



Key Issues Confronting Global Oil and Gas Markets

A Presentation to Pertamina Energy Outlook 2015

by

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President

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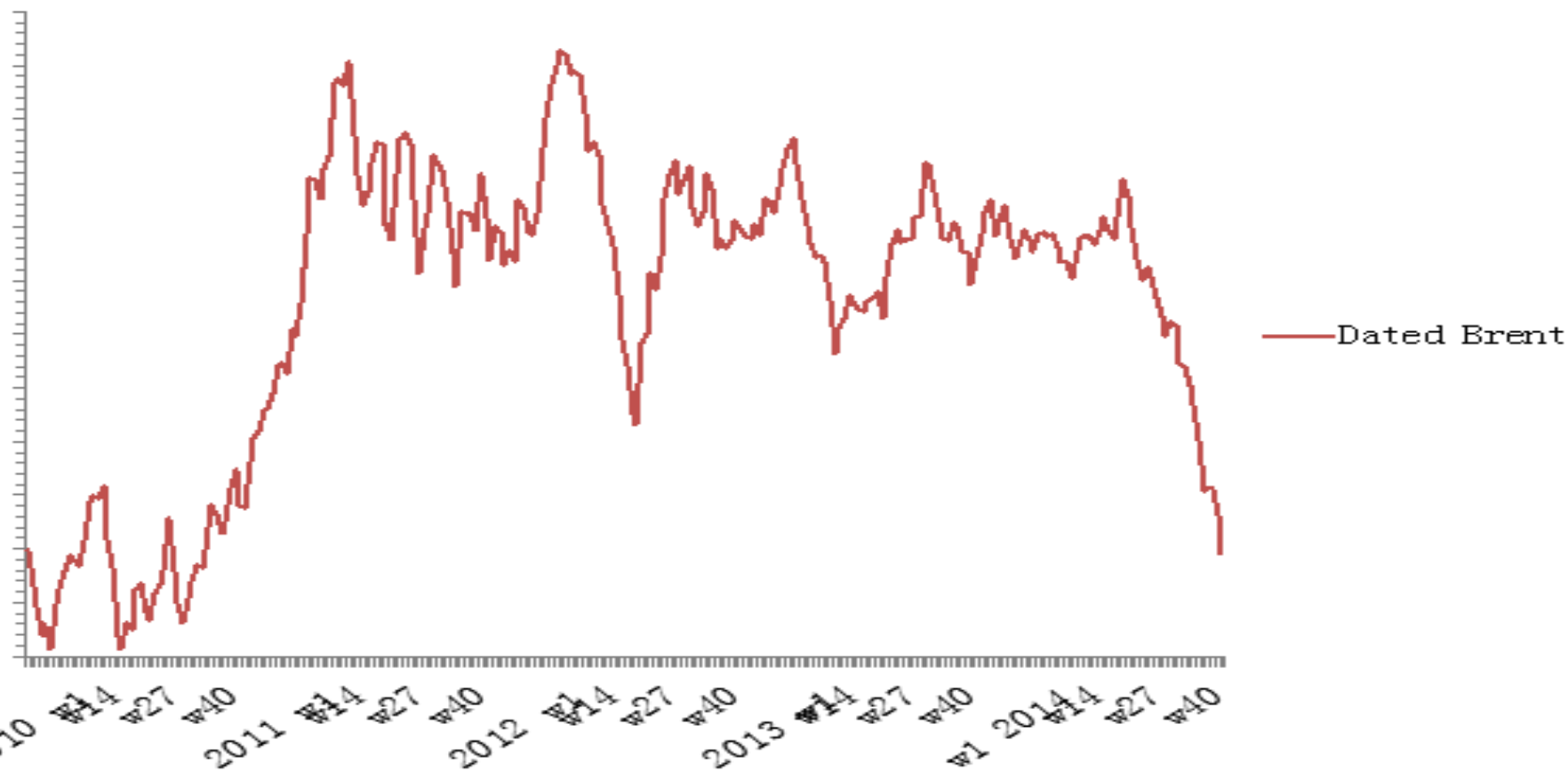
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Key Questions Facing the Oil and Gas Industry

- Is low oil price the new “normal”?
 - How do Saudis see the world?
 - Impact of US as a new energy superpower?
- How will oil and gas (LNG) industry adjust?
- Downstream recovery on the horizon?

Crude Prices: Recent \$40/bbl slump - back to 2010 levels

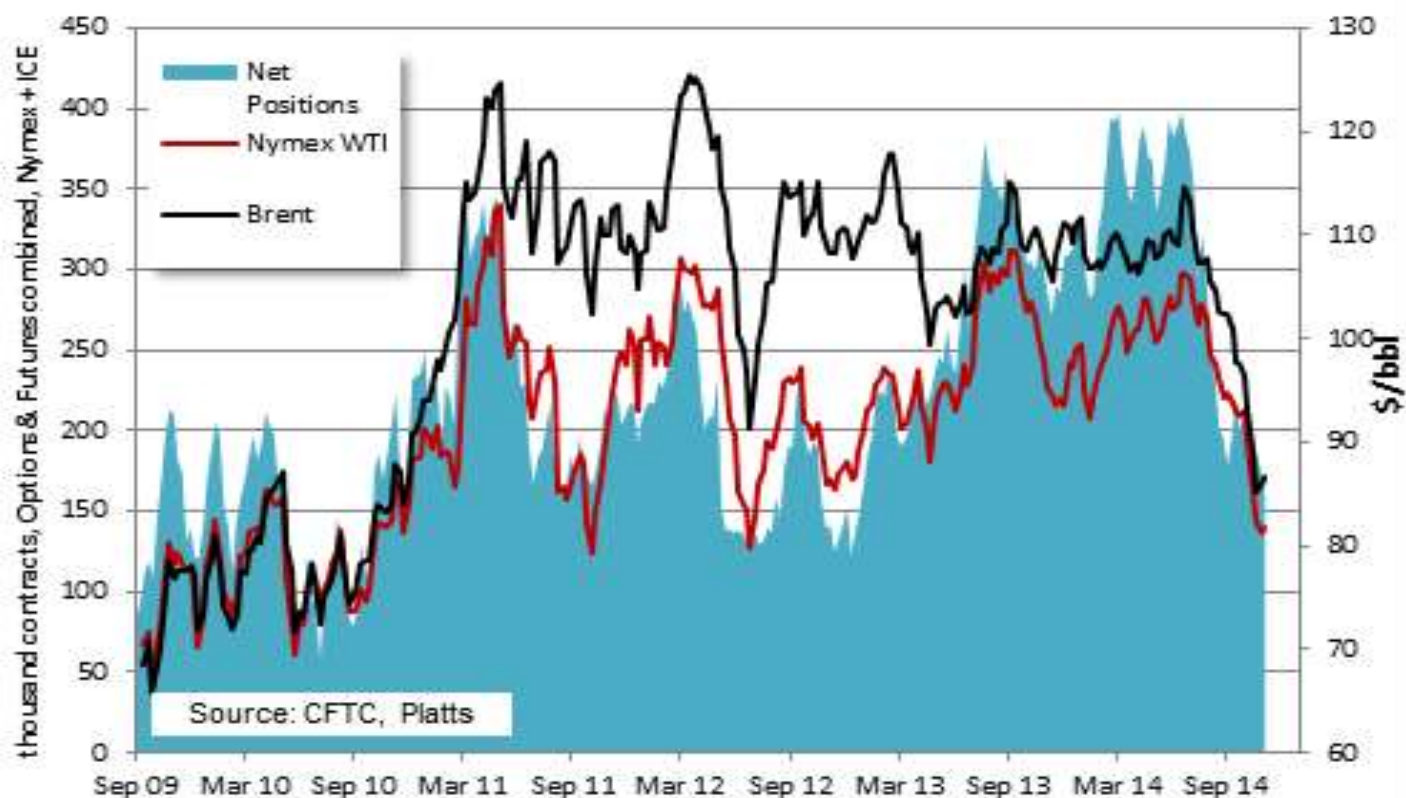
- Crude prices have slumped to 4-year lows recently
- Various factors: US shale boom, weaker demand, Libya recovery and Saudi policy!



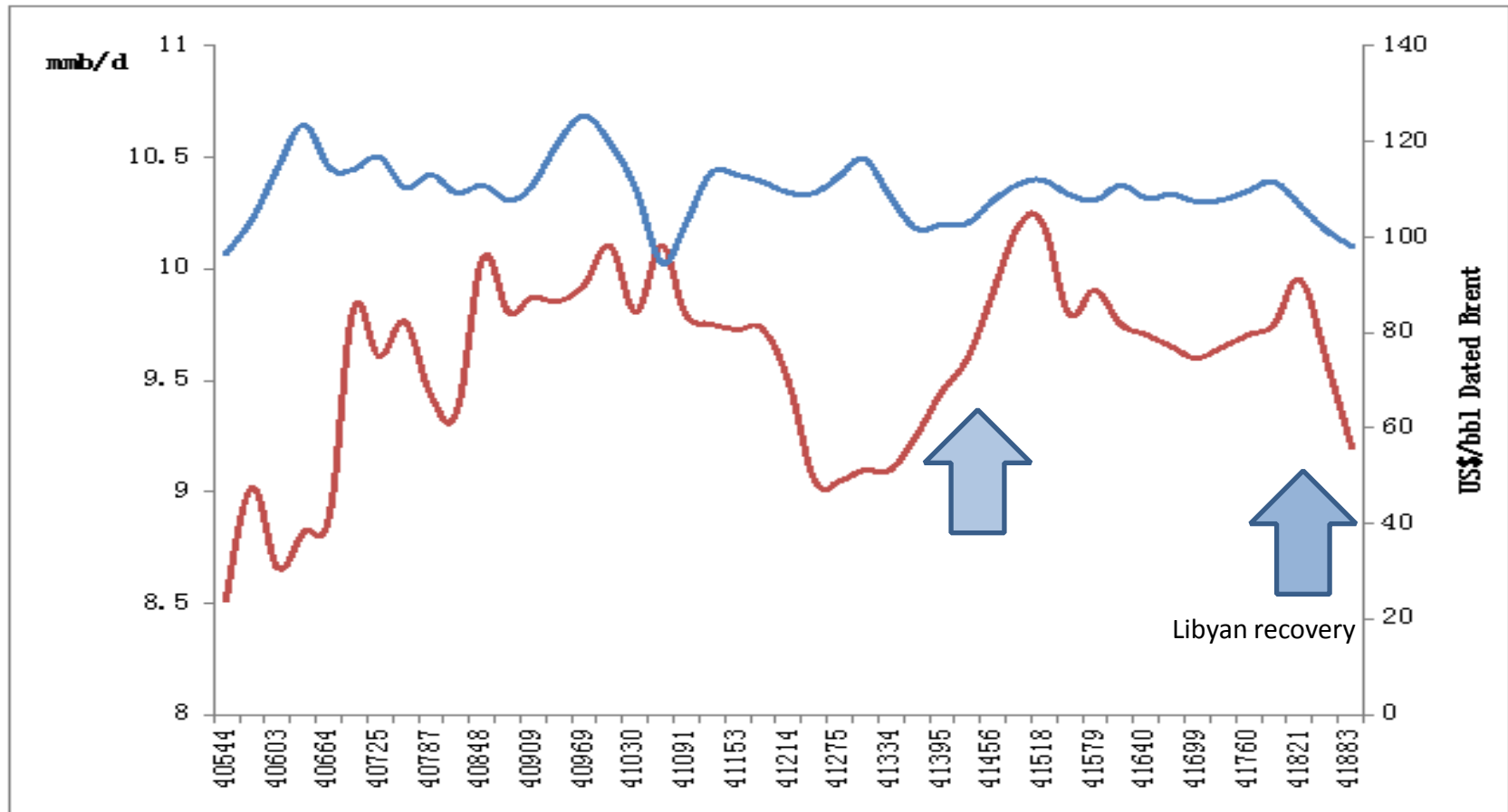
Speculative Positions – Net Longs pulling out recently

- After record “net longs” position in June (ISIS), huge pullback by speculators in last few months
- Bearish reaction to OPEC announcement

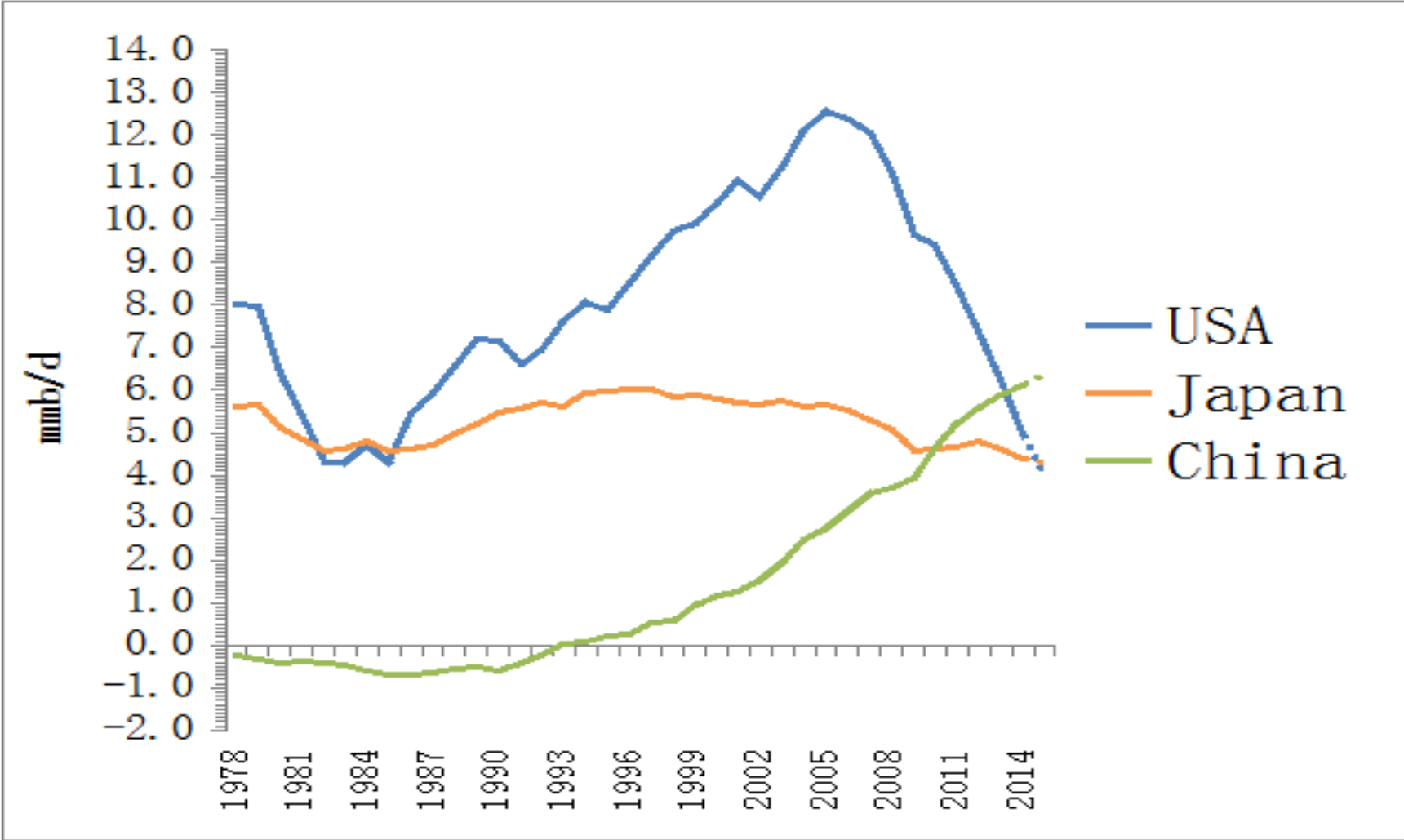
Managed Money Net Positions vs WTI & Brent Weekly Averages



Saudi Oil Output – Balancing the Market... Until Recently

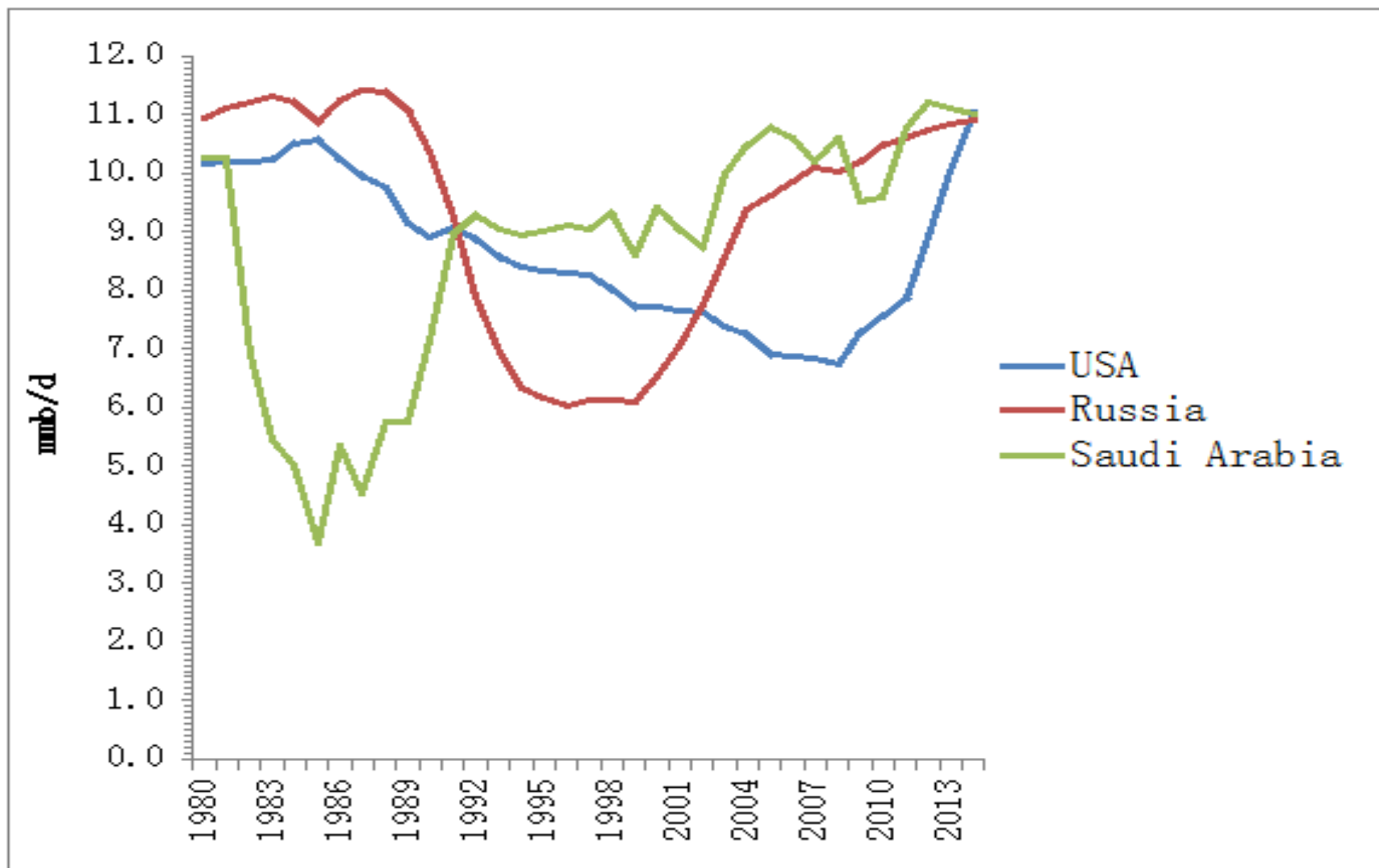


A Bit of History: The World's Three Biggest Net Oil Importers



More History: Oil Output in USA, Russia & Saudi Arabia

- Total output in US/Russia/Saudi Arabia has converged this year; Saudis looking over the precipice!

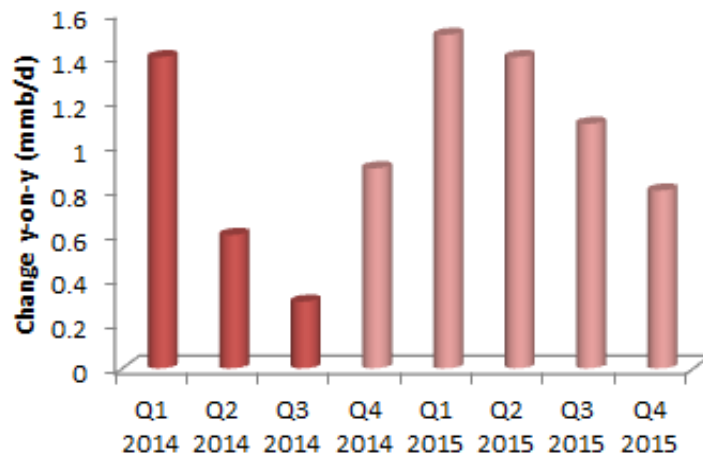


Anaemic Oil Demand Growth

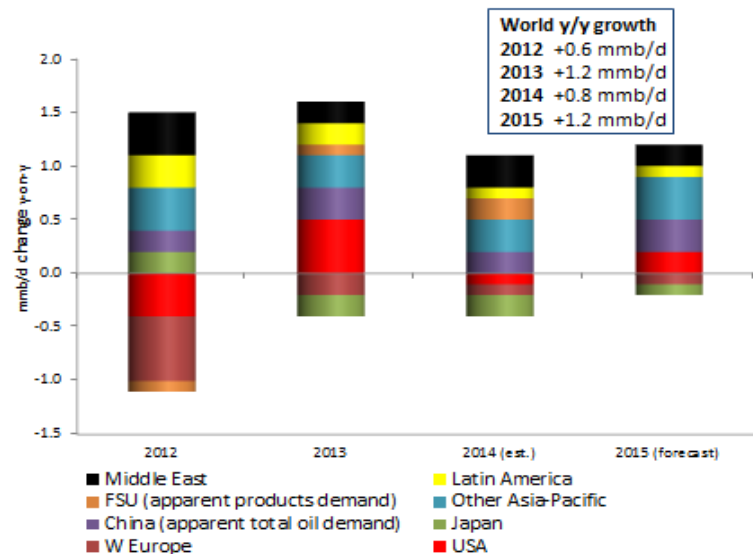
- Our latest estimates show world demand growth y-on-y at only 0.3 mmb/d in Q3
- Q4 demand projected up 0.8 mmb/d, but mainly because Q4 last year was very mild
- Similarly, Q1/Q2 '15 demand growth exaggerated by mild weather in 2014 in Europe/Japan
- Downside to 2015 demand looking likely due to GDP – unless recent price drop has an impact

World Oil Demand – Quarterly & Annual Developments through 2015

Quarterly Changes in World Oil Demand through 2015

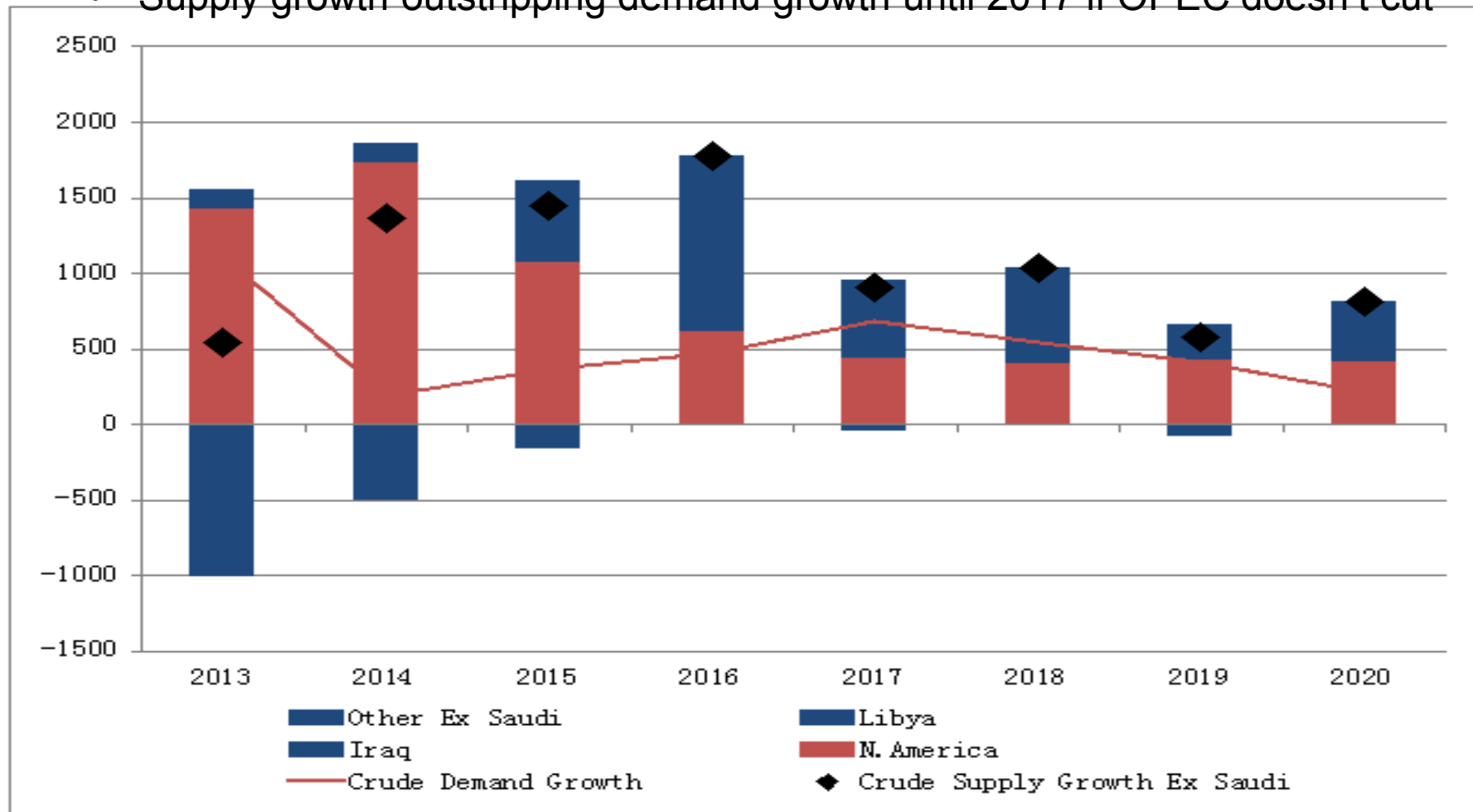


Annual Changes in Oil Demand by Region



US Production Growth Pressures OPEC/Saudis

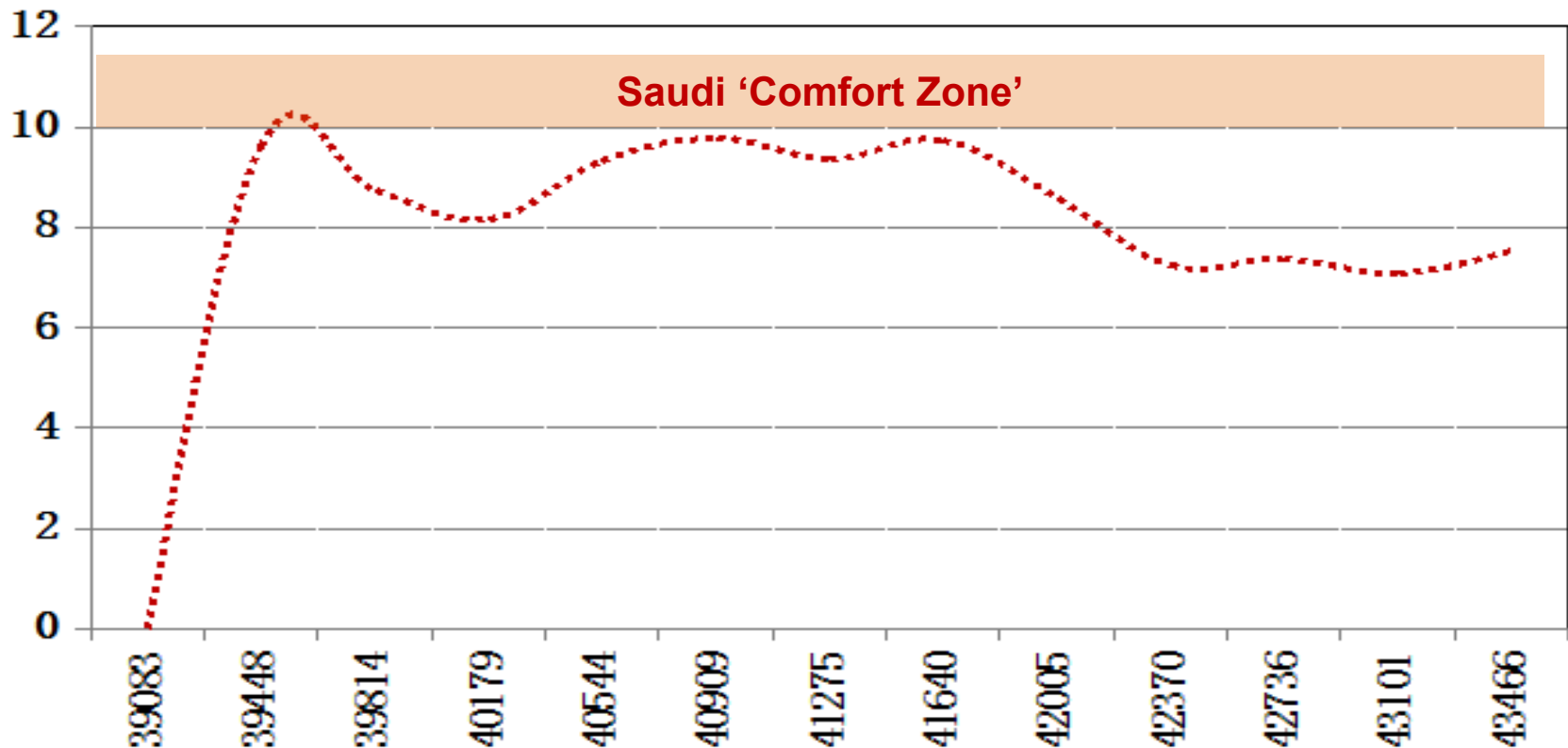
- North American growth dominating until at least 2016
- Iraq and Libya set to boost supply by over 500 kb/d in 2015, further still in 2016
- Supply growth outstripping demand growth until 2017 if OPEC doesn't cut



Crude Price Driver: Lower Call on Saudi Output

- Saudi “comfort zone” is at 8.5-9.5 mb/d.
- Saudis unlikely to accept below 8 mb/d production level

Call-on-Saudi crude assuming no cuts by other OPEC members

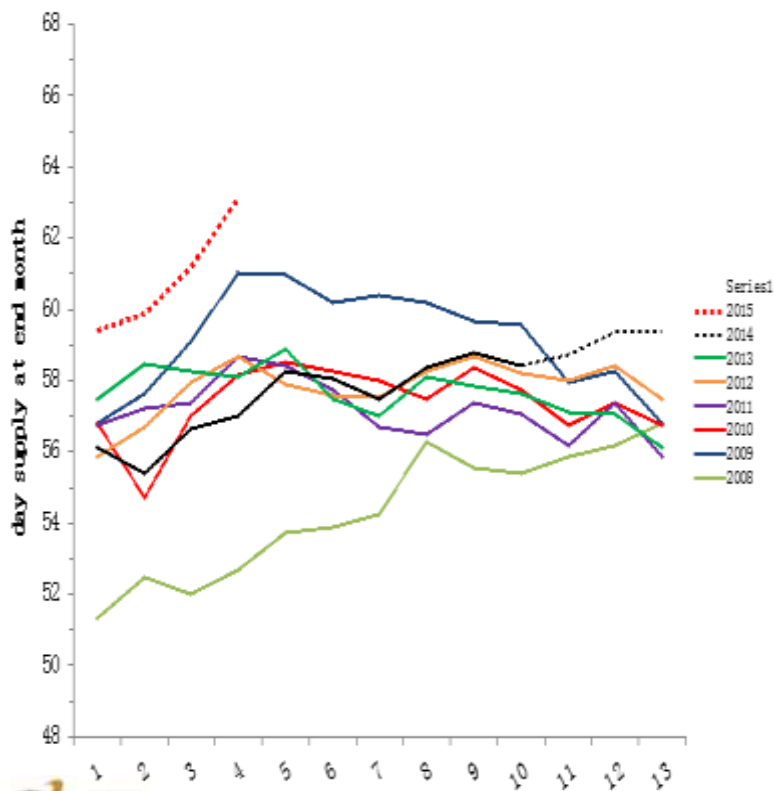


Contra-seasonal Stock Build in Q4 Expected to Continue

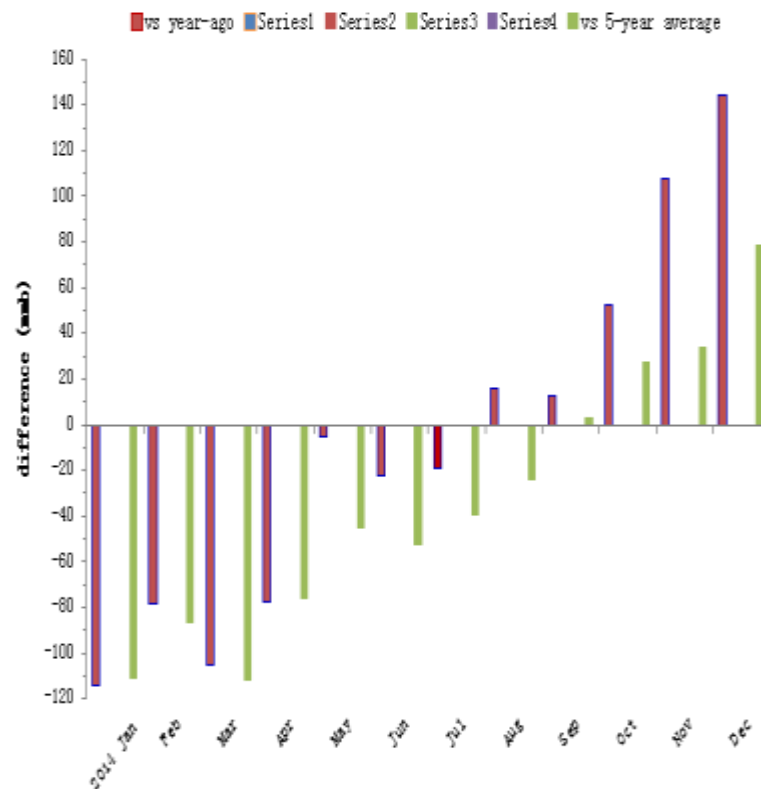
- Our projections indicate that there will be small contra-seasonal stockbuild in Q4, vs big stock draw last year.
- This trend is expected to continue and lead to a significant stock-build in Q1'15.

OECD On-land Company Stocks Outlook to Q1 2015

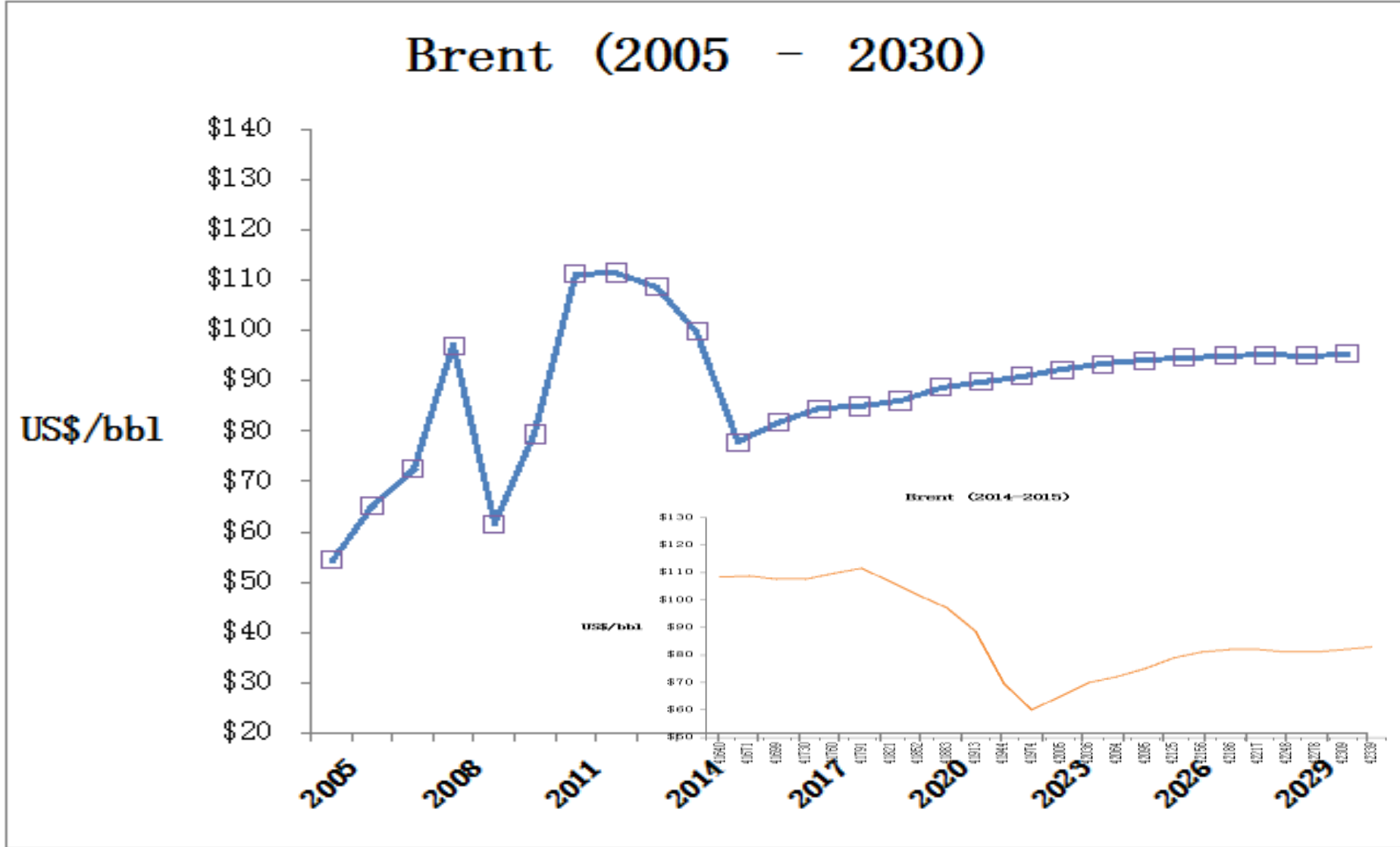
Potential Stocks Outlook - OPEC output at current levels



Stocks vs year-ago & vs 5-year average



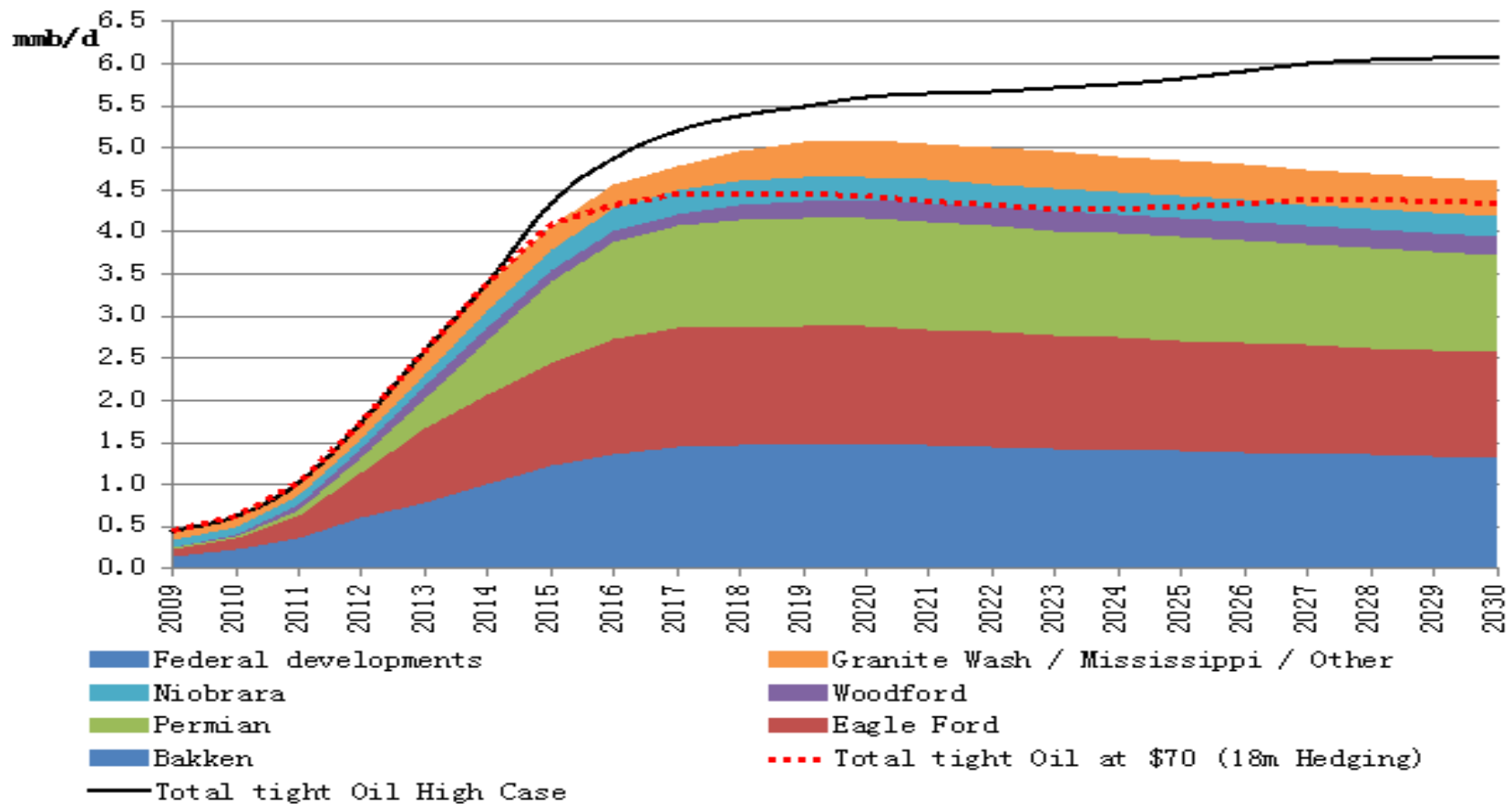
Long-Term Oil Price: Pressure Points



2005 to September 2014 are actuals, forecasts in \$2014 thereafter

Tight oil production expected to grow despite low oil prices...

- US tight oil growth protected in 2015 by inertia of current drilling activity
- 2016 output growth at risk as weaker prices expectations start feeding in



The US as an Energy Superpower

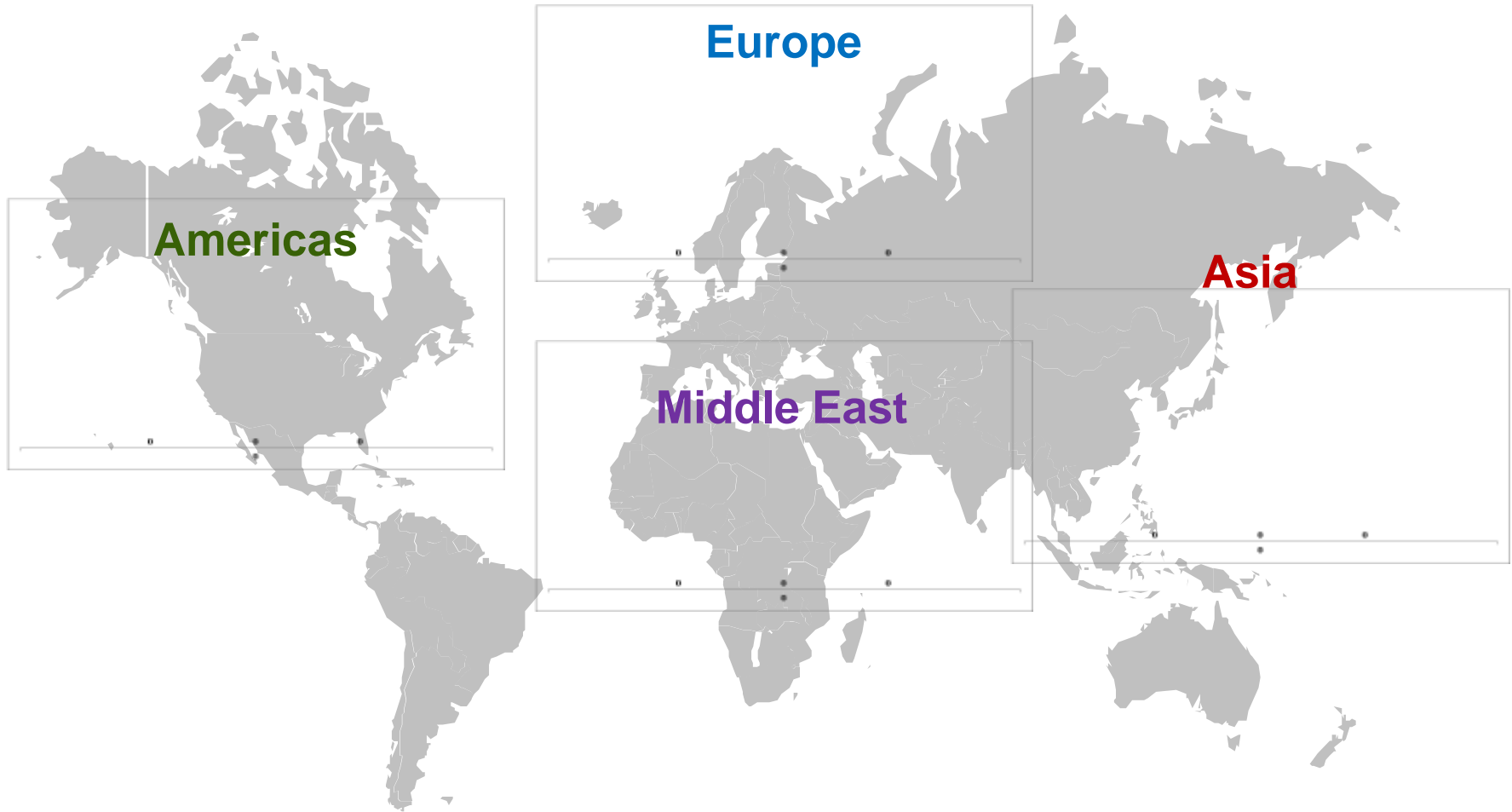
- ❖ OPEC-size addition to oil production *New*
- ❖ Largest producer of condensates in the world (now) *New*
- ❖ Amongst top 3 LNG exporters in the world (by 2020/22) *New*
- ❖ Top LPG exporter in the world *New*
- ❖ Largest exporter of refined products in the world (now) *New*
- ❖ Emerging major petrochemical exporter (by 2020) *New*
- ❖ Emerging ethane exporter *New*
- ❖ Major coal exporter *New*

Impact on Asia

- ❖ More Atlantic Basin crude available for Asia
- ❖ Possible exporter of crude: Not suitable for Asia in terms of quality
- ❖ Possible exporter of condensates: Heavily needed in Asia
- ❖ Large exporter of naphtha from new condensate splitters in USG
- ❖ Large exporter of LPG
- ❖ Large exporter of LNG
- ❖ Large exporter of diesel and other refined products
- ❖ Major exporter of gas-based petrochemicals

Asia to Remain Largest LNG Demand Center

(mmtpa)*



*Base-case scenario

“New Frontiers” of LNG Supply – Big Bonanza?



• US

- Under construction – 44 mmtpa
- Announced* – >260 mmtpa



• Canada

- Announced* – >310 mmtpa



• Russia

- Under construction – 16.5 mmtpa
- Announced – 63.9 mmtpa



• East Africa

- Announced – up to 32.5 mmtpa**



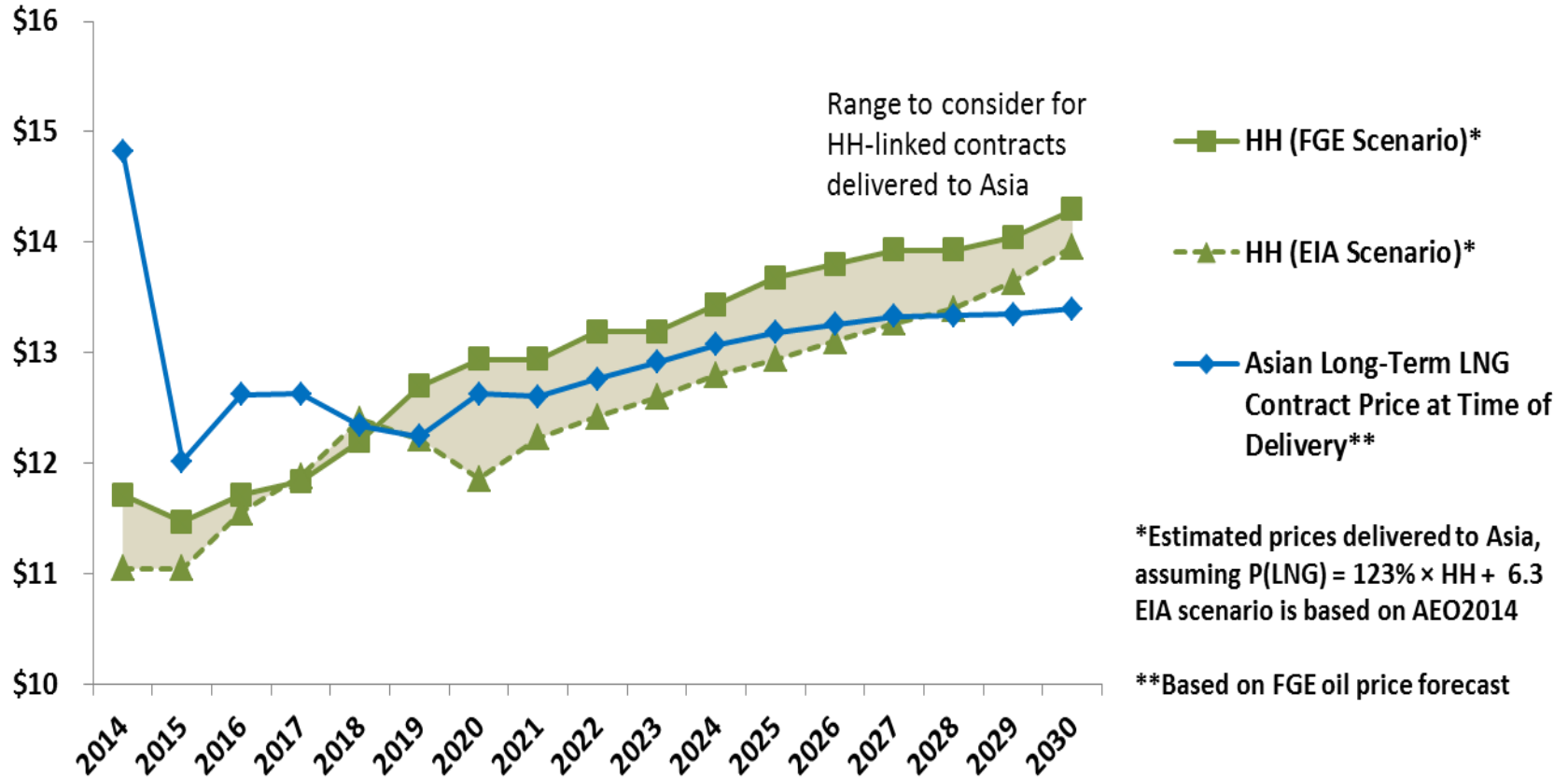
*Capacity per DOE authorization to FTA countries for US, NEB authorization for Canada.

**Mozambique project partners' original plan includes up to 50 mmtpa but 20 mmtpa landed + 2.5 mmtpa FLNG in 1st phase. Tanzania is 10 mmtpa.

Long-Term Oil vs. Hub Indexation—Which is Better?

Projected Oil- and Hub-Linked LNG Prices Delivered to Asia

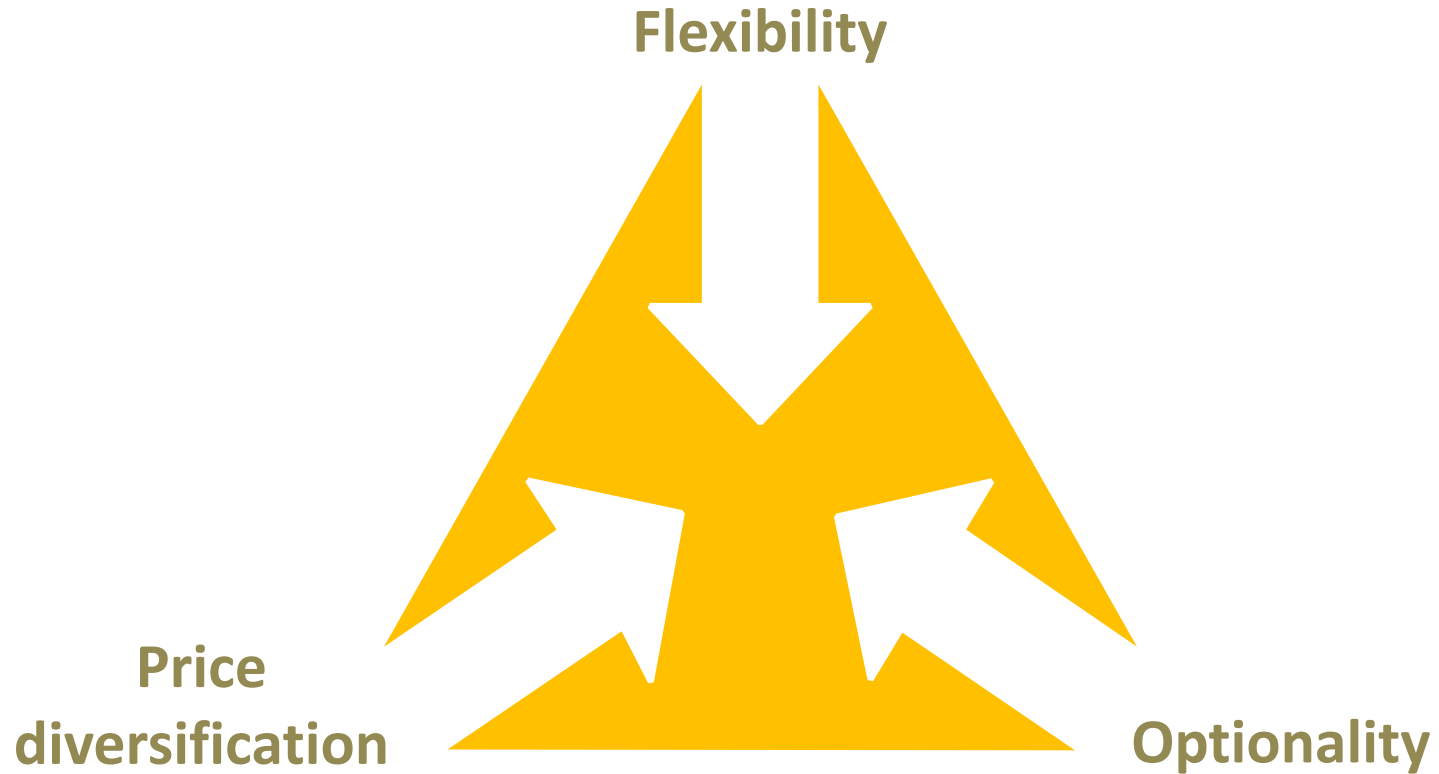
US\$/mmBtu



*Estimated prices delivered to Asia, assuming $P(\text{LNG}) = 123\% \times \text{HH} + 6.3$
EIA scenario is based on AEO2014

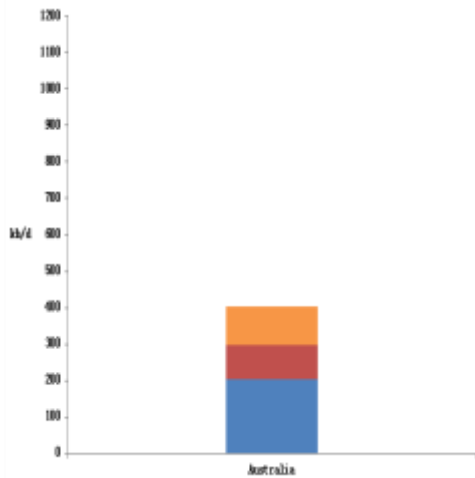
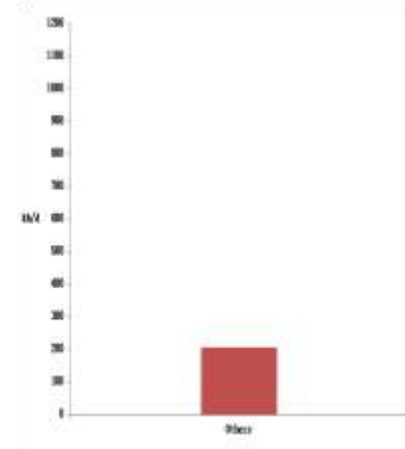
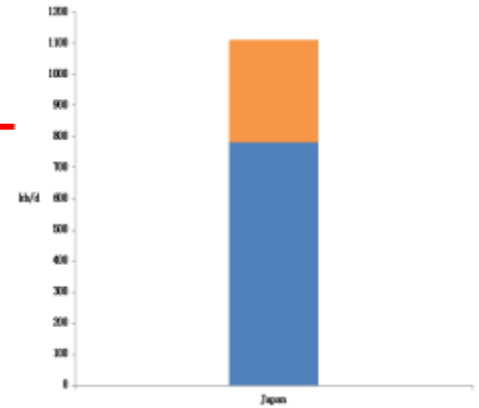
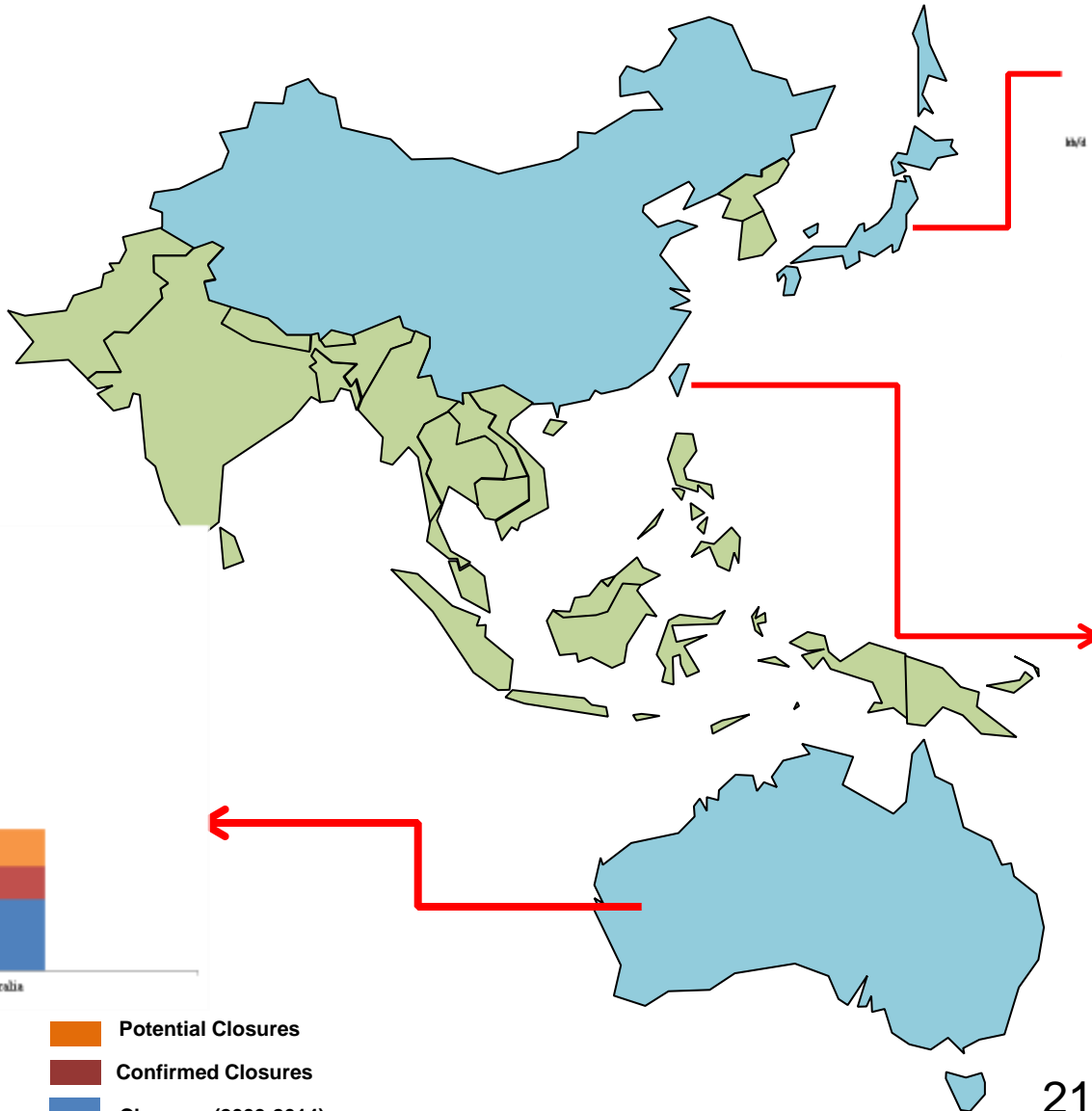
**Based on FGE oil price forecast

US LNG—What Does it Mean for the Market?



Refinery Closures: Potential Realized?

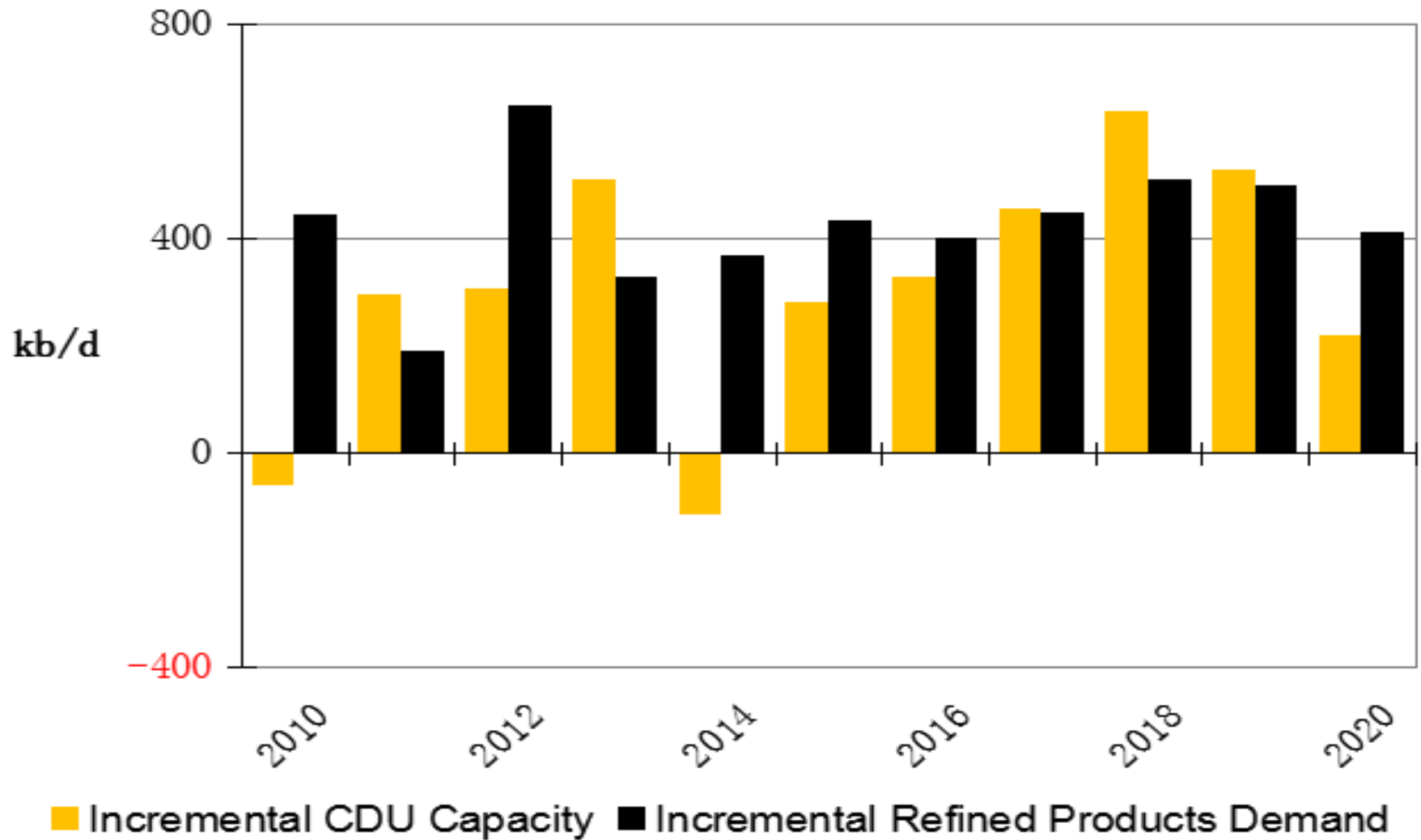
Japan Leads Refinery Closures in Asia Over 2009-2020



- Potential Closures
- Confirmed Closures
- Closures (2009-2014)

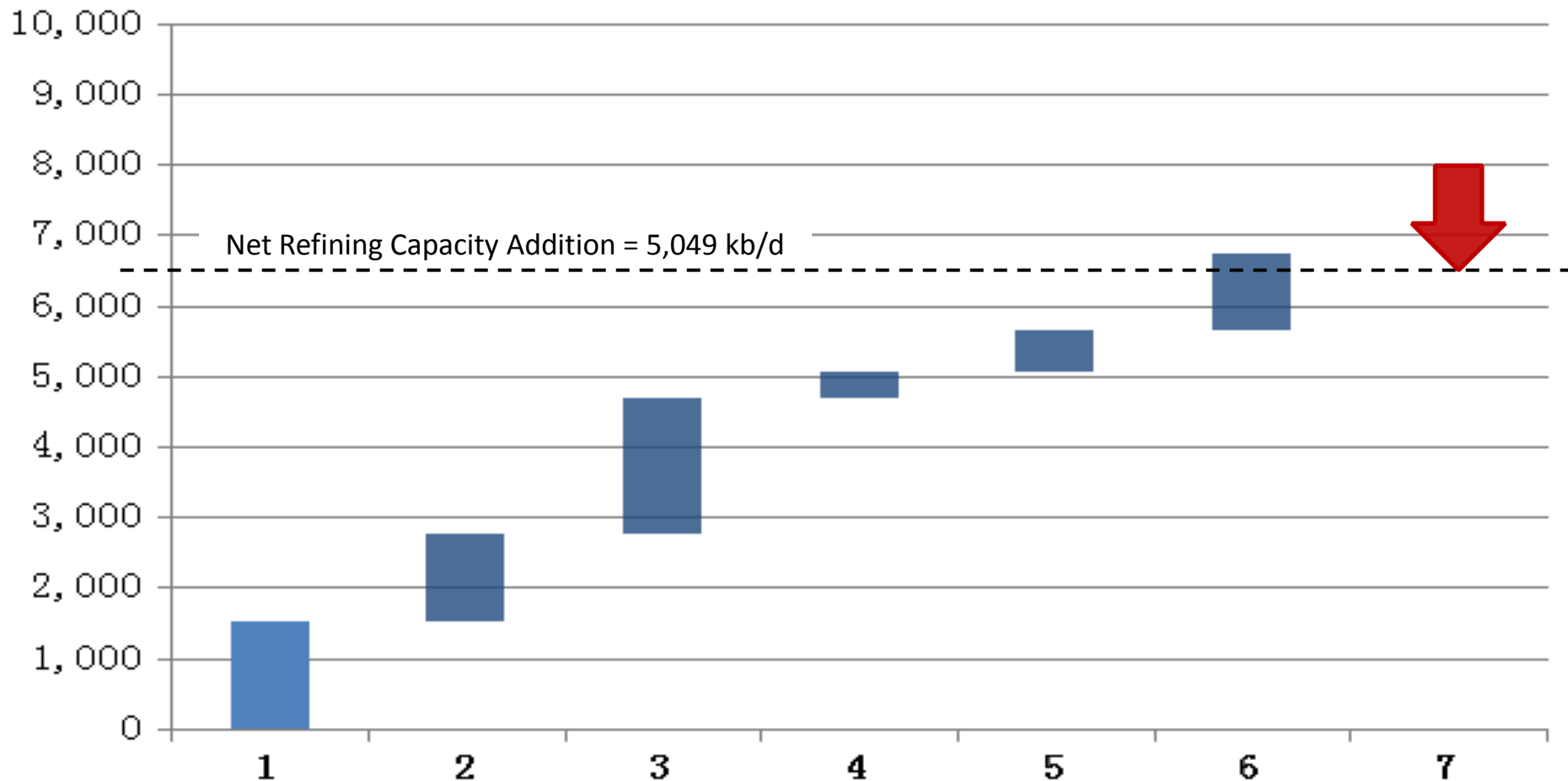


East of Suez Net CDU Capacity vs. Demand Growth



Who is Building East of Suez?...Why?

Total Net Refining Capacity Additions in East of Suez, 2014–2020



Implications for Oil and Gas Industry and Pertamina

- Expensive “dream” projects fade away
- Costs likely to come down as investment slows
- Market to rebalance at a new equilibrium
- Brownfield investments attractive
- Refinery margins remain pressured, albeit with some relief in Asia
- Asian “pull” shifts to Atlantic Basin “push”
- A new more rational “normal”

Thank You

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