

Global Gas Security Review

How flexible are LNG markets in practice?

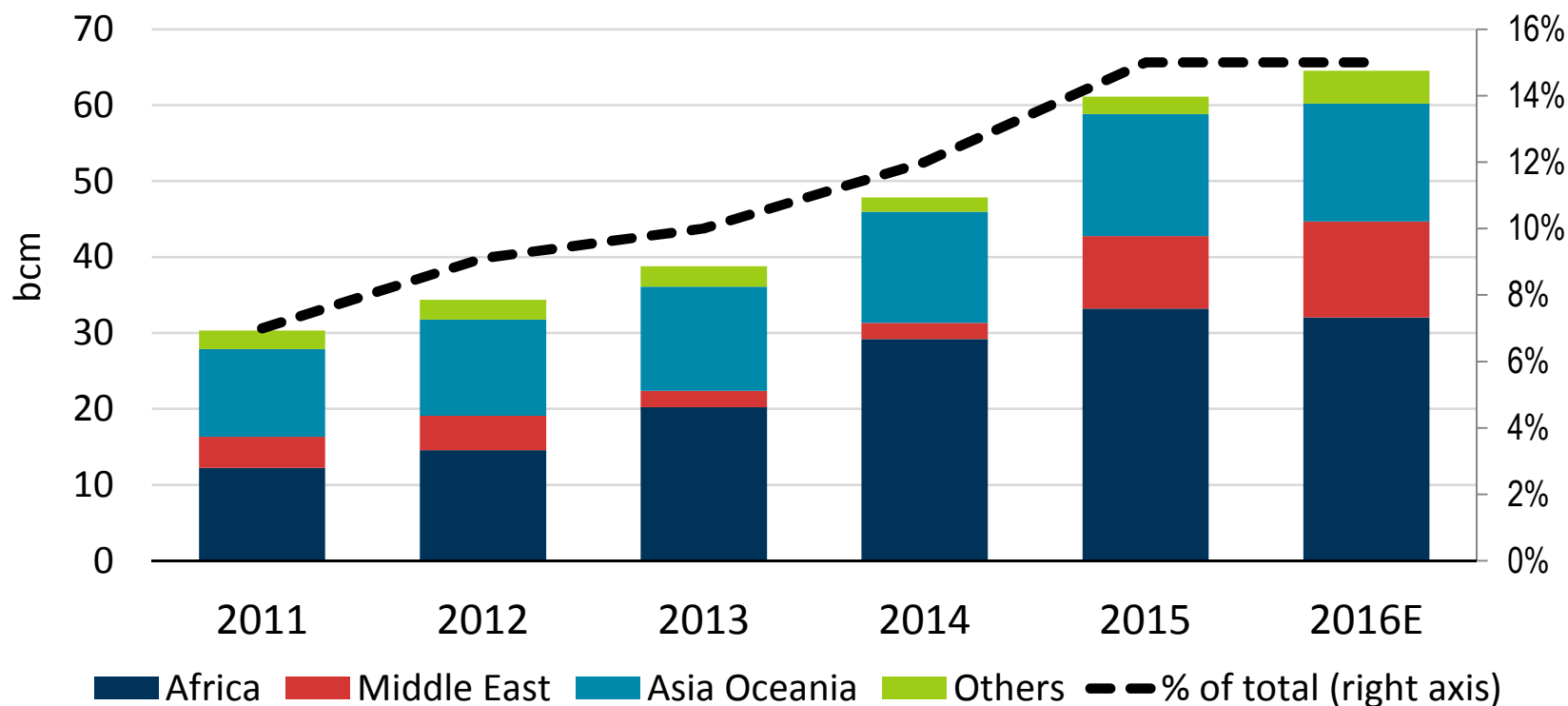
Enerclub, Madrid 27 February 2017

IEA's Global Gas Security Review

- 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 arising from poor regulation, geopolitical crises & natural disasters*
- In response, the IEA is broadening its role on energy security to include gas
 - *This follows mandates from 2015 IEA Ministerial & G7 under Japanese Presidency*
- IEA will conduct “resiliency assessments” & bring data/analysis to market participants to boost transparency, including:
 - *outages by type & region*
 - *flexible & uncontracted LNG volumes*

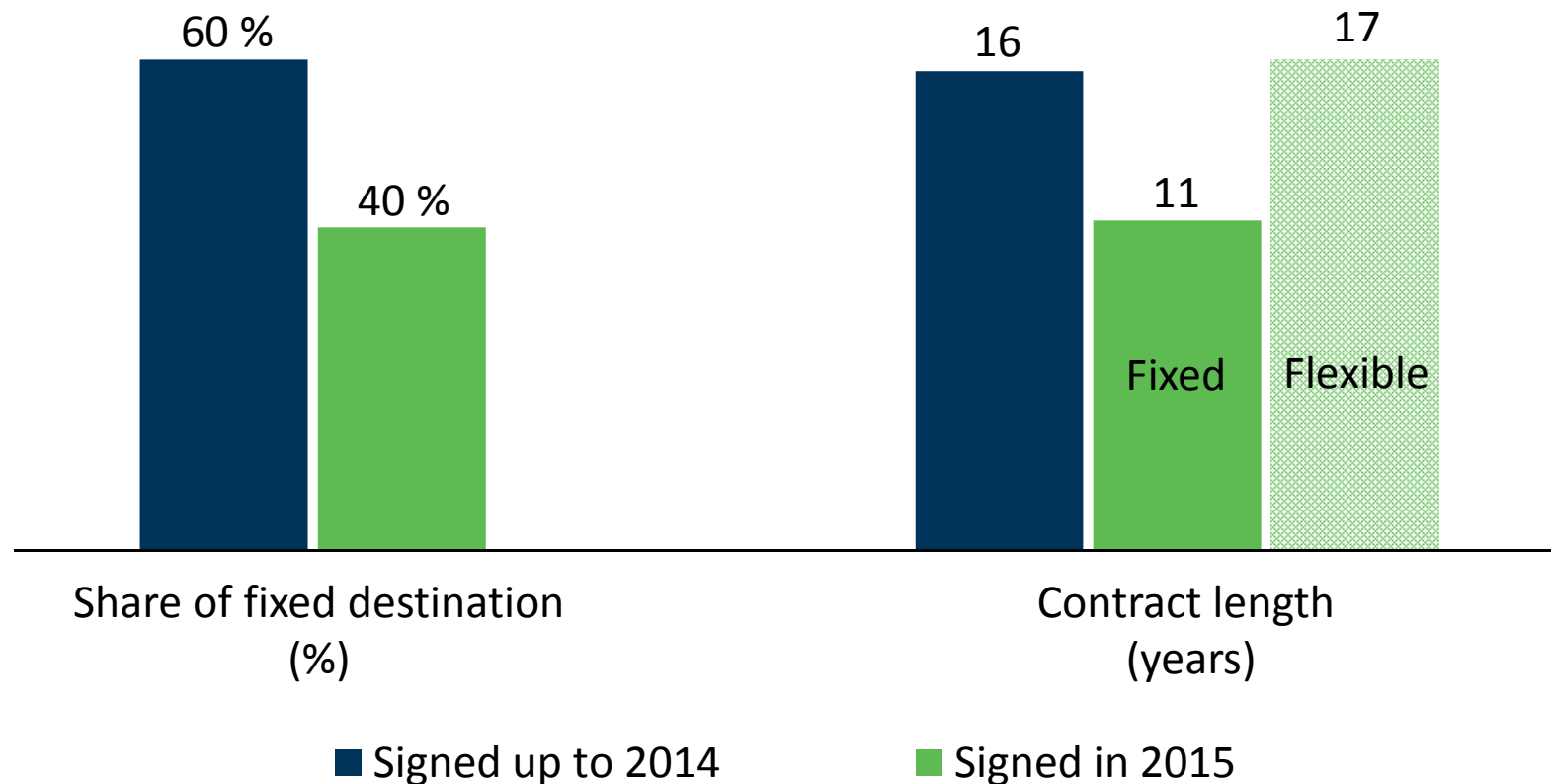
LNG markets have less “surge” capacity than commonly thought

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

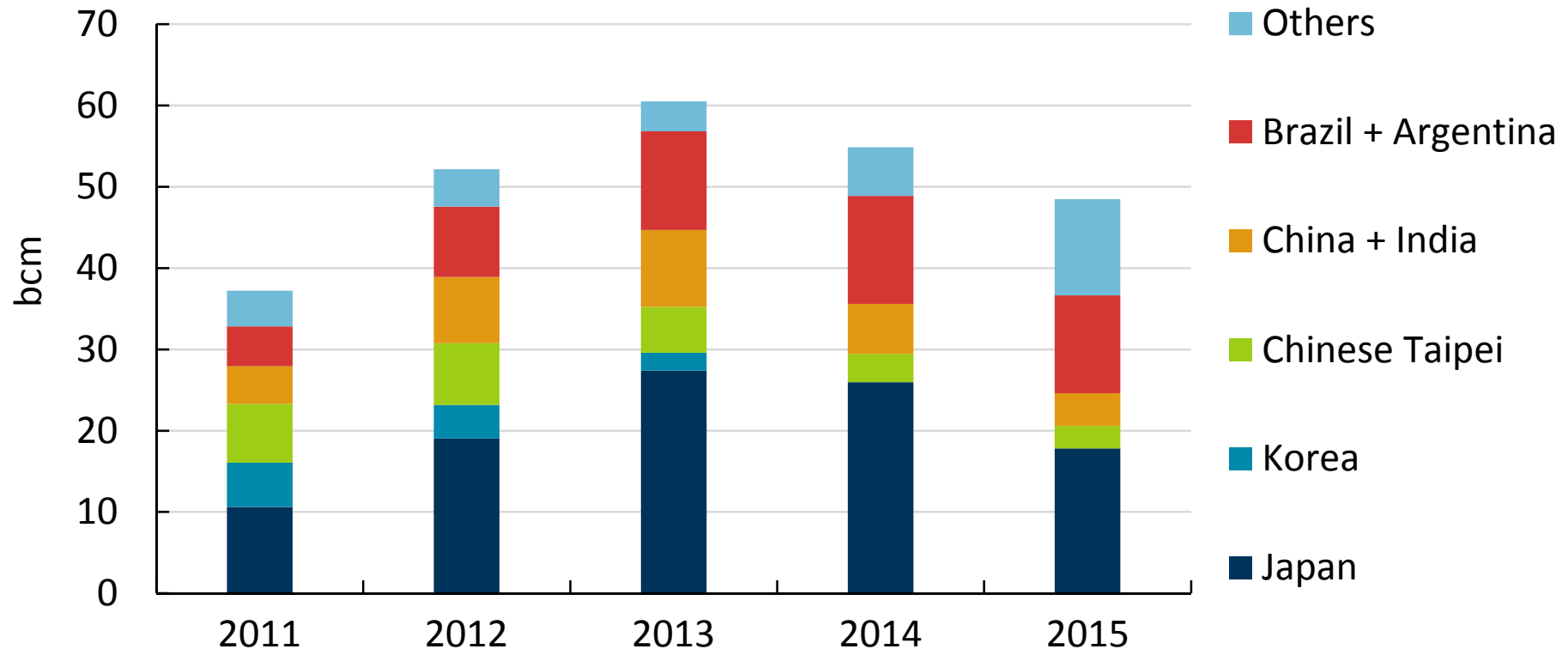
But LNG contract structures are becoming less rigid – increasing market efficiency



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

Demand for flexible LNG volumes remains above pre-Fukushima levels

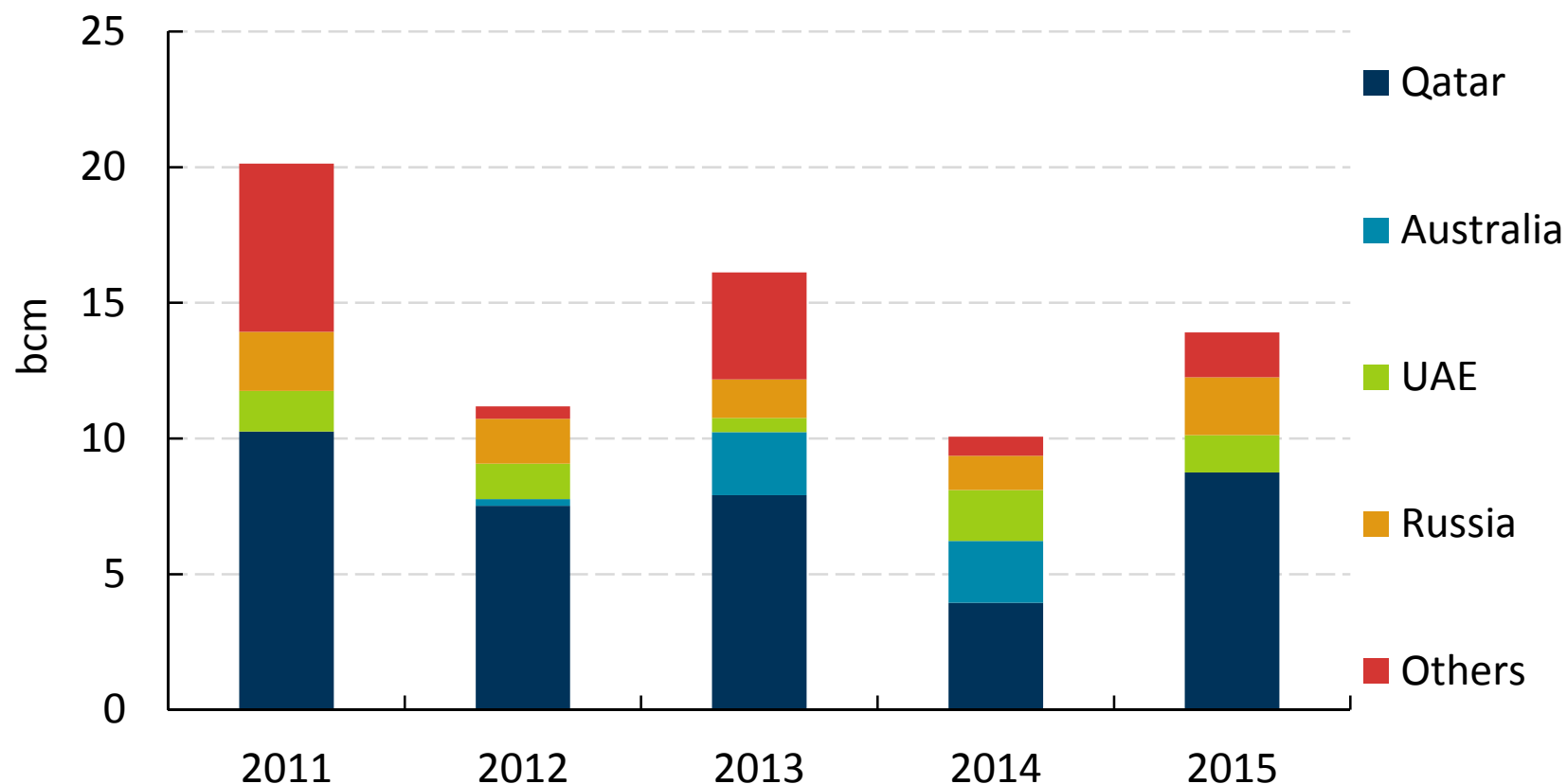
Demand for flexible LNG volumes



Demand for flexible LNG volumes peaked in 2013 at around 20% of global LNG trade; new buyers are offsetting some of the slack left by Japan

Qatar plays a pivotal role in LNG security

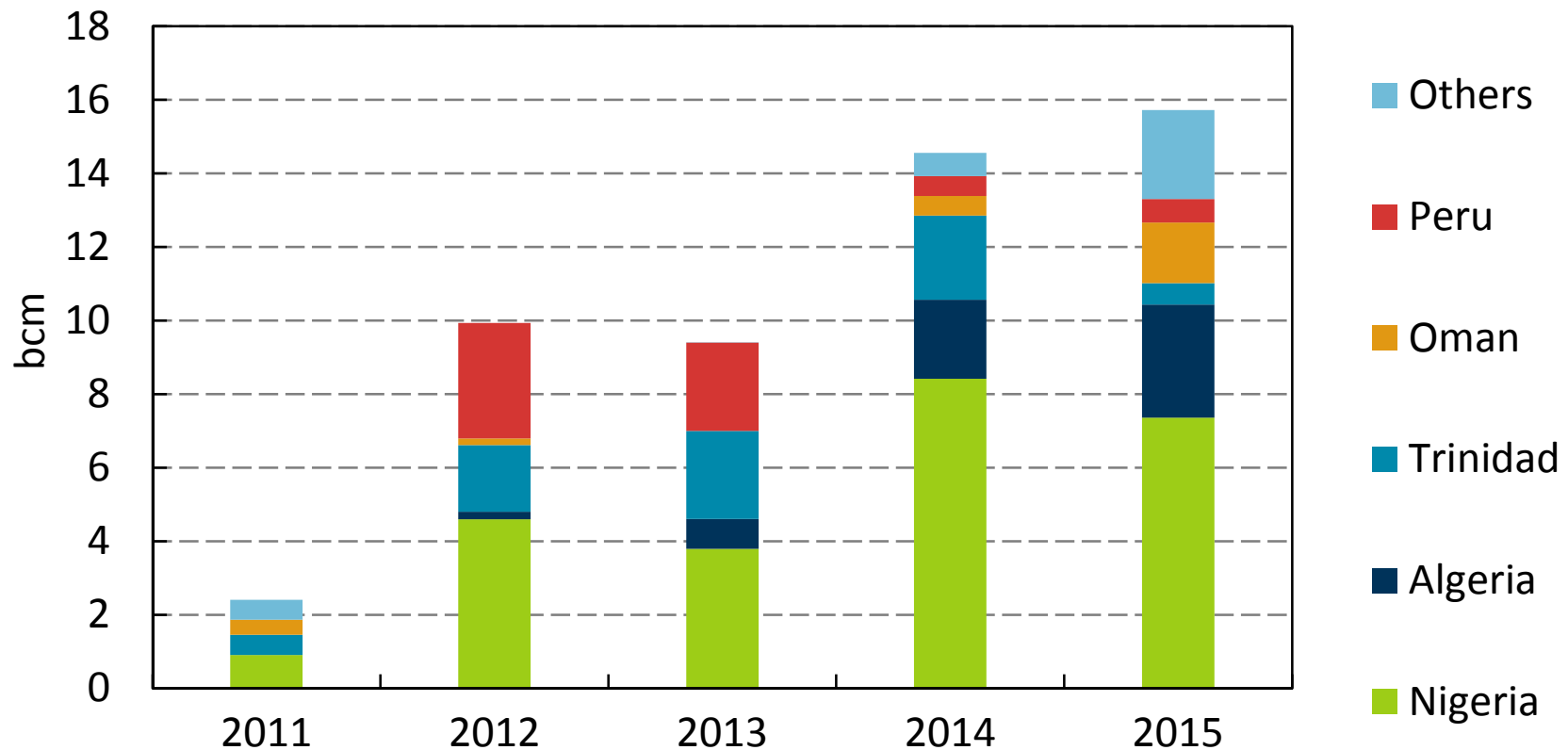
Uncontracted volumes by exporter



Qatar provides more than half of global uncontracted LNG volumes; Flexibility comes from uncontracted LNG, diversions, re-loads & contracts with open destinations

Exporters follow different approaches with respect to diversions

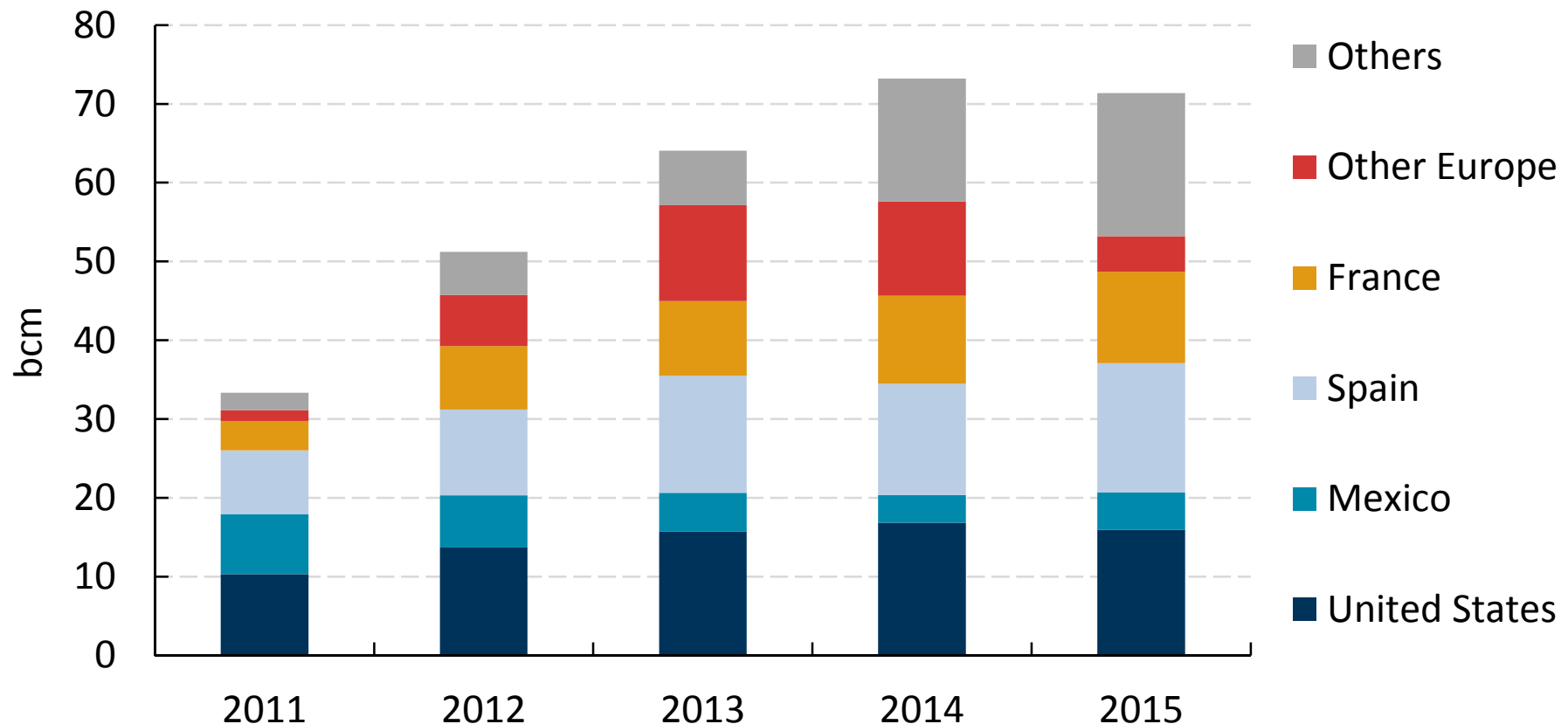
Divertions from exporting countries



Nigeria and Trinidad have showed a collaborative approach and higher willingness to allow for diversions

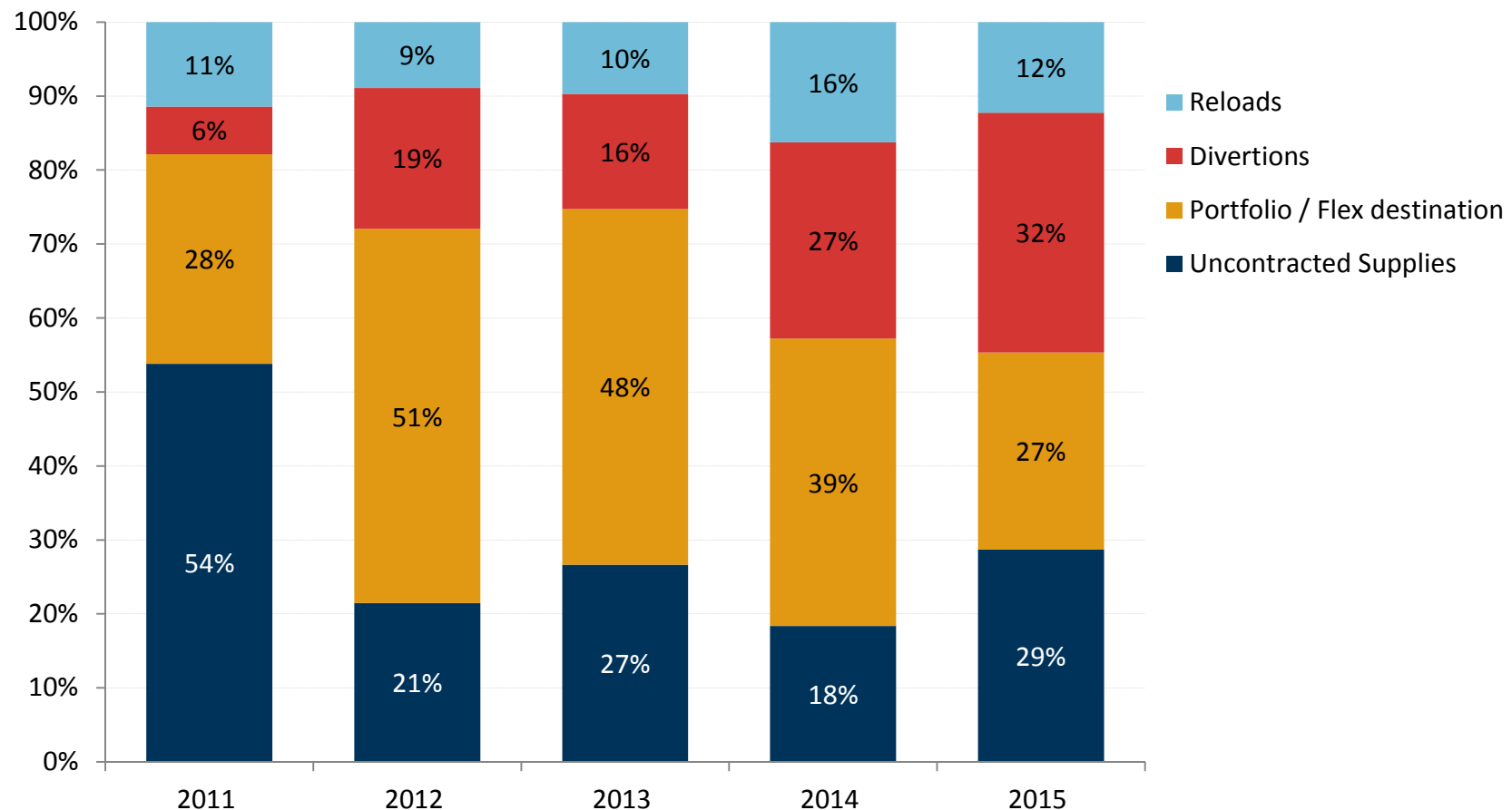
Europe key provider of volume flexibility to the market

Over-contracted position of LNG importers



Europe and the United States have accounted for much of the flexibility provided by the demand-side over the past 5 years.

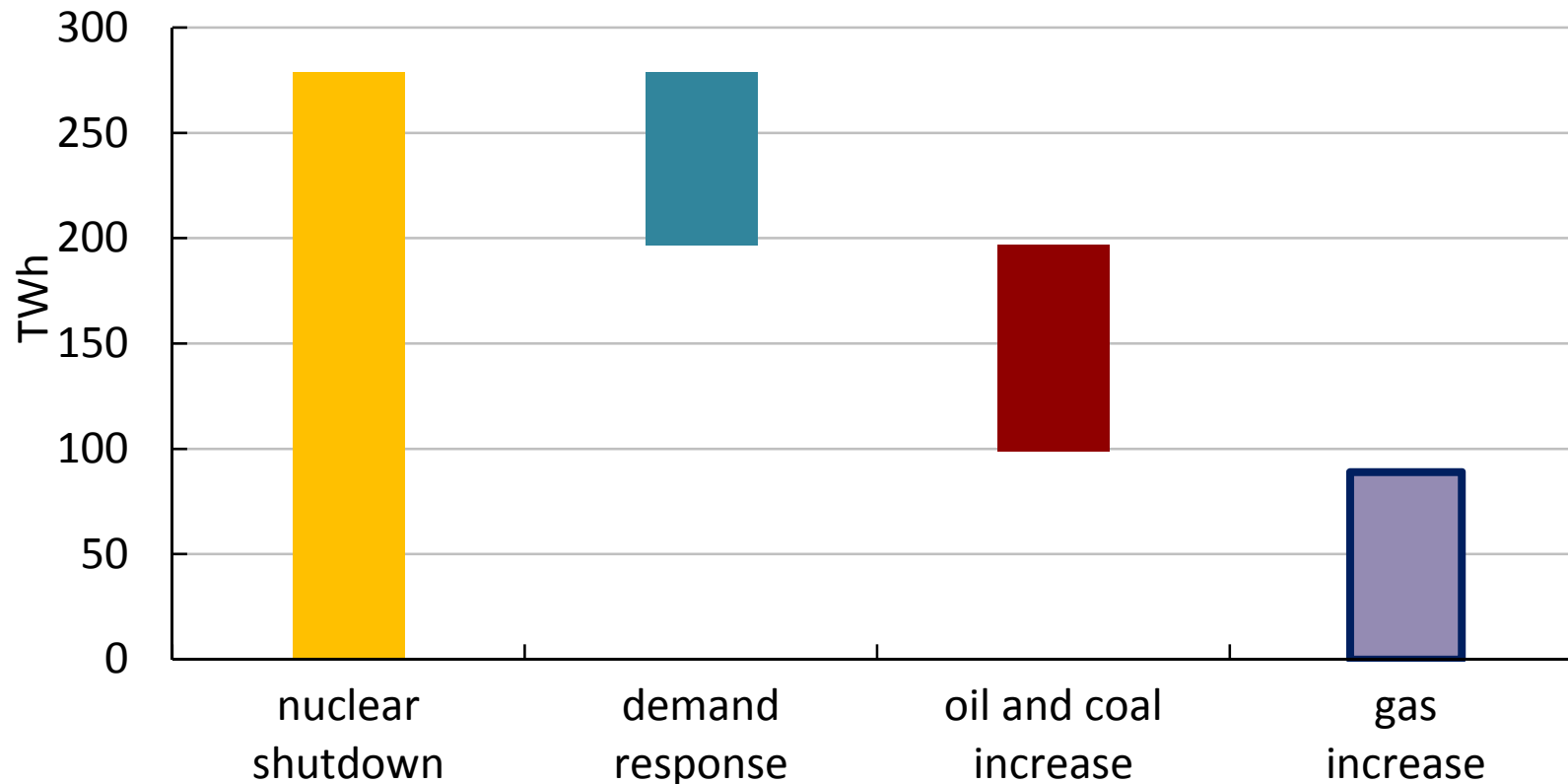
How flexibility needs were met?



Flexibility was effectively provided in a big proportion by the demand side and to a lesser extent by the supply side

Flexible LNG volumes played a role in safeguarding energy security after Fukushima

Power system response to Fukushima 2010-13*

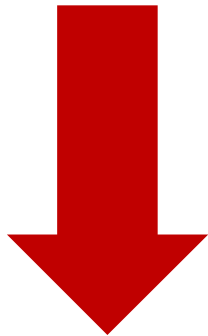


*data refers to Japan's Fiscal Year.

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

Europe - Higher dependency of Russian gas imports

Changes witnessed over 2011 – 2015 timeframe

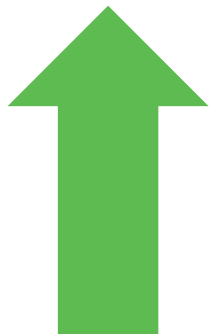


Demand drop: 90 bcm

Domestic production decrease: 61 bcm

LNG imports reduction: 32 bcm

African gas piped imports decrease: 13 bcm



Russian piped imports increase: 20 bcm

Southern gas corridor, TANAP + TAP is a key project to reinforce Europe's diversification of supply.

Key messages

- Although contracts are becoming more flexible, the ability of LNG markets to respond to disruptions is not as great as many believe
- The keys to gas security are diversity of supply, the ability to “fuel switch” and robust infrastructure, including adequate storage
- The current downturn in LNG investment puts the prospect of tighter markets on the horizon
- The IEA will pursue its mandate on gas security by conducting “resiliency assessments” & improving market transparency