

Global Gas Security

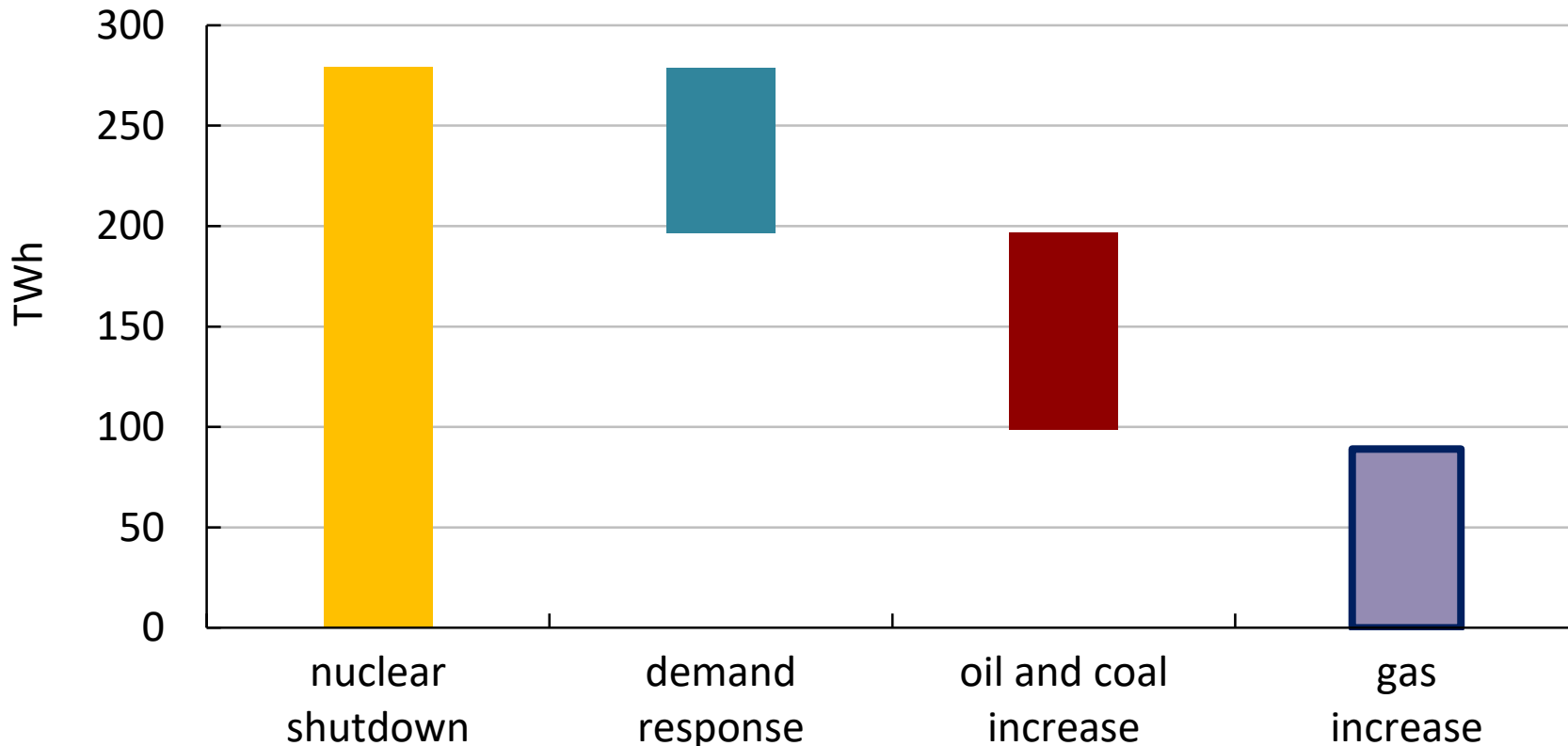
How secure & flexible are LNG markets?

Peter Fraser, Head of Gas, Coal and Power Division
International Energy Agency

- Gas is playing an increasingly important role in the energy mix
- Well supplied markets does not mean gas security can be taken for granted
 - *As markets become more interconnected, shocks in one region can quickly spread*
 - *Disruptions are happening, how are markets responding?*
- 2016 was the first annual review and focused on LNG

LNG played an important role in Japan post-Fukushima

Power system response to Fukushima 2013 vs 2010*

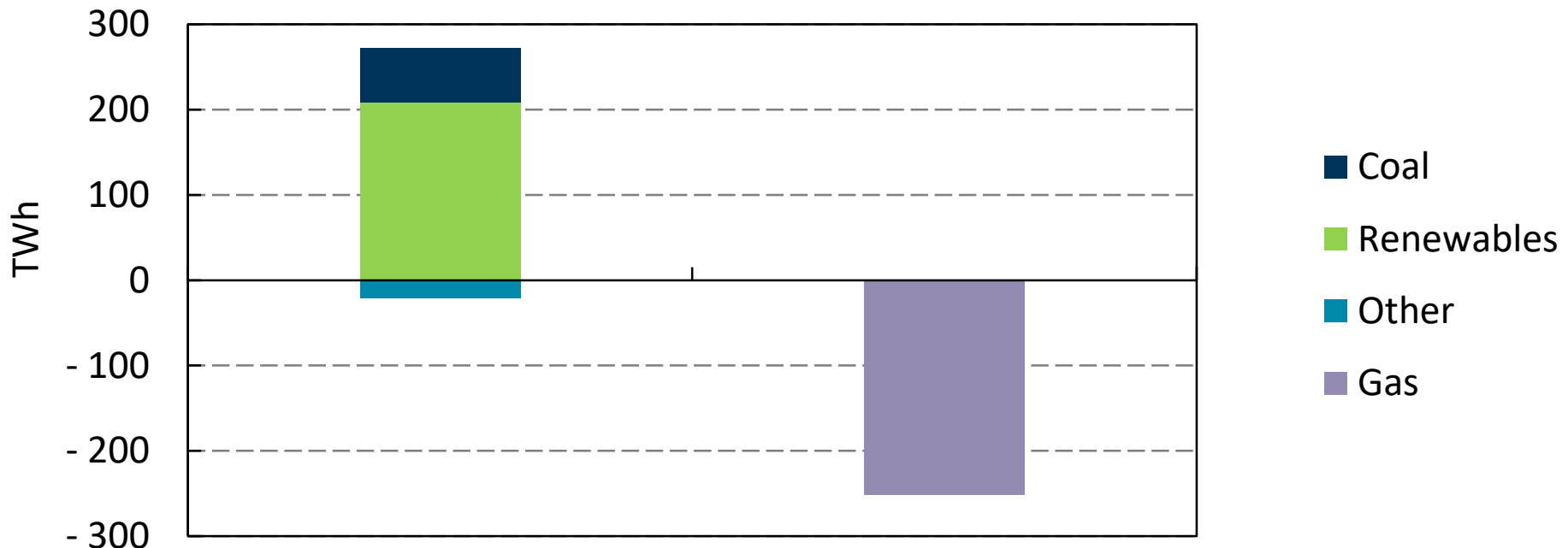


*data refers to Japan's Fiscal Year.

Gas replaced one-third of the nuclear loss, similar to the contributions of oil and coal, highlighting the importance of a diversified demand-structure

A massive shift in European power demand structure freed LNG for Japan

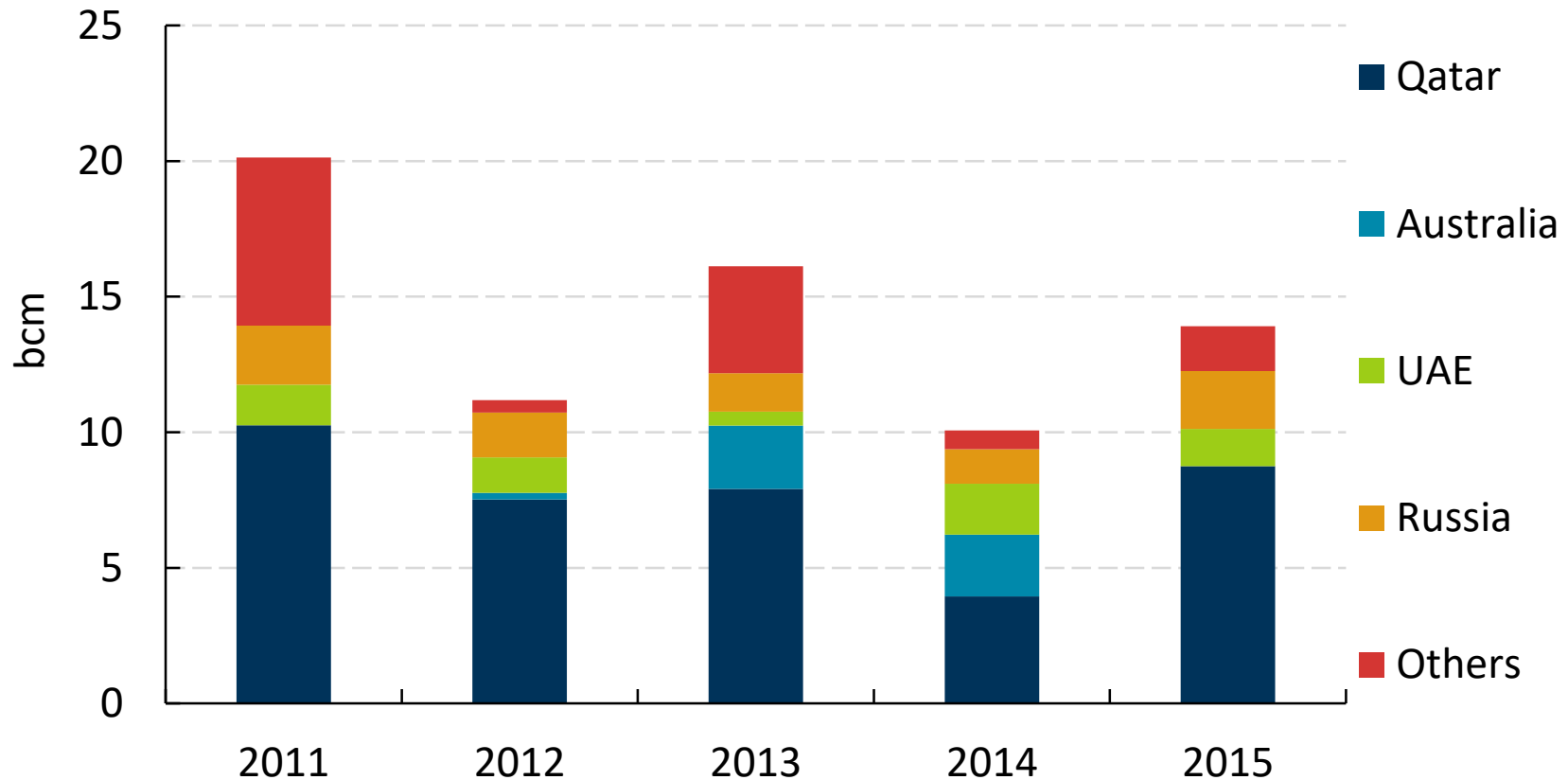
Power generation in Europe 2010-13



The Euro crisis, renewables growth and higher reliance on coal squeezed gas demand in power. The scale of this response unlikely to be repeated.

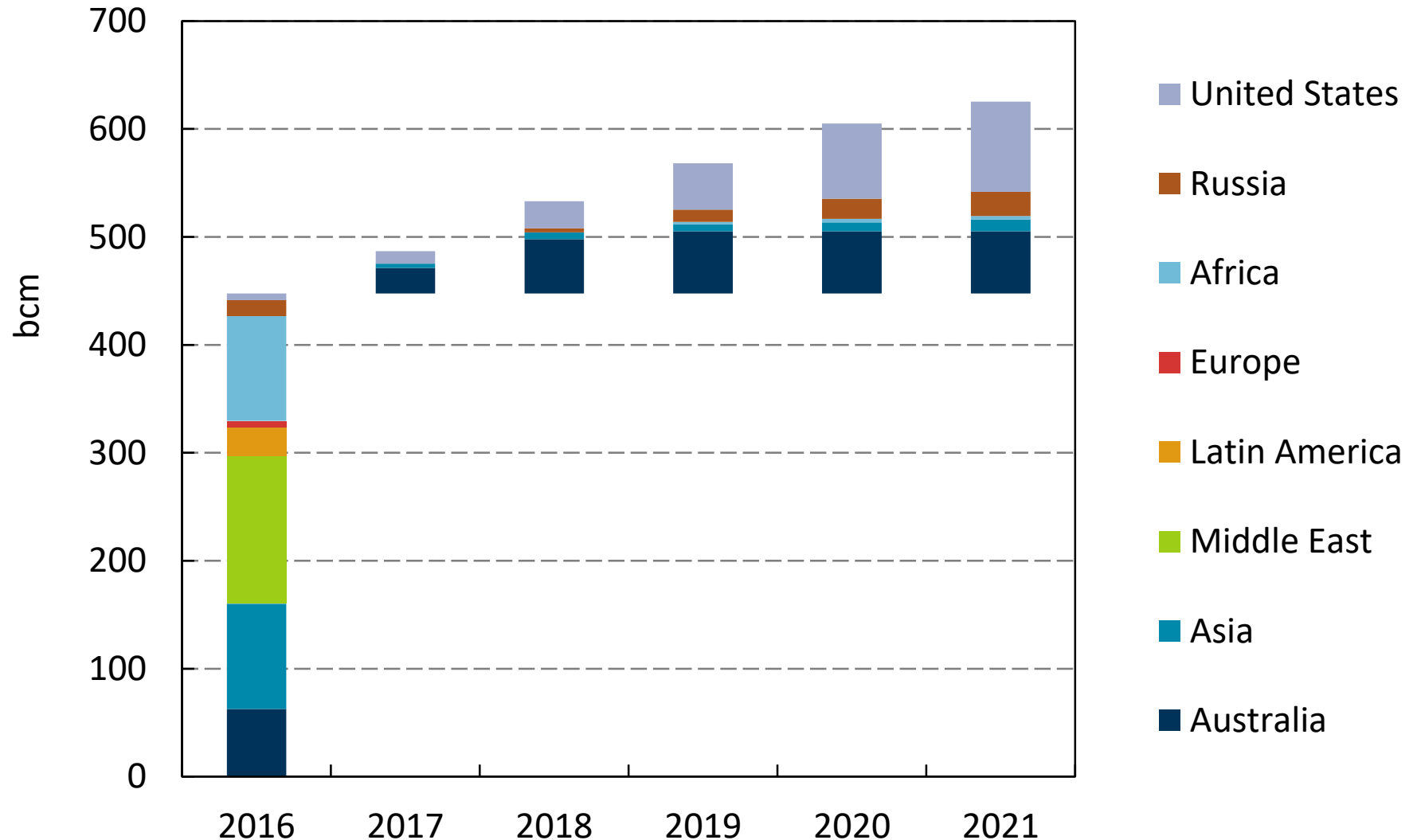
Qatar plays a pivotal role in LNG security

Uncontracted volumes by exporter (bcm)

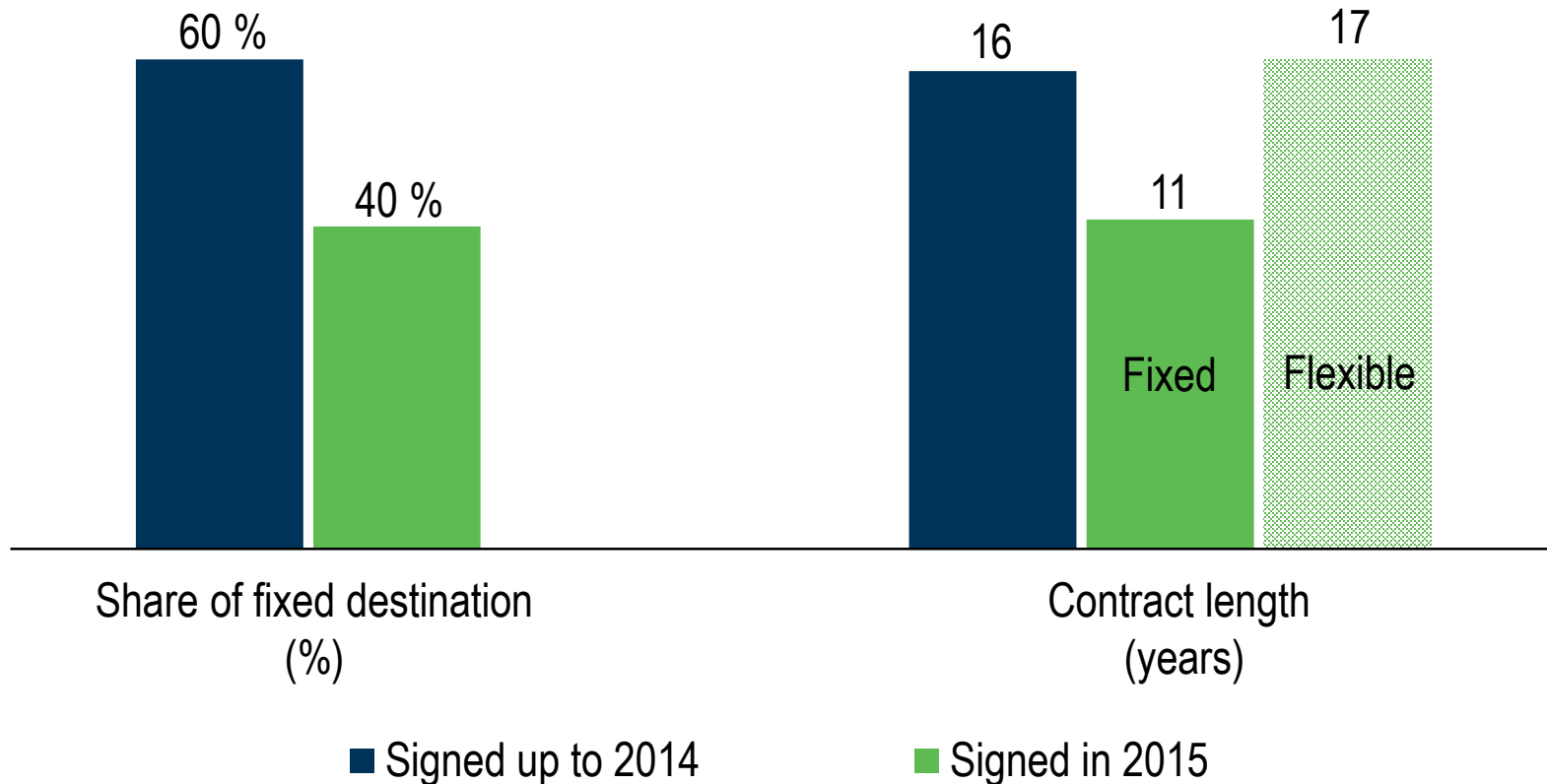


Qatar provides more than half of global uncontracted LNG volumes

US capacity (and contracts) will add more flexibility



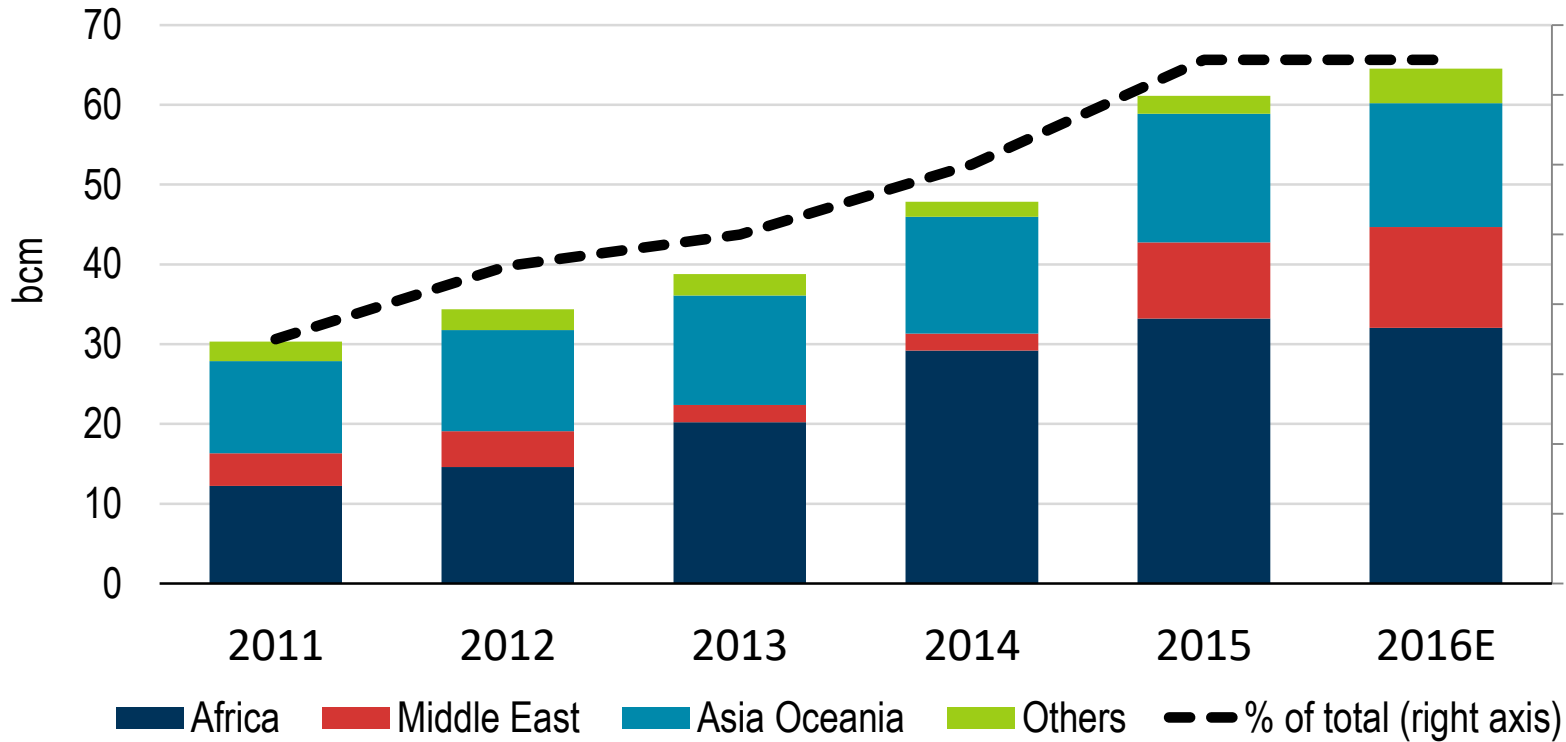
Abundant supplies are loosening contract terms – especially destination clauses



Contracts with flexible destinations & shorter terms are becoming more common; buyers will accept longer contracts in exchange for increased destination flexibility

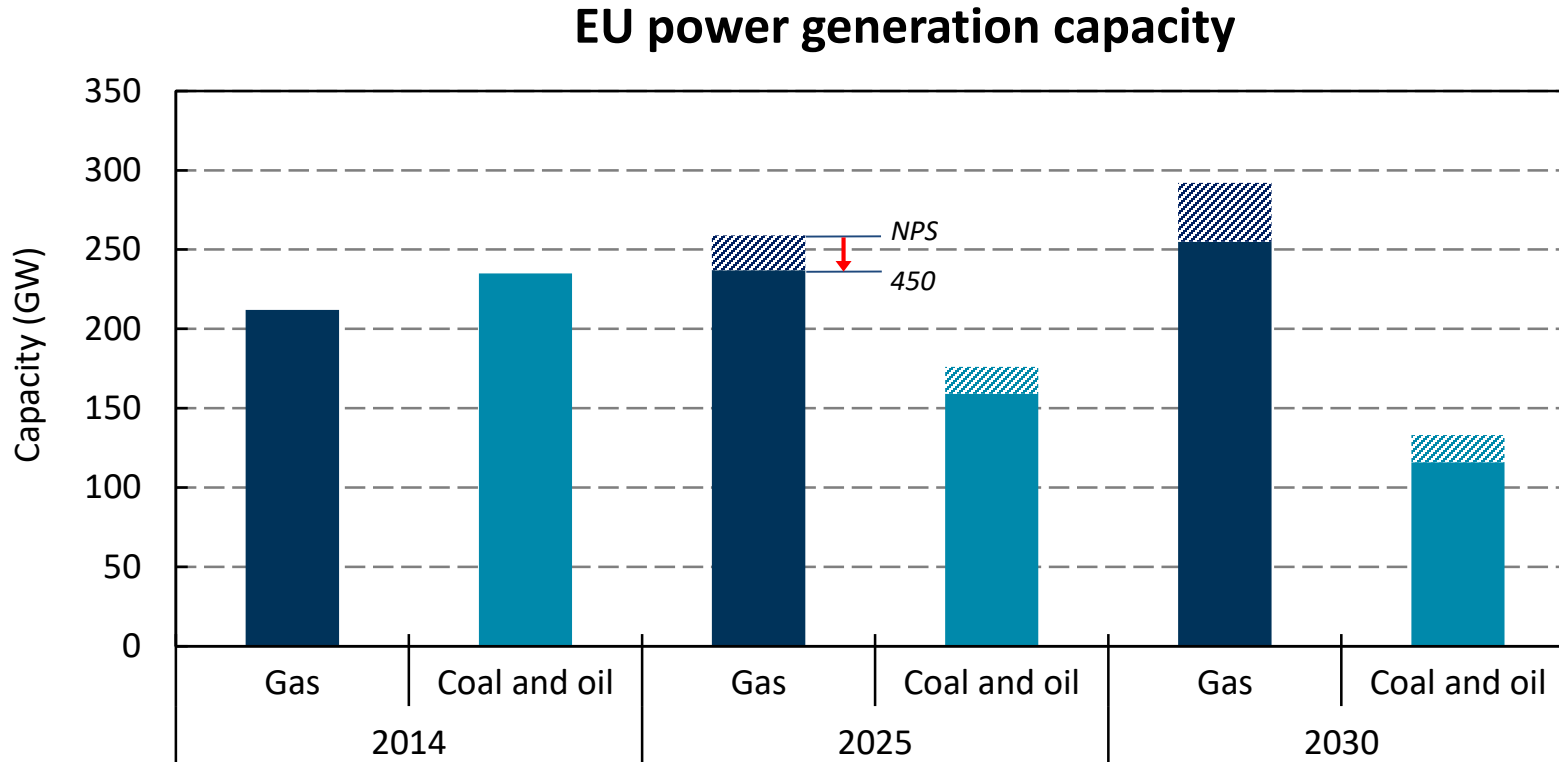
But an increase in offline capacity is concerning

LNG capacity offline by region



LNG capacity out of service has doubled over the past five years to 15%, highlighting security & investment challenges in key producer countries

In the future, Europe's power sector will be less able to switch fuels



On the other side of the spectrum: switching away from gas to coal in Europe has proven a useful market response mechanism during the Fukushima crisis, future coal capacity retirements however will limit this potential

Key messages

- Some positive developments in LNG and security:
 - Successful response to Fukushima
 - Market conditions (and new players) are encouraging flexibility.
- And some things to watch:
 - More capacity offline than expected.
 - Diminishing power system flexibility
 - Timing of new investment

Key issues for the 2017 report

- Market transparency
- 2016-17 Security of Supply events
- Policy developments