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THE R. LEWIS CO., LANSING MICH.

# SHELL LNG OUTLOOK 2018

#### **DEFINITIONS & CAUTIONARY NOTE**

Reserves: Our use of the term "reserves" in this presentation means SEC proved oil and gas reserves. Resources: Our use of the term "resources" in this presentation includes quantities of oil and gas not yet classified as SEC proved oil and gas reserves. Resources are consistent with the Society of Petroleum Engineers (SPE) 2P + 2C definitions.

Operating costs are defined as underlying operating expenses, which are operating expenses less identified items. Organic free cash flow is defined as free cash flow excluding inorganic capital investment and divestment proceeds. Clean CCS ROACE (Return on Average Capital Employed) is defined as the sum of CCS earnings attributable to shareholders excluding identified items for the current and previous three quarters, as a percentage of the average capital employed for the same period. Capital employed consists of total equity, current debt and non-current debt. Capital investment comprises capital expenditure, exploration expense excluding well write-offs, new investments in joint ventures and associates, new finance leases and investments in Integrated Gas, Upstream and Downstream securities, all of which on an accruals basis. In 2016, the capital investment was impacted by the acquisition of BG Group plc. which are included in "Cash flow from investments in controlling interest" within "Cash flow from financing (CFFF) activities". Divestments comprises proceeds from sale of property, plant and recognised upon divestment, as well as proceeds from the sale of interests in entities while retaining control (for example, proceeds from sale of interest in Shell Midstream Partners, L.P.). This presentation contains the following forward-looking Non-GAAP measures: Organic Free Cash Flow, Free Cash Flow, Capital Investment, CCS Earnings less identified items, Gearing, Underlying Operating Expenses, ROACE, Capital Employed and Divestments. We are unable to provide a reconciliation of the above forward-looking Non-GAAP measures to the most comparable GAAP financial measure is dependent on future events some which are outside the control of the company, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures consistent with the company accounting policies and the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be acco

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this presentation "Shell", "Shell group" and "Royal Dutch Shell" are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies. "Subsidiaries", "Shell subsidiaries" and "Shell companies" as used in this presentation refer to companies over which Royal Dutch Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to "joint ventures" and "joint operations" respectively. Entities over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in a venture, partnership or company, after exclusion of all third-party interest.

This presentation contains forward-looking statements concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements of historical fact are, or may be deemed to be, forward-looking statements for the expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressing management's expectations, beliefs, estimates, forecasts, project', "risks", "schedule", "seek", "should", "testimate", "could", "estimate", "could", "estimate", "could", "astimater ", "could", ", "



## 01

EXTERNAL ENVIRONMENT CREATING MORE OPPORTUNITIES FOR GAS AND LNG



STRONG LNG FUNDAMENTALS EXCEEDED EXPECTATIONS IN 2017 03

SUPPLY INVESTMENT REQUIRED TO MEET LONG-TERM DEMAND GROWTH

#### SHELL LNG OUTLOOK 2018

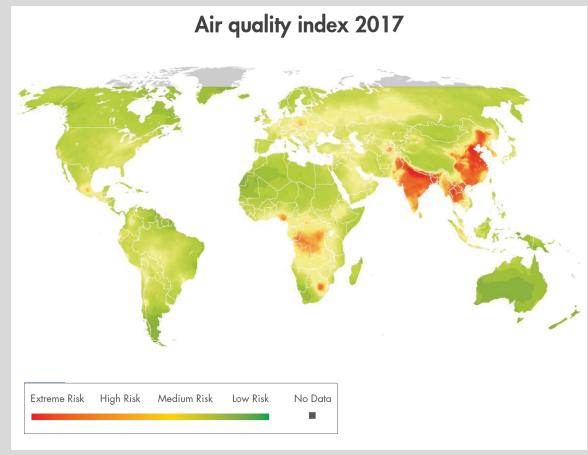
## EXTERNAL ENVIRONMENT CREATING MORE OPPORTUNITIES FOR GAS AND LNG

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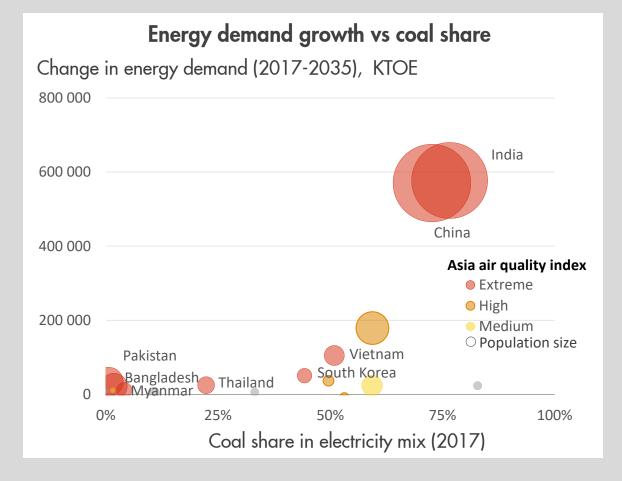
#### THE ENERGY CHALLENGE



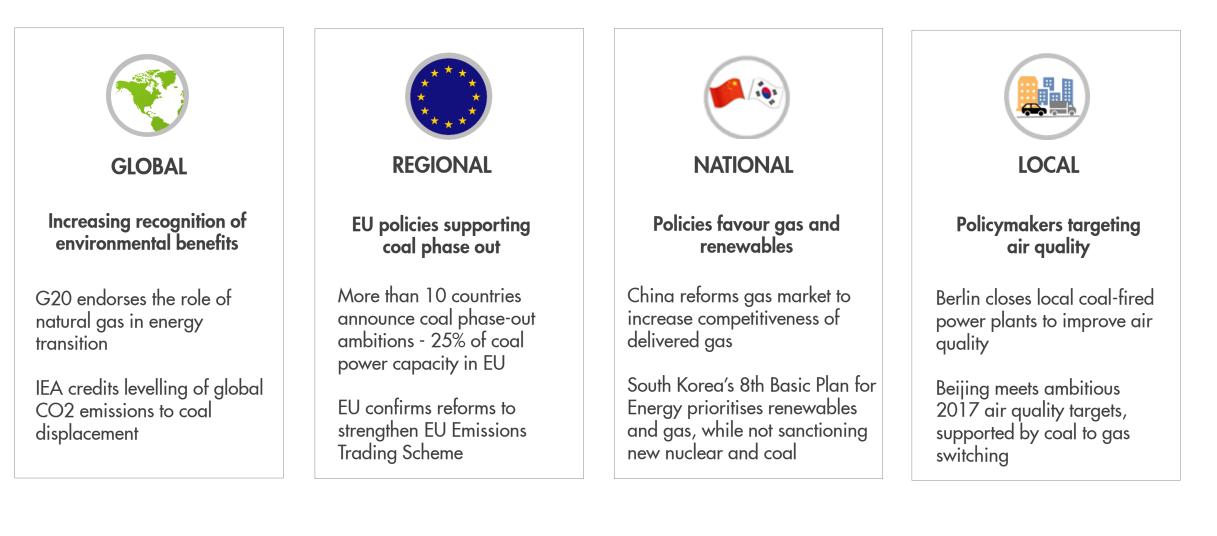
#### **GROWING ECONOMIES NEED MORE AND CLEANER ENERGY**



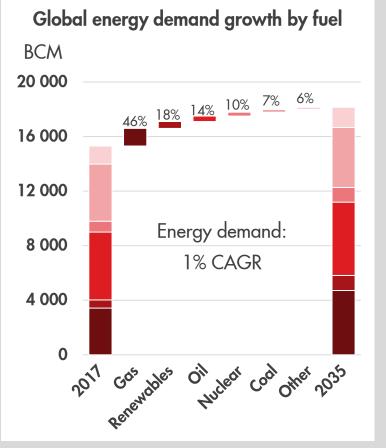
Source: Shell interpretation of Wood Mackenzie and Verisk Maplecroft Q4 2017 data



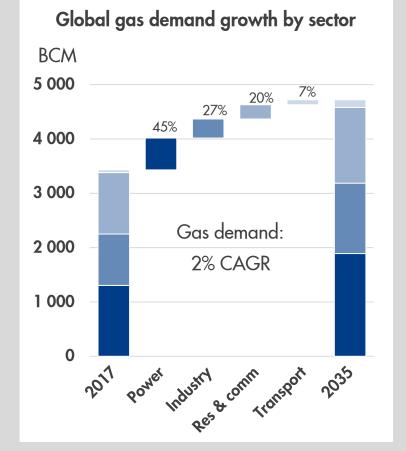
### POLICY ACTIONS FOR CLEAN ENERGY SUPPORT GAS AND LNG



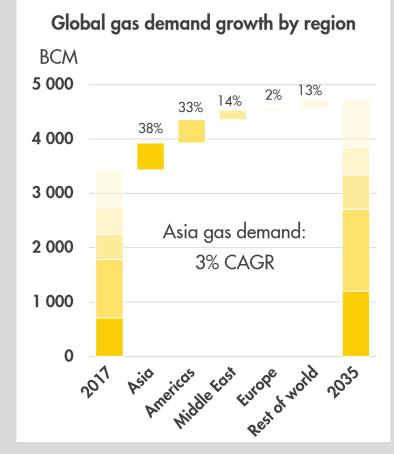
### GAS PLAYS GROWING ROLE TO MEET ENERGY CHALLENGE



Source: Shell interpretation of Wood Mackenzie Q4 2017 data

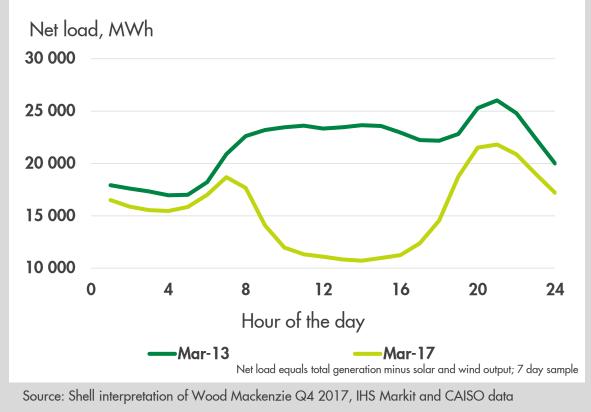


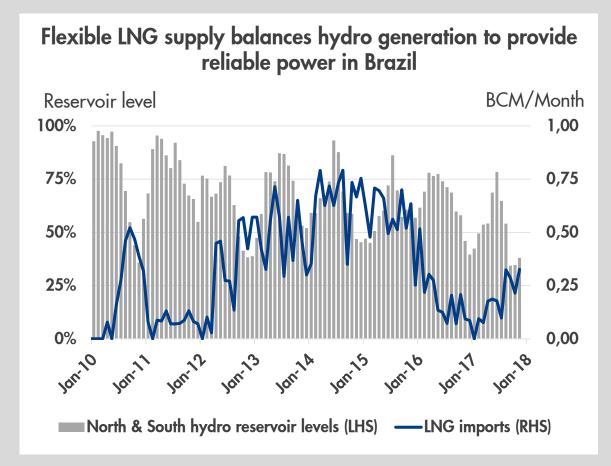




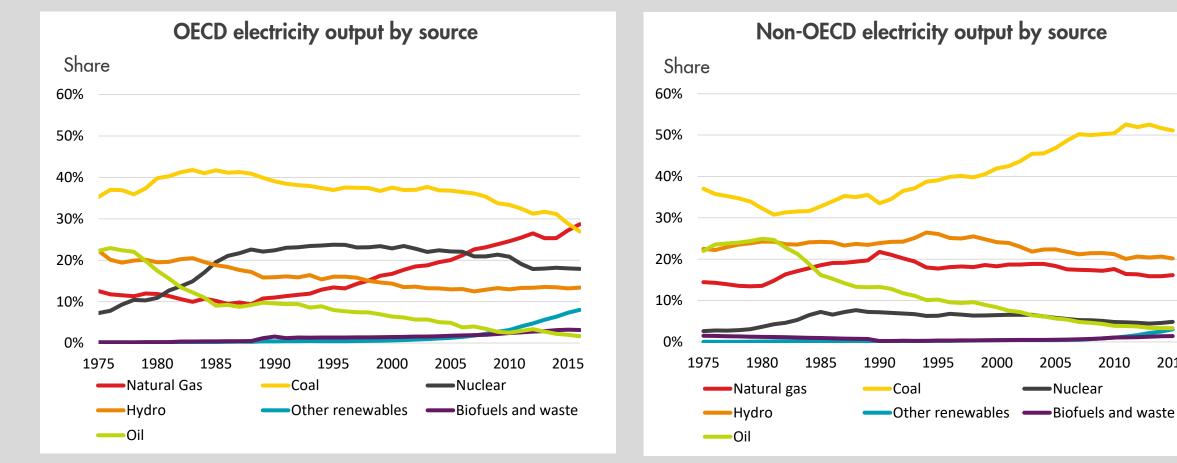
#### **GAS SUPPORTS RENEWABLES**

## Flexible gas generation complements solar to provide reliable power generation in California





#### OECD LEADING THE MOVE TO GAS AND RENEWABLES FOR POWER GENERATION



Source: Shell interpretation of International Energy Agency (IEA) data

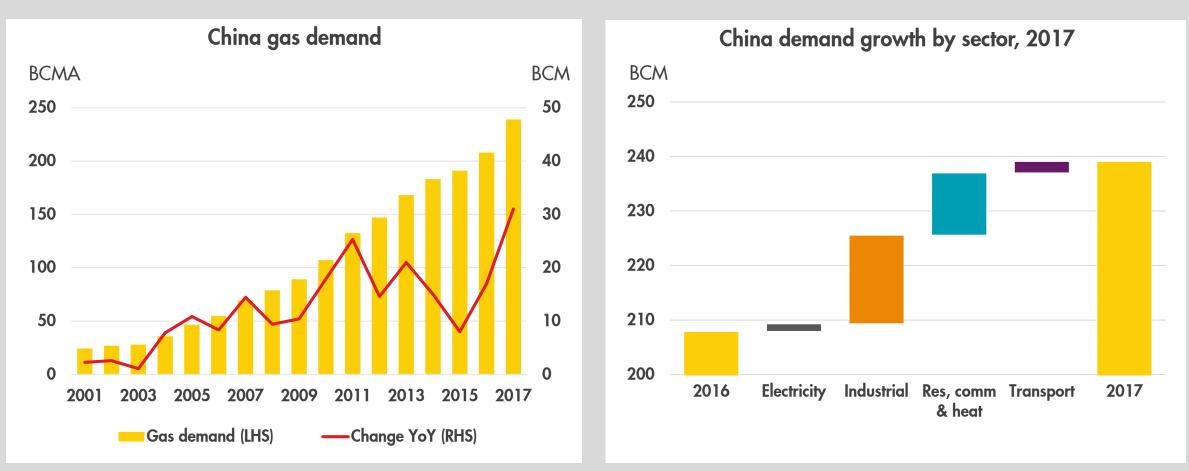
2005

Nuclear

2010

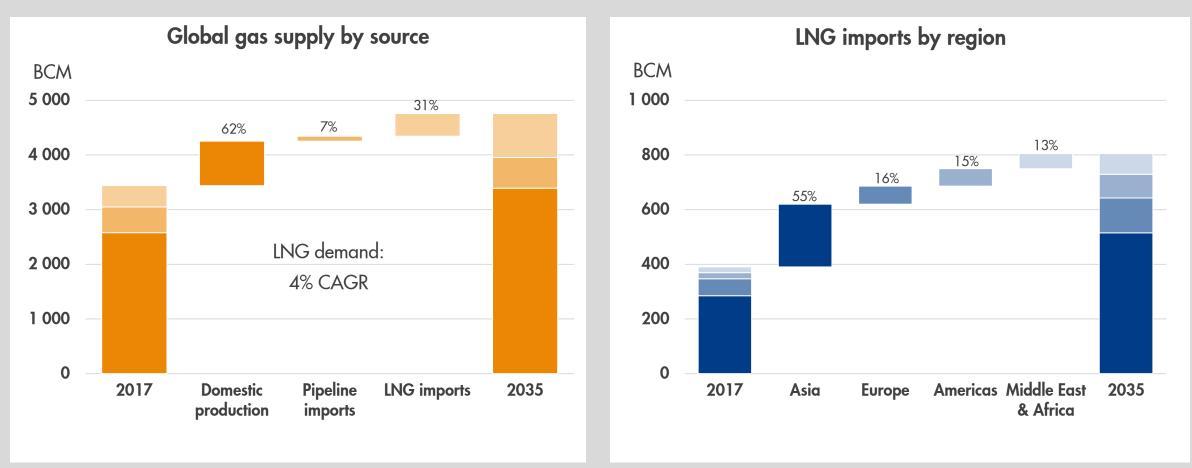
2015

### STRONG CHINA GAS DEMAND DRIVEN BY GROWTH OUTSIDE POWER



Source: Shell interpretation of IHS Markit, China National Bureau of Statistics and Chinese customs data; latest estimates for 2017

### LNG IS THE FASTEST GROWING GAS SUPPLY SOURCE



Source: Shell interpretation of Wood Mackenzie Q4 2017 data

CAGR - Compound Annual Growth Rate

## LNG PROVIDES NEW FORM OF ENERGY SECURITY

#### **LNG SOLVES GAS MARKET UNCERTAINTIES:**

- Declining domestic production
- Pipeline disruptions
- Falling nuclear utilisation and reliability
- Hydroelectric seasonality, renewable intermittency
- Weather disruptions

#### LNG RESILIENT TO ITS OWN UNCERTAINTIES:

Queensland Curtis

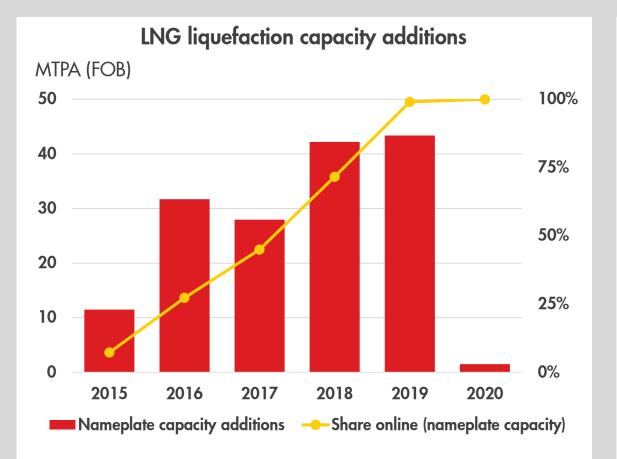
- Geopolitics
- Timing of new supply
- Existing plant output
- Changing trade patterns
- Gas supply and demand uncertainty

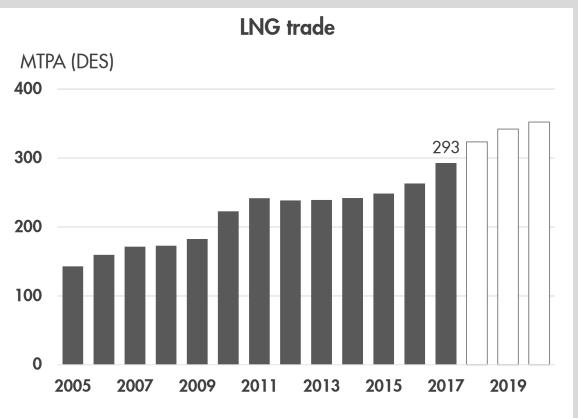
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STRONG LOG FUNDAMENTALS EXCEEDED EXPECTATIONS IN 2017

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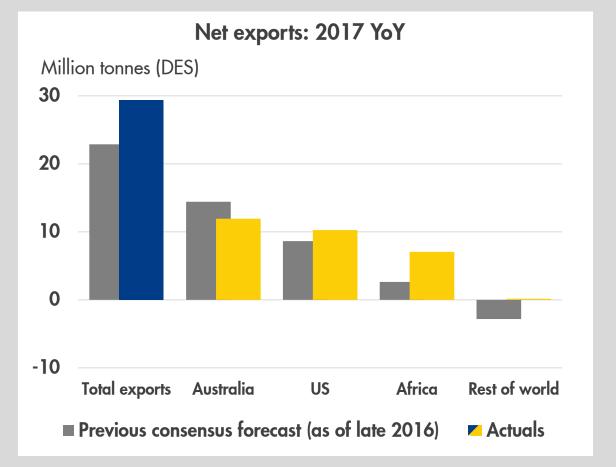
#### **UNPRECEDENTED LNG CAPACITY EXPANSION 45% COMPLETE**

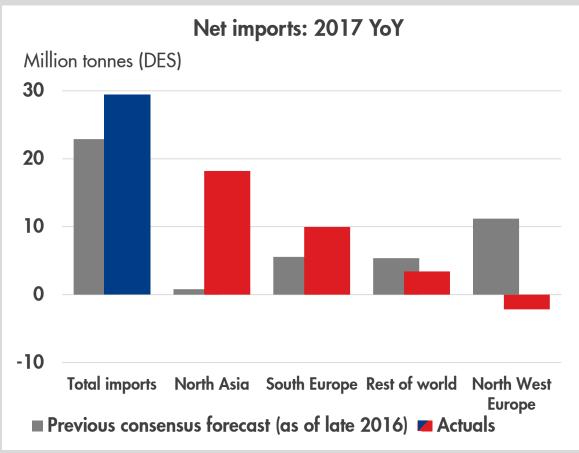




Source: Shell interpretation of IHS Markit Q4 2017 data

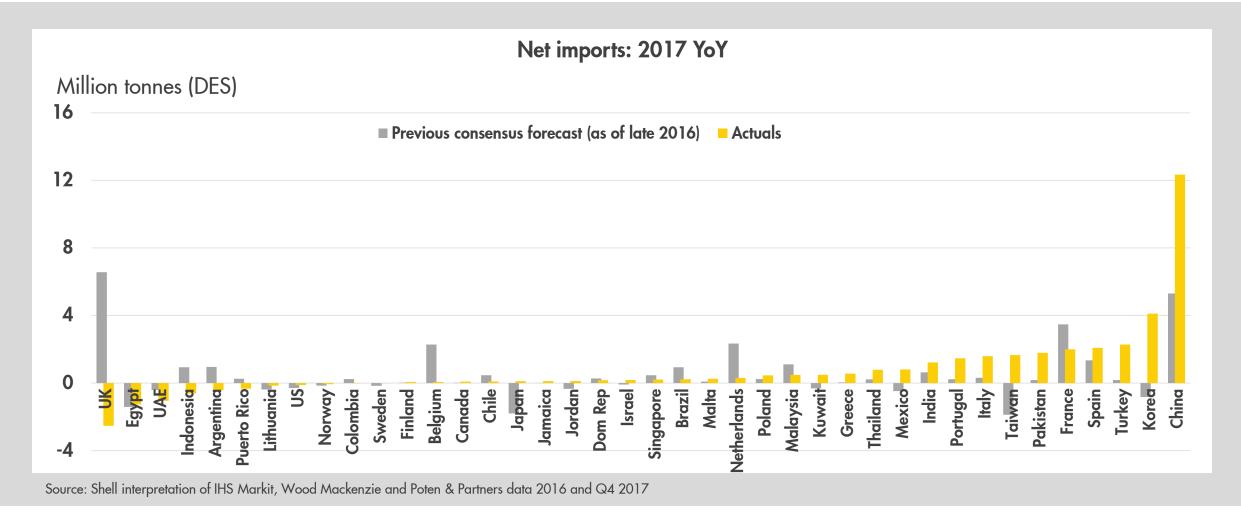
### **GLOBAL LNG MARKET CONTINUES TO DEFY EXPECTATIONS**



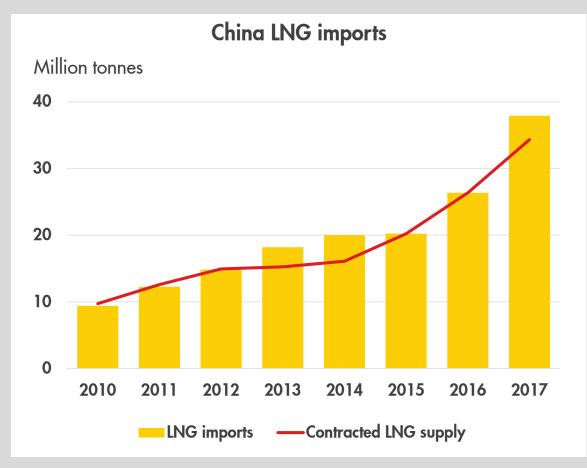


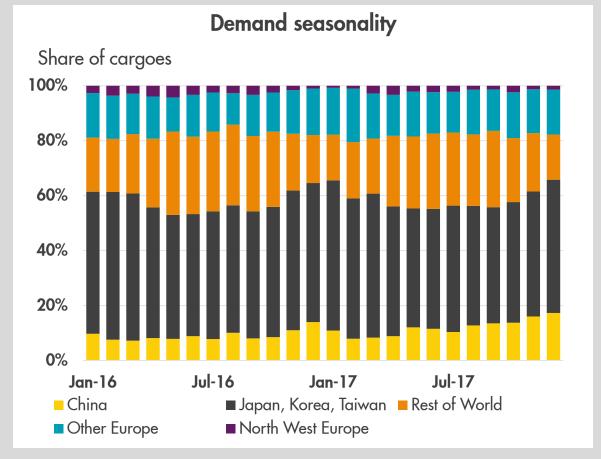
Source: Shell interpretation of IHS Markit, Wood Mackenzie and Poten & Partners 2016 and Q4 2017 data

#### 29 MT INCREASE IN LNG IMPORTS IN 2017



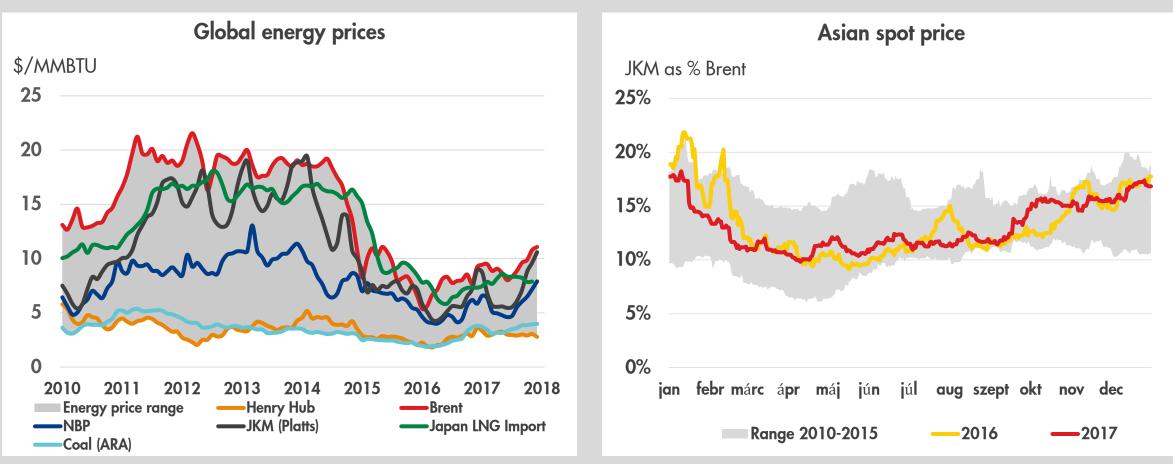
#### LNG ACCOMMODATES CHINA GROWTH AND SEASONAL DEMAND





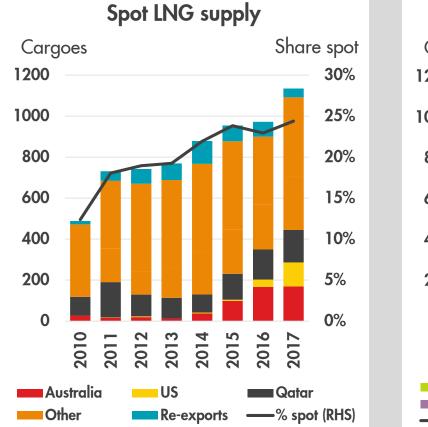
Source: Shell interpretation of IHS Markit Q4 2017, S&P Global Platts, ICE data and Wood Mackenzie Q4 2017 data

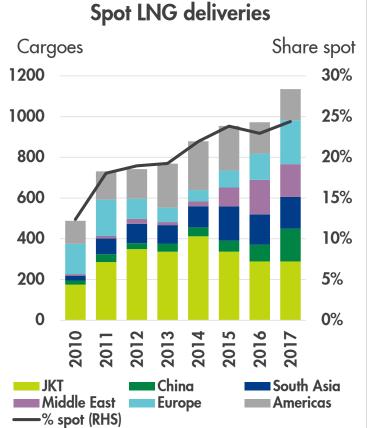
#### SPOT PRICES CONTINUE TO REFLECT STRONG DEMAND FOR LNG

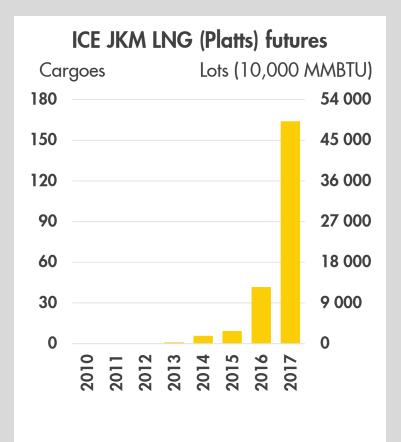


Source: Japanese customs data (Japan LNG import), S&P Global Platts (JKM), ICE (NBP, Brent, ARA coal), NYMEX (Henry Hub)

#### PHYSICAL AND FINANCIAL LIQUIDITY INCREASE AS MARKET EVOLVES

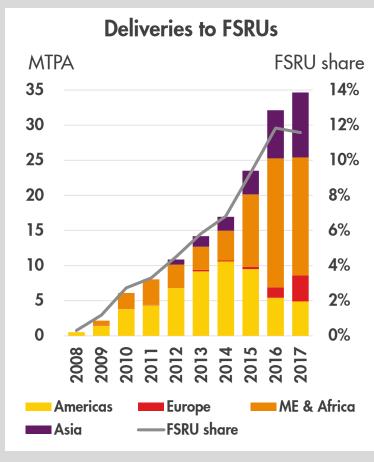






Source: Shell interpretation of IHS Markit Q4 2017, S&P Global Platts and the ICE data

#### FAST, FLEXIBLE FSRUs CONTINUE TO INCREASE LNG IMPORTS



#### FSRU importing markets

Existing	Under Construction & Development	Proposed
<ul> <li>Argentina Egypt</li> <li>Brazil</li> <li>Indonesia</li> <li>Jordan</li> <li>Pakistan</li> <li>China</li> <li>Israel</li> <li>Kuwait</li> <li>Turkey</li> <li>Colombia</li> <li>Italy</li> <li>Lithuania</li> <li>UAE</li> </ul>	<ul> <li>Bahrain</li> <li>Bangladesh</li> <li>Panama</li> <li>Chile</li> <li>Ghana</li> </ul>	<ul> <li>Croatia</li> <li>Cyprus</li> <li>El Salvador</li> <li>Hong Kong</li> <li>Ivory Coast</li> <li>South Africa</li> <li>Sri Lanka</li> </ul>

Source: Shell interpretation of IHS Markit Q4 2017 data

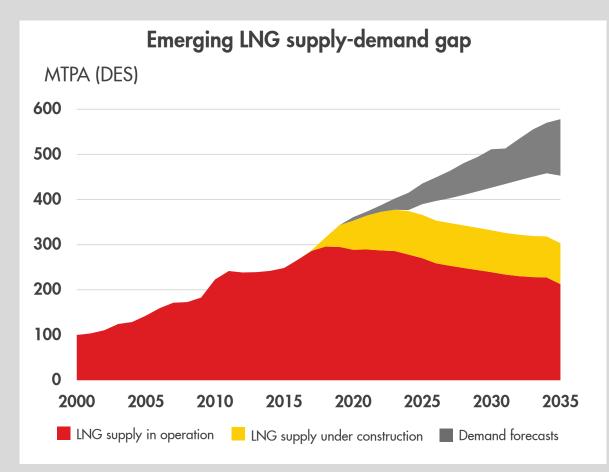
Estu moored off the port of Aqaba in Jordan

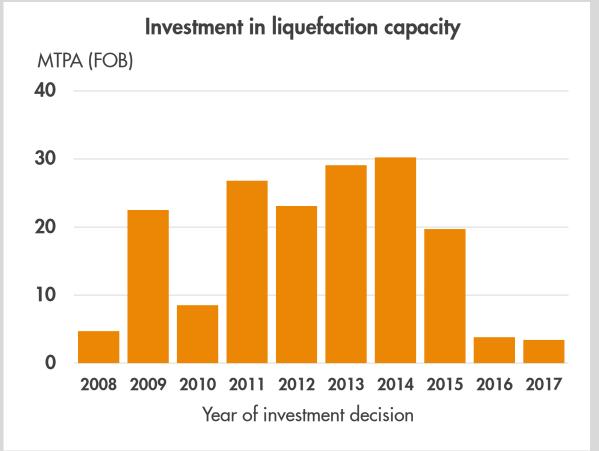
#### **DEMAND FOR LNG IN TRANSPORT GROWS GLOBALLY**



SUPPLY INVESTMENT **REQUIRED TO MEET LONG-TERM** DEMAND GROWTH

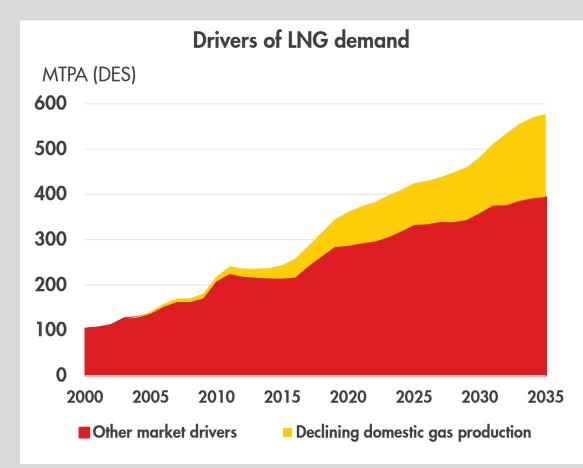
#### LACK OF SUPPLY INVESTMENT RISKS FUTURE GLOBAL LNG MARKET GROWTH

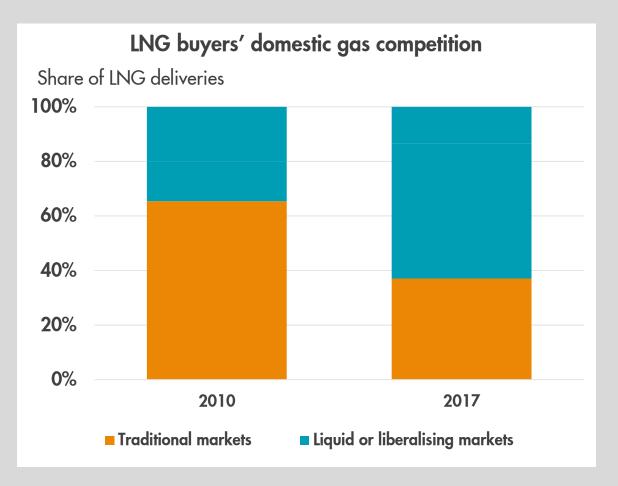




Source: Shell interpretation of IHS Markit, Wood Mackenzie, FGE, BNEF and Poten & Partners Q4 2017 data

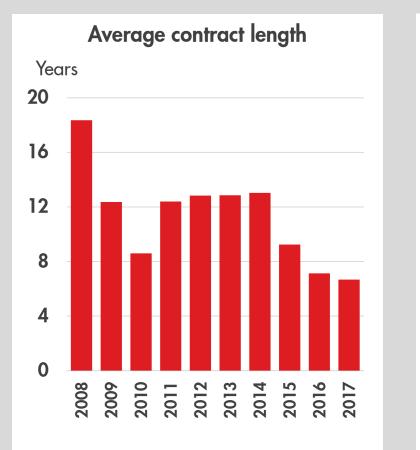
#### **LNG BUYERS AND THEIR NEEDS ARE CHANGING**

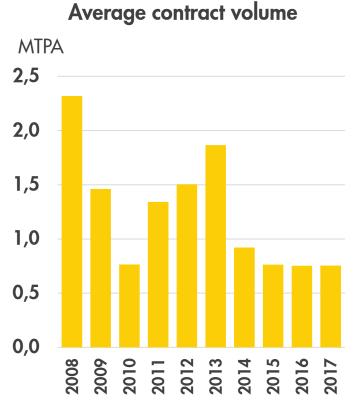


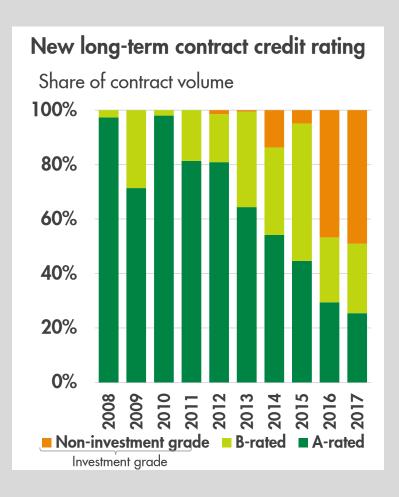


Source: Shell interpretation of Wood Mackenzie Q4 2017 data

#### **LNG BUYERS SIGNING SHORTER AND SMALLER CONTRACTS**

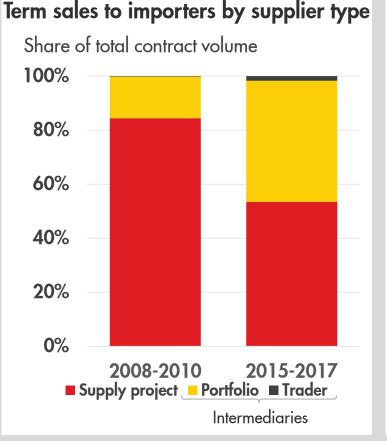






Source: Shell interpretation of IHS Markit Q4 2017, Moody's and Fitch data

### LIQUEFACTION INVESTMENT NEEDED TO MEET DEMAND GROWTH

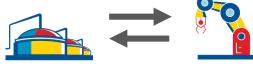


#### STALEMATE CONSTRAINING GROWTH OF LNG SUPPLY



FINANCIERS Look to ensure revenue certainty **LNG PRODUCERS** Seek long-term LNG sales to secure financing ----+--

MISMATCH BETWEEN BUYER AND SELLER NEEDS



LNG BUYERS Seek smaller, more flexible purchases to remain competitive in downstream market

END-USERS Look to avoid long-term contracts that are not in line with their competitive position

Source: Shell interpretation of IHS Markit Q4 2017 data

#### SUMMARY

SHELL LNG OUTLOOK 2018

External environment creating more opportunities for gas and LNG

Multiple levels of policy support gas and LNG demand Gas supports renewable power generation and provides cleaner non-power energy supply

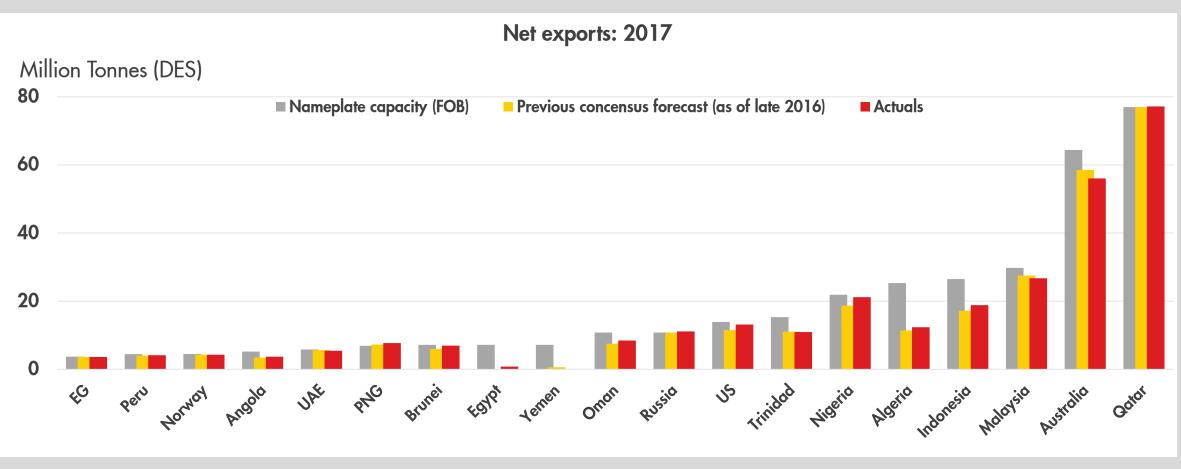
Strong LNG fundamentals exceeded expectations in 2017

11 % increase in LNG imports Physical and financial liquidity increases as market evolves

Supply investment required to meet long-term demand growth

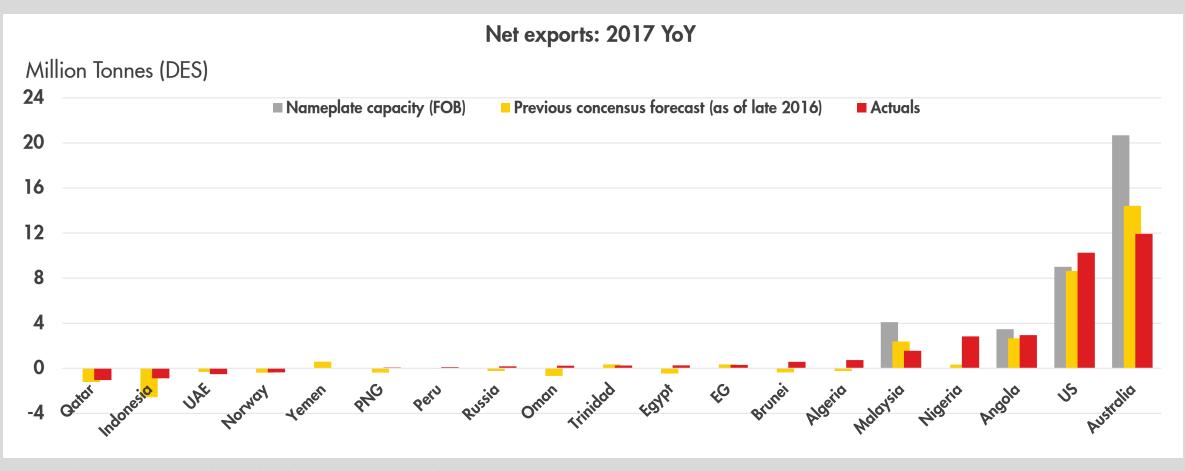


#### **2017 LNG EXPORTS**



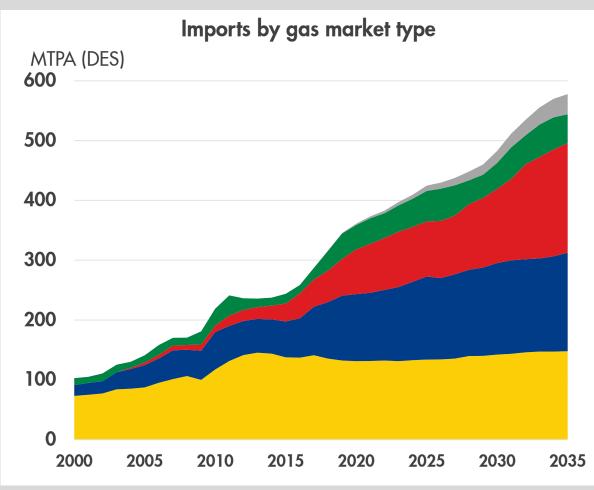
Source: Shell interpretation of IHS Markit, Wood Mackenzie and Poten & Partners data 2016 and Q4 2017

#### **2017 CHANGE IN LNG EXPORTS**



Source: Shell interpretation of IHS Markit, Wood Mackenzie and Poten & Partners data 2016 and Q4 2017

#### FIVE DEMAND DRIVERS CONTRIBUTE TO CONTINUED LNG GROWTH



Demand driver Country/region			
Bunker fuel	<ul> <li>Atlantic</li> </ul>	<ul> <li>Middle East</li> </ul>	<ul> <li>Pacific</li> </ul>
Balances LNG supply	<ul> <li>North West Europe</li> </ul>	е	
LNG replaces declining domestic production into existing demand	<ul> <li>India</li> <li>Thailand</li> <li>Indonesia</li> <li>Malaysia</li> <li>Pakistan</li> </ul>	<ul><li>Egypt</li><li>Kuwait</li><li>UAE</li><li>Colombia</li></ul>	<ul> <li>Bangladesh*</li> <li>Bahrain*</li> <li>Philippines*</li> <li>Vietnam*</li> </ul>
LNG complements domestic and pipeline supply	<ul> <li>Southern Cone</li> <li>Eastern Europe</li> <li>Southern Europe</li> <li>North America</li> </ul>	<ul><li>China</li><li>Singapore</li><li>Jordan</li><li>Israel</li></ul>	<ul> <li>Morocco*</li> <li>Côte d'Ivoire*</li> <li>Ghana*</li> </ul>
Gas supply solely dependent on LNG	<ul><li>Japan</li><li>Korea</li><li>Taiwan</li></ul>	<ul><li>Puerto Rico</li><li>Dominican Republic</li></ul>	<ul><li>Panama*</li><li>El Salvador*</li></ul>

\* Denotes future LNG importing countries

Source: Shell interpretation of Wood Mackenzie Q4 2017 data

#### **2017 LNG IMPORTS**

