# THE FUTURE OF GAS-TO-POWER PROJECTS

**AS GLOBAL DEMAND FOR POWER CONTINUES TO GROW, SO TOO DOES THE NEED FOR NEW APPROACHES TO PROVIDING SUCH POWER. THERE ARE A NUMBER OF REASONS WHY GAS-TO-POWER PROJECTS SHOULD BE AN IMPORTANT PART OF THE SOLUTION TO MEET THIS GLOBAL DEMAND. HOWEVER, THE PACE OF SUCH PROJECTS REACHING THE MARKET HAS BEEN MUCH SLOWER THAN MANY EXPECTED. BY MATTHEW BROWN, PARTNER, LATHAM & WATKINS.**

Recently announced projects provide hope that the deadlock gradually is breaking. Participants are increasingly optimistic that projects will be realised around the globe – adding to the list that have already been successfully financed. So, what is the future for these projects and what can we expect in 2019 and beyond?

## Key drivers for gas-to-power

Over the past 24 months, many potential gas-to-power projects have been announced around the world, including in Bangladesh, Chile, Indonesia, Myanmar, Pakistan, South Africa and Vietnam. A number of global trends and market changes have led to this new wave of announced gas-to-power projects.

First, ever-increasing global demand for power, particularly in emerging markets – where existing generation capacity continues to be insufficient to meet the needs of domestic and industrial users – has created a need for rapid deployment of large capacity generating units beyond what feasibly can be met by renewable energy sources alone. Even relatively conservative forecasts suggest that global electricity demand will increase by more than 50% over the next 25 years.

A fall in liquefied natural gas (LNG) prices over recent years – coupled with significant new supply becoming available from both existing market players and new market entrants including those that will come on stream over the next few years in Australia, Canada and the US – has substantially changed gas pricing and supply metrics. LNG supply is set to more than double over the next 20 years, met by a corresponding increase in demand – particularly in the Far East.

At the same time, environmental and social factors also play into the equation. Combined-cycle gas turbines generate far less pollution and greenhouse gas emissions than other traditional thermal projects, coal or diesel.

This allows countries to work towards a cleaner energy mix by incorporating gas-to-power projects in an overall portfolio that includes more intermittent power generation sources such as solar or wind – the ability of gas-fired projects to respond quickly to changes in load on the grid being particularly attractive in locations with a high proportion of renewable energy.

In addition, global credit providers such as export credit agencies look upon these environmental credentials favourably, and continue to encourage and support the financing of lower carbon emitting power projects. Many commercial banks have announced that they are no longer able to support coal-fired projects, providing an additional boost to gas-to-power projects.

Advancements and innovations in technology also are key, particularly floating storage and regasification units (FSRUs), which provide an efficient solution for the development of gas-to-power projects using LNG.

Many of the gas-to-power projects being considered incorporate an FSRU rather than more traditional onshore regasification facilities. FSRUs carry many advantages, including that they can be built offsite and readily transported to the location of the project with a reduced construction time and cost, and with potentially less risk than an onshore development - particularly if onshore development may encounter issues such as increased security or permitting risks.

Finally, geographical considerations are also a factor. Unlike pipeline gas, LNG can be redirected to different parts of the world based on regional demand, including where domestic gas reserves may be depleted.

A number of the gas-to-power projects that have been announced are looking to deliver gas and power to regions where domestic gas reserves, or other fuel sources, are dwindling. The increasingly diverse sources of supply for LNG are also very attractive to many host

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governments – providing an alternative to inflexible supply via a single gas pipeline.

### Applying the brakes

The above factors, while far from an exhaustive list, would be expected to lead to a wave of projects reaching financial close across many markets. However, the number of projects that have reached financial close is still very small and a number of announced projects have stalled or moved much more slowly than expected.

The reasons for this slow progress differ markedly from project-to-project and region-to-region. A significant contributing factor has been political considerations – many countries in which rapid development of gas-to-power had been forecast have experienced slower progress after changes in government or as a result of uncertain political risk following the announcement, or holding, of local elections.

In other locations, changes in policy - including with respect to availability of government guarantees or other state support - have meant a slowdown while new solutions are found and new structures considered.

Elsewhere, the lack of willingness or ability to change laws, regulations, or policies has resulted in projects encountering difficulties.

This has included, for example, countries where minimum local ownership requirements for aspects of the gas-to-power chain - eg floating infrastructure - or involvement of regulated monopoly government-owned entities in the required value chain - eg power sellers or buyers of petrochemical imports - provide limits to aspects of the project.

Other projects have been hit by less sector-specific issues, such as permitting or other process issues or a lack in the market of creditworthy offtakers to support a financing.

In many countries, gas-to-power projects straddle separate government departments - eg gas ministry and power ministry - meaning that such projects essentially face twice the level of oversight and regulation, plus the risk of inconsistency in policy. For example, the power ministry may want the developer to take the risk of supply of LNG but the gas ministry may wish a state-owned company to maintain its monopoly over the import of gas.

For gas-to-power projects proposed in developing economies, the focus – in terms of making these projects economically feasible – will continue to be on those entities that represent the weakest link and the legal systems that support their payment obligations. Typically, the entities that cause the biggest bankability concerns are domestic entities involved in the offtake of the LNG/gas or the power purchasers, whether commercial or the end-consumer.

Although there are structural solutions that can provide or enhance credit support, these solutions come at a cost. These costs can include the tariff charged by the LNG/gas suppliers, the fees charged by lenders, or the cost borne by domestic consumers in the form of increased electricity charges or higher taxes.

In most cases a political choice on how this cost is allocated will be necessary, requiring governments to make hard political choices. In the OCTP transaction in Ghana - a non-integrated gas-to-power project - for example, the government needed to (a) procure a World Bank partial risk guarantee to support the payment obligations of GNPC as the offtaker of gas to ensure gas supply for the power projects, and (b) provide a back-up guarantee of the obligations of GNPC.

### Realising projects

Notwithstanding the above issues, many projects are continuing to come to market and more projects are being successfully financed – including the recent project financing for the Jawa 1 project in Indonesia. This followed the financing of the Penco Lirquen project in Chile in 2016. Both projects, while differing in some respects – including in respect of funding arrangements – were integrated models and provide solid templates for future similar projects around the world.

Notably, these templates offer creative solutions and mitigants to some of the above mentioned issues. When regulations dictate that certain assets in the gas-to-power value chain must meet certain criteria - eg have a minimum local ownership requirement or be available on an open access basis - structures have been developed to split ownership among different ownership entities, while maintaining a model that permits financing of an entire project on an integrated basis.

### Partnering up for success

At the same time, we also are seeing a strong push to more vertical integration of the entire gas-to-power value chain. A number of LNG suppliers, including for example Qatar, have announced and activated plans to partner with other participants in the development of gas-to-power projects, eg power developers, other governments and government utilities, contractors etc.

From the LNG supply side, vertical integration can be a way of creating additional routes to market for LNG above and beyond more traditional buyer options. Similarly, power developers are becoming involved in the regasification elements of these projects. This move to more vertical integration aligns interests along the overall value chain, and can result in effective partnerships that facilitate successful projects.

The Penco Lirquen project in Chile is one example of this, with sponsors representing the LNG supply and power development sectors working together to structure a project in which interests were aligned.

This approach can greatly support the bankability of such projects, particularly where

it can assist in reducing project-on-project risk. Other market participants including gas traders, ship building companies, LNG shipping companies and construction contractors have also expressed interest in this vertical integration approach – looking to partner with other participants to offer complete package solutions for delivery of power all over the world.

### The best structuring approach

Sponsors will need to continue to look at a range of factors for a particular project to decide whether to pursue an integrated - ie incorporating all of the key upstream gas extraction, midstream gas transport and downstream gas delivery/regasification and power generation components - or non-integrated - incorporating only some of such components - gas-to-power model or indeed a hybrid of the two approaches.

In general, the jurisdictional opportunities and challenges of a project likely will be a significant contributing factor in the chosen model and approach. While non-integrated projects may be appropriate in many jurisdictions - particularly those with specific regulatory restrictions and/or with certain parts of the gas-to-power value chain already well established - in other jurisdictions a more integrated model may be more appropriate and in fact may be the only option.

Sponsors' willingness to participate in parts of the value chain that are not their core business will also impact the selection of preferred model. In instances of such willingness, the benefits of vertical integration may favour an integrated approach. Similarly, if sponsors cannot, or are not willing to, participate in sectors outside their usual business – or in certain jurisdictions, cannot do so – a more non-integrated or hybrid structure may need to be considered.

Lenders will typically require all, or at least key, sponsors to retain all or a substantial portion of their ownership interest in the project until completion, and to preserve a significant percentage for a number of years following completion.

Following these initial periods, international lenders generally will lift the transfer restrictions and permit sponsors to transfer their interests – though qualification requirements, such as credit ratings, may apply. Structuring decisions will need to take into account these requirements – particularly if these minimum hold requirements apply across multiple elements of the value chain.

The overall complexity of a project will also drive structuring decisions. For example, if an FSRU and associated terminal will be multi-user, the introduction of third-party users creates a number of complexities that need to be considered as part of the bankability assessment, including allocation of storage capacity, scheduling, and priority and determining appropriate penalties for failing to comply with these obligations.

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In such projects, parties need to negotiate comprehensive usage arrangements to mitigate the associated risks. While the exact arrangements will be a function of items such as the applicable regulatory regime, needs of potential users, physical parameters of the FSRU/terminal and whether the project is structured as a tolling or offtake model, a number of templates have been successfully developed and financed and will provide guidance for future projects.

Financing considerations also will feed into this decision. Very few sponsors have the ability or the risk appetite to balance sheet-finance multi-billion dollar projects, meaning lender - including export credit agency - involvement is needed. Often, such lenders will have special considerations of their own, which must also be factored into the choice of project structure.

### 2019 and beyond

The initial wave of new gas-to-power projects was announced some years back and has progressed more slowly than was forecast at the time. The benefits of additional, reliable, and greener power are obvious in the long term, but certain issues – including political risk – provide barriers to the development of these projects and explain why the full potential of gas-to-power has not yet been realised.

A key challenge is determining how to balance the risks and rewards to achieve sufficient alignment for all entities involved – including sponsors, banks, multilaterals and governments.

Notwithstanding the various obstacles facing gas-to-power projects, creative solutions are being found to overcome them and projects are being successfully financed. In 2019 and beyond, there likely will be more growth in this sector as solutions continue to be found and templates that are demonstrably bankable become more widely used and adapted to meet remaining challenges.

We expect that a wide range of structuring outcomes will continue to be developed to address the needs of specific projects and locations, including hybrids of integrated and non-integrated models. These factors, coupled with the continued relevancy of all of the key drivers for gas-to-power, should mean that gas-to-power projects play an important role in the power generation mix well into the future. ■