

# Cheniere Energy and the LNG Market

NARUC LNG Working Group November 8, 2015 Patricia Outtrim, Vice President, Government and Regulatory Affairs

## **Forward Looking Statements**

This presentation contains certain statements that are, or may be deemed to be, "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements, other than statements of historical facts, included or incorporated by reference herein are "forward-looking statements." Included among "forward-looking statements" are, among other things:

- statements regarding the ability of Cheniere Energy Partners, L.P. to pay distributions to its unitholders or Cheniere Energy Partners LP Holdings, LLC to pay dividends to its shareholders;
- statements regarding Cheniere Energy Inc.'s, Cheniere Energy Partners LP Holdings, LLC's or Cheniere Energy Partners, L.P.'s expected receipt of cash distributions from their respective subsidiaries;
- statements that Cheniere Energy Partners, L.P. expects to commence or complete construction of its proposed liquefied natural gas ("LNG") terminals, liquefaction facilities, pipeline facilities or other projects, or any expansions thereof, by certain dates or at all;
- statements that Cheniere Energy, Inc. expects to commence or complete construction of its proposed LNG terminals, liquefaction facilities, pipeline facilities or other projects by certain dates or at all;
- statements regarding future levels of domestic and international natural gas production, supply or consumption or future levels of LNG imports into or exports from North America and other countries worldwide, or purchases of natural gas, regardless of the source of such information, or the transportation or other infrastructure, or demand for and prices related to natural gas, LNG or other hydrocarbon products;
- statements regarding any financing transactions or arrangements, or ability to enter into such transactions;
- statements relating to the construction of our proposed liquefaction facilities and natural gas liquefaction trains ("Trains"), or modifications to the Creole Trail Pipeline, including statements concerning the engagement of any engineering, procurement and construction ("EPC") contractor or other contractor and the anticipated terms and provisions of any agreement with any EPC or other contractor, and anticipated costs related thereto;
- statements regarding any agreement to be entered into or performed substantially in the future, including any revenues anticipated to be received and the anticipated timing thereof, and statements regarding the amounts of total LNG regasification, liquefaction or storage capacities that are, or may become, subject to contracts;
- statements regarding counterparties to our commercial contracts, construction contracts and other contracts;
- statements regarding our planned development and construction of additional Trains, including the financing of such Trains;
- statements that our Trains, when completed, will have certain characteristics, including amounts of liquefaction capacities;
- statements regarding our business strategy, our strengths, our business and operation plans or any other plans, forecasts, projections or objectives, including anticipated revenues and capital expenditures and EBITDA, any or all of which are subject to change;
- statements regarding projections of revenues, expenses, earnings or losses, working capital or other financial items;
- statements regarding legislative, governmental, regulatory, administrative or other public body actions, approvals, requirements, permits, applications, filings, investigations, proceedings or decisions;
- statements regarding our anticipated LNG and natural gas marketing activities; and
- any other statements that relate to non-historical or future information.

These forward-looking statements are often identified by the use of terms and phrases such as "achieve," "anticipate," "believe," "contemplate," "develop," "estimate," "example," "expect," "forecast," "goals," "opportunities," "plan," "potential," "project," "propose," "subject to," "strategy," "target," and similar terms and phrases, or by use of future tense. Although we believe that the expectations reflected in these forward-looking statements are reasonable, they do involve assumptions, risks and uncertainties, and these expectations may prove to be incorrect. You should not place undue reliance on these forward-looking statements, which speak only as of the date of this presentation. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of a variety of factors, including those discussed in "Risk Factors" in the Cheniere Energy, Inc., Cheniere Energy Partners, L.P. and Cheniere Energy Partners LP Holdings, LLC Annual Reports on Form 10-K filed with the SEC on February 20, 2015, which are incorporated by reference into this presentation. All forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by these "Risk Factors." These forward-looking statements are made as of the date of this presentation, and other than as required under the securities laws, we undertake no obligation to publicly update or revise any forward-looking statements.



## **U.S. LNG Export Projects**

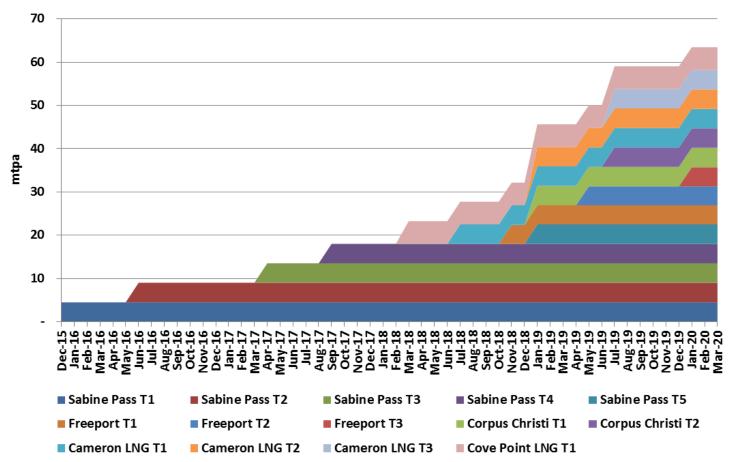
- 5 projects under construction (Sabine Pass T1-5, Corpus T1-2, CameronT1-3, Freeport T1-3, Cove Point) - Total capacity: ~64 mtpa
- 2 projects (Corpus Christi T3, Sabine T6) have received FERC permit: + 9 mtpa
- 7 more LNG projects have filed complete FERC applications\*: + 66 mtpa



Source: Office of Oil and Gas Global Security and Supply, Office of Fossil Energy, U.S. Department of Energy; U.S. Federal Energy Regulatory Commission; Company releases; Cheniere Research. \*Excelerate was omitted since they requested to be drapped out of the regulatory process



### **U.S. Ascent to One of the Largest LNG Producers**



### **US Trains - Under Construction**



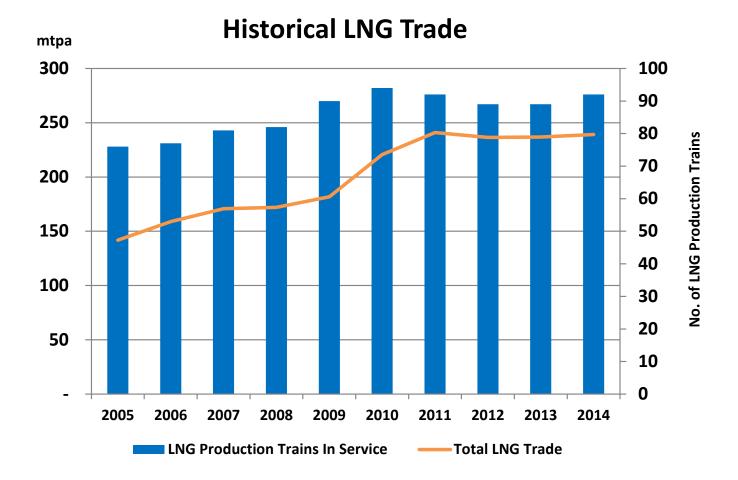
## **Producer Ranking - 2014**

		Rank by Production	<u>A</u>	
90.0		In mtpa	20	014
		Country	Production	Capacity
80.0		1 Qatar	76.4	77.0
		2 Malaysia	24.8	24.2
70.0		3 Australia	23.6	28.4
		4 Nigeria	19.2	21.8
60.0 -		5 Indonesia	17.4	29.9
00.0		6 Trinidad & Tobago	13.1	15.5
		7 Algeria	12.7	28.5
50.0 Under performance:	Capacity	8 Russia	10.6	9.6
declining reserves:	Production	9 Oman	7.7	10.7
40.0 domestic needs		10 Yemen	6.3	6.7
		11 Brunei	6.1	7.1
30.0		12 Abu Dhabi	6.1	5.8
		13 Peru	4.0	4.5
20.0		14 Norway	3.5	4.3
	· · · · · · · · · · · · · · · · · · ·	15 Papua New Guinea	3.4	6.9
10.0		16 Equatorial Guinea	3.4	3.7
		17 Angola	0.3	5.2
0.0 + • • • • • • • • • • • • • • • • • •		18 Egypt	0.3	12.2
	A. 6. 6. 6. 6.	19 USA	0.2	0.4
Oata nest seen stall says seen nade tothe on a sussi or the serie of	ohabi media peru nway winea USA	Total	l 239.1	302.3
10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Dhabi Angola Peru Norwal Guinea USA Konatorial Guinea USA			



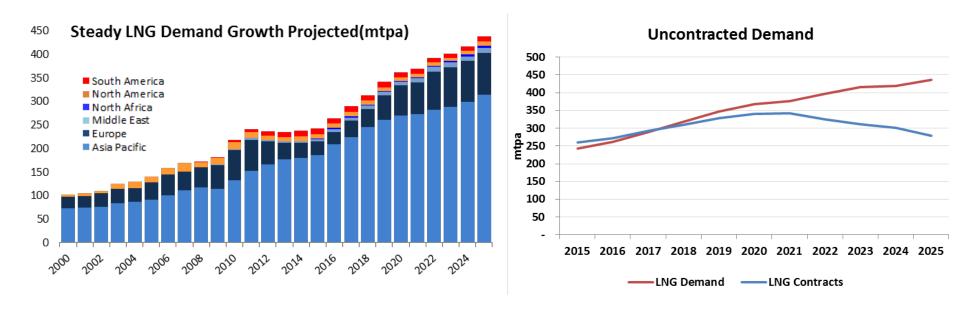
## Sluggish Supply Growth Led to Stagnant Trade in Past 3 Years

# PNG LNG start up in 2014 was the first sustained liquefaction capacity to come online since Pluto LNG in 2012





### Though Sense of Scarcity Died Down, Long Term LNG Growth Remains Solid

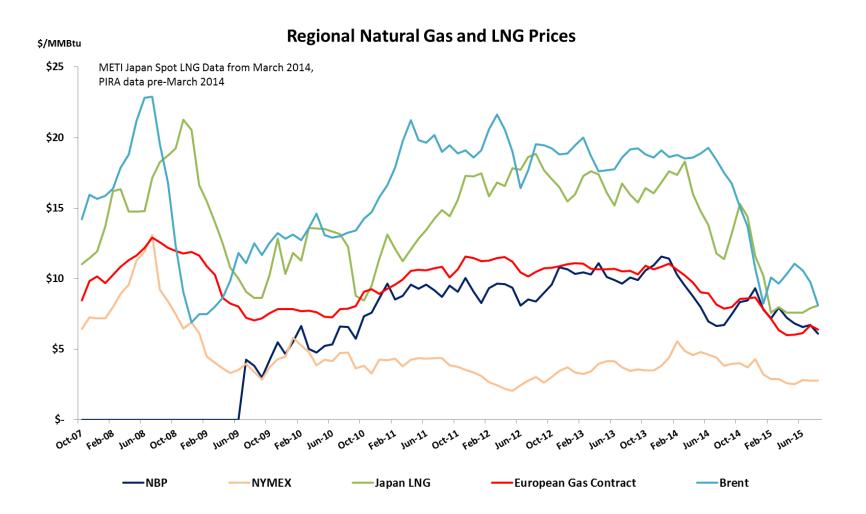


- Competition intensifying, potentially driving adjustments to LNG contract terms and re-distribution of risk
- Benefits the industry in the longer run
- Demand pull from new markets not to be underestimated



## **Lower LNG Prices Bring New Demand Opportunities**

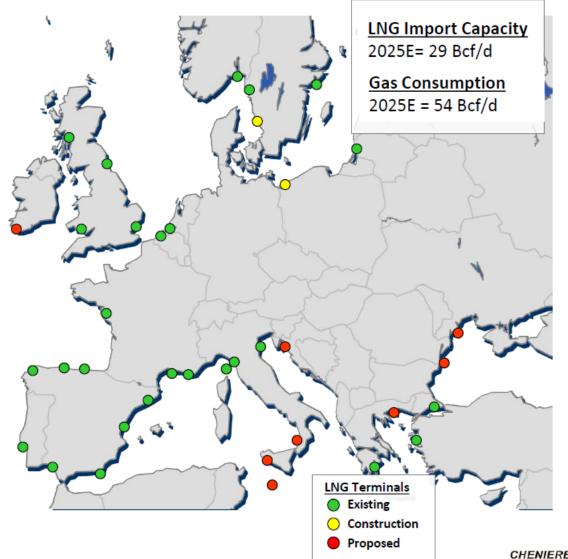
# Lower-priced LNG and gas become competitive against dirtier burning options, especially in the power sector



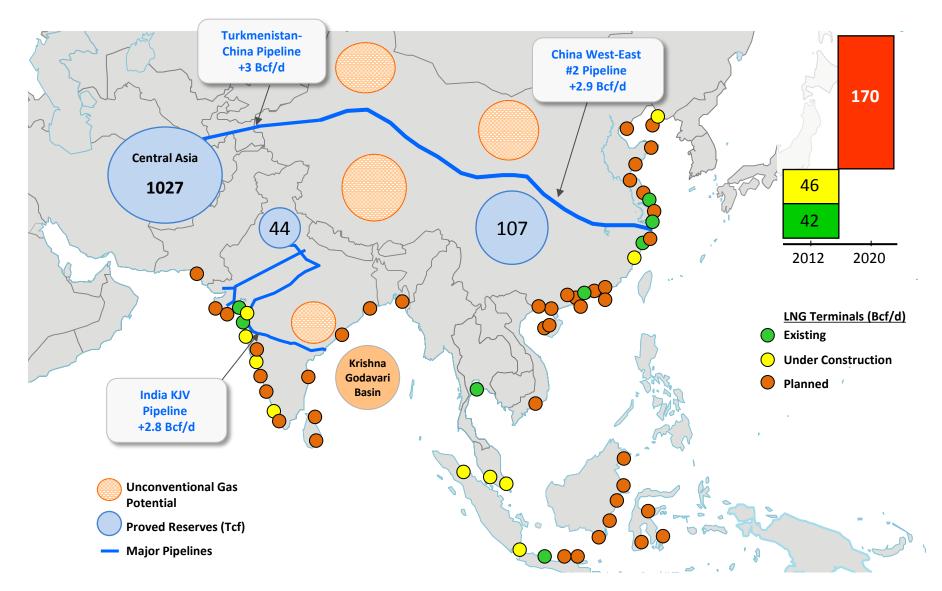
## **Cheniere Well-Positioned to Supply European Markets**

### Estimated gas demand of ~54 Bcf/d by 2025

- Cheniere's low cost LNG platform can provide low cost LNG supply to European markets
- Offering purchasing and destination flexibility; supply diversity
- Gas-to-power solutions; develop downstream markets



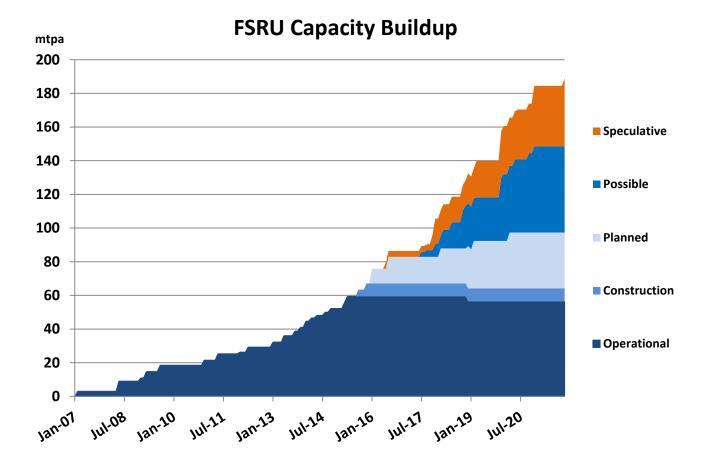
## **Asia – Emerging Markets**





## **FSRUs Bring New Markets Online Quickly**

### There is 132 mtpa of potential new demand from FSRU terminal markets by the end of 2021





## FSRU Markets Emerge in Months, Not Years

### All three markets started importing by May 2015 and are already importing almost 1 million tonnes per month

#### Egypt, Pakistan & Jordan LNG Imports mt 900 800 700 600 500 400 300 200 100 0 Jan Feb Mar Apr May Jun Jul Aug Sep Egypt Pakistan Jordan

### **Egypt's Second FSRU**



FSRU Starts Commercial Operations

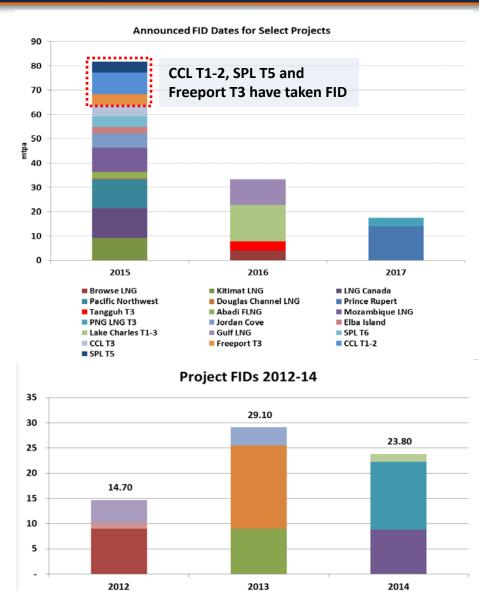


## **New Liquefaction Projects Face Major Hurdles**

### Pace of international investment projects inherently slow

- Despite highly optimistic targets, we estimate no FIDs outside of the US in 2015
- Risk of delays, cancellations of large scale projects
  - Projects become marginal as IRRs are slashed and payback periods delayed
- Risk of creating a supply shortfall post 2020
- Aging facilities and depleting reserves to exacerbate issue
- Demand for long-term supplies will respond to avert supply shortages

Source: Cheniere Research, Company disclosures



Sabine Pass T3-4

Yamal LNG

PFLNG 2

Freeport T1-2

MLNG T9

APLNG T2

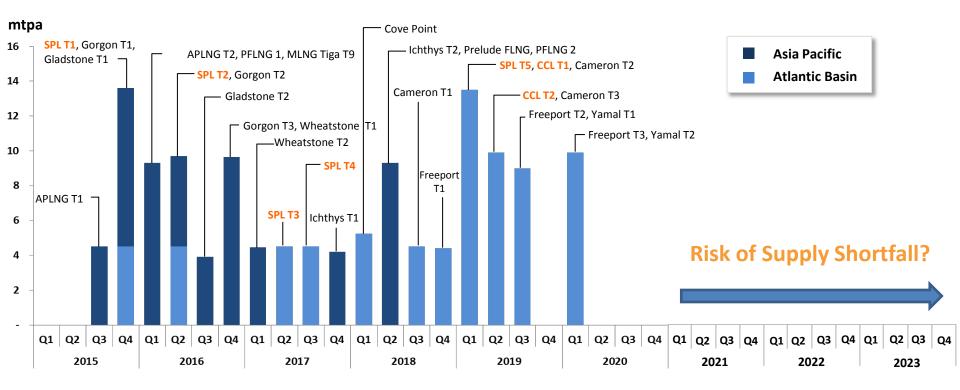
Sabine Pass T1-2

Cameron LNG

PFLNG 1

## Low Oil Prices Place Post 2020 Supplies at Risk

- Nameplate Liquefaction Capacity ~ 311 mtpa;
   2020 expected at ~ 445 mtpa
- Current prices bring above ground risks into focus, threatens commerciality of some proposed projects



CHENIERE

## Conclusions

### New project sanctioning slowing further

- Large-scale projects are more prone to delays; funding challenges
- New markets and new players to make up an increasing share of the LNG demand pie
  - Including in Asia, Middle East and Europe
  - More independents enter the market

 These markets exhibit different profiles than the typical big markets we are used to

- Smaller loads, intermittent demand, additional uncertainty to manage and more risk averse
- Contracting terms need to be more aligned with buyers' needs

### • US LNG better positioned to service these markets

- Abundant, reliable, affordable supplies with flexible contracting options
- Enables buyers to be more responsive and better adapt to market conditions
- Enhances liquidity and drives market towards optimization, efficiency



## **Executing on Strategy** 2025 Forecast for Cheniere Energy, Inc.

~60 mtpa LNG by 2025

~14% of the total LNG market

One of the largest exporters of LNG on a global basis ~9 Bcf/d

One of the largest natural gas buyers in the U.S.

\$50B+ in U.S. infrastructure

Significant investment in U.S. infrastructure ~**1,000** permanent jobs created

Supporting over 200,000 indirect jobs Flexible, Scalable, industryleading platform

## **Cheniere's Key Businesses**

### LNG PLATFORM

- Four planned LNG terminals to be located along Gulf of Mexico
- ~60 mtpa planned
- Scalable platform
- SPL T1-5 and CCL 1-2 underpinned by long-term contracts, competitive capital costs

### GAS PROCUREMENT

- Providing feedstock for LNG production
- Redundant pipeline capacity ensures reliable gas deliverability
- Upstream pipeline capacity provides access to diverse supply sources

### CHENIERE MARKETING

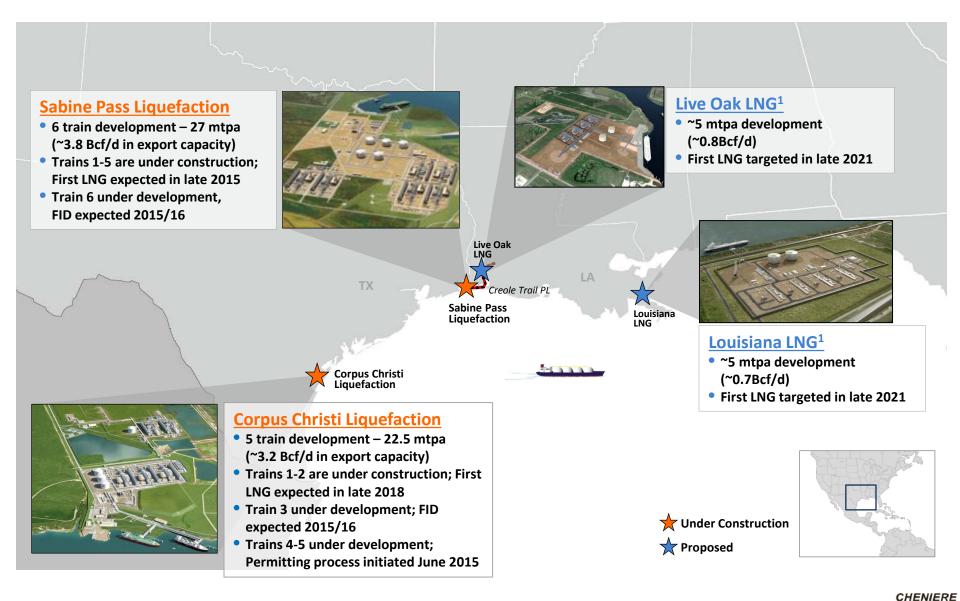
- LNG sales, FOB or DES, provided to customers on a short, mid, and long-term basis
- ~9 mtpa LNG volumes expected from SPL T1-6 and CCL T1-3
- 3 chartered LNG vessels to date

### FUTURE DEVELOPMENTS

- Developing/ investing in infrastructure to facilitate hydrocarbon revolution in Texas and beyond
- Optimize value of LNG platform
- Identify opportunities in related markets



## **Cheniere LNG Platform**



### **Cheniere Energy Global Customers**





## The U.S. Is A Low Cost Source of LNG

#### Estimated breakeven LNG pricing range, Delivered Ex-Ship to Asia

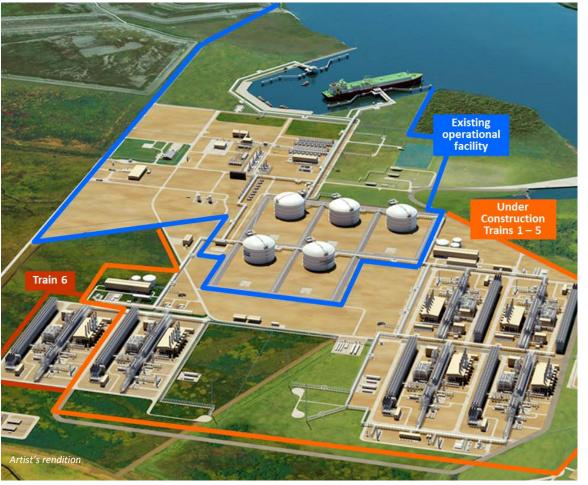


Source: Cheniere Research, Wood Mackenzie, company filings and investor materials. Note: Breakeven prices derived assuming unlevered after-tax returns of 10% on Canadian projects and 12% on all other projects over construction plus 20 years of operation. Henry Hub at \$3.00/MMBtu

- The U.S. is one of the lowest cost natural gas providers in the world
- U.S. liquefaction project costs are also significantly lower due to less project development needed
- The breakeven LNG price for Cheniere LNG export facilities is one of the lowest compared to other proposed LNG projects

## Sabine Pass Liquefaction — Brownfield LNG Export Project

Utilizes Existing Assets, Trains 1-5 Under Construction



#### Design production capacity is expected to be ~4.5 mtpa per train, using ConocoPhillips' Optimized Cascade<sup>®</sup> Process

#### **Current Facility**

- ~1,000 acres in Cameron Parish, LA
- 40 ft. ship channel 3.7 miles from coast
- 2 berths; 4 dedicated tugs
- 5 LNG storage tanks (~17 Bcfe of storage)
- 5.3 Bcf/d of pipeline interconnection

#### Liquefaction Trains 1 – 5: Fully Contracted

- Lump Sum Turnkey EPC contracts w/ Bechtel
- T1 & T2 EPC contract price ~\$4.1B
  - Overall project ~95% complete (as of 9/2015)
  - Operations estimated late 2015/2016
- T3 & T4 EPC contract price ~\$3.8B
  - Overall project ~74% complete (as of 9/2015)
  - Operations estimated 2016/2017
- T5 EPC contract price ~\$3.0B
  - Construction commenced June 2015

#### **Liquefaction Train 6**

 FID upon obtaining commercial contracts and financing

Significant infrastructure in place including storage, marine and pipeline interconnection facilities; pipeline quality natural gas to be sourced from U.S. pipeline network



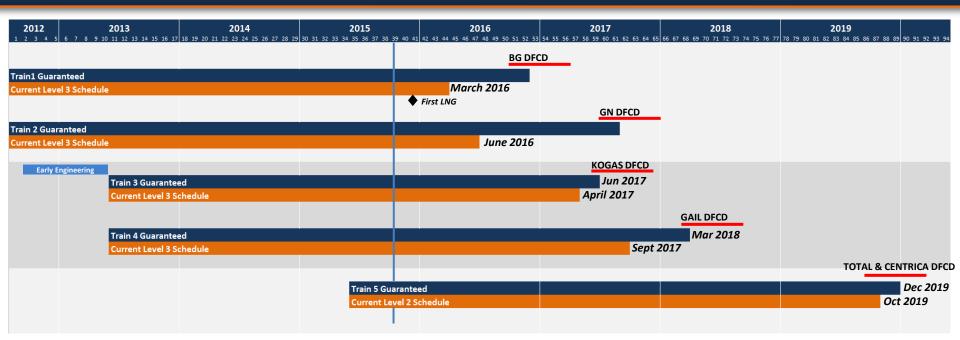
## **Sabine Pass Liquefaction Construction – July 2015**



### **Aerial View of SPL Construction – August 2015**



## SPL Construction Completion Schedules Trains 1 – 5



#### Stage 1 (Trains 1&2) overall project progress as of September 2015 is 95.2% complete vs. Target Plan of 97.5%:

- Engineering, Procurement, Subcontracts and Construction are 100%, 100%, 82.2% and 91.5% complete against Target Plan of 99.8%, 100%, 87.0% and 96.4% respectively
- Bechtel Delivered the Train 1 Commissioning and Start-up Plan in Feb, projecting Fuel Gas introduction in Sep, Feed Gas introduction in Oct, and Ready for Start-up in Dec; all in support of the current First LNG Target by year-end 2015, and Target Substantial Completion in Mar 2016

#### Stage 2 (Trains 3&4) overall project progress as of September 2015 is 73.6% complete vs. Target Plan of 79.6%:

Engineering, Procurement, Subcontracts and Construction are 100%, 98.9%, 50.0% and 40.4% complete against Target Plan of 98.8%, 98.2%, 62.3% and 55.1% respectively

#### Stage 3 (Trains 5&6) overall project progress:

- NTP on Train 5 issued to Bechtel on June 30<sup>th</sup>
- Soil stabilization civil works are in progress and the current plan estimates Train 5 operational in 52 months from NTP



## LNG Sale and Purchase Agreements (SPAs) Sabine Pass Liquefaction

~20 mtpa "take-or-pay" style commercial agreements~\$2.9B annual fixed fee revenue for 20 years

	BG GROUP	gasNatural fenosa	<b>()</b> KOGAS	GAIL	TOTAL	centrica
	BG Gulf Coast LNG	Gas Natural Fenosa	Korea Gas Corporation	GAIL (India) Limited	Total Gas & Power N.A.	Centrica plc
Annual Contract Quantity (MMBtu)	286,500,000 (1)	182,500,000	182,500,000	182,500,000	104,750,000 (1)	91,250,000
Annual Fixed Fees <sup>(2)</sup>	~\$723 MM <sup>(3)</sup>	~\$454 MM	~\$548 MM	~\$548 MM	~\$314 MM	~\$274 MM
Fixed Fees \$/MMBtu	<sup>(2)</sup> \$2.25 - \$3.00	\$2.49	\$3.00	\$3.00	\$3.00	\$3.00
LNG Cost	115% of HH	115% of HH	115% of HH	115% of HH	115% of HH	115% of HH
Term of Contract <sup>(4)</sup>	20 years	20 years	20 years	20 years	20 years	20 years
Guarantor	BG Energy Holdings Ltd.	Gas Natural SDG S.A.	N/A	N/A	Total S.A.	N/A
Corporate / Guaranto Credit Rating <sup>(5)</sup>	r A-/A2/A-	BBB/Baa2/BBB+	A+/Aa3/AA-	NR/Baa2/BBB-	AA-/Aa1/AA-	A-/Baa1/A-
Fee During Force Majeure	Up to 24 months	Up to 24 months	N/A	N/A	N/A	N/A
Contract Start	Train 1 + additional volumes with Trains 2,3,	4 Train 2	Train 3	Train 4	Train 5	Train 5

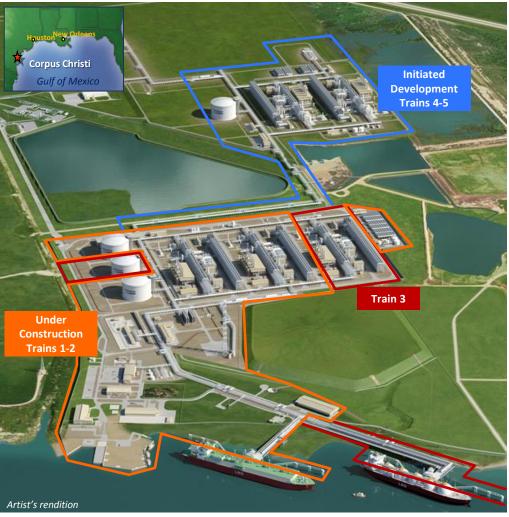
(1) BG has agreed to purchase 182,500,000 MMBtu, 36,500,000 MMBtu, 34,000,000 MMBtu and 33,500,000 MMBtu of LNG volumes annually upon the commencement of operations of Trains 1, 2, 3 and 4, respectively. Total has agreed to purchase 91,250,000 MMBtu of LNG volumes annually plus 13,400,000 MMBtu of seasonal LNG volumes upon the commencement of Train 5 operations.
(2) A portion of the fee is subject to inflation, approximately 15% for BG Group, 13.6% for Gas Natural Fenosa, 15% for KOGAS and GAIL (India) Ltd and 11.5% for Total and Centrica.
(3) Following commercial in service date of Train 4. BG will provide annual fixed fees of approximately \$520 million during Trains 1-2 operations and an additional \$203 million once Trains 3-4 are operational.
(4) SPAs have a 20 year term with the right to extend up to an additional 10 years. Gas Natural Fenosa has an extension right up to an additional 12 years in certain circumstances.

(5) Ratings are provided by S&P/Moody's/Fitch and subject to change, suspension or withdrawal at anytime and are not a recommendation to buy, hold or sell any security.



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## **Corpus Christi Liquefaction Project**



Design production capacity is expected to be ~4.5 mtpa per train, using ConocoPhillips' Optimized Cascade® Process

#### **Proposed 5 Train Facility**

- >1,000 acres owned and/or controlled
- 2 berths, 4 LNG storage tanks (~13.5 Bcfe of storage)

### **Key Project Attributes**

- 45 ft. ship channel 14 miles from coast
- Protected berth
- Premier Site Conditions
- 23-mile 48" and 42" parallel pipelines will connect to several interstate and intrastate pipelines

### Liquefaction Trains 1-2: Under Construction

- Lump Sum Turnkey EPC contracts w/ Bechtel
- T1 & T2 EPC contract price ~\$7.1B
  - Construction commenced May 2015
  - Operations estimated 2018

### Liquefaction Train 3: Partially Contracted

- 0.8 mtpa contracted to date
- Targeting additional 2.1 mtpa
- Reach FID upon contracting

### Liquefaction Trains 4-5: Initiated Development

Permit process started June 2015

### **Commenced Construction on Trains 1-2 in May 2015**



## Corpus Christi LNG Site in the Middle of an Industrial Zone

**Aerial Map of Surrounding Area** 



## **August Construction**



## **August Construction**





## **Corpus Christi Liquefaction Economic Benefits**

Announced infrastructure investment of ~\$14.5 billion (Stages 1 & 2)

### Direct Jobs

- Peak 4,000 construction jobs
- 430 permanent jobs at terminal

### Indirect & Induced Jobs\*

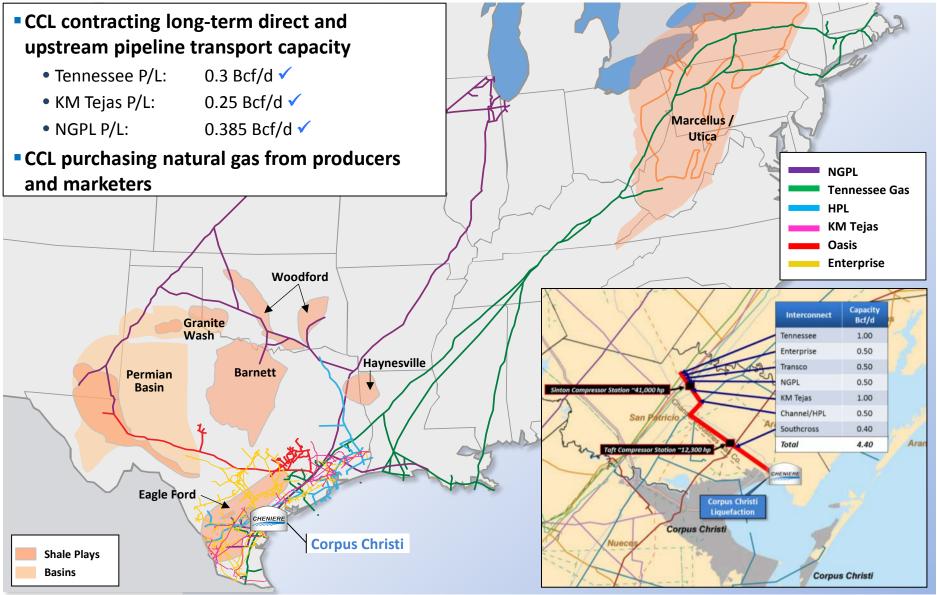
- Construction activities will create on average 31,000 Texas jobs per year over nine years
- Up to 92,000 jobs in Texas in a typical year that will be supported from the E&P activity needed to meet natural gas demand for exports from CCL
- ~5,000 jobs per year in the Coastal Bend region supported from ongoing CCL operations

### Economic Impacts\*

- \$6.9 Billion to South Texas GDP and \$4.8 Billion in wages to regional workers during construction
- \$49.6 Billion in economic activity in the State of Texas during construction
- \$21.8 Billion to U.S. GDP over first 25 years of ongoing operations
- \$9.8 \$15.8 Billion/yr improvement to US Balance of Trade

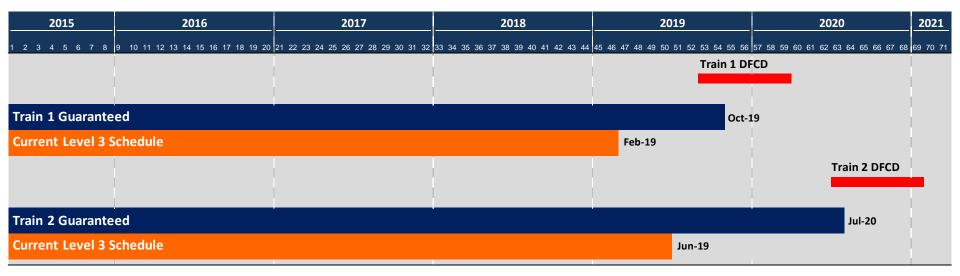


### Gas Procurement Corpus Christi Terminal





## **Corpus Christi Liquefaction Project Schedule**



### Stage 1 (Trains 1&2) overall project progress as of September 2015 is ahead of target:

- Engineering, Procurement, and Construction has progressed to 82.0%, 32.0%, and 0.4% compared to a plan of 77.1%, 21.5%, and 0.9% respectively.
- NTP issued, construction commenced for Trains 1-2 in May 2015



### **Corpus Christi Liquefaction SPAs**

### SPA progress: ~8.42 mtpa "take-or-pay" style commercial agreements ~\$1.5B annual fixed fee revenue for 20 years

	PERTAMINA PT Pertamina (Persero)	Endesa S.A.	IBERDROLA	gasNatural fenosa	woodside Woodside Energy Trading	Électricité de France	EDP Energias de Portugal S.A.
Annual Contract Quantity (TBtu)	79.36	117.32	39.68	78.20	44.12	40.00	40.00
Annual Fixed Fees <sup>(1)</sup>	~\$278 MM	~\$411 MM	~\$139 MM	~\$274 MM	~\$154 MM	~\$140 MM	~\$140 MM
Fixed Fees \$/MMBtu <sup>(1)</sup>	\$3.50	\$3.50	\$3.50	\$3.50	\$3.50	\$3.50	\$3.50
LNG Cost	115% of HH	115% of HH	115% of HH	115% of HH	115% of HH	115% of HH	115% of HH
Term of Contract <sup>(2)</sup>	20 years	20 years	20 years	20 years	20 years	20 years	20 years
Guarantor	N/A	N/A	N/A	Gas Natural SDG, S.A.	Woodside Petroleum, LTD	N/A	N/A
Guarantor/Corporate Credit Rating <sup>(3)</sup>	BB+/Baa3/BBB-	BBB/Baa2/BBB+	BBB/Baa1/BBB+	BBB/Baa2/BBB+	BBB+/Baa1/BBB+	A+/A1/A+	BB+/Baa3/BBB-
Contract Start	Train 1 / Train2	Train 1	Train 1 / Train 2	Train 2	Train 2	Train 2	Train 3

(1) 11.5% of the fee is subject to inflation for Pertamina and Woodside; 14% for all others

(2) SPA has a 20 year term with the right to extend up to an additional 10 years.

(3) Ratings are provided by S&P/Moody's/Fitch and subject to change, suspension or withdrawal at anytime and are not a recommendation to buy, hold or sell any security.



### **Proposed Development – Other Hydrocarbon Exports**

- Estimated investment opportunity up to \$2B
- Facilities to export up to 1 MMbpd liquid hydrocarbons
- Initial development expected to be supported with 3rd party contracts
- Initial investment expected up to \$1B, initial commercialization ~200kbpd
- In discussions with potential customers for contracting capacity
- Regulatory process fairly straightforward
- Estimated start of operations: 2017





