Global oil prices

Market drivers – and implications

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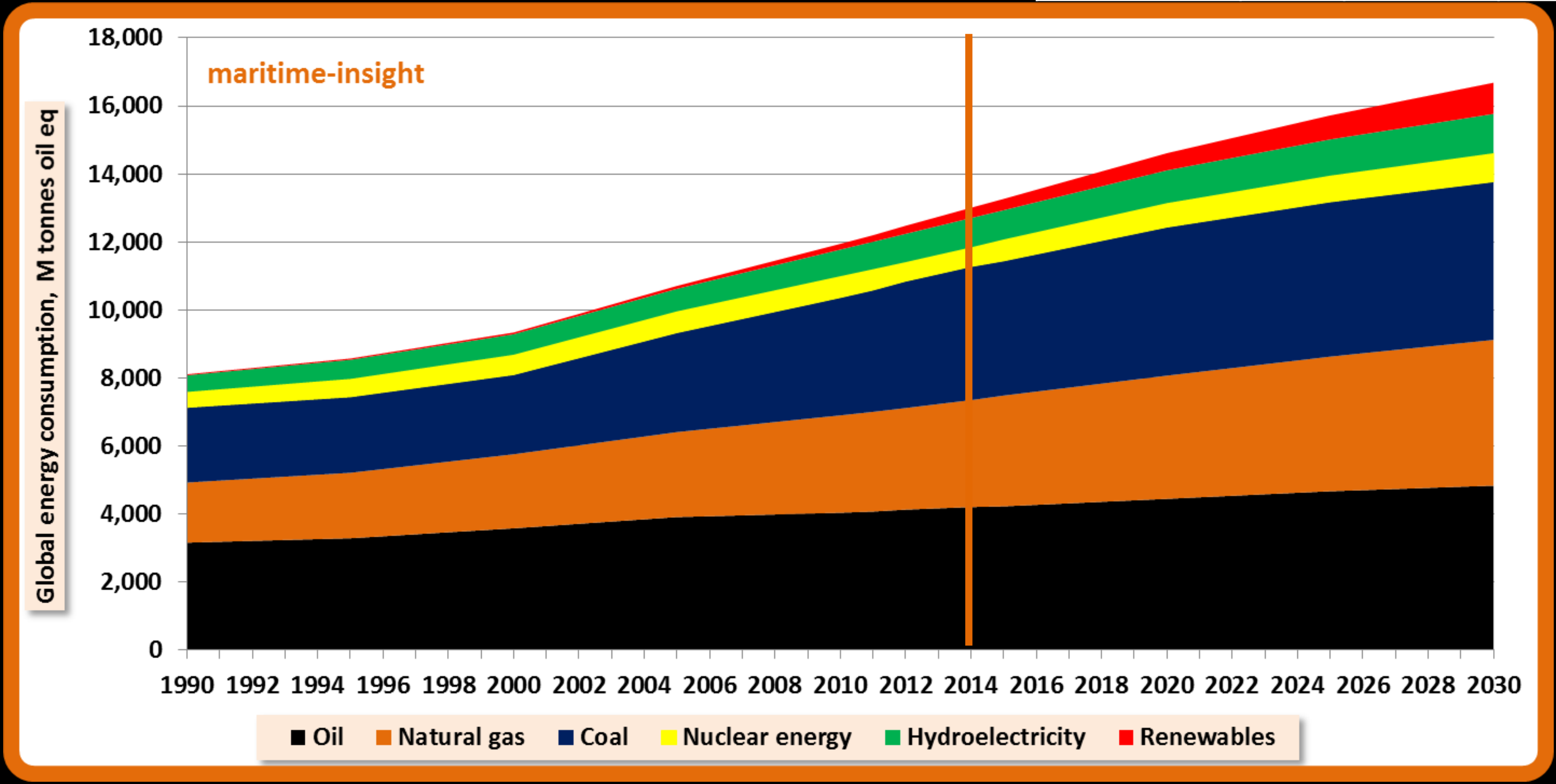
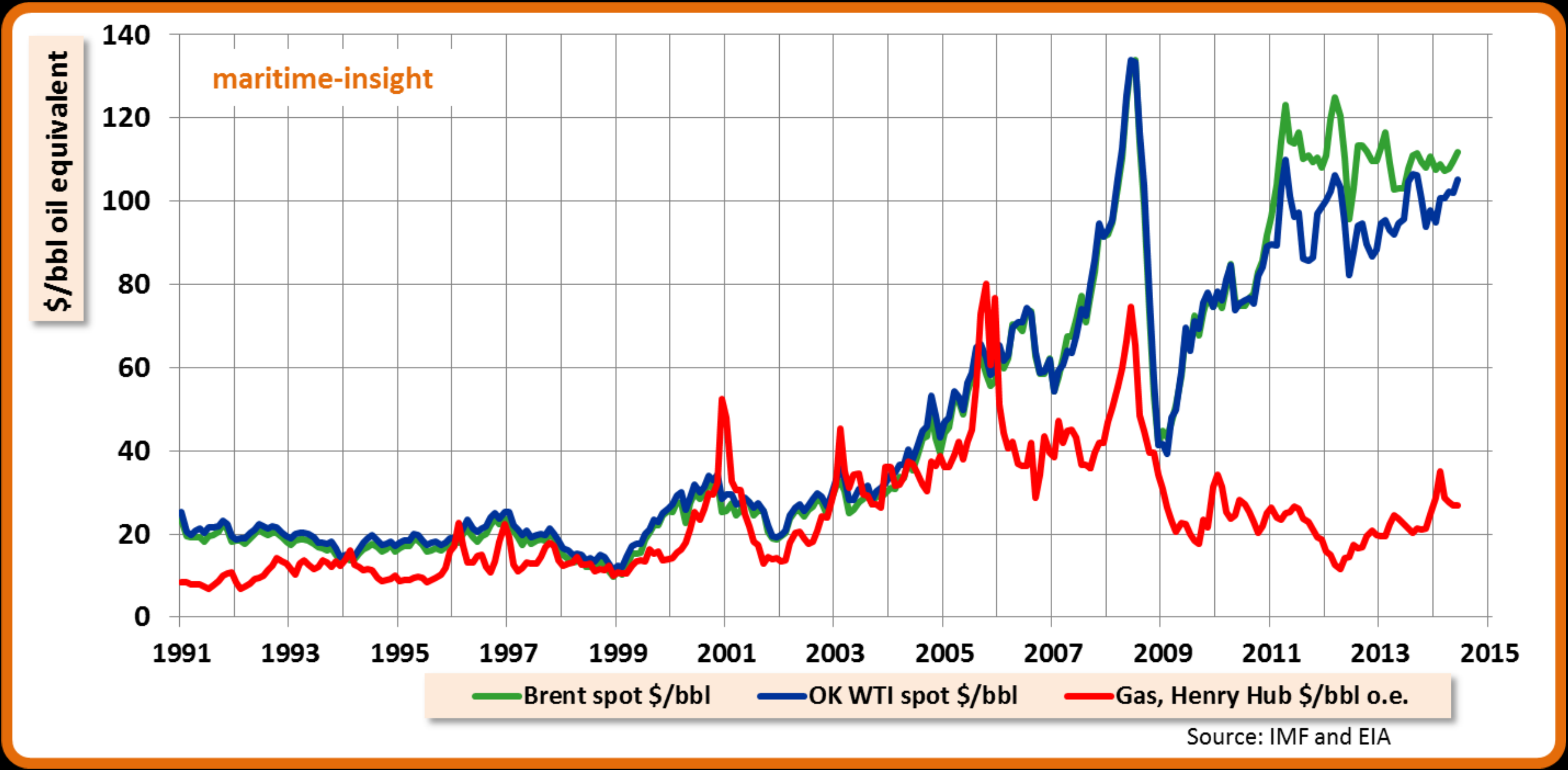
Fossil fuels completely dominates the energy market – and this is expected to continue

	Share 2014	CAGR 2014-2030	Share 2030
Oil	32.5%	0.9%	**29%**
Gas	87% 24%	**2.0%**	83% 25.5%
Coal	30%	1.1%	28%
Nuclear	4%	2.5%	**5%**
Hydroelecticity	7%	1.8%	7%
Renewables	2.5%	**7.2%**	5.5%



Some energy prices until the summer of 2014 – an illustration of a growing gap, in-between WTI and Brent but more importantly US gas



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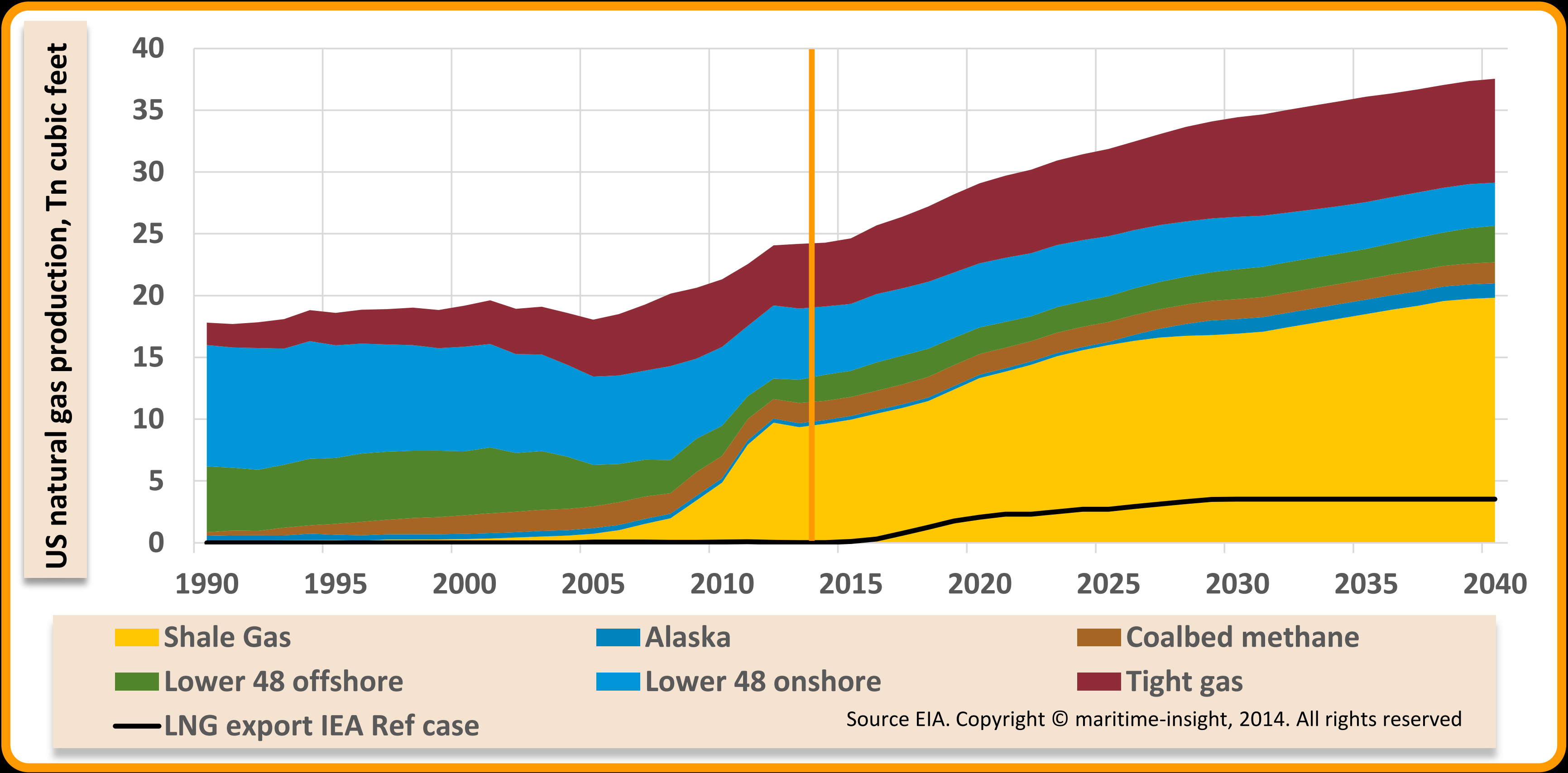
Shale gas was the reason for the price gap and it is a revolution not only on the energy market

+ Power generation
+ Chemical production
+ Energy intensive production
+ Bunker fuel in N American SECA
+ LNG for exports
+ Liquefaction capacity 10%



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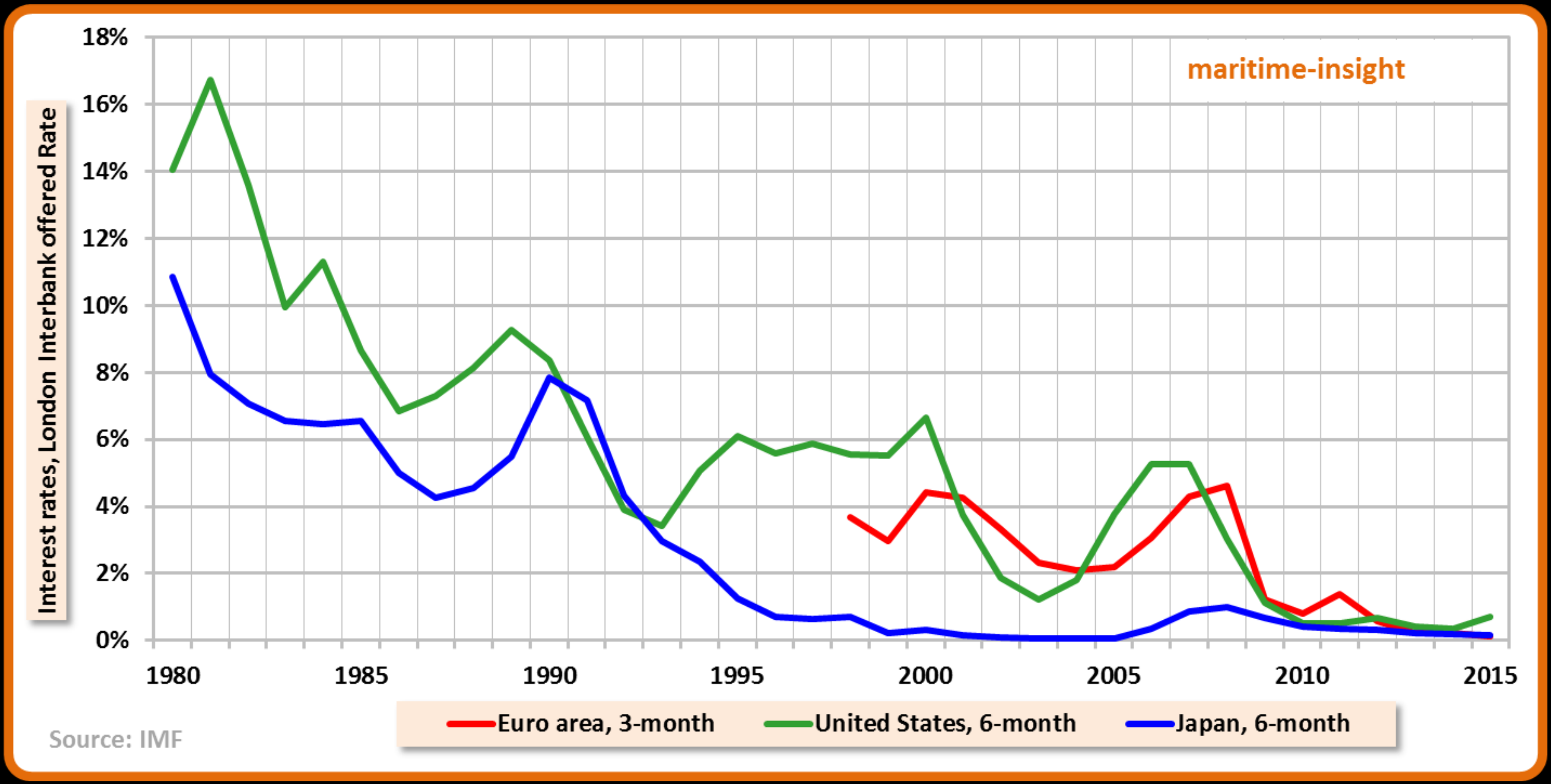
At the same time government tried to boost GDP: money became cheap



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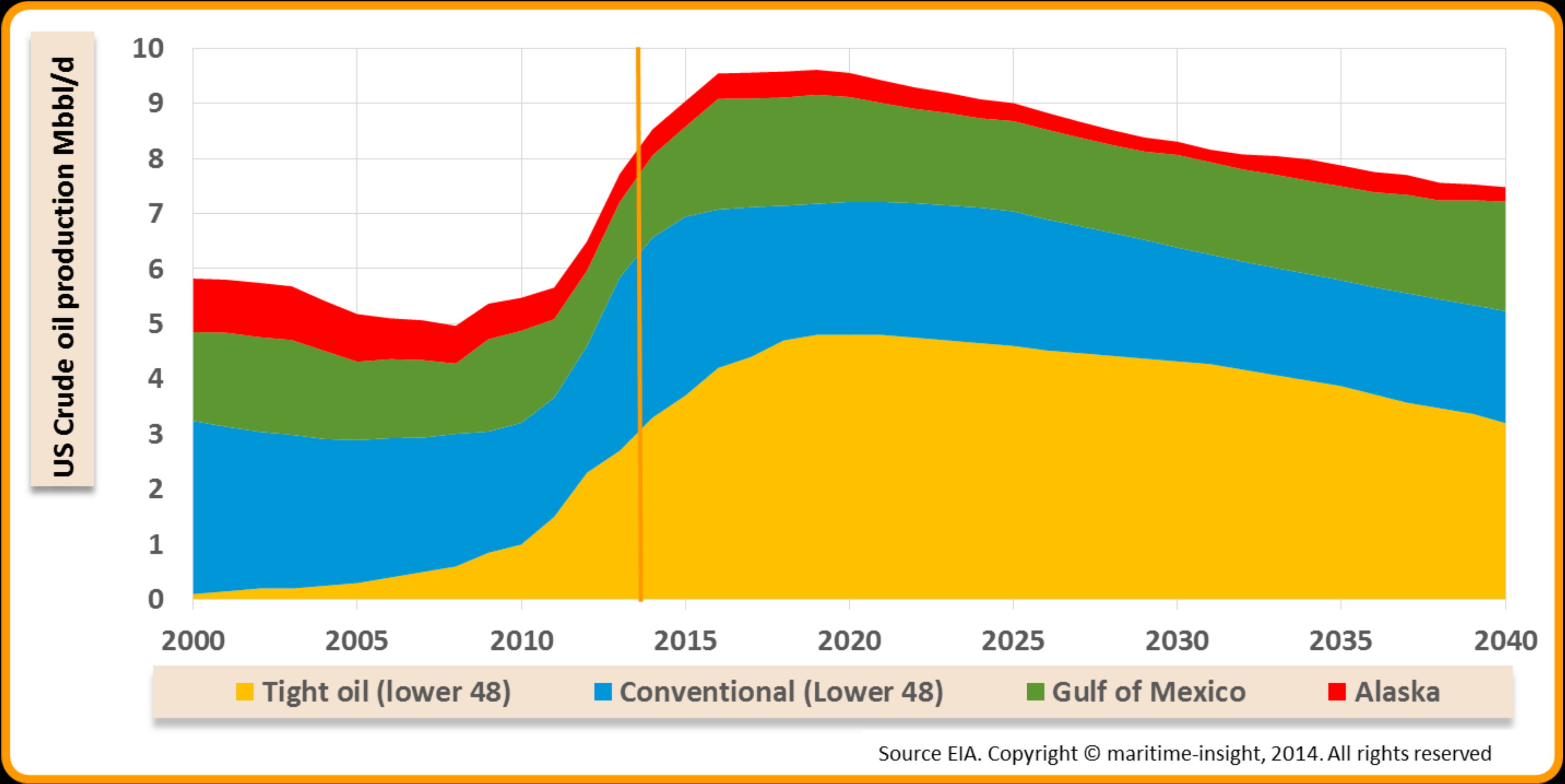
Investments in Crude oil. Production in the US – to double in 5 years – 10% of total global demand

+ US oil imports down
+ Global crude oil prices down
+ Ample supply of crude and products in North America
+ Oil product exports (diesel)



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The oil market has changed over time

- 1960 – 2010
  - Supply shortage in the West – US biggest buyer
- 2010 –
  - Supply surplus in the West
    - Tight oil in the USA (+shale gas)
    - Oil sand in Canada
    - Conventional oil in Mexico, Brazil & Venezuela
  - Export destinations from Middle East, Africa & Russia switch to:
    - China
    - India
    - Other Asia

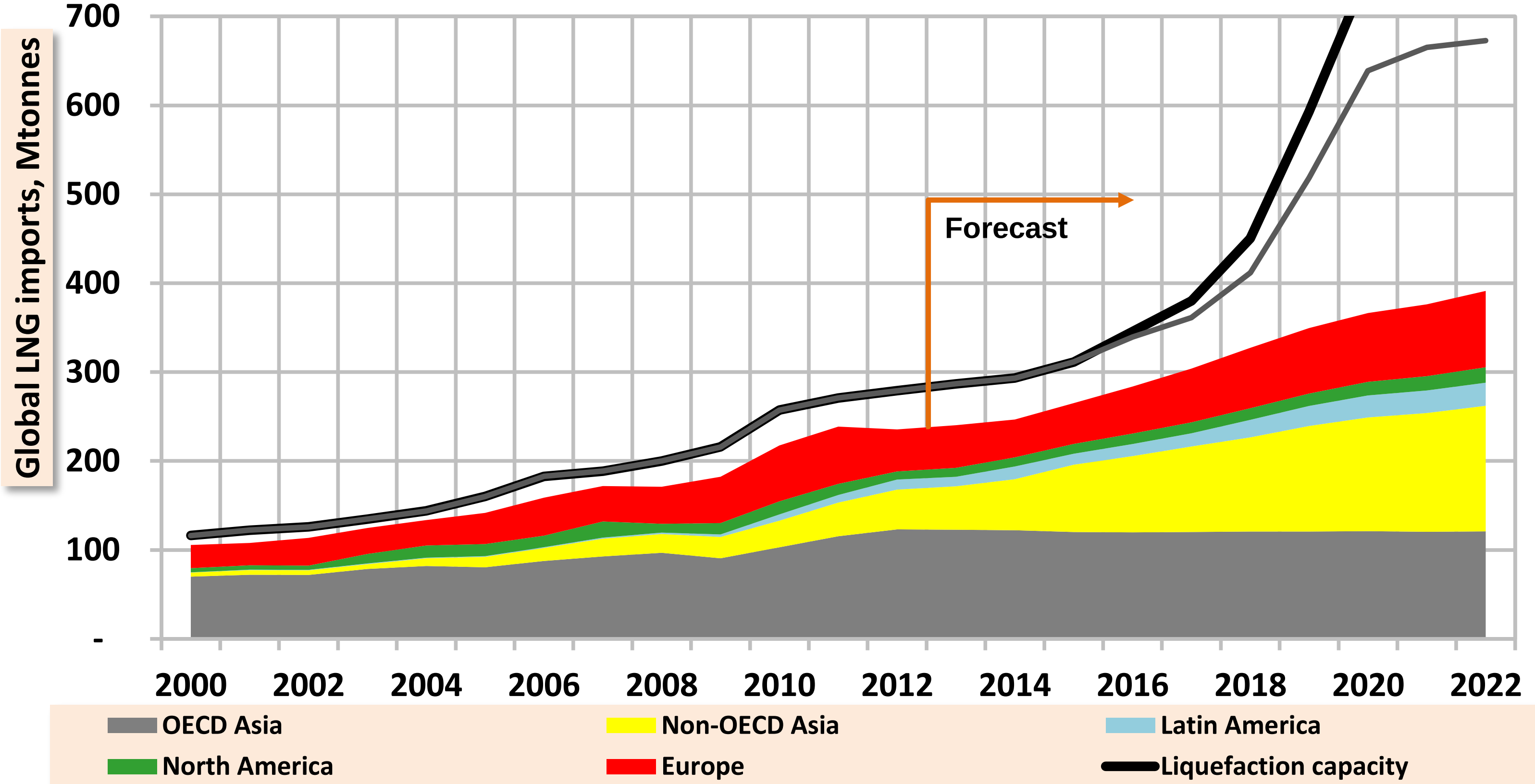
Supply side dynamics
→ new swing producer?

- Conventional oil production
  - High initial capital investments – fairly short term
  - Low variable costs – longer term
  - Robust to oil price changes
- Tight oil
  - Low initial capital investments
  - Higher variable costs
  - Sensitive to oil price changes

Supply side pluralism

- Historically, market share competition has not paid off
  - volume gains are disproportionate to price drop for sustained revenues
- Tight oil increases supply side competition
- OPEC's (Saudi's) market control
  - is reduced at price levels where tight oil is profitable
- Alternatives to oil put a cap on the oil price
  - → market share becomes important to sustain revenues
  - → OPEC has opted to defend its market share ie volume before price

Growth in liquefaction capacity outpaces forecasted LNG imports (demand). In other worlds – there is a lot of the alternative



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There are however things that speaks for higher prices as well

- OPEC
  - Libya: big problems with stability and disruptions
  - Irak: production start in West Qurna-2 & Badra
  - Iran: depending on sanctions (USA-Russia)
  - Venezuela: problems with stability and disruptions
- Non-OPEC
  - project delays
  - geo-political disruptions
  - decline in yield from old fields

In short

- Crude oil production stability: Saudi Arabia
- Swing producer: USA?
- Rest of world: unstable and/or uncertain conditions
- Competitive export prices from US refineries
- European refiners struggling with volumes and profitability

Break-even prices

Type of oil	Production cost USD/bbl
Venezuela heavy	90
Nigeria deepwater	79
Norway	67
US GOM (deepwater)	64
Brazil	63
US tight oil	60-80 (but cheaper as well)
Saudi Arabia	23

So what is the net outcome of all this for the next 5-10 years?

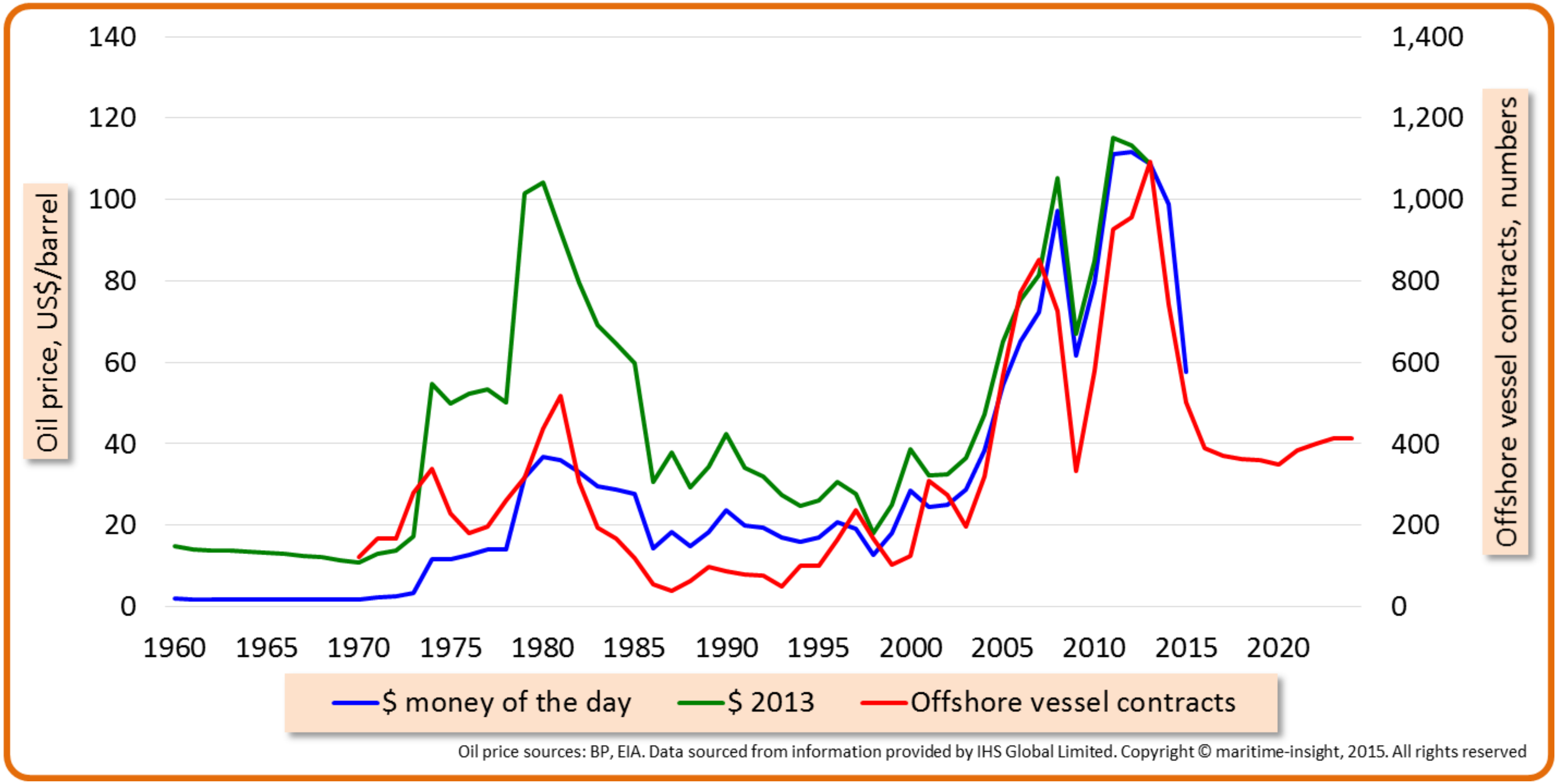
Downward pressure

- Slow demand growth
- Supply side competition:
  - OPEC defends market share
  - OPEC is dissolved
  - Tight oil production growth
- Gas as truck fuel
- Technical advancements in offshore production

Upward push

- Demand growth from North America & Far East
- China most important
- OPEC is successful
- Fracking is deemed too harmful to the environment
- Investments are to low

Offshore investments correlate with oil price changes – lower investments now give upward pressure on long term oil price



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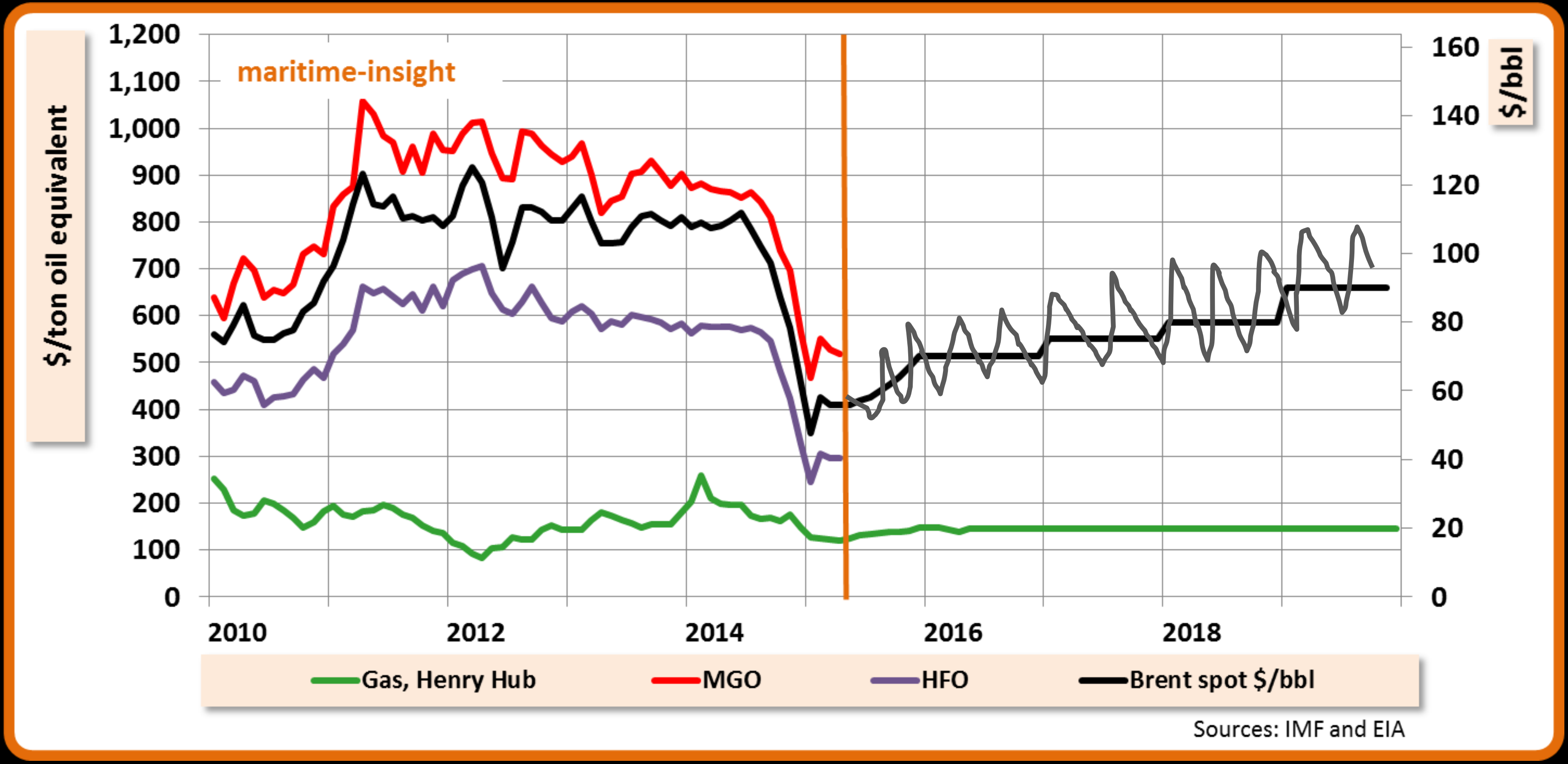
Crude oil's dive, kills the incitements for gas outside of the North American SECA. Elsewhere gas follows oil price upwards. Scrubber is the winner given continued gap between HFO and MDO



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