Talking points: Unconventional gas, a global phenomenon
World Energy Resources series (2016)

Who**:** The report coordinated by the World Energy Council is the result of collaborative input from the Natural Gas Knowledge Network, a Study Group of the World Energy Council flagship study: World Energy Resources. Like all the Council's Networks, it comprises experts from across the world including companies such as Engie, Petrobras, GAIL India and Accenture as well as academia.

Why**:** The '2012 World Energy Council Survey of Energy Resources: Shale Gas – What's New' predicted that shale gas development would have a "significant impact on the dynamics and prices" of future natural gas markets. Since then, unconventional gas supplies have made great strides with, for example, three Australian coal bed methane (CBM) to liquefied natural gas (LNG) projects coming online between 2014-16 and US shale gas reflecting 10% of global natural gas supply in 2014. This latest study explores the implications of the rapid growth in unconventional gas supplies on global markets and concludes that, unconventional gas has become a global phenomenon and will continue to have global implications for some time to come. The weight of these changes on the global supply landscape is an important consideration for energy professionals seeking to understand the future of the industry.

What:

- Natural gas is the number three fuel in the global energy mix and has the potential to play a critical role in building a cleaner and more resilient energy system.
- Unconventional gas has the potential to take a substantial share of future added natural gas supplies.
- A new supplier landscape is emerging as unconventional gas, led by the US shale gas story, enters regional natural gas markets as LNG
- Unconventional gas is changing market dynamics now, and as more Australian CBM and US shale gas emerge on the global market as LNG, three trends emerge as the most meaningful in the global context :
    1. Interconnected markets
    2. International growth of unconventional gas
    3. Shifting portfolio allocations
- However, the reality remains that current market dynamics place the future of natural gas at risk. Swift intervention is needed by key market actors to protect long-term conventional and unconventional supplies.

Key findings

1. Interconnected markets: With excess supplies in the market, there has been price normalisation and other structural shifts towards a more global and transparent market across the three main regional hubs: Asia, Europe, and North America.

The key uncertainty, outside of North America, is whether gas can be made available at prices affordable to consumers while offering suppliers incentives for continued infrastructure investments. Unconventional gas reduces concerns about security of supply by providing a new cast of gas suppliers who will bring the features of an interconnected market: competition, liquidity, consumer bargaining power and a clear price signal.

2. International growth of unconventional gas: Exploration and production (E&P) operators in Australia, China, and Argentina have made progress in growing unconventional gas supplies outside of North America.

National Oil Companies (NOCs), driven by the desire to bring affordable natural gas supplies online, are making progress in developing unconventional resources outside of North America. The evolution of this trend will create competition for investments influence how trade flows evolve across regional markets. Australia and China have made significant progress and are already shifting dynamics in Asian markets. While still in the early stages, Argentina and Saudi Arabia have the potential to emerge as commercial unconventional oil and gas producers by 2020. Other "New Frontiers" are emerging as progress is made in Mexico, Poland, Algeria, South Africa and Turkey. However these markets are at least five to ten years away and will face competition from large conventional suppliers in sub-Saharan Africa, Russia and the Middle East.

3. Shifting portfolio allocations: In this time of uncertainty, US unconventional gas emerged as a cost competitive asset type that continues to shift industry capital towards flexible, shorter-cycle investments in North America shale assets.

US shale gas LNG is entering markets in a challenging period and it has disrupted the global supply structure with economics that are competitive with many conventional assets. Technology innovation drove productivity, efficiency, and operational flexibility in E&P and a new set of investors enabled the fast tracking of LNG export projects. Three main drivers led to the rapid rise of shale gas on global markets:

- Operational flexibility
- Continued operational and technical innovation
- Favourable regulatory climate

As the market slack is absorbed through 2020 and prices move closer to the cost of supply, the US is well positioned to respond quickly and emerge as a marginal LNG supplier.

What does this show?

Natural gas has the potential to play a critical role in the grand transition to an affordable and environmentally sustainable energy future. The World Energy Council's Resources 2013 chapter on natural gas predicted natural gas could reach 25% of the global energy mix by 2030. Unconventional gas supplies have the potential to reflect a substantial portion of that share and will continue to change the supply landscape for natural gas. While the demand outlook is currently uncertain, advances in supply side technologies for unconventional resource development, led by advances in US shale gas operations, have changed the supply landscape and created new prospects for affordable and secure supplies of natural gas.

In shifting the supply structure of the global market, unconventional gas may compliment the actions of key actors by increasing transparency, competition, and reshaping the economics of natural gas. This will enable the confidence for investors to develop the infrastructure required for the reliable and safe use of natural gas as a fuel source for the long-run. However, the reality remains that current market dynamics place the future of natural gas at risk. Swift intervention is needed by key market actors to protect long-term conventional and unconventional supplies.

Key recommendations for market actors emerging from the report are:

- **Industry**: Bring a higher degree of focus to portfolio allocation, risk management, and efficiency and continue to seek new and innovative investment partnerships to deliver projects.

- **Policymakers**: Establish policies that promote a liquid market and competition needed for security of supply and the formation of clear price signals.

- **Consumers**: Evaluate the economic and environmental benefits of diversifying energy assets with natural gas in power, industry, transportation, and chemicals and consider innovative investment partnerships to secure supplies.