

# Global Gas & LNG Outlook to 2035

September 2018



Energy Insights  
By McKinsey



# 2018 gas & LNG market highlights



## Summary

- 1 2018 saw increased LNG flows from the US and Australia impacting global gas dynamics while pipeline flows remained stable with the start-up of the TANAP pipeline in June
- 2 Steep demand increases in China combined with new LNG supply from the US and Australia have disrupted historical LNG flow patterns in 2018

### Demand

- A The five countries where LNG imports increased the most during H1 of 2018 are all in Asia and all experienced LNG import volumes up at least 12% year-on-year
- B In China, LNG import volumes grew the most out of other delivery mechanisms (e.g., pipeline, domestic production) at 52% p.a. during H1 of 2018

### Supply

- C Over the course of 2018, new LNG projects are expected to add 48 bcma of capacity with new additions primarily coming from the US and Australia; so far, LNG plant utilization has been stable at around ~82%

- D LNG flows from Qatar to Europe and Egypt decreased to the benefit of Turkey, South Korea, China, and South Asia

### Trade flow patterns

- E In the first half of 2018, global LNG flows continued to grow at a pace of ~8% p.a. vs 12% p.a. in 2017
  - F Asia was the main destination for LNG flows, with a share of spot cargoes remaining mostly below 25%
  - G Global tonne-mile demand increased from ~930 to ~1,070 billion, driven mainly by increasing LNG exports from the US, re-exports from Europe, and rapidly growing Chinese demand
- 3 On the pricing side, oil and most gas prices rallied in 2018 with the exception of Henry Hub; as a result, the spread between Asian spot LNG and Asia-landed Henry Hub prices widened to a maximum of ~USD3.7/mmbtu in February 2018

While traded volumes in financial spot LNG products have increased, relatively low churn rate indicates liquidity is still lagging other leading gas indices

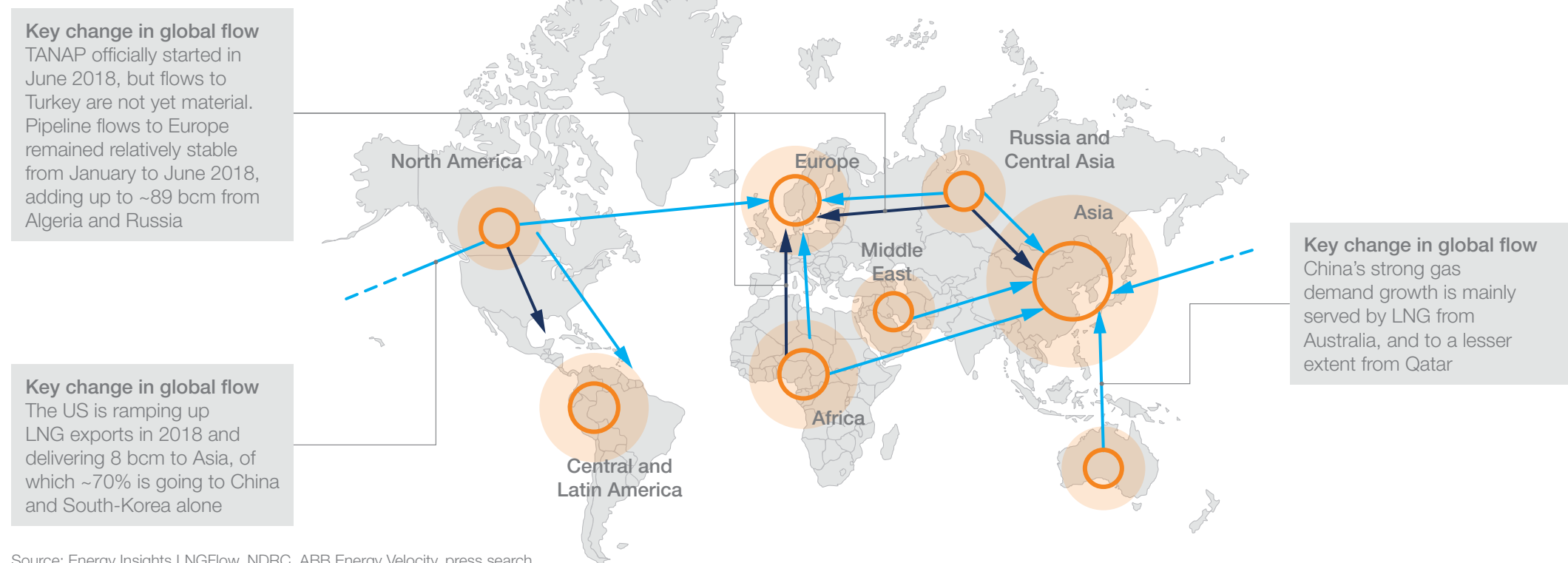


## 2018 saw increased LNG flows from the US and Australia impacting global gas dynamics while pipeline flows remained stable with the start-up of the TANAP pipeline in June

### Main 2018 pipeline and LNG flows

bcm

— LNG — Pipeline ○ Supply/demand region



Source: Energy Insights LNGFlow, NDRC, ABB Energy Velocity, press search



## 2 Steep demand increases in China combined with new LNG supply from the US and Australia have disrupted historical LNG flow patterns in 2018

### On the demand side

**A** The demand increase in Asia was the sole driver for LNG growth, with China and South Korea providing most of the additional pull

**B** In China, the increase in LNG imports was the fastest out of other delivery mechanisms at 52% p.a. in H1 2018

### On the supply side

**C** Over 2018, an additional 48 bcma of new liquefaction capacity will come online, primarily from the US and Australia

**D** Lower Qatari flows to Egypt and Europe were substituted by increased volumes to South Korea and China

### Trade flow patterns

**E** Over 2017-18, LNG flows grew by ~8% p.a., with most flows destined for Asia

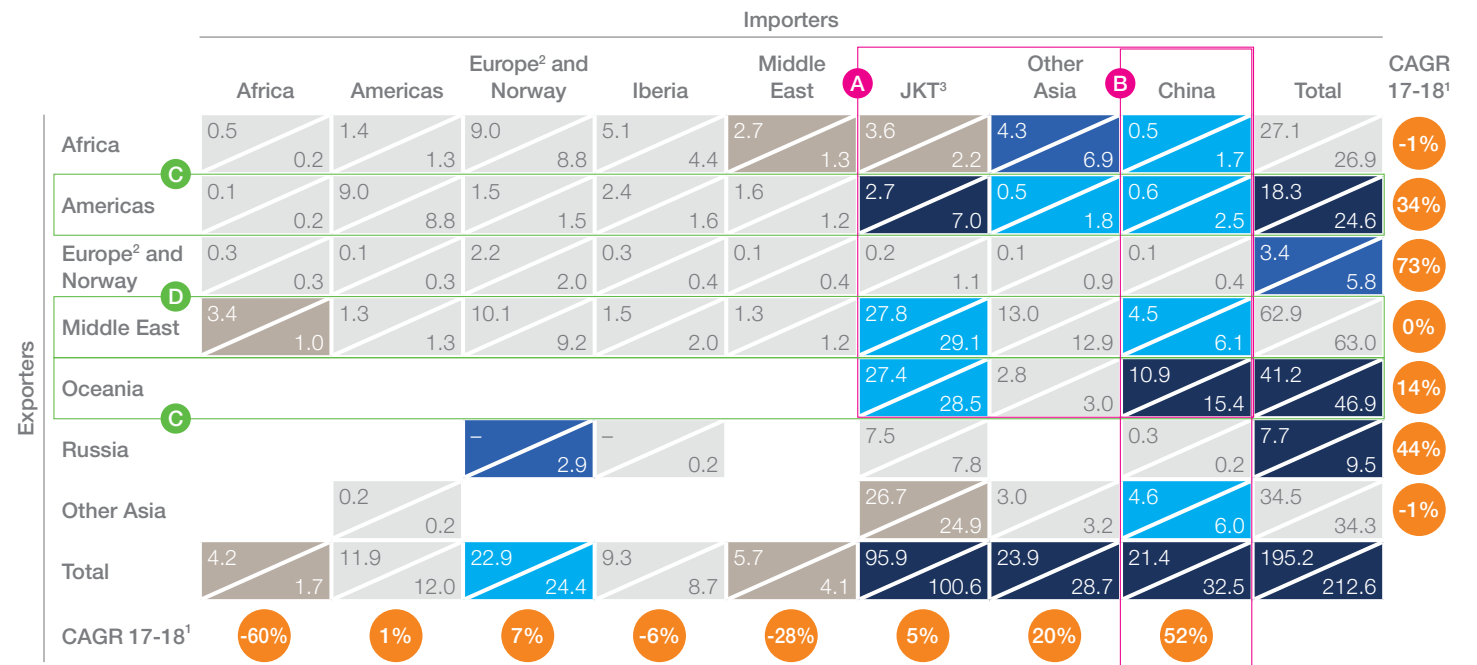
**F** As a result, global tonne-mile demand increased from ~930 to 1,070 billion, driven mainly by increasing US exports and re-exports and Chinese demand

LNG flows between main importers and exporters in 2017 and 2018<sup>1</sup>

▢ 2017<sup>1</sup> ▢ 2018<sup>1</sup>

bcm for Jan-June 2017 and 2018 respectively

■ Δ >3 bcm ■ Δ 2-3 bcm ■ Δ 1-2 bcm ■ Δ -1-1 bcm ■ Δ <-1 bcm

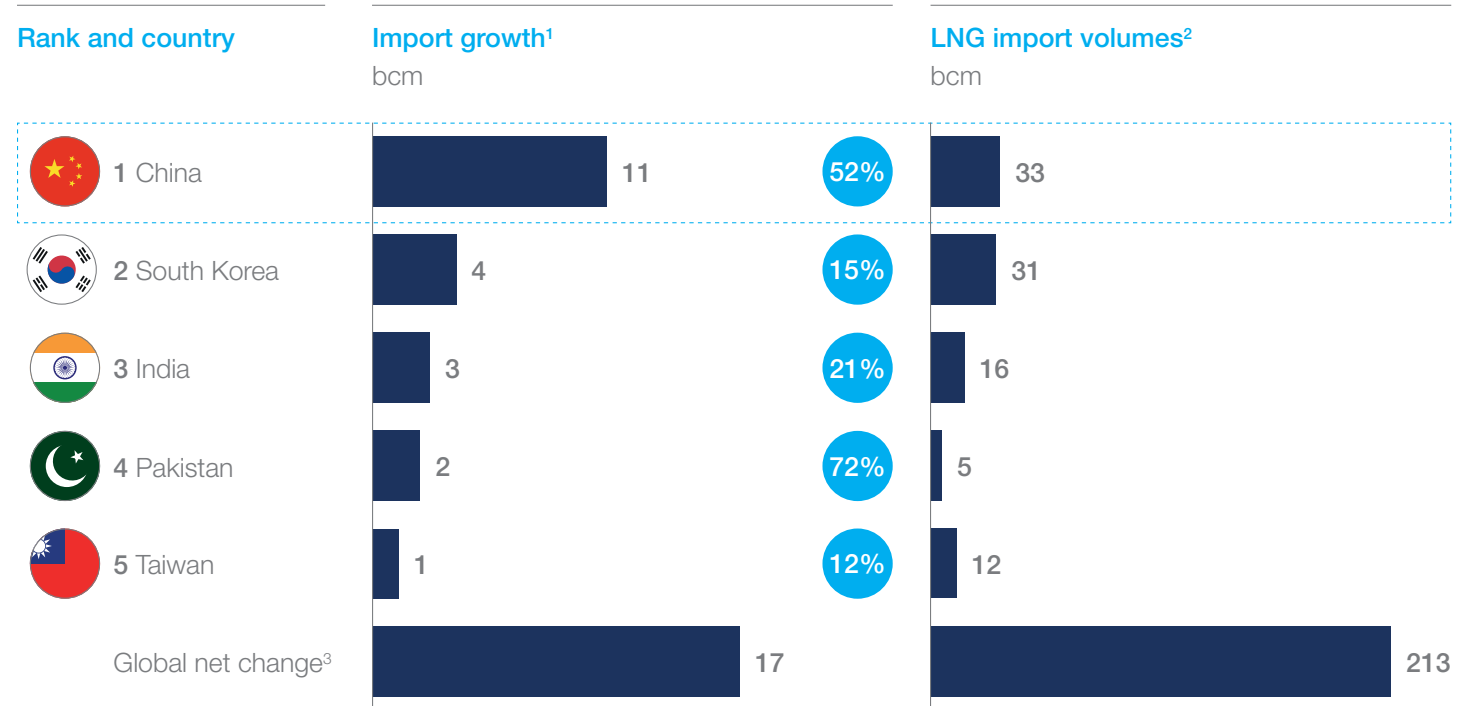


<sup>1</sup> Cumulative January-June, including all re-exports except minor flows from Iberia and Japan (both <0.2bcm) in this representation <sup>2</sup> Europe includes EU28 excluding Spain and Portugal plus Turkey, Ukraine, Switzerland, Albania, Belarus, Iceland, and Macedonia <sup>3</sup> Japan, South Korea, and Taiwan  
Source: Energy Insights LNGFlow

## A The five countries where LNG imports increased the most during H1 of 2018 are all in Asia and all experienced LNG import volume increases of at least 12% year-on-year

### Key highlights

- In terms of absolute growth of LNG imports, the five top-ranking countries are all in Asia, with China standing out with ~11 bcm year-on-year growth
- Japan experienced a slight decline (~-0.5 bcm) in LNG imported volumes, but remains the largest importer globally with ~58 bcm for January-June 2018 alone



● Year-on-year growth between January–June 2017 vs. 2018 □ Deep dive to follow

<sup>1</sup> Absolute growth from January–June 2017 to January–June 2018 <sup>2</sup> Cumulative January–June including re-exported volumes

<sup>3</sup> Net global change in demand (includes increases and decreases in imports)

Source: Energy Insights LNGFlow, Cedigaz



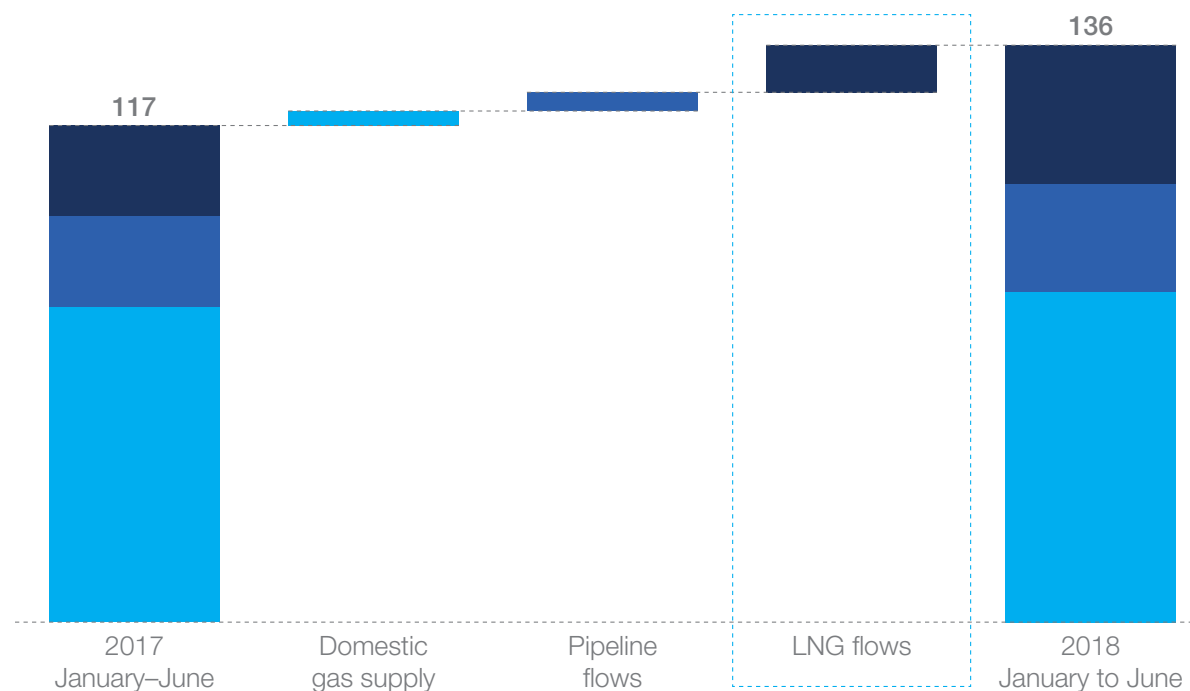
## B In China, LNG import volumes grew the most out of other delivery mechanisms (e.g., pipeline, domestic supply) at 52% p.a. during H1 of 2018

- LNG imports grew by 52% from 2017 to 2018, increasing regasification utilization to ~80% and representing ~60% of total additional consumption

China gas supply mix<sup>1,2</sup>

bcm

■ LNG ■ Pipeline ■ Domestic gas supply □ Deep dive to follow



Growth

2017 to 2018<sup>1</sup>, %

52%

20%

5%

<sup>1</sup> Cumulative January–June 2018 <sup>2</sup> For pipeline imports, flows in June are estimated to be equal to May  
Source: Energy Insights LNGFlow, press search

## B While regas utilization jumped to ~80% in 2018 vs 69% in 2017, the addition of 8 bcma of regas capacity by the end of 2018 may loosen the system

LNG receiving terminals in China<sup>1</sup>

bcm ● Existing 2017 (74.3) ● New 2018 (3.0)<sup>2</sup>



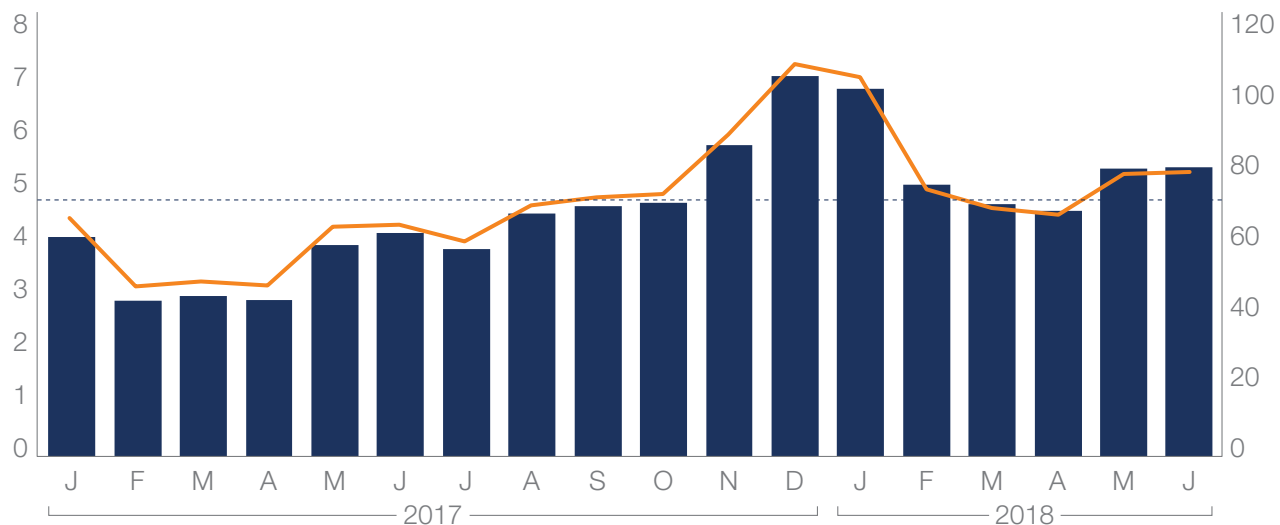
<sup>1</sup> Excluding small scale (<0.6 bcm) terminals not tracked by LNGFlow

<sup>2</sup> Tianjin Onshore (SINOPEC) started in February 2018

Source: Energy Insights LNGFlow, press search

Chinese LNG import volume and regasification terminal utilization rate from January 2017 to June 2018

bcm ■ Volume received — Regas utilization %



- The average regasification utilization rate throughout 2017 was 69% which theoretically provided an additional >30 bcma of spare capacity for extra imports
- So far in 2018, the average utilization sits at ~80%. An additional 8 bcma of regas capacity is coming online by the end of 2018

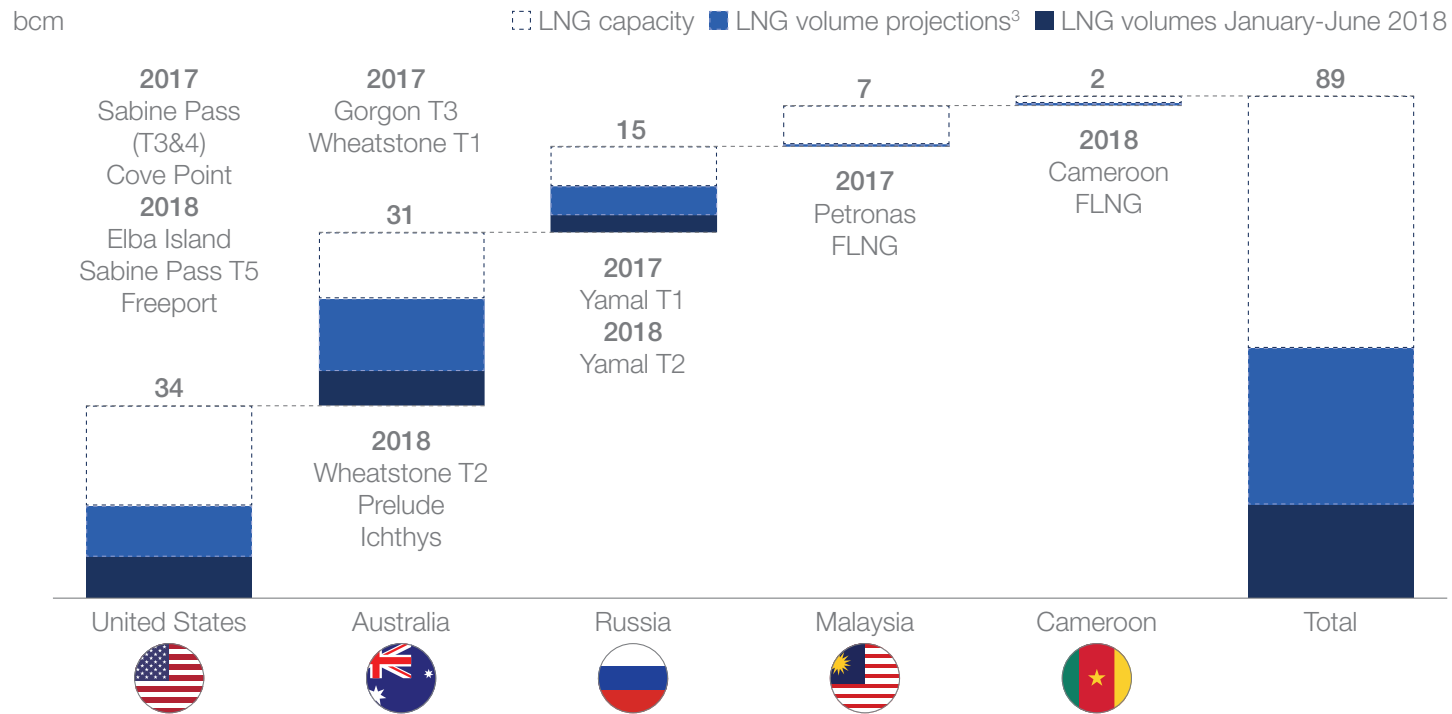


# C Over the course of 2018, new LNG projects are expected to add 48 bcma of capacity with new additions primarily coming from the US and Australia

## Key highlights

- While 41 bcma of liquefaction was added in 2017, 2018 will see 48 bcma of new liquefaction capacity coming online
- ~90% of new capacity added in 2017-18 is located in the US, Australia, and Russia
- The slow ramp up in commissioning combined with projects expected to start later in 2018 implies that total additional supply for 2018 will be ~40 bcm

Liquefaction capacity added in 2017-18 by main exporter and 2018 LNG production<sup>1,2</sup>



<sup>1</sup> Assuming that trains 1, 2, and 3 at Gorgon and trains 1, 2, 3, 4 at Sabine Pass operated at the same utilization rate <sup>2</sup> Cumulative send-out January-June <sup>3</sup> Projection for rest of the year based on 2018 utilization rate  
Source: Energy Insights LNGFlow

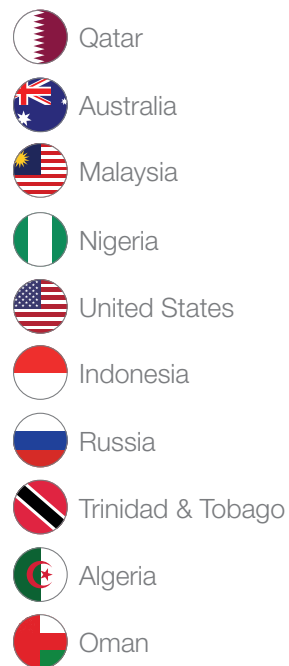
# C The overall LNG plant utilization has been stable at around 82% as ramp-up compensated for commissioning of new projects

## Key highlights

- Decrease in liquefaction utilization in the US driven by the temporary shutdown of Sabine Pass in early 2018
- Decrease in utilization in Russia from 99% to 94% as Yamal starts up operations
- Increase in Australian liquefaction utilization as recently completed project (e.g. Gorgon) ramped up production

### Top 10 exporters 2018

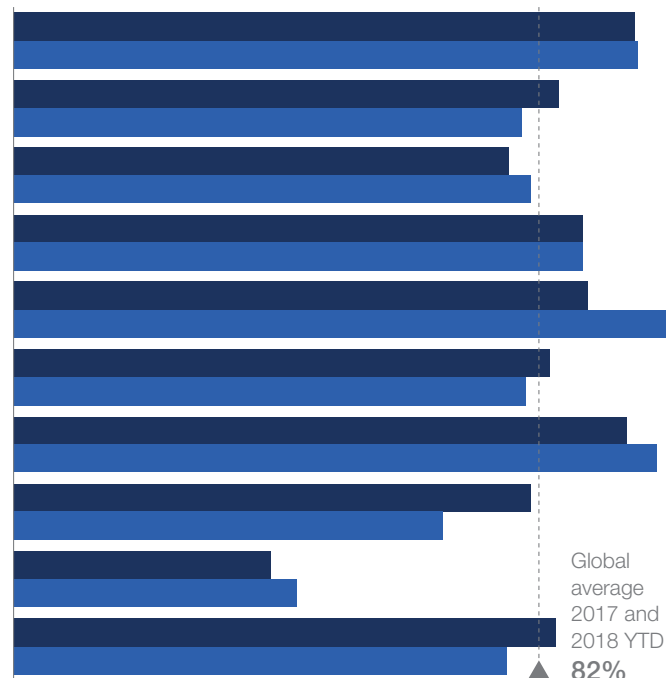
bcm



### Utilization<sup>1</sup>

January–June, %

■ 2018 ■ 2017



### Change in utilization

% ● Δ<-1% ● -1%<Δ<1% ● Δ>1%



<sup>1</sup> Average utilization for all liquefaction plants in the exporting country based on nameplate capacity  
Source: Energy Insights LNGFlow

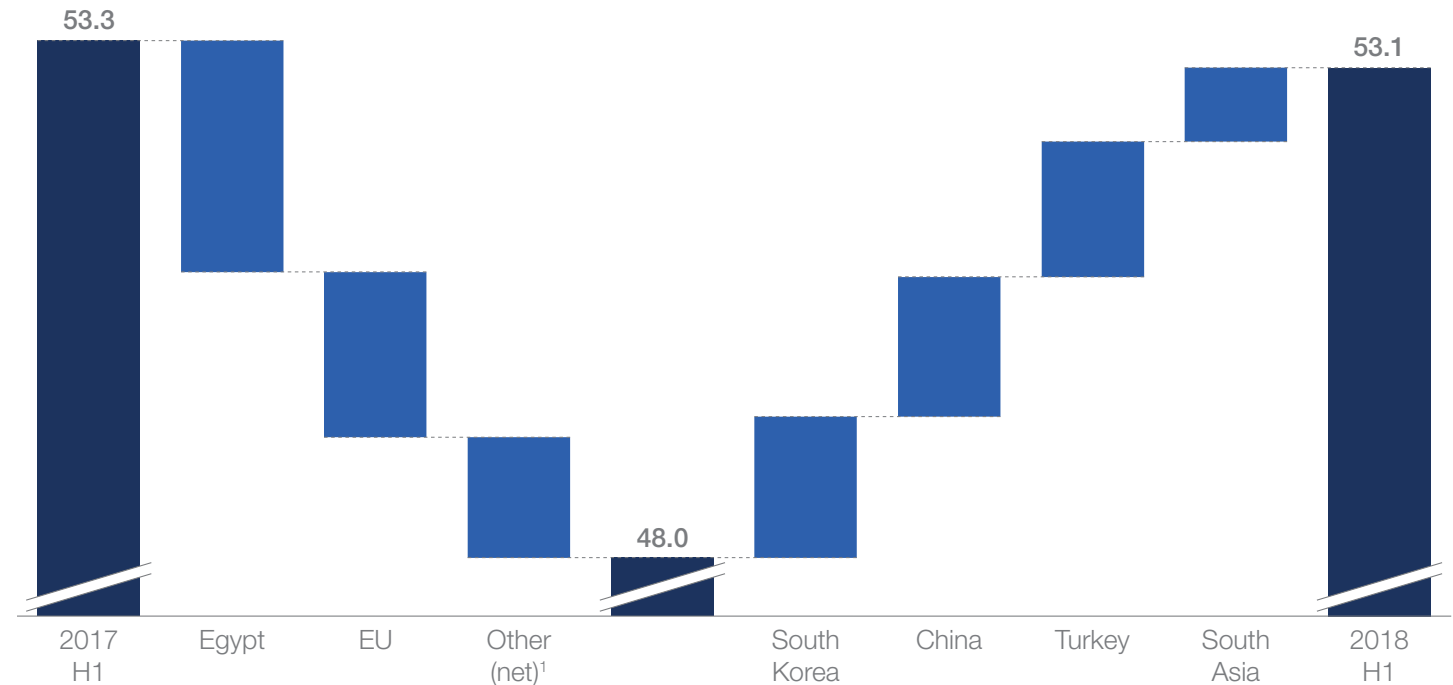


## D LNG flows from Qatar to Europe and Egypt decreased to the benefit of Turkey, South Korea, China, and South Asia

- The inherent flexibility in Qatari contracts enabled the diversion of volumes from Europe and Egypt to South Korea, China, Turkey, and South Asia

Breakdown of Qatari LNG export changes, January–June 2017 vs. 2018

bcm



<sup>1</sup> Includes minor increases/decreases to Singapore (-0.6), Thailand (-0.5), UAE (-0.3), Japan (-0.3), Taiwan (+0.2), and Argentina (+0.2)

Source: Energy Insights LNGFlow, Cedigaz, press search

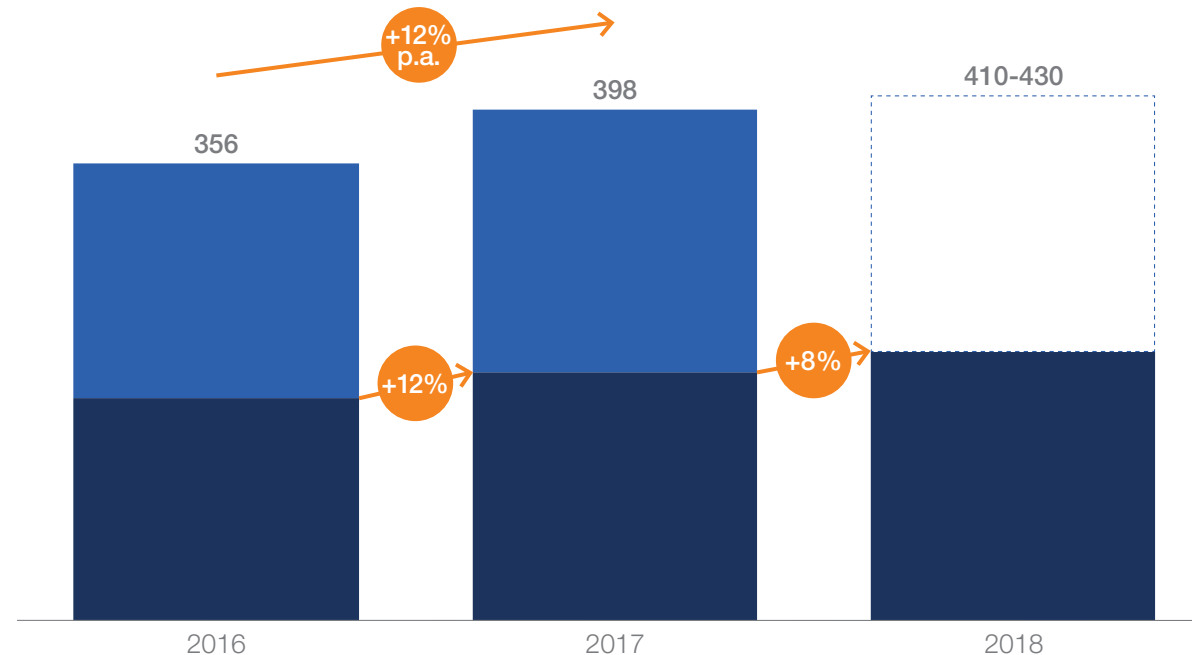
## E In the first half of 2018, global LNG flows continued to grow at a pace of ~8% p.a. vs 12% p.a. in 2017

### Key highlights

- In 2017, the global LNG market grew by ~12%, which is significantly above the overall gas market growth of ~3%<sup>2</sup> for 2017 and the long-term growth projection of ~1% p.a. over 2017-2035<sup>3</sup>
- In the first half of 2018, the trend continued with the LNG market growing at a more modest >8% year-on-year
- Asia made up >75% of total global LNG demand, while Europe represented ~15% of demand
- Chinese LNG demand grew by ~11 bcm, the largest increase within Asia

### 2016-18 LNG demand evolution<sup>1</sup>

bcm ■ LNG demand Jan-June ■ LNG demand Jul-Dec □ Projected LNG demand Jul-Dec



### CAGR

2016-18, %

7-10%

~10%

<sup>1</sup> January-June 2018 flows excluding re-exports (deducted from original source), visualization excludes minor (<0.2 bcm) re-exports from JKT and Iberia

<sup>2</sup> See BP Statistical Review 2018 <sup>3</sup> Energy Insights Gas Intelligence Model

Source: Energy Insights analysis, Energy Insights LNGFlow, BP Statistical Review



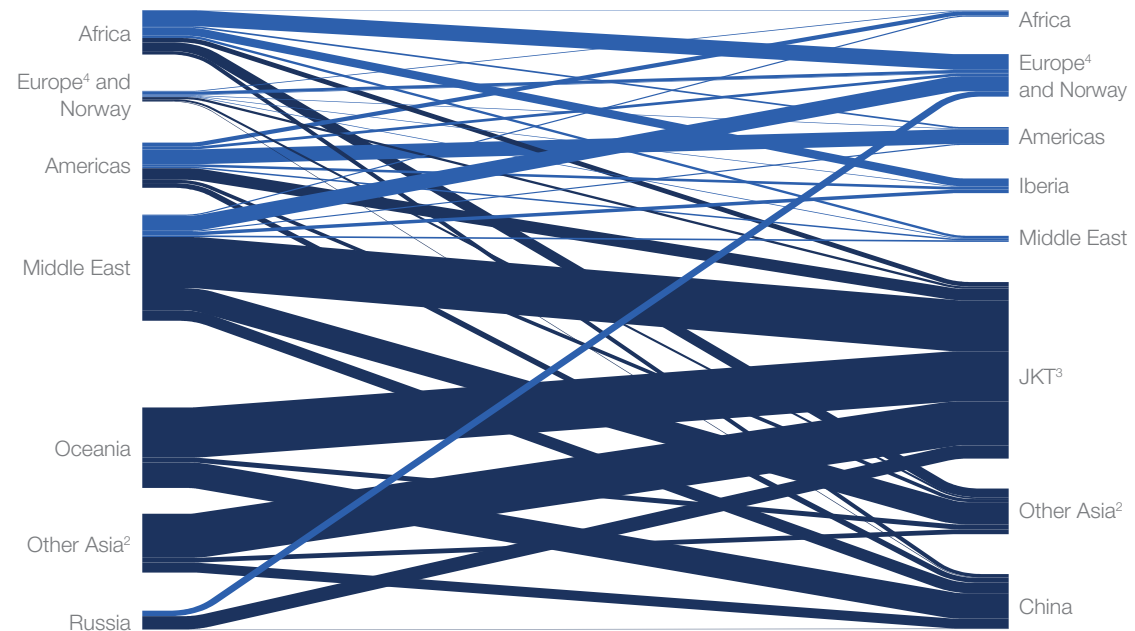
## Asia was the main destination for LNG flows with a share of spot cargoes remaining mostly below 25%

### Key highlights

- Total LNG demand in the first half of 2018 added up to ~209 bcm (excluding re-exports) where ~23% of the flows corresponded to spot demand
- LNG flows to JKT accounted for almost 50% or ~100 bcm, an increase of almost 5 bcm compared to the first half of 2017, driven mainly by increased flows to South Korea
- China increased its LNG imports by ~11 bcm to >32 bcm, which is an increase of more than 52% year-on-year (January–June 2017 vs. 2018)

### Actual LNG demand flows<sup>1</sup> in Jan-June 2018

bcm



<sup>1</sup> January-June 2018 flows excluding re-exports (deducted from original source), visualization excludes minor (<0.2 bcm) re-exports from JKT and Iberia

<sup>2</sup> Other Asia includes all Asian countries except Japan, Korea, Taiwan, and China <sup>3</sup> JKT includes Japan, South Korea, and Taiwan <sup>4</sup> Europe includes EU28 excluding Spain and Portugal plus Turkey, Ukraine, Switzerland, Albania, Belarus, Iceland, and Macedonia <sup>5</sup> High-level estimation of spot share in total volumes by region including re-exports based on McKinsey analysis of flows and machine learning

Source: Energy Insights LNGFlow, Cedigaz

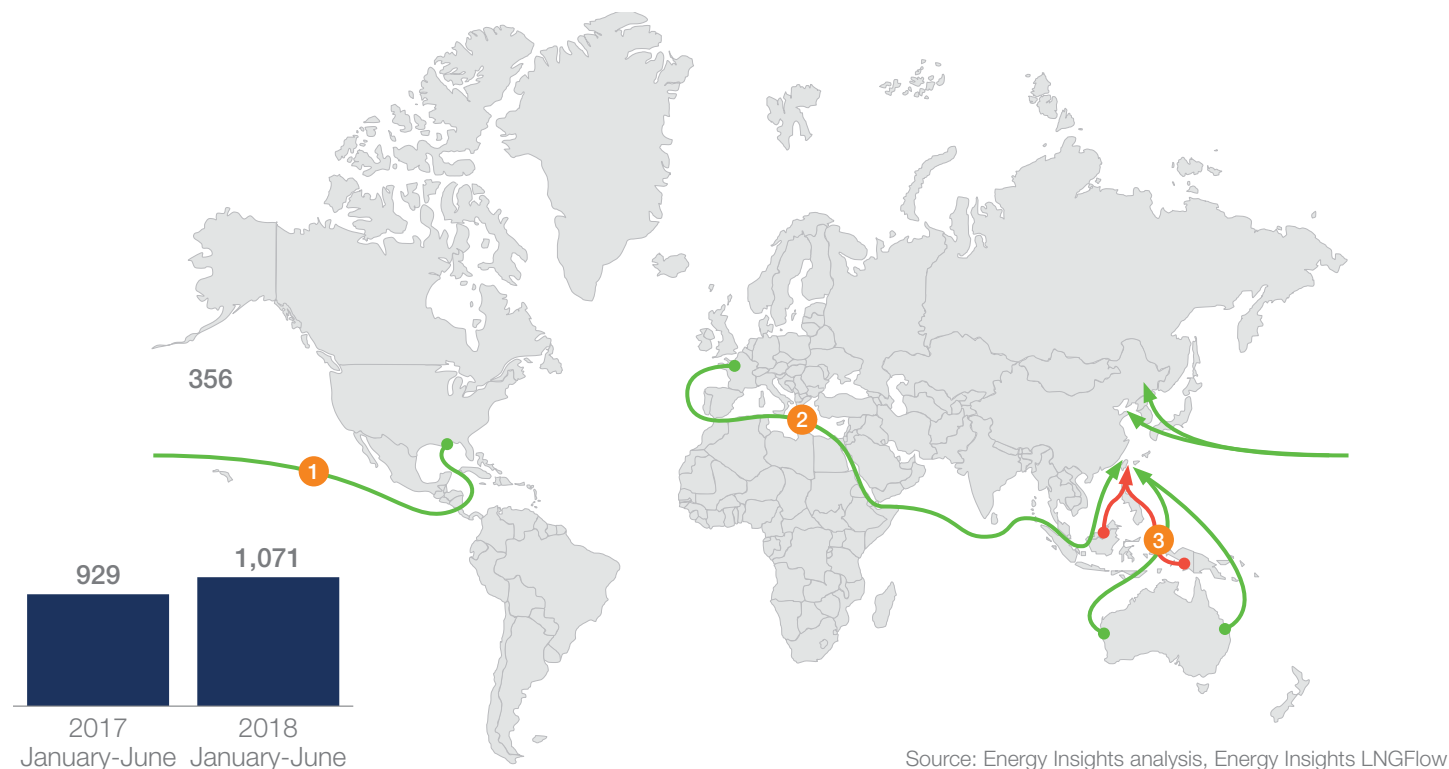
## Global tonne-mile demand increased from ~930 to ~1,070 billion, driven mainly by increasing LNG exports from the US, re-exports from Europe, and rapidly growing Chinese demand

The shipping tonne-mile demand increased from 930 to 1,070 billion tonne-miles between H1 2017 and 2018 driven by:

- 1 Increased volumes from the US to China and South Korea
- 2 Increases in volume and distance of re-exports (~4,000 miles in January-May 2017 vs >7,000 miles in 2018)
- 3 Additional Australian supply has predominantly headed to China and Japan, displacing closer flows from Malaysia and Papua New Guinea:
  - Papua New Guinea reduced output by 1.5 bcm in H1 2018 after an earthquake disrupted plant operations
  - Malaysia delivered less to Japan (-1.8 bcm) and increased flows to Thailand (+0.3 bcm)

### LNG shipping tonne-mile demand in H1 2017-2018

Billion tonne-miles

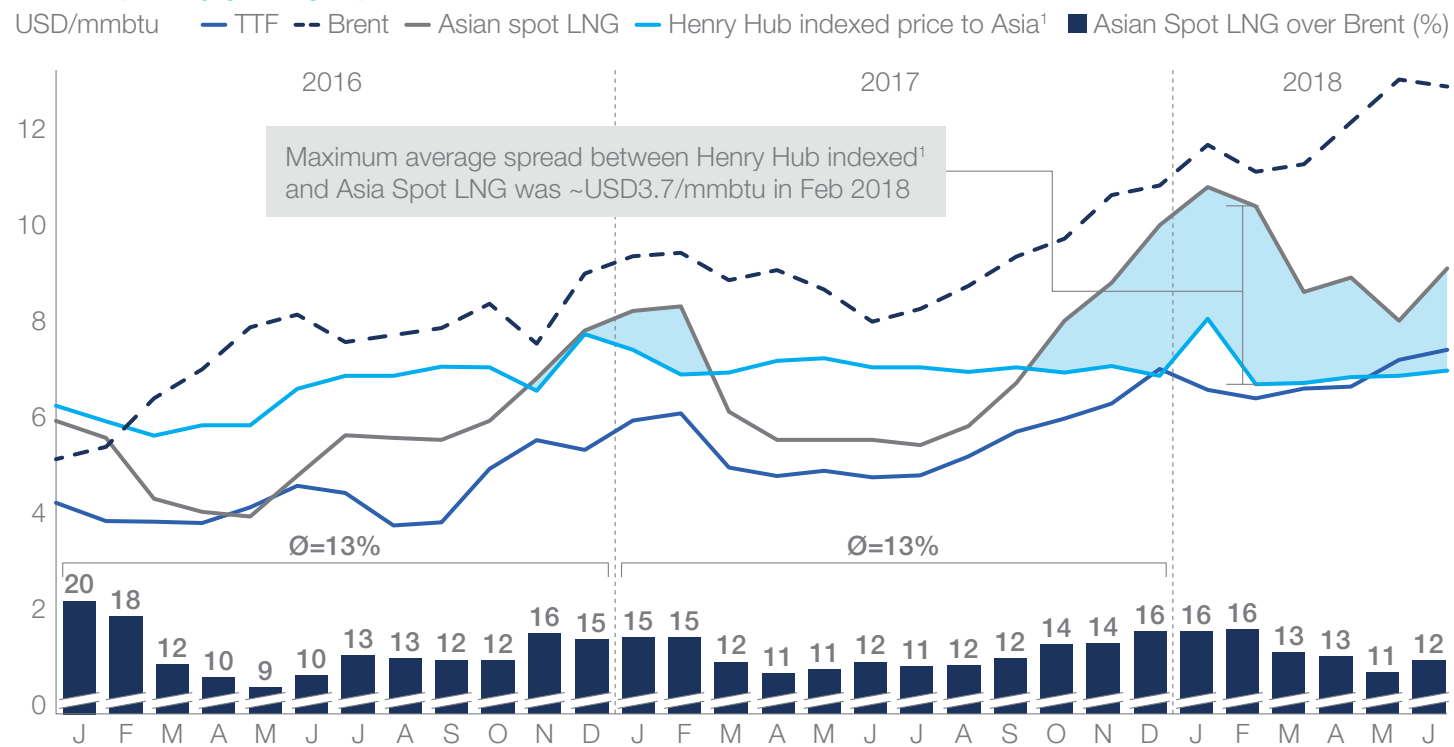


Source: Energy Insights analysis, Energy Insights LNGFlow

### 3 On the pricing side, oil and most gas prices rallied in 2018 with the exception of Henry Hub; as a result, the spread between Asian spot LNG and Asia-landed Henry Hub prices widened

- Overall, gas prices in primary trading hubs increased alongside oil prices
- In a high-oil-price environment, LNG exports from the US to Asia become increasingly competitive, as the spread widens between Asian spot LNG and Henry Hub indexed prices to Asia
- The spread between Asian spot LNG price and TTF also widened (up to ~USD4/mmbtu) providing a mark-up of USD1-2/mmbtu<sup>2</sup> for re-exports from Europe. Consequently, re-exports from Europe to Asia in 2018 were ~1.5 bcm higher than 2017
- In 2018, the slopes of Asian spot LNG prices vs Brent continued to fluctuate seasonally but averaged around ~13%

2016-18 primary global gas price indicators



<sup>1</sup> Henry Hub\*115%+USD2/mmbtu plus USD1.8/mmbtu for shipping <sup>2</sup> Assuming USD2-3/mmbtu shipping costs

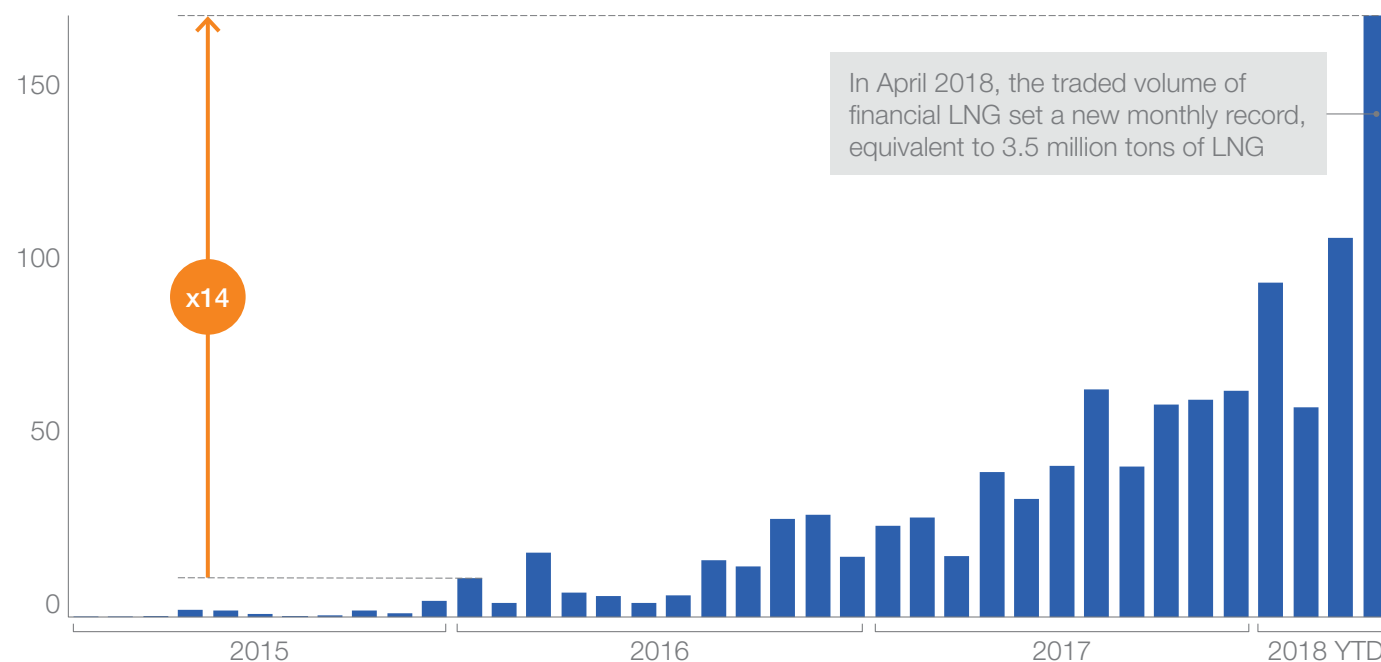
Source: Energy Insights analysis, Elexys, created by editing the Spot LNG Price Statistics (Japanese Ministry of Economy, Trade and Industry)



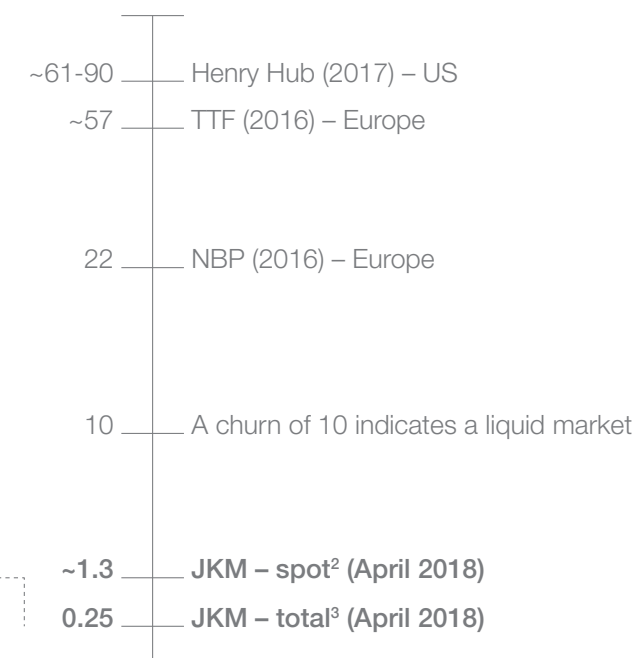
### 3 While traded volumes in financial spot LNG products have increased, relatively low churn rate indicates liquidity is still lagging major gas indices

Traded volumes of financial LNG derivatives<sup>1</sup> over 2015-18

Tbtu per month



Churn for global price gas markers



<sup>1</sup> Settled against the monthly average of Platts published Japan Korea Marker <sup>2</sup> Churn for one month. Financially traded volume over spot imports into China, South Korea, Japan, and Taiwan

<sup>3</sup> Churn for one month. Financially traded volume over total imports into China, South Korea, Japan, and Taiwan

Source: Energy Insights LNGFlow, OIES, press search

# Medium-term highlights: the gas & LNG world five years out



## Summary

- From the analysis of global gas balances, two main conclusions can be drawn:
  - Over 2017-2022, natural gas demand and supply are expected to grow by 1.6% CAGR, with ~50% of demand growth in Asia and very strong growth from unconventional production
  - Changes to the domestic supply and demand balances of several countries are expected to affect their international gas trade exposure; for example, lower gas production in Pakistan and Thailand is expected to deepen the domestic gas deficit and increase their gas import requirements
- Looking at the way gas is delivered around the world, gas-consumed-where-produced is expected to continue dominating the gas mix (~70-75%), while the share of traded gas is expected to grow from 25% to 28% by 2022
- New gas infrastructure (pipelines and new import/export LNG terminals) is expected to support the rise in traded gas flows with the largest import increases expected in China, South Asia, and Europe

### Pipeline gas

- New pipelines will add ~200 bcma of cross-border capacity by 2022 with the US and Russia retaining their position as major piped gas exporters

### LNG

- Commissioning of 132 bcma of liquefaction capacity is expected until 2022, with ~70% located in the US and Australia
- The LNG market rebalancing is expected to take place around 2022 as the pace of Asian gas demand growth can only feasibly be met with LNG flows and new liquefaction additions which will bring available supply to a peak around 2020
- On the LNG demand side, China, South Asia, and Europe are expected to make up most of the new LNG demand growth

### Regional highlights

- In China, growth in domestic supply and pipeline flows are not expected to be sufficient to meet the pace of demand growth, leading to a rapid increase in LNG imports

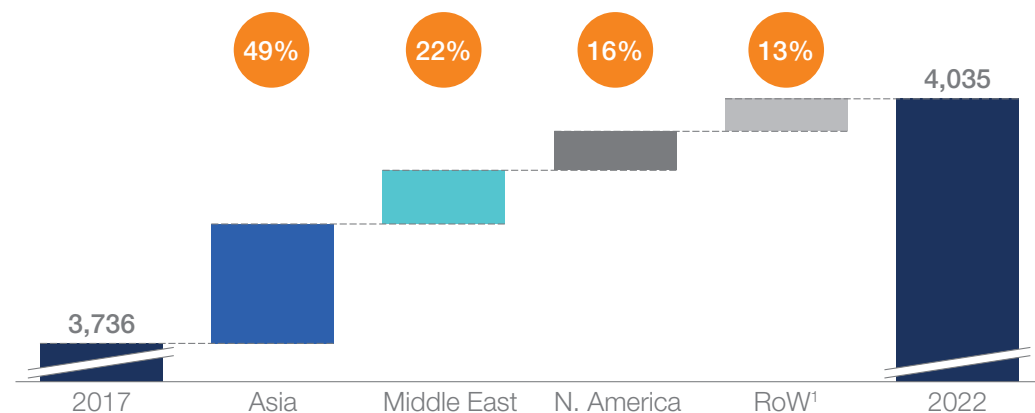
- In South Asia, the gap between declining domestic supply and modest growth in demand is expected to widen to ~20 bcm by 2022. With no existing pipeline infrastructure, LNG imports mainly sourced from Qatar and the United States are expected to bridge the gap
- Europe is expected to face a similar situation with a ~45 bcm gap developing between declining supply and a flat demand growth profile. As a result, Europe is expected to increase imports in pipeline gas and LNG, predominantly from existing suppliers (Russia, Algeria)



## Over 2017-2022, natural gas demand and supply are expected to grow by 1.6% CAGR, with ~50% of the demand growth in Asia

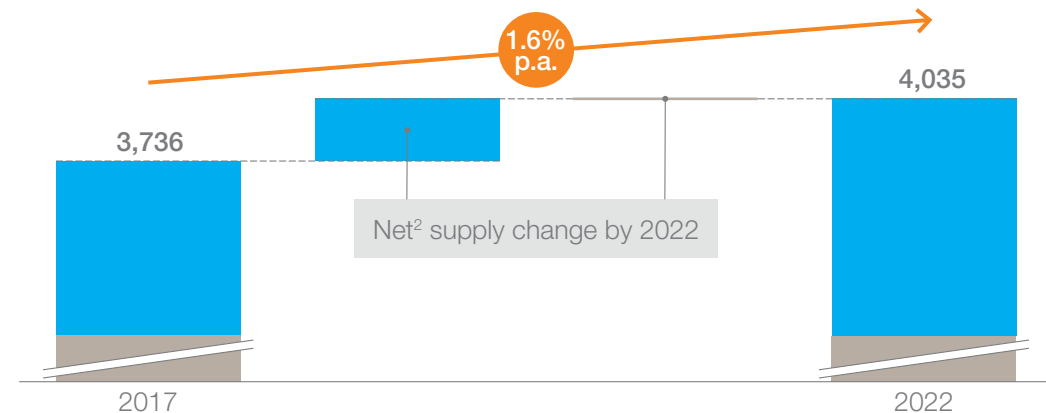
### Gas demand growth forecast

bcm ■ Asia ■ Middle East ■ North America ■ RoW ● Share of global demand growth



### Gas supply growth forecast

bcm ■ Unconventional supply ■ Conventional supply ● Share of total supply



1 Rest of the world 2 Sum of production from both growing and declining fields. Many conventional gas fields are expected to mature by 2022

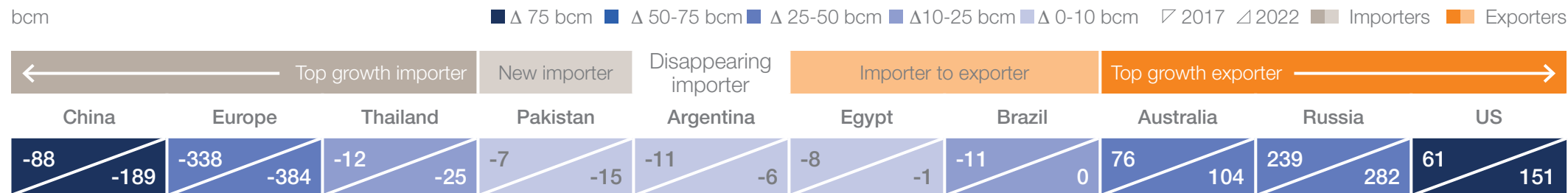
Source: Energy Insights analysis, Energy Insights Gas Intelligence Model

- Between 2017 and 2022, natural gas demand is expected to grow by ~300 bcm and reach ~4,040 bcm by 2022
- Demand growth is expected to be concentrated in Asia with ~150 bcm of new demand
- The Middle East and North America are expected to be the second and third largest sources of demand growth, adding ~70 bcm and ~50 bcm of demand, respectively
- On the supply side, the ~300 bcm growth is expected to come entirely from unconventional fields, while conventional production remains stable
- Conventional gas share in total gas supply will decline from 76% in 2017 to 70% in 2022



## The international gas trade exposure of many countries is expected to be influenced by changes to their domestic supply and demand balances

### Net domestic balance<sup>1</sup> in 2017 and 2022



<sup>1</sup> Defined as total domestic supply minus domestic demand. Indicates import needs or export capabilities

Source: Energy Insights analysis, Energy Insights Gas Intelligence Model, IHS Vantage

- China, where gas demand is expected to rise the most globally, will increasingly rely on gas imports as supply growth isn't expected to keep up with demand growth
- Supply declines in Europe will deepen the natural gas deficit and increase Europe's reliance on piped gas and LNG imports
- Important declines in gas field output in Thailand lead to an increasing gap in supply
- New LNG import facilities in Pakistan will enable the country to ramp up imports
- The exploration of shale gas basins in Argentina is expected to bring an extra 6 bcm of domestic gas production by 2022
- The start of production from the offshore Zohr field will enable Egypt to gradually decrease its import needs and ultimately resume LNG exports
- The development of presalt fields with significant associated gas will enable Brazil to increase supply while demand is gradually replaced by hydro and wind energy
- The US is expected to see the biggest gas export growth due to abundant and cost-competitive shale gas supply
- New pipelines to Europe (Nord Stream 2, Turkish Stream) and China (Power of Siberia) will allow Russia to market its growing supply

## Gas-consumed-where-produced is expected to continue dominating the gas mix (~70-75%), while traded gas is expected to grow from 26% to 28% by 2022

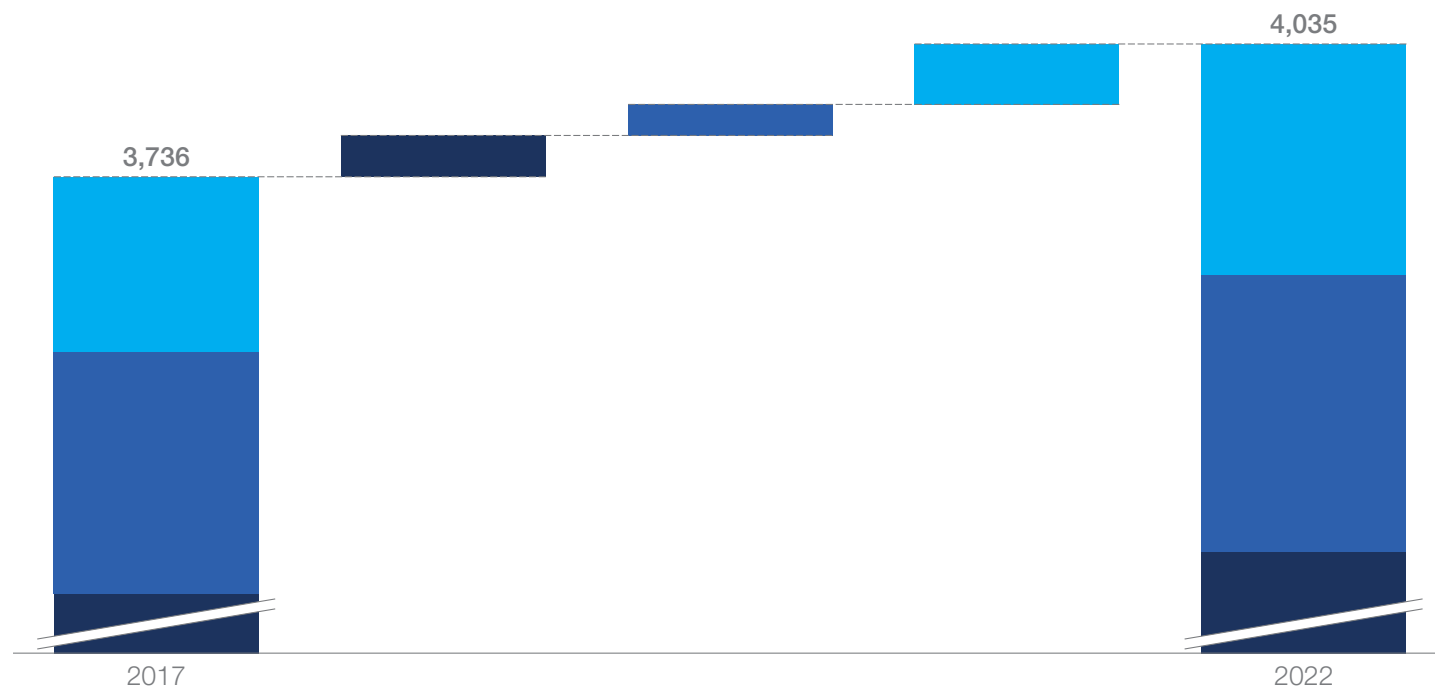
### Key highlights

- Between 2017 and 2022, the share of gas consumed where produced will decline from 75% to 72% in favor of both pipe and LNG traded flows
- Pipeline flow increases will be catalyzed by cross-border pipeline additions
- LNG flows are expected to grow the most out of the three delivery mechanisms, primarily due to the growing distances between supply and demand centers

Global domestic consumption, piped and LNG gas import projections

bcm

■ LNG flows ■ Pipeline flows ■ Gas consumed where produced<sup>1</sup>



<sup>1</sup> Including LNG flows within country for Malaysia and Indonesia  
Source: Energy Insights analysis

# New gas production is expected to enable Brazil and Egypt to reduce their import dependence and allow US and Australian export markets to flourish

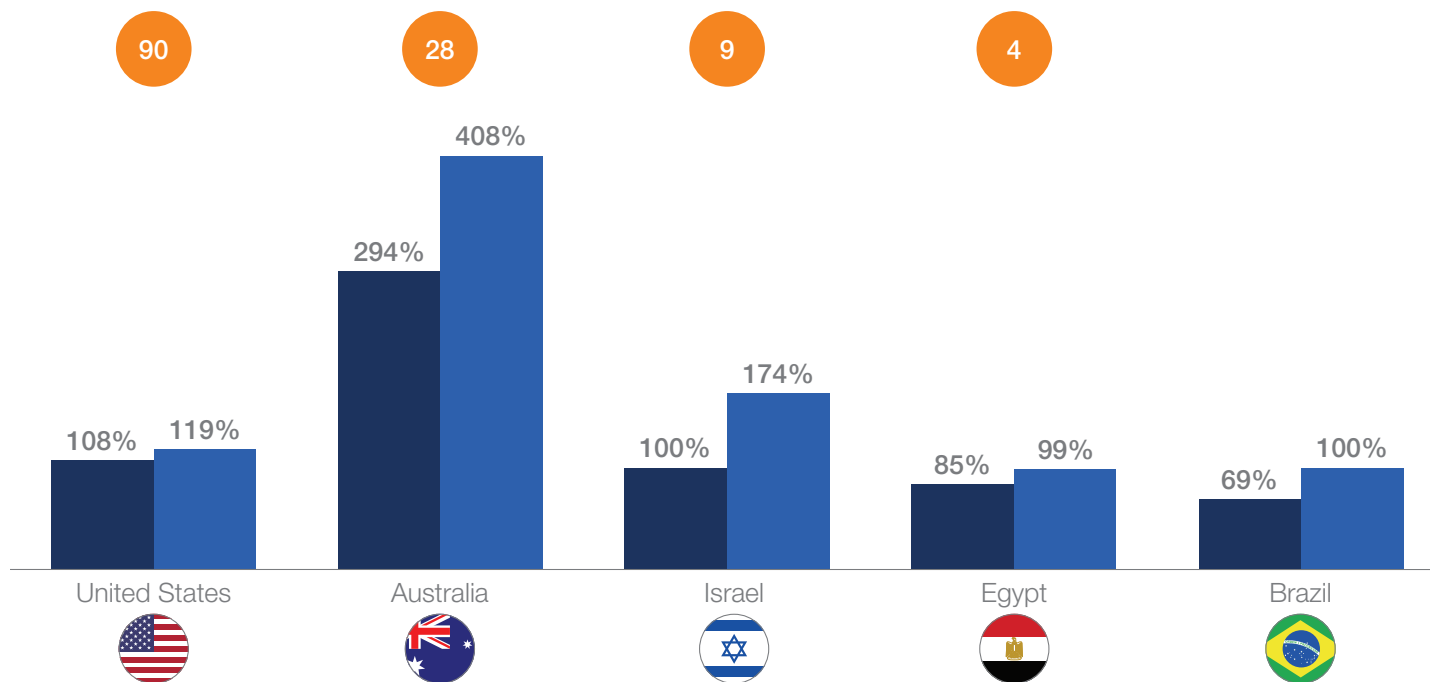
## Key highlights

- New production in the East Med will enable Egypt and Israel to meet their own demand and enable Egypt to resume LNG exports in the early 2020s
- Associated gas from pre-salt fields in Brazil will allow Brazil to reduce its dependency on imports
- The US and Australia will continue growing their domestic supply resources in order to expand their LNG and pipe exporting capacities

### Share of locally produced gas<sup>1</sup>

Ratio of domestic supply over demand, %

■ 2017 ■ 2022 ● 2017-2022 export change, bcm



<sup>1</sup> Consumed where produced either regionally or locally  
 Source: Energy Insights analysis, IHS Vantage

## New gas infrastructure is expected to support the rise in traded gas flows with the largest import increases in China, South Asia, and Europe

### Global highlights

- A** Pipeline additions are expected to lead to flow increases to Mexico, China, and Europe
- B** The commissioning of 132 bcma of liquefaction capacity over 2017-22 is expected to lead to increased LNG flows and a market rebalancing in 2022

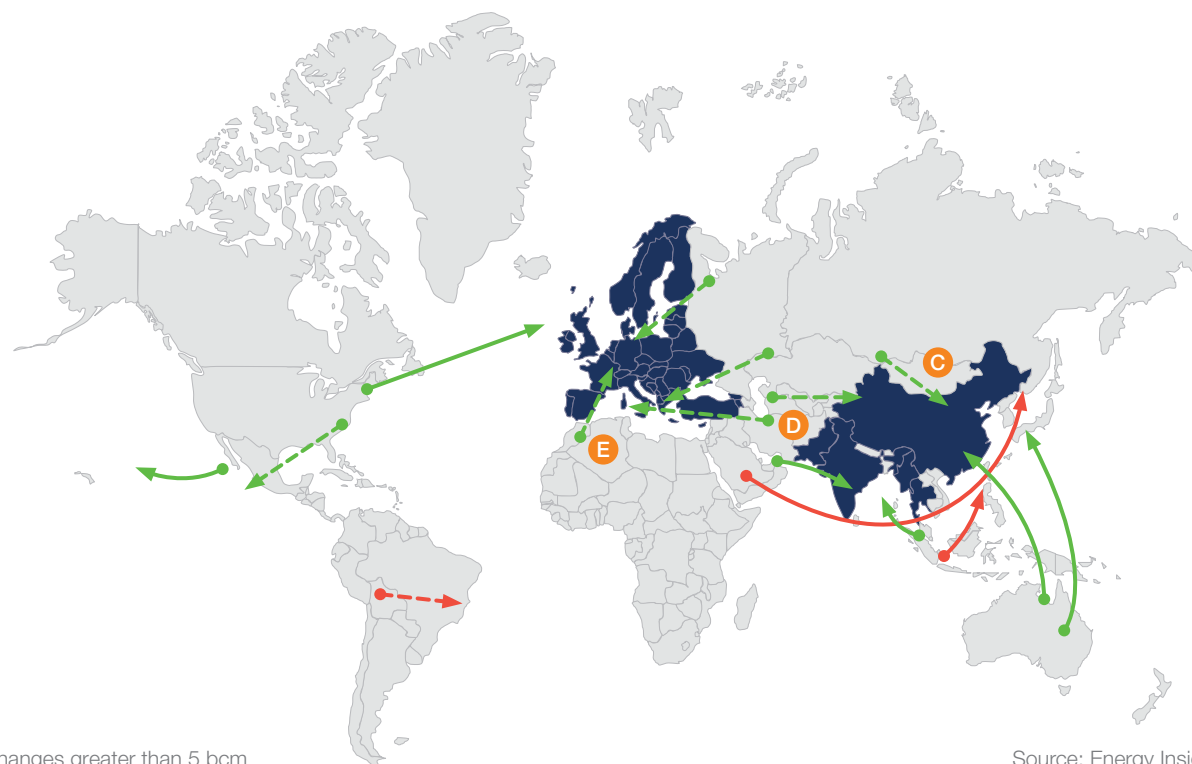
### Regional highlights

- C** In China, policy-driven demand growth is expected to be met with a combination of increased domestic supply, pipe, and LNG flows
- D** In South Asia, declining domestic supply is expected to require increased LNG imports especially from Qatar
- E** In Europe, a flat demand profile is expected to be met by a 6% increase in pipe flows and a ~50% increase in LNG flows to offset declining production

#### Traded gas flow evolution<sup>1</sup>

Change in bcm, 2017-2022

--- Pipe flow increase    - - - Pipe flow decrease    --- LNG flow increase    - - - LNG decrease

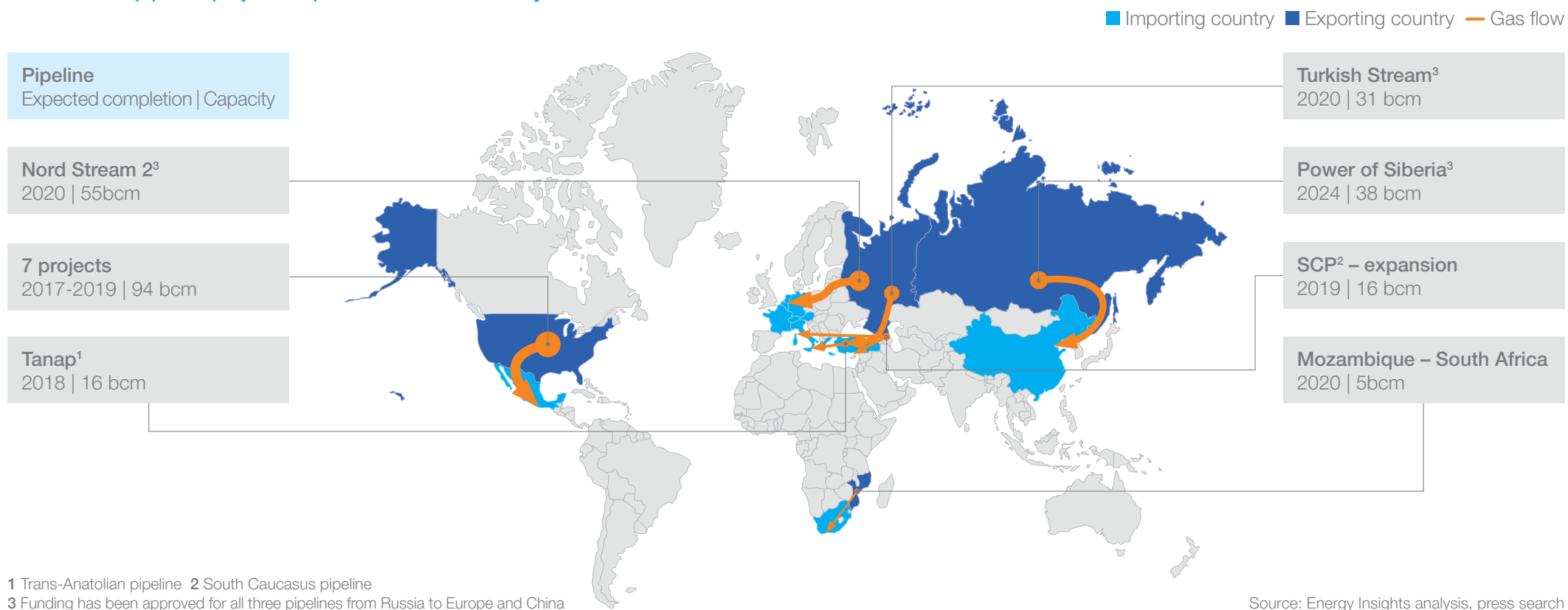


<sup>1</sup> Illustrates changes greater than 5 bcm



# A New pipelines will add ~200 bcm of cross-border capacity by 2022 with the US and Russia retaining their position as major piped gas exporters

## Cross-border pipeline projects expected to come online by 2022

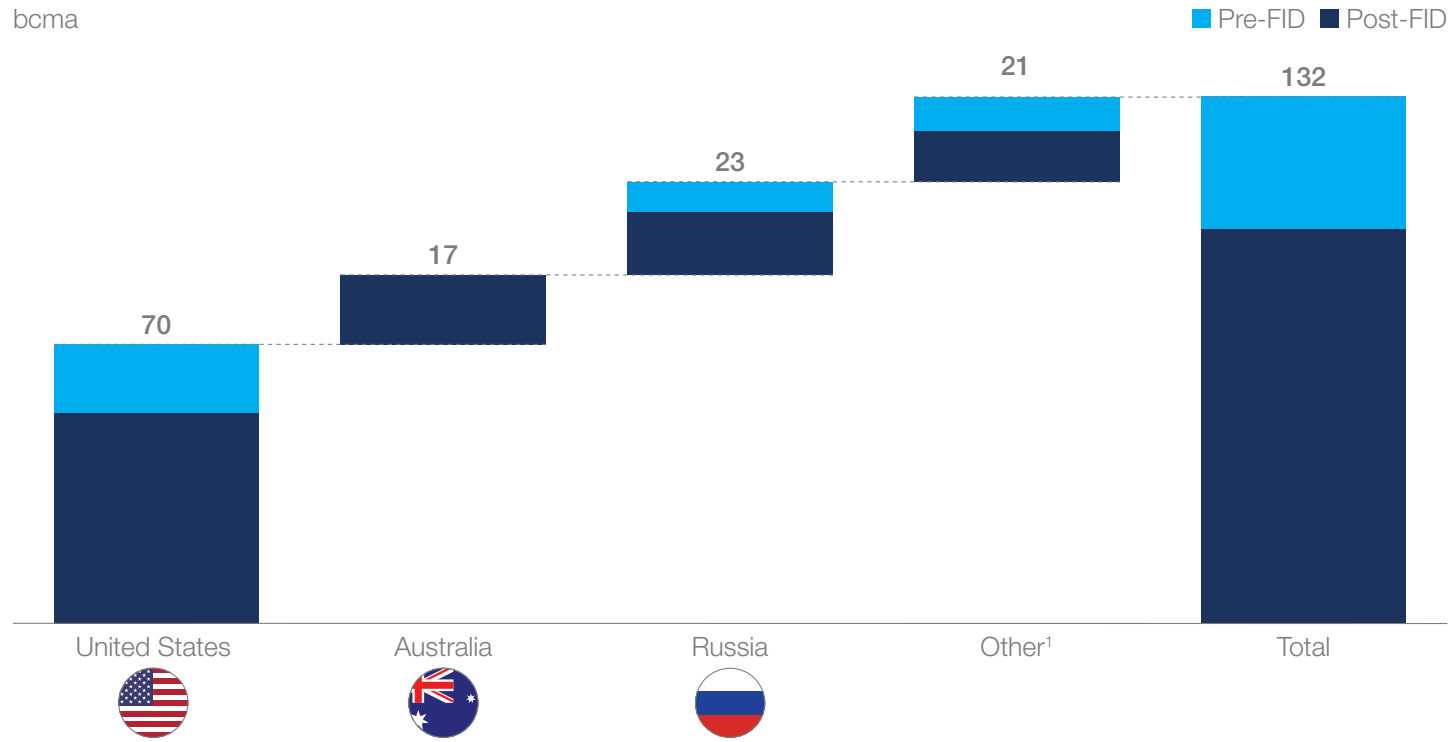


## B Commissioning of 132 bcma of liquefaction capacity is expected until 2022, with the US and Australia representing ~70% of it

### Key insights

- 75% of future liquefaction capacity expected online by 2022 is either already under construction or has received FID
- The US is expected to continue increasing their share in global liquefaction capacity by 2022, adding 70 bcma alone
- Australia has almost completed the commissioning of its wave of liquefaction projects with Ichthys and Prelude expected to start production in 2018

Additional liquefaction capacity expected online by 2022

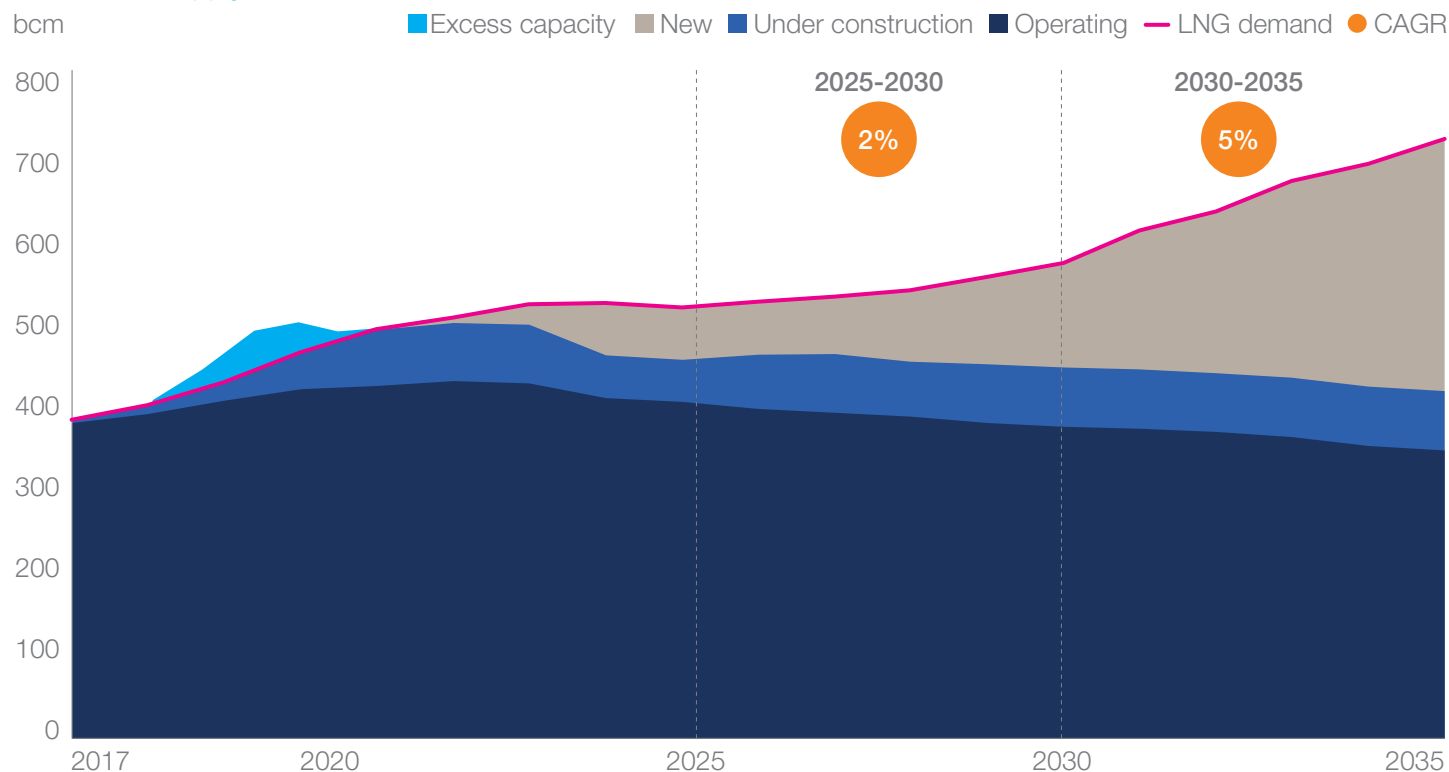


<sup>1</sup> Includes projects in Indonesia, Canada, Equatorial Guinea, and Mozambique  
 Source: Energy Insights analysis

## B The LNG market rebalancing is expected to take place around 2022

- Asia, and in particular China, is providing strong overall demand growth for gas in the near term which can only feasibly be met with LNG
- Supply from existing and under construction facilities will peak in the early 2020s and decline thereafter as fields deplete
- LNG demand growth plateaus in the mid-2020s as new pipeline additions temporarily lower LNG demand
- Over 2030-35, LNG demand growth accelerates as declining production from pipeline suppliers to Europe and Asia implies extra LNG requirements to bridge the gap

Global LNG supply and demand to 2035<sup>1</sup>



Source: Energy Insights analysis, Energy Insights Gas Intelligence Model, IHS Vantage

# Long-term insights



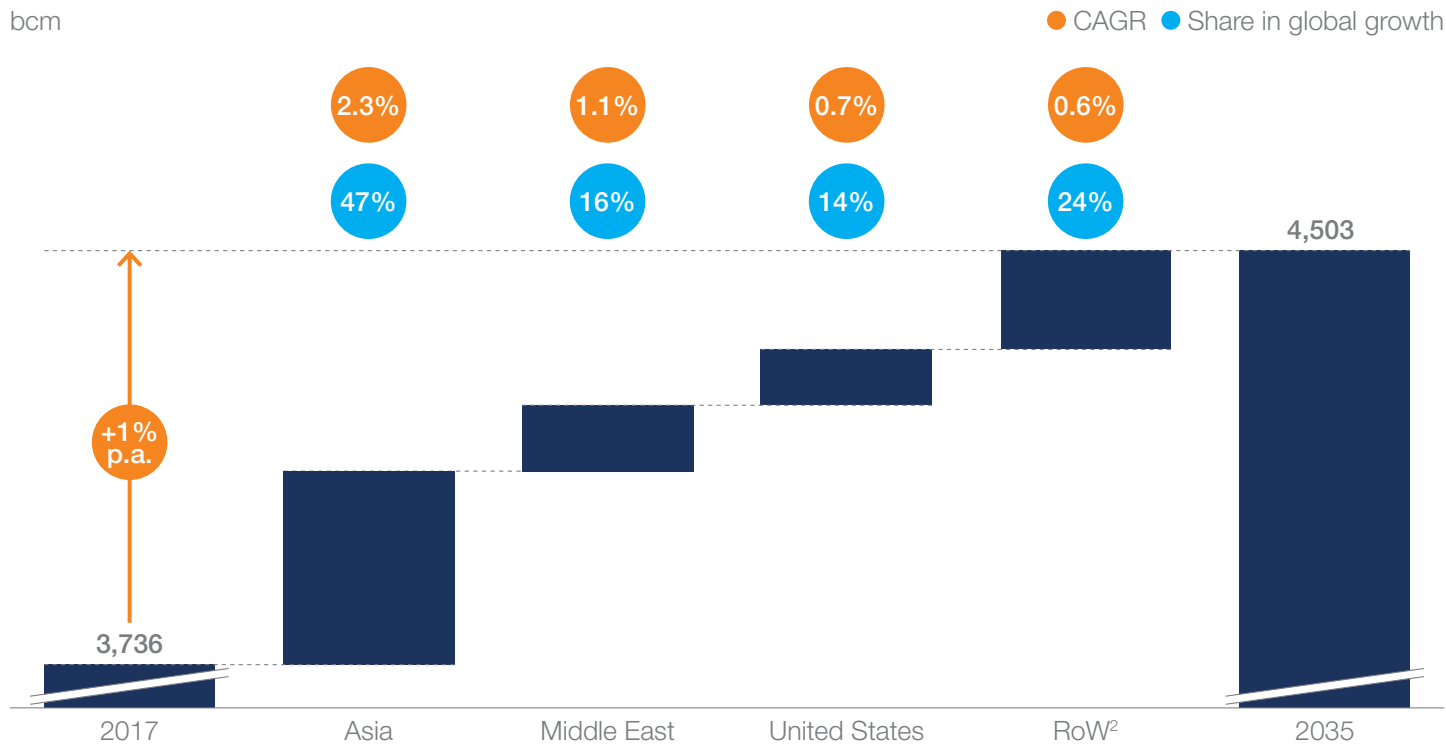


# ~50% of global gas demand growth by 2035 is expected to come from Asia, with traditional demand centers remaining relatively stagnant

## Key insights

- Asia (especially China) remains the main driver of demand growth, adding ~340 bcm of additional demand between 2017 and 2035
- Africa will grow at 2.3% p.a. between 2017 and 2030, bringing in ~70 bcm of additional demand
- 0.7% and 1.1% demand growth in the US and the Middle East, respectively, translates into substantial volume additions (around 100 bcm each)
- Europe and Russia are expected to remain stagnant, adding altogether ~20 bcm of demand between 2017 and 2035

Global gas demand by region to 2035<sup>1</sup>



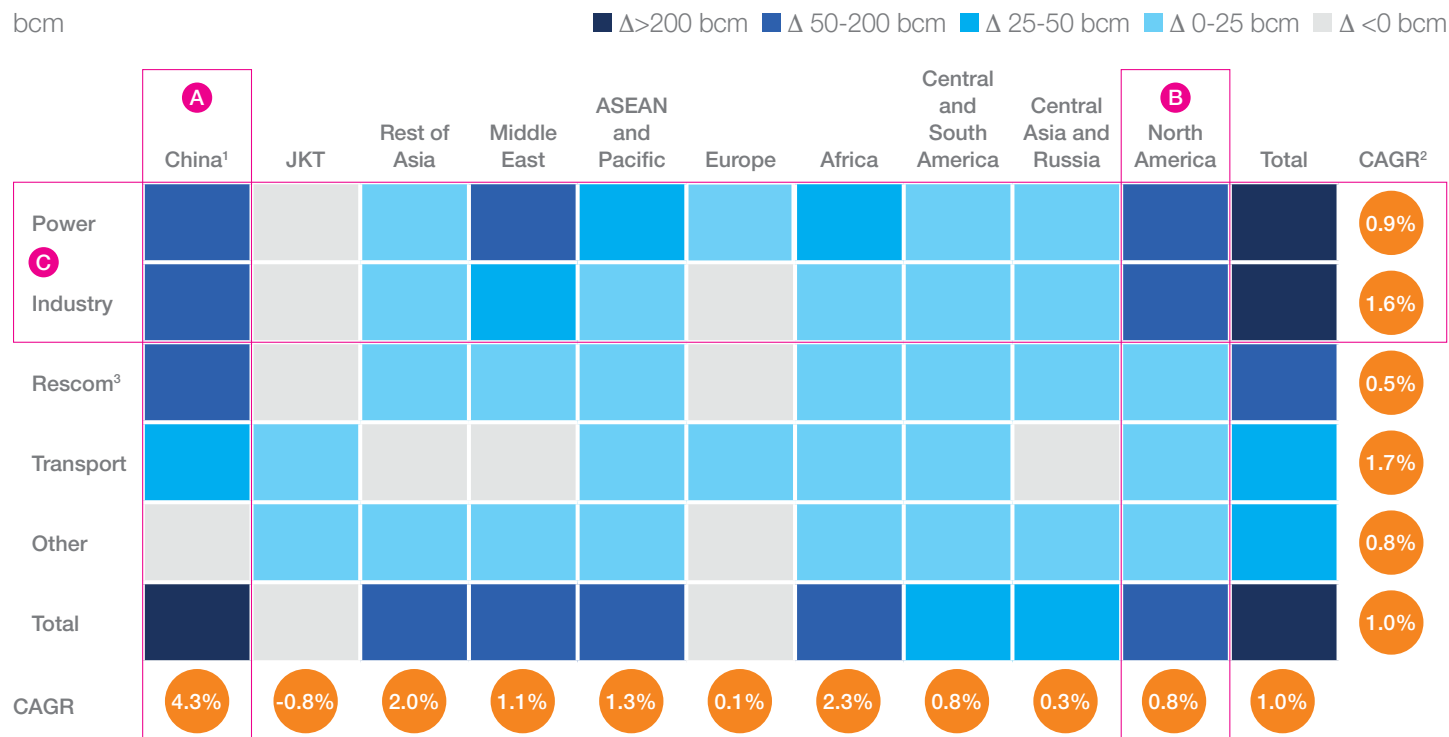
<sup>1</sup> Assuming LNG market oversupply gap in short-medium term to be evenly filled by LNG supply and demand <sup>2</sup> Rest of World  
 Source: Energy Insights analysis, Energy Insights Gas Intelligence Model



# Global natural gas demand is expected to grow by ~1% p.a. to 2035, mainly driven by the power and industry sectors

- A** Geographically, China represents 1/3 of total global demand growth to 2035
- B** North America makes up 20% of total demand growth for gas
- C** Sectorally, gas demand growth in the power and industrial sectors represent 80% of total global growth
  - Power growth is driven by rapid electricity demand growth in China, the Middle East, Africa, and North America
  - Strong industrial demand growth in China, the Middle East, and North America is driven by gas-intensive industries (e.g., petchem) taking advantage of accessible and competitive natural gas supplies as feedstock

Global gas demand by sector and region between 2017 and 2035



<sup>1</sup> Includes Hong Kong <sup>2</sup> Compound annual growth rate 2017-35 <sup>3</sup> Residential and commercial gas demand  
 Source: Energy Insights analysis

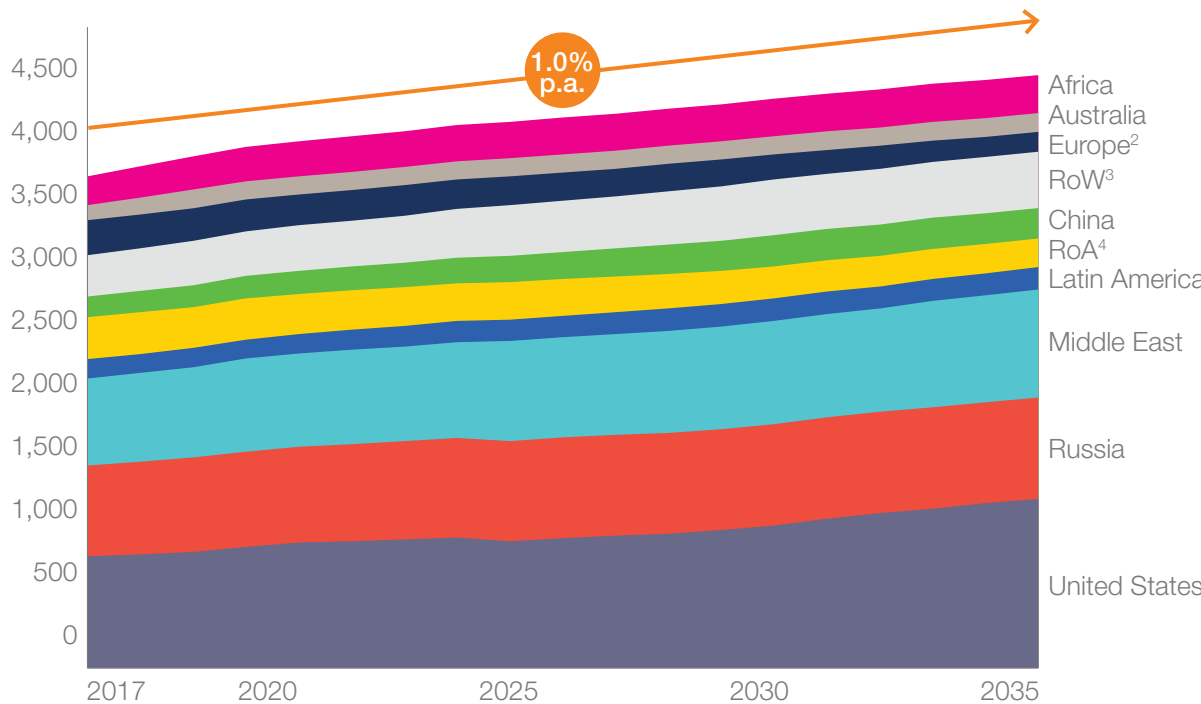
# Global natural gas supply growth is expected to be driven by China, the US, the Middle East, and Russia

## Key insights

- The main drivers of growth are China, the US, the Middle East, and Russia
- In addition to unconventional gas expansion, China will double its conventional gas production between 2017 and 2035
- Shale gas production growth in the US will continue, helping the US to join Qatar and Australia as top global LNG exporters
- In the Middle East, Saudi Arabia and Iran will each account for 30% of the region's new supply
- Russia will further increase its role as a key supplier to gas-scarce Europe and China
- Output in Europe will be declining rapidly, whereas in Latin America and ROW it will remain relatively flat

Global gas supply by region to 2035<sup>1</sup>

bcm



<sup>1</sup> Assuming LNG market oversupply gap in short-medium term to be evenly filled by LNG supply and demand <sup>2</sup> Including Norway <sup>3</sup> Rest of World <sup>4</sup> Rest of Asia  
Source: Energy Insights analysis, Energy Insights Gas Intelligence Model, IHS Vantage



## Methodology

The Global Gas & LNG Outlook provides projections of the key trends in the global gas market through 2035. These projections represent a reference case of the future market developed by specialists of Energy Insights with input from the experts and practitioners of McKinsey & Company's Global Oil & Gas practice.

The projections are not statements of what will happen but are the result of the modeling simulations of the integrated gas market system, based on a set of specific assumptions derived from the current legal, technological, and demographic trends.

## About us

We are a global market intelligence and analytics group focused on the energy sector. We enable organizations to make well-informed strategic, tactical, and operational decisions, using an integrated suite of market models, proprietary industry data, and a global network of industry experts. We work with leading companies across the entire energy value chain to help them manage risk, optimize their organizations, and improve performance.

For more information about our Global Gas & LNG Outlook to 2035, please contact:  
[info\\_energyinsights@mckinsey.com](mailto:info_energyinsights@mckinsey.com)

[www.mckinsey.com/GasOutlook](http://www.mckinsey.com/GasOutlook)

© Copyright 2018 McKinsey Solutions Sprl

This report contains confidential and proprietary information of McKinsey and is intended solely for your internal use. Do not reproduce, disclose, or distribute the information contained herein without McKinsey's express prior written consent.

Nothing herein is intended to serve as investment advice, or a recommendation of any particular transaction or investment, any type of transaction or investment, the merits of purchasing or selling securities, or an invitation or inducement to engage in investment activity.

This material is based on information that we believe to be reliable and adequately comprehensive, but we do not represent that such information is in all respects accurate or complete. McKinsey does not accept any liability for any losses resulting from use of the contents of this report.



Energy Insights  
By McKinsey