

EXHIBITOR: **Air Liquide** STAND: O250

Obtaining a shorter return on LNG investment by targeting niche markets

Ravi Bhamidipati, Director, Business Development, and Oriane Farges, LNG Product Manager for the Americas, provide a view from Air Liquide Engineering and Construction of the small scale LNG market

The market for LNG projects, of varying scale, is very promising. Natural gas is considerably cheaper than other energy sources such as gasoline and diesel. Its environmental advantages and cost effectiveness has enabled LNG to be used in areas such as the fueling of high horsepower engines (for vehicles, ships and rail), industrial applications, remote power generation, virtual pipeline and monetising stranded gas. Because of these advantages, it has partially or completely displaced other less efficient and more costly energy sources.

With both small and large scale LNG projects, the key is to have the optimal technology offerings and an efficient execution model. Air Liquide offers a comprehensive and unique suite of technologies for LNG liquefaction which are adaptable for small and large scale applications. We offer process licensing, engineering and procurement services for both small and large scale LNG projects.

While large scale LNG projects cater to the export market, small scale LNG projects target niche markets such as remote power, transportation and peak shaving applications. With significantly lower capital expenditure requirements, shorter installation times, supported by short-term offtake contracts, developers can obtain a faster return on their investment.



Ravi Bhamidipati



Oriane Farges

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Air Liquide’s Turbofin™ technology is well suited to small scale plant (those with a

capacity of up to 0.25 million tons per year). It is a process for the liquefaction of natural gas based on a nitrogen refrigerant cycle, provided as a fully standard and modularised plant. Its flexibility enables the delivery of a cost competitive plant within a very short delivery time.

Regardless of the size of plant, a vital aspect of LNG project development and operation is ensuring adherence to the highest standards of safety. Like most industrial facilities

where hydrocarbons are handled, an LNG plant presents inherent safety hazards such as flammability and handling of a cryogenic liquid. However, only the vapour form of natural gas, which is not toxic, is flammable and its ignition temperature is much higher than other fuels. When spilled over water, it vapourises quickly and does not leave any residue.

LNG has the best safety record of all common hydrocarbon fuel types such as gasoline, propane, and diesel. Air Liquide puts safety as its first priority in all its activities. With its extensive experience of designing and operating cryogenic facilities globally, Air Liquide’s LNG safety standards combine the most stringent rules from both the cryogenic and natural gas worlds. Turbofin’s ease of use and its use of a non-hydrocarbon refrigerant, improves its safety, adding to its attractiveness as an option for developers of small scale projects.

