INTERVIEW

In Our Most Optimistic Scenario, European Gas Consumption Does Not Return to its 2010 Level Until 2020,

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

- In many producing countries, natural gas exports are competing with the growing needs of the local population.
- World gas consumption is expected to grow at an average annual rate of 2.5% between now and 2020.
- Traditional exporters of natural gas by pipeline will remain the principal suppliers to Europe but will have to adapt to a more competitive environment.
- It is hard to imagine a single pricing model that would apply to all gas markets.

(Following is the text of an interview with Armelle Lecarpentier, Chief Economist of **CEDIGAZ**. See next page for her biography, which contains a brief presentation of the activities of CEDIGAZ: www.cedigaz.org).

Arab Oil and Gas: *According to the estimates of **CEDIGAZ**, the **world's apparent natural gas consumption** increased by 2.2% to 3,349 billion cubic meters in 2012, compared with an average annual growth rate of 2.7% over the past 10 years. Are Europe and the former Soviet Union primarily responsible for that?*

Photo CEDIGAZ.

■ **Armelle Lecarpentier**: Demand was particularly strong in North America and the emerging countries of the Southern Hemisphere, but conversely two regions saw their gas consumption decline: Europe and the CIS. In Europe, demand on the part of industry and the power sector is sluggish due to the economic crisis, and gas is continuing to lose ground in the power sector as a result of the growth in renewable energies (in Spain and Germany) and in the face of fierce competition from coal (especially in the United Kingdom), while the price of a ton of CO_2 is very low.

In the CIS, and especially Russia, the decline in demand is attributable to the slowdown in industrial activity, the advances made in the energy efficiency of (gas-fired, combined-cycle) power stations, and the significant development of nuclear power.

AOG: *According to CEDIGAZ again, the volume of **international gas trade** is estimated to have dipped by 0.8% to 1,016 billion cubic meters in 2012. There were declines both in the **volumes***

***exported by gasline** and in those exported in the form of **liquefied natural gas** (LNG). As regards exports by pipeline, one obviously sees the negative impact of the European economic crisis on Russia's exports, but what are the main reasons for the drop in LNG exports?*

■ **A.L.**: World LNG exports effectively fell by 2.2% in 2012, according to CEDIGAZ, which in volume terms represents a historic drop of over 7 billion cubic meters. Limitations on the supply of LNG put a brake on the expansion of world gas demand and weighed on international prices in Asia and Europe. These tensions affecting world gas supply remain in evidence today.

Apart from recurring delays in the implementation of new projects, they are mainly linked to the lack of gas available for existing plants in a large number of producing countries, especially as exports are competing with the growing needs of the local population. This is particularly the case of countries in North Africa (Egypt, Algeria) and South-East Asia (Indonesia, Malaysia). In 2012 we started to see domestic LNG transfers in Indonesia, from the local production plant in Bontang to a new regasification terminal in Jakarta. In Egypt, the Damietta plant ceased operating in the first quarter of this year due to a shortage of feed gas, and the country is planning to build a floating regasification terminal. Political tensions and internal conflicts in certain countries may also hamper the proper operation of LNG export facilities, as attested by the acts of sabotage against gas infrastructure in Yemen and, more recently, Nigeria. More minor factors such as prolonged technical defects and unscheduled maintenance work have also had a non-negligible impact in 2013.

AOG: *While several countries saw their production rise significantly last year, you point out that many producing states are facing **growing competition between their domestic needs and exports**. Can you elaborate on that point?*

■ **A.L.**: Emerging countries are effectively experiencing an explosion in the demand for gas, which is growing by over 5% a year, driven by demographic and economic growth (industrialization and urbanization). In the Middle East, gas is a competitive energy source that

WHO'S WHO

> Armelle Lecarpentier

Chief Economist of CEDIGAZ

Armelle Lecarpentier holds a degree in energy economics from the **IFP School** in the Paris suburb of Rueil Malmaison and helped to produce the *World Energy Investment Outlook* of the **International Energy Agency** before joining **CEDIGAZ** in 2003. She is now Chief Economist of this international association, which was founded in 1961 by a group of oil and gas companies and **IFP** (which has since become **IFPEN**) and now has around 100 members. CEDIGAZ compiles and analyzes statistical and other information about natural gas, liquefied natural gas and unconventional gas in an exhaustive and critical manner (www.cedigaz.org).

Within CEDIGAZ, Armelle Lecarpentier is responsible in particular for analyzing the international gas market and edits the well-known annual review *Natural Gas in the World*. She has also produced two other studies - *The Players on the European Gas Market* (in 2004 and 2008) and *Underground Gas Storage in the World* (in 2006 and 2010). Among other things, she is an expert on the European gas market and on the security of natural gas supplies. She writes regular articles for the **French Gas Association** (Association Française du Gaz – AFG), participates in international conferences and lectures at the IFP School.

Source : CEDIGAZ.

is the preferred fuel of the power generation industry, making it possible to release more oil for export. In Asia, gas is being snapped up by the petrochemical and fertilizer industries. This general trend has not been accompanied by a commensurately rapid growth in gas production. As a result, there is a gas shortage that is growing over time and is even forcing exporting countries to curb their exports as far as possible, or to not renew long-term contracts. At the beginning of this year, Indonesia announced that it was to reduce its LNG exports by 14% this year, due to the above-mentioned internal transfers. Another major LNG-exporting country, Malaysia, has just opened an LNG reception terminal and is becoming an importer.

AOG: *According to you, what are the prospects for an increase in world gas production, consumption and exports in 2013 and 2014?*

■ **A.L.**: It is still too early to be able to announce precise results, but many factors lead us to expect a situation in the short term that is broadly similar to, if not less favorable than, the one we saw in 2012, namely a moderate increase in world production and consumption of 2% a year and a decline in inter-regional gas trade. This is due to negative factors (the economic crisis, the supply shortage, gas's loss of competitiveness in Europe), which are persisting in the short term. Furthermore, Japanese gas demand, which has been growing for two years under the impact of Fukushima, seems to have reached saturation point. In the United States, the substitution of natural gas for coal was particularly marked in 2012, but the rise in American gas prices last year resulted in far fiercer competition between these two fossil fuels.

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AOG: *CEDIGAZ remains optimistic about* ***gas consumption over the medium and long term****, due in particular to the impact of the Fukushima disaster on the nuclear programs of various countries, the sharp growth in the consumption of emerging countries, and the growth in unconventional gas production in the United States. What are your medium- and long-term forecasts?*

■ **A.L.**: These many factors favoring both the supply of and demand for gas herald a rapid increase in gas consumption of around 2.5% a year up to 2020 and 2% a year over a longer-term timeframe, up to around 2035, since energy efficiency, the slowdown in population growth and the development of green energies (and/or nuclear power in some countries) are tending to moderate demand.

AOG: *When might* ***gas consumption in the European Union*** *begin growing again?*

■ **A.L.**: Gas consumption in Europe (the EU-35 – the 27 member states plus Turkey, Norway, Switzerland, Serbia, Croatia, Albania, Bosnia and Macedonia) recorded two successive annual declines in 2011 (of 8%) and 2012 (3%), wiping out in those two years the gains achieved during the previous decade. One can reasonably envisage a relatively visible recovery in European consumption with effect from the second half of this decade, which would be the consequence above all of an improvement in the economic climate and the decommissioning of some coal-fired and nuclear power stations as required by European regulations (the *2001 Large Combustion Plants Directive*). But the growth in European gas demand is expected to remain modest despite this recovery, with gas remaining in close competition with coal and renewables.

Europe's ability to reform its emission quota exchange system efficiently in the medium term in order to bring about a sufficient rise in the price of CO_2 emission rights and hence increased utilization of natural gas remains uncertain. In the most optimistic scenario produced by CEDIGAZ, European gas consumption (including Turkey) does not return to its 2010 level until 2020 and only rises by 1% a year from 2015 onwards.

AOG: *And what about your other scenarios?*

■ **A.L.**: In the reference scenario, the gas demand of the EU-35 increases by 1% a year between 2015 and 2035. In our low scenario, demand rises by no more than 0.7% a year over the same period.

AOG: *There are growing pressures in Europe in favor of a fall in the prices of imported gas and/or a review of the* ***indexation formulas linking gas prices to those of crude oil or petroleum products****. Countries belonging to the* ***Gas Exporting Countries Forum*** *(GECF) continue to defend the indexation system very firmly. Is their position tenable in the long term in view of the development of the balance of power between producers and consumers?*

■ **A.L.**: Spot prices in Europe have become more competitive than indexed prices in a context of weak demand, which should keep producers under pressure in the future. Natural gas imported at selling prices indexed on spot prices are already expected to account for more than half of the total supplies to the EU (27 countries) in 2013 or 2014. Europe is undergoing a long-term shift towards a more flexible and diversified supply base as a result of importing LNG, which can be purchased at spot prices. Traditional suppliers of gas by pipeline will remain the principal sources of supply for the European market, but they will have to adapt to this more competitive environment through commercial and contractual negotiations in order to strengthen their position.

AOG: *: On the* ***Asian market****, are we beginning to see importers starting to question the indexing of gas prices on oil prices?*

Natural gas imported at prices indexed on spot prices are expected to account for over half of the EU's total gas supplies in 2013-14

■ **A.L.** : In Asia, long-term contracts indexed on oil are the reference model, and gas prices are very closely correlated with those of crude oil, which can be considered to be lastingly high. Asian buyers have thus shown renewed interest in relatively low-cost American projects which, by guaranteeing indexation on the **Henry Hub** spot price, offer an advantageous alternative. Asian buyers see in that an opportunity to diversify their purchasing portfolio by limiting the number of contracts indexed on oil. This strategy can be seen in the contractual relations between, for example the Korean company **Kogas** and **Sabine Pass**, between the Japanese companies **Chubu Electric** and **Osaka Gas** and the **Freeport** project, between **Tepco** and **Cameron LNG**, and between the Japanese companies **Kansai** and **Tokyo Gas** and the **Dominion Cove Point** consortium. This trend may encourage exporting countries other than the United States to offer an element of indexation on spot prices in their sales contracts and thus help move gas price-setting mechanisms towards a system of indexation on spot prices.

AOG: *According to you, which **means of fixing gas prices** would represent a good compromise between the interests of producing countries, consuming countries and the gas industry?*

■ **A.L.**: In that regard, one has to bear in mind the specificities of the gas industry. The recent past has shown that the globalization of gas markets has been slow and difficult. In 2012 world LNG trade accounted for only 9% of world gas supply, and regional disparities in the level and structure of prices have never been so marked. Furthermore, markets have specific expectations, risks and supply problems, and in this context it is hard to be able to consider a single pricing model that would apply to everyone.

Asian buyers are showing renewed interest in relatively low-cost gas export projects from the United States

While consuming markets are looking for competitive, flexible and diversified sources of supply, the long-term security and regularity of supplies can also be regarded as a paramount objective in mature markets. The question of the quality of the gas is also taken into account. In Japan, for instance, indexation on oil prices can be expected to remain predominant to ensure the long-term viability of costly supply projects located in Australia from the end of this decade onwards. But producers will for their part have to offer new commercial options in order to introduce greater flexibility. For some emerging markets such as India, where demand is very price-elastic, the issue of the cost of its gas supplies is essential, and preference will be given to low-cost projects (in the United States) that are indexed on the Henry Hub. In Europe, it is unlikely that the operators of new upstream mega-projects (in East Africa, Nigeria, Yamal …) will propose complete indexation on spot prices in a market that is so uncertain that the price risk is particularly high.

That is why, generally speaking, the shift of price formulas towards large-scale indexation on the spot market will depend on market conditions, such as the existence of available, abundant and competitive world supplies, and will be linked to the emergence of new approaches to risk management, such as futures markets.