LNG as a global market

ESCP London School

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TOTAL

Today’s Menu
(and “take-aways”)

Latest changes in the LNG landscape

2014 was a continuation of 2010-2013
What happened to LNG prices from July 2014?
The current situation of LNG actors

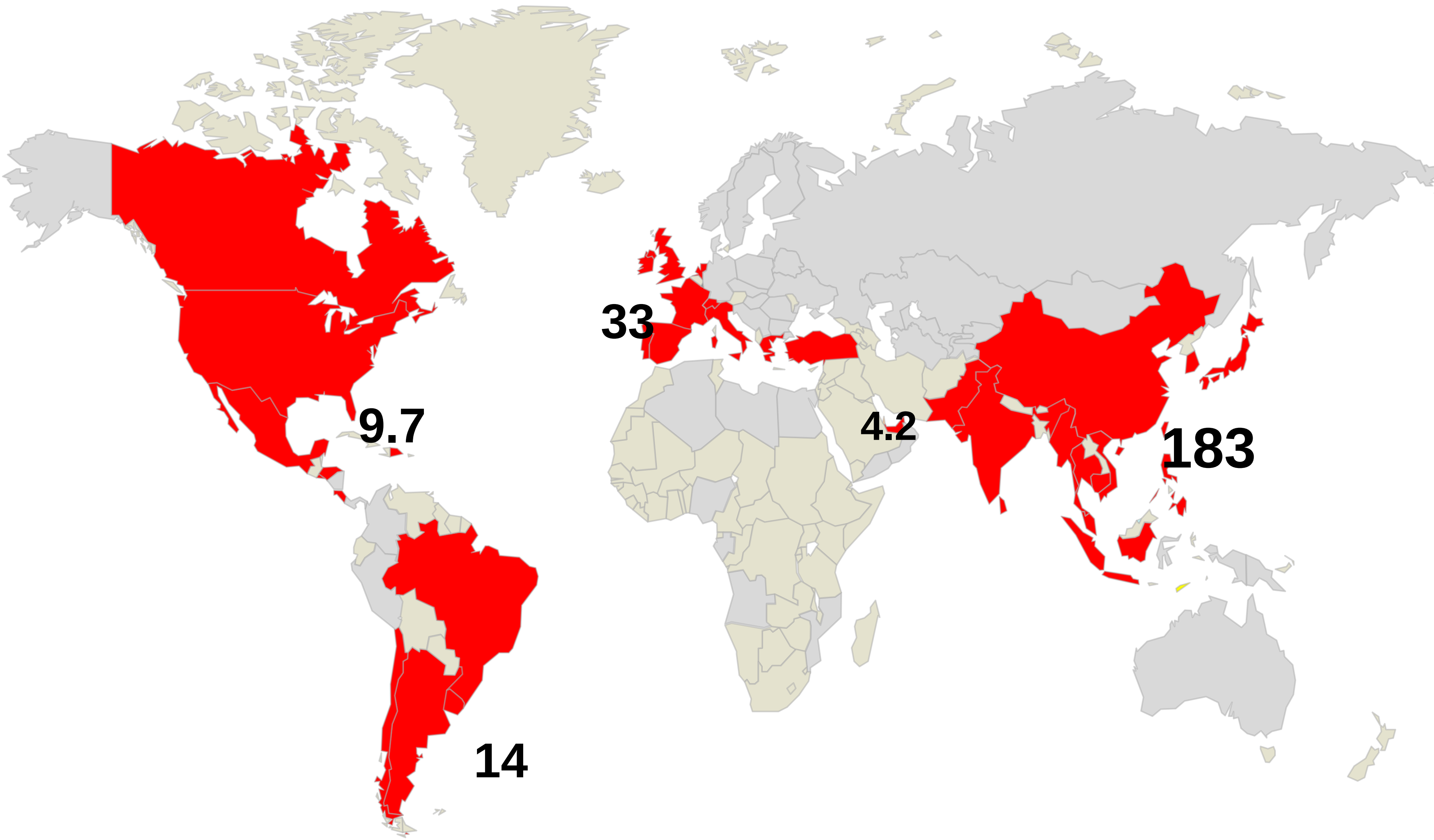
New LNG supply: For Asia or Europe?

Austral Asia…………..Targeting NE-Asia
Southern Atlantic…….South America?
Northern Atlantic…….The Arctic Race for markets

And the winners are…..

In a Buyers’ Market, the Biggest Suppliers can wait

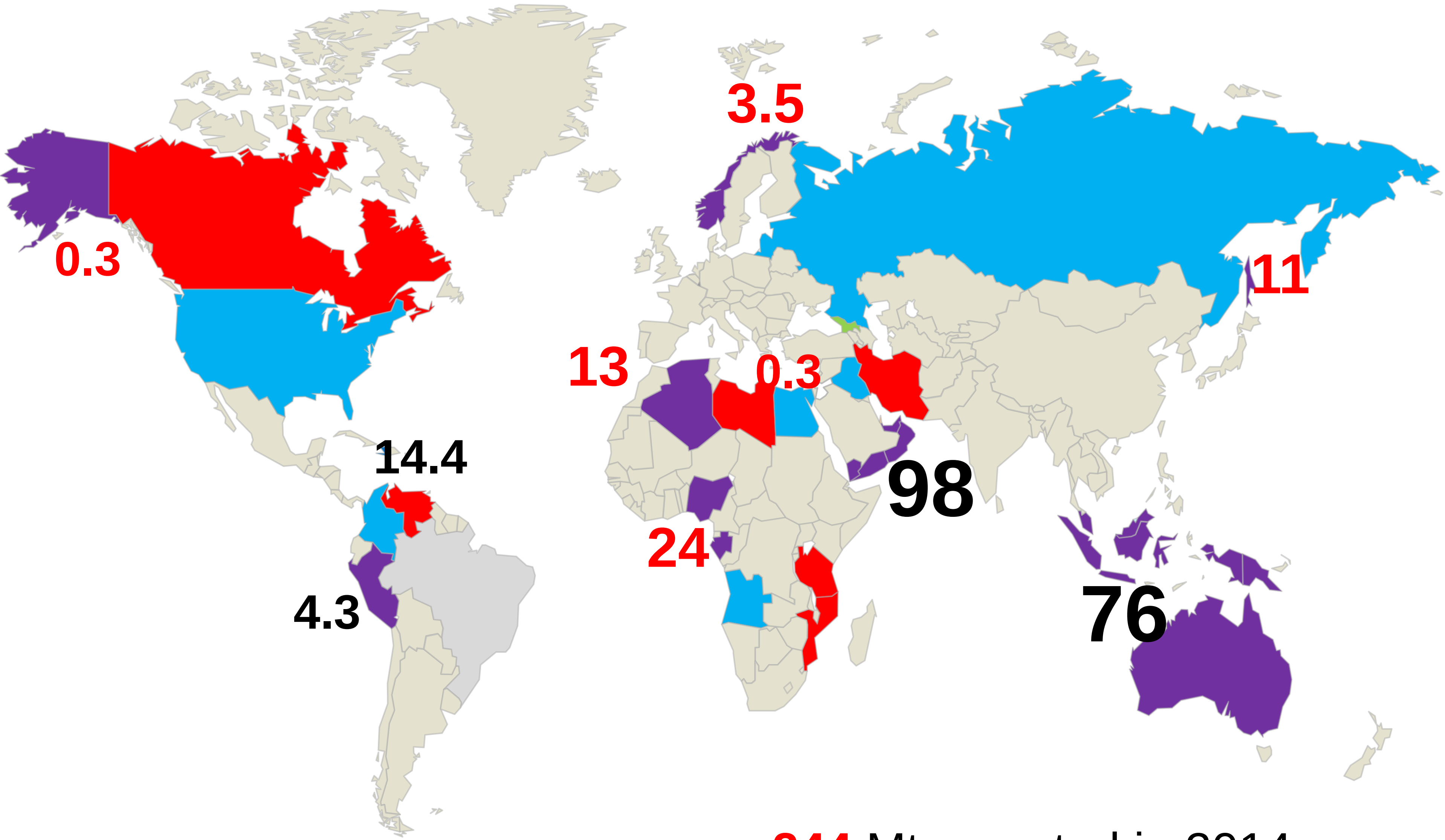
2014 LNG Imports (Mton) : 244



Source: IHS CERA for IGU

1 Mton LNG = 1.38 Bcm of gas

Current and future suppliers of LNG (+candidates)

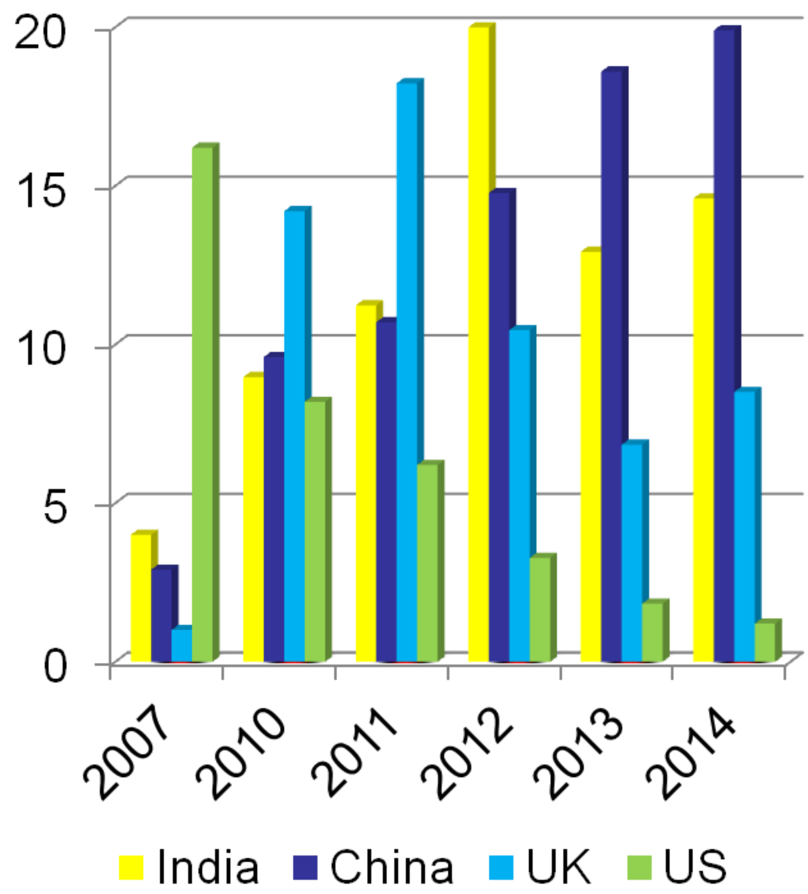


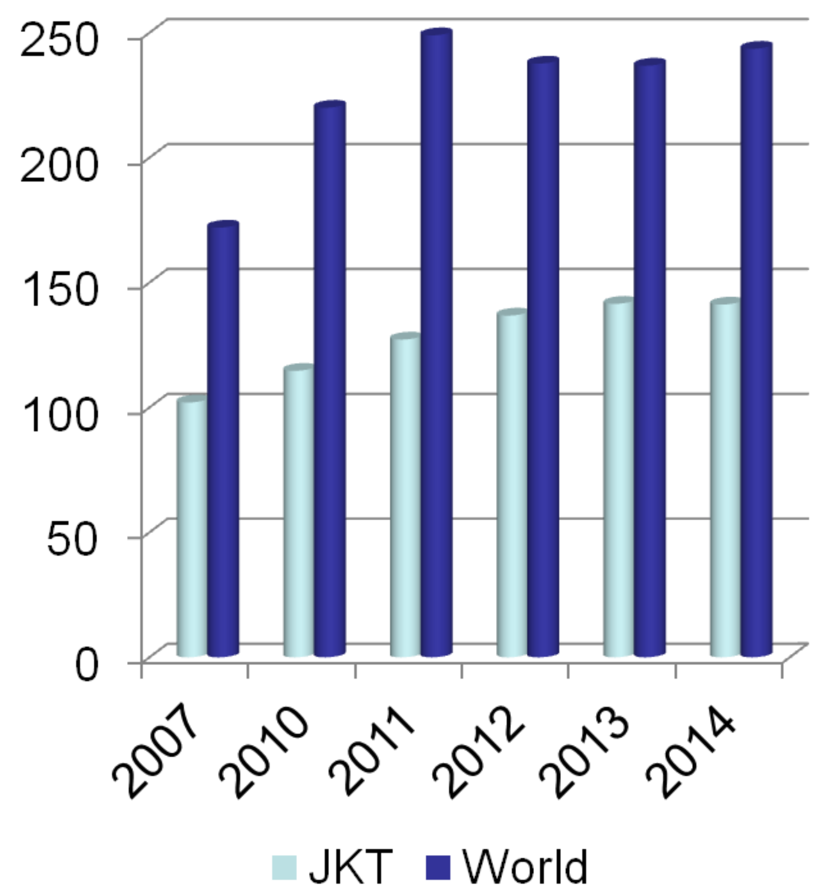
Source: HIS CERA for IGU

244 Mt exported in 2014

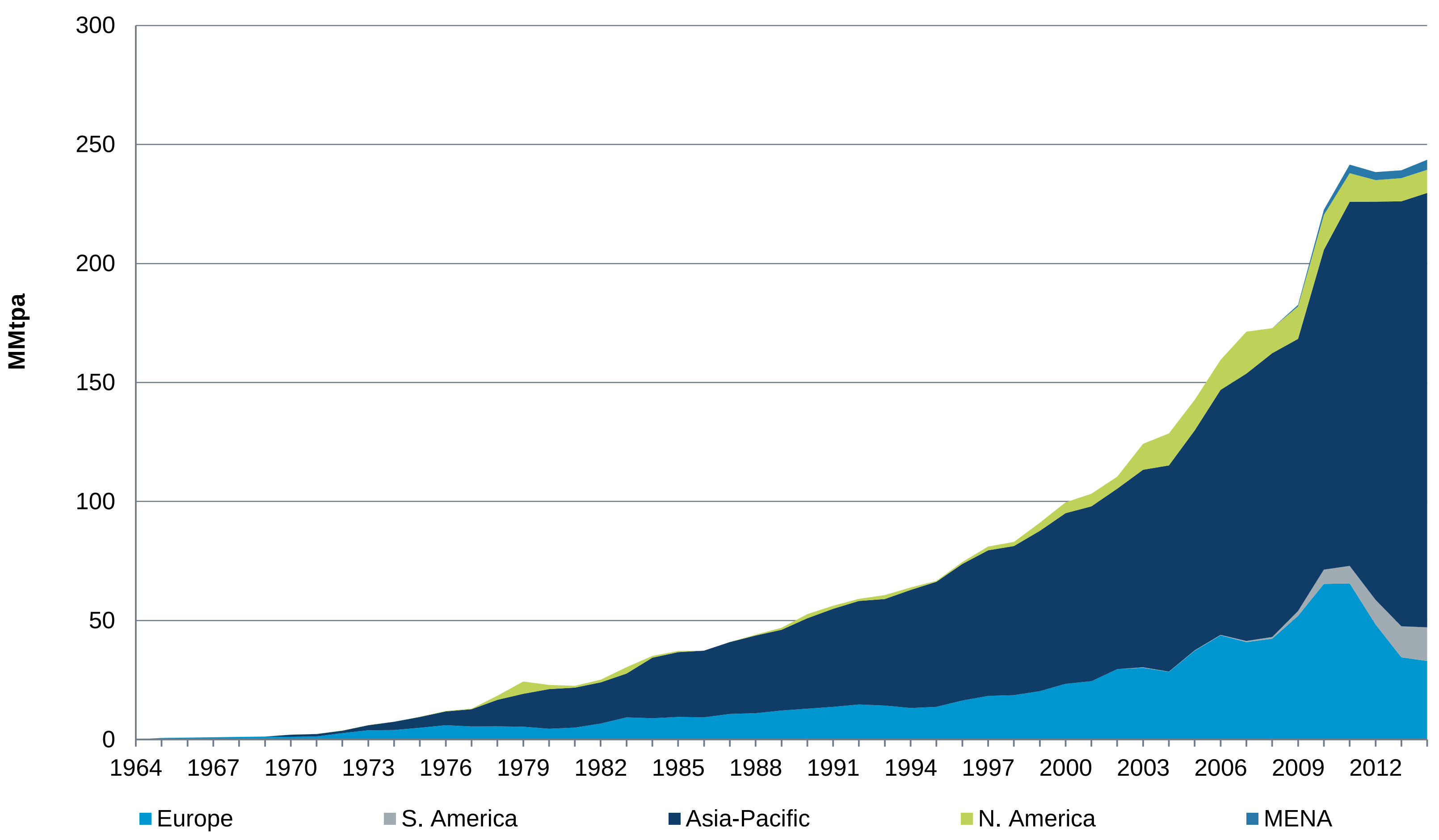
Recent trends in LNG imports (Mton)

Before and after “Fukushima”





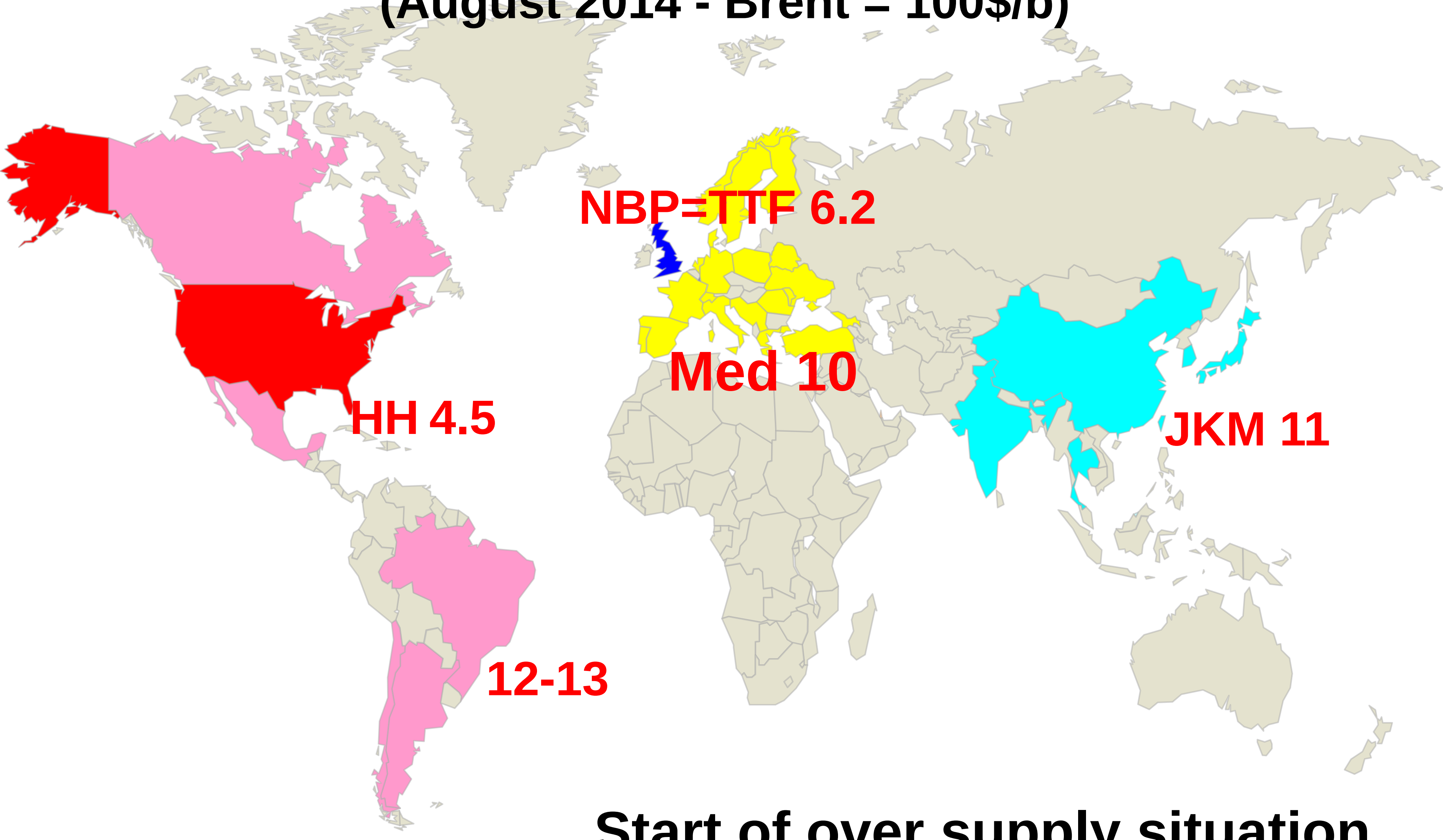
LNG imports by Regions



Source: IHS

What happened to LNG prices since July 2014?

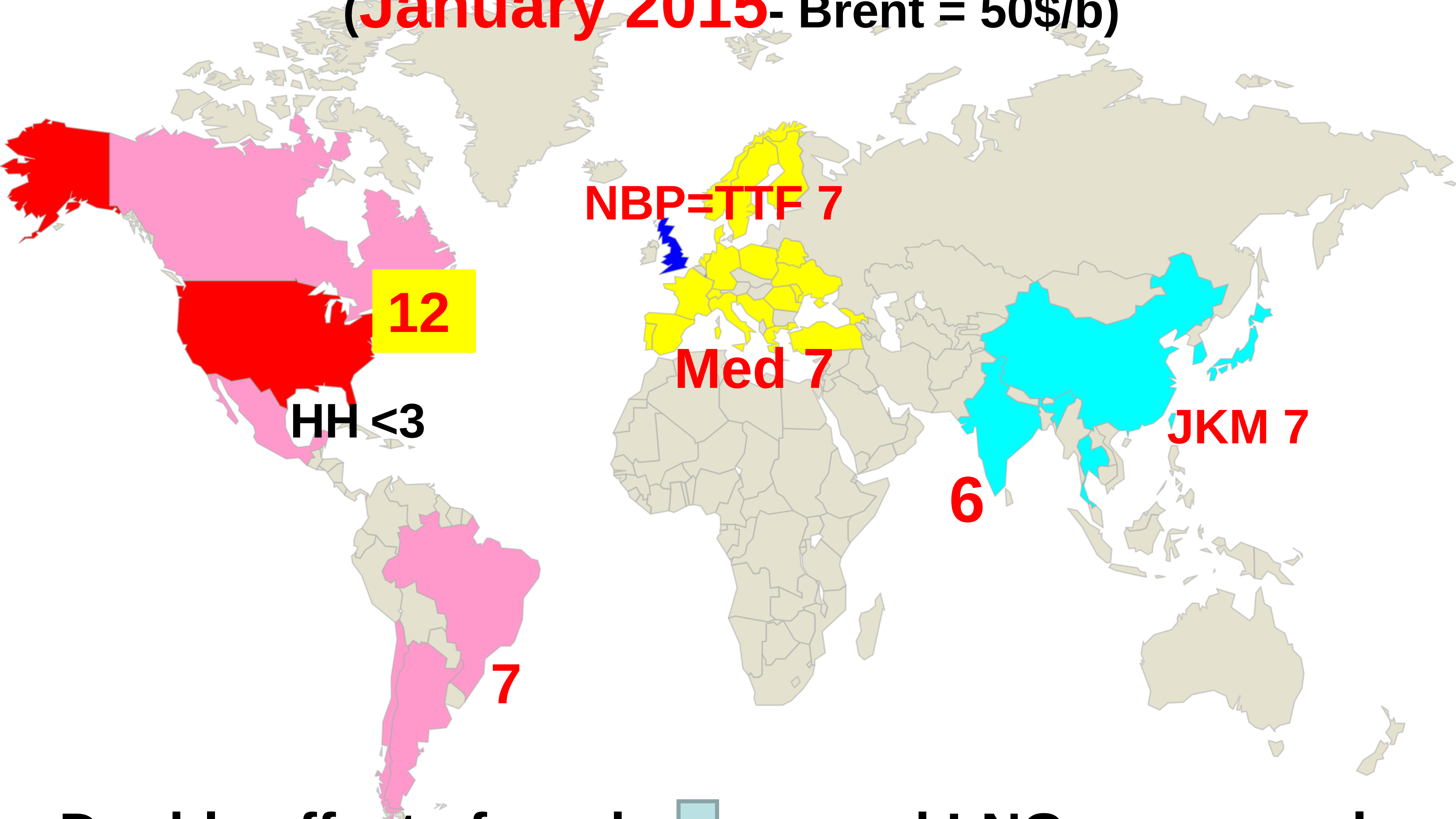
Gas Markets & LNG spot prices ($/MBtu)
(August 2014 - Brent = 100$/b)



Start of over supply situation

Gas Markets & LNG spot prices ($/MBtu)

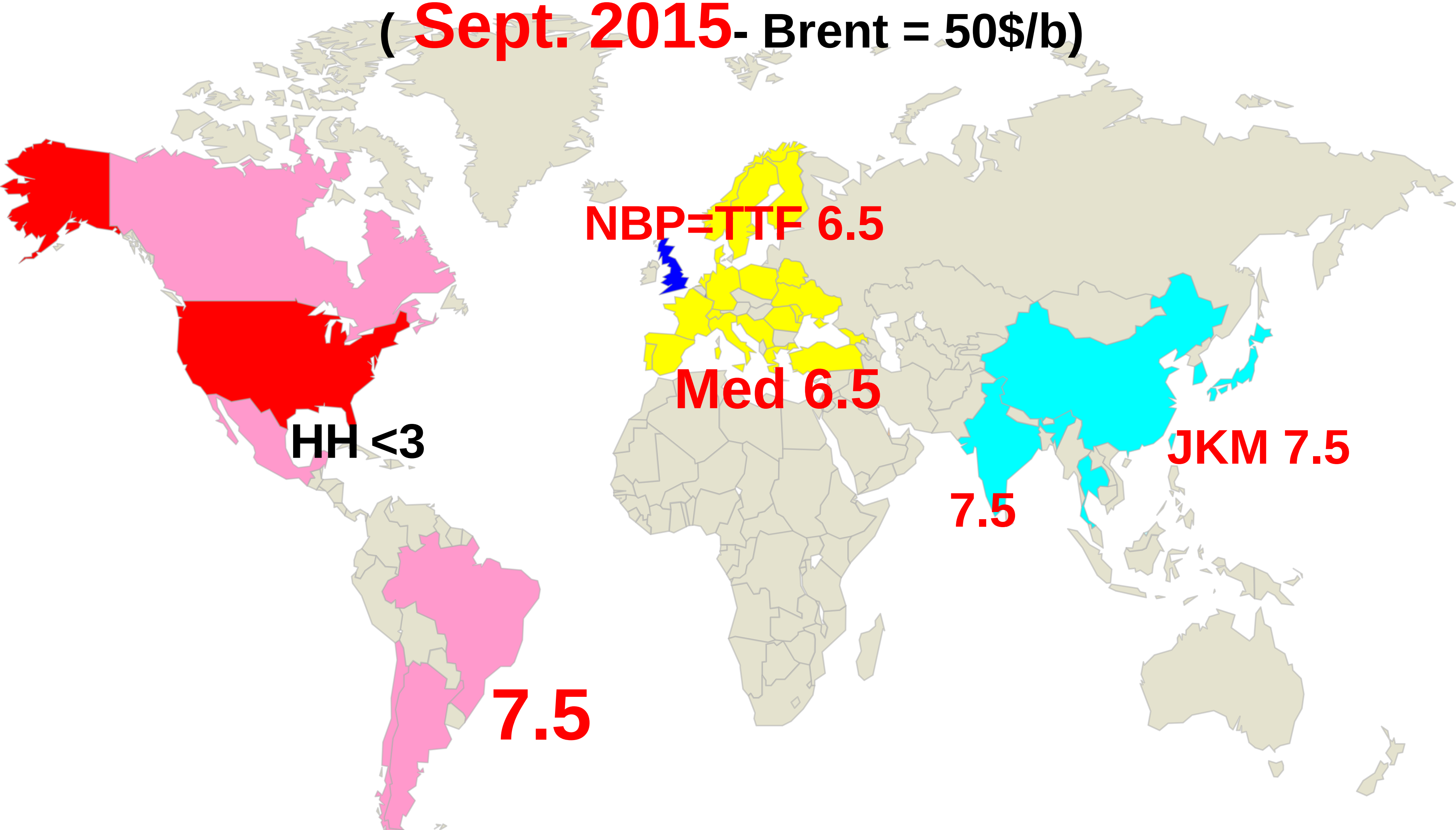
(January 2015- Brent = 50$/b)



Double effect of crude and LNG over supply

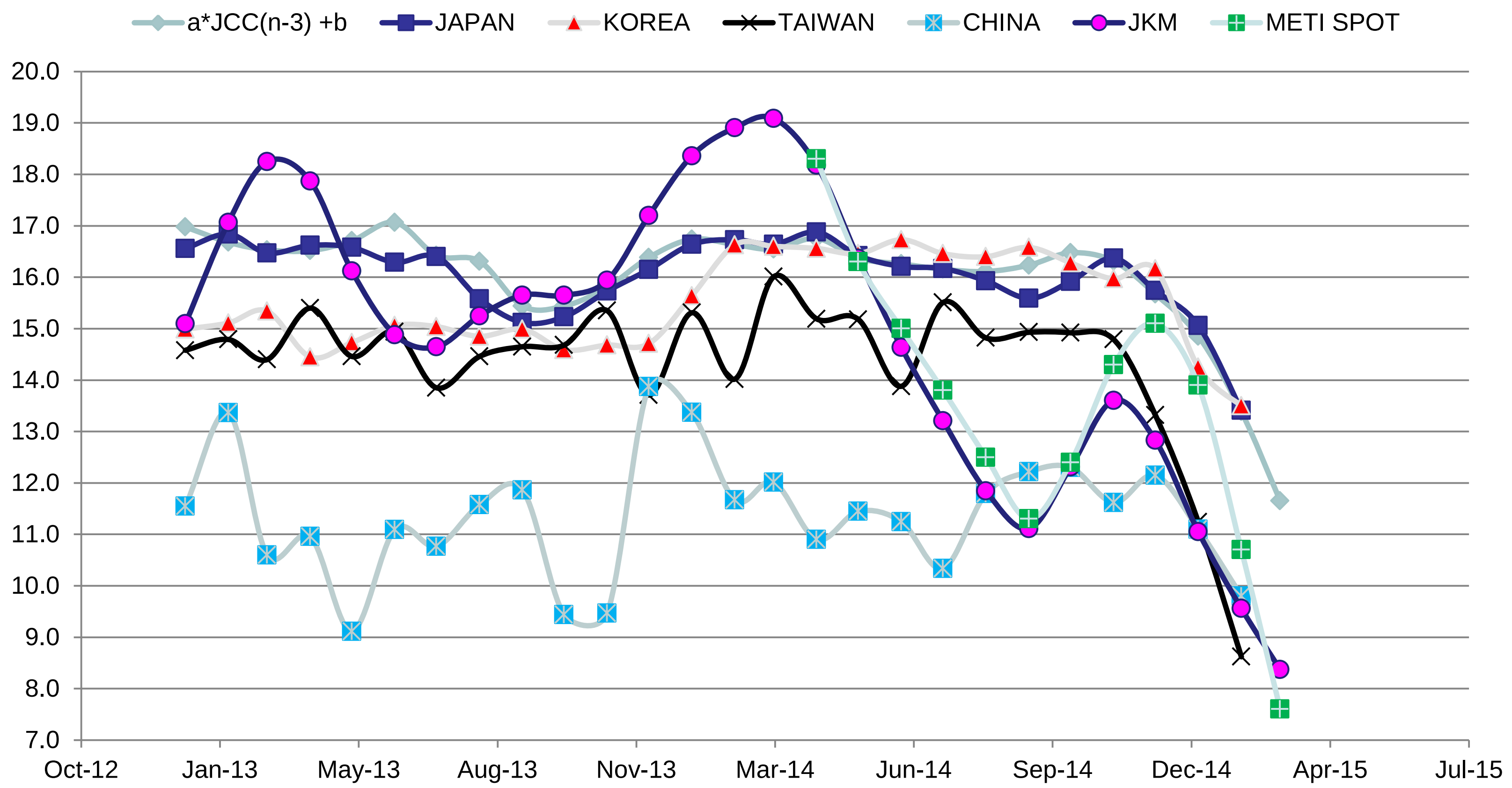
Gas Markets & LNG spot prices ($/MBtu)

(Sept. 2015- Brent = 50$/b)

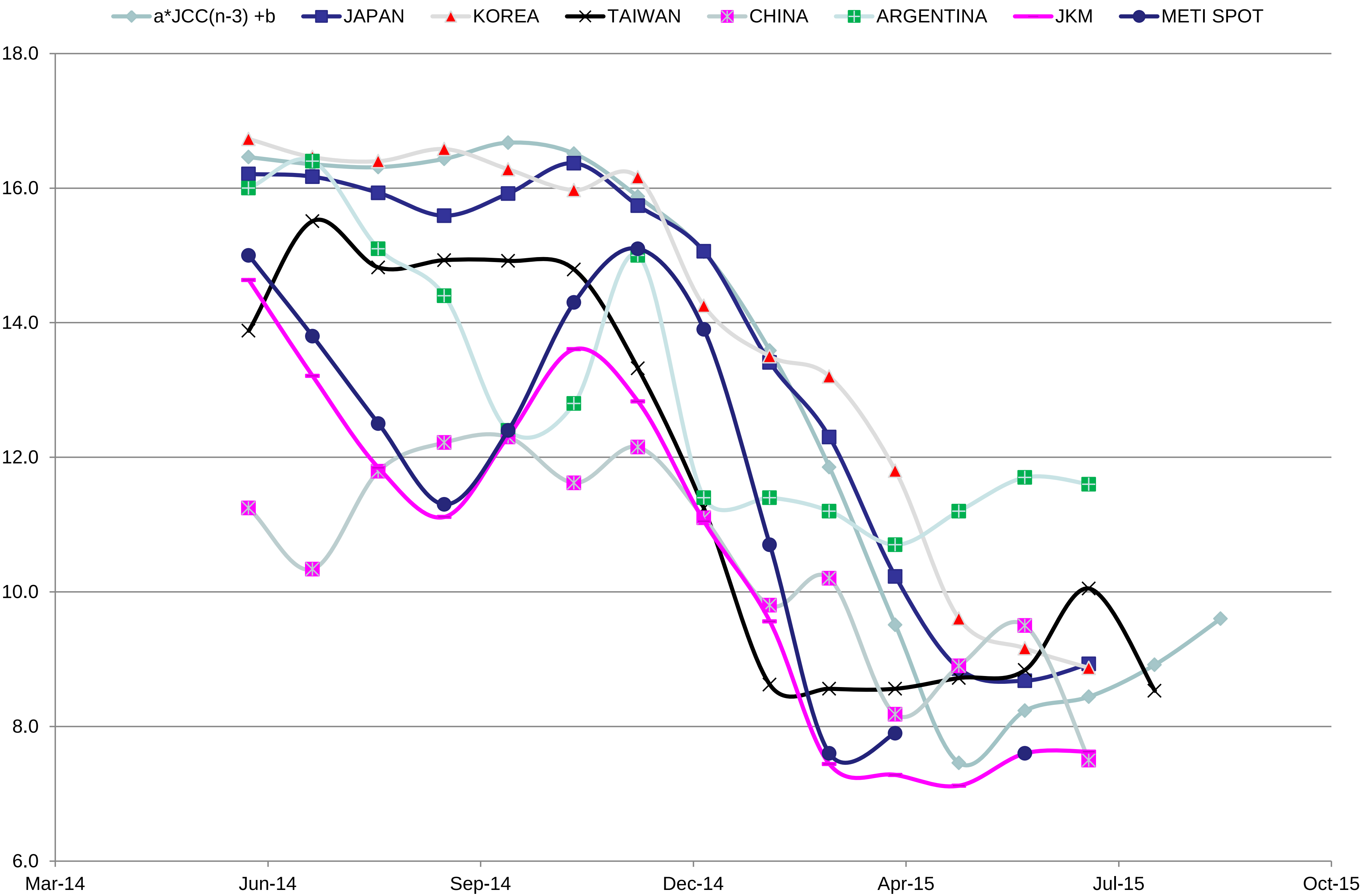


Spot prices equalization for the first time ever (except US)

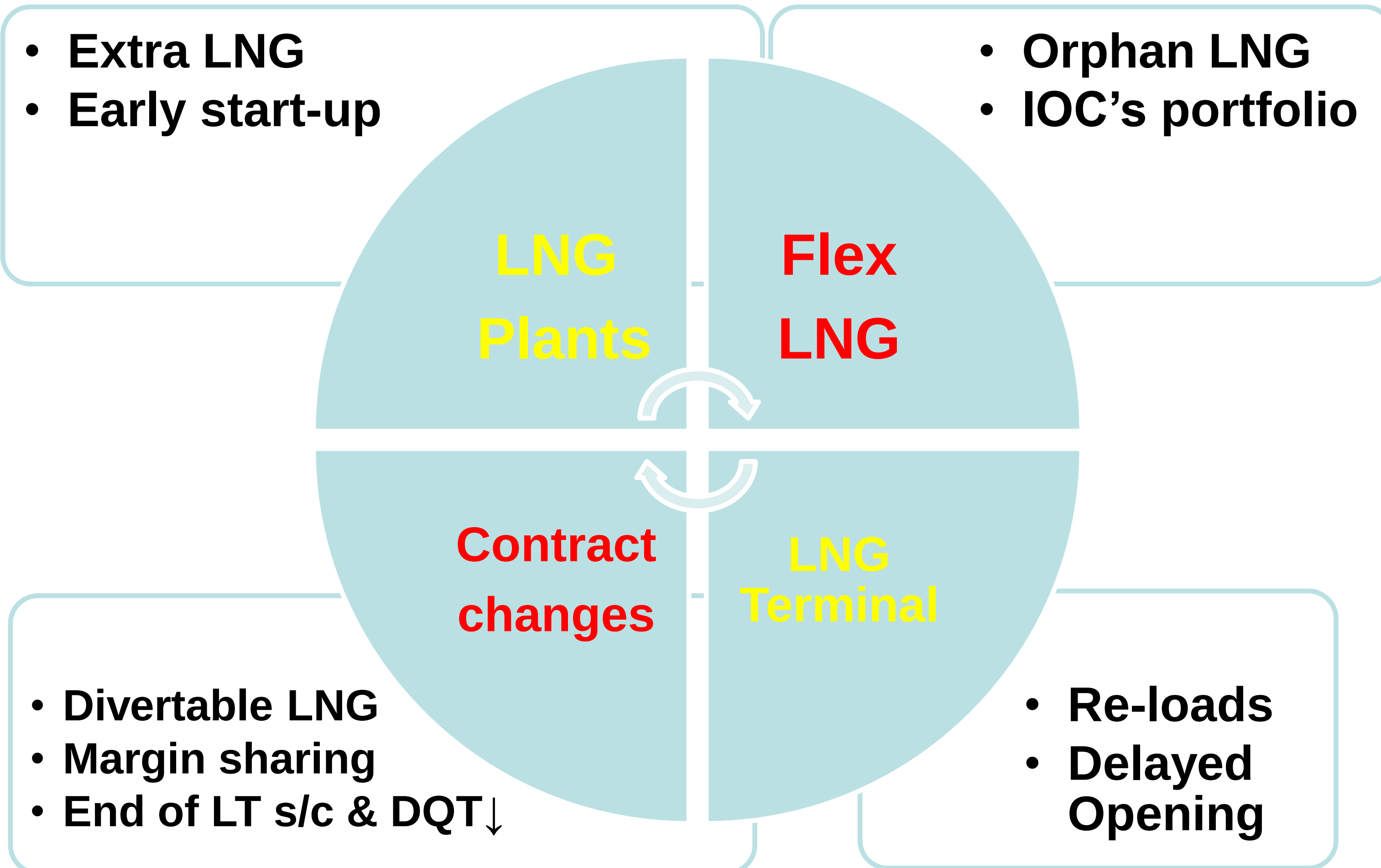
JKM & METI« spot » price indicators **vs** actual monthly import prices



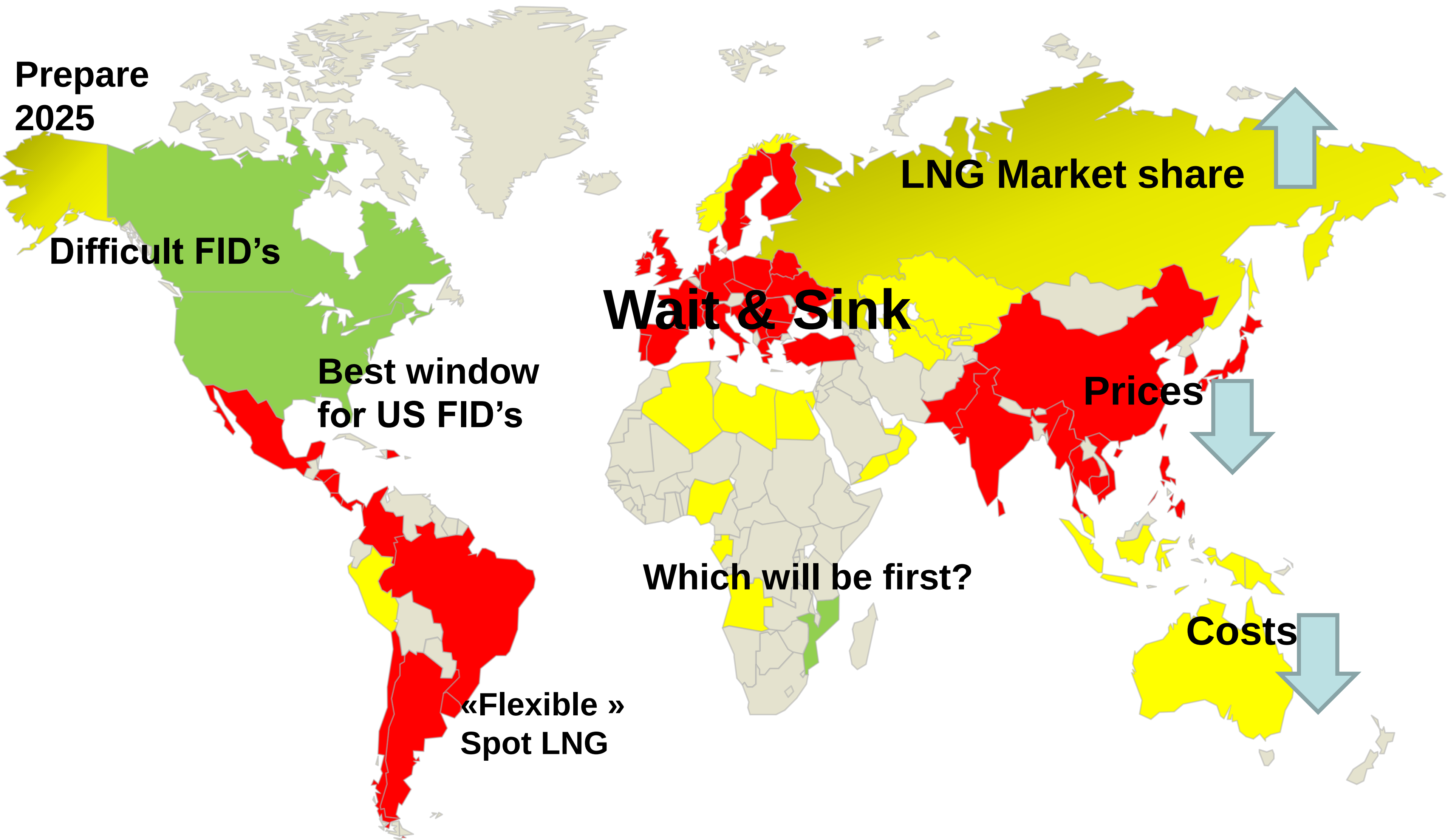
Japan LT LNG prices « **proxi** »: **14.85%** ***JCC**[n-3] - **a**


a*JCC(n-3) +b
JAPAN
KOREA
TAIWAN
CHINA
ARGENTINA
JKM
METI SPOT
18.0
16.0
14.0
12.0
10.0
8.0
6.0
Mar-14
Jun-14
Sep-14
Dec-14
Apr-15
Jul-15
Oct-15

Sources for « spot » LNG sales



The race for new LNG LT supply to the World



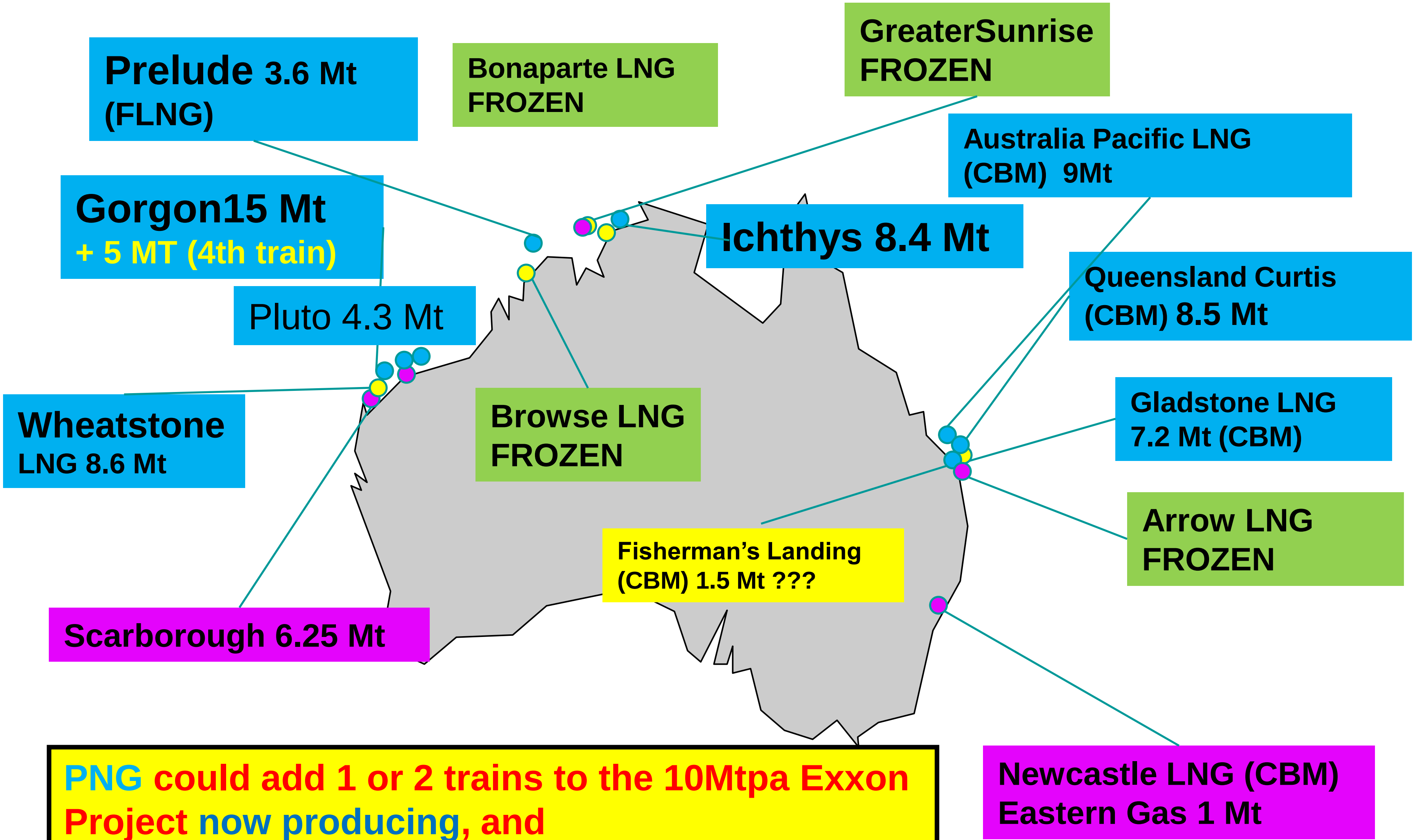
A new « Cold War » breaking in the Arctic between Alaska and Russia

Suppliers’race to Markets

NOC's & IOC's future LNG plants (under study)

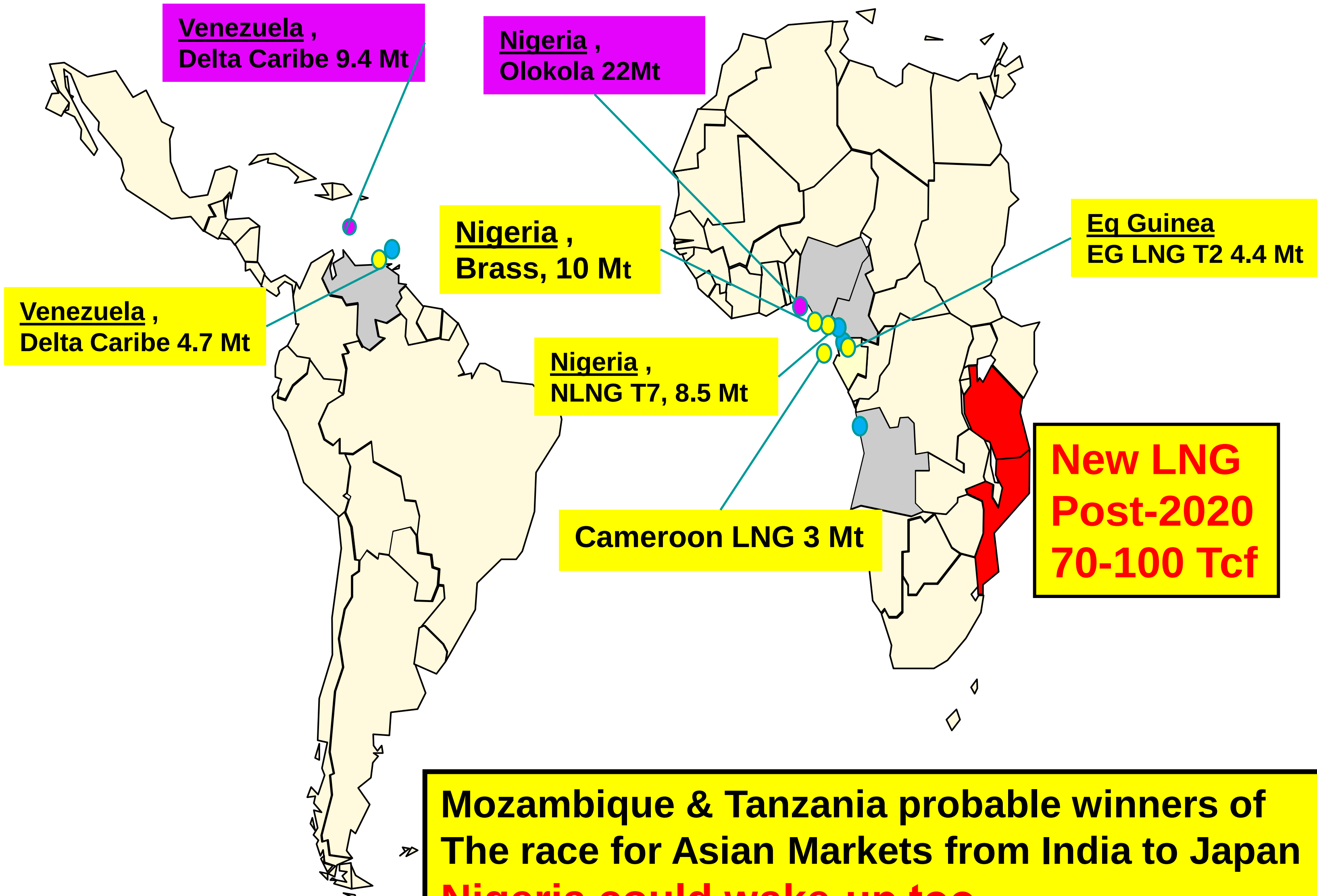
« Time is of essence »

Australian LNG estimate >100 Mtpa by 2020



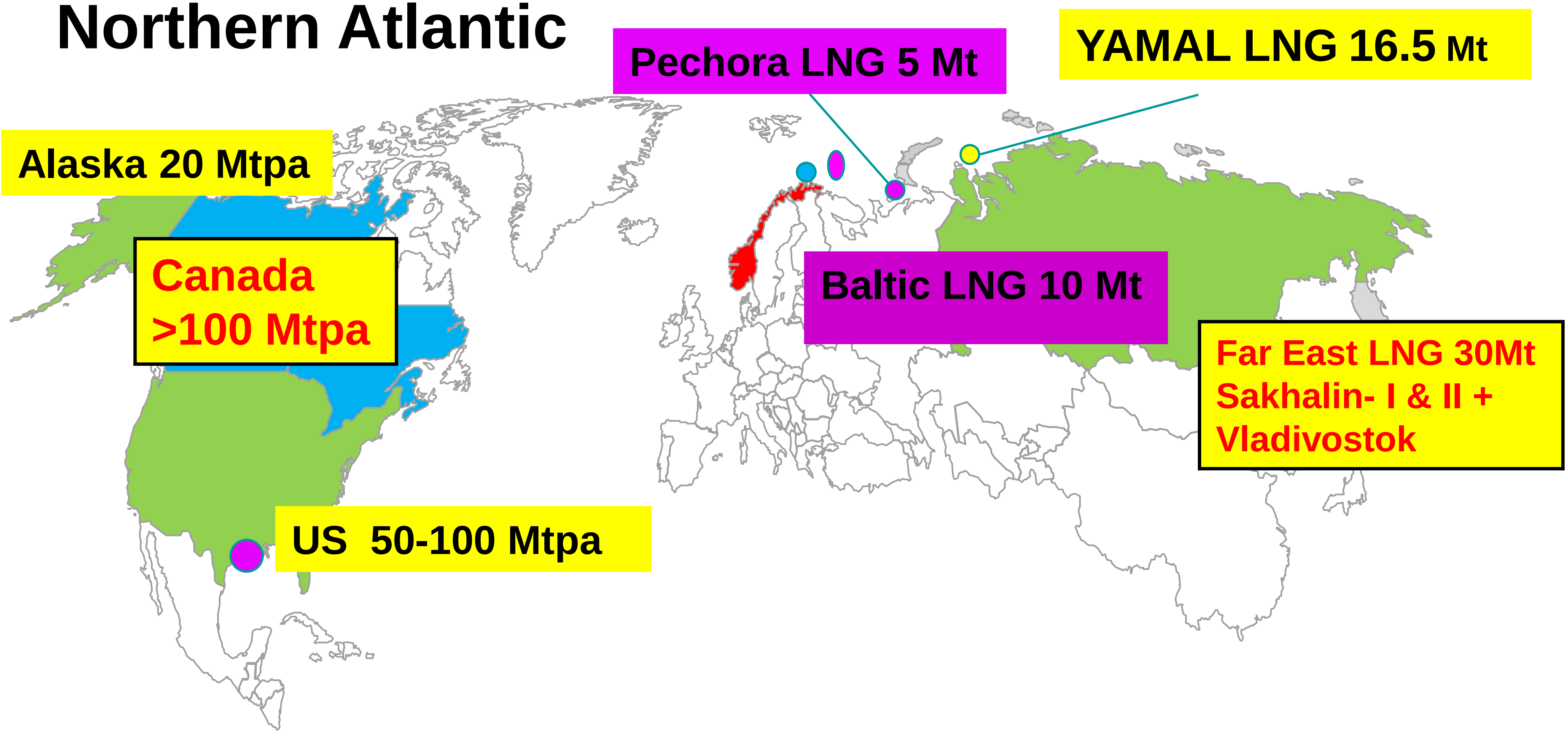
PNG could add 1 or 2 trains to the 10Mtpa Exxon Project now producing, and "Don't discard Indonesia for new LNG too!"

Southern Atlantic LNG: +23 Mtpa (+39Mtpa)



Mozambique & Tanzania probable winners of The race for Asian Markets from India to Japan
Nigeria could wake-up too…..

Northern Atlantic



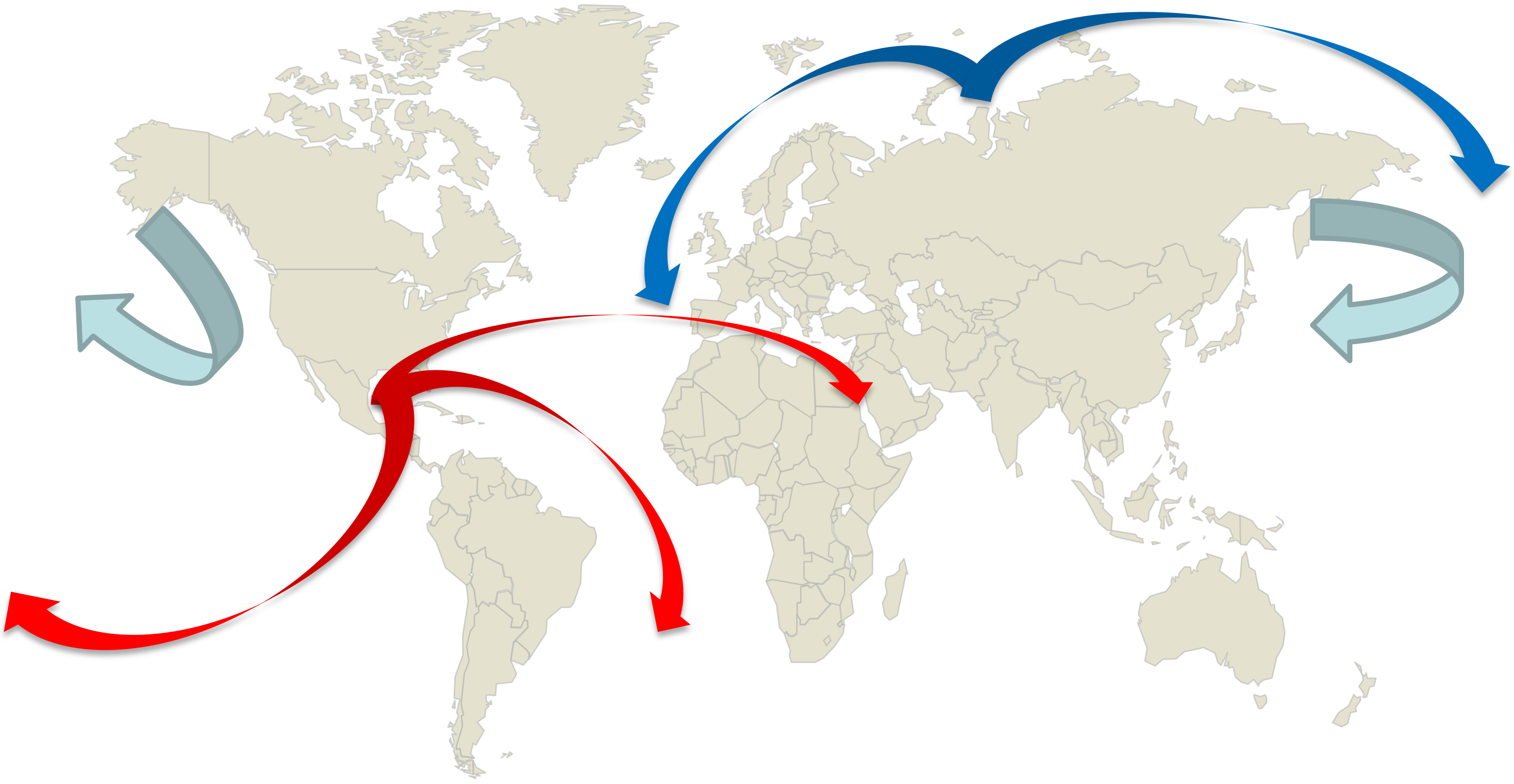
The toughest race for FID's these days

(US 48, Alaska, Canada, East & Arctic Russia)

Shaping a new energy landscape post 2025

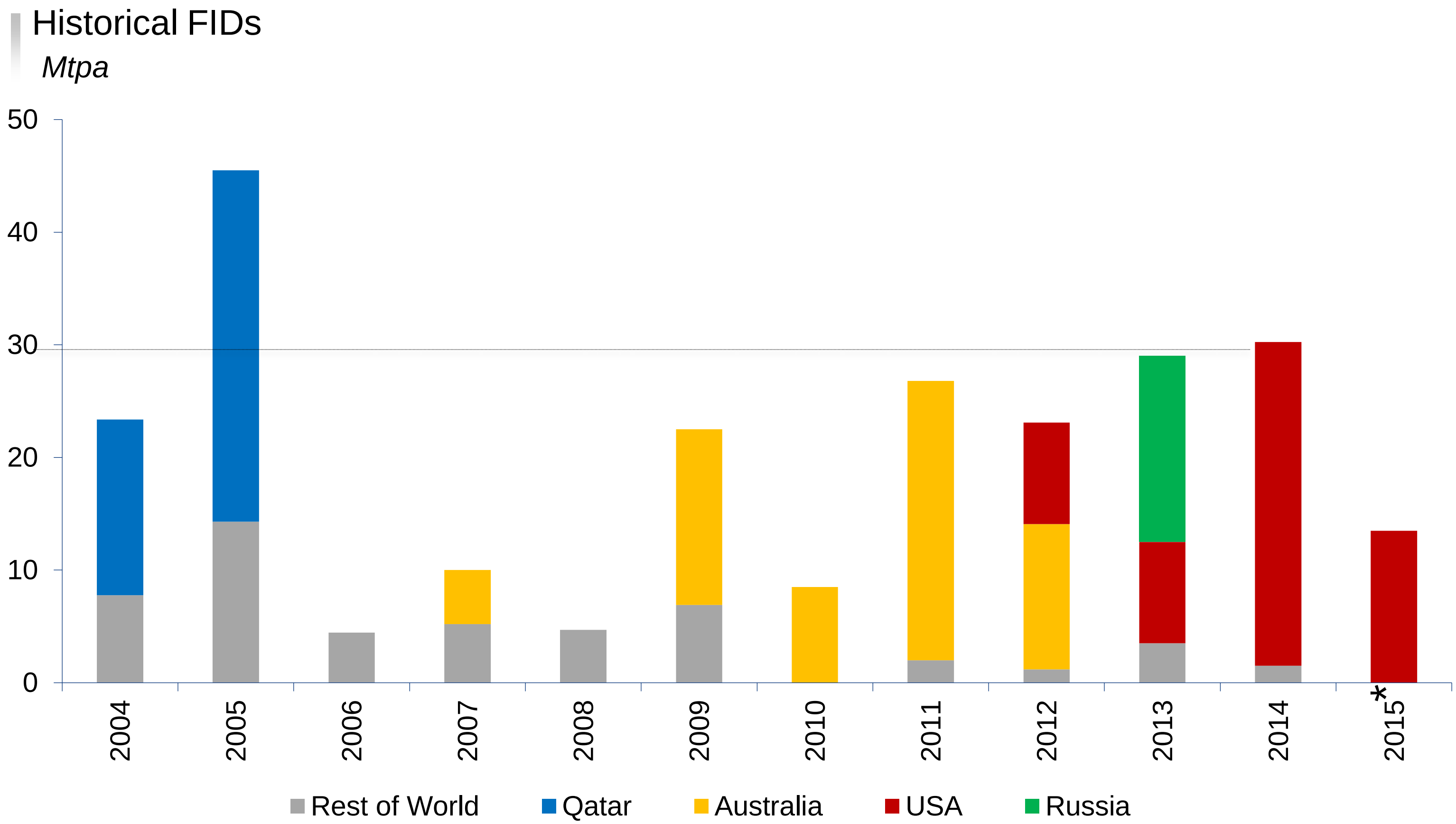
US and Russia LNG competitors

Panama and Arctic route well positioned for potential basins arbitrage



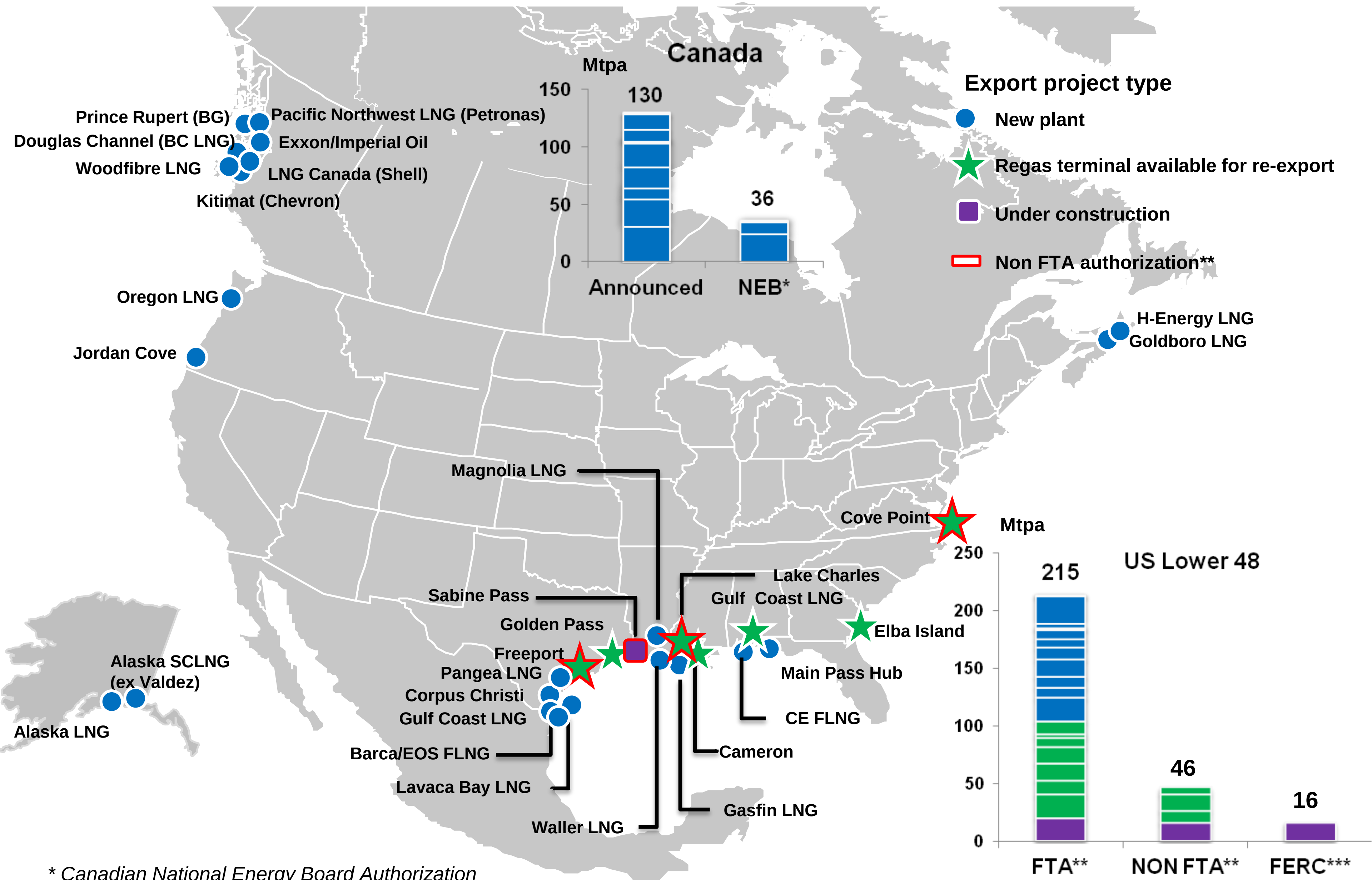
Recent LNG Projects FID's

Massive New LNG CAPACITY by 2020: more than 100 Mtpa



Three projects in the US took FID in 2014 (Freeport, Cove Point, Cameron) adding ~30 Mtpa Already 15 Mtpa US projects took FID in 2015 (Freeport T3, Corpus Christi) taking advantage of already secured SPAs (*) Year-to-date

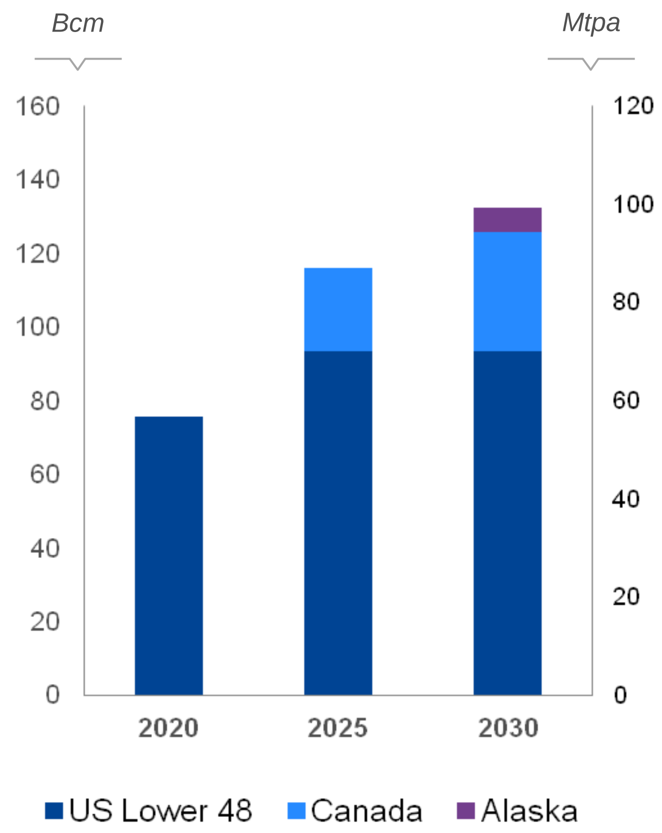
CANADA AND THE US FIGHTING FOR LNG EXPORTS MARKETS



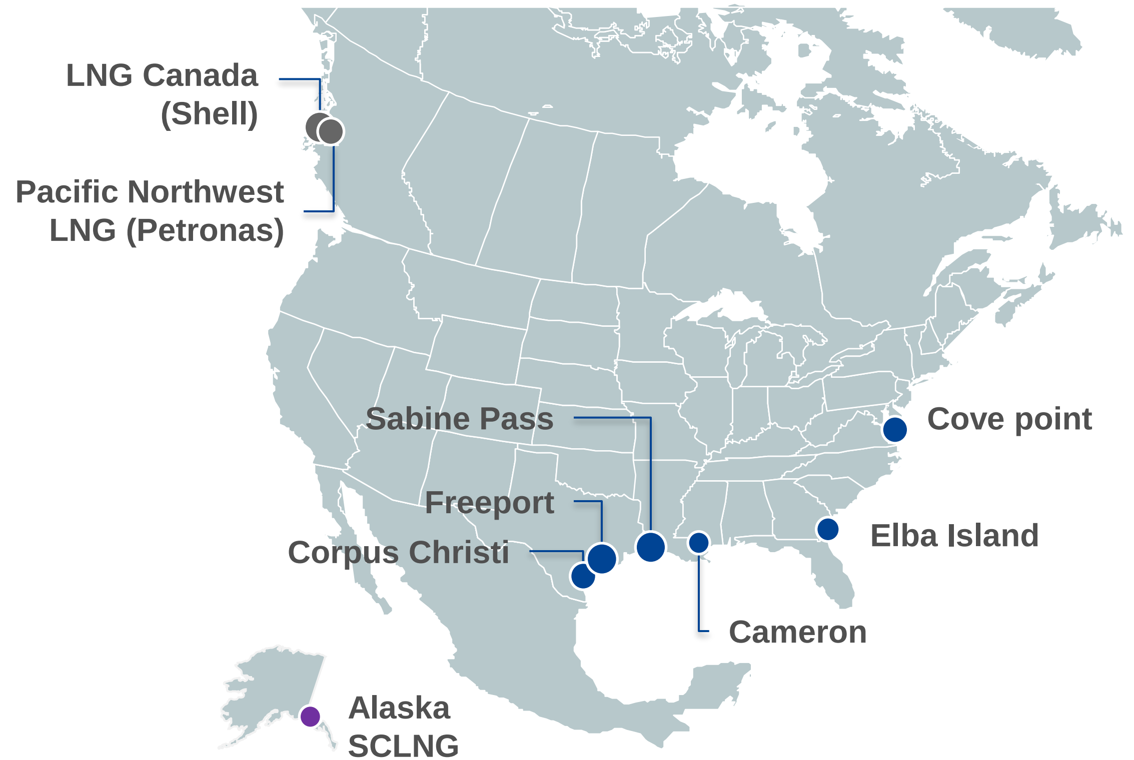
** Canadian National Energy Board Authorization*
***DOE Authorization for export to FTA / non FTA countries*
**** FERC Authorization to build the plant*

BEST ESTIMATE OF NORTH AMERICA LNG EXPORTS

US / Canada LNG export scenario



Most probable American projects



And the

LNG demand is…..

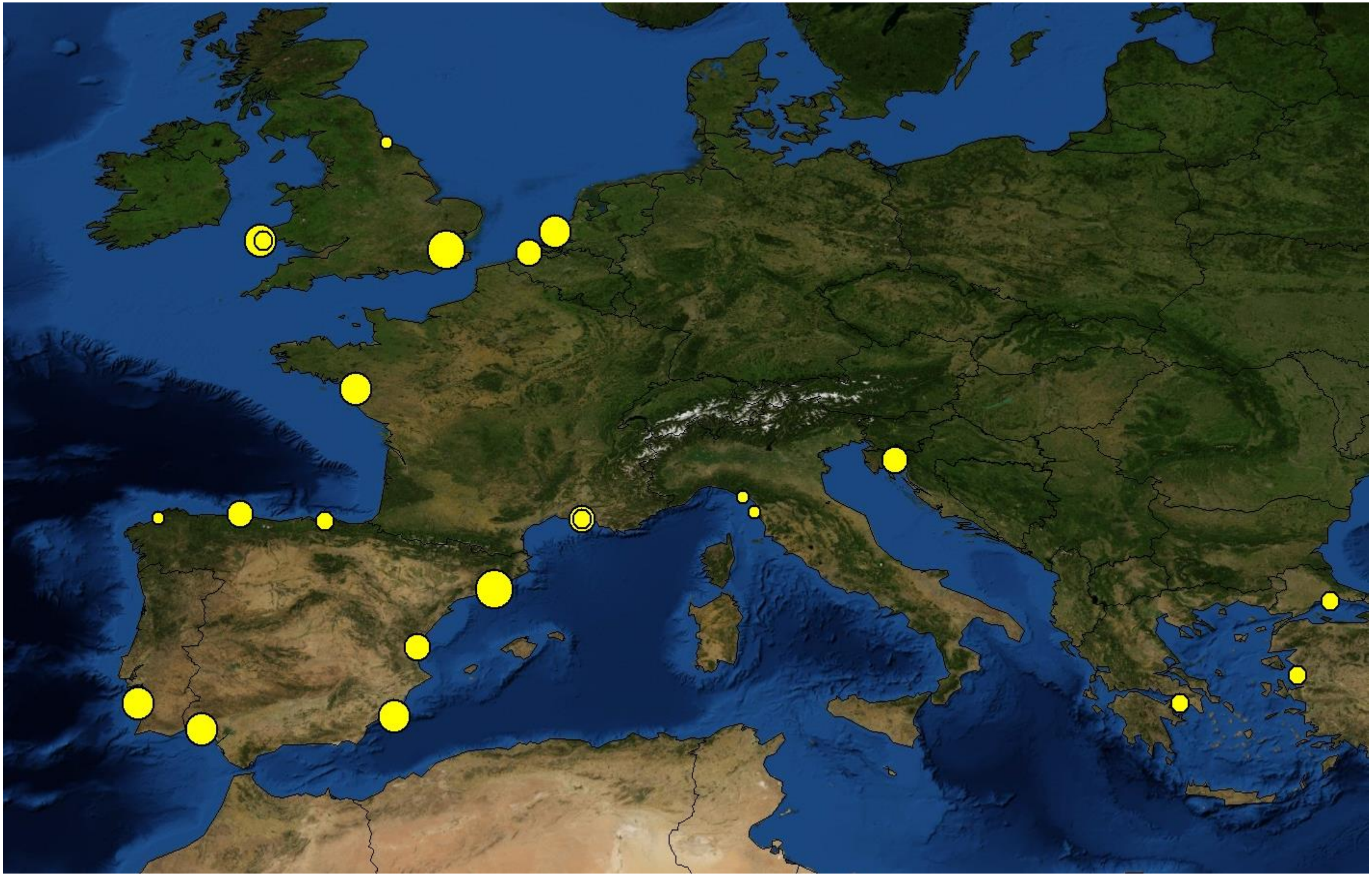
Serious Candidates for LNG imports: new re-gas terminals

(excluding India, China, Japan, Korea and Taiwan)

Malaysia, Indonesia, *Vietnam*, *Philipines*, Chile, Pakistan, *Bangladesh*, Egypt, Jordan, UAE, *Columbia*, Israel, Baltic countries, *South Africa*, *Uruguay* new imports

Europe LNG terminals as of 2013

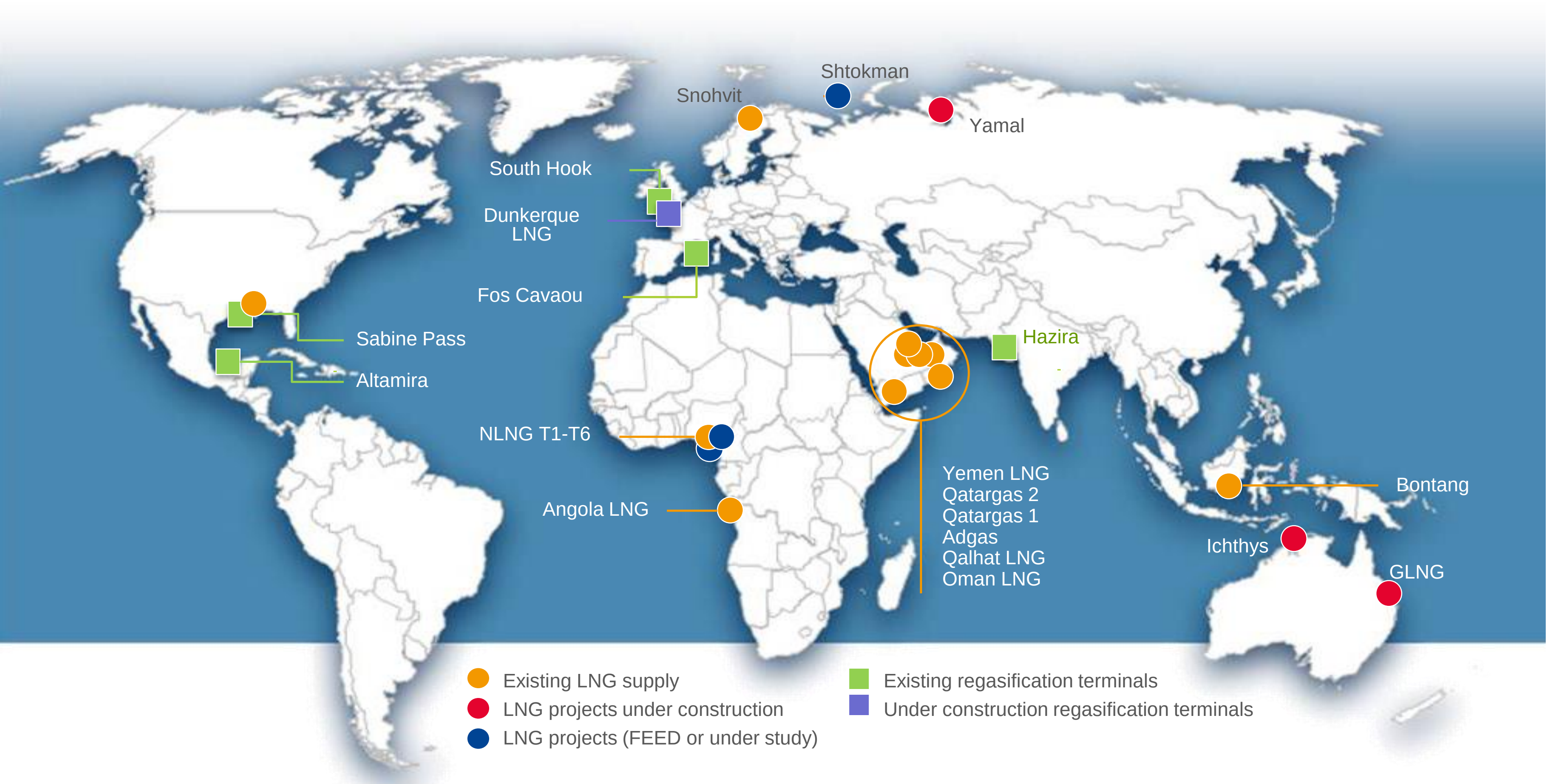
(210Bcm regas capacity- 22% load factor)



Conclusions

- Mid-term 2015-2020
  - Europe and Asia will share flexible supply
- Long-term (> 2020)
  - **Austral Asia & Russia to supply Asian buyers**
    - Australia, PNG, Russia, North America and Mozambique in the race for securing Buyers in Asia
  - **European Buyers may count on 'Flex LNG"**
    - From existing hidden LNG
    - From contracted LNG export from the US (and Canada?)
  - **US Gulf of Mexico LNG exports**
    - to prove a good bet for both Europe & South America
- LT Buyers to decide which projects they like best

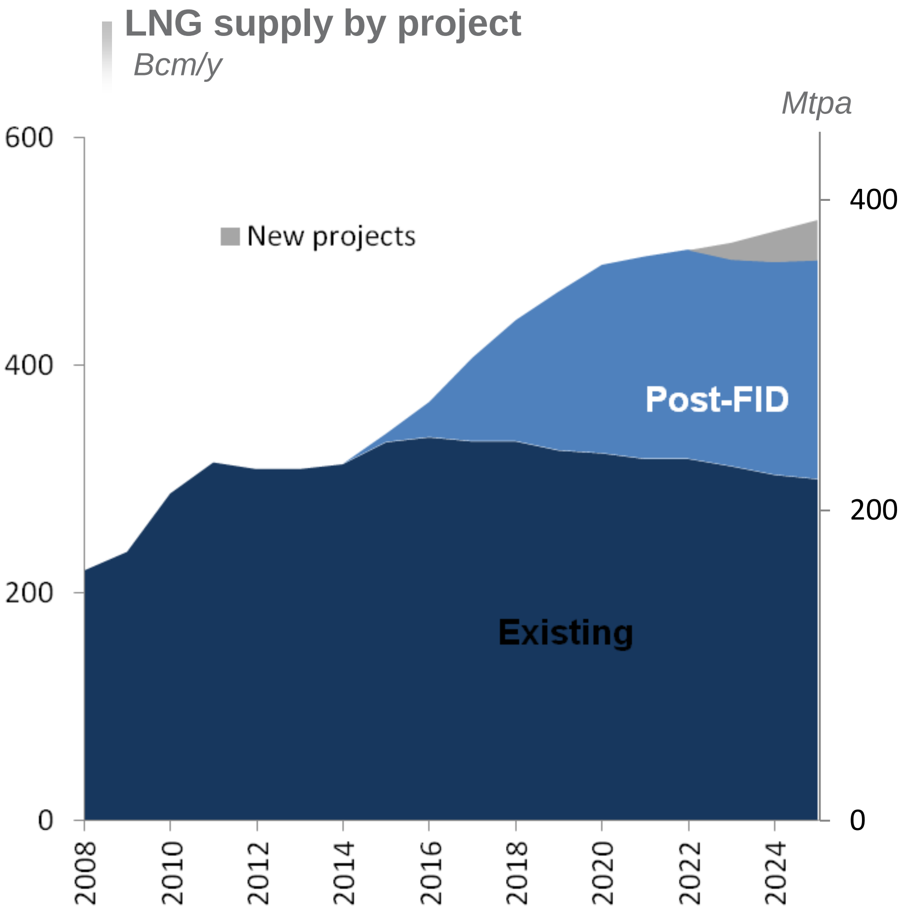
Total - A global LNG player

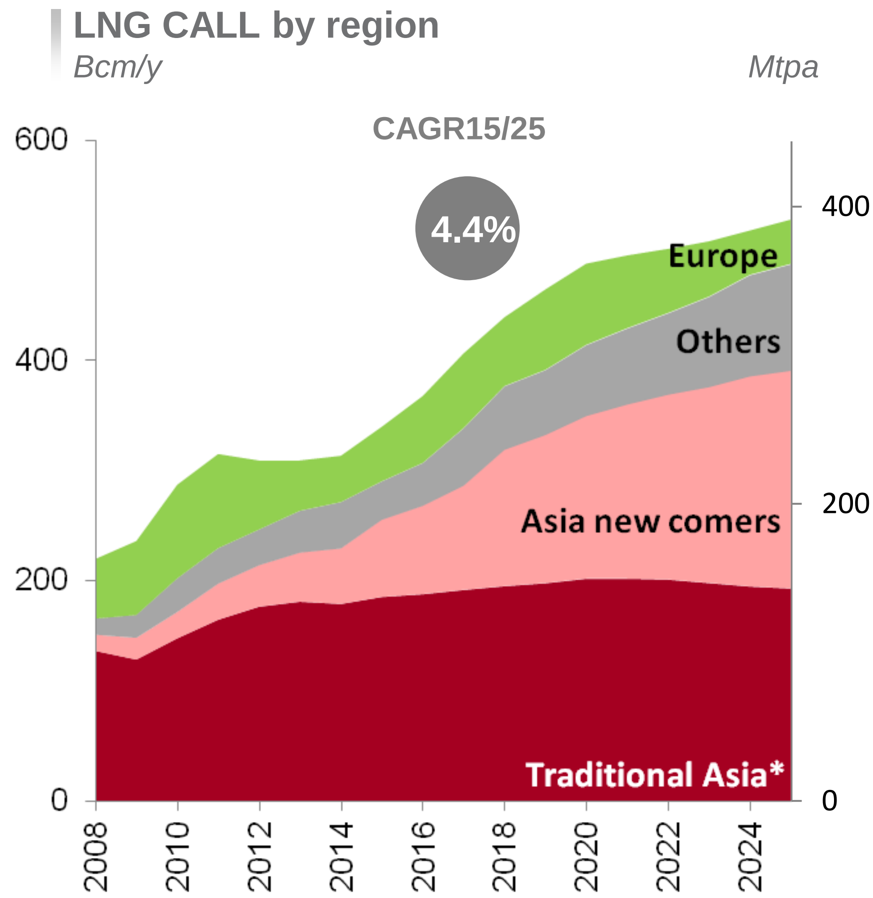


* Group share of LNG production, by affiliates and equity interests (including production equivalent for Bontang LNG facility)

** LNG purchases by the Group, including those from subsidiaries and participations that are part of the Upstream LNG portfolio

WORLD LNG SUPPLY FORECAST vs ESTIMATED DESTINATIONS
(AS OF SEPTEMBER 2015)





New sanctioned projects mainly from Australia, US and Russia adding 40% of the existing capacity in the next 5 years
Europe: flexible market (pipeline competition) as well as Asian newcomers