

## Articles

### "Chain of Fuels"

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LNG projects present unique development and operational risks and present several issues in resolving these risks. By their nature, LNG projects are geographically far-flung, expensive, political and technical. An added complicating factor is that a complete, wellhead to market LNG project includes several different parties, each bringing different appetites for risk, credit capacities, negotiating strengths and technical expertise to the table. An important task facing developers and their legal advisors is to identify the risks inherent to each stage of an LNG project, and to document the sharing of those risks in a comprehensive and thoughtful manner.

Perhaps no risks burdening an LNG project are more complicated and intractable than those grouped under the broad category of force majeure. The risk structure of an LNG project is sometimes referred to as illiquid, meaning that if an unexpected event occurs, alternative destinations, supplies and equipment are for the most part unavailable within a commercial timeframe. For instance, if a ship fails to arrive, the receiving terminal is unlikely to have ready access to other LNG supplies at any price. Similarly, if the liquefaction terminal experiences a casualty, usually there is no alternate destination for the gas, and no alternate LNG supply for downstream customers. And if the regasification terminal experiences operating problems, then the options for an LNG supplier to unload at alternative ports are limited, if they exist at all. Such illiquidity exacerbates the consequences of almost all force majeure events affecting any given LNG project – the inability of directly affected participants effectively to compensate for unexpected events reverberates up and down the supply chain.

This article begins by sampling, in an indicative but non-comprehensive fashion, some of the force majeure events unique to the parties present at various points in the LNG supply chain. We follow by suggesting ways in which the various participants might share and transfer force majeure risk in light of their varying negotiating positions and abilities to absorb supply interruption.

#### **The Potential Perils**

Each link of the LNG supply chain presents different risks to uninterrupted operation. The exploration and production link is unusually vulnerable to what may broadly be termed governmental force majeure. Many gas reserves classified as strategic from a global perspective are in locations where governmental oversight is lacking or insufficient for one reason or another, whether for want of a developed legal structure, consistency of application or regime stability. Further, other gas reserves located in politically stable areas can become vulnerable over the life of the reserves. An investor in a typical LNG project anticipates a minimum of twenty years of production at a steady, high rate – political environments can change dramatically in that time period, even in relatively established economies. Finally, substitute expertise in all but the most technical production and exploration conditions is generally available, further creating vulnerabilities of the in-ground gas reserves to governmental intervention and disruption. These factors mark the exploration and production link of the LNG supply chain as the link most susceptible to changes in governmental policy, including expropriation, forced contract renegotiation, sudden problems with title, restrictions on currency transfer or repatriation, political violence and currency devaluation.

The exploration and production link is also particularly vulnerable to operational failure at all stages of development: exploration, exploitation and development drilling, lifting and reworking. Such operations in some environments are relatively straightforward; in other environments there is significant technical risk. But although the technology expertise to prosecute reliably an exploration and production project in challenging and hostile environments has dramatically improved in the last two decades, no major operation escapes all operational interruption. Yet another risk of supply interruption relates to the adequacy of reserve. Reserve evaluation is increasingly proficient, but still vulnerable to unexpected adjustments as a gas field is developed, matures and declines. Questions of responsibility for reserve failure must be negotiated by the direct contracting parties, of course, but must also be accounted for by all participants in the project.

## Articles

The pipeline transporting gas to the liquefaction facility faces force majeure risk that in some aspects is similar to the production field, but different in other important ways. A gas pipeline can be vulnerable to low-level, endemic sabotage. A political or insurgent organization with few resources but seeking to disrupt commerce on a national scale could scarcely construe a more ideal target than a large, land-based high pressure trunk line crossing remote terrain. Such a target matches their capabilities more closely than a localized and secured facility such as a liquefaction plant, or an underground facility such as a producing gas field.

The liquefaction facility presents numerous unique force majeure risks. It is vulnerable to government intervention and interruption, though in different ways than a producing field or a pipeline. For instance, once a liquefaction facility is operating, the risk of expropriation is lower because the facility has limited value without the operating expertise which might disappear if the government were to step in. On the other hand, the permitting and construction phase of a liquefaction facility can be and often is rife with delay. A single local agency delaying the processing of a critical path permit will delay the entire LNG supply chain, with attendant cost run-ups. In addition, non-governmental entities in many countries have continued, with increasing frequency and sophistication, to wage campaigns against large foreign-owned facilities. Their interests can range from environmental to cultural to local politics. No particular project will experience the same portfolio of local opposition as another - but it is an exasperating fact of life for in-country infrastructure development that most projects will attract focused local opposition.

In addition, the liquefaction facility faces considerable construction risk. Installing an expensive, technical facility in a remote location causes an exponential increase in traditional construction risks such as supply disruption, unavailability of materials or expertise, escalating costs (such as nickel steel), and other construction cost overruns arising from implementation problems. Further, only a limited number of firms worldwide can perform such functions reliably and with dispatch. A project developer and its legal counsel should not ignore the potential failure of even the most experienced and creditworthy contractor to place equipment, material and personnel at a remote location, in a particular order and timing so as to execute timely the construction and commissioning of a liquefaction facility. To some extent a construction contractor will reimburse liquidated damages for delays caused to some project participants, but no construction firm is large enough or willing to cover damages to remote parties in the supply chain, most of whom are affected by delay to a similar extent as the immediate contracting parties.

LNG shipping presents the classic force majeure risk, "perils of the sea" being one of the most common citations in a force majeure litany. There seem to be innumerable reasons for one's ship to fail to come in, including storm, incompetent crews, accidents, arrest of vessel, pirates and terrorists, owner malfeasance and mechanical failure. While the direct results of many shipping failures are insurable, the indirect results, such as business interruption, are difficult to insure at best.

The regasification terminal faces many of the same force majeure risks as the liquefaction terminal, including construction and political opposition. On the latter point, however: Due to the regasification facility being large, visible, stationary and poorly understood from a safety perspective, it is an automatic target for non-contractual stakeholders and would-be stakeholders. While liquefaction terminals can face significant opposition of this nature, regasification terminals, often located closer to population centers and in countries where non-governmental organizations are more active and well-funded, are typically forced to withstand more long-lasting and effective public and private opposition. Such pressures have continued to increase the cost of LNG projects through delays in financing and construction, through increases in site purchase and permitting costs, compensatory payments to non-participants and insurance premiums, and through resort to more expensive technologies such as offshore floating or stationary terminals. Particularly in many areas of North America, these pressures have built to the point that siting a traditional land-based regasification terminal on a greenfield basis is becoming almost impossible, and is increasingly difficult under many brownfield scenarios as well.

The downstream pipeline transportation and marketing aspects of the LNG supply chain are more manageable in 4 terms of force majeure risk. Some not-in-my-back-yard (nimby) and related NGO risk can attend pipeline routing and laying, but pipelines and their necessity and utility are generally understood by everybody and one way or another they usually get built. Similarly, if a pipeline's operation fails due to a casualty or other force majeure event, frequently, in North America at

## Articles

least, alternative transportation schemes are available. The marketing of regasified LNG closely follows the marketing of any other gas source. It is worth noting the obvious, however, that the price of gas in the destination market entirely drives the ultimate financial performance of the project. Most force majeure definitions will exclude pricing as a consideration, but that is merely a way of allocating a risk that can be as fundamentally outside the ability of the parties to control or compensate for as more traditional force majeure conditions. The fact that a particular participant is able to contract to sell at a long-term fixed price and quantity simply means that some other participant has accepted pricing risk.

### **Risk - Acceptance and Absorption**

It is thus a complex and frustrating task to negotiate and draft risk-sharing arrangements extending through the interconnecting force majeure clauses in the various project documents. The precipitating factor which creates the need to assign LNG risk, and drives to a large extent how it is assigned, is the manner in which ownership of each stage is held. It is possible in theory to develop an entire LNG project on a single balance sheet, with no debt and no project documents. In such a case, of course, all force majeure risk would be implicitly borne by the developer - no particular negotiation or drafting skills required. In reality the only players able to amass the capital, gas reserves, marketing know-how and project development expertise necessary to execute an LNG project on this basis are the large integrated oil companies. As it turns out, the most prominent LNG players, in terms of total capital investment, are precisely those companies. However, most do not choose, or have found it difficult, to complete an entire LNG project from well head to burner tip. A company may own throughput rights in a regasification terminal, for instance, but not the terminal itself. (Terminal development in North America, for instance, is very much a function of success in acquiring sites and managing local stakeholders. Accordingly, several non-integrated energy companies with a focus on LNG regasification have been at the forefront in development LNG receiving facilities.) Similarly, an integrated energy company's ownership of the original gas reserves is seldom at the 100% level. Other components, such as shipping, are usually contracted to a third party. Finally, even if a single integrated company were to choose to undertake for its own account many or most stages of an LNG project, that company would as a matter of course structure the documentation among its various subsidiaries in such a way that documents do not have to be revisited if a particular contract is assigned to a true third party or if a division is divested.

Given that LNG projects will almost invariably have multiple owners or be structured so as to allow for multiple owners, contractually allocating force majeure risk becomes the immediate task. Because of the illiquidity of the LNG market, as described above, facing an event of force majeure is momentous; much more so than with a different type of project, perhaps comprising one facility with multiple input and output options. In the latter case, the result of force majeure is simply that the claiming party's performance is excused and the other party is assumed to have available at least some avenues of compensation. In the context of an LNG project, on the other hand, each event of force majeure precipitates a bi-directional chain reaction of causes and effects - each player up and down the chain is affected by the force majeure occurring at a particular stage.

Each participant in an LNG project that contemplates the consequences of a force majeure event somewhere in the chain must resolve two questions in negotiating its project documentation: whether and to what extent it will bear any of the risk itself of a particular force majeure event, and whether and to what extent it will be excused from the effect of the event on the other participants in the project. In each case, those questions must be addressed both in the context of the party in question being the claiming party, or being an innocent bystander affected by a more remote event. Stated differently, for each force majeure event, a contracting party can be seen as taking one of three alternate stances in relation to a particular contracting counterparty: (i) a minimal risk absorber, not assuming any of the adverse impact of the particular event for itself or the counterparty, thus having the right under the contract either to continued payment notwithstanding the occurrence, or to alternate performance or damages, in each case regardless of the origin or party affected by the occurrence of force majeure; (ii) a medium risk absorber, assuming the impact of the event to the extent of its own interest only, by agreeing not to require performance from the counterparty as a result of the occurrence; or (iii) a maximum risk absorber, assuming the impact of the event not only for itself but for the counterparty by continuing payment or rendering alternate performance to compensate for the loss.

## Articles

The resolution of these questions will depend on many factors, including the relative bargaining strength of the parties, their respective abilities to absorb risk, the type of force majeure event occurring, a determination that one party more than the other is most able to prevent the occurrence, and the point in the LNG chain at which it occurs. For instance, the owner of rights to gas in the ground will probably not be in a position to pass on to a participant in the LNG chain, particularly the pipeline or liquefaction players, any of its own costs incurred due to any force majeure, but neither is it likely to assume payment or damage obligations to pipeline owners as a result thereof, i.e., it will be a moderate risk absorber. On the other hand, the owner of the liquefaction terminal may accept force majeure risk (and attempt to pass it on) for pipeline sabotage, thus functioning as a moderate risk absorber in that aspect. But the same owner in the same contract may refuse to absorb any force majeure risk for pipeline expropriation, on the basis that the pipeline owner is most able to cover off legal risks in its dealings with the government, either by virtue of an implementation agreement with the host government subject to international arbitration and award recovery procedures, by virtue of inviting the government into the project, or by virtue of its in-country familiarity with applicable government offices. Thus, in a different aspect of the same agreement the liquefaction owner would be a minimal risk absorber. In its downstream contract with the LNG buyer, the liquefaction owner may attempt to be a minimal risk absorber with respect to perils of the sea, at least with respect to events such as false arrest or credit. The LNG purchaser controls the shipping, or is contracted with the controlling party, has the most upside of any player, is the most experienced at dealing with shipping risks, particularly at preventing most forms of high seas credit and payment issues. Further, the portion of the pipeline sabotage risk which was accepted by the liquefaction owner may in some instances be passed on to the LNG purchaser, i.e., the terminal owner may continue to receive capacity payments from the purchaser notwithstanding the occurrence of certain seagoing events, particularly if the purchaser is an owner of the rights to gas in the ground and/or a participant in the pipeline.

Regarding risk absorption capability, the receiving terminal owner is frequently in a different category to the other participants in an LNG project. Often, the terminal will be project financed, supported by a tolling arrangement or other terminal use document with a creditworthy counterparty. The counterparty is often the entity holding the marketing upside (and risk). Investors in the terminal are typically recruited by the developer to fit a certain profile. Similar to utility investors, they are content to take a modest return backed by an investment-grade credit. From the viewpoint of such an investor, the failure of the ship to arrive, for whatever reason, is not a risk that it particularly cares to assume, or has the capacity to assume. Such investors will frequently insist on being paid come "hell or high water", and a vigorous discussion may ensue between the two parties, one of them a classical low risk absorbing party, and the other reluctantly assuming a high risk role. The terminal owners will argue that the terminal capacity has been provided at a certain cost, with a return that is modest when measured on an unlevered basis. So long as the facility performs, it should remain relatively unencumbered by the vicissitudes of force majeure, in the owners' view. The terminal user, on the other hand, stands at a point in the chain where it has invested or contracted with other parties to provide 90% to 95% of the capital invested in the LNG project at the time the first ship carrying its LNG cargo arrives. The user, if it agrees to absorb such risks, will sometimes extract as a price the condition that it maintain strict oversight over the construction, operation and maintenance of the terminal, often to the point of either assuming operation or becoming a major investor in the receiving terminal.

In summary, the party in the LNG chain most likely to absorb force majeure risk for its own account and for the account of others is the owner of the upside in the transaction, which is frequently the owner of the hydrocarbons subject to the liquefaction, shipping and regasification. Conversely, the party likely to assume the least amount of force majeure risk is frequently the owner of the regasification terminal, perhaps even the owner of the liquefaction terminal. Other parties, such as the upstream producers and the ship owners, will frequently take on a medium risk profile, willing to accept losses for their own force majeure experiences only.

The foregoing examples are posed in the context of a structure where the major risk/beneficiary party is the owner of the LNG and gas, particularly through the regasification facility. Other structures are possible, driven by such factors as creditworthiness, appetite for risk within a particular organization, whether a participant possesses portfolio of projects, and negotiating leverage. Perhaps the party with the most upside under a particular deal structure should logically assume the most risk, but other contingencies of the negotiation may, and often do, drive the process to a different outcome.