

International Gas Contracts

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Executive summary

This paper offers an overview and explanation of international gas contracts, of which there are several types along the value chain. The key objective of this paper is to focus on two specific categories of long-term agreements for gas and liquefied natural gas (LNG) sales, namely Gas Supply Agreements for pipeline gas (GSAs) and Sale and Purchase Agreements for LNG (LNG SPAs). These two types of long-term supply contracts play a central role in the international gas industry, where natural gas is transported by cross-border pipelines or shipped over long distances in the form of LNG.

GSAs and LNG SPAs have a long history. They have underpinned early gas and LNG export projects dating back to the mid-1900s and later drove the development of international gas and LNG trade. Despite the emergence, and growing role, of spot and shorter-term alternatives, long-term GSAs and LNG SPAs have remained the key contractual instruments for international gas and LNG sales.

GSAs and LNG SPAs have evolved over time. The early contracts were inflexible arrangements concluded between buyers and sellers for periods often exceeding 20 years, delivering gas and LNG in a rigid (mainly point-to-point) trading model. These contracts offered limited options to modify the rights and obligations of the parties during the lifetime of the contract. At the time parties accepted the rigid contract structures as buyers were seeking security of gas supply and sellers security

of offtake. In response to various structural changes in gas markets (including principally market liberalization in North America and Europe), and changing supply and demand fundamentals, gas supply contracts have become increasingly flexible. The general trend towards more flexibility has been reflected in changes to both price and non-price terms in GSAs and LNG SPAs.

A greater diversity of pricing mechanisms (including oil-, hub-, spot-indexed and other, price formulas applied on a stand-alone or hybrid basis), volume adjustments for operational purposes, and diversions of LNG cargoes, are some examples of flexible terms that are commonly found in the newer contracts. Notably, the historical principle of risk allocation, where the seller assumes the price risk, and the buyer assumes the volume risk, has remained relevant in long-term contract negotiations.

There are no universally accepted general terms for pipeline gas and LNG supply contracts. GSAs and LNG SPAs are negotiated on a case-specific basis. They are typically strictly confidential and combine (1) the commercial choices

GSAs and LNG SPAs are negotiated on a case-specific basis.

of the parties and (2) their shared long-term outlook for market changes. In practice, long-term gas and LNG contracts commonly include price review clauses, but, they rarely provide a practicable renegotiation basis for more comprehensive changes to contract terms. The issue of contract reopener mechanisms became particularly relevant during the Covid-19 pandemic, where market circumstances significantly affected performance under gas and LNG contracts and triggered the need for various operational adjustments. More recently, the ability of the parties to renegotiate contract terms has become even more urgent amidst the global search for additional

gas and LNG supplies in response to the Russian invasion of Ukraine and related disruptions (executed and anticipated) to Russian gas and LNG exports.

The ongoing assessment of the impact of the war in Ukraine arguably presents itself as the most critical and immediate challenge for long-term gas and LNG supply contracts in Europe. The continued pursuit of innovation in GSAs and LNG SPAs, along with the emerging contractual responses to decarbonisation requirements, are other examples of the key factors that will shape the outlook for international gas contracts in the future.

In response to various structural changes in gas markets and changing supply and demand fundamentals, gas supply contracts have become increasingly flexible.

1. Introduction

Natural gas plays a significant role in fulfilling global energy needs. It can be either transported by pipelines (domestically or internationally) or shipped in the form of liquefied natural gas (LNG). The construction of gas and LNG infrastructure requires large-scale investments, which have been from the early days supported by long-term offtake contracts concluded with creditworthy buyers. Historically, there was only one – long-term – contracting segment for gas and LNG sales. This is how precedential LNG cargo deliveries and pipeline exports of gas were executed, with significant contracted volumes and financial stakes locked in via these contracts. In the 1990s, short-term markets began to emerge and introduced new contractual arrangements for gas and LNG sales. As a result, the contracting landscape for international gas and LNG transactions has become more diverse, although despite a growing role for spot or short-term transactions, substantial volumes of gas and LNG are still traded under long-term contracts. As this paper highlights in the conclusion, in the aftermath of the Russian invasion of Ukraine, these traditional contracts could become even more relevant. We therefore see a resurgence of interest from various actors, including energy market participants, regulators, but also the general public, in long-term gas and LNG supply contracts.

2. Long-term gas and LNG supply contracts

Long-term supply contracts have shaped the development of the gas and LNG industries. They remain the primary contracting instrument for international gas and LNG sales. Accordingly, this section discusses the fundamentals of long-term gas and LNG supply contracts, with a focus on their two main categories, namely Gas Supply Agreements ('GSAs') and LNG Sale

and Purchase Agreements ('LNG SPAs'). GSAs and LNG SPAs are jointly referred to as 'contracts' in this paper.

2.1 Parties and core principles of risk allocation

In every long-term gas and LNG supply contract, there is a seller and buyer of gas or LNG, respectively. In international contracts for cross-border sales, buyers and sellers are based in different jurisdictions. The identity, ownership, financial position, and exposure to competition in domestic and international energy markets, are examples of factors that may influence the dynamics of contract negotiations.

Although international gas and LNG sales started off with a limited number of participants, the pool of buyers and sellers has recently become more diverse. It increasingly includes energy traders in addition to international oil and gas majors and large (often state-owned) utilities with supply obligations to domestic end-users. In parallel, many of the more traditional long-term market participants have faced structural changes in their domestic markets and diversified to become more involved in international sales, seeking to utilise growing arbitrage opportunities in gas and LNG markets.

While every GSA and LNG SPA is tailored to the circumstances of the buyer and seller, there are certain fundamentals of risk allocation that have evolved in the gas and LNG industries. One principle is that the seller assumes the price risk while the buyer assumes the volume risk, mainly through its take-or-pay obligation (which is discussed below). The willingness to implement this principle of risk allocation has traditionally

Seller assumes the price risk while the buyer assumes the volume risk, mainly through its take-or-pay obligation.



influenced contract discussions and their outcomes reflected in the commercial choices of the parties for their contracts. To a considerable extent, GSA and LNG SPA terms have also been influenced by the terms of other agreements negotiated as part of the development of gas and LNG projects.

2.2 Key commercial choices

Negotiation of long-term gas and LNG supply contracts routinely takes several months (often between 6 and 12 months but can sometimes take years) and, in essence, results in a selection of mutually acceptable commercial decisions that the parties see as suitable for their long-term contractual relationship.

There is no standard GSA or LNG SPA. The wording of every contract is case-specific but, in practice, there are many similarities in these contracts. The high level of similarity applies mainly to contracts linked to a certain source of supply (such as the Troll fields in Norway) or delivering gas

or LNG to a specific market or region (for example, due to regional patterns reflected in shared contractual features, a general differentiation can be made between LNG contracts supplying Europe and Asia).

Contracts for long-term gas and LNG supplies often run over hundreds of pages and contain dozens of provisions. They also routinely include annexes and schedules with technical detail (for example, in relation to gas and LNG quality specifications). All aspects of the contract, and the economic parameters within which they operate, are matters for negotiation between the parties. The priority rank of specific arrangements will often change during contract negotiations. As parties progress their contract discussions, there will be modifications to the negotiating agenda. While parties are free to add or remove any items (and there is no universally accepted minimum contract content), there are certain commercial choices that are of particular importance and can therefore be found in virtually every long-term gas and LNG supply contract. Some of these provisions are discussed below.

2.2.1 Duration

Historically, both GSAs and LNG SPAs have been concluded for terms exceeding 20, 25, or even 30 years. The long duration of contracts has been traditionally linked to the substantial investments that are required to underpin the economics and financing of new gas and LNG infrastructure. Over the years, the link between the required contract duration and the project's financing requirements has been, in principle, sustained¹. At the same time, the emergence of new financing options and the expansion of spot, short- and mid-term markets, have challenged the rationale for contracts exceeding 10 years in some commercial settings, including expansion projects and projects close to liquid markets. While substantial contract terms have remained the norm for deliveries to Asia, many European buyers have developed a preference for shorter-term deals. As discussed below, the current search for additional supplies of non-Russian gas and LNG to Europe has re-focused buyers towards long-term contracts.

The long duration of contracts has been traditionally linked to the substantial investments that are required to underpin the economics and financing of new gas and LNG infrastructure.

There is no universally recognised international trading price for gas or LNG.

2.2.2 Price

The contract price is an essential component of every long-term gas and LNG supply contract. It tends to be the most sophisticated, but also the most troublesome, contract component.

Pricing mechanisms

There is no universally recognised international trading price for gas or LNG. In practice, parties to GSAs and LNG SPAs always need to choose the most suitable pricing mechanism for their contract. Historically, contract prices in gas and LNG contracts have been indexed to the prices of crude oil (and other petroleum products), but over the years, alternative price mechanisms have emerged, ultimately leading to a greater variety of pricing in these contracts. In the past decade, oil indexation in GSAs and LNG SPAs for deliveries to Europe has largely been displaced in favour of spot and hub indexation, primarily to prices at liquid European gas hubs such as Title Transfer Facility (TTF) in the Netherlands and National Balancing Point (NBP) in the UK.²

¹ For a discussion in the context of LNG see Anne-Sophie Corbeau and David Ledesma (eds.), *LNG Markets in Transition: The Great Reconfiguration*, Oxford: OUP/OIES: 'One important element currently remains untouched in the LNG business: long-term contracts. Conventional wisdom is that LNG export plants must be supported by long-term contracts covering most of their capacity. Due to the huge capital costs, financing the construction of an LNG plant would be **next to impossible** without the assurance of a long-term contract' (at p. 7, emphasis added).

² See Jonathan Stern, Howard Rogers (2011). 'The Transition to Hub-Based Gas Pricing in Continental Europe.' Oxford Institute for Energy Studies (OIES) Paper NG 49 and Jonathan Stern and Howard Rogers (2014). 'The Dynamics of a Liberalised European Gas Market: Key determinants of hub prices, and roles and risks of major players', OIES Papers NG 94. For a discussion of European gas hubs, see Patrick Heather (2019). 'European traded gas hubs: a decade of change', OIES Energy Insight: 55.

By contrast, oil linkage has remained practically unchallenged in LNG supplies to Asia for many years. Only recently, parties to Asian LNG SPAs have started to incorporate other pricing mechanisms, including hub indexation (to a foreign hub such as Henry Hub³), Platts' Japan Korea Marker (JKM), and other indices (including coal prices).⁴

The increased diversity of price mechanisms in long-term contracts has led to an intensive use of hedging tools such as futures and swaps to manage gas price volatility by market participants, thus changing the actual short term economics of those contracts for the buyers or sellers that entered into those hedges.

Examples of price formulas

The determination of a suitable price mechanism for gas and LNG sales spanning several years is a complex exercise, which should carefully consider the specific circumstances of the parties and broader market conditions that prevail at the time of the contract negotiation. Prior experience (or certain preferences) of the seller usually plays a key role in the choice of the proposed price mechanism. The actual price formula reflecting the outcome of negotiations between the parties typically becomes a closely guarded commercial secret. As a result, little is known about long-term pricing mechanisms in the public domain. It is therefore worth looking briefly at some generic examples that have served as reference points in the gas and LNG industries.

The determination of a suitable price mechanism for gas and LNG sales spanning several years is a complex exercise, which should carefully consider the specific circumstances of the parties and broader market conditions.

Pipeline gas

A common method of pricing gas in a GSA is one whereby the parties will fix a base price and agree that the base price will be adjusted over time by escalating (or deflating) it against the movement of a nominated index in order to derive the contract price. This is illustrated as follows:

$$P = P^o \times [f \times A^n]$$

In this example, the price (P) is determined as the base price (P^o) multiplied by a defined percentage (f), which is often called a “pass-through factor”, of the quoted price of a defined commodity (A) over a defined reference period (n).⁵

LNG

A traditional oil-linked price formula, which can be found in many Asian LNG SPAs, is presented as a simple linear equation:

$$P_{\text{LNG}} = A \times P (\text{crude oil}) + B$$

where:

P_{LNG} is the price of LNG in US\$/MMBtu

³ There is no liquid gas hub in Asia. For a discussion, see Agnieszka Ason (2020). ‘Scenarios for Asian long-term LNG contracts before and after Covid-19’, OIES Paper NG 160, referred to as Ason (2020).

⁴ See Howard Rogers, Jonathan Stern (2014). ‘Challenges to JCC Pricing in Asian LNG Markets’, OIES Paper NG 81 and Ason (2020).

⁵ Peter Roberts (2020). ‘Gas and LNG Sales and Transportation Agreements: Principles and Practice’, 6th ed, at para 10-006.



P (crude oil) is the price of crude oil, mainly Japanese Crude Cocktail (JCC)⁶ or Brent, in US\$ /barrel

A is the slope (which is typically presented as a percentage)

P is the constant, which was historically linked to inflation and the costs of transporting LNG⁷

By contrast, the price in US LNG SPAs has been traditionally linked to Henry Hub prices. The contract sales price (CSP) formula used in many US LNG contracts reads as follows:

$$\text{CSP} = (1.15 \times \text{HH} + \text{Xy})$$

where:

HH is the Henry Hub futures price in US\$/MMBtu for the month in which the cargo's delivery window begins, and

Xy is a constant in US\$/MMBtu applicable for each contract year

(which increases annually based on a designated inflation rate).

The contract price in this example adds a 15 per cent markup on the Henry Hub price (to cover the costs of transporting the natural gas to the flange at an LNG plant and the cost of the LNG used in the liquefaction process), and includes the constant (Xy), which is the capacity charge or tolling fee largely covering the investment and operating expense of the liquefaction plant.

Currency and payment

Currency is a vital part of gas and LNG supply contracts, where parties do not wish to leave room for ambiguity. Accordingly, contracts take a prescriptive approach and typically specify the currency in which the contract price is to be calculated, invoices are to be issued, and payments are to be made.

Contract price provisions either expressly mandate the calculation of the contract price in a specified currency (for example, *'the Contract Price shall be determined in US dollars'*) or identify the currency for the relevant components of the price formula (such as the price of fuel oil expressed, for example, in *'US dollars/tonne'*). As a general rule (and as evidenced by the examples of price formulae above), contracts stipulate a single currency for the contract price (commonly US dollars or euros).

Payment provisions routinely accompany currency provisions. They are often detailed in nature and define when, where, and how payment is to be made by the buyer against the seller's invoice. Contracts stipulate various payment modalities and timeframes. In most cases, the payment obligation is deemed as fulfilled as soon as the payment reaches the bank nominated by the seller.

⁶ Japan customs-cleared crude oil price is the average price of customs-cleared crude oil imports into Japan. It is the commonly used price formation mechanism in long-term LNG contracts in Japan, Korea, and Taiwan.

⁷ Andy Flower, Jane Liao (2012). 'LNG pricing in Asia', in Jonathan Stern (ed.), *The Pricing of Internationally Traded Gas*, Oxford: OUP/OIES.

Disputed amounts are not uncommon. If the buyer disputes the invoice, contracts typically require that all disputed amounts are nonetheless paid in full by the buyer on a provisional basis against the seller's invoice (subject to later adjustment). In addition, contracts establish various protections for the seller in the event of the buyer's payment failure, including, most commonly, late payment interest and the seller's right to suspend deliveries. If the payment issue persists (for example, for more than 60 days from the due date of the relevant invoice), the seller can be entitled to terminate the contract in response to the buyer's prolonged payment failure.

Recently, currency and payment provisions in GSAs came into the spotlight in the context of the Russian invasion of Ukraine and Russia's demand for rouble gas payments formulated in a Decree published in March 2022. While several EU buyers accepted the new payment mechanism, some other buyers' refusal to pay for gas in roubles has resulted in their supplies of Russian gas being cut off by Gazprom.⁸ Although, in its current form, the rouble gas payment mechanism is limited to pipeline gas supplies, recent reports point to the possibility of its expansion to Russian LNG sales.⁹ In a parallel development, the application of rouble gas payments has expanded beyond the EU, with Gazprom and China National Petroleum Corporation agreeing, in September 2022, on payments for Russian gas delivered through a Russia-China pipeline based on a 50-50 split between the rouble and yuan.¹⁰

2.2.3 Volume/quantity

Security of offtake

Long-term security of offtake is one of the key priorities for the sellers, lenders, and other stakeholders involved in the financing of capital-intensive gas and LNG projects. To secure a stable revenue stream, gas and LNG sales are subject to firm offtake obligations from the buyers, which are typically structured on a take-or-pay basis.

Take or pay

'Take or pay' is, in essence, a contract provision that obligates the buyer to take and pay for gas or LNG or otherwise pay an agreed price for any gas or LNG not taken. Take-or-pay obligations are very common (but not obligatory) in long-term gas and LNG supply contracts.¹¹ Technically, they are usually tied to a specified timeframe (for example, annual, monthly, quarterly, or daily). They can be also calculated differently, including on a cargo-by-cargo basis in the LNG context.

Take-or-pay obligations should ensure that the buyer pays for gas or LNG and are, in practice, heavily negotiated by the parties. As a result, they are rarely absolute. Force majeure events, a seller's failure to deliver gas or LNG, and off-specification gas or LNG, are examples of situations where the buyer may be excused from liability for non-performance of its take-or-pay obligation. Contracts also tend to incorporate various mechanisms that limit the take-or-pay commitment. For example, take-or-pay provisions may apply

⁸ For a discussion, see Agnieszka Ason (2022). 'Rouble gas payment mechanism: implications for gas supply contracts', Oxford Energy Comment, OIES.

⁹ Reuters, 'Gazprom proposes adding LNG to rouble-for-gas scheme – Ifax' (4 July 2022).

¹⁰ Reuters, 'Russia's Gazprom, CNPC agree to use rouble, yuan for gas payments – Gazprom' (7 September 2022).

¹¹ For a discussion of take-or-pay clauses, see Kim Talus, Scott Looper, and Luke Burns (2020), 'Long-Term Take-or-Pay Agreements in Natural Gas Industry: Past, Present and Future', Oil, Gas and Energy Law (OGEL).

Generally, take-or-pay levels are highest for new (greenfield) projects that require substantial financing, and tend to be lower for supplies from existing projects (or get lowered by the parties at the time of contract renewal).

to a pre-defined percentage of the Annual Contract Quantity (ACQ). The take-or-pay percentage varies from one contract to another and is, in practice, often placed by the parties within a range of between 70 – 95 per cent. Generally, take-or-pay levels are highest for new (greenfield) projects that require substantial financing, and tend to be lower for supplies from existing projects (or get lowered by the parties at the time of contract renewal). The profile of the buyer and market conditions at the time of contract negotiation also play a role. To date, large gas or LNG buyers with access to alternative supply sources have been the most successful in lowering the take-or-pay threshold. There are also certain historical and geographical patterns that can be identified. For example, long-term deliveries of Russian gas to Central and Eastern Europe are generally subject to a higher take-or-pay commitment (often exceeding 85 per cent ACQ) than the respective sales of Russian gas to Western Europe. In Asia, the highest take-or-pay levels (nearing or equalling 100 per cent) can mainly be found in some earlier LNG SPAs for delivery to Japan and South Korea.

Volume/quantity adjustments

A combination of individual negotiating powers of buyers and sellers and prevailing market conditions usually determines the level of flexibility that the buyer can secure in terms of its offtake obligation. For example, while most LNG SPAs provide for

annual downward quantity tolerance levels not exceeding 10 per cent, several LNG buyers from (then) emerging markets, such as China and India, were able to secure more exponential flexibility entitlements during periods of a buyer's market in the early 2000s.

The ability to modify (decrease but also sometimes increase) the volume of gas or quantity of LNG to be taken by the buyer can become relevant in certain circumstances, including market disruptions. A substantial decrease in domestic demand during the Covid-19 pandemic (initially due to lockdowns imposed in Asia) serves as an example of an acute need for downward quantity adjustments. Notably, despite financial hardship and the risk of penalties faced by many buyers across the globe at that time, contentious take-or-pay issues were predominantly resolved by the parties through rescheduling and diversions of cargoes. More recently, the global pursuit for additional gas and LNG supplies in response to the Russian invasion of Ukraine has shifted global attention to mechanisms allowing buyers to procure additional gas and LNG under the contracts. While not every GSA and LNG SPA will contain express provisions allowing the buyer to nominate more gas or secure excess LNG, there has been a strong focus in both gas and LNG industries on formulating negotiated solutions for additional supplies.

2.2.4 Transportation

Pipeline gas

Natural gas reserves are often located in remote and technologically challenging locations, far away from the potential end-use markets, so transport infrastructure is essential for virtually every physical gas sales transaction. Cross-border pipelines are a critical component of any international gas supply link. Pipelines can be used either only for the purpose of meeting the seller's commitments under a particular GSA, or as multi-shipper

Transport infrastructure is essential for virtually every physical gas sales transaction.

pipelines for the transportation of gas to multiple parties. Some issues related to gas transportation are contained in GSAs,¹² in particular, the delivery point, which is routinely stated. For example, the contract may provide that the point of delivery for gas shall be at the border between country A and country B (say, Algerian – Moroccan border). GSAs usually tie the transfer of risk from the seller to the buyer to the delivery point (as defined by the contract).

LNG

In contrast to pipeline gas, LNG is mainly transported by maritime LNG vessels of various types (including Moss- and membrane-type tankers), which allows for shipments of LNG over long distances, often from one continent to another, for example, from North America to Europe or Asia.

LNG SPAs routinely contain provisions on the type of LNG vessel to be utilised under the SPA and allocate responsibility for port charges and compliance with various terminal requirements in relation to both loading and unloading of cargoes. The expectation of the parties is that a loaded LNG cargo will transit from its loading port

to a nominated unloading port and it is for the parties to decide whether the cargo is sold free on board (FOB) or delivered to the buyer ex-ship (DES). In practice, the choice between FOB and DES terms can be of significant commercial value since the party who controls the shipping gets more flexibility and access to the potential trading upside.

The destination of LNG cargoes, the final aspect of cargo transportation, has become a contentious issue over the years, with buyers progressively securing a greater degree of destination flexibility in their contracts.¹³ Regulatory intervention measures have also played a role, with the regulators in the EU and Japan effectively removing destination restrictions from deliveries into these markets. In the past decade, destination flexibility has become standard in globally expanding US LNG sales and, more recently, a less controversial issue in the context of LNG sales to Europe.¹⁴ At the same time, the ability to modify deliveries and redirect cargoes has remained a major concern for many Asian LNG buyers. For some of them, destination flexibility has become a pressing issue during the pandemic, especially under LNG SPAs that either prohibit or do not foresee any diversion rights. For example, Chinese LNG SPAs tend to prescribe a single delivery point and expressly prohibit the delivery of the LNG 'to any destination outside of the People's Republic of China'. Other contracts for deliveries to Asia impose several constraints on the execution of diversion rights, including the exclusion of diversions to certain (mainly foreign)

¹² Gas Transportation Agreements (GTAs) contain detailed gas transportation arrangements and form a distinct category of international gas contracts.

¹³ See James Atkin (2020), 'Destination Flexibility in LNG Sales Contracts', OGEL.

¹⁴ Destination restrictions used to be a hotspot for EU antitrust cases in the early 2000s. In the past ten years, the issue has become incidental, with a few examples of relevant cases. Recently, in March 2022, the EU Commission discontinued antitrust proceedings in case AT.40416, which was initiated in June 2018 to examine whether LNG supply agreements between Qatar Petroleum Companies and European buyers hindered the free flow of gas within Europe in breach of EU antitrust rules.



terminals and the requirement to obtain the seller's consent for a diversion, often being the key practical impediment to securing cargo diversion in a timely manner.¹⁵

Delivery failure

Delivery failures would ideally be unheard of in a long-term supply relationship. Nonetheless, the issue of seller's delivery failure may arise in practice from time to time, mainly due to operational difficulties of the seller resulting in undelivered gas or LNG.

The regulation of a seller's liability for delivery failure varies significantly from one contract to another. Some contracts

require the seller, for example, to reimburse the buyer for 'all reasonable, direct, and verifiable damages' incurred by the buyer. This formulation essentially shields the seller from liability from the buyer's consequential (as opposed to direct) losses. Commonly, contracts impose more robust limitations on the seller's liability in the event of its delivery failure, including liability caps set at a certain percentage of the contract price (such as 50 per cent). It is also not uncommon to see a GSA or an LNG SPA lacking express provisions addressing the seller's liability for delivery failure.

The issue of delivery failures has recently attracted extensive press coverage. Several reports have claimed instances of

¹⁵ Ason (2020).

'missed' long-term LNG cargoes, which are understood to have been sold in the spot market instead by sellers taking advantage of arbitrage opportunities during spot price spikes.¹⁶ For pipeline gas, the issue of a seller's delivery failure and related contractual entitlements of the buyers have, in turn, recently become relevant in the context of Gazprom's gas supply cuts.¹⁷

2.2.5 Quality specification

Quality specification is an important aspect of long-term contracts, which is often regulated at length in technical schedules. Quality specification arrangements differ for pipeline gas and LNG and depend on the market where gas or LNG is delivered. They are accompanied by robust measurement and testing provisions.

A novel dimension of quality specifications is the GHG emissions profile of gas or LNG sold under a GSA or an LNG SPA. If the environmental credentials of the product are required by the local regulator (or are otherwise of relevance to the buyer), quality specifications may define the price and use cases of gas or LNG delivered under the contract.

Pipeline gas

GSAs specify the quality of the gas to be delivered by the seller at the delivery point. This specification usually addresses several components, including the required chemical composition, calorific value, and the permitted range for the gas delivery temperature. For gas transported through multi-shipper pipelines, contracts may specify that the characteristics of gas made at the delivery point will be the

same as the characteristics of gas made available to other buyers at the same delivery point.

Gas pipeline pressure is an important safety factor. GSAs usually therefore impose gas pressure maintenance obligations on both parties. The seller and the buyer will then each need to maintain the required pressure of gas in their respective facilities so that the gas will be able to transit into the pipeline at the input point and also into the buyer's gas reception facilities at the output point.

LNG

Like GSAs, LNG SPAs specify the required characteristics of LNG to be delivered under the contract. A sample provision reads along the following lines:

Sample LNG quality specification provision

LNG delivered under this Agreement shall, when converted into a gaseous state, comply with the following specifications:

Minimum Gross Heat Content (dry) 1000 BTU/SCF Maximum Gross Heat Content (dry) 1150 BTU/SCF Minimum methane (C1) 84.0 MOL%

Maximum H2S 0.25 grains per 100 SCF Maximum Sulfur 1.35 grains per 100 SCF Maximum N2 1.5 MOL%

Maximum Ethane (C2) 11 MOL% (...)

¹⁶ S&P Global, 'LNG market upheavals push Asian buyers to seek more legal protection in contracts' (5 May 2021). For a recent analysis, see Max Rockall, Michelle Glassman Bock, and Marija Scekcic, 'Contractual Arbitrage in Today's Gas and LNG Markets', Lexology (4 October 2022).

¹⁷ Most recently, Gazprom suspended gas supplies to Italy. See S&P Global, 'Russia's Gazprom halts gas supplies to Italy due to Austrian 'regulatory changes'' (3 October 2022).



For both pipeline gas and LNG sales, parties can be expected to approach the issue of quality specification with competing interests, with the buyer seeking a possibly detailed specification (such that the LNG quality meets domestic gas supply specification) and the seller preferring a widely drawn formulation to reduce its exposure to the risk of an off-specification delivery.

Off-specification delivery

An off-specification delivery applies to circumstances where gas or LNG delivered under the contract has failed to meet the required quality standard. Contracts define the rights and obligations of the buyer and the liabilities of the seller in such cases. A common differentiation in terms of the seller's liability is made by the contracts between off-specification gas that only technically fails to meet the required specification (but can still be used) and circumstances where the gas is not fit for use by the buyer.

As well as provisions for the delivery of off specification gas to the pipeline, which is the responsibility of the seller of gas, there are also typically provisions for off-specification gas at the buyers'

receipt point, which can then become the responsibility of the pipeline company. This can be very important in the context of commingled gas where there are multiple shippers on a pipeline.

With the progress of decarbonisation efforts, new arrangements for off-specification delivery will be required for failures to meet the required GHG emissions profile of gas or LNG. This applies mainly to cases where the standard defined by a contract is subject to requirements imposed by the regulators (and a failure to meet the required standard may expose the buyer to penalties).

2.2.6 Governing law

The choice of substantive law governing the rights and obligations of the parties under the contract is another important consideration at the contract negotiation table. For the sake of neutrality, parties to international long-term gas and LNG supply contracts typically choose a third-country law (for example, Swiss law for a contract supplying gas from Turkey to Greece). While in pipeline gas sales contracts for deliveries to Europe, the choice of civil law (such as Swiss, French, or Swedish law) is not uncommon, the vast majority of LNG SPAs for long-distance deliveries to both Europe and Asia are governed by a common law system chosen by the parties (in practice, either English or New York law), which offers a strong body of precedent and, potentially, more predictability of the outcome in the event of a dispute.

With the progress of decarbonisation efforts, new arrangements for off-specification delivery will be required for failures to meet the required GHG emissions profile of gas or LNG.

Sample choice-of-law clause

This Agreement, and any non-contractual obligations arising out of or in connection with this Agreement, shall be governed by and interpreted in accordance with the laws of England and Wales.

2.2.7 Other contract terms

In addition to the provisions discussed above, there are several other contract clauses reflecting the key commercial choices of the parties that can be found in long-term LNG and gas supply contracts. These provisions include, *inter alia*, the allocation of tax responsibilities between the parties, limitations of liability, assignment of rights, notices, waivers, and confidentiality arrangements (routinely requiring parties to keep all terms and conditions contained in, and related to, the contract in strict confidence).

2.3 Long-term outlook for market changes

In parallel to negotiating specific commercial aspects of the deal, parties to long-term gas and LNG contracts need to take a long-term outlook in anticipation of market changes that may affect their contractual relationship. The responsiveness to market changes (for example, of structural or regulatory nature) is mainly reflected in the parties' ability to adjust contract terms during the lifetime of the contract. Dispute resolution provisions play an important role in this context, routinely allowing for recourse to third-party dispute settlement and thus protecting parties from inefficiencies of protracted negotiations. In some cases, the right to end an untenable contractual relationship may be available under a contract.

Price review, in essence, serves the purpose of revising the contract price during the (long) lifetime of a contract. The price review clause is the key contractual arrangement in this context. The following example is representative of a price review clause in a GSA and highlights its key components:

*If at any time either Party considers that **economic circumstances** in Spain beyond the control of the Parties, while exercising due diligence, **have substantially changed** as compared to what it reasonably expected when entering into this Contract... and the Contract Price... does not reflect the value of Natural Gas in the Buyer's end user market, then such Party may, by notifying the other Party in writing and giving with such notice information supporting its belief, request that the Parties should forthwith enter into **negotiations** to determine whether or not such changed circumstances exist and justify a revision of the Contract Price provisions and, if so, to seek agreement on a **fair and equitable revision** of... Contract Price provisions...*

*If the parties are **unable to agree upon a new pricing formula within 120 days**, either party may refer such matter to **arbitration**...*

① Price review trigger ② Price review process ③ Price review methodology



Price review trigger

Like the example above, price review clauses in contracts for deliveries to Europe commonly quote 'change of circumstances' as a trigger for a price review. Change of circumstances typically needs to be of a certain magnitude (for example, 'substantial') and linked to a particular market (mainly 'the buyer's market'). Multiple price reviews have been triggered by European buyers in the past few years in response to liberalisation of their domestic markets.

By contrast, price review triggers in contracts supplying Asian markets tend to be strictly temporal. Price reviews under those contracts can be initiated after a set number of years from the date of first delivery (for example, after ten years) and within specified price review windows throughout the life of the contract (for example, within six months after the beginning of every consecutive ten contract years). Recent Asian LNG SPAs tend to stipulate shorter price review

Price review, in essence, serves the purpose of revising the contract price during the (long) lifetime of a contract. The price review clause is the key contractual arrangement in this context.

intervals (typically of four or five years), which offer more flexibility to request a revision of the contract price. But Asian LNG contracts still rarely stipulate that a price review can be requested outside the regular price review periods, or due to a change of circumstances, which constrains the parties in their attempts to revise the contract price.¹⁸ This has become a major concern for many market participants exposed to the volatility of oil and gas prices in the past few months.

¹⁸ Agnieszka Ason (2019). 'Price reviews and arbitrations in Asian LNG markets', OIES Paper NG 144.

The emergence of new players in the industry has led to a greater push towards price review clauses offering recourse to arbitration primarily as a means to hedge against the risk of protracted price review discussions.

Price review process

Negotiation (often referred to as ‘good faith discussions’ in the Asian context) is routinely the first step in a price review process. For many years, arbitration has been a standard dispute resolution method in European price reviews. For a variety of reasons, including the traditional Asian preference for non- adversarial dispute resolution mechanisms, and the close-knit nature of the LNG sector, Asian contracts have not adopted the European preference for arbitration and only required (or encouraged) the parties to ‘meet and discuss’ the contract price. Notably, the attitude towards arbitration is now changing in Asia. The emergence of new players in the industry has led to a greater push towards price review clauses offering recourse to arbitration primarily as a means to hedge against the risk of protracted price review discussions. As a result, recent Asian LNG contracts increasingly provide for arbitration as the second step after good faith discussions

have been conducted for a stipulated period of time. Determination by an expert (or panel of experts), as a separate dispute resolution process with the expert acting as an independent decision-maker, has never evolved into a full-fledged alternative to arbitration in price reviews arising from European contracts. By contrast, some Asian price review clauses submit price review disputes to expert determination.¹⁹

Price review methodology

Many price review clauses offer little guidance as to the factors that should be taken into account in a price review. The example above refers to ‘fair and equitable revision’ of the contract price. Some price review clauses do not specify any instructions or parameters at all for the price review, potentially exposing the contract parties to the risk of undesirable results.²⁰ The lack of guidance on methodology should not cause major problems as long as the decision on the price adjustment remains in the hands of the parties. But problems could arise if informal price discussions fail and the case is submitted to arbitration or expert determination. Parties may feel uncomfortable leaving this vital decision to an external actor whose powers are not constrained in any tangible manner by the contract. In response to such concerns, a wide variety of measures can be adopted to limit the discretion of arbitrators or experts hearing a price review claim, including limits to structural changes to price formulas and quantitative limits to price adjustment.

¹⁹ Agnieszka Ason (2019). ‘Price reviews: Are Asian LNG contract terms finally changing?’, OIES: Oxford Energy Forum.

²⁰ The well-known example of a price review arbitration with unwanted results is the Atlantic LNG case, where a tribunal applied a dual pricing formula that ‘neither party had requested, and both appear to have argued against.’ For a detailed discussion, see Paul Griffin (2017). ‘Principles of price reviews and hardship clauses in long-term gas contracts’, in Paul Griffin (ed.), *Liquefied Natural Gas: The Law and Business of LNG*, Globe Business Publishing, 3rd edition.



Contract renegotiation

In some cases, more comprehensive contract adjustments (going beyond the contract price) are needed in order to respond to changing market fundamentals. Contractual basis for these adjustments tends to be uncertain. Some GSAs and LNG SPAs incorporate provisions, such as ‘meet and discuss’ or hardship clauses, which may serve as contract reopeners. Nonetheless, these clauses are typically general in nature and potentially unenforceable. They also typically do not stipulate any recourse to formal dispute resolution mechanisms and are commonly silent on the consequences of the parties’ failure to reach an agreement on a revision of the relevant contract terms. As a result, renegotiation attempts under GSAs and LNG SPAs often prove unsuccessful.²¹

Based on prior experience, and in anticipation of future market changes and regulatory risks, parties increasingly consider adding a practicable renegotiation

basis to their contracts. An illustrative example of a renegotiation clause is as follows:²²

Model contract renegotiation clause

It is hereby agreed ... that in the event of any major physical or financial change in circumstances ... either party may serve notice on the other requiring the terms of this [contract] to be re-negotiated with effect from the date on which such notice shall be served. The parties shall immediately seek to agree amended terms reflecting such change in circumstances and if agreement is not reached within a period of six months from the date of the notice the matter shall be referred to an Arbitrator...

²¹ For a discussion of contract adjustments and changes to non-price terms in price reviews, see Ason (2020).

²² The clause quoted above is stated in a long-term license agreement between Associated British Ports and Tata Steel UK, *Associated British Ports v Tata Steel* [2017] EWHC 694. For a discussion, see Ason (2020).

Force majeure

Force majeure, broadly speaking, refers to unexpected external circumstances that impede performance under a contract. Both GSAs and LNG SPAs routinely contain force majeure clauses. Each contract will apply its own understanding of what qualifies (or not) as an event of force majeure.

Sample force majeure clause

No failure or omission by either Party to carry out or to perform any of the terms and conditions of this Agreement shall be deemed a breach of this agreement, if and to the extent that such failure or omission arise from Force Majeure.

Contracts often provide illustrative examples of force majeure events. They can be broadly classified into (i) acts of God, (ii) acts of war and civil unrest, (iii) acts of government, and (iv) other circumstances (that are often related to the damage caused to specified gas and LNG infrastructure).

In some cases, more comprehensive contract adjustments (going beyond the contract price) are needed in order to respond to changing market fundamentals.

Figure 1. Examples of force majeure events in long-term gas and LNG supply contracts.

Acts of God	fire, flood, earthquake, lightning, storm, storm warning, cyclone, typhoon, tornado, tidal wave, volcanic eruption, frost, landslide, soil erosion, washout, epidemics, navigational or maritime peril, other natural disaster
Acts of war/civil unrest	acts of war (whether declared or undeclared), invasion, armed conflict, terrorist act, threat of terrorist act, riot, insurrection, acts of public enemies, piracy, strike, lockout, labour disturbances, other forms of civil disturbances
Acts of government	restrictions imposed by public authorities, embargo, sanctions, laws, regulations and other acts of government (or compliance with such acts) that directly affect the ability of the party to perform its contractual obligations
Other circumstances	damage to the seller’s facilities for the production and treatment of natural gas, damage to or failure of the buyer’s facilities, reservoir failure, delays in receiving major equipment, disruption to the voyage of an LN tanker

Circumstances that are expressly excluded from the scope of force majeure under a contract are usually exhaustive and limited. They are often focused on the financial hardship of a party and related issues such as lack of funds, loss of market demand, and currency devaluation.

Technically, a force majeure claim requires notice from the affected party (buyer or seller), leading it to being excused from its obligations under the relevant contract. For example, in the event of a buyer's force majeure, the buyer may be relieved from its take-or-pay obligation. Under most contracts, this will lead to the suspension of deliveries of gas or LNG for the duration of the force majeure event. A buyer claiming force majeure will also usually be required to undertake mitigation efforts to ensure the resumption of normal performance of the contract. Prior to the resumption of normal performance, contracts routinely require that parties continue to perform their obligations to the fullest extent possible.

Although there have been earlier incidental instances of force majeure in gas and LNG industries, the past three years have seen an exponential surge in force majeure notices from both buyers and sellers. The relevant examples concern a wide range of circumstances, initially primarily linked to the effects of the Covid-19 pandemic.²³ More recently, Freeport LNG, a top US LNG producer, has declared (and later retracted) force majeure after the explosion at its facilities in June 2022.²⁴ In the context of pipeline gas deliveries, Gazprom declared force majeure (in July 2022) retroactively for supplies to certain European buyers.²⁵

2.3.2 Dispute resolution

Disputes that arise from time to time are part of commercial reality of every long-term contract. Ideally, disputes will be resolved amicably, without any involvement (and costs) of external actors. In practice, recourse to third-party dispute resolution may help parties resolve their disagreement more efficiently.

Dispute resolution methods

Litigation before national courts, the primary dispute resolution method in domestic settings, is rarely considered as a dispute resolution method in international commercial contracts. This is because none of the parties is ready to accept the home country advantage of the other party. For example, in the context of international gas sales, a German gas buyer would be hesitant to submit the dispute with a Russian supplier to a Russian court. The same consideration applies to the position of the Russian seller before a German court. Courts in other jurisdictions could, in turn, be hesitant to hear the case. For such (or similar) circumstances, 'alternative dispute resolution' (ADR) presents itself as a viable alternative. ADR is a broad term, which covers multiple dispute resolution methods, including arbitration, expert determination, mediation, and negotiation. In negotiation, parties resolve the dispute themselves.

In all other types of ADR, parties define the mandate of external actors. In arbitration and expert determination, arbitrators and experts (who are typically chosen by the parties) act as decision-makers. By contrast, mediators help parties settle their disputes without imposing any binding decision on them.

²³ See Ason and Meidan (2020). 'Force majeure notices from Chinese LNG buyers: Prelude to a renegotiation?', Oxford Energy Comment, OIES.

²⁴ Reuters, 'Freeport LNG retracts force majeure, widening losses for gas buyers – sources' (10 August 2022).

²⁵ Reuters, 'Russia's Gazprom tells European buyers gas supply halt beyond its control' (19 July 2022).



Figure 2. Key dispute resolution methods.

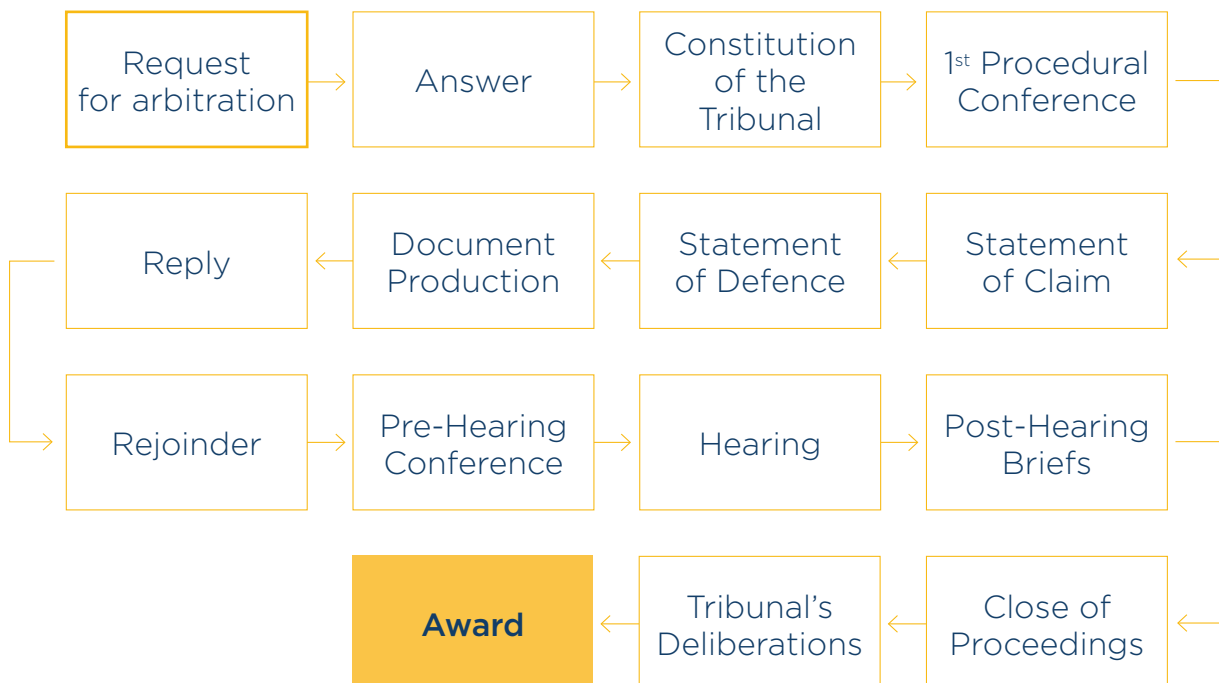


The choice of a dispute resolution method is routinely stated in a contract. Some GSAs and LNG SPAs stipulate various dispute resolution methods for different types of disputes arising under the contract. For example, disputes related to gas quality measurement (and other disputes of technical nature) are often submitted to expert determination. Some contracts expressly allow the parties to choose the most suitable dispute resolution method for their dispute (for example, providing for the choice between arbitration and expert determination for certain categories of disputes).

Arbitration

Arbitration is the preferred dispute resolution mechanism in international commercial contracts. As an alternative to litigation before national courts, it offers parties flexibility, which is reflected in a variety of procedural choices. In particular, the parties can choose the arbitrators, a neutral place of arbitration, the most suitable arbitral rules, the involvement of the administering institution, and the language of arbitration. Furthermore, parties can determine many other aspects of arbitration, including the desired timeframe, structure, and level of confidentiality of arbitral proceedings. In essence, users of arbitration can tailor the arbitral process to their needs.

Figure 3. Illustrative procedural steps in international arbitration.





The outcome of arbitration ('arbitral award') cannot be disregarded by the losing party. It is binding and can be enforced in most jurisdictions across the globe. The options of recourse against an arbitral award are very limited and typically do not include an appeal. Instead, an unfavourable award can be challenged before national courts on narrowly defined grounds. In the absence of violations of due process or mandatory rules pertaining to public policy (for example, competition laws), the prospects of a successful challenge before a national court are very low. In the vast majority of cases, international arbitral awards are final and complied with voluntarily.

There is usually scope for efficiency gains in arbitration. Parties themselves may strengthen time- and cost efficiency of the arbitral process in several ways. For example, they can agree that the proceedings will be 'bifurcated', that is divided into different phases, so that the tribunal will first need to confirm its jurisdiction and, only if confirmed, review the merits of the case as the next step. Furthermore, parties may specify

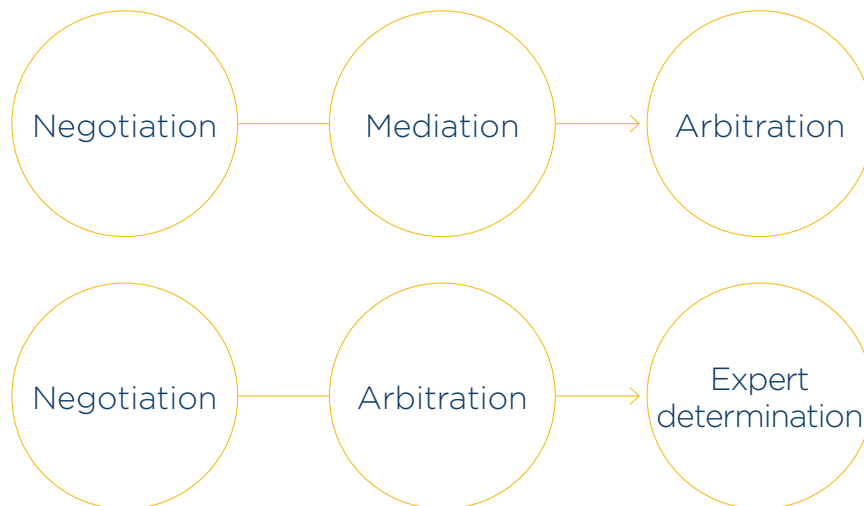
time limits for arbitrators to render an award, determine the scope of document production, or agree in advance on the appropriate method of cost allocation. They can also reduce the number of written submissions, provide for virtual (rather than physical) hearings, or benefit from other forms of technological advancement in arbitration.

Hybrid dispute resolution

A multi-tiered dispute strategy can often benefit the parties. In GSAs and LNG SPAs, negotiation is commonly seen as a pre-arbitration step. Notably, there can be a series of steps in the overall dispute resolution process, prioritising less adversarial means of dispute resolution (such as mediation) before the dispute is submitted to arbitration. For questions where arbitrators heavily rely on expert evidence (such as contract price adjustment), expert determination can be applied as a separate dispute resolution step.²⁶

²⁶ For a discussion of expert determination in price reviews, see Agnieszka Ason (2019). 'Price reviews and arbitrations in Asian LNG markets', OIES Paper NG 144.

Figure 4. Multi-tiered dispute resolution process.



2.3.3 Contract termination

Contract termination before the end of the anticipated contract term is a nuclear option in a long-term business relationship and is rarely considered by the parties, mainly due to reputational risks associated with this step. Nonetheless, contracts can become untenable to either buyer or seller at some point. Accordingly, most GSAs and LNG SPAs, taking a long-term outlook, expressly allow the affected party to end the contractual relationship in certain circumstances.

Termination events

Circumstances where the contract can be terminated by one party (rather than by mutual agreement), are, in practice, limited. Technically, GSAs and LNG SPAs tend to provide closed lists of narrowly defined termination events. Cases of a material breach of contract, insolvency, or other forms of default by buyer or seller are the primary examples that can be found on these lists. Issues related to the guarantor's default also routinely feature as termination events.

Some contract termination rights are time sensitive. At an early stage, a contract may be terminated due to the failure of the party to satisfy a condition precedent by a required date. At later stages, events of prolonged force majeure, or persistent failure by the seller to deliver or a buyer's failure to pay, may also entitle the affected party to exercise its termination right (which is then linked to a predefined period of time, for example, force majeure lasting over 24 months during any 36-month period). In addition to time constraints, termination rights in such cases can be further limited through quantitative thresholds (for example, requiring that the prolonged force majeure resulted in the seller being prevented from making available 50 per cent or more of the ACQ during the periods of force majeure).

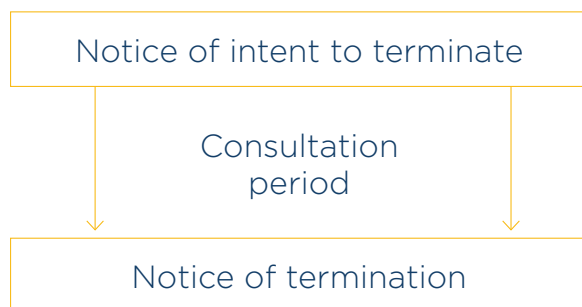
Termination process

Contract termination is typically construed as a right of the party pursuing the end of a contractual relationship (rather than an automatic outcome under a contract) and, at a minimum, requires notice from the terminating party. Contracts stipulate

various requirements related to the content and the timing of the notice. For example, they may require the termination event to be identified 'in reasonable detail' and the notice to be filed within a stipulated period (such as 90 days) from the termination event.

A contract termination process may prove complex. This is particularly the case if the relevant contract termination provisions prescribe several steps and, for instance, differentiate between the notice of intent to terminate and the subsequent notice of termination. The interim step, the consultation period (which is sometimes referred to as 'good faith discussions' in LNG SPAs), can last for several months.

Figure 5. Multi-step contract termination process.



In the absence of sufficient detail in the contract, the required length of the consultation period and its mandatory nature, can become contentious issues and delay the execution of termination rights.

Effects of termination

The consequences of contract termination are typically not stated in great detail in contracts, exposing the parties to uncertainties regarding their respective post-termination positions.

Long-term gas and LNG supply agreements, serving as primary examples of international gas contracts, contain robust provisions that define the rights and obligations of the parties.

Contracts typically merely provide that the termination of the contract should be without prejudice to the rights and remedies of the parties accrued prior to termination and specify the provisions that shall survive the termination of the contract.

3. Conclusions and outlook for international gas contracting

Long-term gas and LNG supply agreements, serving as primary examples of international gas contracts, contain robust provisions that define the rights and obligations of the parties. GSAs and LNG SPAs operate in a dynamic market environment. There are many challenges ahead of these contracts, which always require improvements to contract terms and, at times, urgent responses from the parties.

3.1 Continued pursuit of innovation

Keeping their core contract components in place, GSAs and LNG SPAs have changed substantially over decades, especially in terms of their flexibility arrangements. The recent tendency towards greater contractual flexibility is set to continue in the future, with a growing role of

alternatives to oil indexation and scope for innovation in relation to various operational aspects of the contracts. In recent contracts, there is generally significantly more emphasis on securing volume and delivery modifications in an expedited manner in response to changing market circumstances. Newly signed GSAs and LNG SPAs also tend to offer more legal protections for buyers and sellers in response to future market disruptions.

In parallel, there is a growing cross-influence across various gas and LNG contracting segments. Due to the sustained growth of spot and short-term gas and LNG trading, fundamentals of these transactions have recently become relevant considerations in long-term contract renegotiations and price reviews. At the same time, GSAs and LNG SPAs

are increasingly influenced by the terms commonly found in fast-paced gas and LNG sales. The relevant examples include expanding cargo diversion entitlements and new cargo cancellation rights, which have been recently secured by some long-term LNG buyers. Operating in future globalised and commoditised gas and LNG markets, parties to new-generation GSAs and LNG SPAs could become more open to contract terms already seen (or later emerging) in other contracting segments. The contract structure for the recent US LNG contracts provide an example of how various elements of the gas value chain within the contracts are increasingly becoming unbundled, breaking the link between the commodity element and the transportation (liquefaction) element, similar to the unbundling in the pipeline market in liberalised gas markets.



3.2 Response to decarbonisation

Decarbonisation has become a priority consideration in international gas contracts. Since June 2019, there have been several reported deliveries of LNG cargoes accompanied by carbon offsets. These cargoes, initially designated as ‘carbon-neutral’ and, more recently, as ‘offset-paired’,²⁷ have brought the environmental credentials of LNG deliveries to the forefront of discussion in the LNG industry. With most recent developments initially centred on spot transactions, decarbonisation requirements have become increasingly relevant in the context of long-term LNG contracts. This has been reflected in various industry-driven initiatives aimed at improving the environmental performance of long-term LNG sales. In 2020 and 2021, precedential LNG SPAs accompanied by statements of GHG emissions were announced by Singapore-based Pavilion Energy. In parallel, in July 2021, Shell and PetroChina signed a 5-year contract presented to the public as ‘the world’s first contract for carbon-neutral LNG’,²⁸ establishing a precedent for transposing the idea of ‘carbon-neutral’ LNG to term sales.

The concept of ‘carbon-neutral’ LNG, as such, is not uncontroversial. However, there have been questions raised in the

industry as to its credibility as a commercial product and legal construct. The lack of transparency in the quantification and reporting of GHG emissions is a major concern.²⁹

With priorities in contract negotiations recently shifting in favour of security of supply, announcements of ‘carbon-neutral LNG SPAs’ are not expected in the near term. Nonetheless, due to significant volumes locked into long-term contracts, LNG SPAs with GHG neutrality objectives appear to be the likely next step in the industry’s response to decarbonisation.³⁰

3.3 The impact of the war in Ukraine

Price volatility and supply disruptions following the Russian invasion of Ukraine have adversely affected performance under multiple gas and LNG supply contracts. Parties to GSAs and LNG SPAs have also been confronted with unprecedented demands from the regulators in relation to (and at times manifestly interfering with) their contractual rights.³¹ The prolonged period of market uncertainty has resulted in an increased emphasis on risk management

²⁷ <https://www.chevron.com/newsroom/2022/q3/chevron-delivers-first-offset-paired-lng-cargo>

²⁸ <https://www.shell.com/business-customers/trading-and-supply/trading/news-and-media-releases/shell-and-petrochina-sign-world-s-first-term-contract-for-carbon.html#:~:text=Shell%20and%20PetroChina%20sign%20world's%20first%20term%20contract%20for%20carbon%2Dneutral%20LNG,-Jul%2012%2C%202021&text=PetroChina%20International%20Co.,neutral%20LNG%20supply%20with%20Shell>

²⁹ For a detailed assessment, see Jonathan Stern (2022). ‘Greenhouse Gas Emissions from LNG Trade: from carbon neutral to GHG-verified.’ OIES Energy Insight.

³⁰ In essence, LNG SPAs with GHG neutrality objectives will combine (1) GHG emissions transparency and (2) mitigation measures, including direct emissions reductions (for example, through CCS) and/or carbon offsets. In practice, LNG SPAs with GHG neutrality objectives will create new rights and obligations for the parties.

³¹ The Decree of March 2022 establishing rouble gas payment mechanism serves as the primary example of regulatory intervention in long-term contracts. In the EU, there is an ongoing discussion of regulatory measures aimed at capping the price of gas. See Politico, ‘Europe’s gas price and options, explained.’ (6 October 2022) and Reuters, ‘EU proposes energy measures, avoids immediate gas price cap (18 October 2022).

activities by industry participants and, most recently, led to a significant surge in disputes under long-term contracts.³²

In parallel, the urgent need to mitigate dependence on Russian gas imports has triggered a search for additional supplies and, as of October 2022, has resulted in dozens of new LNG contracts signed this year, including more than 25 deals signed by US producers (for more than 35 million metric tons per year).³³ Although legal and commercial aspects of these new contracts are generally confidential, the reported contract terms (mainly between 15 and 25 years) and the estimated average duration of new contracts nearing 20 years, signal a significant rise in long-term contracting. This, in turn, means a departure from the earlier trend favouring shorter deals.

The resurgence of long-term LNG contracts could either serve as a short-lived phenomenon (applied ad hoc to solve the looming supply crisis) or mark a major shift in contracting practices in the industry. Certainly, the current re-focus on long-term contracts is being driven by a unique set of circumstances, where expectations of buyers and sellers in relation to long contract terms could have become aligned. While sellers generally favour long-term commitments (especially for new gas and LNG projects that require financing), the uncertainties of future decarbonisation requirements have created an additional incentive for the sellers to lock substantial LNG volumes into long-term contracts. Meanwhile, security of supply has re-emerged as the key imperative for buyers, who need to secure stable gas and LNG supplies to meet their domestic demand and are unable to accept the risks of short-term purchases.

One of the questions that may arise in relation to new long-term contracts is whether high spot prices will sustain oil indexation in these contracts. Importantly, high spot prices (similarly to oil price drops during the pandemic) temporarily affect LNG price levels but do not resolve the issue of price formation.

The choice of a pricing arrangement should prioritise a price formation mechanism that is best suited to the relevant economic and market conditions in the long run, rather than being influenced by price levels that are momentarily seen as favourable.³⁴ With that in mind, it seems unlikely that recent events will alter the earlier trajectory of departure from the use of oil indexation in gas and LNG prices.

Finally, one of the most interesting aspects of recent contract negotiations is their speed. Significantly reduced negotiation timeframes (from months to weeks) are understandable under the circumstances but may also expose parties to various risks, including the risk of disputes that may arise between the parties in areas that could not be sufficiently thought through. Relatively less focus on decarbonisation requirements in expedited contract discussions may also eventually expose parties to greater risks of regulatory intervention, especially considering that several SPAs signed this year will run beyond 2040.

The key challenge in the LNG industry in relation to new long-term contracts is therefore to ensure that contracts that are currently being sought after as an urgent solution will serve parties well in the future.

³² See, for example, Reuters, 'Ukraine's Naftogaz initiates new arbitration proceeding against Gazprom' Interfax, 'Czech CEZ preparing lawsuit for arbitration against Gazprom – media' (24 October 2022).

³³ Natural Gas Intelligence, 'European buyers stuck in the mud on long-term natural gas needs, say experts, (7 October 2022).

³⁴ For a discussion of risks of confusing price formation with price levels, see Jonathan Stern and Howard Rogers. (2012). 'The Transition to Hub-Based Pricing in Continental Europe', in Jonathan Stern (ed.). *The Pricing of Internationally Traded Gas*, OIES/OUP.

