7 February 2014

AmCham EU position on Shale Gas Development in the EU

POSITION STATEMENT

Background

A number of EU Member States are exploring the potential for shale gas extraction or, in some cases, are at the very early stages of shale gas exploration with the potential for shale gas already identified.

Last year, the European Commission conducted a public consultation 'Unconventional fossil fuels in Europe'. The American Chamber of Commerce to the European Union (AmCham EU) welcomed the initiative, as many of our members are active in this sector, providing technology solutions and services at different stages of the exploration and exploitation phases of unconventional gas and oils.

Summary

AmCham EU believes it is important to highlight that unconventional gas refers to conventional natural gas hydrocarbons developed in an 'unconventional way'. The energy source, natural gas, is always the same; but because the gas is trapped in a relatively impermeable layer of shale it requires appropriate technology for its exploitation. We therefore support an agnostic and objective-based case for shale gas exploration in the EU that should focus on three main areas:

- **Security of supply** – Meeting the EU's future energy requirements.
- **Environmental sustainability** – Reducing carbon emissions and promoting sustainable extraction. Our members promote the highest standards and good practice for well bore construction, casing, cementing and completion and throughout the drilling and hydraulic fracturing process. They fully support the public disclosure of chemicals used in hydraulic fracturing in Europe, according to the REACH Regulation and posting on the Association of Oil and Gas Producers (OGP) disclosure website (www.NGSFacts.org).
- **Economic benefits** – Ensuring the EU benefits from the exploitation of energy resources; maximises competitiveness, growth, jobs and availability of affordable energy.

It is likely to be years before the full potential of shale gas for Europe is realised. While more work needs to be done to determine if commercial deposits are present, it is important that companies should be allowed to

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conduct exploration in order to gather geological data and evaluate the economic potential of the resource, support refinement of a robust regulatory framework and, if required, demonstrate industry good practices. This will be vital to build government/public confidence in the industry.

Security of supply

There is considerable concern about energy security and prices. Global energy demand is already twice as high as it was 30 years ago and the International Energy Agency (IEA) estimates that it is set to grow again by a third by 2035.

If global gas demand rapidly rises or if we see disruptions in supply to which demand cannot react quickly, the EU will see price spikes and wider market instability. At the same time, the IEA estimates that globally there is approximately 60 years of proven natural gas reserves at current demand levels, which could rise to more than 250 years if the unconventional gas potential is added.

AmCham EU recognises that a diverse energy mix and avoiding over-reliance on one source or fuel is key to delivering energy security in the long-term. Natural gas will remain a key element in the European energy mix, especially in light of the EU's threefold objectives of sustainability, security of supply and competiveness of energy.

Shale gas on its own cannot provide a 'quick fix' to the EU's energy challenges. However it should be pursued in combination with other fuel sources and technologies.

Environmental sustainability

Greenhouse gas emissions (GHG)

The EU is committed to reducing GHG emissions by 20% by 2020, based on 1990 levels. Additionally, the European Commission has also proposed in its 'Energy Roadmap' (December 2011) to reduce energy-related GHG emissions by 80% by 2050.

With the right safeguards in place, the net effect on national emission from shale gas production will be relatively small when compared to the use of other sources of gas. Carbon emissions from exploiting Europe's shale gas reserves will be significantly less than those for coal and also lower than for imported liquefied natural gas.

Gas will also allow sufficient time to get enough low carbon technology up and running so we can power the country and keep cutting emissions. Over the next two decades or more, gas in the power sector will support the ability to reduce carbon emissions while we develop low carbon alternatives for electricity.

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Sustainable and cost-effective extraction

Technology-based solutions exist to explore and exploit unconventional gas while mitigating the environmental impact, increasing ultimate recovery and improving process efficiency.

Member States should be encouraged to assess recoverable resources in order to adopt the most appropriate policy and technology measures to exploit shale gas. Hydraulic fracturing is the most commonly used technology to extract unconventional gas. This technology has now been used for more than 50 years and has significantly developed and is now less invasive for the surrounding environment. Nevertheless, policy and public debates on this topic have raised questions that merit a full response.

Hydraulic fracturing involves the injection of 'fracturing fluids' in a closed containment to unlock hydrocarbons from shale rock. In the US experience fracturing fluids are typically composed of 94.5% water, 5% sand and 0.5% chemical additives. The use of chemical additives in the fracturing fluids is essential for an efficient hydraulic fracturing process and reducing the use of energy as well as the volume of water needed to complete the process.

Our members support the application of state-of-the-art processes in fluids and chemicals management to avoid spills or other accidents in the course of blending and using fracturing fluids. Efficient water and wastewater management is crucial for the economic and environmental sustainability of the hydraulic fracturing process.

Studies into the economic benefits

The EU currently imports over €4 billion fossil fuels per annum (Source: European Commission, 2013). By increasing indigenous energy production and by using energy more wisely, the EU can potentially benefit from lower energy prices.

Europe's shale gas resources may not be of a similar magnitude as those of the US, however the economic benefits in the US are indicative of the impact a growing gas industry in Europe could have. Five years ago the US was underestimating the potential gas resources at its disposal. Today it holds reserves that could serve its current needs for 100 years.

These benefits were captured in a report entitled *The Economic and Employment Contributions of Shale Gas in the United States* (IHS Global Insight, 2012). This concluded that the shift in the availability of natural gas is having a dramatic impact on the US economy in terms of stimulating job creation and economic growth. Among the study's key findings were:

- Nearly $3.2 trillion in cumulative investments in the development of unconventional gas are expected to fuel the increase in production between 2010 and 2035;

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- One million workers supported this rapid expansion in unconventional activity in 2010; by 2015 the number will have climbed to nearly 1.5 million and by 2035 will reach more than 2.4 million;
- The unconventional gas contribution to the US gross domestic product (GDP) was more than $133.4 billion in 2010; in 2015 it will be $196.5 billion and will reach $331.7 billion in 2035; and
- Government revenue from unconventional gas activity was $33.7 billion in 2010 and is projected to reach more than $49 billion annually by 2015 and will continue to rise, to just over $85 billion by 2035.

In Europe, a more recent study conducted on behalf of OGP by Poyry entitled *Macroeconomic Effects of European Shale Gas Production* (November 2013) examined the potential macroeconomic benefits of shale gas development in Europe. It concluded that shale gas operations could trigger the creation of between 600,000 and 1.1 million new jobs by 2050. Critically, many of these jobs would be in sectors most affected by the current economic crisis and would be in net addition to jobs created in other sectors, including the renewable energy industry.

The study also found that shale gas production in the EU28 should result in lower gas and electricity wholesale prices when compared to a future with no shale gas production. Reductions in wholesale gas prices of between 6-14% and reductions in wholesale electricity prices of between 3-8% were indicated even with the most conservative scenarios.

Driving a robust EU gas market

Europe is the world's second-largest natural gas market and demand is continuing to rise, particularly as a fuel for power generation, heating and transportation. Import diversification and increased domestic production could lead to reduced gas prices and more competitive industry. There are a significant number of important collateral benefits that could result from a greater use and supply of gas as an energy resource.

- First, this development would generate a need for more gas infrastructure investments, particularly in a resilient network of gas pipelines connecting producers and users, both for gas from outside and within the EU;
- Second, greater use of gas in the transportation (e.g. shipping and commercial road transport) and household heating sectors would promote cleaner urban air and possibly lower energy bills. Ready and transparent access to gas transportation infrastructure will be critical in a success case. It will require open, interconnected (both inter- and intra-EU) gas supply distribution and export markets. Provisions to that end should be included in the Connecting Europe Facility plans; and
- Third, natural gas provides an important feedstock in the chemical sector for ethylene production. Cheaper chemical products would impact the whole manufacturing chain related to plastic based substitutes for other materials such as metals, glass, metal, wood and to other products with high chemical content (automotive, electronic

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components, packaging, etc.). Similarly, natural gas is used as the main input for the production of fertilisers such as urea, ammonium sulphate and ammonium nitrate

Conclusion: factors in the success of unconventional resource development

AmCham EU believes that it would be a missed opportunity for EU Member States to neglect the benefits of exploiting this indigenous source of energy. We believe that the consistent application of regulation and good practice by industry to unconventional gas resource exploration and exploitation can manage and mitigate possible environmental impacts.

By supporting shale gas, Europe can displace a proportion of gas imports thereby increasing economic resilience and energy security, and mitigating dependence on imported fossil fuels. This would translate into more jobs, tax revenues and growth.

Decision-makers have the role to act responsibly setting safeguards to address environmental and community concerns while at the same time ensuring the best use of resources available supporting local economic growth.

Key factors in the success of shale gas development

- Continued *transparency* by the unconventional resources industry to enhance stakeholder understanding of the impacts from production;
- Continued development and implementation of *industry good practices* and technology to mitigate environmental concerns;
- Reasonable and *appropriate regulations* that promote the adoption of advanced technologies that can be economically implemented with appropriate reviews and approvals; and
- *Collaboration* among government, industry, non-governmental organisations, universities and the private research community and all stakeholders involved in the development of shale gas in Europe, including operators, service companies, water utilities and the chemical industry will allow for a fact based dialogue with society and provide the basis for the development of shale gas development in Europe.

Europe has an opportunity to sustainably exploit unconventional gas working in partnership with industry. Industry best practices, advanced technology, an expert workforce, appropriate regulation and predictable and certain regulatory environment all have an important role to underpin unconventional resource development.

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AmCham EU speaks for American companies committed to Europe on trade, investment and competitiveness issues. It aims to ensure a growth-orientated business and investment climate in Europe. AmCham EU facilitates the resolution of transatlantic issues that impact business and plays a role in creating better understanding of EU and US positions on business matters. Aggregate US investment in Europe totalled €1.9 trillion in 2012 and directly supports more than 4.2 million jobs in Europe.

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