

# Carbon Neutral LNG Offerings Emerge as Competitive Advantage

LNG sellers are preparing proposals for carbon neutral LNG supply as more buyers are committing to additional environmental and sustainability measures. These buyers are said to be keen to work with LNG sellers that have the best carbon emissions management, while sellers that do not have the capability might be excluded from further discussions.

The sellers are either investing directly to produce offset credits or offering to be the intermediary for the buyers looking to identify credible projects. The capability to provide carbon emissions management for LNG buyers would also become a revenue stream for the LNG sellers. Sellers are offering buyers a service that ensures sufficient carbon offset credits are provided for the tenor of the LNG supply contract and that these are verified as being of the highest quality, permanent and of benefit to local communities.

The prevailing view is the measurement, reporting and verification of carbon emissions could become part of annual delivery program discussions. Producers and portfolio players would have to create a separate master agreement for carbon neutral solutions in addition to the LNG sales and purchase agreements (SPA) they sign. It would have its own set of terms and conditions, although it would have ties to the supply SPA, sellers may want to structure it to have such that there may no cross default between the two.

The carbon offset solution would most likely be a separate and complex negotiation, as such offerings would be tailor made according to each buyer's preferred options of carbon offsets or even locations of the projects producing the credits. The seller and buyer would also have different regulatory obligations for emissions accounting. The seller must provide remedies if there are problems supplying or maintaining the quality of the verified carbon offsets later.

Buyers need to decide what emissions need to be offset in the agreement, such as those from upstream gas production through to liquefaction of a cargo, shipping, storage and even gas consumption. Buyers are most interested in offsetting emissions for gas production and liquefaction, while shipping offsets can depend on whether the cargo is FOB or DES.

The common offset solutions would be verified emissions reduction credits produced by nature-based, community-based and renewables projects. There are also carbon capture and utilization projects, although these are more capital intensive than the others. Such projects often also have other sustainability benefits, mainly related to the local communities and environment, which buyers can take into consideration when choosing methods to produce the carbon offset certificates.

## No industry body or guidelines

There is no industry body that has been set up to produce guidelines for the measurement, reporting and verification (MRV) requirements for carbon emissions of an LNG cargo and carbon neutral LNG SPAs. Energy companies have voluntarily provided grants for third-party scientific studies to build knowledge about value chain emissions. However, what is now voluntary emissions data reporting could become an obligation when regulations change as governments pledge more climate change efforts.

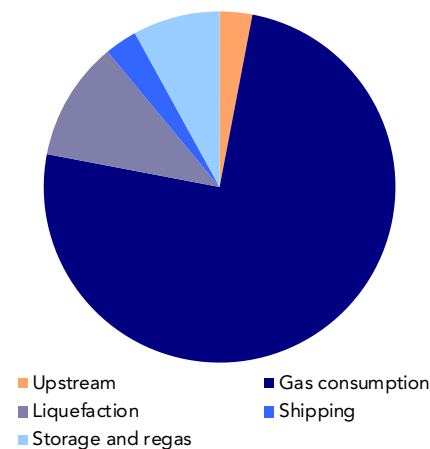
Sellers' main concerns are finding ways to reduce LNG production carbon emissions over the long term, as buyers may increasingly look for supply that has the lowest levels, along with considering contract price and other conventional aspects of SPAs. In the future, if regulations change, sellers could be asked by buyers for MRV of carbon emissions of

their supplies for existing LNG sales and purchase agreements.

Regulatory policies vary across the countries on what is accounted for along the chain of production, shipping, and consumption of LNG. Regulations for greenhouse gas emissions are constantly evolving, and governments could start regulating cross-border carbon emissions. Some governments are paying subsidies for creating carbon sinks and carbon dioxide sequestration facilities, and such subsidies are likely to be on the rise.

Total carbon emissions of a standard LNG cargo would be an average of 250,000 tCO<sub>2</sub>e (tons of carbon dioxide equivalent) for a 3.5 Tbtu to 4 Tbtu cargo, when it is based on life-cycle emissions, according to data from industry sources such as International Group of Liquefied Natural Gas Importers. From upstream production to delivering a single cargo, carbon emissions are estimated to be above 50,000 tCO<sub>2</sub>e. The cost for carbon offsets varies depending on the sources and prices for traded offsets, which are driven by supply and demand expectations. At \$10/tCO<sub>2</sub>e, life-cycle emissions of a 3.5 Tbtu to 4 Tbtu cargo would cost \$2.5 million for the end-user. When expressed as a percentage, burning the gas would account for three-quarters of the emissions, while gas production and liquefaction is roughly 15%, shipping is at least 3%,

Carbon emissions in LNG - %



and regasification is closer to 5%. LNG storage would make up the rest at 2-3%.

### Buyers ask for offset solutions in recent deals

Buyers in Japan, Korea, Singapore, and Thailand have asked suppliers for their carbon offset solutions in negotiations for supply. The first of such cargoes in Asia were one-off deals. Shell reported five carbon neutral LNG cargoes sold to Northeast Asian buyers since the first two cargoes to Tokyo Gas and GS Energy last June. Shell sold two cargoes to CNOOC in June and one to CPC in March. Offsets were produced from Shell's nature-based projects on the cargoes which had 240,000 tCO<sub>2</sub>e to 260,000 tCO<sub>2</sub>e each.

Jera sold a carbon-neutral cargo purchased from Adnoc and delivered into India in the same month. For this cargo, Jera sold the cargo and the equivalent offsets for carbon emissions related to gas consumption in India. While others are just getting started, Shell has built a portfolio of nature-based projects that are producing certified carbon offsets as part of its target of becoming carbon neutral by 2050. These offsets are being marketed to its customers and traded. Its nature-based offsets are sourced from conservation, afforestation and reforestation projects in several countries such as China, Peru, Africa, India and Indonesia. Natural gas is half of Shell's total energy production last year.

More buyers are preferring to run supply tenders to secure multi-year supply and in the foreseeable future, sellers would

also be competing on the best carbon offset solutions as part of the process (see **LNGWM Midmonth**, Aug'20). The LNG supply tender for Pavilion Energy asked for a GHG reporting methodology that is determined under a separate mutual agreement for the contract that would be five years, with an extension option for another five years (see page 13). Pavilion and the seller will have to agree to the overall methodology of the measurement of the GHG emissions of every cargo from the base supply source to the loading facility in Singapore.

### Bowing to shareholder pressure

Energy companies are publishing their carbon emissions reduction targets in their corporate social responsibility reports as part of voluntary sustainability commitments. Already under pressure with a negative economic outlook and a broader view of lower-for-longer oil prices, energy companies must outline their long-term plans to reduce carbon emissions in their portfolio of assets to please certain groups of shareholders and lenders. Several listed energy companies took the opportunity to make announcements on their carbon neutral strategies to make up for an expected anaemic second-quarter earnings season.

There is more than one way to present the carbon emissions data and a closer look shows that companies have taken different approaches in trying to meet the various standards for reporting carbon emissions. For example, the emissions in joint ventures, especially those without operatorship, could be excluded,

or included, depending on corporate policies.

Energy companies are creating their own carbon intensity reduction goals that best fit their expected capital cost allocation towards renewable projects. In general, however, the motivation is to report higher emissions data now, so that it is easier to show reduction over the years, while public commitment for long-term targets should only be made when management is confident they could be met at reasonable cost estimates. The common goal seems to be divestment of carbon-intensive oil and gas production and investment in renewable energy for carbon offsets.

BP announced a plan on July 23 to reduce its oil and gas production by 40% and will not carry out exploration in new countries, while increasing its investments in renewables, hydrogen, and bioenergy. Its targets are a 30-35% reduction of CO<sub>2</sub> emissions in 10 years' time for its operations, and 35-40% in its oil and gas output by 2030.

Cheniere issued its inaugural corporate responsibility report in July. It reported a decline in its unit carbon emissions since it began production in 2016, from 6.99 CO<sub>2</sub>e/MMcf to 4.67 CO<sub>2</sub>e/MMcf in 2019 under Scope 1 greenhouse gas (GHG) emissions intensity standards. These are emissions from owned or controlled sources of energy, according to the US Environmental Protection Agency. Cheniere operated two liquefaction trains in 2016 and seven trains in 2019.