MIRANDA INTELLIGENCE

Mexico's new era of strategic energy partnerships – Mirage or Gold Rush?

December 1, 2022 – While Mexico's government will for sure continue to grant its state-owned energy companies preferential treatment, even after Mexican President Andrés Manuel López Obrador (AMLO) exits in October 2024, private players in the cross-border natural gas industry are suddenly excited and engaging with the administration. They are looking able to grab the next big strategic partnership, an optimism on full display at the recent industry gathering at the US-Mexico Natural Gas Forum in San Antonio, Texas.

"Mexico finds itself enjoying a level of access to decently priced natural gas on tap from existing pipeline infra that's hardly seen today elsewhere in the world today," said Ana Ludlow, Engie México's VP head of government affairs and sustainability, in an interview with Miranda Intelligence (MI) at the forum.

That's great, perhaps, but events like the February 2021 deep-freeze in Texas and the haywire in NG pricing costing Mexican industrials billions in the aftermath are evidence of the challenges, Ludlow said. "The underlying challenge in Mexico ultimately has to be about boosting domestic production," as well as natural gas storage as a pillar of national energy security.

By various calculations, imports of natural gas from the US to Mexico jumped more than 7% year-on-year in 2021 to 5.944Mcf/d (million cubic feet per day) thanks in part to availability from new pipeline infrastructure, including importantly the Sur de Texas-Tuxpan undersea pipeline, and today roughly 60% of all electric power generated in Mexico comes from gas.

And while the lion's share of those NG imports feed power to industrial clients and installations for national oil company Pemex, roughly 80-90% of all domestic use electricity is sourced from imported natural gas.

Still, Ludlow told MI, access to natural gas remains highly limited with only 26 of 32 Mexican states having pipeline-access to the molecule. The CFE is thus put in the unenviable position of massive unused gas capacity in some parts of the country and other areas starved, such as the Yucatán Peninsula, with industrial activity running at about 40% of potential capacity, thanks to power rationing.

The need to bring NG to Mexico's southeast, for example, is a fact agreed upon by all sides, especially if southeastern states hope to attract foreign direct investment, industry and new jobs. This is one of the primary objectives AMLO laid out for his presidency upon election in July 2018.

To this Engie México counts itself the latest dealmaker in a string of private-public strategic partnerships announced in 2022, with the company confirming Monday, November 28, that it has signed a deal with state-owned power company CFE to develop terms and requirements to expand the Mayakan gas pipeline in the Yucatán Peninsula.

And this is just the latest of agreements.

On July 1, CFE CEO Manuel Bartlett unveiled a raft of agreements to advance four NG-related projects in Mexico in conjunction with US-LNG player New Fortress Energy (NFE) and Canada's TC Energy, along with a fifth between NFE and Pemex, requiring investments totaling US$12.5 billion.

Three weeks later, Sempra Infrastructure, the Mexican subsidiary of the San Diego-based energy infrastructure giant Sempra Energy, announced agreements to advance the joint development of critical energy infrastructure projects in Mexico, including the rerouting of the Guaymas-El Oro pipeline in Sonora, the proposed Vista Pacífico LNG project in Topolobampo, Sinaloa, and the potential development of a liquefied natural gas (LNG) terminal in Salina Cruz, Oaxaca.

These include completion on stalled gas pipeline projects, ambitious new efforts to activate Mexico's LNG exports and big picture interconnections and port development to reach the far corners of Mexico and lay the groundwork for eventual supply to Guatemala and the rest of Central America (see Inset 1 – Details and status for strategic alliances Mexico's flagship NG projects)

Representatives from all three private firms and CFE closed the forum as a showcase, with NFE CFO Christopher Guinta outlining how close communication and openness is proving highly effective with the government.

Miranda Intelligence caught up with Guinta a week after the conference and just two days after the firm finalized contracts on the Lakach deal in Mexico City, to get his tack on the new wave of NG and LNG strategic partnerships.

Guinta joked the latest trip to Mexico was about the 30th of 2022 but the work they'd done to get these deals finalized has been worth it, confident of NFE's good fit with the solid economy located just south of the US' largest energy hub.

"There are a few things that make Mexico perfect for FLNG," Guinta told MI. "One is the fact that there is an underutilized pipeline capacity moving gas into Mexico," with a nod to the Sur de Texas-Tuxpan pipeline, "So, that's where we'll put the Altamira facility."

“Second,” he said, "Are the stranded gas assets owned by a state oil company" at Lakach in the Bay of Campeche. “So we can tap into that, sit right on top of it, and produce the gas and sail it the shore and for international consumption.”

“It's the right place at the right time for us,” said Guinta. “We think that the Mexican energy policy has been consistent and is attractive for foreign investment.”

“Now, I can say that, because NFE doesn't have the legacy baggage that other companies may or may not have, we've been able to approach the AMLO administration and the Mexican government who've been nothing but supportive and had open arms for NFE,” he added.

“And, I am just humbled by the ability to be able to go there and put our liquefaction technology into Mexico, and make Mexico ... Mexico will be, as a result of these 3 or 4 units that we'll put there, they'll be one of the largest LNG producers in the world. That's pretty cool, and it's exciting for us,” said Guinta.

L to R - Juancho Eekhaut, Sempra Infrastructure; Dr. Miguel Reyes, CFE Internacional; Leonardo Robles, TC Energy; Chris Guinta - New Fortress Energy

That said, critics are jumping on such partnerships to claim this new model of direct discussions with CFE, Pemex and gov’t last only while you’re in AMLO’s good graces and set up a structural uncertainty when he leaves office.

Speaking to Miranda Intelligence on the sidelines of the event, Guinta said, “It’s not just about getting close, it’s about listening to what they’re asking, if they president

is asking for state-owned control of power generation, then we can accommodate that. The president's asking for energy security through getting gas from their reserves to store, then we can accommodate that."

"Really, we just try to be partners, and help them with what their objective is," said Guinta.

The wave of deals came in contrast to a June decree that attempted to eliminate private business-to-business natural gas sales, other than those sales made by CFE, Pemex or natural gas network operator Cenagas – a point of contention still being fought against in the courts.

And while the boom in energy PPPs has triggered a new enthusiasm across the NG industry, concerns over the political landscape in Mexico have hardly subsided, four years into an administration that has seen an utter re-write of the 2013 structural energy reforms. The López Obrador administration has used regulation, power of decree, presidential decree and non-constitutional legislation to return Mexico to state-controlled energy, and in the process, impact tens of billions of dollars in private renewable energy investment, and in downstream and midstream sectors. It has also undermined once autonomous regulators with the power of appointment and top-down political muscle, most expertly executed by AMLO's energy minister and shrewd enforcer Rocío Nahle.

SINGING A NEW SONG

But with less than two years left in office and his great push to re-write the constitution blocked in April, far from conceding losses where they occurred and leave the upkeep of his energy legacy to his successor, AMLO is showing a turn to pragmatism. This is naturally a welcome turn in the eyes of the private sector and once that has only gained momentum since USTR (US trade rep) Katherine Tai launched a formal USMCA trade dispute July 20 – one quickly joined by Canada. This trade dispute attacks Mexico's assertion that it has the right to favor its state-owned energy concerns, Pemex and CFE, at the cost of the free competition promised both in the constitutional 2013 reforms and reinforced in various tracts of the USMCA trade agreement, which came to replace the aging Nafta deal on July 1, 2020.

López Obrador has also demonstrated, conveniently, a new enthusiasm for renewable energy, pitting Sonora state as a North American hub for lithium extraction and its development into batteries for electric batteries. He has opened invitations to US and Canadian automakers to create a cross-border framework designed to fulfill the expected North American demand for electric vehicles in the coming decades, along with a nascent USMCA-driven semiconductor chip industry

that will allow that production to expand unfettered by the potential supply chain disruptions that have plagued Mexican manufacturing since the onset of COVID-19.

The turn to pragmatism is further evidenced by AMLO changing his tune on renewable energies and the global energy transition. During the UN's recent COP27 climate conference, Mexico announced it intends to reduce its greenhouse gas emissions 35% by 2030, up from its previous commitment of 22%, thanks in part to promised support from the US, as well as double its current clean energy generation by 2023 to some 40GW, under a master investment plan valued at US$48 billion.

AMLO also unveiled a separate US$2.5 billion initiative to bring energy-transition focused plans to five states across the nation, all of which falls perfectly in line with the climate change evangelism so espoused by the administration of US President Joe Biden.

Perhaps, and it seems very likely, López Obrador's new tune on energy is inspired as gambit to negotiate its way out of some potentially dire consequences (sanctions, tariffs, fines) the insiders that Miranda has consulted are likely to come if the dispute panels go ahead in early 2023. (See Mexico & US – Nearshoring haven or heading for a trade war? - November 15, 2022)

López Obrador, speaking Friday Nov. 25, indicated Biden will attend the North American Leaders' Summit in Mexico City, originally slated for Dec. 12 but AMLO said had moved to Jan. 12, 2023.

And the writing on the wall clearly indicates that AMLO hopes Biden will signal a break in the impasse that has mired the trade partners in the formal USMCA dispute process.

The issue was front and center with the forum's opening speaker Tony Payan, the director of Rice University's Mexico Center, who later spoke with Miranda Intelligence to say that while this might be the Mexican president's thinking, the US has every reason to proceed to the formal panels and punitive actions that could cost Mexico tens of billions of dollars in trade.

"The president doesn't intend to give an inch, he doesn't intend to make any concessions to US team, to the USTR," Payan told MI. "He intends to place an inexperienced level team, tell them what to say, tell them what to do, and then allow the process to get into the panels, and then of course that will take months," adding a resolution may not arrive until late 2023 or early 2024. This of course places the burden of any punitive actions largely on AMLO's successor with presidential elections set for June 2024.

Tony Payan, Rice University's Mexico Center

Asked whether AMLO's new-found enthusiasm for clean energy and strategic partnerships could result in Mexico escaping the dispute process, Payan added, "It might be that president is going to release some of those permits, for those companies wanting to operate in Mexico. It could be that the president will make a concession not directly on the issues but different things, for example what you mention, inviting additional investment in some area in other places, like Plan Sonora."

However, said Payan, why would the US halt a potentially lucrative legal venture when it knows Mexico has iron clad commitments under the trade agreement that could garner billions for the US government if shown to be in violation.

Plan Sonora and the other new promises from Mexico are great, he added, but "The US government is simply not going to settle for just that," said Payan.

"I think the US government is probably going to proceed slowly and steadily and open the panel of consultations, work through them over time, but eventually the shoe will drop," he said.

THIS WINDOW OF OPPORTUNITY

For players like Engie México, however, the iron is hot and ready to strike, with Ludlow telling Miranda Intelligence actions the government can do now to make the most of the strategic partnerships it's begun to embrace.

Firstly, as Ludlow stressed earlier, is the need to boost domestic natural gas production and storage, something that projects like Pemex's new strategic partnerships with NFE at the Lakach deep-water field stand to improve.

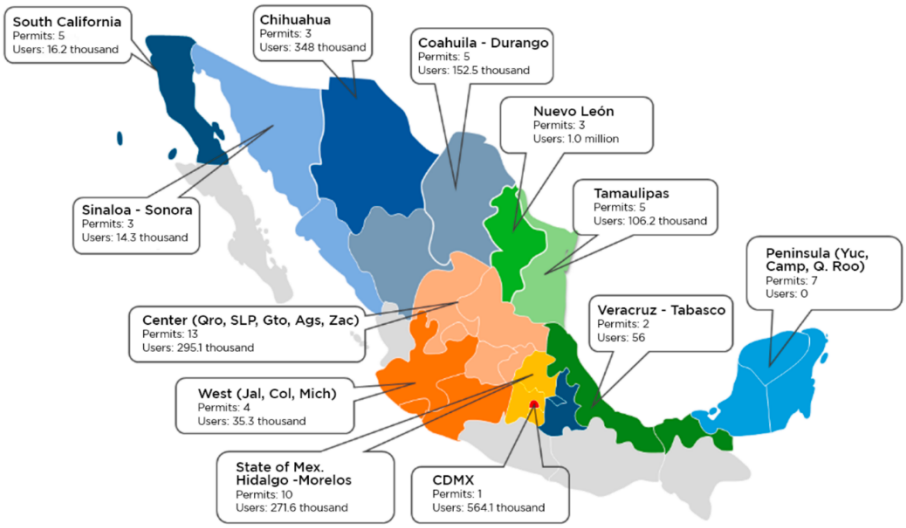
However, as Alma Ámerica Porres Luna, a veteran regulator on Mexico's hydrocarbons commission CNH has been arguing, Mexico needs to come to terms with the untapped NG bonanza in the Burgos Basin south of Texas that would require hydraulic fracturing, or fracking, to access. This is a process "outlawed" by AMLO but not in fact yet made illegal despite various efforts since 2018 from lawmakers in the president's own Morena Party and the majorities in both houses of Congress they hold.

In 2013, the U.S. Energy Information Administration ranked Mexico as having the world's sixth largest shale reserves estimated at 545Tcf (trillion cubic feet), nearly as much as the US' estimated 665Tf3. Build in massive LNG infrastructure in the Gulf of Mexico and on the Pacific coastline, and North America becomes the go-to source for energy as needed in the event of disruptions like that caused by Russia's invasion of Ukraine.

And yet, these resources remain untapped, held back by factions of the ruling party that refuse to allow fracking in Mexico.

Beyond this, said Ludlow, Mexico has to loosen the reign on midstream permits, to allow the private sector to invest in infrastructure. This would provide resources that CFE and the federal government simply do not and will not possess in the immediate future but will be required to meet the rising demand to come with Mexico's expanding population and the industrial expansion to all reaches of the nation that the president has himself champions.

Ludlow presented the following graphic in San Antonio to demonstrate the near vacuum of natural gas distribution permits in place through Mexico.



Beyond this, said Ludlow, “There has to be an alignment between the three tiers of government [federal, state and municipal] so that all three are committed to the mass expansion of natural gas usage.”

“The benefits here are huge,” she added, “Not only for household users, but also for the industry, as this would require an alignment for the permitting process.”

Ludlow said firms ready and willing to engage in natural gas projects face a barrage of permitting hurdles coming from every level of government and multiple agencies potentially requiring their own separate approval processes at each of these tiers.

Ana Ludlow, Engie México

She said, however, that “regardless of where you want to build a gas infrastructure” the requirements are almost the same for each of these entities, and ultimately, it could all be handed through a single process, if each of these bodies were compelled to coordinate with one another.

A “one-stop permitting shop” could take every requirement asked of natural gas firms and put them into a single list of requirements, creating a pool of documents that can be accessed by federal energy sector regulator CRE, the hydrocarbons environmental agency ASEA, or even Mexico’s archeology and anthropology authority INAH – any and all agencies under any and all circumstances, to allow each of the agencies work at once and produce rulings as quickly as possible.

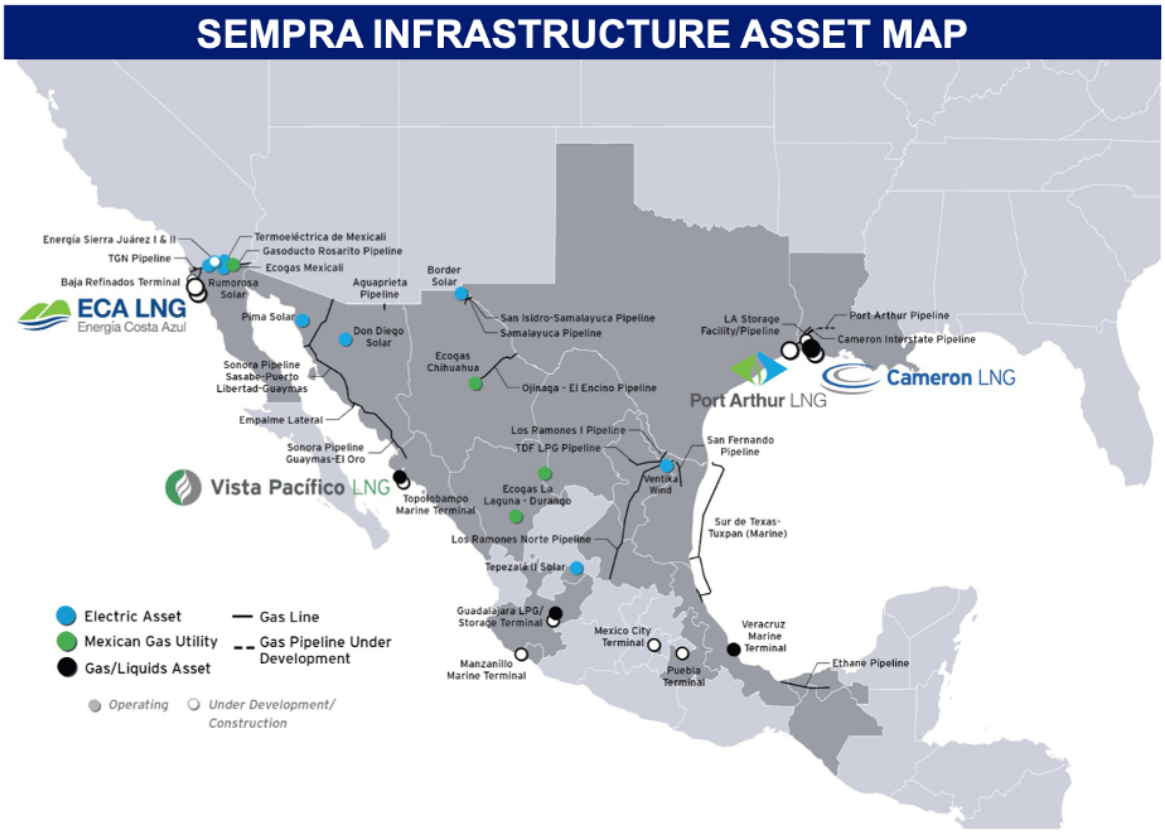
This however, “has to be defined with the energy policy,” added Ludlow. The administration needs to set this in stone now with the arrival of these major strategic partnerships, and more so with the government’s new commitments announced at COP 27.

“The definition of this policy has to be explicit and extend to all sectors,” she said, adding the resulting alignment in project development would have a remarkable impact in the economy and in financial markets.

“It’s been 20 years since this market open, and yet with natural gas there’s been no significant growth,” said Ludlow, “This could go a long way in lighting the fuse.”

The strategic alliances moving Mexico's natural gas market

- **SEMPRA INFRASTRUCTURE: Energía Costa Azul LNG (ECA LNG)**



Situated on a scantly populated stretch of coastline between Tijuana and Ensenada, Baja California state, Sempra Infrastructure's (SI) Costa Azul project is the farthest advanced LNG venture under development in Mexico, with FID made in 2020 for the first phase, a 3MTPA (million tons per annum) single-train LNG liquefaction facility with an initial offtake capacity of approximately 2.5 MTPA.

In late 2020, Mexican government conditioned the permit for the company to export LNG from Mexico on a commitment to helping CFE reduce its unused natural gas capacity and extend supply to geographically isolated Baja California Sur (BCS), on the lower half of the Baja California Peninsula.

This "We give you a permit, you do us a favor", quid-pro-quo interaction with the authorities would prove to be a harbinger for how subsequent strategic partnerships

have come to fruition, with close engagement and commitments to listen to the government's needs and help state-owned energy companies bridge gaps in Mexico's natural gas infrastructure.

The next year, SI announced plans to develop a second LNG liquefaction unit near its liquid hydrocarbons storage terminal in Topolobampo in Sinaloa state, on the eastern edge of the Gulf of California, called Vista Pácifico LNG, a single-train liquefaction unit for export of about 3.5 MTPA once in operation. In July 2022, SI went further to formalize its partnership with CFE to establish the framework for an out-and-out joint venture between the companies at Vista Pácifico.

The deal requires the restoration of service provided by the Guaymas-El Oro pipeline – requiring the parties to resolve an entrenched conflict with the indigenous Yaqui population that interrupted service in 2017.

The president, who touts considerable support among Mexico's indigenous peoples, would presumably be very involved with any resolution on the matter, with López Obrador on past occasions saying a re-routing of the pipeline might eventually be needed with the solution.

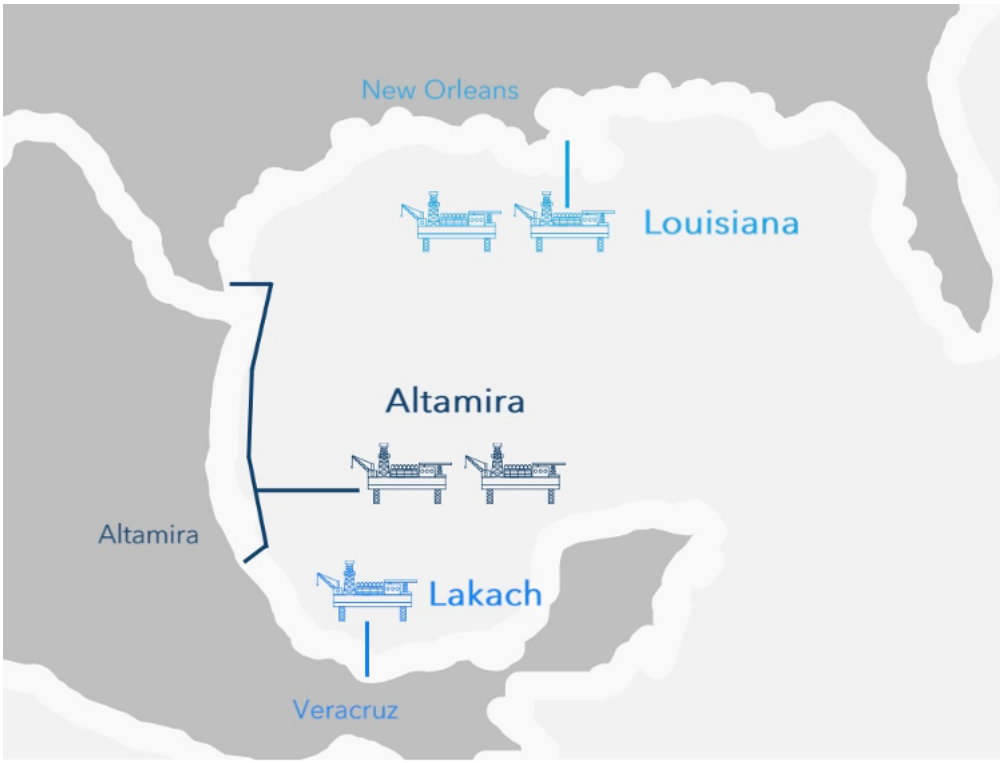
In addition, the companies expanded a memorandum of understanding (MOU) signed earlier in 2022 to jointly explore the potential development of an LNG terminal in Salina Cruz, Oaxaca. This would be in support of the government's Interoceanic Corridor in the Isthmus of Tehuantepec (CIIT) project, which is intended to promote economic growth and development of Mexico's southern and southeastern states.

These development projects would also theoretically help CFE make use of unused capacity, providing additional sources of LNG supply for isolated markets in Mexico and expanding LNG exports for the global market.

These development projects, together with the rerouting of the Guaymas-El Oro pipeline, remain subject to a number of commitments to be satisfied, including, as applicable, feasibility studies, reaching definitive customer, construction and partnership agreements, securing all necessary permits, obtaining financing and incentives, receiving respective board approval, and reaching a final investment decision.

The real test, however, will be whether Mexico has adequate pipeline infrastructure and correctly positioned capacity to properly support projects, particularly Vista Pacífico. This is a common doubt heard among attendees speaking to Miranda Intelligence at the gathering, and at least one forum speaker Eduardo Prud'homme, co-head of Mexican energy consultancy Gadex, told the audience he doesn't think it can.

- **NEW FORTRESS ENERGY (NFE)**



US-LNG player New Fortress Energy (NFE) turned industry heads in July announcing two deals on projects in the Gulf of Mexico, that marked a significant expansion in the firms Mexico operations, previously limited to its facilities near La Paz, BCS. One meant Mexico may soon become one of the world's largest exporters of LNG, albeit fed in large part at least by gas extracted on the US side of the border; the other that national oil company Pemex had foregone the oil & gas round-structure enshrined in the constitution with 2013 energy reforms to hand a US firm known mainly for its LNG processing and gas-to-power a potentially lucrative deal to restart its mothballed deep-water development in the Lakach field located 131 km northeast of Coatzacoalcos, Veracruz.

The final agreements finalized November 21 in Mexico City involved a three-part deal.

The first part begins with the sale of NFE's 135 MW gas-to-power plant in La Paz, BCS, to CFE, helping the state utility ease shortages without relying on coal, diesel

or fuel-oil burning thermoelectric capacity. This plant, fed by NFE's LNG regasification terminal it had opened July 2021 in the port of Pichilingue, just outside of La Paz, a feeder for multiple CFE power generation facilities in Baja California Sur.

The second and third aspects entail LNG development in the Gulf of Mexico. NFE is launching five new facilities within the Gulf of Mexico, two on the US side off the coast of Louisiana, two others with Pemex at the Lakach field and one other just offshore at the Altamira O&G and petrochemical hub near Tampico, Tamaulipas state.

At Altamira, NFE will deploy two 1.4 MTPA LNG platforms that feed from CFE's existing firm pipeline transportation capacity from TC Energy's Sur de Texas-Tuxpan Pipeline to deliver feedgas volumes for export by NFE. The firm sees the Altamira project helping CFE subsidize the underutilized pipeline capacity coming off the Sur de Texas-Tuxpan and gives the utility access to premium global LNG prices with an estimated economic impact to CFE on US$4 billion.

All-in-all NFE's five 1.4 MPTA LNG projects in the Gulf amount to about 7 MTPA in added export capacity, all set to turn on over the next 20 months, "which is 60% of the expected LNG [worldwide] to come online in the next five years," said NFE's CFO Christopher Guinta told Forum attendees.

At Lakach, NFE has agreed to help PEP complete 7 wells in addition to assembling the offshore gas processing facility and the two LNG platforms in hopes of eventually reaching 3.5 Tcf (trillion cubic feet) of NG in potential resources at Lakach, when paired with nearby gas reserves. The project helps to boost local production of natural gas, which will be transported to shore to Pemex facilities, and for export, with NFE feeding exports to needy regions like Europe from the offshore complex directly abroad, with Guinta saying the Lakach LNG facility would be complete by April 2024.

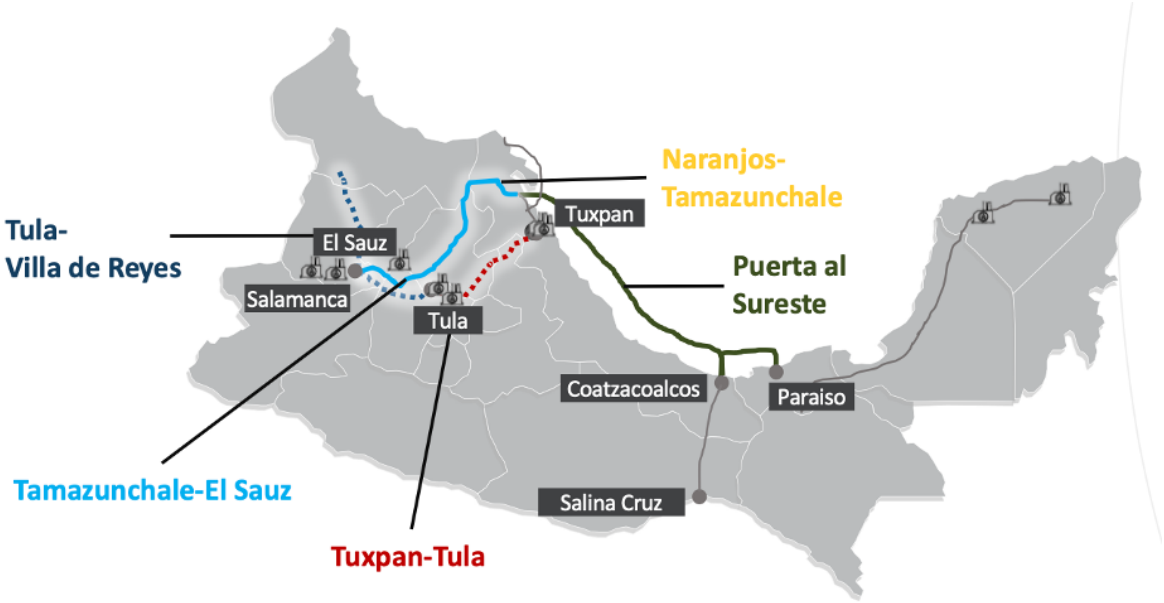
In early November, Mexico's hydrocarbons regulator CNH gave the greenlight on Pemex's revised plan to restart development at the Lackach field with CFE. It approved the expanded plan targeting total investment of US$1.79 billion, higher than earlier estimates of US$1.50 billion, with the national oil company revealing its exploration and production unit PEP has already poured US$1.062 billion into the project.

Discovered in 2007 and considered a potential game-changer for the natural gas-starved states in Southeastern Mexico, Lakach is one of the largest non-associated natural gas discoveries ever made in Mexican waters, located about 131km from Coatzacoalcos on the Veracruz coast. The play has probable (2P) natural gas reserves of 937 Bcf (billion cubic feet) with total original gas in play of 1.1 Tcf (trillion

cubic feet), and NFE in its July announcement notes the potential for much more gas development in the same part of Gulf of Mexico, adding, “Coupled with nearby undeveloped fields Kunah and Piklis, the area has a total resource potential of 3.3 Tcf and comprises one of the most significant undeveloped offshore gas resources in the Western hemisphere.”

The project faces some speculation that Pemex’s lack of experience in deep-water contributed to its inability to get Lakach of the ground, though crashing global oil prices in 2015 and 2016 certainly played their part. NFE, as well, has had little experience on the extraction side of the equation, much less in bringing to bear the highly complicated technology required in deep-water projects.

- **TC ENERGY**



Long-time collaborators with CFE, Canada’s TC Energy also got in on the strategic alliance bonanza this year to hammer out a deal for critical pipeline supply to the southeast and to the CIIT trans-isthmus project, reaching a deal in August on the development of the US$4.5 billion Southeast Gateway Pipeline, a 1.3 Bcf/d (billion cubic feet per day), 715 km offshore natural gas pipeline to serve the southeast region of Mexico with an expected in-service date by mid-2025.

The project will be TC Energy’s second marine natural gas pipeline in Mexico, connecting to the coastal regions of Veracruz and Tabasco, originating onshore in Tuxpan, Veracruz, then going offshore, making landfall at two spots –

Coatzacoalcos, Veracruz, and Dos Bocas, Tabasco. The project is hoped to go into operation by 2025.

The deal had the additional merit of requiring all parties to put aside previous disputes and allowed for the completion on the north section of the Villa de Reyes pipeline (VdR North) and the east section of the Tula pipeline (Tula East).

The Calgary-based energy developer looks to confront some level of resistance on the project from local and environmental groups, but benefits in this case of having the blessing of the López Obrador administration, which has been able to punch through similar opposition on other mega-projects launched during his presidency, like the Train Maya project.

MIRANDA INTELLIGENCE

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