LNG-to-power in Brazil and GNA I

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An SPV comprising Prumo Logistics, BP and Siemens reached financial close at the end of March on the development, construction and operation of an LNG-to-power project located in the Brazilian state of Rio de Janeiro, part of a trend in the country's power market where there has been a surge of these types of projects.

The companies created the SPV - UTE GNA I Geração de Energia (commonly called GNA I) - to implement the thermal power complex in the Porto do Açu region.

Historically, Brazil has always peaked the interest of international investors but faced three main obstacles:

- most projects are contracted in local currency, thus requiring financing in Brazilian reais
- the large presence of BNDES as a main competitor to commercial banks
- the country is not investment grade or part of Organisation for Economic Co-operation and Development (OECD)

The LNG-to-power project has found a way to involve international investors while still abiding by the requirement of financing in Brazilian reais. The debt providers were a development bank and a multilateral institution - BNDES and IFC but the BNDES loan was guaranteed by KfW IPEX-Bank with support from German ECA Euler Hermes Aktiengesellschaft.

Aside from the financing aspect, LNG-to-power projects are here to stay in Brazil. The gas-fired plants are seen as the best complement to the large number of renewable projects currently under development in the country.

Julie Marin, IFC investment officer, infrastructure sector, said: "This (GNA) is a very large project that got a lot of attention. With a technology relatively new, there are very few LNG-to-power projects around the world, especially with the same characteristics and same flexibility as GNA. It will allow displacing coal power production. Gas is more efficient, cleaner, and provides a stable base-load to the system, enabling further development of renewable projects."

The project should not be confused with the 1.338GW UTE GNA phase I which is also using the same name as the SPV, GNA I. The same SPV is currently raising financing for this second phase of the project.

Many believe that the structure used on GNA I will open doors for commercial banks to get involved with GNA II.

The financing

The project's total costs are estimated at around $1.2 billion, with the GNA I financing package including a US$288 million 15-year loan with World Bank's IFC, and a R1.76 billion (around $475 million, at the closing of exchange rates) with BNDES.

Although IFC's loan agreements are denominated in dollars, the client will receive the amount in Brazilian reais, with the exchange rate from the date of disbursement. GNA is liable only for the amount in local currency, without being exposed to currency risk.

The loan from BNDES is covered by ECA guarantees, which means that the Brazilian development bank is not exposed to project risk.

Traditionally, ECAs are not allowed to cover development banks loans. In this case, KfW backed the financing from BNDES, which in turn was supported by Euler Hermes. Euler Hermes covered 95% of the risk, while KfW acted as an intermediary, covering the remaining 5% and structuring the guarantee scheme.

The guarantee transaction is in relation to a contract with Siemens, which will provide the turbines for the gas-fired plant. This will be the first application for Siemens H-class gas turbines in Brazil.

Siemens has also secured a contract for the turnkey construction of the plant, in a consortium with Brazilian construction company Andrade Gutierrez. Additionally, it will provide long-term O&M services for the power plant.

Lakeshore Partners was financial adviser.

Legal advisers on the financing included:

- Pinheiro Neto
- Milbank
- Souza Melo Torres

The project

The financing package will fund the development, construction and operation of an integrated liquefied natural gas to power (LNG-to-power) facility in Porto de Açu.

The SPV split comprises:

- Gas Natural Açu (GNA) – 67%
- Siemens Energy and Siemens Financial Services – 33%

GNA is owned by:

- Prumo Logistics – 70%
- BP Global Investments – 30%

The GNA I project is expected to start commercial operation in 2021. It comprises an integrated 1.3GW CCGT power plant, an LNG import marine terminal, a transmission line, and the expansion of an existing substation.

The plant will be linked to Brazil's electrical grid (SIN) and capacity and energy will be sold under regulated PPAs executed with 36 distribution companies. These PPAs were originally awarded to Bolognesi Group in a competitive bid, and fully transferred to GNA in late 2017.

The project is part of the largest LNG-to-power complex in Latin America, in the São João da Barra municipality, in the state of Rio de Janeiro. The 90 square km -complex is owned by Porto do Açu Operações, a company 98.8% owned by Prumo.

The SPV plans include the construction of a second gas-fired power plant, which would take the project to a total installed capacity of 3GW.

LNG-to-power in Brazil

The Brazilian oil & gas sector has suffered in recent years, with low international oil prices as a result of the corruption and political crisis involving Petrobras. However, the country has massive reserves yet to be developed.

Facing relatively high electricity prices, high dependency on hydropower (which represents around 70% of the power matrix in the country), and huge quantities of gas, Brazil has seen a boom in LNG-to-power projects.

There are at least eight projects currently under development or planning in the country. While GNA is considered as one project, it encompasses nearly four different plants.

Specialists in the country say that the prohibition of burning flair gas in Brazil, when producing oil, and low gas prices internationally, will encourage oil & gas companies working on the Brazilian coast bid as sponsors on LNG-to-power projects. Their involvement will be to provide cheap (almost for free, some would say) gas to the power plants.

GNA I was the second LNG-to-power to reach financial close in Brazil. The first one was Porto de Sergipe I, from Centrais Elétricas de Sergipe (Celse), which closed a R5 billion ($1.5 billion) financing package in 2018.

Some new projects under development or being studied include:

- Rio Grande (Rio Grande do Sul state) – 1,238MW project from Bolognesi Energia, under negotiations with Spanish Cobra, which would move the project to Ceara or Bahia states
- Santa Catarina – Project from Porto Brasil Sul, RBE Comercializadora de Energia, and Ponte Nova Energia Serviços (PNES)
- Vale Azul – from Marlim Azul consortium (Shell, Patria Investimentos) and Mitsubishi Hitachi Power Systems
- Novo Tempo Barcarena (Para state) – 1,600MW from Celba (centrais Eletricas de Barcarena)
- Amazonica (North region) – from Amazonica Energy

- Peruibe (in Sao Paulo state) – 1,700MW from GasTrading
- Comperj – Petrobras is studying the transformation of the petrochemical complex into an LNG-to-power plant
- Joinville (Santa Catarina) – Engie negotiates a partnership with Golar Power to build an LNG terminal to fuel its 600MW project

Conclusion:

Some of the LNG-to-power projects currently under study in Brazil are in competition even though they are in different locations, all because they will connect to the national grid.

Some argue that there is no space for so many thermal power plants, which will drive fierce competition in the next power auctions to be held by the ministry of mines and energy (MME). Without securing PPAs, the fear is that most of these projects are unlikely to become a reality.

GNA I and GNA II have PPAs guaranteed. The SPV is preparing GNA II and GNA IV to participate in the next power auctions.

GNA currently has an advantage over competitors to develop the second, third and fourth phases of the project. With all located in the same space, scale might play a greater role in the projects' competitiveness.