



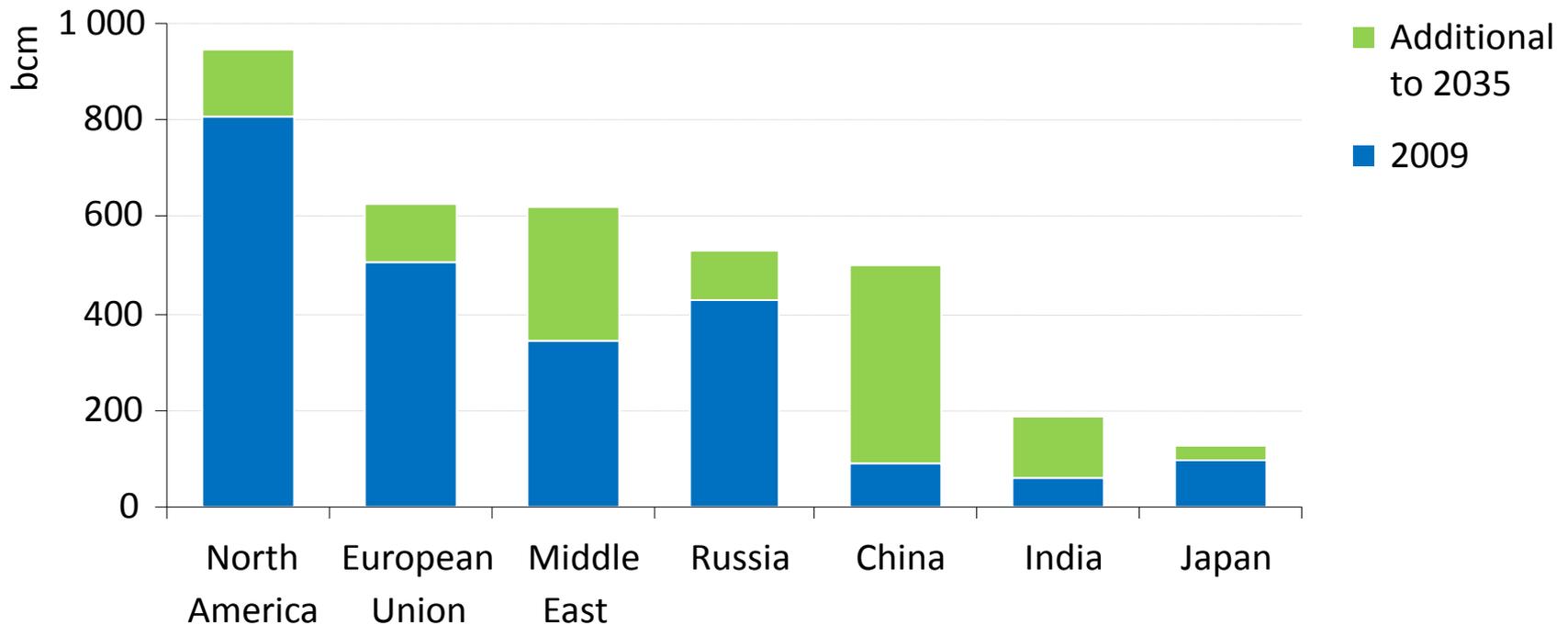
# **The Challenge of Investment to ensure LNG Supply to Asia**

**LNG Producer Consumer Conference  
Tokyo, 19 September 2012**

Didier Houssin, Director Energy Markets and Security, IEA

# Gas accounts for 1/3 of global energy demand growth by 2030

Natural gas demand by selected region in the New Policies Scenario, 2009 and 2035



***The trend growth rate of gas demand is equivalent to an LNG project every month***

# The traditional T.O.P. model has been effective but faces challenges



Dedicated  
upstream



Liquefaction



Oil-  
indexed  
contract

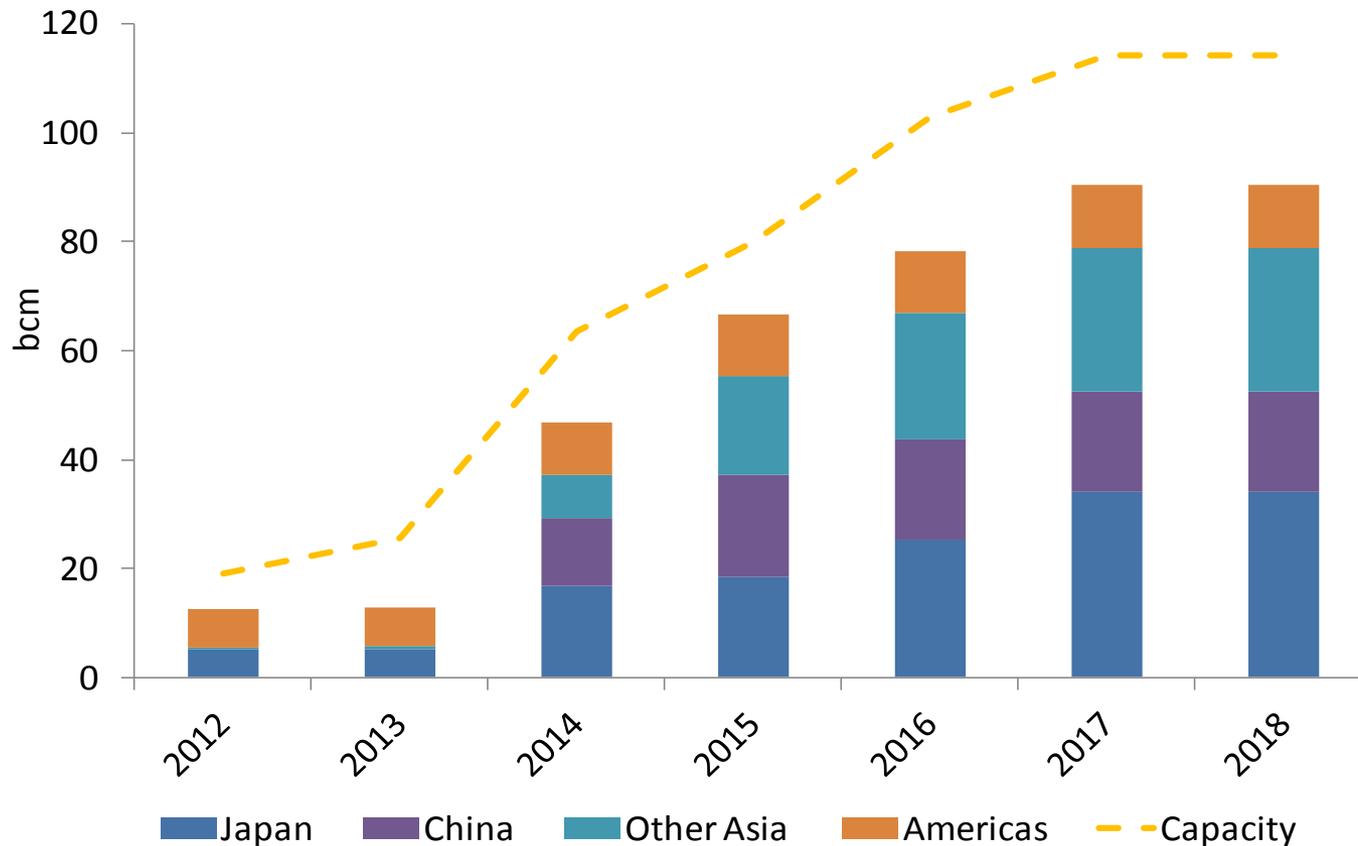


Customers

- At high oil prices, competitiveness is undermined
- Gas demand uncertainty creates risks for the buyers
- Competition from other gas sources and other primary energy sources (nuclear, renewables) is essential for efficient pricing

# Long-term contracts remain key for financing new investments

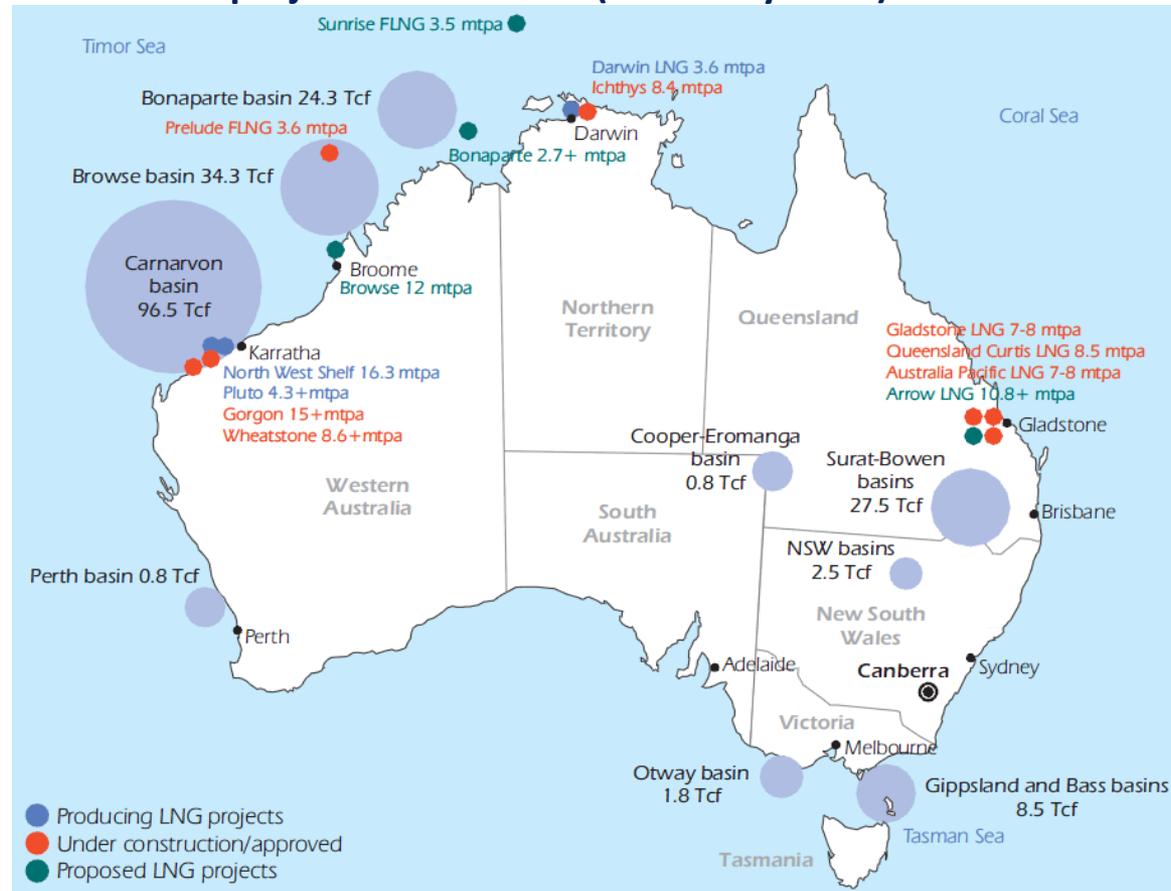
## New LNG capacity and the contracted volume on a long-term basis



- **81% of LNG that will come online over 2012-17 are contracted on a long-term basis, including Australian projects and Angolan LNG, originally contracted for US market.**

# Challenge 1: controlling costs (e.g. Australia)

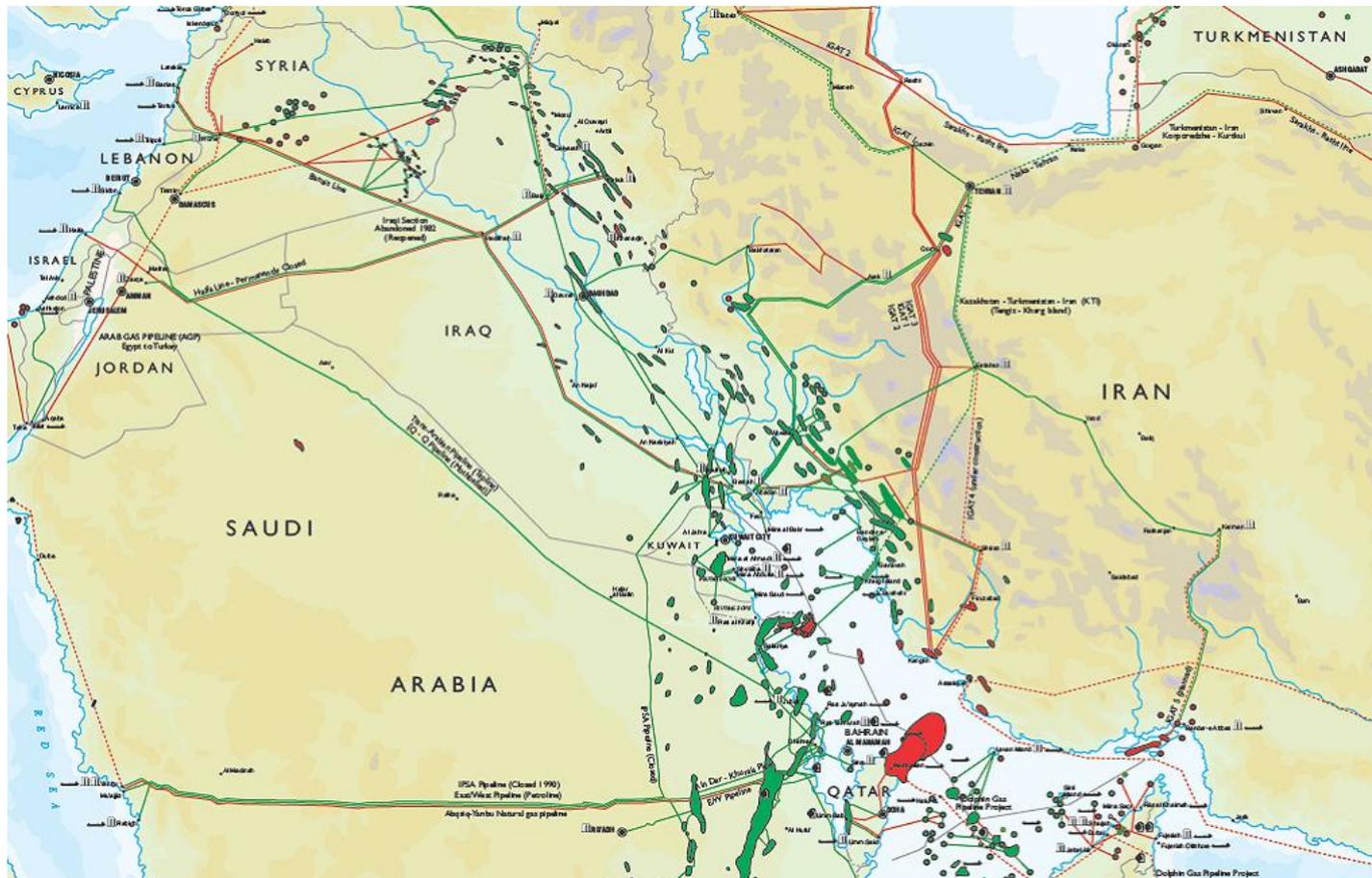
## LNG projects in Australia (as of May 2012)



This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

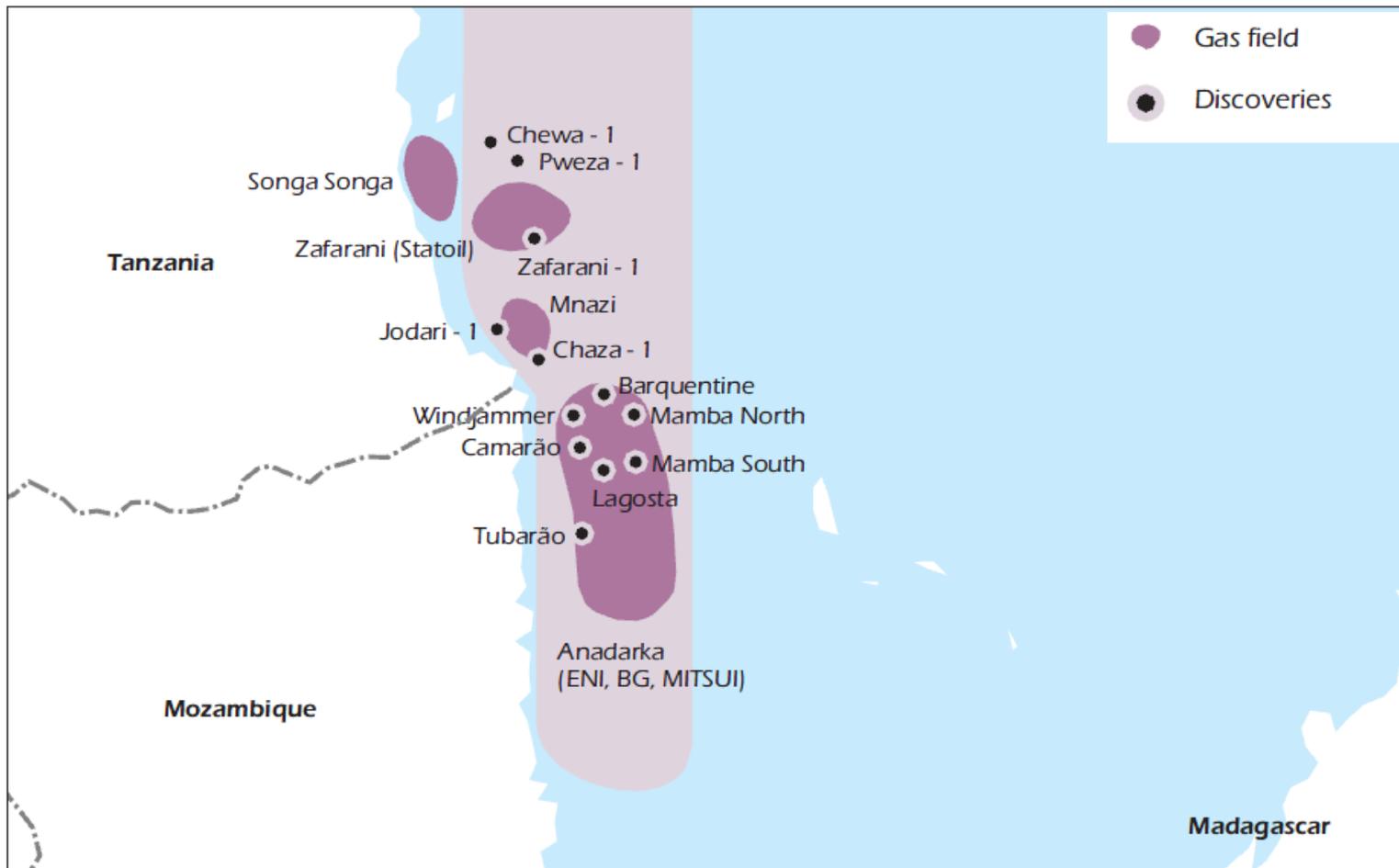
- 140 billion USD committed for LNG (83 bcm of LNG under construction , four are first of-a-kind projects)
- Remote locations, inflation of labor and services costs
- A large scale, secure, but not cheap supply

# Challenge 2: mobilizing large conventional gas resources (e.g. the Middle East)



- Qatar: new wave of investment unlikely in the short to medium-term
- Iran constrained by geopolitics
- Saudi Arabia, Iraq, Egypt need to develop further non associated fields follow domestic demand

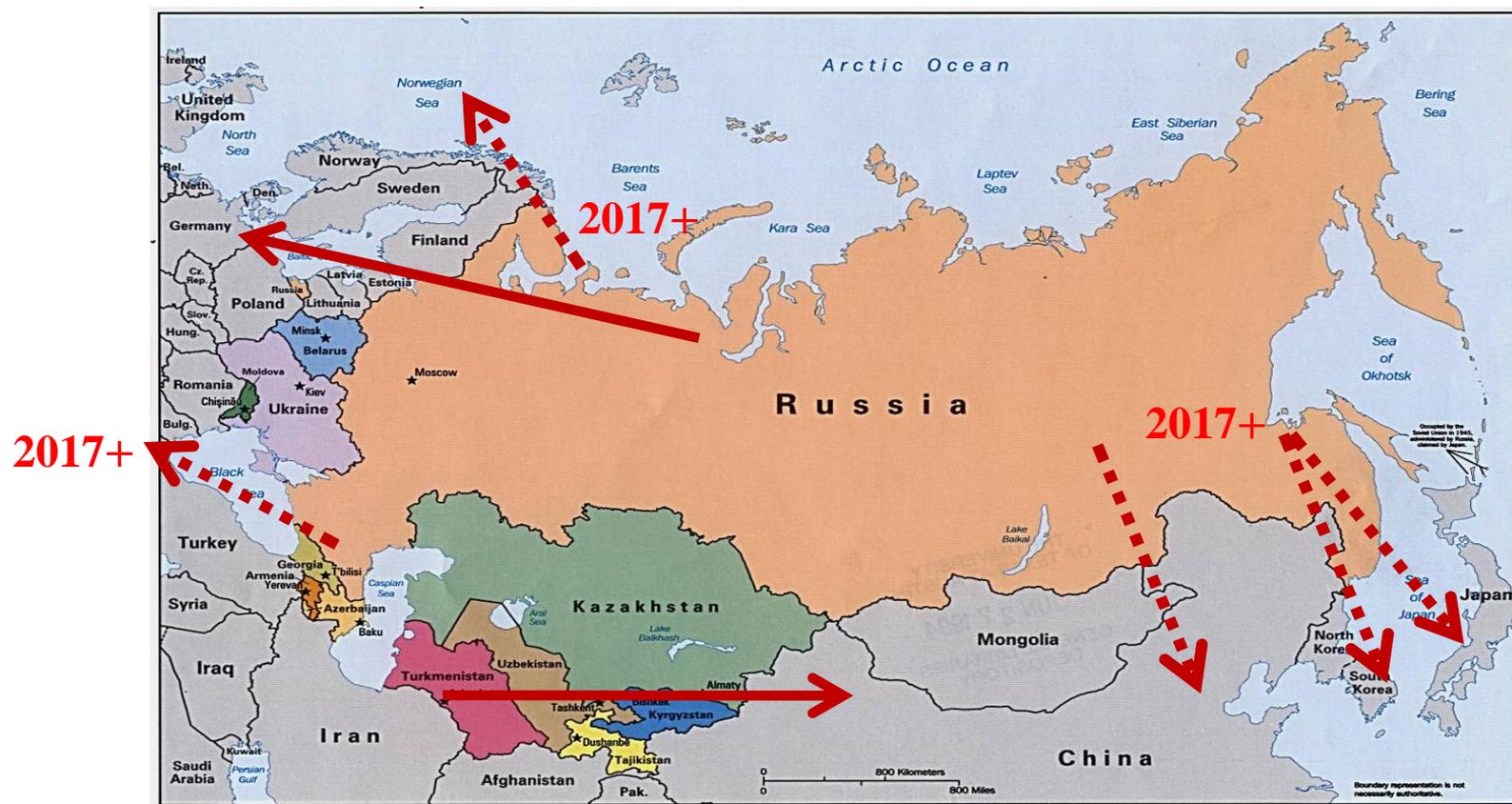
# Challenge 3: developing frontier upstream provinces (e.g. East Africa)



This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

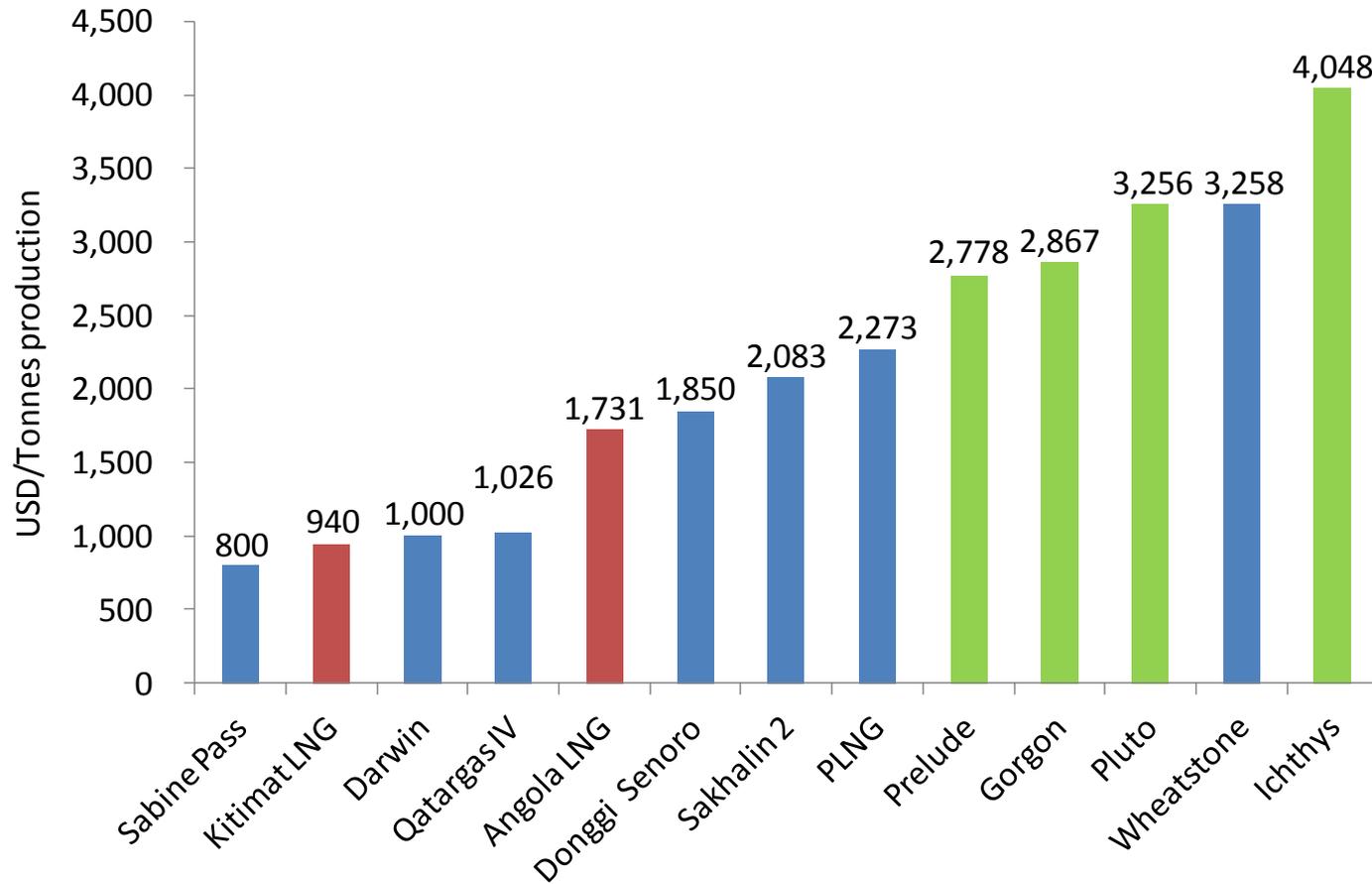
- Large discoveries ideally located to serve Asia, but
- Geologically complex, large investment needs
- Infrastructure yet to be built

# Russia and Caspian pipeline and LNG gas shifting to Asia?



- Yamal: 11.7 tcm reserves with a potential to produce 115bcm/y by 2017
- Far East/East Siberian projects for China/Korea/LNG export await FID
- Turkmenistan is increasing its exports to China (possibly to 65 bcm by 2020)

# New committed projects will be more expensive



- LNG development costs have more than doubled since 2003 worldwide, almost tripled in Australia.
- Main cost factors: location, labor costs, competition for EPC services

# Conclusions

- **Long-term contracts remain important to ensure LNG investment but there is a need for more competitive pricing and greater flexibility**
- **New LNG investment will need to move to frontier areas**
- **Cost control and project management is the key to develop competitive LNG supplies**
- **At a global level, governments, industry and international agencies need to cooperate to improve technology and tackle investment barriers**