



Energy Charter
Secretariat



Ministry of National
Development

Contractual Issues Related to Energy Trade

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Workshop Report



Anita Orban, Hungarian Ambassador-at-Large for energy security and
Urban Rusnák, Secretary General of the Energy Charter,
during the opening session

The Energy Charter Secretariat (ECS) and the Ministry of National Development of Hungary held this joint workshop to discuss the role of long-term natural gas contracts and the evolution of hub trading against the background of the significant changes on global gas markets. The event brought together around sixty decision-makers from industry and governments from gas exporting, importing and transit countries.

Why this Workshop?

The purpose of the Energy Charter Treaty is to promote long-term cooperation in the energy field, based on complementarities

and mutual benefits. The Treaty also contains an obligation for all of its Contracting Parties to generally develop an open and competitive energy market. The Energy Charter is by its mandate and competence an organisation promoting international energy security.

Gas contracts and trade is the domain of private Companies acting in the market. However, governments and regulators have always had a strong influence. Developments on international gas markets are today subject to intensive public debate. Based on its ambition to contribute to sustainable international cooperation and to balance the interests of energy exporting, importing and transit countries, the Energy Charter Secretariat co-organised this Workshop with Hungary, an important player on the European gas market. The purpose of the Workshop was to allow for a matter-of-fact discussion to promote better mutual understanding.

This note sets out the Energy Charter Secretariat's summary of the discussions at the Workshop. It neither reflects the opinion of the co-organisers nor of any particular participant.

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Why gas is different

Gas is different from other commodities. In view of the transportation challenge and the need for high upfront investments necessary there is a need for a greater connection between supplier and consumer, often involving transit as well. The development of gas markets in different regions of the world was the topic of one of the presentations. Gas markets it was pointed out cannot be understood without taking into consideration the relevant resource base. While there are thousands of suppliers in the US, gas supplies in continental Europe have been dominated by only a few supplier countries. The development of regulation in the US gas market was looked at in detail. Within a period of more than 50 years the US moved from regulation of wellhead prices to a system of deregulated prices and open access to pipelines. Long-term contracts in the US were initially concluded for 10-20 years, but with increasing volumes from numerous suppliers and a mature transportation system available, the contract duration was reduced significantly.

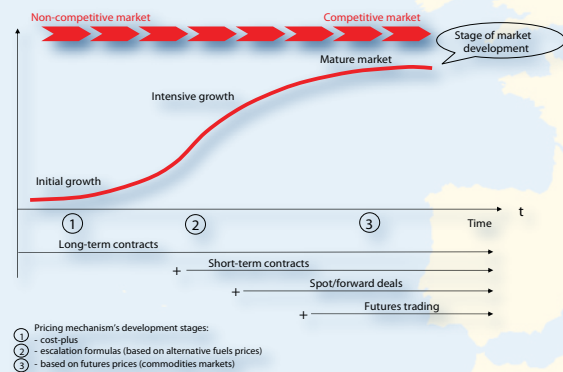


Schematic presentation of gas resource bases

Oil price indexation was never the practice in the United States.

In Europe and Asia, long-term contracts have for decades been the backbone for security of gas supply. Gas trade in Europe involved

international trade across borders from the very beginning. The "Groningen concept" was developed as a basis for exports of Dutch natural gas in the early 1960s. Its purpose was to make investments in gas exploration feasible and bankable and to make the gas tradable in an evolving gas market. The concept foresaw long-term take-or-pay contracts to pay back upstream investments and a pricing formula indexed to gas replacement values (mainly petroleum products), a net-back to the delivery point, price reviews and destination clauses. Russian gas exports followed this model, with pay-back periods even longer due to higher unit capital investments in the supergiant West-Siberian fields and long transportation distances.



Phases towards a competitive gas market,
based on A. Konoplyanik, Putting a Price on Energy,
Energy Charter Secretariat, 2007

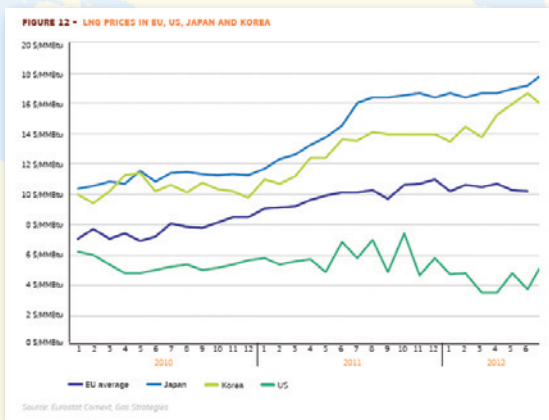
Another presentation focused on the evolution of oil and gas markets from non-competitive to competitive ones. Replacement value pricing, e.g. on the basis of oil or petroleum product indexation, is necessary during the period of intensive growth of gas markets. In the advanced stage of market development, spot contracts and spot pricing are introduced, going beyond physical markets to include paper markets.

At the time, oil or oil product prices were considered an adequate basis for gas price indexes, as they were rather stable, could sustain the investments and could not be manipulated by the parties.

The price of gas

Several presentations addressed the repercussions of the US shale gas revolution for global gas markets. Additional supplies on the global market have resulted in a painful spread between oil-indexed gas prices and spot prices. As a result, increasing volumes of gas are traded at hubs. In Europe, their share is approaching 50%, whereas in Japan they have reached 20%. Nevertheless, gas imports remain costly. For example, due to increasing imports following the Fukushima accident and a simultaneous rise of LNG prices the overall cost of Japan's gas imports has almost doubled in three years to about 6 trillion Yen (46 billion Euro).

With regard to the possible impact of LNG exports from the US on global pricing, an estimate was given that due to the transportation cost, gas prices in 2020 in Europe would remain about 6 USD higher per MBtu than US Henry Hub and prices in Asia about 7 USD higher.



Spread of world LNG prices

Participants also discussed the divergence of pricing levels of long-term contracts in Europe, going from 10,5 \$/MBtu in Germany to 16 \$ in Bulgaria. It was argued that those differences are related to the respective power of the buyer and the seller at the moment of signing a contract. These facts triggered a lively discussion on the underlying pricing



Experts following one of the panel presentations

mechanisms and the recent changes in the world of gas.

The old and the new gas world

Market developments such as the shale gas revolution in the US are part of a new gas world which is evolving. Changes in the market structure in Europe were another topic broadly discussed. In the "old world" wholesale utility companies in the consuming countries bought natural gas on the basis of long-term (20 years and more) contracts. They assumed the volume risk based on take-or-pay obligations, while the producer was taking the price risk, based on oil indexation. Due to their monopoly position, the utilities could pass on price increases to the final consumer.

In the new gas world, competition in the supply in the final destination market means that the price risk can no longer be passed easily to consumers. Price reopeners are insufficiently responsive to the volatile short-term price movement. The creation of wholesale pricing hubs creates the opportunity to share the price and volume risk on a new basis. This is why there is strong interest in consuming countries in the development of gas trading hubs. It is, for example, part of EU policy, based on the Third Energy Package and the Gas Target Model. Gas trading hubs in Europe are still far away from the liquidity of Henry Hub in the US, but they do show increasing

depth and price correlation due to better interconnection. This is what made some of the participants optimistic with regard to their future dominant role in international gas trade. Steps to promote the development of liquid hubs are also under consideration within the Japanese government.

A new balance of risks?

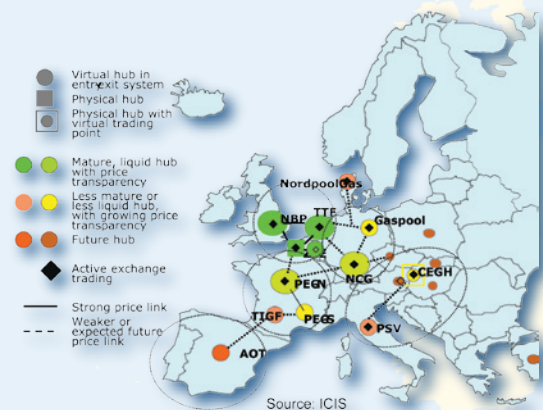
Consumers currently benefit from lower prices at liquid trading hubs. But to what extent is this situation sustainable?

Gas producers argue that the price risk is increasingly being pushed onto them. They face price revision procedures, and in a world where gas trade would be based solely on spot trade they would assume the price risk fully. This happens at a time of challenges and great uncertainty. From the producer's view, upstream projects have become more capital intensive. There is uncertainty about future demand. While demand is rising globally, this is not the case in Europe, where an increase of renewable energy and coal has been observed recently. Energy policy decisions in the consuming countries have added to this uncertainty. However, state-owned gas producing companies in the exporting countries are less interested in shareholder value than in the benefits of their activities for future generations. As a result, they may be reluctant to invest into major new exploration projects.

It was stated that "gold-plated" investment guarantees are not available any more on today's gas markets. Producers needed to move to a "low-cost" investment standard. According to this view, expensive projects that require oil indexation to be profitable will be indefinitely postponed. The participants discussed how the objective of long-term sustainable energy supply can be achieved under such circumstances.

Experts discussed to what extent hubs in Europe are mature enough to provide sufficient comfort to lenders. For that purpose they need to be sufficiently liquid and deep. A shallow spot market is not suitable for the management of a large scale volume risk. Even with a functioning spot market, the equity commitment of the investor will need to be higher, as banks used to favour long-term contracts. The role of the public authorities as investors may also become more important.

Another concern is that spot prices are volatile and may be subject to manipulation.



Gas hubs in Europe

Participants agreed that spot gas pricing does not necessarily mean lower prices. Prices will become more volatile and could possibly be even higher than under oil indexation. There is a risk that hub trading prices may be manipulated, in particular if only a limited number of suppliers are available. The spectrum of participants in a spot market is more open, but also possibly unstable, with a strong role for financial players. It was argued that spot prices and forward curves are unpredictable, as they are based on frequently changing perceptions of global financial players. Price quotations at trading hubs provide for more immediate transparency, but the underlying reasoning for prices is less clear than a fixed price formula in a long-term contract.

Energy policy, public principles for gas trade

The fact that there was joint participation of industry and government representatives allowed particular attention to be paid to the different roles that public and private actors play in international gas markets.

There was general agreement on the three objectives of government energy policy. The first one, energy security, is security of supply for the consumer and reliability of markets for the producer. The second one is affordability for the buyer, but also a price that can support new supplies in the future. The third one is environmental sustainability.

For governing network industries like natural gas, the following public principles were identified: Consumer protection, use of essential facilities and opportunities for new entrants. Regulation is not an end in itself but a means to achieve a competitive market in the consumers' interest. Competitive markets, it was argued, presuppose an efficient price discovery based on supply-demand fundamentals at liquid marketplaces and market entry possibilities by non-incumbent players.

Governments are usually not party to or negotiators of gas supply or pipeline capacity contracts. But governments may set rules to ensure that free pipeline capacity is made available and that no supplier can misuse a dominant position on the market. Nevertheless, there was agreement that there are limits to overcoming price differentials based on regulatory measures. The major price differentials that exist within the US gas market are a case in point. Against this background, the aim to achieve a single price for gas may be unrealistic.

In view of the diverging market conditions, in particular the resource base, the question was posed whether an open access policy following the US example can deliver on

the given policy objectives. It was argued that regulation may not always provide the best consumer protection, in particular in view of the long-term availability of supplies. Concerns were also voiced with regard to the objective of price stability for consumers. Another expert argued that unbundling may compromise reliability of supplies in extreme circumstances. In this regard it was asked why a consumer should not be allowed to own gas storage. From the transit country's perspective there is also a concern about the security of transit flows.



During one of the expert sessions

Downstream regulation needs to take into account the views of the supplier as much as the supplier needs to adapt to the changing conditions faced by the buyer. There was a view that regulation may not change the fact that Europe is surrounded by monopoly suppliers. Nevertheless, new suppliers have recently entered the market.

Private principles of gas trade

Along with energy policy objectives and public principles there are also private principles that govern international gas trade, given the fact that contractual and commercial relationships usually exist between private companies. Such principles were referred to as entrepreneurial freedom, non-manipulation of price, price competition in the final market and

investment recovery and protection. This requires freedom of choice with regard to the delivery point, whether hub or final consumers. Parties should have the choice of pricing terms in the context of the whole portfolio and be flexible in view of options such as short-term, long-term, own gas and pipeline capacity. Nonetheless in order to achieve such freedom, regulatory intervention is sometimes required.

Long-term contracts are custom-made and highly complex agreements. The pricing provisions reflect the balance of commitments between the buyer and the seller. In other words, they reflect the relative risking or de-risking of gas sales agreements, including flexibilities, take-or-pay mitigations, interruptability of deliveries, alternative delivery points and force majeure. Long-term contracts may include penalties for the supplier in case of non-availability of gas and interest on overdue payment by the buyer or other enforcement provisions. From an economic perspective, the price formula must be consistent with both parties' respective opportunity costs. Against this background, and also in view of the confidentiality of contracts, one participant argued that policy advice on how gas sales agreements should look like would be inappropriate.

Coexistence of several pricing mechanisms?

How will gas trade be organised in the future? Participants recognised a move towards more hub-based pricing. This said, there was hardly any doubt that long-term contracts will be needed in the future in order to sustain investments and supplies.

The question is rather whether long-term contracts will still be based on oil indexation. It is obvious that this is currently not the preferred mechanism, but there are also doubts that a better one exists. Some

participants did see a world of international gas trade based on gas-to-gas competition only. But emphasis was put on the freedom for market participants to choose the pricing formula that suits them best.

There was a strong view expressed that neither a rigid application of oil parity nor a single price market based entirely on spot quotation are likely options in current circumstances. It is more probable that indexation would continue, however deviating from petroleum products indexation to include spot gas quotation and other competing fuels in the basket formula. The oil index may continue to provide some advantages in view of greater depth and forward price availability, and a wide existence of related hedging mechanisms and derivatives.

Conclusions

At the conclusion of the discussions at the Workshop on Contractual Issues Related to Energy Trade, the Secretariat noted that long-term natural gas contracts used to play a strong role for energy security and continue to provide important signals for strategic investments in exploration and infrastructure, making them viable and bankable.

There is a trend towards a variety of contractual structures including more spot trading or gas-indexed term contracts. However, this trend is specific for each region. Such gas pricing, based on supply and demand at trading hubs may as well provide adequate signals to market participants, including for investments. However, to that end trading hubs need to be sufficiently deep and liquid and must not be subject to manipulation.

Both long-term contracts and spot priced sales can provide acceptable solutions to buyers and sellers. They need to provide an acceptable balance of risks, in view of the



marketability of the product as well as the return on the investment and the compliance with the applicable competition rules.

Long-term take-or-pay contracts based on alternative fuel indexation may provide a value in terms of flexibility and security of supply. While benefiting from this, the buyer-reseller is constrained in view of the competitiveness of natural gas in the relevant market.

Short-term trading may provide additional benefits for the end user in view of lower prices. But spot indexation may also mean more price volatility and higher prices.

There is strong support for the freedom of entrepreneurial choice as the basic principle governing commercial terms and conditions in international gas trade. Governments have an important role in promoting

energy policy objectives such as energy security, competitiveness and environmental protection. Regulation needs to take into account an analysis of its long-term impact and the specificities of regional and national markets as well as the mutual and at times diverging interest of exporters and importers.

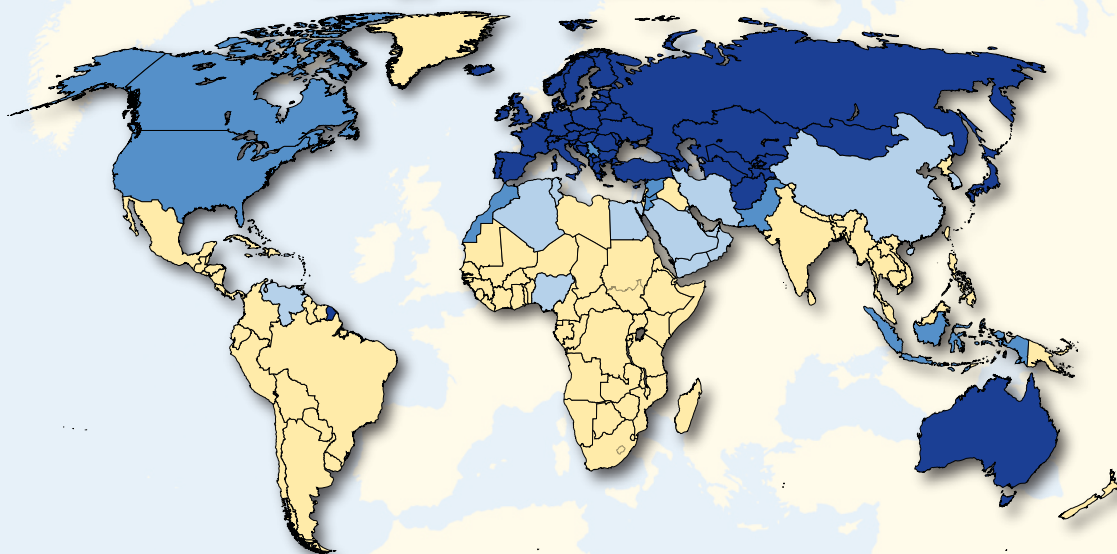
Support was expressed for the role of international organisations such as the Energy Charter as a forum for dialogue for governments and industry from energy producing, consuming and transit countries. International organisations can also provide analysis in support of this dialogue. On the basis of such international cooperation, common principles and/or rules could be developed to facilitate cross-border trade and interconnections and to make the international gas market more efficient.



About Us

The Energy Charter Secretariat monitors the implementation of the Energy Charter Treaty and provides support to the Treaty-based international organisation, the Energy Charter Conference (52 states). The aim of the Treaty is to strengthen the rule of law on energy issues, by creating a level playing field of rules to be observed by all participating governments, thereby mitigating risks associated with energy-related investment and trade. The Treaty focuses on: the protection of foreign investments; non-discriminatory conditions for energy trade; reliable energy transit; the resolution of state-to-state and, in the case of investments, investor-state disputes; and energy efficiency policies.

Energy Charter Constituency



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area

MEMBERS OF THE ENERGY CHARTER CONFERENCE – signed the 1991 Energy Charter and the 1994 Energy Charter Treaty

Afghanistan, Albania, Armenia, Australia*, Austria, Azerbaijan, Belarus*, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, European Community (now part of the European Union) and Euratom, Finland, France, Georgia, Germany, Greece, Hungary, Iceland*, Ireland, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Mongolia, the Netherlands, Norway*, Poland, Portugal, Romania, Russian Federation[^], Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan

* – denotes state in which ratification of the Energy Charter Treaty is still pending

[^] – the Russian Federation signed the Energy Charter Treaty and was applying it provisionally until 18 October 2009 inclusive

OBSERVERS TO THE ENERGY CHARTER CONFERENCE – signed the 1991 Energy Charter

Canada, Indonesia, Jordan, Montenegro, Morocco, Pakistan, Serbia, Syria, United States of America

OBSERVERS TO THE ENERGY CHARTER CONFERENCE – by invitation of the Conference

Algeria, Bahrain, China, Egypt, Iran, Korea, Kuwait, Nigeria, Oman, Palestinian National Authority, Qatar, Saudi Arabia, Tunisia, United Arab Emirates, Venezuela, Yemen

International Organisations with Observer Status:

ASEAN, BASREC, BSEC, CIS Electric Power Council, EBRD, IEA, OECD, UN-ECE, World Bank, WTO

The Energy Charter Secretariat also has signed in November 2007 a Letter of Understanding on Cooperative Activities with the Secretariat of the International Energy Forum

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