INTERVIEW

"The Current Level of LNG Prices Does Not Ensure the Viability of Many Liquefaction Projects,"

Armelle Lecarpentier, Chief Economist of **Cedigaz**, tells **AOG**

- A recovery in the **European power sector**'s natural gas consumption cannot be expected before 2020
- Cedigaz expects **world gas consumption** to start growing again in 2015
- The **share of gas** in the global energy mix could rise from 21% in 2013 to nearly 24% by 2035
- **Unconventional gas** could account for 32% of world natural gas production in 2035
- **European gas imports** are going to increase significantly and **Russia** is expected to carry on playing a dominant role in Europe's long-term gas supplies

(Following is the text of an interview with Ms. Armelle Lecarpentier, Chief Economist of **Cedigaz**, which is based in Rueil-Malmaison, near Paris – www.cedigaz.org).

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Arab Oil & Gas (AOG): *Natural gas is not very popular in Europe at the moment, since consumption has fallen substantially in the European Union, the carbon price is very low, and there is strong competition from coal and renewable energy sources for the generation of electricity. How does* ***Cedigaz*** *view the* ***prospects for natural gas in the European Union*** *between now and 2020 roughly?*

■ **Armelle Lecarpentier**: Gas demand in the EU is expected to remain sluggish through the rest of this decade, except for 2015, when a brief rebound is currently taking place due to meteorological factors. In the absence of a sufficiently high carbon price, no recovery in the European power sector's gas consumption can be expected before 2020: renewable energies will continue to gain ground and coal will always remain competitive due to its abundant supply, which has weighed heavily on prices over the past two years. The United Kingdom, where gas is becoming competitive again thanks to a carbon tax, is a special case. In view of the maturity of the EU market and the advances made in energy efficiency, no significant growth in the gas demand of the industrial and residential-tertiary sectors can be expected either.

It has to be pointed out that the situation is different if one looks beyond the EU at the less developed markets of Turkey and the Balkans, which should see a rapid growth in their gas consumption over the medium term. Furthermore, natural gas for vehicles will take time to develop during this decade because of the lack of infrastructure at the moment.

AOG: *In early June several European oil and gas companies called on national governments to introduce economic mechanisms for setting the* ***carbon price*** *at a sufficiently high level and clearly indicated that coal would have to be driven out of power generation for environmental reasons. Looking ahead to the* ***COP21*** *conference taking place in Paris later this year, do you think that gas might score some points over coal in the coming years?*

■ **A.L.**: In the context of *COP21*, gas might effectively succeed in emerging a winner and gaining ground over coal in tandem with the upsurge in renewable energies. The gas community has joined the climate cause in the run-up to *COP21*. In effect, one has to remember that gas emits two to three times less carbon dioxide (CO_2) than coal and can thus make a major contribution to the fight against climate change.

At the present time the earth's two largest polluters, China and the United States, have chosen to give the primary role to gas in their energy mix, and at the same time they have made strong official commitments in favor of the climate ahead of *COP21*. Concrete measures have already been taken to reduce the carbon emissions of the most polluting fossil fuels (embodied in the United States' *Clean Power Plan*, and the Five-Year Plan and the introduction of pilot CO_2 emission exchange schemes in China). It has to be hoped that China's contribution will have a domino effect on other developing countries where coal predominates, especially in Asia (India).

AOG: *: What are your forecasts for the* ***development of world gas consumption and production*** *in 2015?*

■ **A.L.**: Gas consumption was virtually stable in 2014, due in particular to exceptionally mild weather conditions in Europe, but this situation is not the same in 2015. Elsewhere, the North American and Middle Eastern markets should continue to grow. That is why Cedigaz expects gas consumption to recover relative to 2014. However, some underlying trends persist and are continuing to have a negative impact on demand: the weakness of gas demand in Asia

WHO'S WHO

> Armelle Lecarpentier

Chief Economist, CEDIGAZ

Armelle Lecarpentier is Chief Economist at **CEDIGAZ**, the international association for natural gas. CEDIGAZ is an international association with around 80 members worldwide, created in 1961 by a group of international oil and gas companies and the **Institut Français du Pétrole Energies nouvelles** (IFPEN). Dedicated to the natural gas sector, CEDIGAZ collects and analyses worldwide economic information on natural gas, LNG and unconventional gas in an exhaustive and critical way.

Armelle Lecarpentier had firstly collaborated to the publication of the book *World Energy Investment Outlook* at the **International Energy Agency** in 2003, before joining CEDIGAZ. She published the following thematic surveys: *The Players on the European Gas Market* (2004, 2008) and *Underground Gas Storage in the World* (2006). She is now in charge of gas market analysis, energy projections and annual statistical studies. She regularly writes articles, especially for the **Association Française du Gaz** (AFG), participates in international conferences and gives courses on gas markets at I**FP School**. Armelle Lecarpentier holds a post-graduate degree in energy economics from the IFP School in Rueil Malmaison, France.

(inter-energy competition), slower economic growth in China, the decline in industrial activity in Russia, insufficient gas supply in Africa and Latin America … This combination of factors points to global gas consumption and production rising by 1.5% to 2% in 2015, which is below the rate of growth seen in the gas market over the past decade.

AOG: *How might **world gas trade** develop in 2015?*

■ **A.L.**: International trade should enjoy positive but moderate growth this year, driven by the import requirements of Europe, where falling production is offset by imports of liquefied natural gas (LNG) and Russian gas. World LNG trade is growing appreciably under the effect of the upsurge in supply from Australia: it is now expected to grow by between 2% and 3% in 2015. In a context of weak demand in Asia, the current LNG surplus is finding an outlet in Europe, where imports bounded by 30% in the first five months of this year relative to 2014. Furthermore, in view of the level of oil prices over the past six months, the prices of Russian gas are going to become more competitive again relative to spot LNG prices in the second half of this year, which should also result in an appreciable increase in imports from Russia.

AOG: *Have you produced forecasts/projections for **world gas consumption by the year 2030 or 2040**, and if so, what are they?*

■ **A.L.**: The Cedigaz international association published its *Medium and Long Term Natural Gas Outlook* in February this year, which outlines projections and trends in the world gas sector up to 2035. In this scenario, primary energy demand grows by 1.3% a year and gas demand by 1.8% a year during the period. The share of natural gas in the world energy mix is thus going to increase from 21% in 2013 to nearly 24% by 2035. Emerging markets will account for 75% of the growth in world natural gas consumption between now and 2035, due to sustained economic growth, political interventions in China, and the substitution of oil for natural gas in all sectors of consumption. Natural gas use is also going to expand in the power generation sector – and to a lesser extent in transportation – in OECD countries, on the assumption that more incentives are introduced into the regulatory framework. The external dependence of Europe and Asia is going to increase and lead to growth in net inter-regional natural gas trade of over 3% a year.

The LNG alternative should develop more rapidly than gas exports by pipeline, which is going to make for greater flexibility and internationalization in world gas trade. Since the competition from coal remains very strong, especially in the power generation sector, the introduction of energy and environmental policies that favor gas at the expense of other fossil fuels will be of major importance.

AOG: ***Gas prices** have fallen considerably on the Asian market and are now close to those prevailing on the European market. Could this narrowing of the gap prove lasting?*

■ **A.L.**: Since December spot prices in Asia have moved closer to the European spot price on the **National Balancing Point** (NBP) at the level of parity, and LNG cargoes have been massively redirected towards Europe, which continues to absorb the majority of shipments. This situation can be expected to persist in the short term, since it is highly likely that the international LNG market will remain over-supplied: stocks are ample and LNG supply is going to continue growing thanks to the progressive increase in production from Australian projects. Prices in Asia and Europe could even fall in the second half of 2015. Competition between gas and other energies, the revival of nuclear energy in North-East Asia, and the slowdown in Chinese economic growth are all factors tending to depress Asian demand. It remains to be seen how emerging markets' demand is going to react to prices of around $6/million Btu …

AOG: *Can you provide an update on the development of world* ***unconventional gas*** *production?*

■ **A.L.**: As regards unconventional gas, current developments are dominated by the upsurge in shale gas production in the United States (which is resisting the fall in oil prices), the takeoff of shale gas production in China (1.3 billion cu m in 2014), and the growth of coal-bed methane (CBM) extraction for the production of LNG for export in Australia. At the moment 80% of world unconventional gas production (including tight gas) is concentrated in the United States, as is almost the whole of global shale gas production.

In the Cedigaz scenario, unconventional gas is going to account for 60% of the increase in world natural gas production up to 2035 and will represent 32% of the total at that point (as against 19% in 2013). Outside North America, the growth of unconventional gas production will mainly be driven by China and Australia. The development of shale gas is going to spread very progressively to the world level from 2020-2025 onwards, but production will be concentrated in a small number of countries.

AOG: *The* ***United States*** *is going to become an LNG exporter in 2015 and will be a net natural gas exporter shortly after that, before becoming one of the world's leading LNG exporters by the early 2020s. What could be the main consequences for international gas markets of this growth in the United States' LNG production?*

■ **A.L.**: The arrival of American LNG is going to increase the liquidity of the international market and encourage arbitrage operations and flexibility in trade flows. It will help to balance the market and limit tensions around prices. When these flows become sufficiently large, the delivery cost of American LNG on the basis of the **Henry Hub** may become the reference price that determines the level of European and Asian spot prices. U.S. LNG is also going to play a part in increasing the proportion of long-term purchases indexed on spot prices in Europe and, to a lesser extent, Asia.

AOG: *Given developments in the* ***United States, Mozambique, Tanzania*** *and the* ***Eastern Mediterranean, Gazprom****'s new plans for exporting more gas to Europe and Asia, the massive expansion of LNG export capacity in Australia, and so on, it would appear that the world is not going to be short of gas between now and the early or middle 2020s. What do you think?*

■ **A.L.**: Demand for LNG is going to continue growing strongly beyond 2020, driven in particular by the arrival of a growing number of importing countries. But after the wave of supply expansion observed during the decade thanks to Australian and American projects, that demand will have to be met by additional sources to ensure the diversity and security of supply of leading consuming countries.

This is that much truer insofar as LNG production is often constrained by the domestic needs of producing countries, and is actually declining in some of them (South-East Asia). In China, LNG will also have to play a key role in the diversification of supplies (in addition to imports from Russia and Central Asia), whereas conventional gas production is going to level off between now and 2020.

But the current level of LNG prices does not guarantee the profitability of many gas liquefaction projects (in Australia, Canada, East Africa, the Eastern Mediterranean ...). Some of them have already been scrapped or deferred. If new investment decisions are not taken within the next two years, the LNG market is likely to experience tensions from 2020 onwards.

AOG: ***Gazprom*** *would like to step up its gas deliveries to the European market as well as increase its market share in the region. Is that realistic?*

■ **A.L.**: Due to the decline in European production and the downward revision of the production ceiling fixed for the **Groningen** field, European imports are bound to grow significantly. In that situation, Gazprom is likely to see its market share increase over the 2015-2018 period. But it is unlikely that its share can continue to rise over the long term in view of the conflict with **Ukraine** (Gazprom has announced that it wants to stop gas transiting via Ukraine after 2019) and of the determination of the European authorities to limit the EU's dependence on Russian gas.

Alternative supply projects, such as the southern European gas corridor, pose numerous challenges that will have to be met. There are political risks (the Middle East, offshore disputes in the Eastern Mediterranean), security problems (Iraq), legal obstacles (the demarcation of the Caspian Sea), and economic, commercial and regulatory barriers. Moreover, there is often competition between export destinations, as well as between external needs and the domestic needs of exporting countries (this is the case in particular of U.S. LNG). That is why, even if it does not succeed in increasing its market share in Europe, Russia should preserve its predominant role as a long-term supplier to Europe.

AOG: *What might be the consequences for the European gas market of the European Union's* ***Energy Union project****?*

■ **A.L.**: The purpose of the European Energy Union program is to promote the transition to a sustainable, reliable and efficient energy supply by means of renewable energies and greater energy efficiency. In this situation, gas can have its place as a transition energy: it is abundant and can be utilized for all applications (including transportation), it promotes energy efficiency, emits little CO_2, and combines perfectly with renewables thanks to the flexibility of thermal gas-fired power stations. In view of the long-term decarbonization of the economy, natural gas will be able to give way to gas from renewable sources that utilizes existing gas infrastructure.

The Energy Union project calls for the development of gas infrastructure and for the strengthening of interconnections between European countries to increase the security and efficiency of energy supplies within the unified market. Furthermore, it aims to diversify sources of supply by giving precedence to the creation of the southern gas corridor so as to limit Europe's dependence on Russian gas. But that implies meeting a number of the above-mentioned challenges and putting in place a clear and appropriate political and regulatory framework that sends the "right signals" to investors by giving them long-term visibility. The different players (public and private) at every level of the chain will have to make the effort to cooperate in order to permit the harmonious development of the European gas market.

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