

# AGLOBAL GAS&POWER COMPANY

May 13, 2015

SK Group in Korea

SK Group SK E&S At a glance

Business Field Shared Growth

# SK GROUP: KOREA'S 3<sup>rd</sup> LARGEST COMPANY

3rd largest in sales - U\$ 143 Billion and in assets - U\$ 136 Billion

Ranked 1st in Oil & Gas Sector and Telecommunication Sector





# A GLOBAL PLATFORM

Employs over 79,000 talents through a network of 80 affiliates



### **Energy & Chemicals**

34 Companies 13,000 Employees



77 Billion



Holding co. of gas distributors, power generation



E&P, future energy, R&D



Oil refining & marketing



Petrochemicals



Lubricants



Chemicals & electronic materials



Fine chemicals, life science



LPG marketing & trading

### ICT

21 Companies 49,000 Employees



U\$ 33 Billion















Mobile service provider

Platform services

Semiconductor memories

IT solutions & consulting

Int'l call & VoIP service

Wired/wireless telecom, broadcasting services Internet portal, SNS /messaging

### **Services**

25 Companies 17,000 Employees



U\$ 33 Billion

Sales in 2013













Energy distribution, trade, consumer goods business

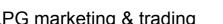
Engineering, plant, construction

Marine transportation

Brokerage house

Marketing, advertising

Hotel, duty free, F&B



# E&S = ENERGY & SERVICE

Comprehensive energy service company



### **City Gas**



### **Power**



### LNG



### Global



### No.1 City Gas Provider in Korea

- 7 city gas companies
- Stable gas supply to 3.6 million venues
- Market share 21%

# **Contributing to stable power supply**

- 2006 Gwangyang Plant (1,074MW)
- 2013 Oseong Plant (833MW)

# Importing competitive LNG

- 2012 Acquisition Australia Barossa-Caldita gas field
- 2013 LNG tolling agreement with LNG liquefaction facility
- 2014 Acquisition North America Shale gas field

# Entry into the Chinese city gas market

- China Gas Holdings (14.52%, one of the three major shareholders)
- Supplying city gas to Wuhan district

### Region-based Total Energy Solution Provider

 Fuel cell, gas cooling, distributed resources, bio gas, hydrogen, solar power

### **Major Projects**

- 2015 Hanam CHP (399MW)
- 2017 Wirye CHP (450MW)
- 2017 Jangmoon Plant (1,821MW)
- 2018 Yeoju Plant(1,000MW)

### **Major Projects**

- 2016 Boryeong LNG Terminal commercial operation
- 2019 Import of North America shale gas
- 2020 Australia Barossa-Caldita gas field commercial production

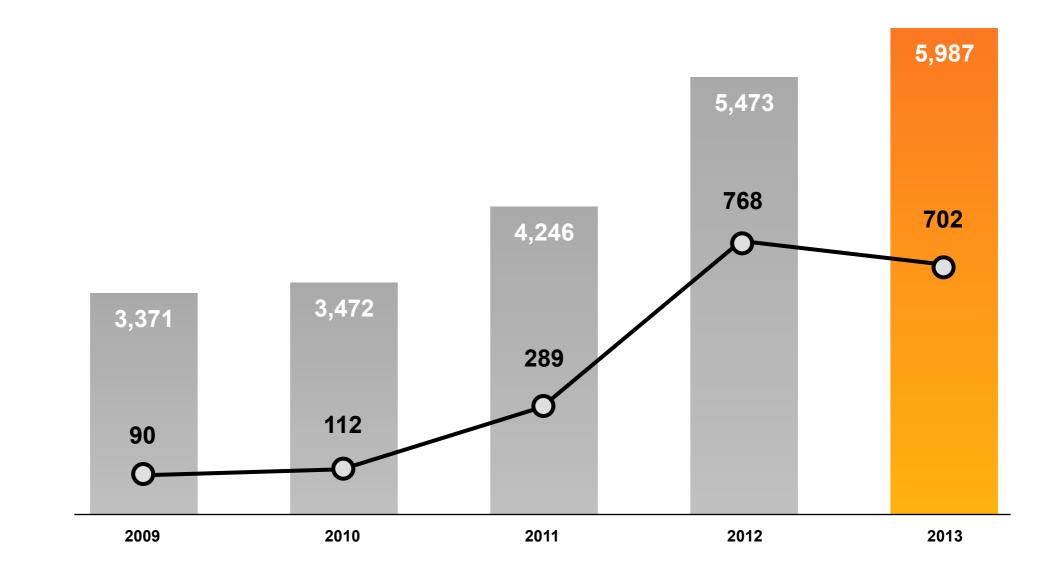
# **Expanding global Network**

- U.S.A
- Australia
- Singapore
- Indonesia

# FINANCIAL HIGHLIGHTS

Significantly increased power business since 2011

### Sales & Net Income



SALES:

NET INCOME:

UNIT: USD IN MILLION

# **LNG PORTFOLIO**







### **Sourcing**



### **LNG Terminal**



### North America Shale Gas

Developing Woodford Shale Gas with Continental Resources by entering into Joint Venture



### Barossa-Caldita

In 2012, SK E&S acquired a 37.5% interest in the Barossa-Caldita gas fields located in offshore Australia, which will be developed as an LNG project

# ranggun

Secured long-term contracts to receive approximately 0.5~0.6 MTPA of LNG for captive demand.

### Tangguh Freeport LNG

Established liquefaction tolling agreement (LTA) with Freeport LNG for importing 2.2 MTPA of LNG for 20 years starting in 2019.

# **Boryeong** terminal

Currently building an LNG receiving terminal in Boryeong, Korea aimed at COD for the end of 2016.



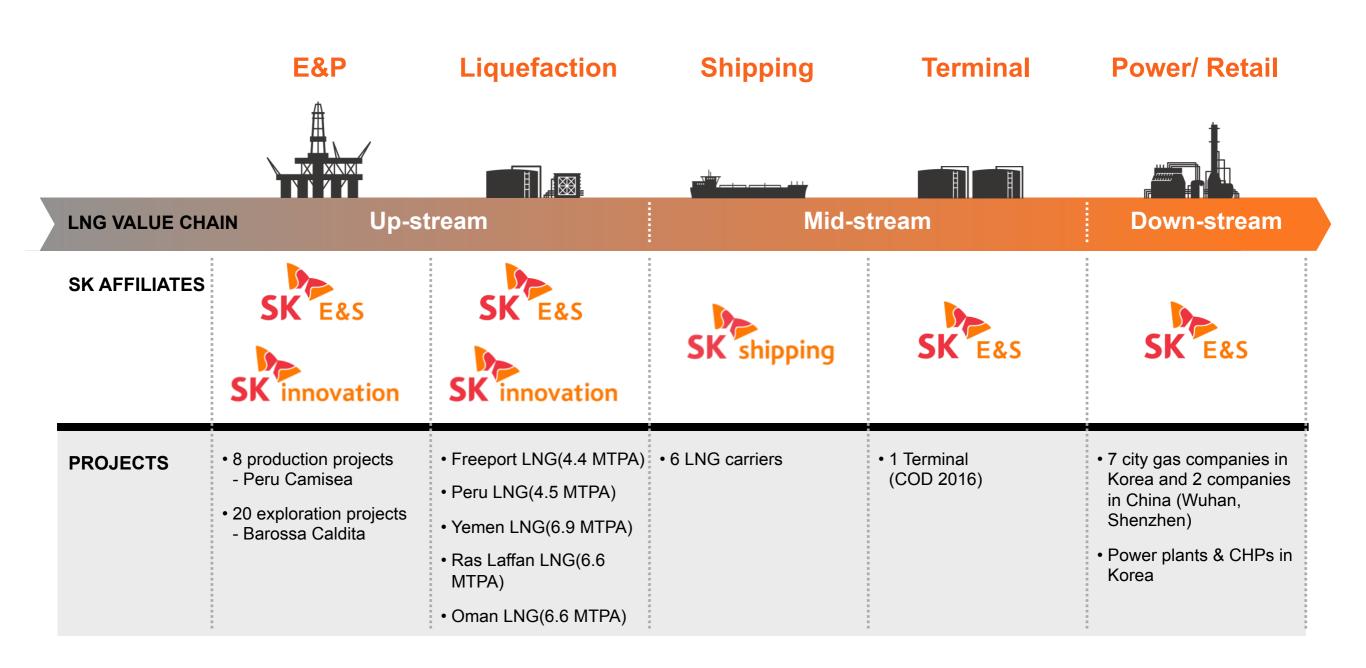






# LNG INTEGRATED WITHIN SK

SK group owns 29 MTPA of LNG liquefaction plant capacity



SK Group SK E&S **Business** Shared **LNG** Field Growth At a glance

# **LNG SUPPLY & DEMAND**







### **LNG Supply**

Long term procurement

• 0.5~0.6 MTPA (committed)

**North America** project

2.2 MTPA (Freeport)

Upstream Asset+Plant Capacity

**Australia** project

- 1.0~2.0 MTPA (planned)
- · Barossa-Caldita Project
- SK E&S holds 37.5% interest

procurement

**Spot /Short term •** Flexible sourcing depending on the demand

### **LNG Demand**

**LNG** power plant

- Gwangyang (1GW), Pyeongtaek (833MW)
- Jangmun (under construction), Yeoju (approved for construction)

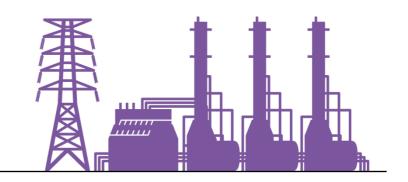
CHP

- Operation in Gimcheon and Iksan
- Construction in Hanam/Misa and Wirye

**Third party** demand

- Domestic demand
- Global demand

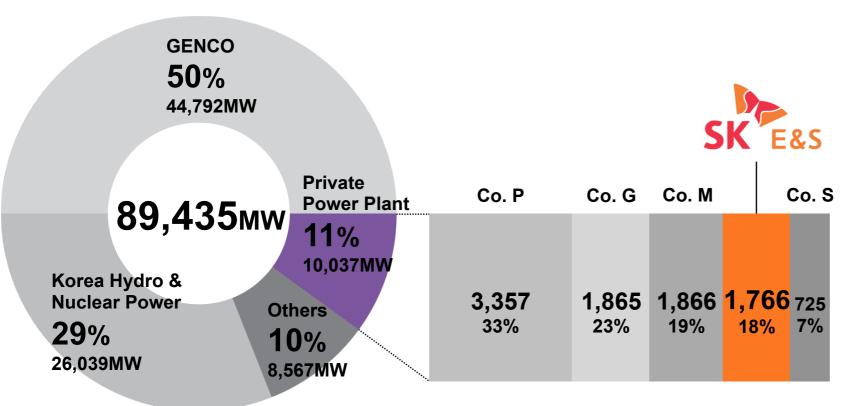
# DEMAND FOR POWER DRIVES LNG GROWTH

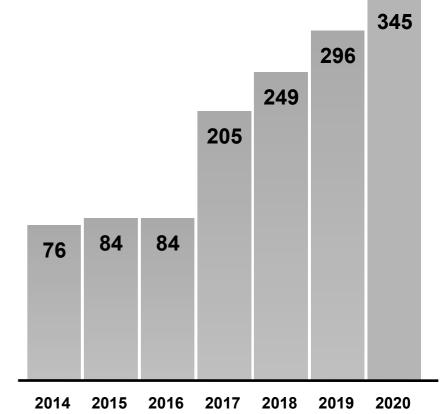


Total capacity of power plants in Korea

Capacity of private power plants

Annual consumption of directly imported LNG





Others

: Korea District Heating Corporation,

Water Resources Corporation

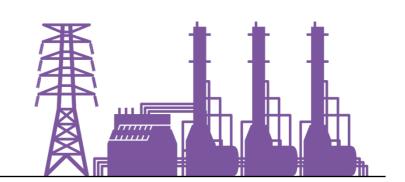
**Data source : 2014 KPX Power Statistics** 

Information System

Units: MW (Megawatt)

Units: 10,000 tons

# SK's STABLE SUPPLY OF ELECTRICITY



Shared

Growth

Jangmoon LNG Power Plant

1,800<sub>MW</sub>

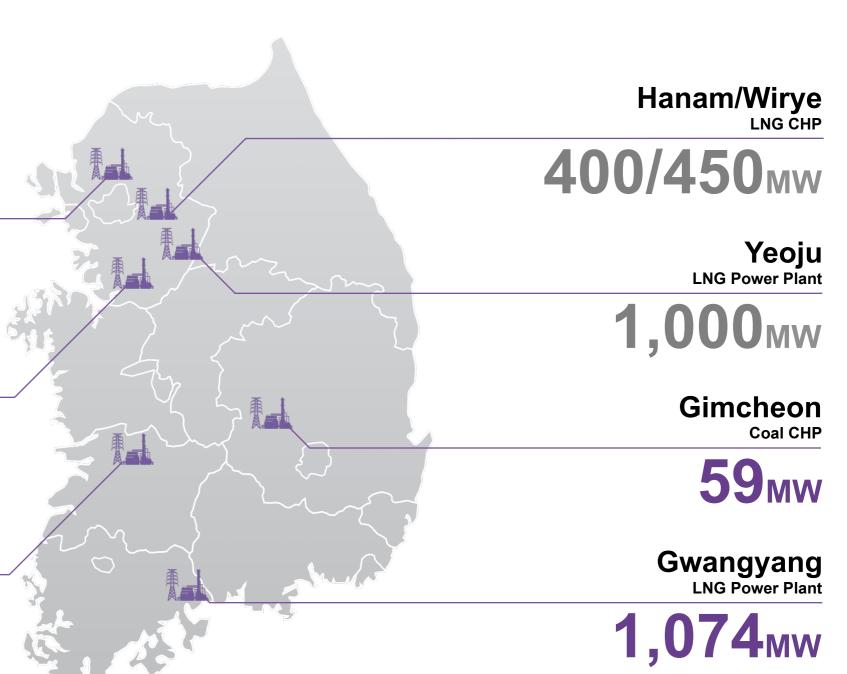
Oseong

**LNG Power Plant** 

**833**<sub>MW</sub>

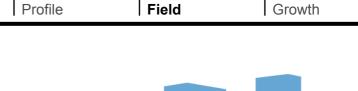
Jeonbuk Coal CHP

**21**<sub>MW</sub>



SK Group SK E&S **City Gas** Profile

# SK's STABLE SUPPLY



**Business** 

Field

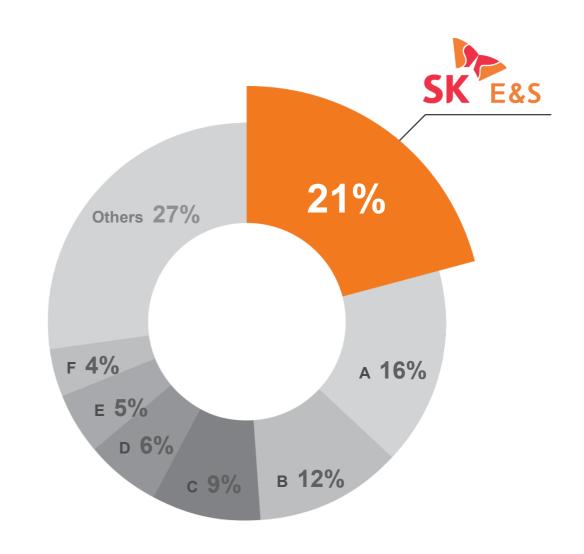
Shared

**OF CITY GAS** 

Our city gas companies strive to supply stable clean energy

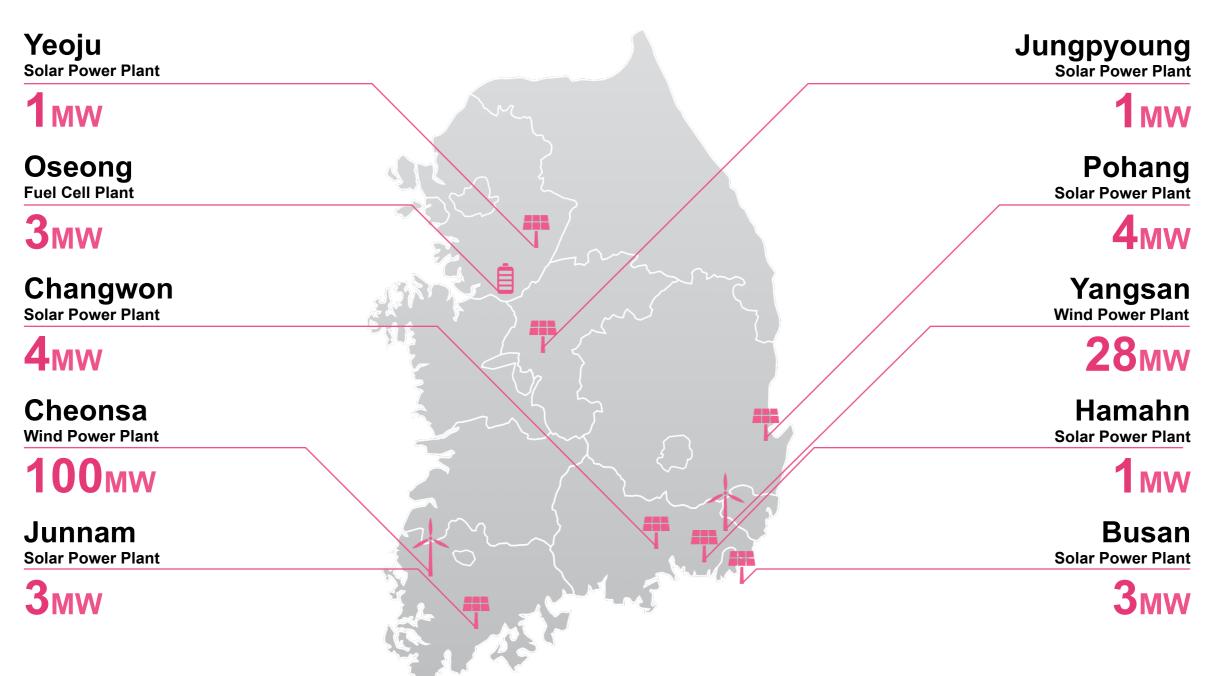


### City gas market share in Korea



# SK's CLEAN ENERGY PORTFOLIO





Global Business SK Group SK E&S Business Shared Growth

# SK E&S IN CHINA VIA CHINA GAS HOLDINGS

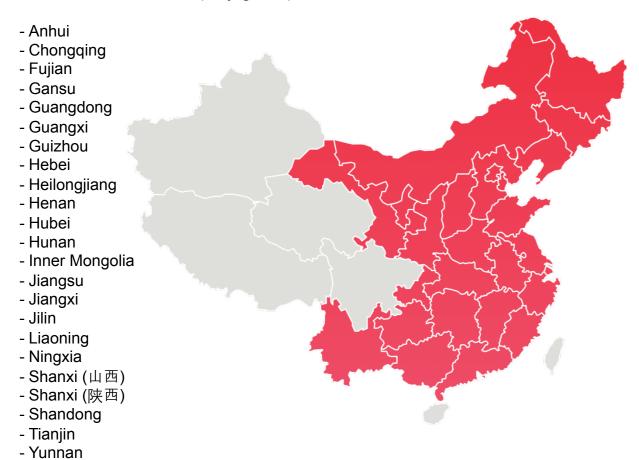


### **Natural Gas Operation Locations**

Distributor covering 24 provinces and 160 cities

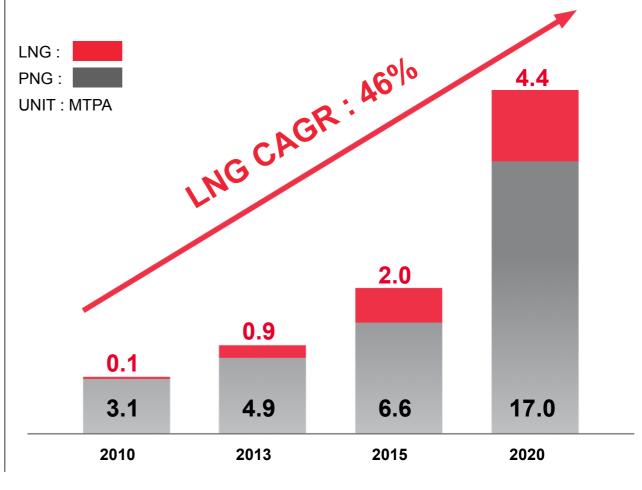
- Zhejiang

 Pipeline networks reaching out 47,668 km with 207 Storage and distribution stations (City gates)



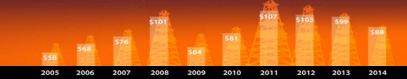
### **CGH Gas Sales Projection**

- Acquired permission for LNG import (2006)
- The possible construction or acquisition of LNG import terminal

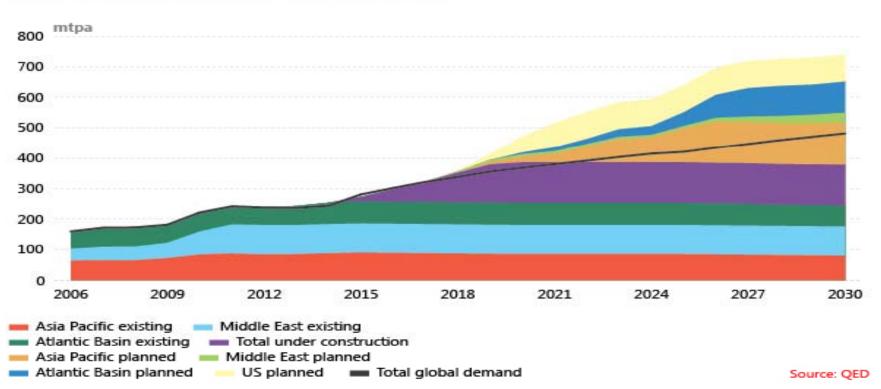




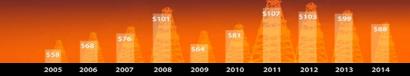
### **Global LNG Supply and Demand – All Planned Supply**



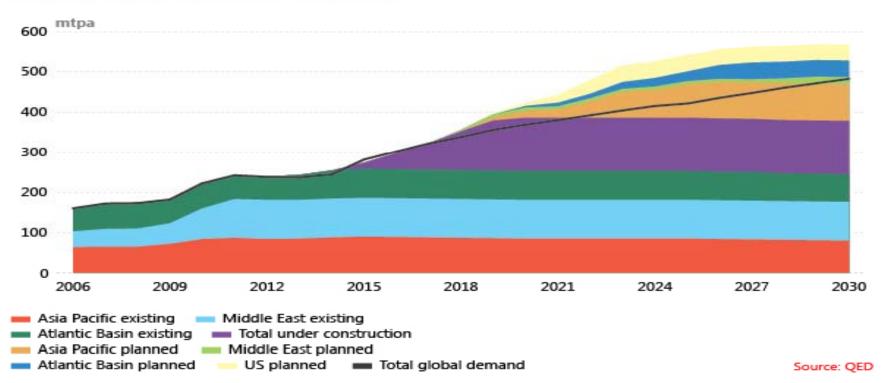
### Global LNG supply and demand - all planned supply



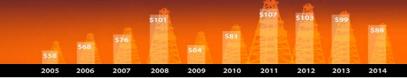
### **Global LNG Supply and Demand – Likely Supply**



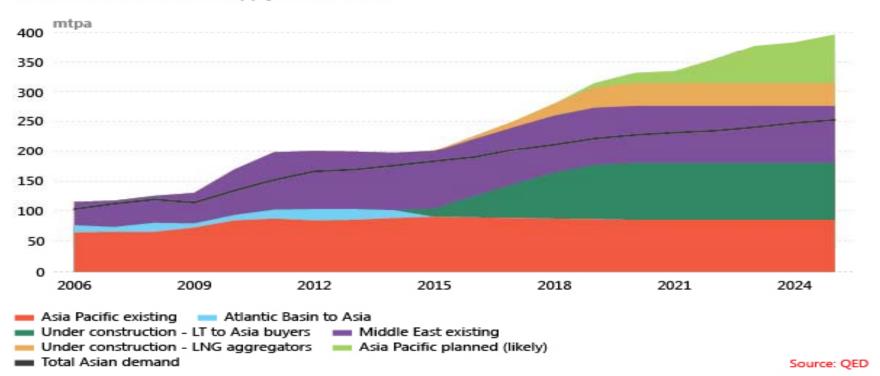
#### Global LNG supply and demand - likely supply

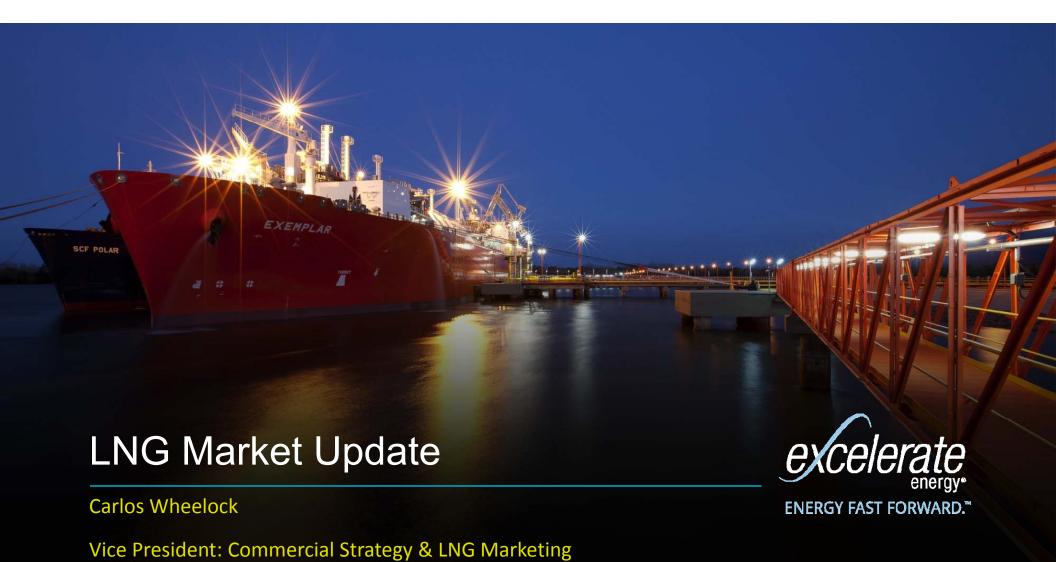


### **Core Asian Markets LNG Supply and Demand**



#### Core Asian markets LNG supply and demand









### Who We Are:

# Pioneer and world leader in innovative LNG midstream solutions.

- Owner and Operator of LNG Carriers
- Designer, owner, and operator of Floating Storage and Regasification Units (FSRUs)
- Developer of Floating Liquefaction, Storage and Offloading (FLSO) Units
- Provider of Operating Services under long-term contracts
- Provider of support services including LNG sourcing, LNG trading and shipping
- In-house expertise to take projects from concept to operation

gx Celerate



### Unique LNG Model

**SPOT MARKET** 

Over 70 Master Sales & Purchase Agreements with key market participants, and a flexible commercial model allows Excelerate access to many markets/regions

**SHIPPING** 

A highly-flexible fleet with storage/regas capacity that provides Excelerate the ability to capture upswings in both trading and chartering markets

**LOGISTICS** 

Industry-leading experience in floating LNG solutions and operations enables Excelerate to a unique ability to meet the demands of many different markets

**HIGH ADAPTABILITY** 

Excelerate has optimized value by quickly moving to the premium LNG market as it shifted from the US to the UK to the Far East

**RISK MANAGEMENT** 

Excelerate has an experienced trading and marketing team that can provide hedging and analysis to de-risk LNG deals and projects.

### Commercial Value Across the Entire LNG Chain

#### **UPSTREAM**

### We provide a complete monetization solution

- Formulation of marketing strategy
- Fleet management and portfolio optimization
- Outlet for commissioning volumes

#### **MIDSTREAM**

# We deliver a complete natural gas solution for end-users

- Assist in formulating sourcing strategy
- Portfolio optimization
- Experienced operations to compliment commercial activities
- Fleet Management

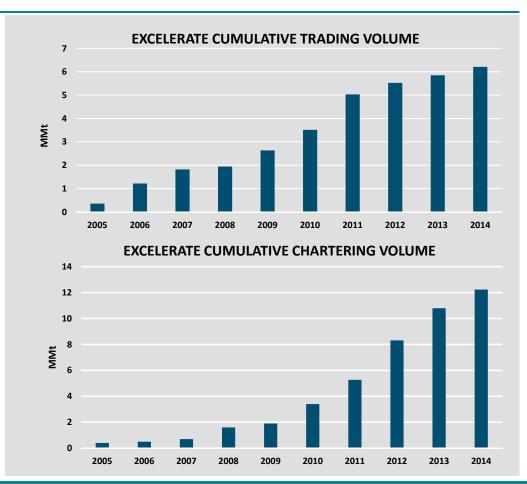
#### **DOWNSTEAM**

# We offer flexible transport/pricing options

- Manage commodity price exposure
- Optimize shipping length through chartering in/out
- Deal structures benefitting from strong operational track record
- Time/location swaps
- Global market player

### Global LNG Trading & Chartering

- Commercially-minded fleet operations
- Established trading team with global relationships
  - 70+ Master Sales & Purchase
     Agreements with key market participants
  - Offices in Houston, London, and Singapore with a combined 50+ years of direct LNG marketing and trading expertise
  - In-house market fundamentals and financial trading capabilities
  - Established contractual framework for long term FOB and Tolling Structures

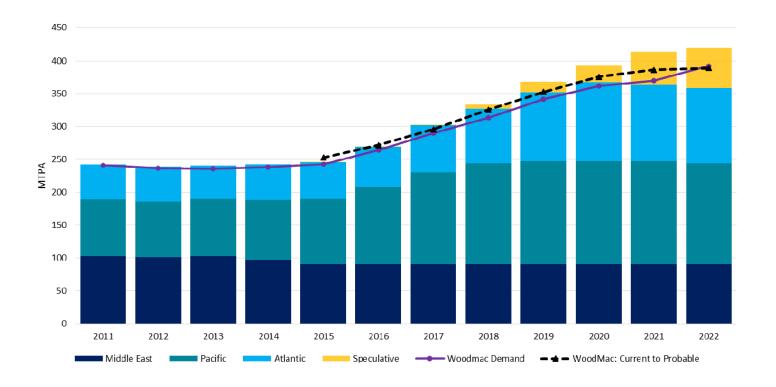




### Three Key Themes in LNG

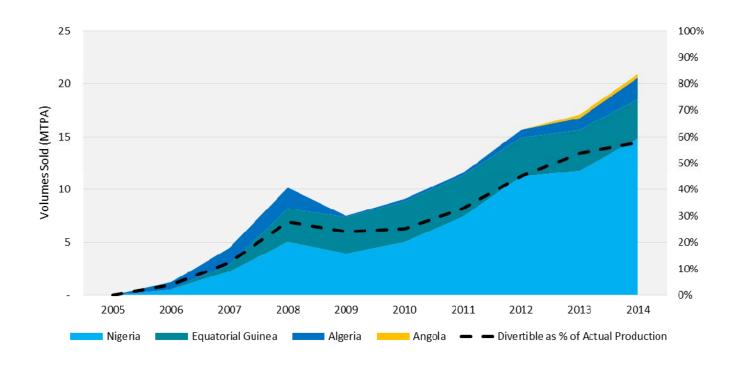
- Supply is Outpacing Demand
  - Over supplied market in the short term
  - Self correcting as speculative projects struggle in this price environment
  - Market balanced in 2019-2020
- Spot Market is Increasing in Size
  - New supply markets are divertible
  - US is take or pay on fixed component only (not commodity)
- Unconventional Buyers
  - Traditional buyers are saturated
  - Smaller entrants are critical to this market
  - FSRU customers went from "Tier 2" to extremely attractive

## **Current Supply-Demand Outlook**



Source: Excelerate Energy, Wood Mackenzie

### **Increasing Spot Market Liquidity**



Source: Excelerate Energy, Waterborne IHS

### Profile of a Current LNG Buyer

- Little demand from traditional markets.
- New demand from unconventional buyers: new entrants and/or taking advantage of low price of LNG.
- Location: emerging markets.
- Volume: <1mtpa.
- Index: open to Oil, HH or Hybrid structure
- Flexibility: volume, destination, shipping, & cancelation rights.
- Receiving Terminal: FSRU preferred. Fast, economical and proven technology.
- Credit Support: required flexibility on performance guarantee

### **Atlantic: Who We Are**













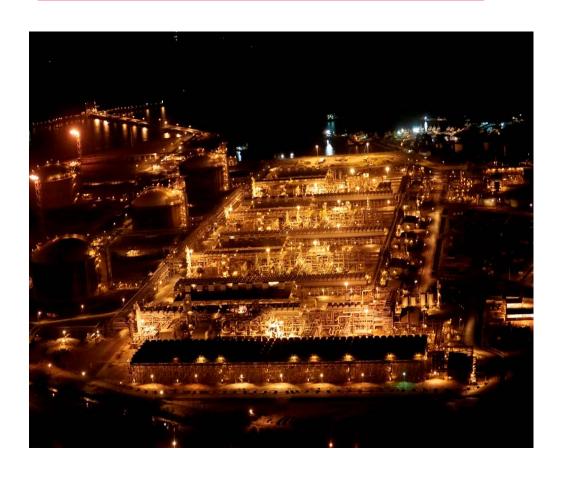
- 7th largest LNG production facility in the world, located in Trinidad
- Four LNG trains producing up to 100,000 metres<sup>3</sup> of LNG per day = 15mmt p.a.
- >250 cargoes p.a. to over 20 countries
- Significant contributor to T&T's GDP & exports
- 700 +permanent employees, and 2,000 contractors at peak periods
- Train 1 merchant plant. T2/3/4 fixed margin / processing



Trinidad and Tobago

### Milestones in 2014





- 15th year of production –
   May 1st
- 3,000th cargo lifted
- 25 million hours worked without an LTI – 7.5 years
- > 1 year without a recordable incident
- Top quartile reliability
- Largest ever cargo shipped: 169,650 m<sup>3</sup>



### Destinations 2008 & 2014



T1-3 cargoes by region 2008

T1-3 cargoes by region 2014

