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50 Ways to Leave (Louisiana) – Pipeline Expansions Key to Unlocking the Second Wave of LNG Export Projects



- The bulk of the second wave of U.S. LNG export projects will be situated along a small stretch of the Gulf Coast, from Port Arthur on the TX-LA border to the Mississippi River in southeastern Louisiana. Three of the seven export projects with FIDs are sited in this region and will add nearly 7 Bcf/d of new gas demand by 2028, and more are expected to reach FID.
- The Gulf Coast has become a hotbed of midstream activity to address worsening bottlenecks for moving incremental natural gas from upstream supply hubs in Texas and northern Louisiana to Port Arthur and southern Louisiana.
- There are 17 announced gas pipeline projects — and many more unannounced ones — vying to connect supply hubs with this growing demand center.
- These pipeline expansions — and how well they are timed with the liquefaction projects — will be critical to the second wave of LNG projects.

1. Introduction

LNG exports will be the biggest driver of growth for natural gas demand in North America over the next five years. After a lull in export capacity additions in 2023, the next wave of liquefaction projects is expected to get underway in 2024, starting with the completion of Golden Pass LNG. Including Golden Pass, seven projects have final investment decisions (FIDs) and are under construction, while around 30 other projects are in various stages of development and working toward the capacity and financial commitments to reach FID. While these projects span North America, importantly, the bulk of the new capacity is being planned or proposed for the U.S. Gulf Coast, and in particular, along a less-than-100-mile stretch of coastline in the northwestern corner of the Gulf of Mexico, between the Beaumont/Port Arthur area near the Texas-Louisiana border and the Mississippi River in southeastern Louisiana.

At full utilization of contracted capacity, feedgas demand at already-operational terminals totals ~8 Bcf/d in the Port Arthur/Louisiana region (gray bar in Figure 1), including ~4.5 Bcf/d at Cheniere Energy's Sabine Pass LNG, ~2 Bcf/d at Sempra Energy's Cameron LNG, and ~1.5 Bcf/d at Venture Global's Calcasieu Pass LNG, which has been loading "commissioning" cargoes since the first quarter of 2022 but has yet to be commercialized. In addition, of the seven FID projects

under construction currently, three are sited in this area (pink bars): Golden Pass LNG in the Beaumont/Port Arthur area, which is due to begin service in 2024; and two recently sanctioned greenfield facilities: Venture Global’s Plaquemines LNG on the Mississippi River in southeastern Louisiana, and Sempra Energy’s Port Arthur LNG, also in the Port Arthur area. Together, these three projects represent nearly 7 Bcf/d of incremental feedgas demand that is due to come online in the next five years, bringing total feedgas demand in the region to nearly 15 Bcf/d by 2028 (maroon bar). Beyond these greenlit projects, there are still more expansions moving toward FID, including some in the near term.

Beaumont/Port Arthur, TX & LA Feedgas Existing+FID LNG Projects

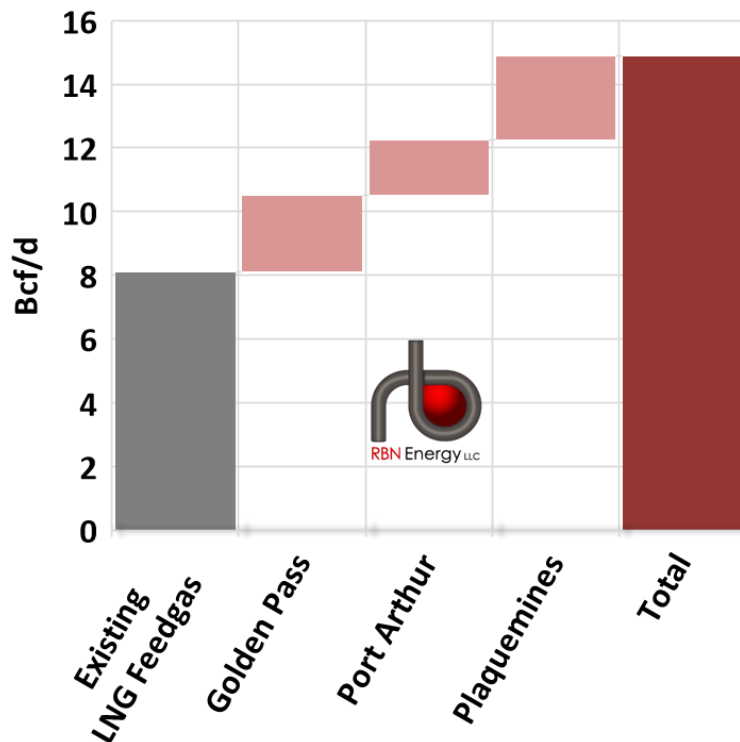


Figure 1. Beaumont/Port Arthur, TX & Louisiana Feedgas – Existing + FID Projects. Source: RBN

As a result of this impending second wave of export projects, a lot more natural gas will be needed in southern Louisiana, raising questions about the availability of gas supply and the pipeline capacity to feed the incremental liquefaction capacity.

The first wave of LNG export facilities primarily reconfigured existing import terminals and gas pipeline tie-ins and coincided with the reversal and expansion of legacy pipeline projects to send rapidly growing Marcellus/Utica gas supplies south to the Gulf Coast. The next wave of development will look somewhat different. For one, many second-wave projects involve building brand-new terminals without the benefit of existing infrastructure that’s already connected to a pipeline that can simply be reversed. In other words, unlike with the first wave, these projects will be more dependent on building new “last mile” pipelines, along with upstream expansions, to access feedgas supply, often requiring multiple supply routes that stack capacity across numerous pipelines to meet all its feedgas needs.

For another thing, existing Appalachia-to-Gulf-Coast pipelines are now constrained, and there are fierce headwinds for building new ones (as exemplified by the battle between midstream developers and environmental groups over the long-delayed Mountain Valley Pipeline, or MVP, which recently escalated to the Supreme Court). With Appalachia limited, the Haynesville Shale in Louisiana and the Permian and Eagle Ford in Texas are the most natural targets for LNG developers and offtakers looking to source feedgas supply, given their proximity to the LNG export corridor. But these supply regions are facing midstream constraints of their own. When it comes to getting gas to the Louisiana coast, where the biggest concentration of liquefaction capacity is being built, bottlenecks have developed for flowing gas from north to south within the state and across the Texas-Louisiana border.

A number of pipeline projects have come online in the past two years, allowing for incremental volumes north to south within Louisiana, including to Gillis, LA, and other feedgas hubs. These include Haynesville takeaway capacity from East Texas and Louisiana on Midcoast Energy’s CJ Express (acquired by Momentum Midstream last year), DTE LEAP, Energy Transfer’s Gulf Run Transmission, and Enterprise Products Partners’ Acadian Pipeline Gillis Lateral and Acadian II expansions. However, as LNG feedgas demand has continued to ramp up in the area, pipeline capacity has struggled to keep up with flows.

LNG feedgas deliveries in southwestern Louisiana have climbed from zero prior to 2016 to more than 7 Bcf/d now with the development of the Sabine Pass, Cameron and Calcasieu Pass facilities (purple, orange and teal stacked bars in the left graph in Figure 2). As feedgas demand grew, north-to-south flows through Louisiana (right graph in Figure 2) more than doubled, from less than 4 Bcf/d in the mid-2010s to just over 8 Bcf/d by the end of the decade, and they’ve grown by another 2 Bcf/d since then. Moreover, flows on many of the individual pipelines in that north-south corridor are at or near capacity.

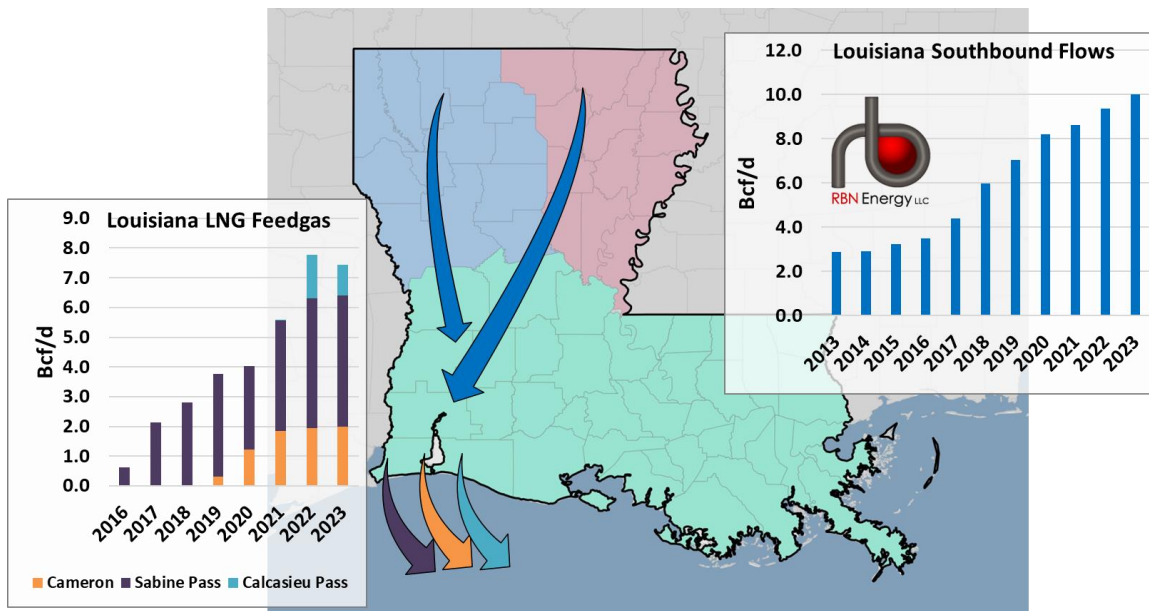


Figure 2. Louisiana LNG Feedgas and Southbound Flows. Source: RBN LNG Voyager

With almost 7 Bcf/d of LNG export capacity coming online in the next five years, a lot more pipeline capacity will be needed to facilitate the second wave of export projects. As such, the Permian and Haynesville shales have become hotbeds of midstream development to address these bottlenecks and increase connectivity between supply regions and key feedgas hubs, and from there, to the terminals.

There are currently 17 pipeline projects in development that are directly or indirectly targeting LNG export demand in the Port Arthur, TX/Louisiana area. The bulk of these projects will increase supply in southwestern Louisiana. That includes three projects totaling almost 5 Bcf/d that will provide incremental takeaway from the Haynesville and terminate in the Starks/Gillis area; two expansions that will move supply “the last mile” of the way for delivery to the Golden Pass and Port Arthur LNG facilities near the Texas-Louisiana border; and three proposed projects associated with Venture Global’s CP2 and Tellurian’s Driftwood LNG, which have yet to reach FID. In addition to these, there are six pipeline projects targeting deliveries to southeastern Louisiana, all but one of which will primarily serve Venture Global’s Plaquemines LNG, the first sanctioned export terminal being developed in the region.

Beyond these announced projects, midstreamers are no doubt in discussions and assessing further need. As more export capacity reaches FID, more pipeline capacity will be needed, and it’s only a matter of time before more projects are announced. How well the timing of these projects aligns with each other and with the timing of the liquefaction capacity build-out will be key to unlocking the second wave of export demand, and by extension, how the U.S. gas market balance evolves.

In this Drill Down Report, we detail the announced pipeline projects that are directly or indirectly targeting LNG export demand in the Port Arthur, TX/Louisiana region, including their status, routes, capacities, timing, and associated LNG facilities.

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