INTERVIEW

LNG Projects Underway in Australia and the United States Will Add Capacity of 160 Billion Cu M/Year by the Early 2020s

*Questions put to Costanza Jacazio of the **International Energy Agency***

- The **U.S. industry** has proved very capable of absorbing shocks
- It would be desirable to introduce **price mechanisms** that reflect gas fundamentals
- Replicating the United States' success in **shale gas** is a big challenge
- Several **LNG projects** have been deferred, and others could be
- Russian **gas exports to Europe** are expected to continue at the current rate over the next few years

(Following is the text of an interview with Ms. Costanza Jacazio, a senior gas expert in the Gas, Coal and Power Division of the **International Energy Agency** – IEA – see her biography on the following page. The interview took place following the IEA's publication of its *Medium-Term Gas Market Report 2015* on 4 June – www.iea.org).

Arab Oil & Gas (AOG): *In 2011 the **IEA** published a World Energy Outlook special report entitled "Are we entering a golden age of gas?" What is the IEA's answer today to its own question some years ago?*

■ **Costanza Jacazio**: There is no clear-cut answer to this question as it really depends where you are in the world. In North America, for example, our latest medium-term gas market report has upwardly revised its forecasts for both gas demand and production by 2020. The US industry is showing an unparalleled ability to absorb shocks. Lower oil prices have a direct negative impact on oil and gas companies' cash flows. However, this is compensated by lower service costs, improving technology as well as investment reallocation to the most prolific shale formations. As a result, the outlook points to continued abundant cheap gas. In other countries, such as Mexico or Argentina, we have seen encouraging steps towards future shale gas development. The investment climate has improved and shale gas production could materialize over time, albeit we are still at early stages. Conversely, in Europe and China, the speed of shale gas development has been disappointing.

AOG: *Is the **Asian premium** really dead or is it a little early to put the final nail in the coffin?*

■ **C.J.**: Regional price differentials have indeed narrowed substantially. This is largely a consequence of lower oil prices and the fact that the bulk of LNG trade is still oil-linked. As a result, Asian prices have fallen more in line with European benchmarks. But while today's low oil prices have realigned oil-linked gas prices with gas demand and supply balances, there is no

guarantee that this will remain the case. Oil prices might rise again. Establishing price mechanisms that reflect gas fundamentals would be desirable.

AOG: *Some Asian countries have decided to expand* ***coal-fired generation****. What is the extent of this move which is not good news for global climate?*

■ **C.J.**: In Asia, outside a few countries such as China and Japan, electrification rates are still low and large volumes of additional power capacity are needed. Amid the very high gas prices that have prevailed in Asia until recently, several countries in the region, including India and ASEAN, have seen gas losing market share to coal in their energy systems. In India, the disappointments with domestic gas upstream did not lead to large-scale LNG imports. Instead coal imports broke all historical records. Other countries, like Malaysia, have decided that using coal and exporting gas is more economical, even if the coal is imported. For gas to play a significant role in providing sustainable electrification very large quantities of cheap gas are needed.

Several Asian countries have seen natural gas losing market share to coal in their energy systems

AOG: *The development of* ***unconventional gas*** *(UNG) in the United States is well known and very dramatic but the IEA is stressing that there are serious obstacles to the development of UNG outside of the U.S., including technical aspects. Could you elaborate on these technical difficulties?*

■ **C.J.**: When talking about shale gas, replicating the US success is indeed proving challenging. The reasons vary from region to region and range from public opposition, high population density, lack of water, a poor regulatory and investment framework to a difficult geology. Shale formations might be deeper or less continuous, which quickly increase extraction costs. Outside North America, the lack of a well-developed service industry is also a key undermining factor.

AOG: *You think that* ***low oil prices*** *will have a major impact on gas investments. Could you explain why?*

WHO'S WHO

> Costanza Jacazio

Senior Gas Expert, International Energy Agency

Ms. Costanza Jacazio joined the **IEA** in November 2014, where she works as Senior Gas Expert at the Gas, Coal and Power Division. Prior to that, she was Head of macro and fuel analysis at **Fortum** - a large utility in the Nordics. In her role, she was working closely with the asset-backed trading team in optimising hedging strategies. She was also responsible for supporting the public affairs department and senior management on economic and fuel-related issues. Costanza was Senior Energy Strategist in **Barclays Capital** Commodities Research team, between 2006 and 2011, and Gas Economist in **BP** between 2004 and 2006. Costanza holds a Msc. in Economics from **Warwick University** (UK) and a Bachelor's degree in Economics from the **University of Turin** (Italy).

Source : IEA.

■ **C.J.**: Lower oil prices affect gas upstream and infrastructure investments through direct and indirect channels. Especially for international LNG trade, oil price indexation still plays a major role, thus affecting the economic viability of new gas projects. Most oil and gas companies reacted to lower oil prices by making significant cuts in capital investment and by focusing on assets with fast returns. This will unavoidably result in slower production growth over time.

AOG: *According to the IEA several **LNG projects** are likely to be delayed or even cancelled. Which are the projects which seem to be the most at risk?*

■ **C.J.**: Due to their capital-intensive nature and long lead times, LNG projects are soft targets for investment cuts and several of them which have not yet received FID (final investment decision) - mostly in Canada and Australia - have been delayed. Russian projects are particularly vulnerable to deferrals as the impact of Western sanctions add to the poor market environment.

Russian LNG projects are particularly vulnerable to deferrals

AOG: *Despite low oil prices **Australia** and the **U.S.** are going ahead at full speed with their LNG projects. What are your latest projections regarding the LNG production capacities of these two countries in five years from now and beyond?*

■ **C.J.**: Lower oil prices pose little risk to the timing of projects under construction, 90% of which come from the US and Australia. The Australian projects are at an advanced stage of development, while projects' operators in the US have limited price exposure once sales and purchase agreements have been signed. Almost 80 billion cubic meters (bcm) per year of LNG liquefaction capacity has been sanctioned in the US and likely to be at full production by the early 2020s. In Australia six projects are under construction and one (Queensland Curtis LNG) has recently started. Those seven projects total almost 85 bcm/year, which is expected to be fully operational by 2020.

AOG: ***European imports of Russian gas** would remain stable at about 150-160 billion cubic meters per year, according to the IEA, despite this region's difficult economic situation, the possible construction of an Energy Union, its rising LNG imports and Russia's plans to export more gas to Asia, especially China. How would it be possible?*

Europe's gas import dependency will rise substantially due to the decline in its production

■ **C.J.**: Europe's import dependency will rise substantially, mainly due to continued declines in its domestic production. Additionally, demand is also expected to increase moderately, as some coal-fired generation capacity is expected to shut down due to environmental regulations. In this context, Russian exports to Europe are likely to remain broadly flat despite the expectation for a substantial increase in LNG imports. By 2020, Russia will transport gas to China via the Eastern route, which sources gas from Eastern Siberian fields. By contrast, exports to Europe are sourced from Western Siberian fields and therefore there will be no arbitrage possibility between the two regions at least till the end of the decade.

AOG: *The IEA is stressing that natural gas is the ally of* ***renewables****. Looking at the situation of the European power industry one may think that they are rather competitors. What is your analysis of this relationship between gas and renewables?*

■ **C.J.**: A very large portion of incremental power demand is expected to come from Asia where coal is almost unbeatable as base-load source of generation. With current technology, renewables largely complement, rather than substitute, conventional power generation but they do make coal-based generation less base-load. This is positive for gas. By cutting the load factor of conventional generation, gas's low capital costs and flexibility increase in importance compared to operating costs where coal retains and will continue to retain an advantage. Recent lower gas prices make a gas+solar combination increasingly looking like a competitive alternative to coal.

A gas + solar combination could be a competitive alternative to coal