Gas Price Reviews – Outlook for Asia

Pipeline gas and liquefied natural gas ("LNG") are usually sold under long-term gas sales agreements ("GSAs"). The duration of a GSA typically exceeds a decade (and is often twenty years) to guarantee a producer's revenue stream needed to finance their project.

Introduction

Given the long-term nature of GSAs, it is difficult, if not impossible, for the parties to agree on a fixed price for the gas being bought/sold. At the same time, the frequent take-or-pay obligations imposed by a GSA require a pricing mechanism that ensures certainty of the price. For this reason, a typical GSA will rely on a pricing formula to calculate the sale price of gas or LNG.

The various elements of such formulae are outside the scope of this article. However, it is important to understand that formulae are not straightforward. By way of example:[1]

$$P_{GAS} = K \times (\alpha \times P_{FUEL\ OIL} \times (H_{GAS} / H_{FUEL\ OIL}) + \beta \times P_{LPG} \times (H_{GAS} / H_{LPG}) \times (1 + R)$$

Where:

P_{GAS} – natural gas city gate price (tax included) in a currency/cm;

K – discount rate;

α, β – weighted percentage of fuel oil and LPG, e.g. 60% and 40% respectively;

$P_{FUEL\ OIL}$, P_{LPG} – import price during the period in currency/kg;

$H_{FUEL\ OIL}$, H_{LPG}, H_{GAS} – heat content of fuel oil, heat content of LPG, and heat content of natural gas (e.g. 10,000 Mcal/kg, 12,000 Mcal/kg and 8,000 Mcal/kg respectively);

R – natural gas VAT rate.

Challenges of indexing oil products

Historically, price formulae relied on a comparison of prices of alternative fuels (i.e. oil products) to establish a commercial price for gas, as in the example above.

Correlation between oil and natural gas price

Without going into the detailed history of the rationale behind this, it suffices to say that, in the past, many countries did not have developed gas markets. Typically, the gas was bought by a State-monopolist from a foreign gas supplier and sold in the buyer's domestic market, without any "gas competition". Instead, the State-monopolists were competing with alternative fuels, such as oil products.

In theory, the indexation of gas to oil products makes sense, as the buyer and seller want to agree on a price that will allow both parties to maintain balanced margins. Theory and practice, however, rarely exist in harmony in a free market.

The indexation of gas to oil products made the gas price formulae volatile. A large movement in the oil price of oil affected the price of alternative fuels and, consequently, the potential margins of the sellers and buyers of gas. In the past decade, we have seen oil volatility materialise through the peaks and troths of 2010, 2011, 2015, 2016, 2018 and now 2020.

At the same time, the economics of natural gas are not intrinsically linked to the price of oil products. By way of example, the developments in hydraulic fracturing (or fracking) drove the cost of gas production down but did not have any considerable impact on the price of oil. This relatively "cheap" gas flooded the markets and drove the price of gas down, without a similar impact on the price of oil.

Last but not least, increasing competition from renewable sources of energy has an impact on the cost of energy, albeit to a different extent in a given market.

All of these factors undermine the notion of a "positive" correlation between the prices of oil and natural gas. Furthermore, these factors argue against the proposition that oil products and natural gas are close pricing substitutes. Therefore, oil-indexation may not always achieve a balanced outcome, as the economics between oil and natural gas may not mirror each other or reflect the market of the buyer.

Liberalisation of markets

The second challenge of oil-indexation is the liberalisation of gas markets. As mentioned above, the State-monopolist model is historic in certain parts of the world. By way of example, the relatively recent liberalisation of the European gas market had a large impact on the way that gas is priced.

[1] Adapted from a research paper by Glada Lahn and Paul Stevens, Finding the 'Right' Price of Exhaustible Resources: The case of gas in the Gulf", Energy, Environment and Resources, Chatham House, October 2014.

As monopolies broke up, consumers were given the choice between different gas suppliers instead of having to decide between gas and alternative fuels. This free market meant that gas was increasingly competing with other gas, instead of alternative fuels.

This highlights a different argument in relation to oil-indexed formulae: in markets where the competing fuel is gas, a reference to alternative fuels may not achieve a commercial result.

Gas hubs

The third challenge with oil-indexed formulae is the emergence of gas hubs in different parts of the world. The model for gas hubs was first developed in North America with the creation of the Henry Hub in the early 1950s. European gas hubs, such as the National Balancing Point (NBP) and the Title Transfer Facility (TTF), are more recent (1996 and 2003, respectively).

A gas hub, in essence, is a free market where a significant amount of trade in gas takes place. This improves transparency through higher trading, and allows for a reflection of the overall price trends since individual trades have less impact on the overall trend of sales.

Due to its high liquidity, price transparency and relevance, many argue that hub-indexation is more preferable for the purposes of a GSA than oil-indexation.

Price review clauses

In the introduction to this article, it was acknowledged that a GSA is a long-term instrument designed to stabilise the margins achieved by a buyer and a seller of gas over time. However, the potential challenges of oil-indexed formulae are that, even with the best of efforts, a price formula may lead to uncommercial results.

For this reason, a GSA will also typically include a price review clause. This allows the parties periodically to renegotiate the price of gas under a particular GSA. An example of a price review clause is the infamous Atlantic LNG GSA:[2]

"*(a) 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 or, after the first Contract Price revision under this Article 8.5, at the time of the latest Contract Price revision under this Article 8.5, and the Contract Price resulting from application of the formula set forth in Article 8.1 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 the above-mentioned Contract Price provisions in accordance with the remaining provisions of this Article 8.5.*

(b) In reviewing the Contract Price in accordance with a request pursuant to sub-Article 8.5(a) above the Parties shall take into account levels and trends in price of supplies of LNG and Natural Gas [intentionally redacted] such supplies being sold under commercial contracts currently in force on arm's length terms, and having due regard to all characteristics of such supplies (including, but not limited to quality, quantity, interruptability, flexibility of deliveries and term of supply).

(c) The Contract Price as revised in accordance with this Article, shall in any event, allow the Buyer to market the LNG supplied hereunder in competition with all competing sources or forms of energy … in the market of the Buyer at the point of consumption, taking into account, inter alia, all appropriate operations, services and risks which are usual in the Natural Gas industry from the points of import for handling and marketing the Natural Gas in all market segments when due regard is given to all characteristics of the LNG supplied under this agreement … and on the basis that sound marketing practices and efficient operations on the part of the Buyer are assumed and such Contract Price shall allow the Buyer to achieve a reasonable rate of return on the LNG delivered hereunder.

(d) Neither Party shall request a Contract Price revision to be effective as of the date which is earlier than twelve (12) Months following the Date of First Commercial Supply and no Party shall request any further revision to be effective as of a date which is earlier than three (3) Calendar Years after the date as of which such Party has last requested a revision to be effective.

(e) Unless the Parties agree otherwise, no price revision shall be effective:

(i) earlier than provided for in (d) above;

(ii) retroactively before the date of notification of the request of such revision; or

(iii) earlier than six (6) months before the date on which agreement is reached or arbitration proceedings are initiated on such revision, whichever is the latest.

(f) If agreement is not reached within six (6) months from the date of notifying the request for Contract Price revision, either Party may submit the matter to arbitration for decision in accordance with the criteria set out in sub-Articles (b) and (c) above.

(g) While, and notwithstanding, the Parties have not reached agreement and no arbitration award is effective, this Contract shall remain in full force and effect and the rights and obligations of the Parties, including, without limitation, the

[2] *Gas Natural Aprovisionamientos, SDG, S.A. v. Atlantic LNG Company of Trinidad and Tobago* (2008) WL 4344525 (S.D.N.Y.)

obligations of the Seller to sell and deliver and the obligations of the Buyer to take and/or pay for LNG at the Contract Price shall remain in effect.

(h) Each Party shall provide all necessary information to substantiate its own claim. No Party shall be required to disclose any business secrets or breach any confidentiality undertaking nor to provide such information as the other Party may need to substantiate its claim."

A similar price review clause can be found in the GSA entered into between Pakistan's State Oil Company and Qatar Liquefied Gas Company in February 2016:[3]

"*15.2 Contract Price Review*

15.2.1 A Party may give a notice ("Price Review Notice") to the other Party to renegotiate the Contract Price no earlier than [intentionally redacted].

15.2.2 Following the issue of the Price Review Notice, the Parties shall meet in good faith and discuss the matter with a view to agreeing what Price Adjustment (if any) is required.

15.2.3 If the Parties agree upon such matters, they shall amend the Contract Price to reflect the revisions (if any) so agreed. Such revised Contract Price shall apply from the Review Date pursuant to Clause 15.2.5 until the end of the Supply Period and neither Party is entitled to give a further Price Review Notice to the other Party.

15.2.4 [intentionally redacted]

15.2.5 Any Price Adjustment which is agreed by the Parties shall take effect in respect of all deliveries of LNG under this Agreement for which the Completion of Unloading falls on or after the date of the Price Review Notice (the "Review Date"). Until any such Price Adjustment has been agreed, the Contract Price shall be determined on a provisional basis under the formula prevailing prior to the Price Adjustment. Where a Price Adjustment is agreed after the relevant Review Date, a perspective calculation and reconciliation (as to the difference between the adjusted Contract Price and the Contract Price provisionally applied, in respect of all delivered of LNG from the Review Date) shall be made, and the resulting adjustment payment (together with the interest at the Base Interest Rate from the invoice due date for each such delivery up to the date of such adjustment payment) paid by the Party from which it is due.

15.2.6 This Agreement and, in particular, the rights and obligations of the Parties, including, without limitation, the obligations of the Seller to sell and deliver and the obligations of the Buyer to take and/or pay for LNG at the Contract Price, shall remain in full force notwithstanding that the Parties have not reached agreement on a Price Adjustment, unless and until terminated in accordance with Clause 15.2.4 or Clause 24."

While price review clauses vary, they usually include:

1. **Trigger**: an event that needs to take place before a price review can commence. The trigger could be the passage of a period of time (e.g. every three years) and/or an external event. The typical external event is a change in the buyer's market that affects the value of natural gas and is not captured by the agreed price formula.[4]

   The burden of proof in this situation would be on the party engaging the price review clause.

2. **Process**: the parties agree on a series of steps that must be taken if a party believes that a Trigger has occurred. This could include the requirement for a notice, a mandatory negotiation period and/or an obligation to provide information to substantiate the engagement of the price review clause.

3. **Methodology**: the parties typically agree on the way in which a price formula is to be renegotiated and/or amended (provided the prescribed Trigger occurred and the agreed Process was followed). The methodology could include:

   a) a requirement for gas to be sold competitively. This should balance the seller's and buyer's margins;

   b) a date from which the formula should apply. Depending on this date, the amended price could apply prospectively or retrospectively; and/or

   c) a mechanism to effect a balancing payment in the event that the formula is applied retrospectively. In other words, if there was an underpayment or an overpayment, how and/or how much a party should pay or refund.

The lack of an agreed methodology could mean that in the event negotiations are unsuccessful, an arbitral tribunal will be at liberty to adjust the formula as it deems fit. This could, as was the case with Atlantic LNG, lead to undesirable results.

Overall, a price review clause is a useful tool to balance the economics of a long-term commitment to buy and sell natural gas. However, in situations where an adjustment to a price formula is valued in the hundreds of millions or billions of US dollars, it is not surprising that not all price review negotiations are successful. If a price review negotiation is unsuccessful, the matter will be typically resolved in arbitration.

It is a widely known fact that the number of price review arbitrations have been on the rise in the past decade. Unsurprisingly, a number of price review arbitrations focus on the preference of hub-indexation over oil-indexed formulae. Hub-

[3] Long Term LNG Sale and Purchase Agreement between Qatar Liquefied Gas Company Limited (2) and Pakistan Company Limited dated 8 February 2016 <https://psopk.com/files/home/use_full_links/qg_executed_redacted_version.pdf> accessed 13 April 2020.

[4] There may also be a requirement that such change is not temporary.

indexed prices are already making their way into GSAs,[5] but in many geographies, there is still no evidence showing a real benefit of hub-indexed prices over oil-indexed prices.

Another issue that some buyers face is that there are no gas hubs relevant to the buyer's market.

Asian markets

Asia not market where there are established gas hubs as there is a lack of liberalisation. While some buyers have partially linked their GSA prices to European hubs, this is not an ideal proxy. In the Asian market, gas has been and still is indexed against crude oil prices. In fact, oil-indexed GSAs (using different baskets/cocktails of oil products) still represent the majority of the market.

Japan, the world's leading LNG importing country, began liberalisation in 1995 by gradually opening up the market and attracting new entrants over that time. The Japanese market has been fully liberalised since 2007. However, this growth is stunted due to limitations of domestic pipeline connections, which pose barriers to new entrants into the market.

Korea is at an earlier stage of liberalisation, with KOGAS importing around 90% of the country's gas demand.

China's increased demand for gas has also resulted in accelerated development in the country's infrastructure in order to accommodate the additional supply.

Gas buyers in Asia are starting to demand a pricing mechanism that is more representative of the market that they operate in. The Platts Japan Korea Marker (JKM) is growing in popularity and has led to some buyers seeking to re-negotiate their terms under oil-indexed GSAs previously linked to the JCC (Japanese Crude Cocktail).

Other developments in infrastructure, such as the TAPI pipeline, will also have an impact on the Asian markets (in particular India and Pakistan). How this will affect GSAs that were signed in the past, remains to be seen.

In order to make the shift from oil-indexed contracts to gas-indexed contracts, a benchmark price will have to be generated. This could only be done by the liberalisation of the markets. In the meantime, it is likely that the frequency of gas price review arbitrations will steadily increase as the price of oil has taken a dramatic turn. Many parties are likely to have commenced the review of the economics of their GSAs and will be considering whether a price review Trigger has occurred.

It is likely that the likes of KOGAS, POSCO, SK Power, CNOOC, CNPC, Petronet, PSO and others will be facing new price review challenges in the current climate.

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[5] Some long-term GSAs have already been 100% hub indexed (e.g. Eni's GSA with Gazprom and some of Statoil's GSAs).