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W|EPC LNG Research

LNG Infrastructure • Project Analysis • Alternative Fuels



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Webber R|A integrates finance, risk, technology, engineering, & capital project execution into a comprehensive strategy to mitigate risk & increase stakeholder value.

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Whether it's long-term due diligence on hard asset investments, independent engineering services, bespoke valuations, fairness opinions, or corporate & strategic consulting, our unique position in the market – **sitting at the nexus of Energy, Industrials, & Renewables** – gives us a valuable and unique perspective.

**Project &
Industry
Research**

**Strategic
Consulting &
Advisory**

**Energy
Engineering**

W|EPC: Platform Overview

Term: Quarterly (*billable and cancelable*). Two Quarter Minimum.

Platform Pricing (3-4 Users): email us at info@webberresearch.com

Individual Pricing: bespoke

Subscription Includes:

Comprehensive Research & Insights: Immediate access to our **Top-Ranked LNG, Energy & Utility, and Alternative Fuels** research, curated data & updates, distributed via email with secure, individualized links, including:

Full Coverage Of The LNG Value Chain, Energy Infrastructure, & Alternative Fuels:

- **LNG Project Deep Dives** (including in-house timeline estimates, budgets, and cost-overruns)
- Satellite & drone imagery, analysis of key updates and market changes – *differentiated depth*.
- **W|EPC Project Database:** key cost, timeline, & regularly data - *cutting through the clutter*.
- Independent project timeline & budget analysis - *identifying issues before the market*.
- Alternative fuel comparisons, infrastructure deep dives – *adding definition to a sea of white space*.
- Corporate Access (includes access to Fireside Chats, replays & takeaways)

Full Research Library Access:

- Access to our full **Research Library**
- Updated models, industry data & satellite imagery
- Our multi-factor LNG S/D model – probability weighting + 70 liquefaction and +100 Regas projects
- Webber Research's LNG Weekly & Other Insights

On-Demand Analyst Access:

- On-demand access to our analyst teams, EPC experts & engineers in New York & Houston
- Bespoke sensitivity analysis & project work
- Project reviews, teach-ins, or client calls – *live expertise, whenever or wherever it's needed*.

For access information, please email us at info@webberresearch.com

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Webber Research Project & Industry Coverage

W|EPC Project & Industry Coverage

LNG Projects	Relevant Companies	Industries & Alt Fuels
Arctic 2 LNG	ADNOC	Ammonia
Browse LNG	AirProducts (APD)	Ethane
Calcasieu Pass LNG	Baker Hughes (BKR)	Floating Liquefaction
Cameron LNG	Bechtel	Floating Regas
Commonwealth LNG	Cheniere (LNG, CQP)	Hydrogen
Corpus Christi LNG	Chevron (CVX)	Liquefaction
Costa Azul (ECA)	Chiyoda Corp. (CHYCY)	LNG
CP2 LNG	Energy Transfer (ET)	LNG Bunkers
Delfin LNG	Enterprise Product Partners (EPD)	LNG Carriers
Driftwood LNG	ExxonMobil (XOM)	Methanol
Elba Island LNG	Fluor (FLR)	Micro-grids
Freeport LNG	Golar LNG (GLNG)	Natural Gas
Fujairah LNG	JGC Holdings (JGCCY)	Nuclear
Golden Pass LNG	KBR, Inc. (KBR)	PDH
Lake Charles LNG	Kiewit	Petro-Chemicals
LNG Canada	Kinder Morgan (KMI)	...and more
Mozambique Area 1	Kosmos (KOS)	
Nigeria Train 7	McDermott (MCDIF)	
Plaquemines LNG	Methanex (MEOH)	
PNG LNG	Mexico Pacific Limited	
Port Arthur LNG	New Fortress Energy (NFE)	
Qatar NFE	NextDecade (NEXT)	
Rio Grande LNG	Petronas (PNAGF)	
Rovuma LNG: Area 4	Qatar Energy (QE)	
Sabine Pass LNG	Sempra Infrastructure (SRE)	
Saguaro LNG (MPL)	Shell (SHEL)	
Tortue LNG	TotalEnergies (TTE)	
...and more	Woodside Energy (WDS)	
	Worley Ltd. (WYGPY)	
	...and more	



LNG Project Database: Unapparelled Detail & Depth



LNG Project Database Update

DOE Non-FTA Regulatory Changes – Assessing The Impact H123

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U.S. LNG Project Database: Key Takeaways

We've updated our [WIEPC LNG Project Database](#). Please contact walter.lobos@webberresearch.com for access information.

1) Takeaways From Our LNG Project Database Update:

- SPA Pricing Starting To Rebound, But Handbrake Is Still On:** Downward pressure on liquefaction fees began in earnest when Venture Global (VG) came into the market (2015/2016). Our analysis and market feedback suggests current SPA pricing is between \$2.15 to \$2.25/MMBtu, with the weight from VG's discounted volumes easing, but still present. (pg. 8)
- Challenging Credit Environment:** From the time VGLNG signed their first SPA (mid-2015), interest rates are up ~500bps, adding ~\$200-300/ton in additional carry costs. Perhaps more importantly, the softer credit and economic environment has gradually gnawed away at Banks risk appetite, creating an even higher financing hurdle. (pg. 10)
- DOE Non-FTA Regulatory Changes – A Significant Variable From Here:** Per below, changes to the Non-FTA approval extension process have added another potential headwind to the financing process, as extension uncertainty should either drive wider credit spreads (at best) or create a pre-FID gating issue (at worst). (pg. 4)
- Construction Inflation:** Since 2012, a total of \$88B of U.S. LNG projects have taken FID (~147MTPA). If all prior projects that took FID were repriced today, the total value of the LNG projects would increase ~29% to \$113B. (pg. 11)
- EPC Risk Premium:** Supply chain issues, inflation, narrowing EPC risk tolerance around LSTK, and other issues are all contributing to a potentially wider EPC risk premium. We believe a pre-COVID allocation for risk, contingency, and profit included in an EPC price would run ~20%. Today, we believe that figure could be pushing 30% (if not higher) and require more risk sharing contract terms, lower limits of liability, etc. – particularly for premium EPCs.

2) Once Again – NEXT's Rio Grande Is The Canary In The Coal Mines:

- We believe NextDecade's (NEXT) Rio Grande LNG continues to have a viable path to FID, despite a wave of regional and sector-wide issues popping up amid the final innings of their process.
- NEXT received a renewed authorization from FERC (in a 3-1 vote, with an opinion written by the committee's chair), following a previous order to reassess by the US Court of Appeals.
- The reauthorization helps remove a lingering issue for Rio Grande, with financing the largest remaining hurdle. However...
- Changes to the DOE's extension process for Non-FTA export approval may complicate the financing process for legacy projects. Rio Grande LNG – which is in a better position than most – would need to export its first cargo by February 2027 in order to avoid applying for an extension, creating a relatively tight timetable and another variable for lending banks to consider (see next slide).

U.S. LNG Project Database: Non-FTA Approval Dates For Select Projects

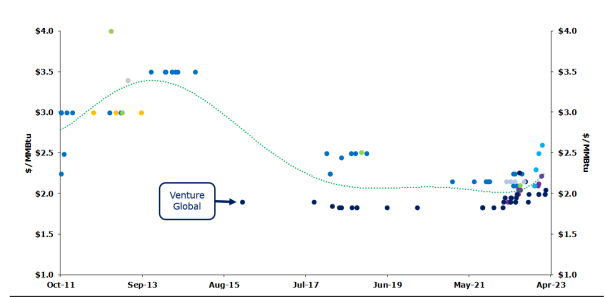
Project	Status	Non-FTA Approval	Capacity (MTPA)	Non-FTA Export Expiry (to 12 years)
Golden Pass LNG	Under Construction	4/25/2017	15.6	9/30/2025 ¹
Energia Costa Azul (Phase 1)	Under Construction	4/26/2018	3.3	6/30/2026
Port Arthur LNG (Phase 1)	Under Construction	5/2/2019	13.5	5/31/2026
Plaquemines Parish LNG (Phase 2)	Under Construction	10/16/2019	19.0	10/31/2026
Plaquemines Parish LNG (Phase 1)	Under Construction	10/16/2019	13.3	10/31/2026
Corpus Christi LNG (Stage 1)	Under Construction	2/10/2020	19.0	2/28/2027
Total Under Construction 65.7				
Defin LNG Phase 1 (Units 1 & 2)	Proposed	6/1/2017	7.0	6/30/2024
Defin LNG Phase 2 (Units 3 & 4)	Proposed	6/1/2017	7.0	6/30/2024
Lake Charles LNG	Proposed	7/29/2016	16.5	12/16/2025 ²
Saguaro LNG/Mexico Pacific LNG (Phase 1)	Proposed	9/19/2018	9.4	9/30/2025
Saguaro LNG/Mexico Pacific LNG (Phase 2)	Proposed	9/19/2018	4.7	9/30/2025
Cameron LNG (E4)	Proposed	7/5/2016	6.8	5/5/2024 ³
Port Arthur LNG (Phase 2)	Proposed	5/2/2019	13.5	5/31/2026
Driftwood LNG (Phase 1)	Proposed	3/22/2018	11.0	3/31/2026
Driftwood LNG (Phase 2)	Proposed	3/22/2018	16.6	3/31/2026
Freeport LNG (E4)	Proposed	5/28/2018	5.1	5/31/2026
Culford LNG (Phase 1)	Proposed	7/31/2019	5.0	7/31/2026
Culford LNG (Phase 2)	Proposed	7/31/2019	5.0	7/31/2026
Rio Grande (Phase 1: T1-T3)	Proposed	2/10/2020	16.2	2/28/2027
Texas LNG	Proposed	2/10/2020	4.0	2/28/2027
Alaska LNG	Proposed	6/20/2020	20.1	6/31/2027
Energia Costa Azul (Phase 2)	Proposed	12/20/2022	12.0	12/31/2028
Vista Pacific LNG	Proposed	12/20/2022	4.0	12/31/2028
CF2 LNG (Phase 1)	Proposed	Pending	10.0	Pending
CF2 LNG (Phase 2)	Proposed	Pending	10.0	Pending
Commonwealth LNG	Proposed	TBD	8.4	TBD
Delta LNG (Phase 1)	Proposed	TBD	10.0	TBD
Delta LNG (Phase 2)	Proposed	TBD	10.0	TBD
Sabine Pass LNG Stage 5	Proposed	TBD	20.0	TBD
Total Proposed 222.2				

Source: Webber Research & Advisory, LLC estimates, Company filings, Regulatory filings

DOE Non-FTA Extensions Could Prove To Be A Gating Issue For Legacy Projects.

Site Prep and/or Civil Work Has Begun Extension Requested

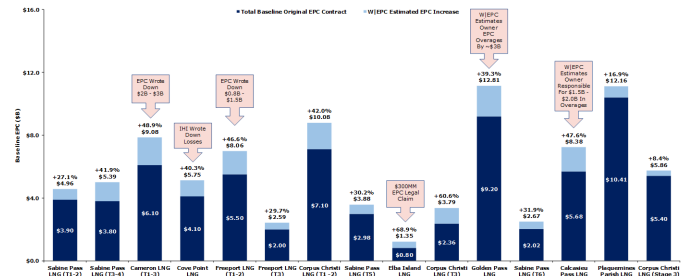
U.S. LNG Project Database: SPA Details



Source: Webber Research & Advisory, LLC estimates, Company filings

Noticeable Downward Pressure On Pricing Once VG Entered The Picture.

U.S. LNG Project Database: Hypothetical EPC Repriced Today



Source: Webber Research & Advisory, LLC estimates, Company filings, Regulatory filings

If the Above Projects Were Repriced Today, Escalation Would Add ~36% To EPC Costs.

U.S. LNG Project Database: RFP Process vs. Months In-Service

LNG Project	Completed U.S. LNG Projects In-Service			Actual vs. Baseline In-Service (Months)	
	Competitive Bid Not LSTK	Competitive Bid LSTK	Open Book LSTK	Early	Late
Corpus Christi LNG (T1 -2)			X	-11	
Corpus Christi LNG (T3)			X	-9	
Sabine Pass LNG (T1-2)			X	-12	
Sabine Pass LNG (T3-4)			X	-5	
Sabine Pass LNG (T5)			X	-9	
Cameron LNG (T1-3)		X			21
Freeport LNG (T1-3)		X			5
Elbe Island LNG		X			17
Calcasieu Pass LNG	X			TBD	TBD
Cove Point LNG			X		5

- ~65% Of Mega Projects Fail Due To Soft Skills: Personalities, interpersonal management issues, etc. can play a significant role in why mega projects fail. A competitive bid process typically drives adversarial relationships that make project challenges even more difficult to navigate.
- Cheniere & Bechtel: Have created a win-win relationship via their EPC open book LSTK process. It also helps that Cheniere projects are very similar to most of the prior LNG trains Bechtel has previously built.

Competitively Bid EPC Projects Were An Average Of 19 Months Behind Schedule.



W|EPC LNG Project Deep Dives: In-House Project Curves, Insight, & Analysis

Golden Pass LNG Project Update: Q221 Key Takeaways

1. New Forecasted EPC Costs (~\$11.6B) – ~\$2.4B Higher Than The Original EPC Contract Value (~\$9.2B)

- On May 19, 2021, Golden Pass LNG (GPX) requested approval to increase the construction workhours & on-site peak labor until the end of the project (Dec 2025). The new forecasted construction peak (7,700) is ~165% higher than GPX's pre-FID forecast (2,900). (pages 3 & 4)
- Cost Impact:** The increased labor costs alone could add ~\$3.8B to the EPC costs. (page 5)
- Project Schedule:** GPX is currently maintaining their completion date of late 2025. Our experience & recent project comps (i.e., Cameron LNG) suggest this strategy (drastic increase in construction labor/cost to chase the original schedule) may not be successful and put balance sheets in harms way. (page 6)
- Progress Has Stalled:** Adding ~42MM construction hours to the project schedule, primarily from 2022 to 2025, dilutes previously achieved progress. (page 7)

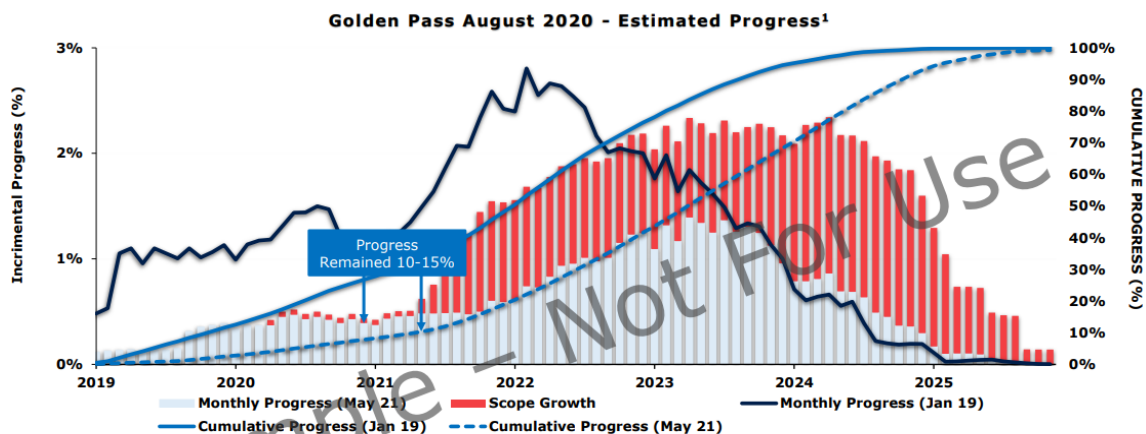
2. Engineering Delays & Changes Continue

- In the last ~45-days, GPX has submitted at least (7) variances &/or engineering design changes to FERC. FERC needs to approve the revised engineering drawings before GPX is authorized to proceed with the requested construction activity. (page 8)
- What It Means:** Engineering changes always delay construction activities & increase risks on higher-cost, more skilled construction labor.
- Construction Change Orders:** Zachry & McDermott (MDR), Chiyoda's EPC partners, are likely impacted by Chiyoda's engineering progress & could result in internal change orders.

3. Chiyoda (6366-JP), ExxonMobil (XOM), & McDermott (MCDIF) – Questions You Should Be Asking

- Bigger picture analysis – XOM & Qatar Petroleum (QP) needs Chiyoda to stay in business (Chiyoda is partnered with Technip Energies to build QP's North Field Expansion Project). To better understand the dynamics of the changes & who might be responsible for billions in cost increases, we suggest asking Chiyoda, XOM, & MCDIF the following questions:
- Increased Capacity:** What was the impact to Chiyoda's engineering efforts, if any, when the GPX facility increased its capacity in June 2020? Did Chiyoda receive change orders?
- COVID-19:** Has COVID-19 impacted the project's on-site construction activities? Has Chiyoda's late engineering impacted potential Force Majeure claims?
- Geotechnical Data:** The piling design keeps changing; Is the geotechnical report rely-upon or is the EPC consortium assuming full responsibility for any changes?

Impact Of Increased Hours On EPC Progress



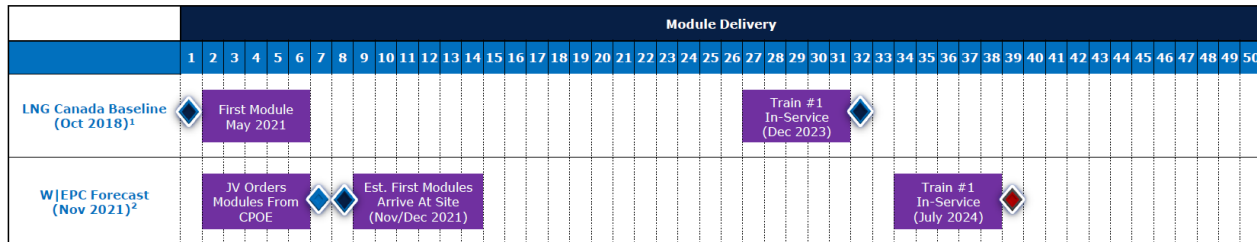
- As labor hours are added to a project (via Change Orders), the previously achieved progress has been diluted.
 - In December 2020, W|EPC forecasted the project was 10-15% complete.
 - 5 Months Later, W|EPC is still forecasting the project is 10-15% complete due to the increased labor hours added.

~42MM Labor Hours Were Added To the Project, Which Dilutes Previously Completed Progress Claims.

¹ W|EPC Analysis Of Company & Regulatory Filings

W|EPC LNG Project Deep Dives: Estimated Timelines & Aerial Image Analysis

LNG Canada Q421 Update: Module Delivery (Baseline vs. November 2021)



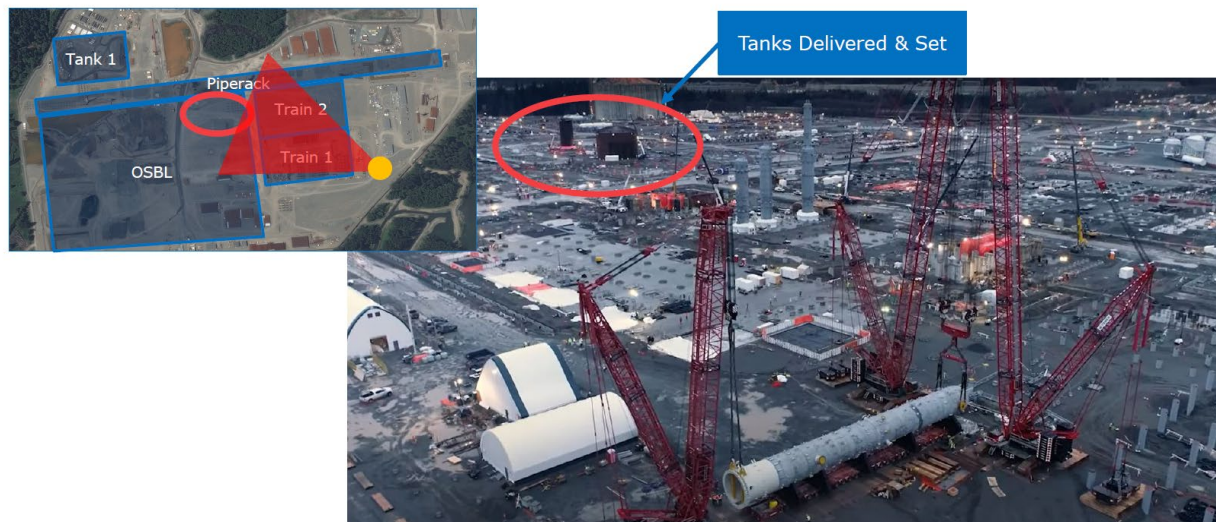
- **~7-Month Delay On First Modules:** In Nov 2018, Fluor indicated the first modules would arrive in Q221. In Oct 2021, Fluor shipped 16 modules (out of 192) from China to arrive Nov/Dec 2021... ~7 months behind schedule.
- **COVID Status:** Yes, COVID has impacted the project; however, Fluor/JGC were behind schedule and overstaffing the project before COVID, which could limit their Force Majeure (FM) claims.
 - Fluor has announced an agreement for COVID impacts on engineering & procurement but no mention of construction.
- **History:** In Q313, CPChem awarded Fluor & JGC a ~\$6B EPC contract for an Ethylene Cracker in Texas. ~39 months later, Fluor/JGC announced the project would be over budget & 12-months late. To date, Fluor has not indicated possible losses/issues on LNGC. In our opinion, they are giving the notion things are okay even with COVID and the delays. For the sake of shareholders, let's hope this isn't a repeat of CPChem.

First Modules Are ~7-Months Late & Fluor Has Not Commented On \$B's In Construction FM Claims.

1) Comments From Project Open House in November 2018
2) W|EPC Estimate Based on Comps & Public Data

2) W|EPC Estimate Based on Comps & Public Data

LNG Canada Q421 Update: Aerial Images























Utilities & Water Treatment Equipment Set But No Steel Or Pipe.

1) WEPC Analysis OF Company & Regulatory Filings



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Rank	Pre-Training Framework	Capacity (MParams)	Running Total
1	 DeepSpeed PyTorch Lightning Full Stack Phase 2 (T18 & E)	16.9	16.9
2	 PyTorch Post-Release LMS (Phase 1) Sempar (T20) & KnowledgeHub (T21)	16.3	33.2
3	 VLLM PyTorch LMS (VLLM) codebase	6.7	40.0
4	 Newfounder FastLane v4.2 New Foundry Energy (NFE)	1.4	41.4
5	 Camicon Camicon LMS Phase 2 (T-4) Sempar (T20) & KnowledgeHub (T21)	6.8	48.2
6	 KODM-S Granular Torture Phase 2 KODM-S (T20) & KnowledgeHub (T21)	2.5	49.7
7	 Newfounder New Foundry Energy (NFE) Rite-Rails LMS v2	1.4	50.7
8	 NEAR New Foundry Energy (NFE) Rite-Rails LMS v1 (T1-3) New Foundry Energy (NFE)	16.2	66.9
9	 VLLM CPJ LMS (VLLM) codebase	20.0	86.9
10	 Newfounder New Foundry Energy (NFE) Rite-Rails LMS v4	1.4	88.3
11	 Agharun Agharun LMS (Agharun) codebase	9.6	97.9
12	 MRV MRV LMS (MRV) codebase	15.3	113.2
13	 PFI by Microsoft PFI LMS (PFI) codebase	7.0	120.1
14	 Lab LMS Lab LMS (Lab LMS) codebase	9.3	129.5
15	 LMS LMS LMS (LMS) codebase	16.5	146.0
16	 Sage LMS Sage LMS (Sage LMS) codebase	14.1	160.1
17	 Macro Pacific Macro Pacific LMS (Macro Pacific) codebase	14.1	174.2
18	 LMS LMS LMS (LMS) codebase	14.1	188.3
19	 PFI by Microsoft PFI LMS (PFI) codebase	3.4	191.7
20	 PFI by Microsoft PFI LMS (PFI) codebase	3.4	195.1

Webber Research & Advisory: Energy & Utility Infrastructure • LNG • Renewables • EPC Risks

[illegible]

	Tier 1 Total	\$0
Tier 1: Domestic		

Source: Webber Research & Advisory, LLC, Company filings

Webber Research & Advisory: Energy & Utility Infrastructure • LNG • Renewables • EPC Risks

Regional Utilization Growth Rates	FY 1-2 Yrs	FY 3-4 Yrs	FY 5-6 Yrs	Long-Term
Asia (Non-China)	6.0%	5.5%	5.0%	4.0%
China	7.0%	9.0%	7.0%	4.5%
EU 27	7.0%	6.5%	3.5%	1.5%
Other	3.5%	3.0%	3.0%	2.0%

Source: Webber Research & Advisors LLC estimates

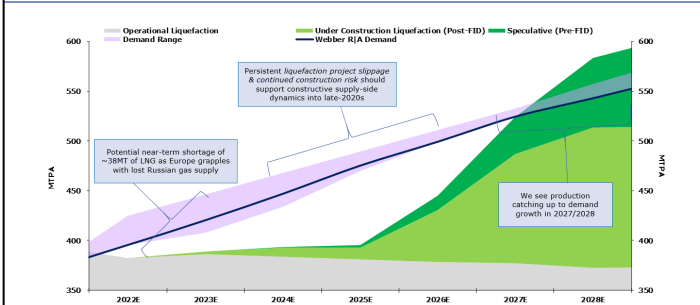
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Proctor (1/1/05)	Off	TBD	-	0%
Hammon Line Phase 2 (T=) (10/1/27)	Off	TBD	-	0%
Cedar UNO (10/1/27)	Off	Pre-Pid	12 months	75%
Cedar UNO (10/1/27)	Off	Pre-Pid	6 months	0%
Commonwealth UNO (11/1/27)	Off	Pre-Pid	12 months	0%
CP2 UNO (10/1/25)	Off	Pre-Pid	12 months	75%
DeAnn UNO Phase 1 (7/1/26)	Off	Pre-Pid	12 months	75%
DeAnn UNO Phase 1 (10/1/27)	Off	TBD	-	0%
Freemont Tract 4 (6/1/26)	Off	Pre-Pid	18 months	0%
Leike Charles UNO (7/1/26)	Off	Pre-Pid	6 months	50%
NRE Trailing 2 (1/1/24)	Off	Pre-Pid	3 months	75%
Port Arthur UNO (7/1/26)	Off	Pre-Pid	12 months	75%
Quaker North South (12/1/27)	Off	Pre-Pid	12 months	90%

Pagbilao LNG (Philippines) - 3/1/23	Construction	6 months	50%
Jagath (India) - 2/1/23	Construction	6 months	75%
Damayi LNG I (China) - 1/31/23	Construction	3 months	50%
Chazhou Huafon LNG I (China) - 7/30/23	Construction	6 months	50%
Gulf of Suez PSRI (Turkey) - 5/1/23	Construction	6 months	100%
Tianjin FLNG II (China) - 5/15/23	Construction	6 months	50%
Jafabed PSRI (China) - 5/31/23	Construction	6 months	50%

Source: Weather Research & Advisory, LLC estimates. Wood Mackenzie.

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Source: Webber Research & Advisory, LLC estimates, Wood Mackenzie, Bloomberg, Shell

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Full Research Library Access:

Our Library Includes:

- Historical reports & presentations (via Blue Matrix)
- Access to our proprietary **W|EPC Project Data Base**
- Relevant company & industry Models
- Industry data, satellite images, & supporting documentation (via secure data room)

Title	Symbol	Author	Type	Date	
Renewables: Q1 Earnings Roundup: PLUG, BLDP, & CLNE - Earnings Recap, PT & Estimate Changes	RNW	Greg Wasikowski, CFA	Industry Note	May 16 2023 05:45PM	
EURN: Q1 Beat, Focus On Next Week's AGM & Strategic Clarity - Earnings Recap, PT & Est. Updates	EURN	Greg Wasikowski, CFA	Company Note	May 12 2023 01:33PM	
KEX: Fireside Chat With CEO/CFO Key Takeaways & Notes	KEX	Greg Wasikowski, CFA	Company Note	May 11 2023 01:21PM	
Renewables: Q1 Earnings Roundup: SEDG & TPIC	RNW	Greg Wasikowski, CFA	Industry Note	May 05 2023 04:20PM	
DHT: Narrow Q1 Miss With Strong Q2 Outlook - Earnings Recap, PT & Estimate Updates	DHT	Greg Wasikowski, CFA	Company Note	May 04 2023 03:37PM	
Cheniere: Early Commercial Momentum With SPL Expansion, FY23 Guidance Bump	EXP	Greg Wasikowski, CFA	Industry Note	May 04 2023 11:27AM	
AMRC: Mixed Q1 & Q2 Guidance Maintain Uncertainty Around 2024 Targets, But Does It Really Matter?	AMRC	Greg Wasikowski, CFA	Company Note	May 03 2023 03:00PM	
W EPC: LNG Project Database Update H123 - Client Call Wednesday 5/3	EPC	Greg Wasikowski, CFA	Industry Note	May 03 2023 10:07AM	
Webber Research: LNG Weekly & GLOP Q1 Earnings Recap	EXP	Greg Wasikowski, CFA	Industry Note	May 02 2023 04:12PM	
Cheniere: Q1 Beat, Raises FY23 Guidance - Initial Thoughts On Q1 Earnings	EXP	Greg Wasikowski, CFA	Industry Note	May 02 2023 10:19AM	
KEX: Solid Q1 - Nearly Firing On All 3 Cylinders Amid Coastal Inflection Point - Q1 Earnings Recap	KEX	Greg Wasikowski, CFA	Company Note	May 01 2023 01:40PM	
ENPH: Q1 Speed Bump Elicits Strong Market Reaction, Recovery Opportunity - Q1 Recap, PT/Est Updates	ENPH	Greg Wasikowski, CFA	Company Note	Apr 28 2023 07:00AM	
KEX: Assessing Multiple Erosion Despite Historically Positive Inland Backdrop - Q1 Earnings Preview	KEX	Greg Wasikowski, CFA	Company Note	Apr 26 2023 07:30AM	
W EPC: Golden Pass LNG - Project Update Q223	EPC	Greg Wasikowski, CFA	Industry Note	Apr 17 2023 12:57PM	
Webber Research: LNG Weekly	EXP	Greg Wasikowski, CFA	Industry Note	Apr 12 2023 12:26PM	
TELL: Binding LOI For \$1B, 40-Year Sale & Leaseback On Driftwood LNG Real Estate	TELL	Greg Wasikowski, CFA	Company Note	Apr 06 2023 03:52PM	
Webber Research: Hydrogen Tracker	RNW	Greg Wasikowski, CFA	Industry Note	Apr 05 2023 03:46PM	
Webber Research: LNG Weekly	EXP	Greg Wasikowski, CFA	Industry Note	Mar 27 2023 02:34PM	
Webber Research: Hydrogen Tracker	RNW	Greg Wasikowski, CFA	Industry Note	Mar 23 2023 02:00PM	
BLDP: Focus Remains On Backlog Growth Following Soft Q4 Print - Q4 Recap, PT & Estimate Updates	BLDP	Greg Wasikowski, CFA	Company Note	Mar 20 2023 11:25AM	
Webber Research: LNG Weekly	EXP	Greg Wasikowski, CFA	Industry Note	Mar 16 2023 12:50PM	
Webber Research: Hydrogen Tracker	RNW	Greg Wasikowski, CFA	Industry Note	Mar 14 2023 12:15PM	
HTOO: Provides 2023 Guidance & P&L Breakeven Target In 2024 - Q4 Earnings Recap, Pt & Est. Updates	HTOO	Greg Wasikowski, CFA	Company Note	Mar 10 2023 04:39PM	
CLNE: Fireside Chat Takeaways & Notes	CLNE	Greg Wasikowski, CFA	Company Note	Mar 09 2023 10:55AM	
W EPC: LNG Canada - Project Update Q123	EPC	Greg Wasikowski, CFA	Industry Note	Mar 07 2023 10:50AM	
GLNG: Positioning For 3rd FLNG Following Sale Of NFE & COOL Shares - Q4 Recap, PT & Est. Updates	GLNG	Greg Wasikowski, CFA	Company Note	Mar 06 2023 04:36PM	
FRO: Q4 Miss, Restarts Dividends Following EURN Merger Termination	FRO	Greg Wasikowski, CFA	Company Note	Mar 03 2023 05:35PM	
Renewables: Q4 Earnings Roundup: PLUG & CHPT - Q4 Earnings Recap, Price Target & Estimate Changes	RNW	Greg Wasikowski, CFA	Industry Note	Mar 03 2023 04:15PM	
CLNE: Rough Q4 & 2023 Guide, JV Value Prop Still Overlooked - Q4 Earnings Recap, PT/Estimate Updates	CLNE	Greg Wasikowski, CFA	Company Note	Mar 01 2023 04:30PM	
AMRC: Mixed 2023 Guidance Prompts Uncertainty Around 2024 EBITDA Target - Q4 Recap, PT/Est Updates	AMRC	Greg Wasikowski, CFA	Company Note	Feb 28 2023 01:35PM	
GLNG: Mixed Q4 Due To Hilli Downtime, Secured Carrier For MKII Conversion	GLNG	Greg Wasikowski, CFA	Company Note	Feb 28 2023 12:20PM	
Cheniere: Further Thoughts On FY23 Guide & SPL Expansion - Q4 Earnings Recap, PT & Estimate Updates	EXP	Greg Wasikowski, CFA	Industry Note	Feb 24 2023 02:06PM	
TPIC: Recovery Loading, But Taking It One Step At A Time - Q4 Earnings Recap - PT & Est Updates	TPIC	Greg Wasikowski, CFA	Company Note	Feb 23 2023 05:45PM	
Cheniere: Beats On Q4 EBITDA & Rev, FY23 Guidance Roughly Inline - Initial Earnings Recap	EXP	Greg Wasikowski, CFA	Industry Note	Feb 23 2023 10:47AM	
Webber Research: LNG Weekly	EXP	Greg Wasikowski, CFA	Industry Note	Feb 22 2023 08:20AM	
Webber Research: Hydrogen Tracker	RNW	Greg Wasikowski, CFA	Industry Note	Feb 16 2023 02:14PM	
SEDG: Q4 Margin Inflection Point - Assessing The Puts & Takes In 2023 - Q4 Recap, PT & Est Updates	SEDG	Greg Wasikowski, CFA	Company Note	Feb 15 2023 11:20AM	
ENS: Price/Cost Recapture Strategy Paying Off, Looking Ahead To What's Next	ENS	Greg Wasikowski, CFA	Company Note	Feb 09 2023 05:55PM	
DHT: Q4 Beat Brings 2022 Back In The Black - Earnings Recap, PT & Estimate Updates	DHT	Greg Wasikowski, CFA	Company Note	Feb 09 2023 01:36PM	
ENPH: Sticking To The Script - Outperformance Continues - Q4 Earnings Recap, PT & Estimate Updates	ENPH	Greg Wasikowski, CFA	Company Note	Feb 08 2023 12:40PM	
W EPC: Freeport LNG T4 Project Update (Q123)	EPC	Greg Wasikowski, CFA	Industry Note	Feb 07 2023 01:08PM	
GLNG: Acquires 50% Of The Hilli For NFE Shares & Cash	GLNG	Greg Wasikowski, CFA	Company Note	Feb 06 2023 03:55PM	
EURN: Solid Quarter Largely Overshadowed By Looming Arbitration - Earnings Recap, PT & Est. Updates	EURN	Greg Wasikowski, CFA	Company Note	Feb 03 2023 09:49AM	
KEX: Defining The Linchpin In Inland - Q4 Earnings Recap, Price Target & Estimate Updates	KEX	Greg Wasikowski, CFA	Company Note	Feb 02 2023 05:20PM	
Webber Research: LNG Weekly	EXP	Greg Wasikowski, CFA	Industry Note	Feb 02 2023 12:39PM	
Webber Research: Q4 Earnings True Up - Shipping & LNG	EXP	Greg Wasikowski, CFA	Industry Note	Feb 01 2023 03:45PM	
CHPT/PLUG: CHPT Partners With STEM, PLUG Partners With Johnson Matthey	RNW	Greg Wasikowski, CFA	Industry Note	Feb 01 2023 07:30AM	
Fireside Chat W/ DOE Office Of Technology Transitions Commercialization Exec - Key Takeaways & Notes	RNW	Greg Wasikowski, CFA	Industry Note	Jan 30 2023 02:56PM	
KEX: Inland Rate Plateau Slows Recovery Pace, Adds Credence To LT Sustainability - Q4 Preview	KEX	Greg Wasikowski, CFA	Company Note	Jan 30 2023 07:30AM	
PLUG: 2023 Annual Business Update Call Takeaways & Notes - Integrated Business Recap, PT/Est Updates	PLUG	Greg Wasikowski, CFA	Company Note	Jan 26 2023 05:40PM	

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Mike co-founded Armistead Street Capital Partners and Webber Research & Advisory in 2019, before which he spent 15-years in finance and equity research roles covering Renewables, LNG & Energy Infrastructure, Shipping, & Transportation at Wells Fargo & Deutsche Bank. Mike was Institutional Investor's #1 ranked LNG & Shipping Analyst for 5 consecutive years (2015, 2016, 2017, 2018, 2019). Mike finished as runner-up in 2020, while guiding Webber Research to become the only new U.S. research firm to receive ranked recognition in any sector.



Greg Wasikowski, Associate Partner

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Greg co-founded Armistead Street Capital Partners and Webber Research & Advisory in 2019, and leads the equity team for renewables & clean energy. Greg was a senior member of the #1 I.I. ranked Wells Fargo LNG, Shipping, & Equipment Leasing team from 2017-2019, prior to which he worked in Consulting for RSM US LLP.



Eric Smith, Director | Energy & EPC Risk Management

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For the last 12+ years, Eric has focused his career in the EPC sector of the energy industry concentrating on large scale energy, LNG, and petrochemical projects. His experience includes leading the commercial efforts for petrochemical and LNG business lines for a global engineering and construction company, supporting the development of a Gulf Coast LNG liquefaction company, and negotiating commercial LNG sales agreements with global LNG buyers.



Robert Meaney, Director | Engineering & Technology

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Robert Meaney has spent the past 12 years of his career in the Government Infrastructure and O&G markets executing \$30 billion in Capital Projects from conceptual design through construction with deep expertise in process technology, project analysis, & construction.



Walter Lobo, Director of Institutional Sales

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Walter Lobo joined Webber Research in September 2020 as Director of Institutional Sales. From 2007 to 2017 Mr. Lobo was a Director of Institutional Sales at Wells Fargo Securities. While at Wells Fargo he managed a diverse book of institutional clients in Europe, New York and the Midwest.



Kamran Javed, Associate Analyst

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Kamran joined Webber Research in 2023, with a focus on LNG. Prior to joining Webber Research, Kamran worked in various roles at JERA Energy America, RasGas, Chevron and ConocoPhillips. He brings over 22 years of experience across the oil and gas value chain with a heavy focus on risk management, strategy, clean products trading and LNG (marketing/trading, economic valuations, strategic planning and commercial shipping).



Qamer Iqbal, Engineering Manager Carbon Capture

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For the last 17 years, Qamer has focused his career in the Technology Development and Engineering sectors of the Energy Industry concentrating on large scale Refinery, Midstream and Petrochemical projects. Qamer has a leading expertise in Process Design & Technology, Project Management and for multiple global Engineering and Construction companies.



Toni Su, Engineering Manager H2 Midstream & Emissions

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Toni Su has over 10 years of experience as a senior technical advisor and project manager for upstream and midstream field operations. Specifically, Toni has designed, constructed, and operated facilities ranging from gas processing and treating (CO₂ and Sulphur) to storage and pipeline systems across gas, NGL, and crude commodities.



**Dr. Bruno Cateni, Process Engineering | H2 & Ammonia**

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Dr. Cateni has more than 25 years of work experience in downstream and midstream Energy Chemicals, Refining, O&G. His duties have included leadership and engineering support roles in all phases of projects, from conceptual design to detailed engineering and commissioning ISBL and OSBL, capital investment planning, project management, resource planning and financial justification for large scale engineering projects.

**Brent Knapton, Project Engineering Manager**

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Brent Knapton has more than 30 years of experience in the energy industry managing projects, leading large resource teams and innovating tools and systems to increase efficiency and productivity. He holds a patent entitled "Energy Recovery from Waste Heat Sources" and has managed diverse technical teams in the roles of Project Engineering Manager, Engineering Manager and Lead Engineer.

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Bhavesh joined Webber Research & Advisory in 2021, prior to which he spent three years with CRISIL (an S&P Global Company) as a Senior Analyst, supporting credit trading at bulge bracket European Investment Banks. Prior to CRISIL, Bhavesh spent five years with Transparent Value Pvt. Ltd. (a Guggenheim Partners Company) as a part of the credit research team working with Guggenheim, focused on both Investment Grade and High Yield credit opportunities across multiple geographies and verticals. Bhavesh has an MBA from N.L. Dalmia Institute of Management Research.

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