

GAS

Medium-Term Market Report 2014

Medium-Term Gas Market Report

Laszlo Varro

Head, Coal Gas and Power Markets

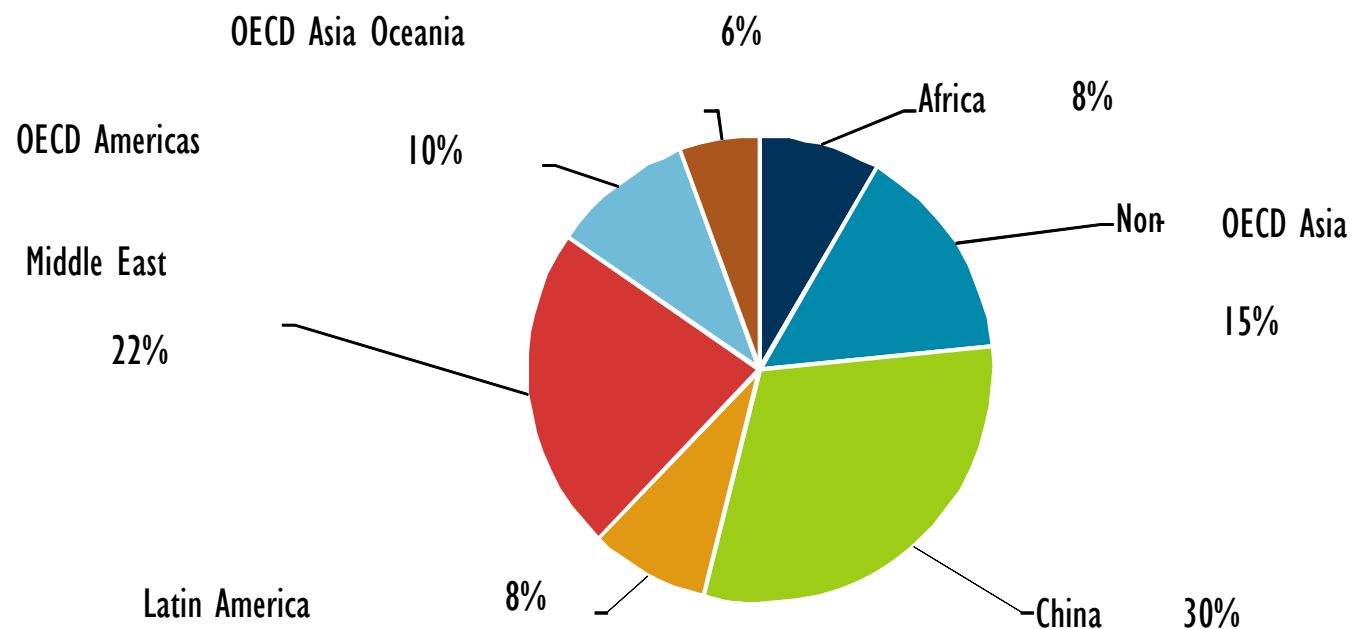


Market Analysis and Forecasts to 2019

Demand grows at 2.2% per year over 2013-19

Medium-Term
Market Report
2014

Incremental gas demand by region, 2013-19

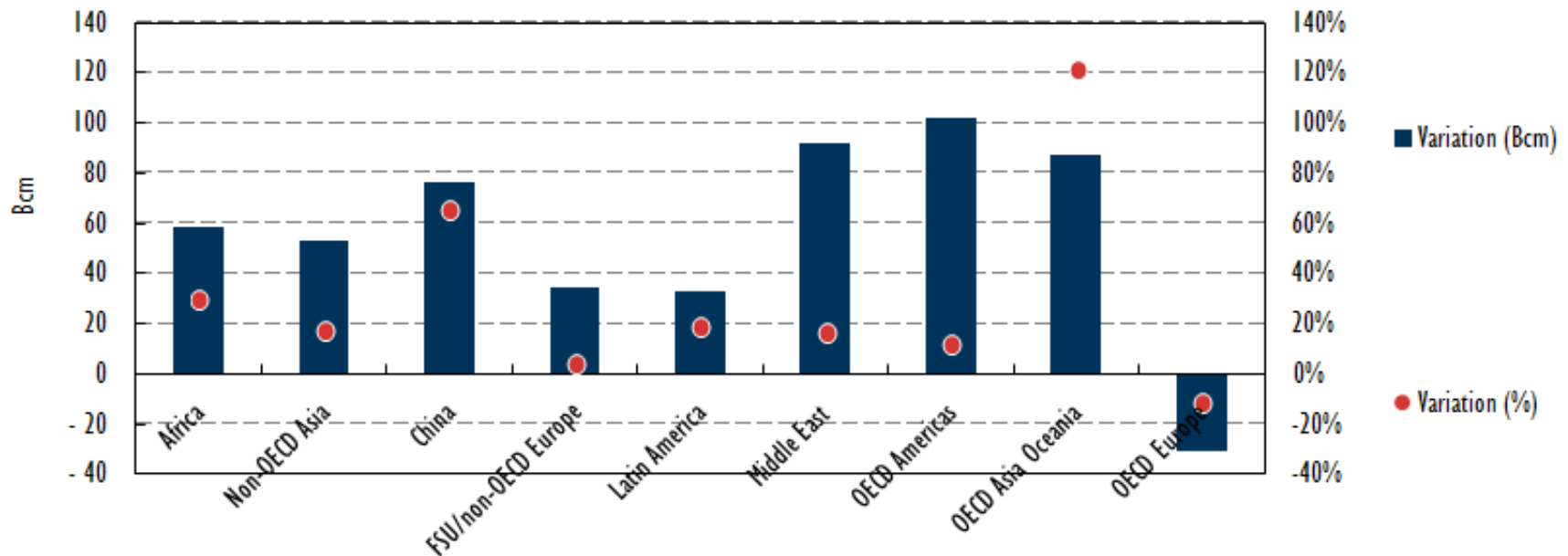


■ Demand in the FSU and Europe does not increase

Supply growing, not all available for export

Medium-Term
Market Report
2014

Incremental gas supply, 2013-19

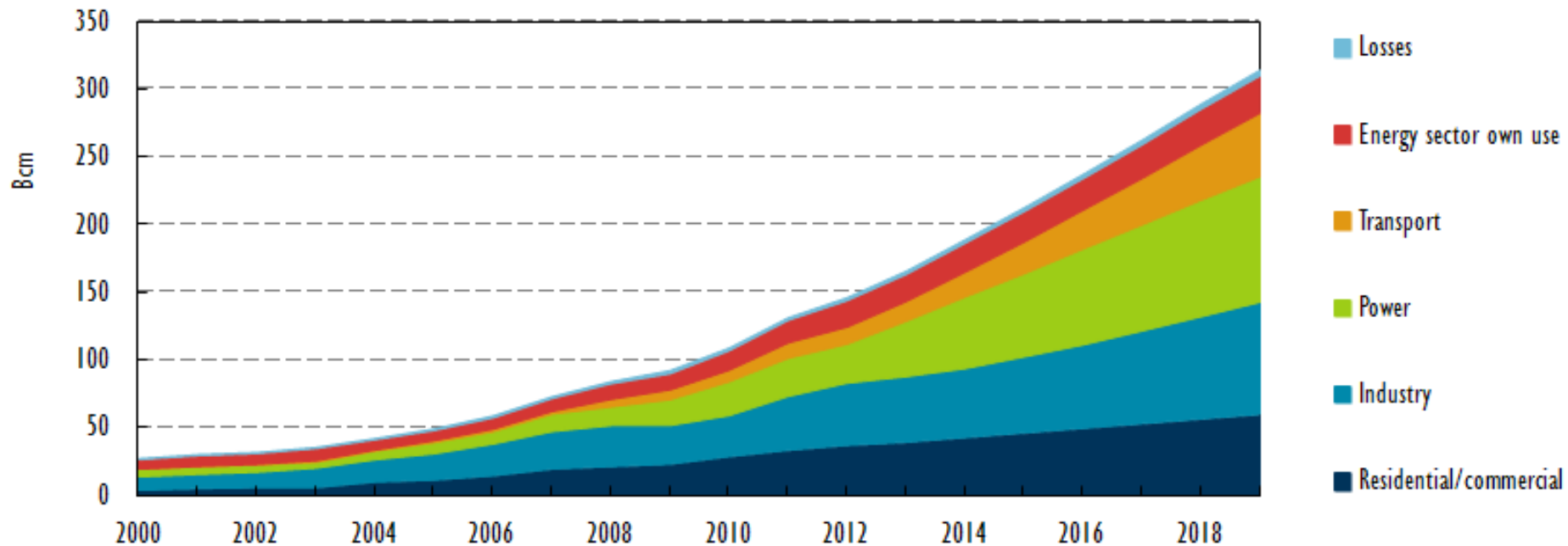


- **OECD Americas and Asia Oceania will represent 40% of additional supply, while FSU production falls significantly behind**

Air pollution issues encourages gas use in China

Medium-Term
Market Report
2014

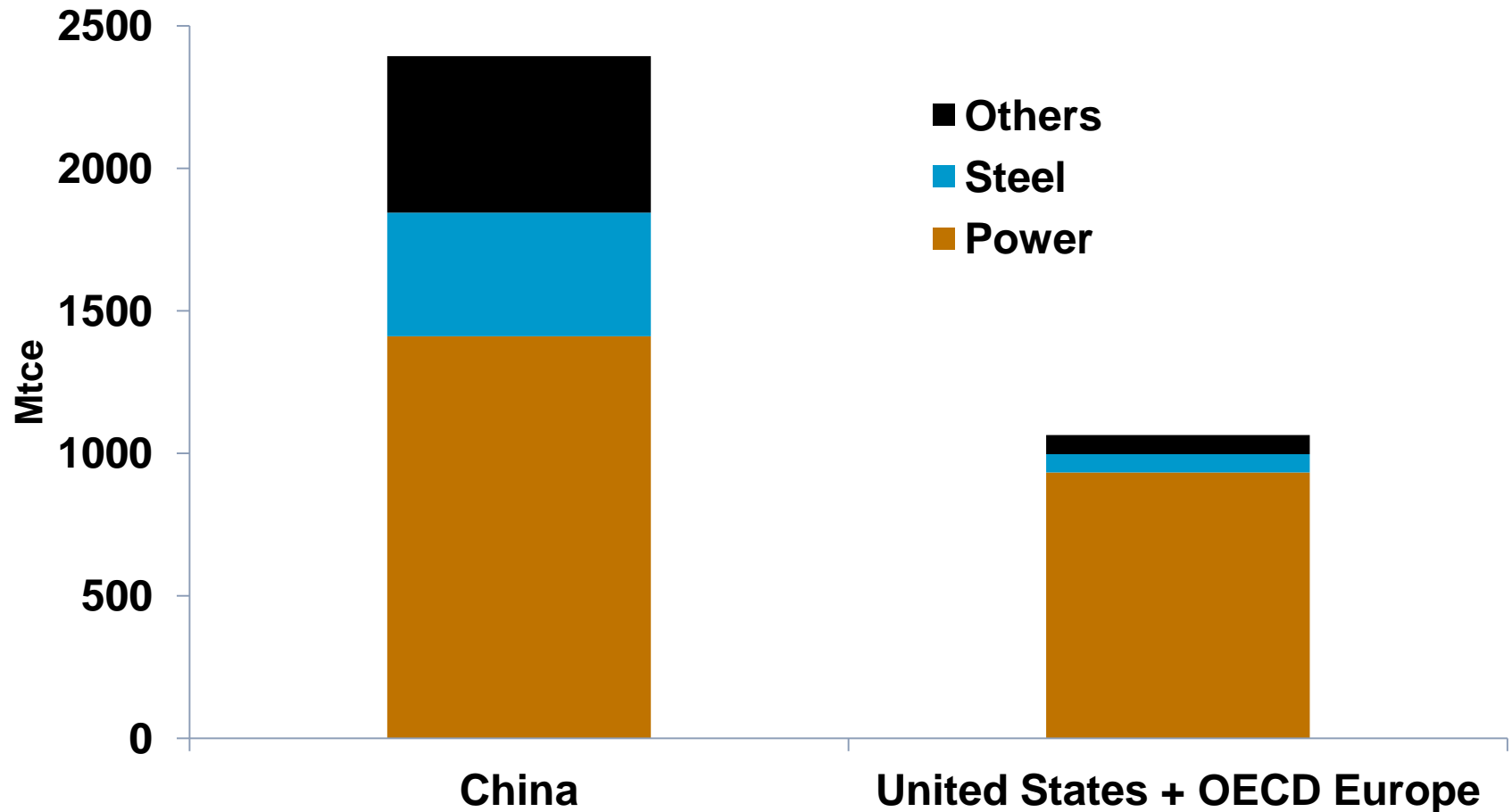
China's gas demand by sector, 2013-19



- Gas demand in China will gain 150 bcm over 2013-19: this is 2 times UK's gas consumption and 2 times China's gas production growth

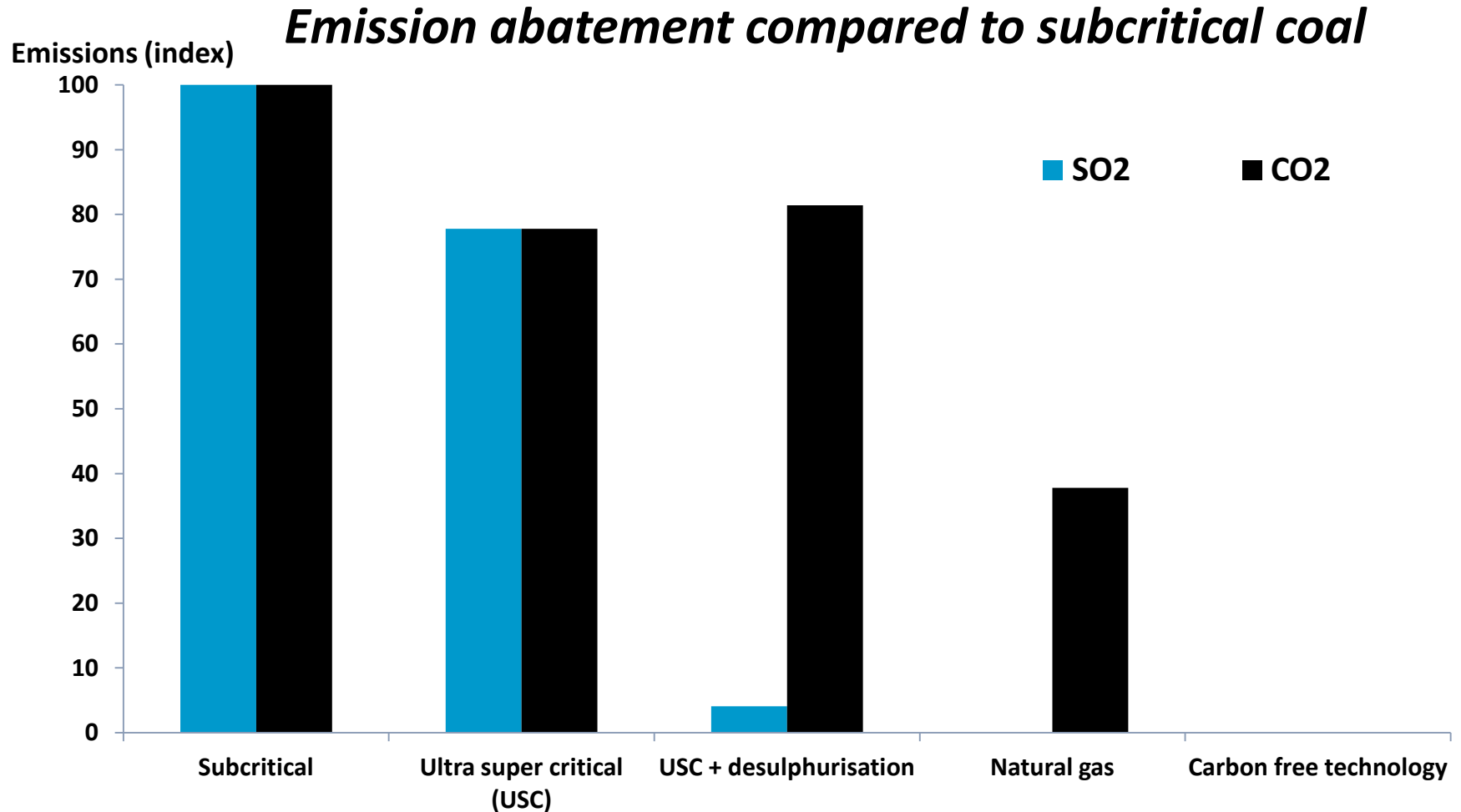
Coal demand per sector

Medium-Term
Market Report
2014



Local air pollution policies might help gas

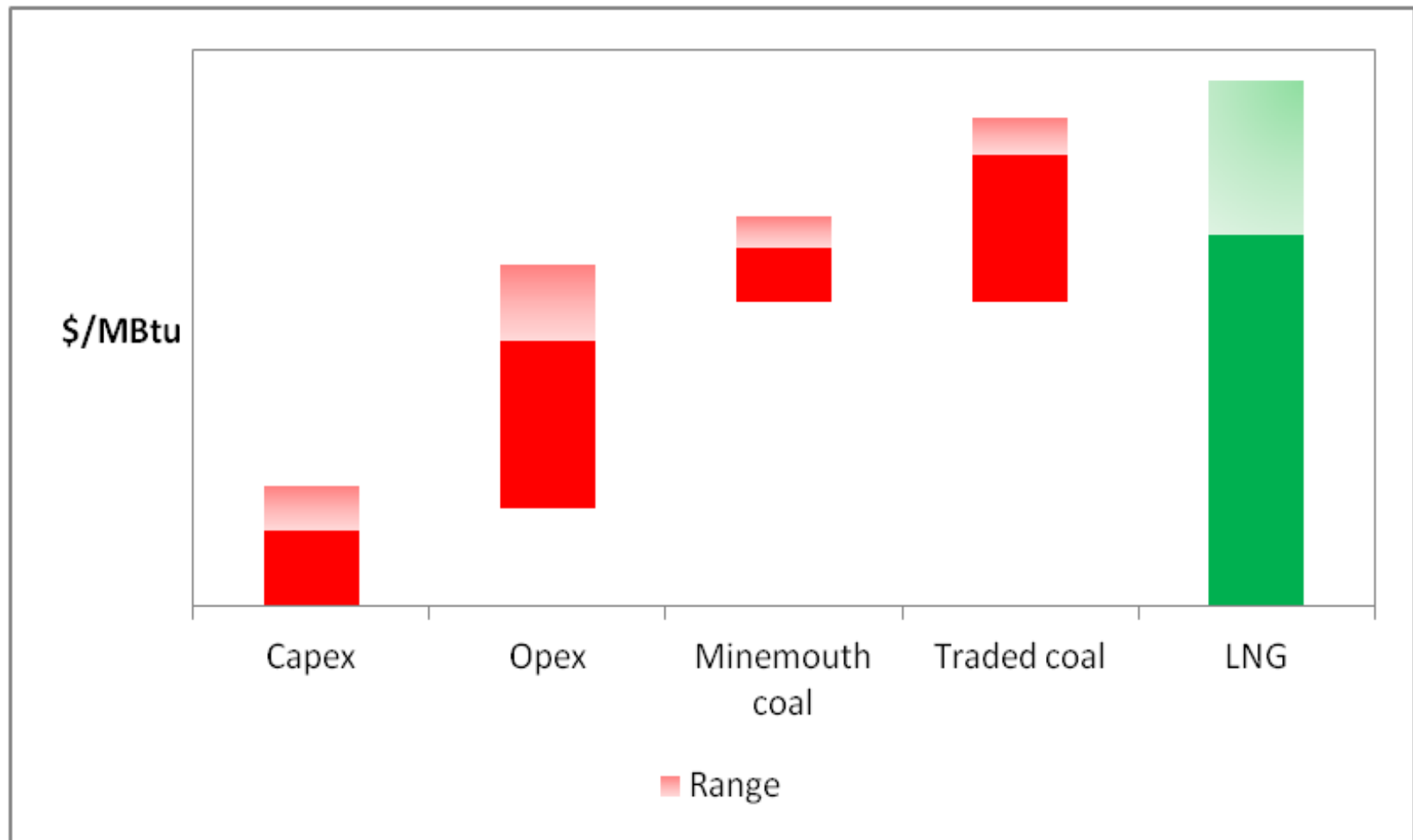
Medium-Term
Market Report
2014



Or they might increase coal demand further

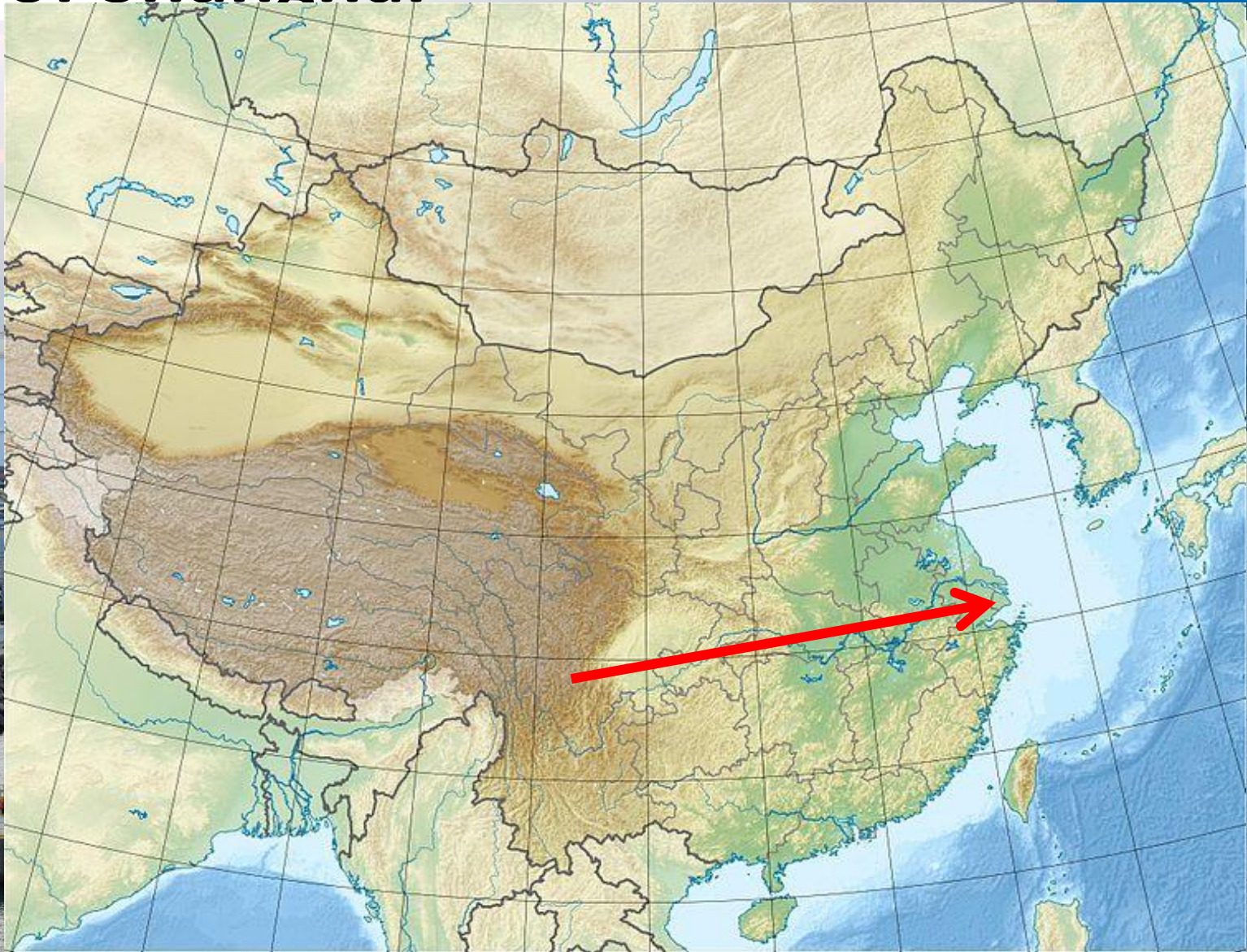
Medium-Term
Market Report
2014

AN ESTIMATE OF COAL-BASED SNG



Case study: Clean energy for the city of Shanghai

Medium-Term
Market Report
2014



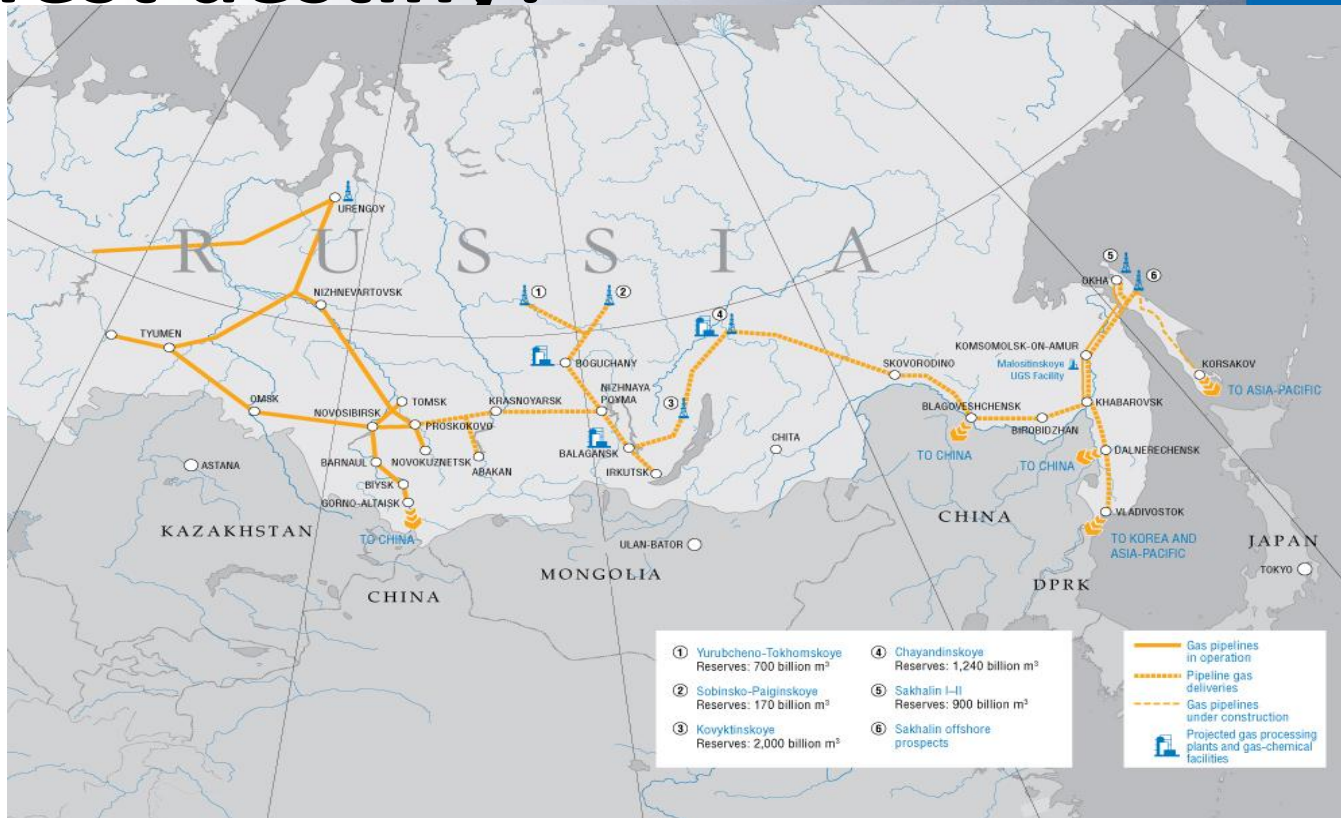
The only country with a rapid energy growth and cold winters

Medium-Term
Market Report
2014



Russian gas: the East is the manifest destiny?

Medium-Term
Market Report
2014

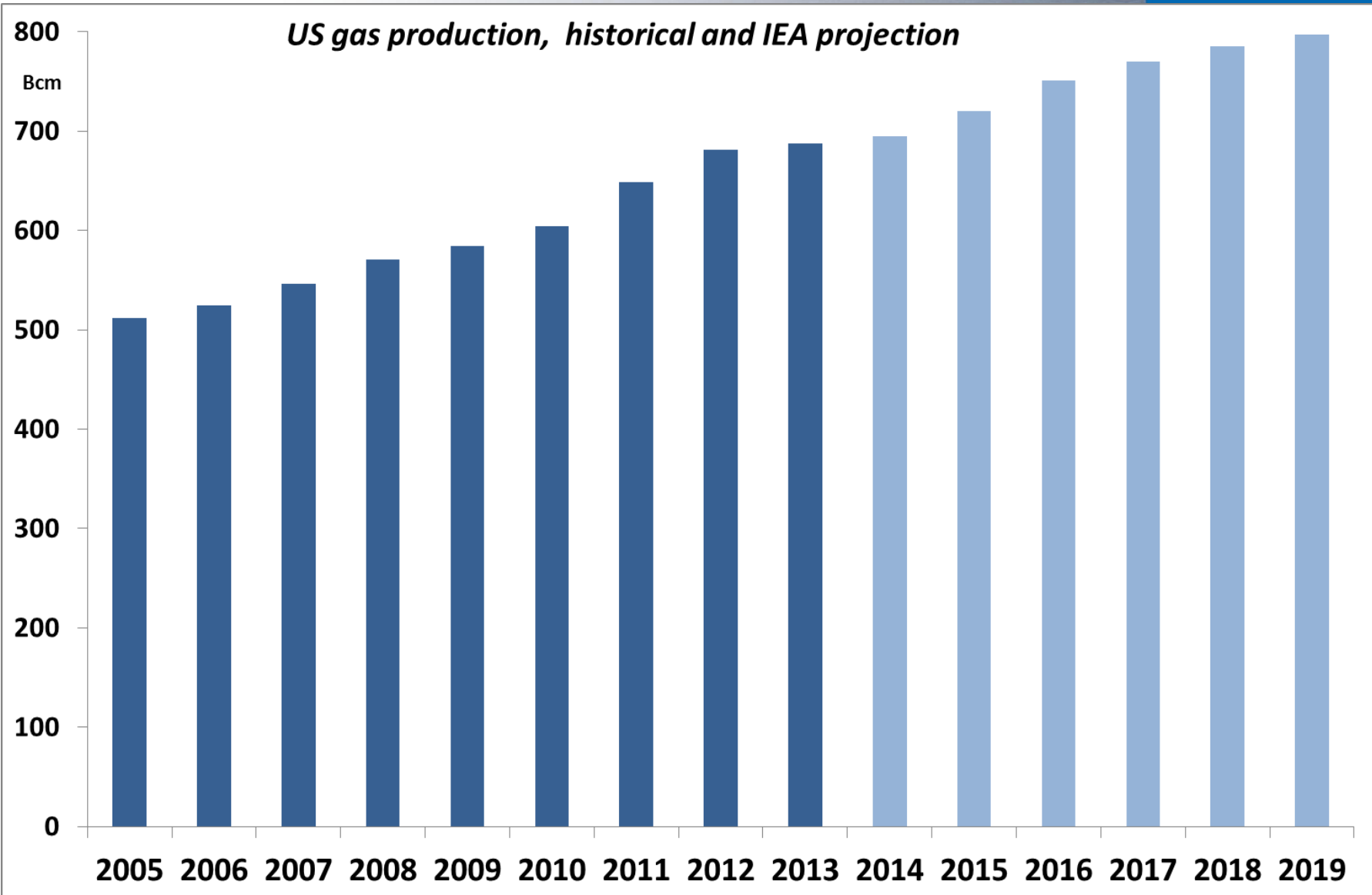


Source: Gazprom

- ***Production constrained by EU and domestic demand***
- ***Surging independent production backed by NGLs***
- ***Asian exports depend on capital-intensive infrastructure***

North American shale: defying gravity

Medium-Term
Market Report
2014



Why US gas production is unstoppable?

Medium-Term
Market Report
2014

- Marcellus
- NGLs and Light Tight Oil
- Technological progress
- Access to capital

“This plant, if it’s located in Germany, energy costs are double, maybe triple; same in Japan. So this gives us a big edge”



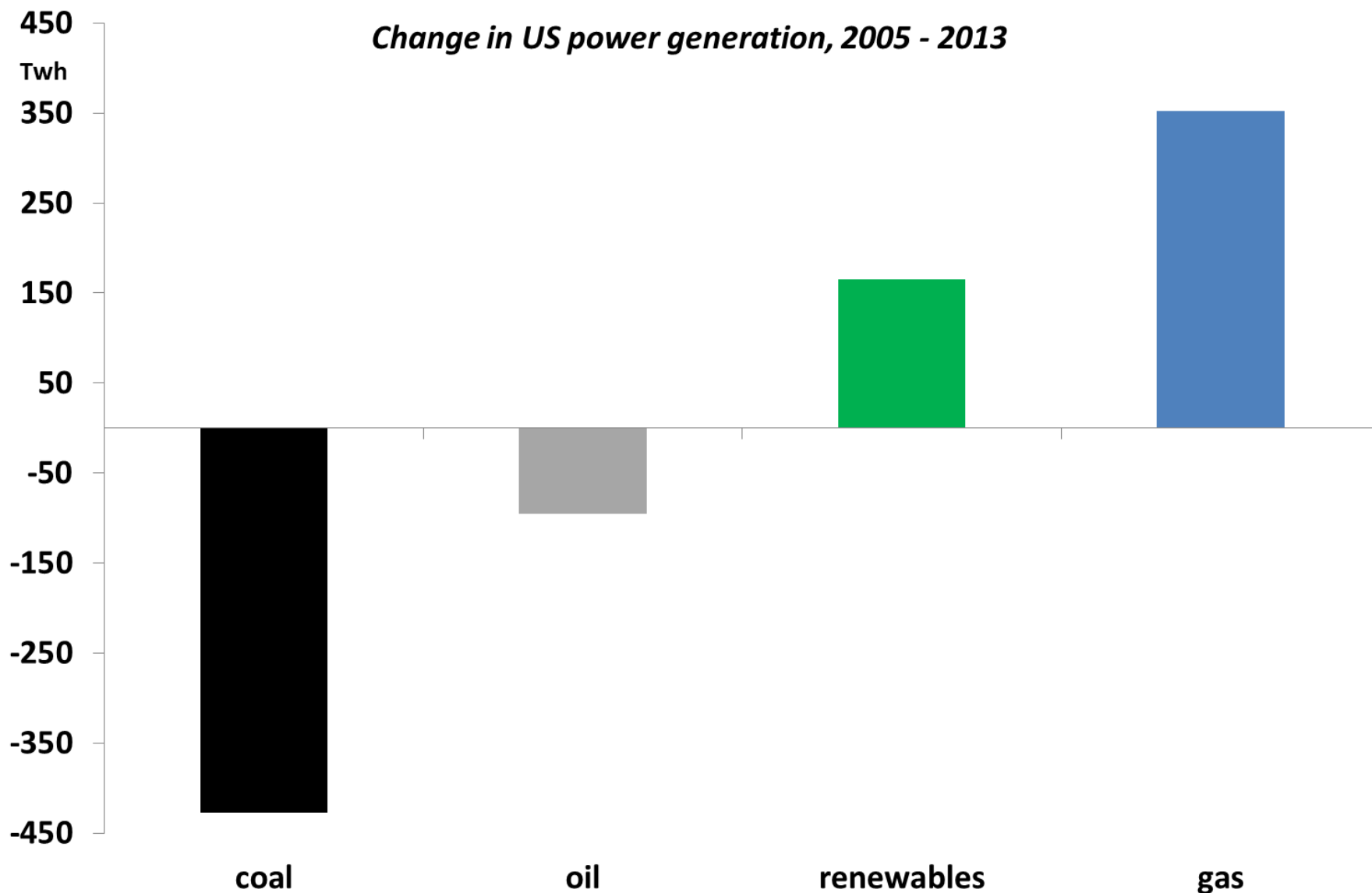
President Obama at the AcelorMittal steel plant in Cleveland

The Obama plan and US gas demand

Medium-Term
Market Report
2014

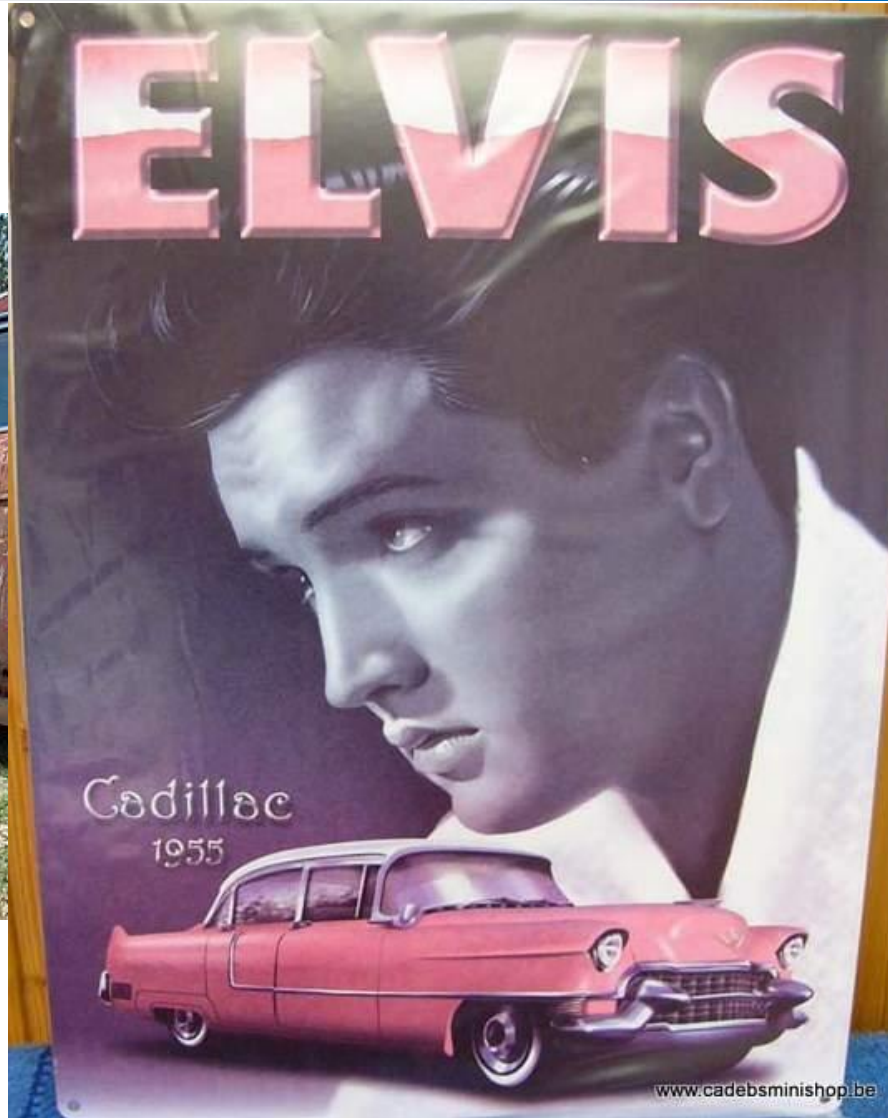


Change in US power generation, 2005 - 2013



Coal was the KING of the US But capacity is now showing its age power system

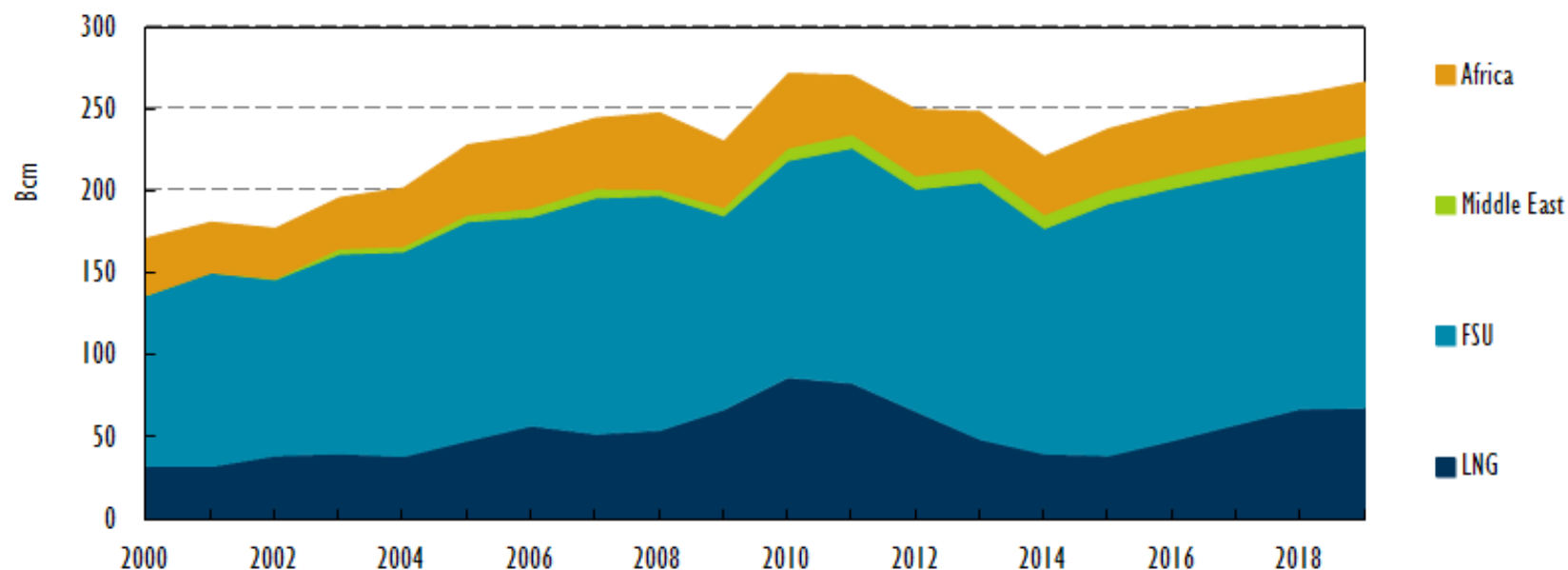
Medium-Term
Market Report
2014



Europe flat and lacking options

Medium-Term
Market Report
2014

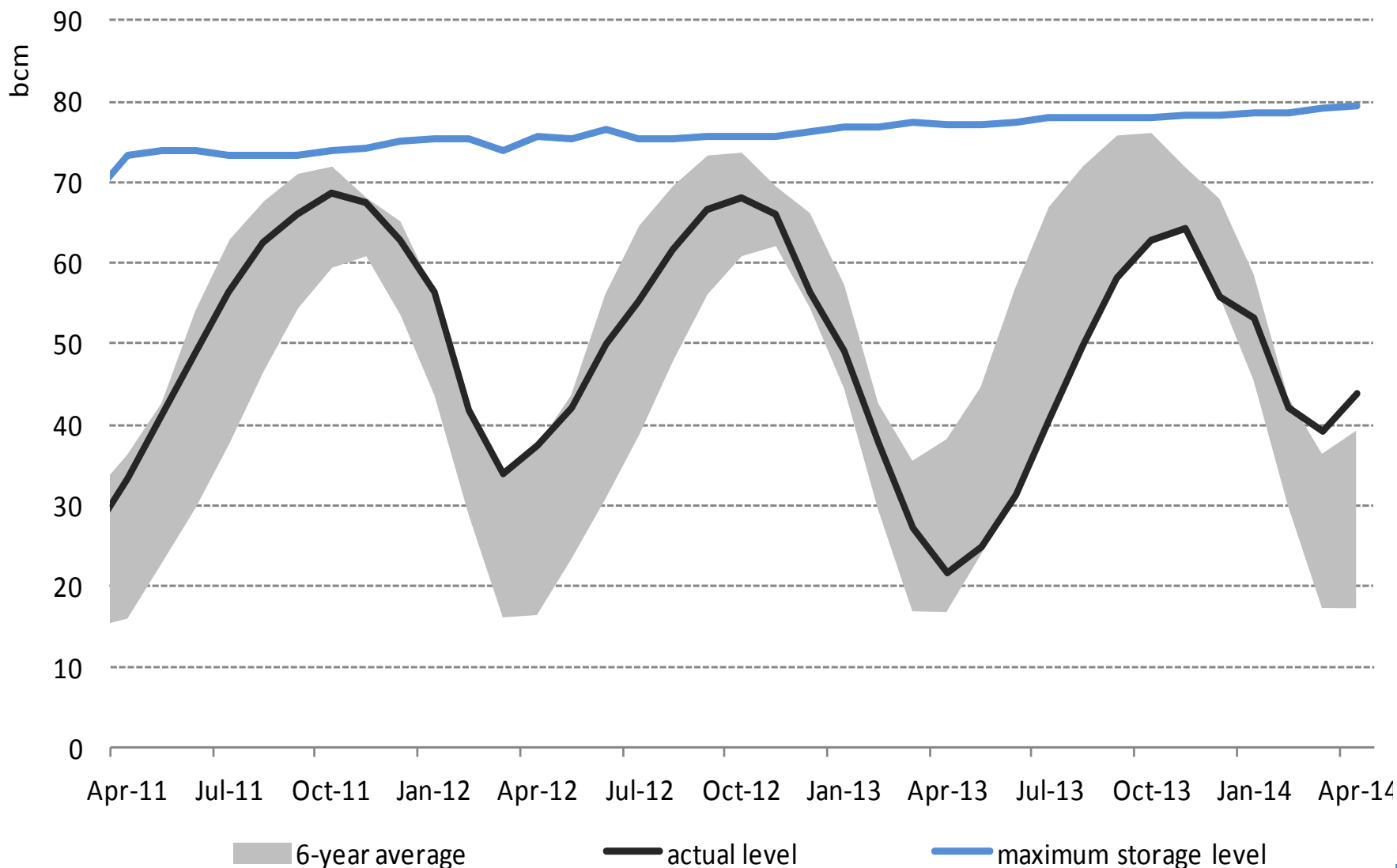
European gas imports, 2000-19



- Even in a context of anemic demand, Russia remains a large component of Europe's supplies

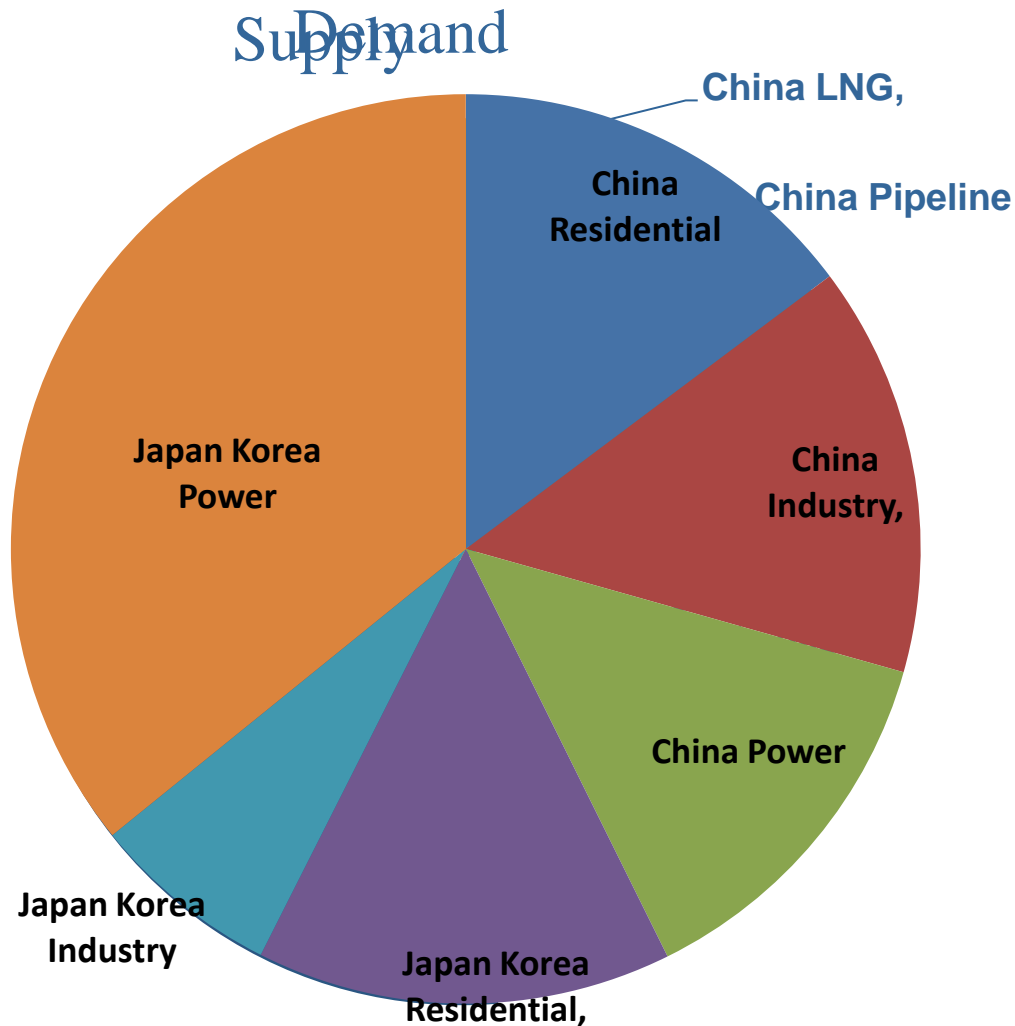
Expanding storage capacity and high initial level – but no incentive for a full fill up

Medium-Term
Market Report
2014



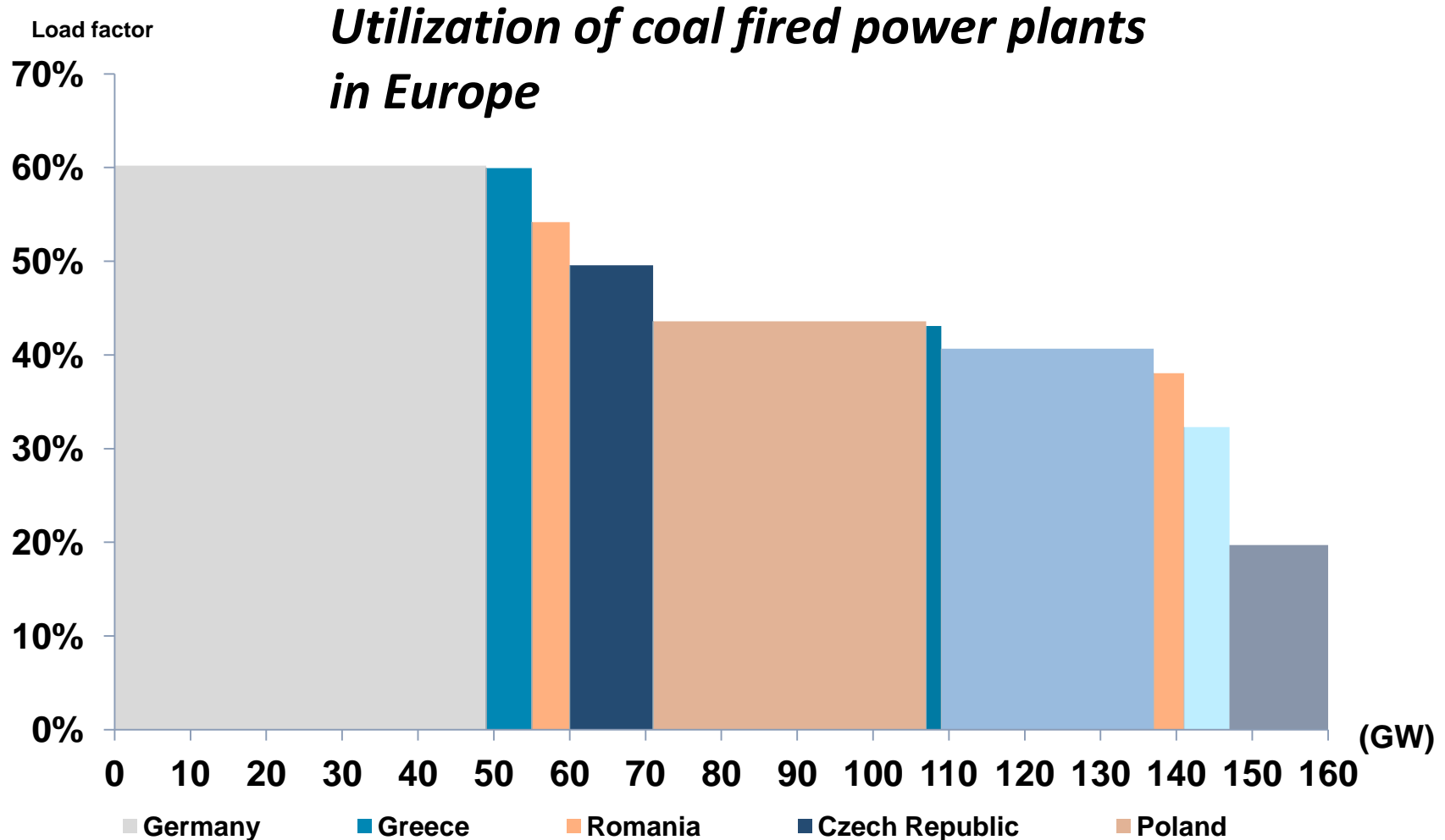
Asia has very little supply or demand flexibility should Europe want more LNG

Medium-Term
Market Report
2014



Further switching to coal is limited

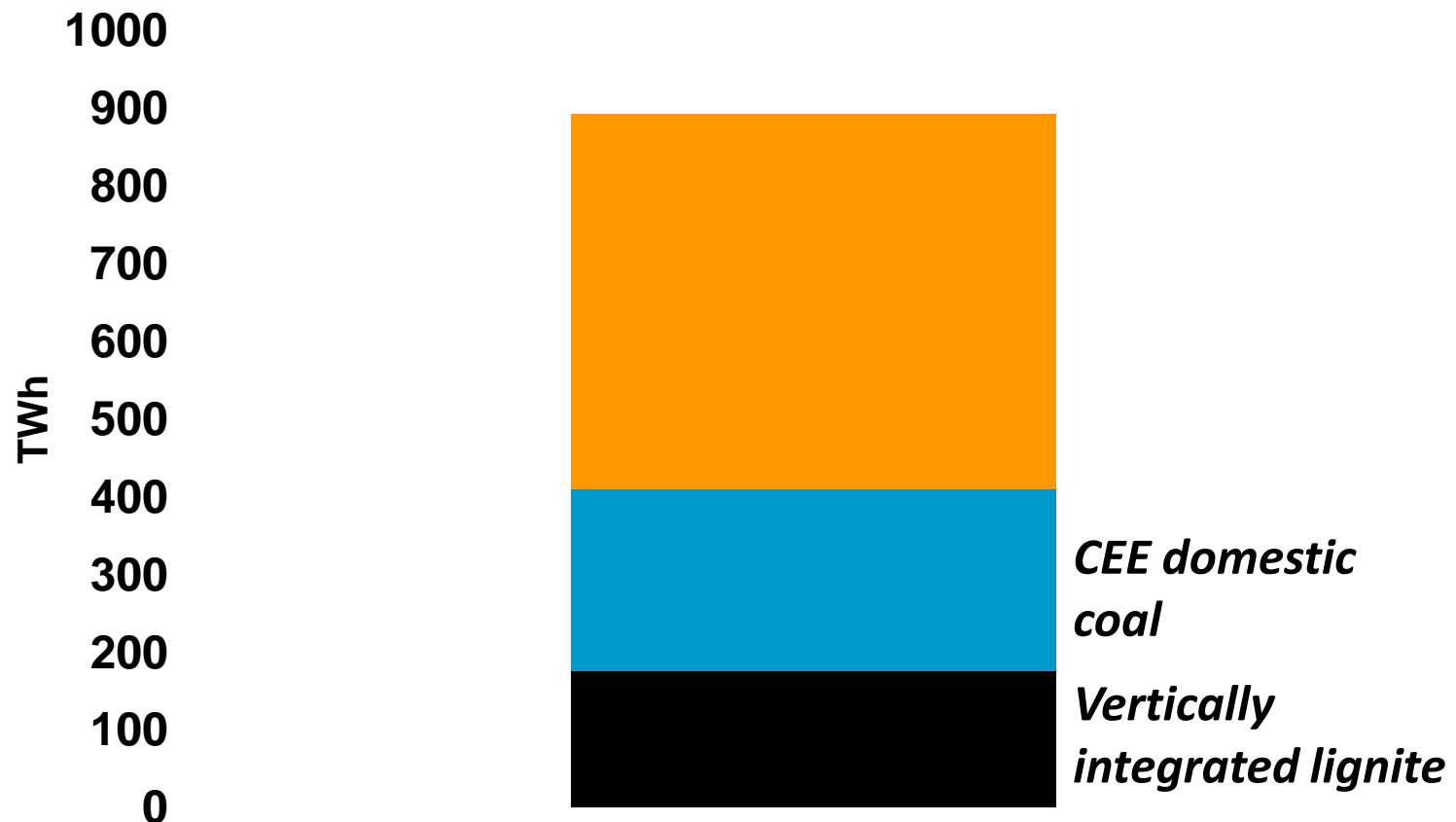
Medium-Term
Market Report
2014



Can coal to gas switch deliver EU climate targets?

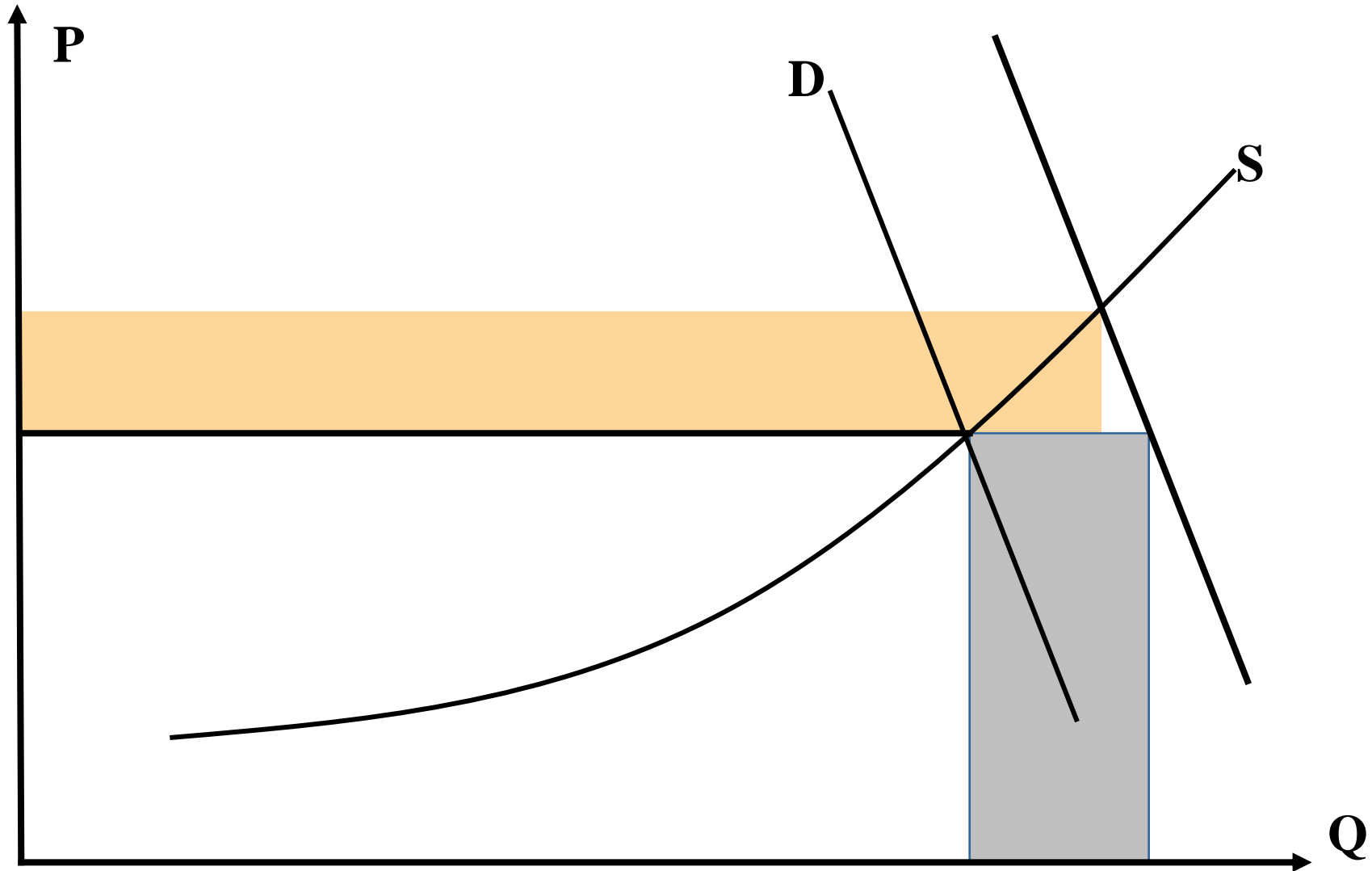
Medium-Term
Market Report
2014

Coal fired power generation in Europe



Coal to gas switch and the microeconomics of gas markets

Medium-Term
Market Report
2014



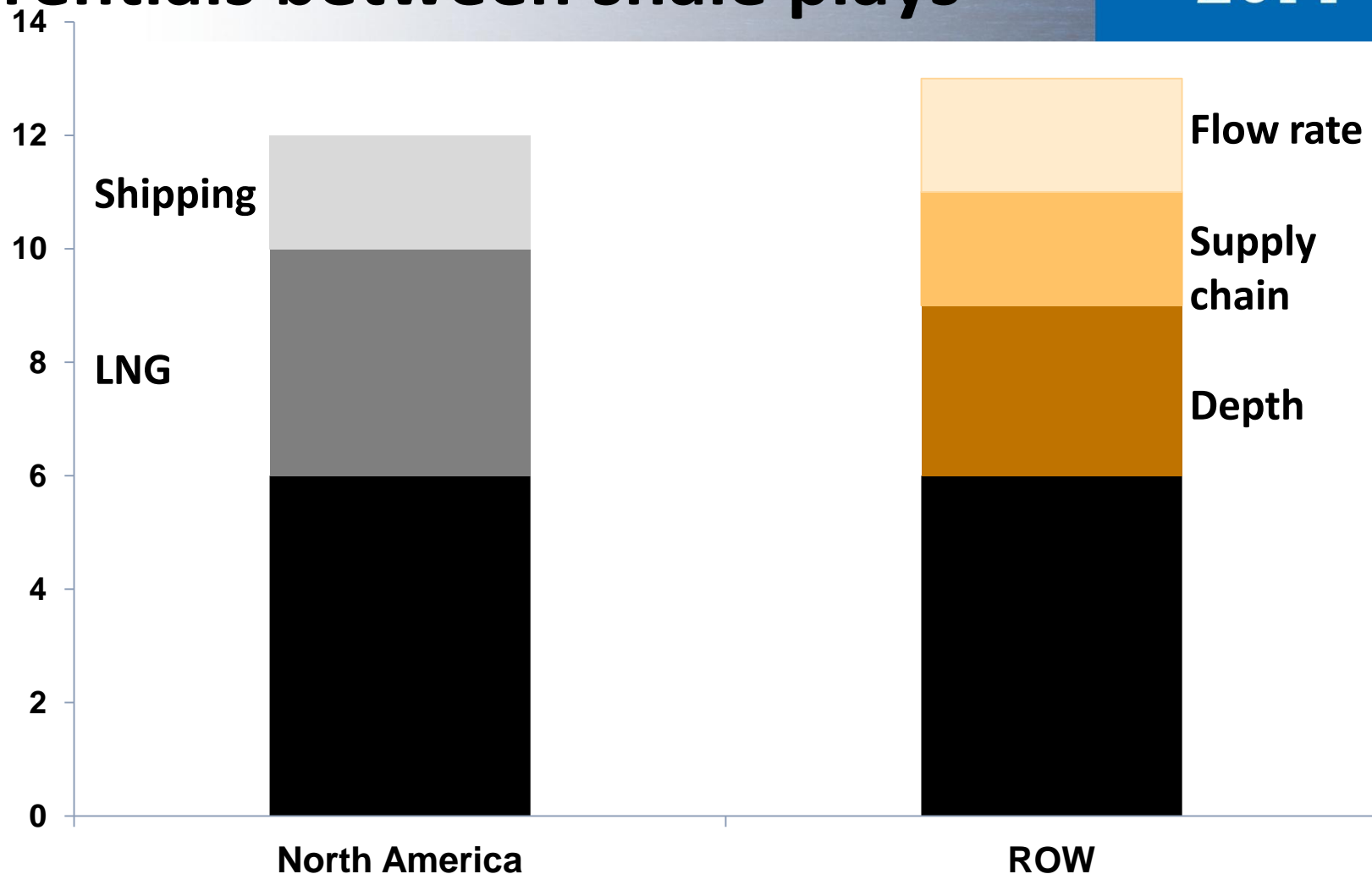
Has Europe killed the shale revolution before it has begun?

Medium-Term
Market Report
2014



LNG costs are less than the cost differentials between shale plays

Medium-Term
Market Report
2014

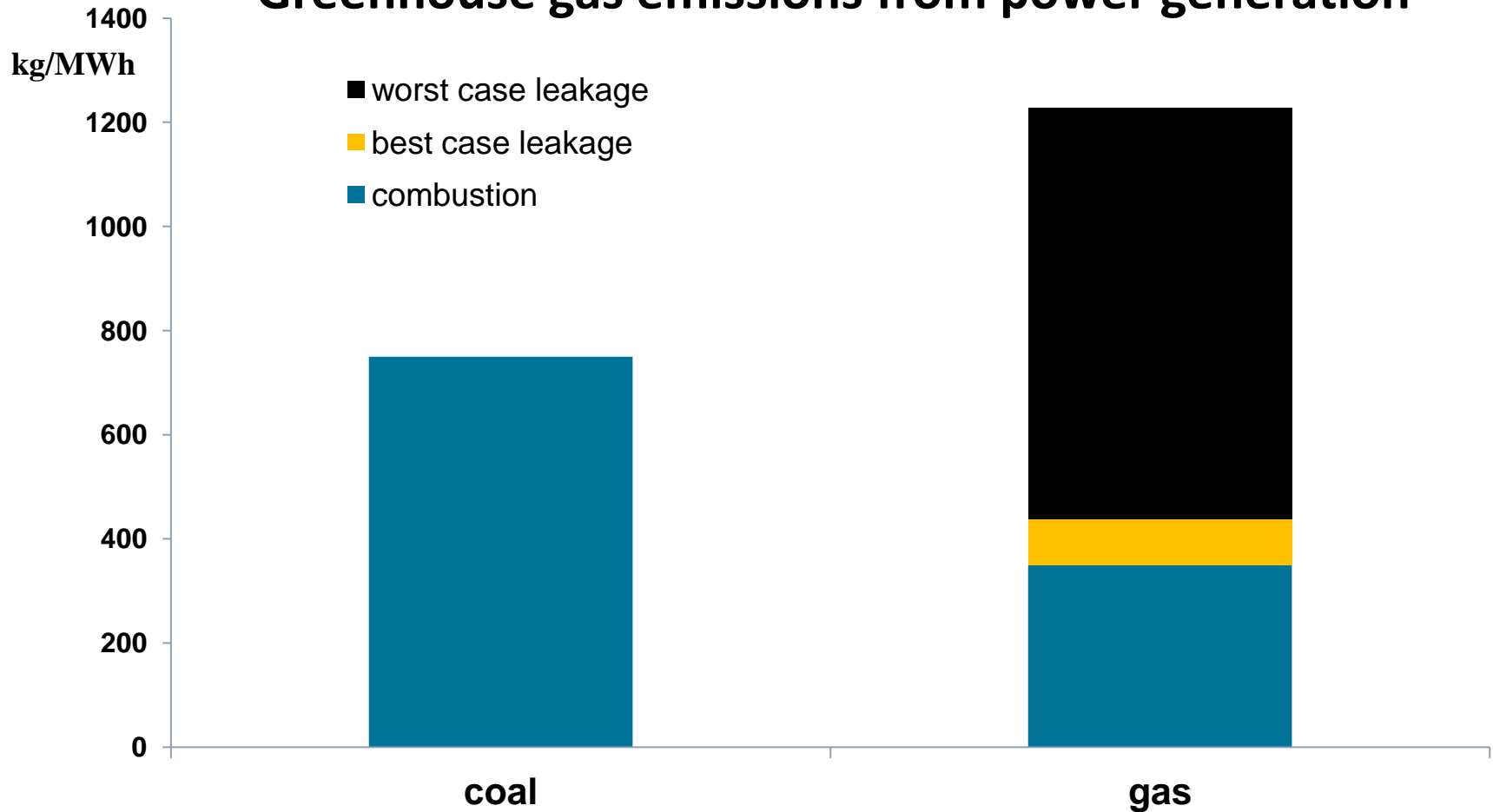


LNG importers with a large shale resource: China, Argentina, Mexico, Brazil

Methane leakage can move gas from solution to part of the problem

Medium-Term
Market Report
2014

Greenhouse gas emissions from power generation



North African supplies – is a rapid ramp up likely?

Medium-Term
Market Report
2014



The El Arish gas pipeline after a militant attack, Egypt 2013

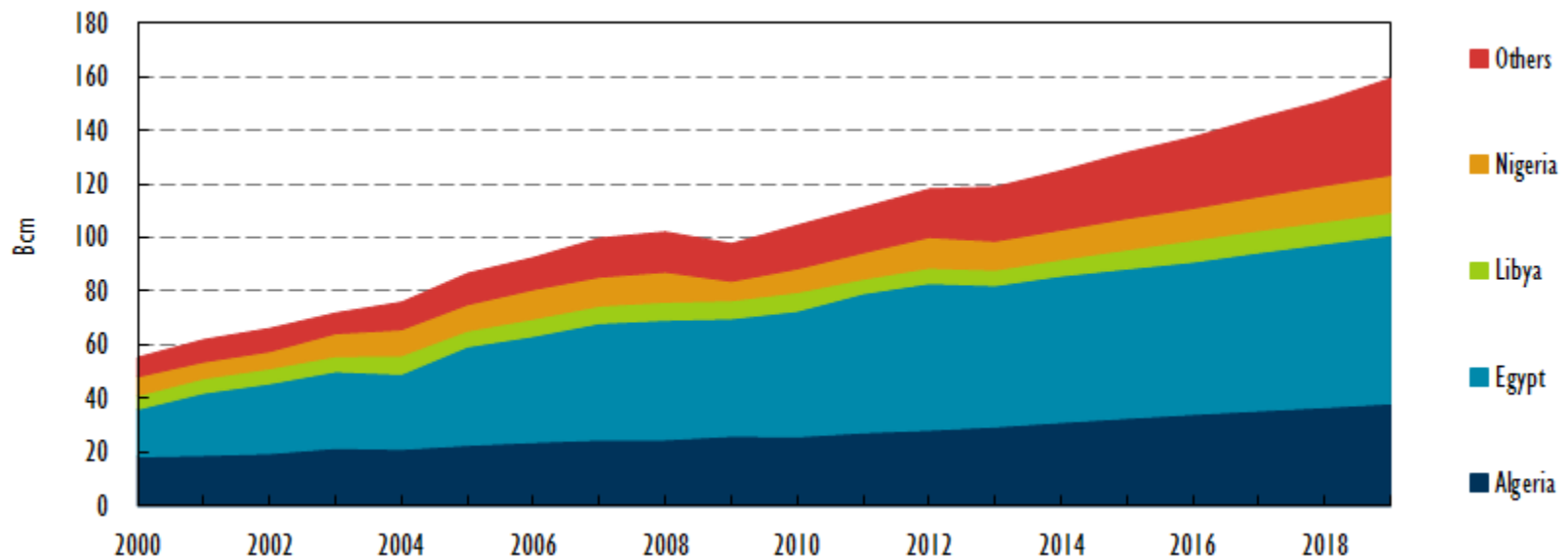


The Algerian army deployed at the In Amenas gas field during hostage taking by extremists, 2013

Africa will be one of the fastest growing regions

Medium-Term
Market Report
2014

Africa's gas demand, 2000-19 (bcm)

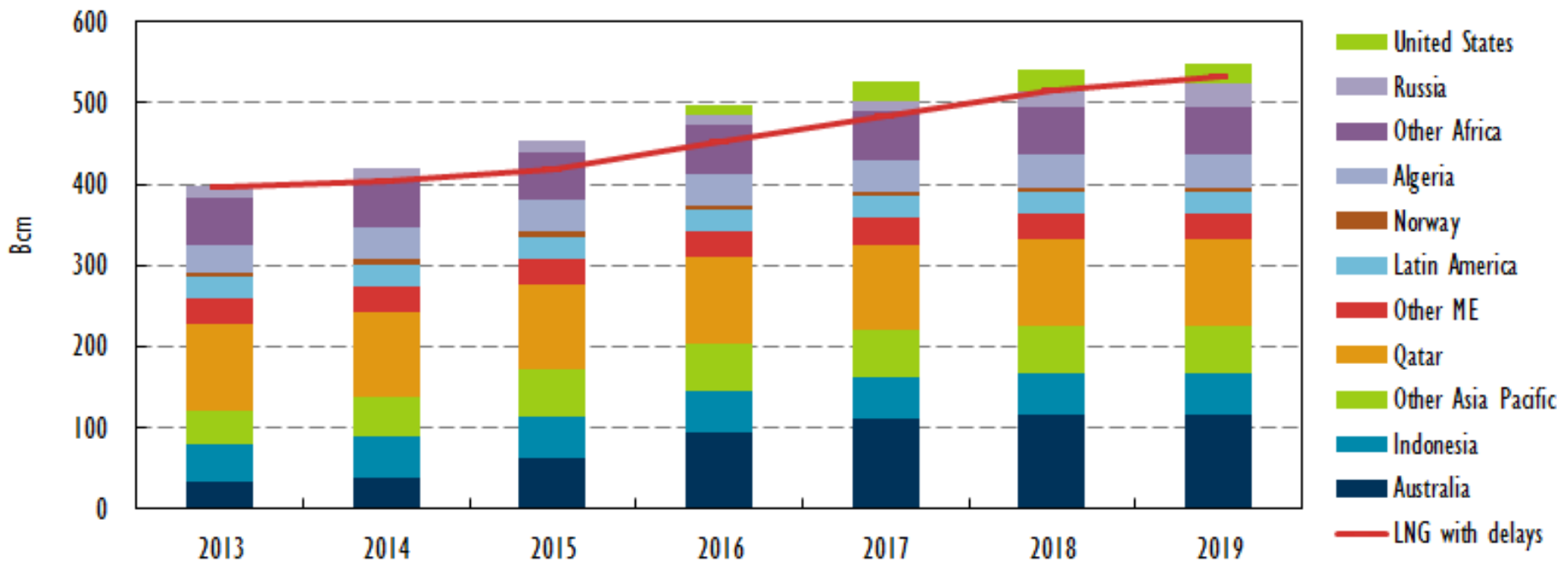


- Africa's thirst for natural gas means that most of the incremental production will be dedicated to the domestic market

Two OECD regions contribute to 40% of the additional supply

Medium-Term
Market Report
2014

LNG liquefaction capacity, existing and under construction

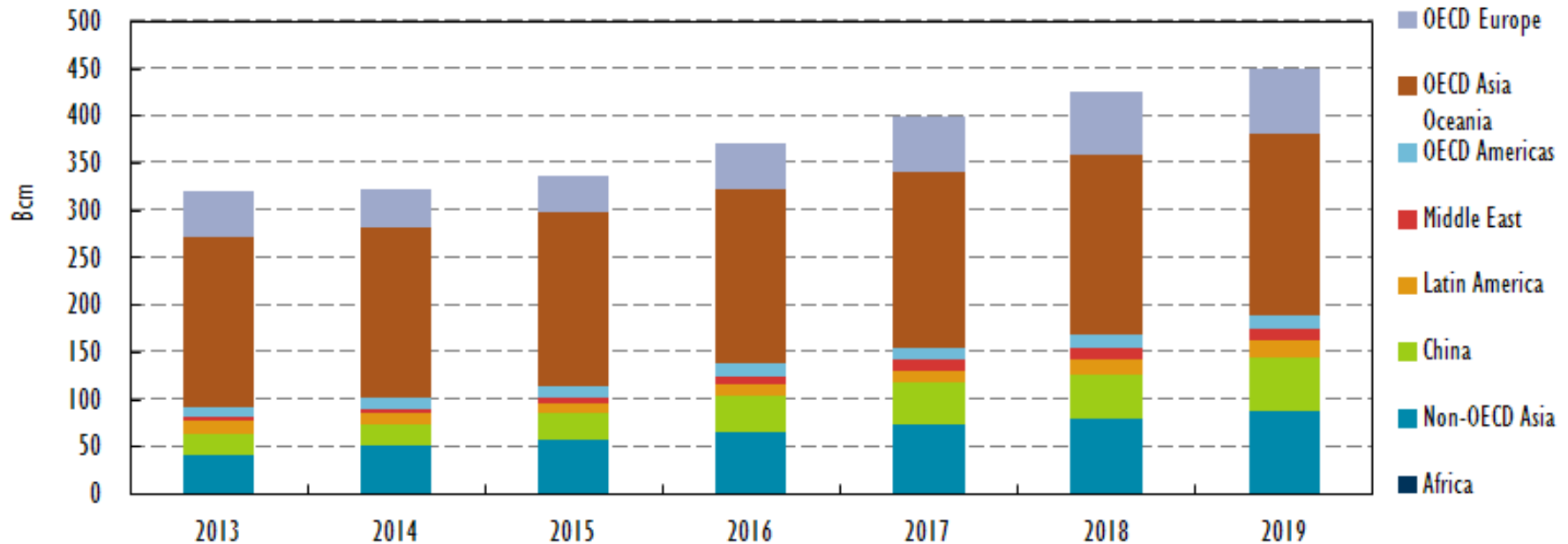


- 150 bcm of LNG export capacity under construction, half of that is coming from Australia

Most of the new LNG will be consumed by Asia

Medium-Term
Market Report
2014

LNG imports, 2013-19



- Consequently, global LNG trade will rise from 320 bcm in 2013 to 450 bcm in 2019

LNG markets: waiting for the cavalry

Medium-Term
Market Report
2014



GAS

Medium-Term Market Report 2014

Medium-Term Gas Market Report



Market Analysis and Forecasts to 2019