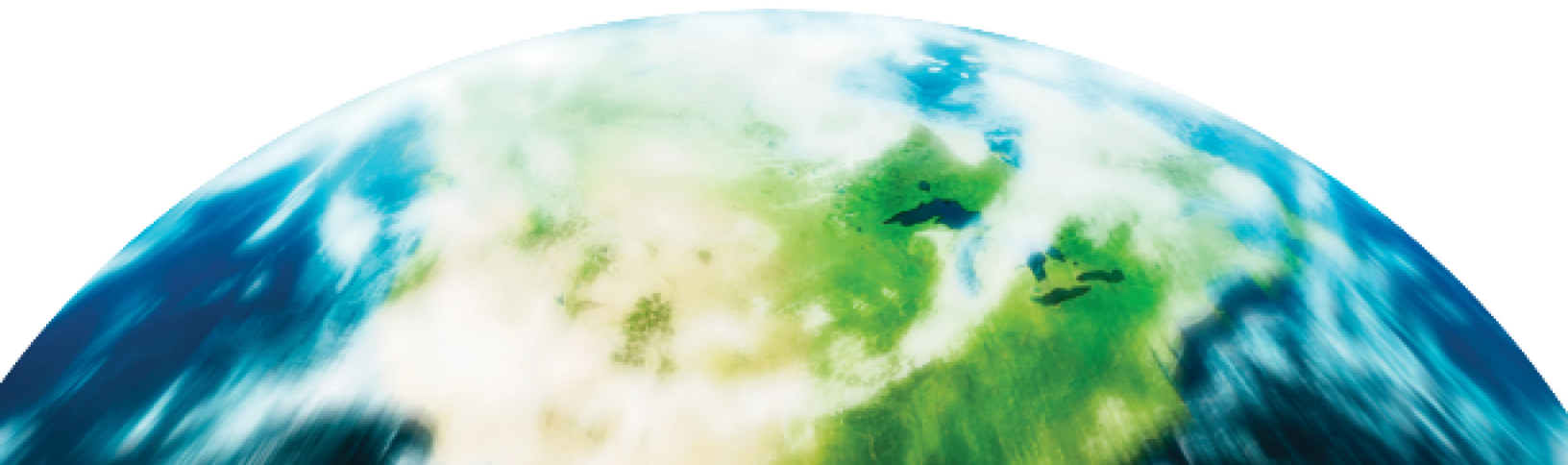


ENERGY SYMPOSIUM

*The Economic and Geopolitical
Impact of North American
Energy Security*

CONFERENCE REPORT
April 10, 2014



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EXECUTIVE SUMMARY

On April 10, 2014, [the Energy Institute](#) at the University of Oklahoma's Price College of Business hosted its second annual Energy Symposium to discuss the direction and sustainability of North American energy security, and to focus on the positive impact that our energy security is having on our nation's economy and geopolitical position in the world.

The symposium featured five speakers whose expertise in oil and gas resource development, global energy macro-economics and geopolitics provided a comprehensive and holistic view of the emerging reality of long-term energy security for the United States. The program was designed to address the following key questions related to our energy security theme:

- Are known and prospective hydrocarbon resources in North America sufficient to provide longer-term assurance for US energy security?
- What is our country's outlook for demand/consumption of oil, access to reliable supplies, and how long can the current positive trends of supply be sustained?
- What are the macro-forces affecting global oil supply and demand, and what threats do these forces impose on the US?
- Can the current trends in natural gas resource development continue, and can our North American resources still be depended on to provide low cost natural gas to fuel both domestic economic growth and opportunities to

export significant volumes of gas via Liquid Natural Gas (LNG) to the global market?

- How has the North American hydrocarbon energy renaissance impacted the US position in the world geopolitically?

Our program's leadoff speaker was [Mr. John Richels](#), CEO of Devon Energy, who addressed the sustainability of North American energy resources. Mr. Richels described the current shale revolution as a "global game changer" and the continuing technological advancements in horizontal drilling and hydraulic fracturing as a "paradigm shift" in the future of resource play development. His observations on the future prospects for North American gas are that we will have at least 100 years supply at current demand levels and that continuing improvements in technology will be the key to extending the resource life well beyond the current estimates. His outlook for oil was also very positive for many of the same reasons, but cautioned that absent a material shift away from oil in the transportation sector or reduced consumption from efficiencies, we will not be "independent" of oil imports. New and open markets for heavy oil from Canada and possibly new supplies resulting from the recent legislative reforms in Mexico will further improve our ability to sustain security of supply to meet future oil demand. Notably, the approval of the Keystone Pipeline is critical. On the gas side, he believes the manufacturing sector will be a big "winner" in this new energy environment, and that more companies will be moving their operations back to the US and creating more higher paying jobs as a consequence of the expectation of long-term, low-cost energy resources here in North America. Mr. Richels also believes that the US can simultaneously become a gas exporter via LNG exports and still grow domestic supplies to meet the increase in demand from an expanding industrial sector that, in part, fuels economic growth at home. Future growth of domestic supplies of oil and gas will also be dependent on the existence of "encouraging" energy regulatory policy and reasonably predictable price and tax expectations for the energy industry.

[Mr. Eric Lee](#) of Citigroup and Mr. Thomas Choi of Deloitte then addressed the macro economic drivers for oil and natural gas, respectively. Mr. Lee stated that Citigroup Research believes US oil demand is currently flat to declining, and he expects that trend to continue due to the ongoing effects of conservation, energy efficiencies driven by technology, and an increasing shift towards natural gas and electricity as a fuel for the transportation sector. With the concurrent growth in oil supplies driven by the onshore US oil shale plays and deepwater drilling in the Gulf of Mexico, Mr. Lee believes the US can be a net oil exporter by 2020 if Canadian oil supplies are fully developed for US consumption. The current impact of domestic oil supply growth on the US economy is being demonstrated by improvement in US trade deficits and growth in GDP and new jobs, as forecast through 2020. On the job front, Citigroup Research forecasts that 2.3 to 3.6 million new, higher paying jobs will be created in the US by 2020 due, directly and indirectly, to the North American energy boom. Mr. Lee expects that oil prices will settle in a band from \$70-\$90 per barrel, providing moderation and lower volatility for fuel and commodity prices and greater protection for the US and global economies from oil price shocks due to geopolitical instability. This outlook is especially good for the US.

[Mr. Thomas Choi](#) then addressed the outlook for US and North American natural gas and particularly, the potential for US LNG exports. Global markets have been paying \$9 to \$16 per mmbtu for natural gas, while prevailing market prices in the US have been around \$4/mmbtu. This disparity is driving investment in numerous LNG export projects, all subject to US government approval. Mr. Choi addressed concerns over the prospects of a continuing low-cost, abundant natural gas outlook that is expected to further drive economic growth versus the perceived negative impact that LNG exports could have on our now favorable position. He stated that with only 6 Bcfd of new export capacity from projects that are now proposed and likely to proceed, the impact on US gas prices would be negligible (i.e., only a 2% increase). Therefore, there should be no real increase in the longer-term natural gas costs which would negatively impact a revived and growing domestic industrial sector. Mr. Choi expects that the maximum export capacity would only be 10 Bcfd,

which would occur only if there is sustained high demand from China. Consequently, there should be no real erosion of the fundamentals that underpin relatively low North American gas prices, and no real threats to the further expansion of manufacturing. Continued growth in natural gas demand and supplies in North America will sustain long-term economic growth potential and bode well for continuous reduction in emissions that impact the environment.

The program then shifted to the geopolitical impact of the North American energy boom. [Mr. Robert Johnston](#), global head of the energy group at the Eurasia Group in Washington, DC addressed the geopolitical dynamics for the US. While focusing first on oil, he stated that Iraq, Iran, and Libya are slowly re-establishing their peak supply capacity (although Iraq now problematic). This is putting price pressure on OPEC and Russia, who need at least \$90 oil prices to support their social programs and overall economy. Medium-term impacts will come from the new legal reforms in Mexico, which is now open to foreign investment. However, Mr. Johnston does not expect Mexico to be a net exporter of oil until after 2020. China's demand growth is slowing, but will not reverse unless there is a catastrophic internal economic meltdown. On the gas side, Mr. Johnston expects global market dynamics to be influenced by US and Canadian LNG exports, sanctions in Iran and Qatar, Australian LNG, shale gas in China, and East African LNG. At some point, the global gap in gas prices will close, but North American prices will remain on the low end of the range. The "wild card" in natural gas is Russia, meaning a continuation of near-term price and supply volatility outside North America. Russia's leverage over Europe, in terms of its control of gas supply, is and will remain significant in the near to mid-term. On the demand side for gas, longer-term challenges will come from the expansion of nuclear generated electric power, Chinese consumption trends, US carbon policy, and EU policies currently favoring renewables instead of natural gas. The emerging strength of North American energy supply puts the US in a position it has not been in since the 1950's. According to Mr. Johnston, the US "can go from playing defense to offense" in its relations with Iraq, Iran, and other Middle East countries (like Syria), Russia, Venezuela and Libya. It will be most important for the

US to maintain a diversity of oil supply and to use natural gas to a greater extent in the transportation sector in order to maintain its newfound position of strength. This emerging strength will allow the US to influence a moderation in global oil prices, creating economic pressure on Russia, Saudi Arabia and others in the Middle East, as well as Venezuela. Mr. Johnston's final message was that the hope for expanding democracies and economic prosperity in the world that will, ultimately, defuse our geopolitical threats, will depend on access by other countries to reliable, low-cost energy supplies. Developing countries, with their significant and growing populations, will make hydrocarbon energy a priority for economic stability and prosperity, in preference to environmental efforts favored by the developed nations. These huge populations must first be fed, warmed, housed and attain better standards of health before they will even think about environmental concerns.

The program's keynote speaker was [Mr. Joseph Stanislaw](#), founder of the JA Stanislaw Group in Boston and Paris – a global energy consulting company. Mr. Stanislaw was a co-founder with Daniel Yergin of the Cambridge Energy Research Associates. In his remarks, Mr. Stanislaw emphasized the messages of the other speakers on the program. “The world has been turned upside down” by the US shale revolution, but he admonished that “we must do it right...we have a license to operate...but we must do it right in order to maintain that license.” Part of “doing it right” is the responsibility to address the issue of climate change and other environmental concerns responsibly and constructively. He believes these concerns present “an opportunity” for the energy industry to lead through innovation and technological advancements pioneered by the industry, which have driven our energy renaissance. Against this, he made a point that in the broad debate on climate change, there is a demographic challenge. The global population is three times what it was in the 1950's and could grow another 50% in the next 10 to 20 years. This reality will become the real issue opposing the global efforts aimed at addressing environmental issues, such as greenhouse gas emissions. On the geopolitical front, Russia will continue to be a foreign policy challenge because “oil and gas is politics and oil and gas is economics in Russia”. Russian leaders are under

pressure in all aspects affecting the investment in and marketing of both oil and gas. That pressure, together with the mind-set of current political leadership, will drive continued and troubling behavior from Russia, thus adding to volatility. Population growth in South America may mean that its countries will become “net zero exporters” of oil and gas in the next 10 to 15 years, putting further pressure on the energy resource-poor of the world. “There is a tectonic shift in the world,” Mr. Stanislaw said. “Before, scarcity of energy supplies ruled. Now, for the US at least, abundance of energy resources is changing the game.” We are “secure”, but we must not think we are “independent...we are not.” He encouraged the energy industry and national political leaders to realize that “we have to move beyond a period where we have lost our confidence – that period from 2001 to 2010”. Instead, “we must now lead the world from our position of strength” – providing leadership in innovation and technology that positively impact energy security for all the world, while also dealing with the important issues of poverty, health, education and, ultimately, environmental stewardship issues that emerge as the developing world’s economies grow and prosper.

NOTE: Some of the observations and conclusions expressed in this report are expansions of key messages conveyed by the program speakers and represent the opinion of the Energy Institute’s leadership as well. We encourage our readers to view the full program by [watching the videos of the Symposium](#).