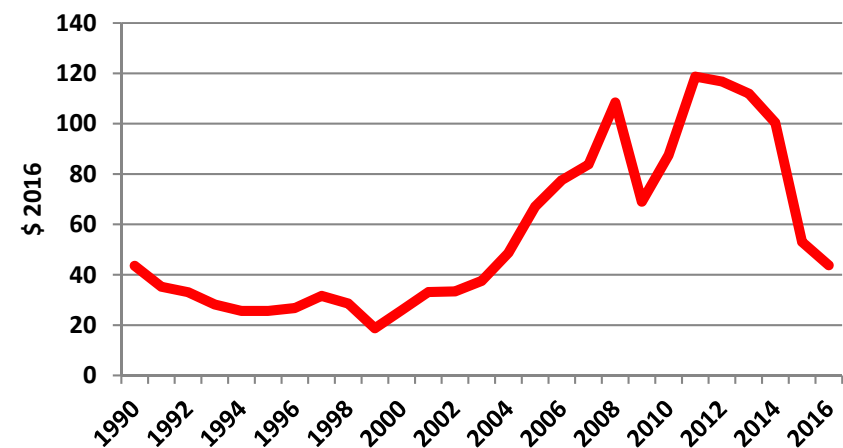
# Technical economic issues: Is long term oil demand being overstated?

- “Energy establishment” typically insists on growing oil demand
- Underestimates long term lagged impact of higher prices: same as the early 1980s
  - High prices 2004-2014
  - “OECD disease” ...

IEA estimates of oil consumption 2010-2040



Oil prices 2000-2016 (Brent)

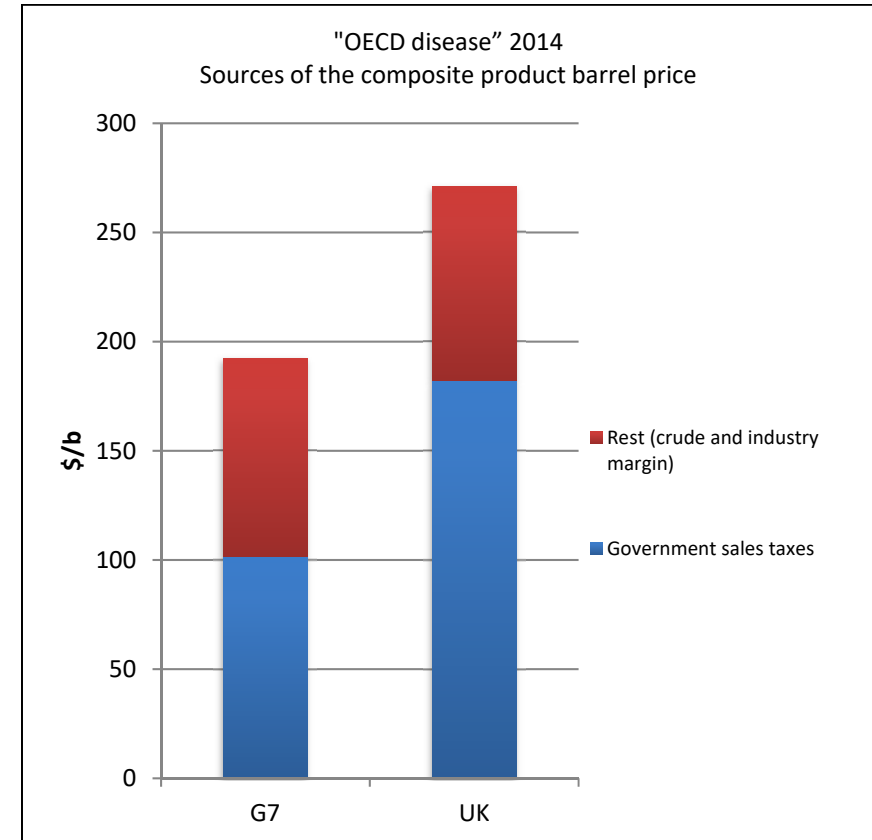


# Technical economic issues: Which oil prices matter?

## Product prices are the key to consumption

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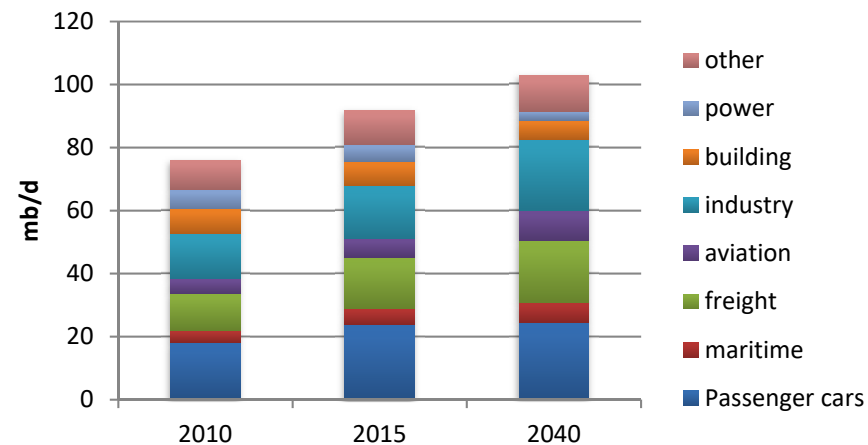
- “OECD disease”?
  - Large tax base; inelastic demand = high tax rates; low collection costs
  - Price reforms to move to border prices and collect revenue
- Already started outside the OECD– India 2002, China 2009, and many others
- Makes future crude oil prices less relevant, especially if they are lower – consumer governments will capture the gain



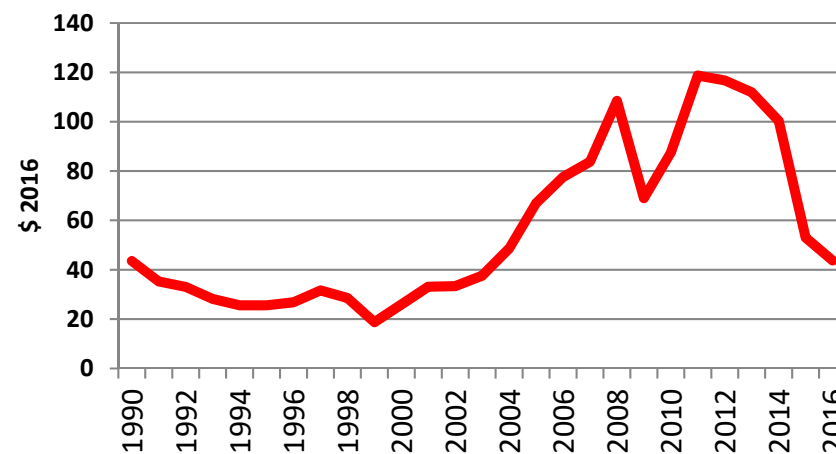
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  - High prices 2004-2014
  - “OECD disease”
- Technology increasing efficiency
  - EVs already discussed
  - Automation
  - Big data revolution
- But it takes time to change energy the appliance stock

IEA estimates of oil consumption 2010-2040



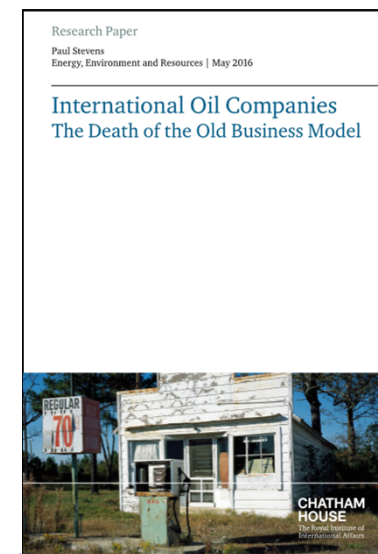
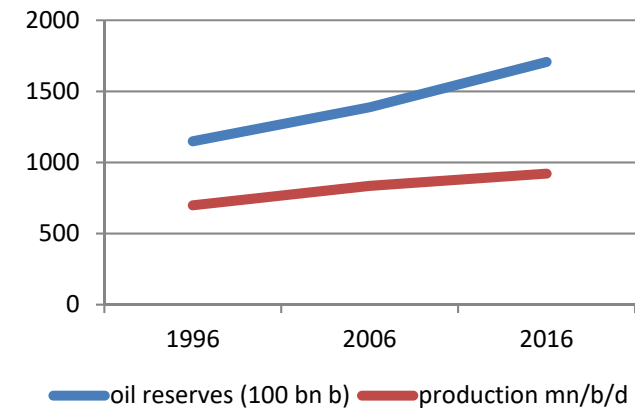
Oil prices 2000-2016 (Brent)



# Technical economic issues: Prospects for oil supply

- Supply side “Peak oil” is dead. There is plenty of oil
- Partially thanks to the “shale technology revolution”
  - But the spread of the revolution faces barriers outside of the USA
    - 17 characteristics that explain the success in the USA
- There is the issue of upstream investment
  - IOCs face major problems
  - National oil companies short of funds

Global oil production and reserves 1996-2016



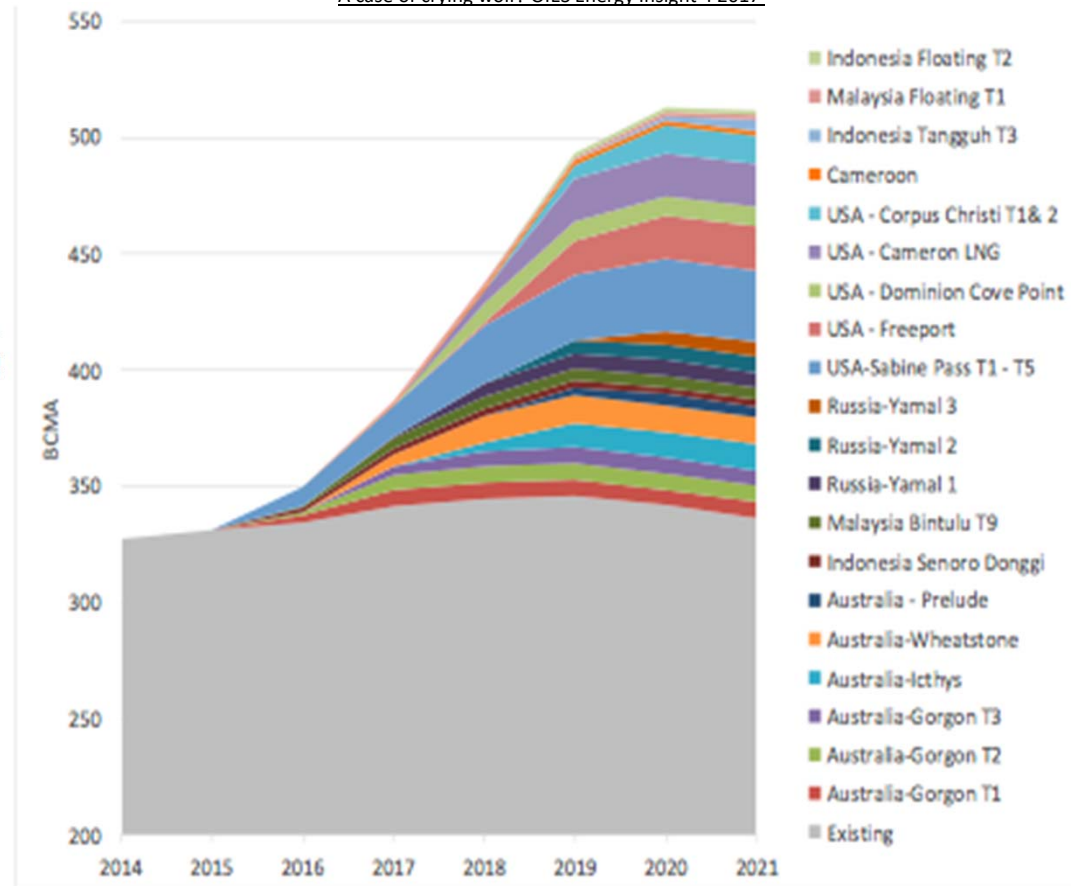
<https://www.chathamhouse.org/publication/international-oil-companies-death-old-business-model>

# Technical economic issues: What is the future of LNG markets?

- Impending LNG glut
- BUT ending Qatar’s moratorium (April) creates huge future investment uncertainty in new LNG:
  - Who would bet against Qatar?
    - Break even \$2-\$5.2/mnbtu. U.S. Henry Hub (2015 \$2.60) +\$4-5. Non U.S. \$9-12
- An impending LNG supply crunch post 2020?

## Global LNG outlook to 2021

From Howard Rogers The forthcoming LNG supply wave:  
A case of crying wolf? OIES Energy Insight 4 2017



## Geopolitical issues: The potential for a renewal of the “cold war”?

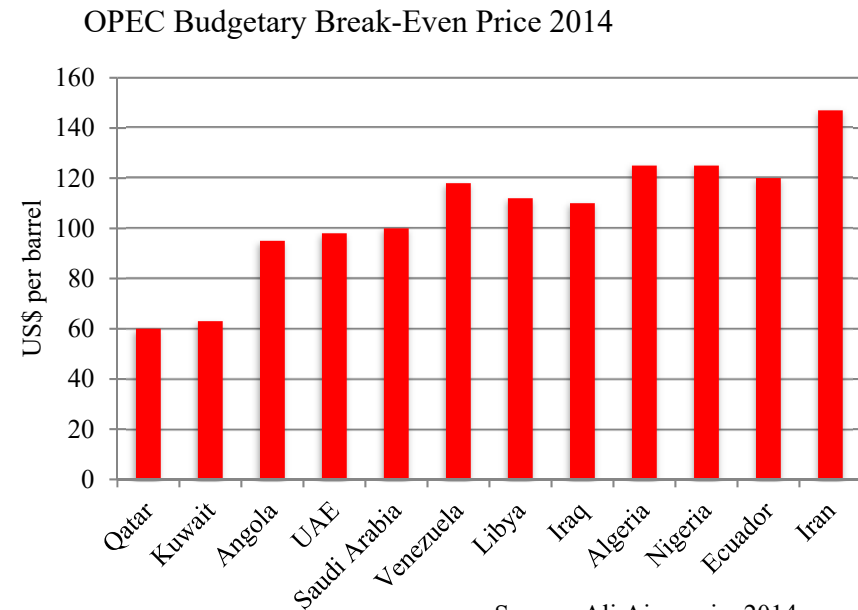
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- “Trumpian uncertainty”
- “Cold war” created patrons and client states most obviously in MENA = war by proxy
- China and concerns over security of oil supplies
- General incentive for energy “self-sufficiency” promotes energy supply

# Geopolitical issues: Serious instability in the Middle East?

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- Region already very unstable
  - Back to 1918
- There is the possibility of more instability
  - Growing economic discontent in MENA region
  - Failure of the “Arab Uprisings” of 2011 – causes not gone away!
  - “Trumpian uncertainty” and Iran
- More instability means a new geopolitically driven oil price shock
  - consumer governments likely to argue “enough is enough”, let’s move away from oil
  - A reinforcing factor for the “energy transition”



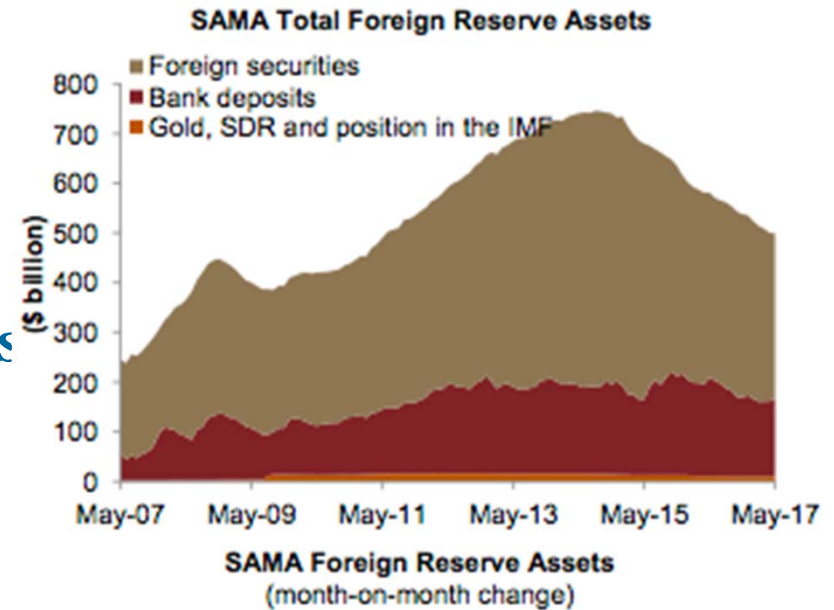
Source: Ali Aissaoui, 2014



# Geopolitical issues: Serious potential instability in Saudi Arabia?

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- Domestic economy
  - Running low on funds?
  - Poor employment prospects
  - Failure to diversify: no “perestroika” (economic liberalization) without “glasnost” (political liberalization)
- Internal dissent and family arguments
- Religious pressure
  - Militant Sunni Islamist
  - Domestic Shi’a unrest: Awamiya



## Main messages

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- Not enough attention given to a coming energy transition which is happening and will accelerate
- Future oil demand being overstated
- Future oil supply not a problem – eventually
- Future for LNG uncertain
- Middle East presents serious threats to oil supply and prices
- The prospects for Saudi Arabia are very uncertain



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# THANK YOU FOR YOUR ATTENTION

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