THE DEMISE OF JOINT MARKETING AND RISE OF EQUITY LNG?

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ABSTRACT

New LNG projects in Australia and export facilities in various stages of development in North America were conceived using different LNG sales models to many legacy LNG supply projects. Examples of this sales model include the original commercial structure of the North West Shelf Venture and more recently the PNG LNG project.

Rules related to the lifting of LNG were governed by the LNG SPAs each venture had jointly with buyers. As such, there was only one interface to manage between the project and LNG buyers when setting the ADP for each LNG SPA.

With the advent of equity LNG lifting whereby JVPs individually offtake their equivalent share of production, what are some of the operational challenges for these ventures?

In this paper, Poten will discuss issues such as:

- How is LNG offtake governed so that equity LNG lifters receive fair and rateable access to their LNG cargoes?
- How equity LNG lifters manage their individual ADP negotiations with their buyer(s) and shipping issues for FOB buyers at LNG export terminals with equity LNG offtake arrangements.
- When the LNG plant is at full production how are excess volumes treated?
- Lifting and schedule issues and challenges related to upstream gas and pipeline capacity procurement faced by an LNG tolling customer in the US.
INTRODUCTION

Some recently started LNG projects in Australia and LNG export facilities in operation or under development in locations including North America were conceived using different LNG sales structures to those of traditional LNG supply projects. The original joint LNG sales structure of the North West Shelf Venture and more recently that of the various Qatari projects are good examples of the so-called joint sales model for LNG. The inaugural LNG commercial structure of the North West Shelf Project as at 1989 provides an illustration of the joint sales commercial model (Figure 1). This sales model was structured such that the LNG produced by the Joint Venture (JV) was marketed by the JV as a single seller with multiple buyers.

**Figure 1 – Single seller entity, multiple buyers (joint sales)**

In this structure the JV sells its produced LNG as one entity. In the case where there is an operator with a dominant shareholding, the marketing committee might be a subcommittee of the JV. However, in cases such as the North West Shelf Venture where there are six equal joint venture parties (JVPs), marketing of LNG is often conducted by an independent entity staffed with secondees from each JVP to – among other purposes – lessen the possibility of shareholder conflict.

The main theme of this paper is to discuss how ventures manage equity lifting of LNG and whether this structure may become the norm as the industry develops further with more final investment decisions (FIDs). However, it is first important to clarify what is meant by equity lifting or equity sales of LNG. In simple terms, an equity LNG structure in an integrated LNG venture where for each annual delivery program (ADP) cycle, individual JVPs are allocated a share of forecasted LNG production (inventory) that equates to their percentage shareholding in the venture. E.g. a shareholding of 30% in a 10 MMt/y facility would give the JVP 3 MMt/y of equity LNG to market.

**HOW IS LNG OFFTAKE MANAGED FAIRLY IN AN EQUITY LIFTING STRUCTURE?**

While equity lifting may be a common commercial structure in the oil industry it is relatively new to LNG. In September 2009 the Gorgon LNG project was the first LNG facility to take FID based on an equity sales structure (Figure 2). Given the production scale of the facility and the JVPs involved (major shareholders Chevron, ExxonMobil and Shell and minor shareholders Osaka Gas, Tokyo Gas and JERA) it might not be surprising to observers that equity lifting was the commercial structure chosen for the Gorgon project. However, while this commercial structure was attractive to the Gorgon JVPs, it introduced an increased degree of procedural

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*Figure 2 – Equity lifting structure (e.g. Gorgon)*

- Lifting in SPAs – no separate agreement
- Balancing in joint account management

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*Figures and diagrams are not included in this text version.*
complexity that took the venture some time to work through prior to the first LNG cargo setting sail for Japan in March 2016.

**Figure 2 – Multiple sellers means inventory emerges as a separate link in value chain**

Managing the allocation of inventory in an LNG equity lifting structure is critical to govern the behaviors of equity lifters in the JVP. SPAs and ship chartering agreements need to be consistent and back-to-back and coordination requirements are high. All JVPs want to be able to accurately predict when they will be allocated a cargo slot. In addition to being able to accurately forecast the timing of revenue from the sale of the cargo there are operational reasons that drive JVPs to seek this greater certainty. This is particularly in the case with Delivered at Place (DAP) sales where buyers may have to adjust shipping schedules, or secure additional shipping capacity, at the last minute to successfully offtake a given cargo.

For an integrated project with equity lifting a third party is typically established to act as the coordinator for LNG liftings. This is frequently done by an administrator known as a Lifting Coordinator (LC) whose main task is to ensure that each Lifter can fairly lift its share of LNG production as the LC develops and administers the cargo scheduling and administration process. The simplified schematic below (Figure 3) illustrates how the LC acts as an intermediary between the project and the equity LNG lifters at a 10 MMt/y export facility. It also highlights the two-step process where the LC issues an ADP to lifters followed by the lifters taking this to their buyers to arrange the ADP between the lifter and end buyer.

**Figure 3 – Equity LNG lifting schematic**
Other than the Joint Operating Agreements (JOAs), there are two key agreements that govern the LC’s activity with respect to LNG. The first is the Lifting Agreement which states the rights and obligations of each JVP to take and separately lift LNG. This purpose of the Lifting Agreement is to establish the processes, rules and procedures related to the LC developing and managing the lifting program throughout the year. The second is the LNG Balancing Agreement which ensures lifters offtake LNG in line with their share of the LNG inventory buildup. The Balancing Agreement also lays out the method to remedy any imbalances in liftings between equity offtakers over the course of a given period. Balancing Agreements revolve around a key concept of fairness that applies to all equity LNG – a lifter’s Reference Entitlement – which is each lifter’s share of production as determined from time to time by the LC.

A variation to the Gorgon equity lifting model with an integrated upstream and liquefaction structure is one such as that is in existence at the neighbouring Wheatstone project where the project was conceived using the same overall structure as Gorgon except with feedgas supplied from multiple fields with different owners. In this scenario SPAs that the equity lifters have and associated ship chartering agreements need to be consistent and back-to-back, upstream and downstream balancing agreements must be consistent and there needs to be full accounting to balance the input and output of physical inventory. Coordination requirements in this structure that fall to the LC can be quite onerous (Figure 4).

**Figure 4 – Feedgas suppliers, sellers and buyers bring complexity across the value chain**

As these equity lifting projects neared start up one of the key questions – particularly for a minor JVP such as the one illustrated in Figure 3 – involved trying to understand how decisions would be made by the LC, what the governance of these decisions would be and how the communication of these decisions would be received from the LC. Some of the concerns of minor JVPs involved whether they would be disadvantaged by their smaller offtake volume and how easily would they be able to access excess volumes the facility produced over nameplate. For example, where a minor JVP had an annual lifting entitlement of less than 5 cargoes the entitlement to an additional cargo could be very attractive from a revenue standpoint, particularly due to the lumpy nature of their cashflow. However, the predictability of when a cargo would be allocated to the minor JVP became somewhat of an operational challenge – particularly when shipping capacity had to be arranged by the minor JVP to lift the cargo.

For the Operator and other JVPs with a substantial stake in the project the challenges related to equity lifting were more around managing the interface between their buyers and the LC if the volumes they sold were FOB and trying
to optimize their LNG shipping tonnage when they sold cargoes on a DAP basis or if an excess cargo became available for them to lift. Given that major shareholders could be lifting as many as 2 cargoes a week, the concerns around lumpy cashflow were greatly diminished.

**HOW EQUITY LNG LIFTERS MANAGE THEIR INDIVIDUAL ADP NEGOTIATIONS WITH BUYERS AND SHIPPING ISSUES FOR FOB BUYERS AT LNG EXPORT TERMINALS WITH EQUITY LNG OFFTAKE ARRANGEMENTS**

In an equity lifting LNG scheme a lifter becomes eligible to offtake LNG when it has built up an entitlement to do so – i.e. its share of reference production. The ADP allocation is modeled by the LC prior to the commencement of the lifting year and each equity lifter is issued an ADP for their equity volumes. The sawtooth diagram below (Figure 5) illustrates a lifter’s inventory position over time and associated LNG liftings. It also represents a concept common to equity lifting – that the entitlement to being able to lift a cargo builds up over time and that liftings are supposed to be rateable so as not to have a negative impact on the lifting schedules of other equity participants in the facility.

**Figure 5 – Example a lifter’s inventory position over a time period**

Managing LNG liftings is partly about cooperation, partly about conflict. For an equity offtaker that has FOB sales to a third-party buyer, the equity lifter maintains close communications with the LC and at the same time closely manages the relationship they have with their third-party FOB buyer to try to avoid hitches along the value chain. The third-party buyer may have planned to optimize shipping and could have planned to dedicate shipping tonnage to the sales contract. However, unlike traditional project sales where LNG ships shuttled back and forth from import terminal to export facility on dedicated routes, sellers and buyers have found that the equity lifting model requires more slack built into transportation planning than they saw in the past. In addition, as LNG liftings are required to be at arm’s length from plant operations, the additional administrative layer of the LC has added a layer of bureaucracy to the facility.

On the one hand equity lifting has added a complexity around the ADP schedule due to an increased number of interfaces and in some cases, this has led to a less optimal schedule than may have been hoped for. However, on the other hand it would appear that the unique challenges faced at the start of LNG equity lifting have largely been overcome and like many new concepts, have settled down over time.
HOW ARE EXCESS LNG VOLUMES TREATED?

LNG Lifting Agreements have specific clauses, administered by the Lifting Coordinator, to allocate LNG that is forecast to constitute an excess cargo outside the ADP. During production operations the Plant Operator may notify the LC that there is the reasonable likelihood of an excess quantity of LNG being available. The LC will then calculate which of the lifters under its Excess Allocation Rules has the highest priority to receive the cargo. If that lifter accepts the excess lifting and the Plant Operator subsequently confirms that indeed an excess cargo is going to be produced by the plant, then the ADP / SDS is adjusted. If the chosen lifter does not want the cargo it is then offered to the next ranked lifter and so on.

The only major difference between facilities with equity lifting and those that have joint sales related to the management of excess cargoes is that for equity lifting there is a process to decide to which JVP lifter the excess cargo will be allocated. And this will vary from time to time depending upon which lifter is due the excess cargo.

LIFTING AND SCHEDULE ISSUES AND CHALLENGES RELATED TO UPSTREAM GAS AND PIPELINE CAPACITY PROCUREMENT FACED BY AN LNG TOLLING CUSTOMER IN THE US

While equity lifting from integrated projects has its challenges, lifting LNG from a US LNG tolling facility that only provides liquefaction services offers a host of different issues for offtakers who have capacity in the facility. US LNG tolling facilities share several similarities with integrated projects that are structured as equity lifting facilities. These parallels typically occur from liquefaction through to LNG lifting. The main divergence lies upstream of the liquefaction facility.

In a US tolling facility, other than maintaining and operating the facility, the main task of the operator is to manage the LNG lifting and scheduling process. Vessels are allocated lifting slots and if a vessel arrives before or during its slot, it can berth (Figure 6).

### Figure 6 – Schematic of slot allocations (US LNG Tolling Facility)

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In the US a lifting and scheduling agreement spells out the role the LNG tolling facility operator will play in allocating slots to its SPA buyer. This agreement is also typically quite specific in detailing procedures to follow if something goes wrong. This could be a technical glitch in the plant, a hurricane or trouble in the pipeline system.
However, what the Operator of a tolling facility typically does not do is secure upstream gas supply or pipeline gas – the terminal does not take title of upstream gas.

A US tolling facility that only provides liquefaction and lifting and scheduling can be complicated for offtakers that are new to the US gas market. LNG offtakers in tolling facilities (e.g. Freeport, Cove Point) must secure gas supplies and pipeline capacity to deliver the gas equivalent to their LNG capacity holding if they want to lift the volumes that their capacity holding equates to (Figure 7).

**Figure 7 – Feedgas suppliers, sellers and buyers bring complexity across the value chain (US LNG Tolling Facility)**

- Separate lifting and scheduling agreement
- Upstream gas and gas pipeline capacity procurement
  - the role of the offtaker
    - A coordination/cooperation agreement between offtakers also may be needed to manage gas deliveries to the Liquefaction facility.

Newcomers to the US market who acquired capacity in LNG tolling facilities were faced with the challenge of either setting up an internal organisation to manage gas procurement and trading, pipeline capacity procurement and trading as well as in some cases, power procurement and trading, or, deciding to outsource this to a third party. Tolling capacity holders also had to manage unfamiliar legal structures with different ownership structures to a traditional LNG facility they had been familiar with in other geographies. In summary – like with new investment in equity lifting facilities – project participants in US tolling facilities faced teething issues as projects start up or move towards first LNG. And many of the potential risk scenarios have yet to be tested. For example, questions that are yet to be tested include: what occurs if power goes down at a site that uses electric drives for liquefaction compression and a tolling capacity holder does not receive the LNG it has already sold to a buyers; and what would the remedy be for a scenario where gas delivered to the tolling facility does not match LNG produced at the plant for whatever reason.

As US LNG Tolling facilities come into operation and the currently identified commercial challenges become less of an issue, the degree to which tolling becomes the norm for US LNG projects as opposed to the Cheniere model – which mimics an integrated project – will become evident. Many new entrants are interested in the concept of LNG tolling but only certain players have the know-how to successfully execute this business model without relying heavily on service providers – at least in the early phase of the project’s life.
CONCLUSION / IMPLICATIONS

The establishment of equity LNG lifting has solved certain commercial challenges that can exist among JVPs in the LNG industry. It has allowed equity holders to have control over their own LNG volumes and has enabled projects to move forward that may have otherwise been delayed due to conflicts around marketing preferences, timing of bringing new LNG to market and/or diverging corporate strategy around LNG portfolio management.

Equity LNG lifting has made life a little more complicated for buyers and sellers in the Asia Pacific region. However, it has placed even greater importance on the coordination of shipping and inventory management. In the right set of commercial and JVP circumstances equity LNG lifting makes perfect sense and is now a proven business model for integrated LNG projects.