

**U.S. House of Representatives Subcommittee on Energy and Power:
Quadrennial Energy Review and Related Discussion Drafts, including Title III –
Energy Diplomacy**

Testimony by:

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Chairman Upton, Ranking Member Pallone, and members of the Committee, I greatly appreciate the opportunity to testify before you on competitiveness in the exploration and production (E&P) business and its importance for national energy sectors, policies, institutional capacity and critical infrastructure. It is my hope that my testimony today will contribute to the important work that the Committee is progressing regarding US energy diplomacy. Thank you.

I appear before you in my capacity as Vice President for IHS where I lead the company's Upstream Strategy & Competition group. IHS is a global research and consultancy firm, with 9000+ employees around the world specializing in energy, capital-intensive industries, data and analysis with a global presence. My consulting activities include involve interactions with companies and individuals at senior to executive levels of the exploration and production (E&P) oil and gas business. Reflecting on several decades of experience in the global oil & gas business, it is quite clear that competitiveness, choice of strategy, focus and above-ground risk all impact

the success or failure of national energy sectors and policies every bit as much as individual projects, new country entry and companies.

Your Committee's "Title III – Energy Diplomacy" draft seeks to advance energy diplomacy by enhancing coordination and planning, and eliminating barriers to trade among allies and partners of the United States. In order for this to be successful it is important to understand the impact of competitiveness in the E&P business. Central to the long term success of the onshore North American shale play is competitiveness. The competitiveness of production of oil and gas in North America is what will provide the fundamental commercial success of US energy diplomacy; My remarks today focus on this point.

The experience of the last ten years for onshore North American shale production is of course most prominently captured in the substantial increase in US oil and gas production with oil up at 9.3 million barrels per day (MMB/d), from 2011's 5.6 MMB/d. Much has been made of the volume performance, and rightly so. It is doubly important to look at production performance now because of lower oil prices noting that we have had "lower" natural gas prices for approximately six years.

Lower prices have had an impact on the US economy as well as the trajectory of US oil and gas production. But, a critical conclusion is that US shale production is no longer a phenomenon of high oil and gas prices. Periods of higher prices did indeed provide windows of higher profitability which paid for higher risk, new play entry and experimentation. At this time, however, an increasing percentage of US shale

production is commercially viable at prices lower than what they could have sustained in prior years.

As a result of a number of favorable resource, commercial and political factors, not to mention the US oil field service sector, US shale production is among the most efficient production types in the world. This is especially remarkable, because the innate quality of the shale resource base is not high in comparison to many other conventional oil and gas resources elsewhere. Higher quality conventional oil and gas resources (albeit increasingly mature) flow to the surface without the intensive fracking operations required for shale production. Of course, as conventional oil and gas fields mature, they require additional stimulation techniques and investments, which drive up the cost, but still represent higher quality resources in terms of produce-ability.

Efficiency gains in US shale production outstrip performance anywhere else in the world. The decline in oil prices over the last nine months, as well as gas prices for the last six years has accelerated these efficiency gains. Indexing to January 2014, WTI (West Texas Intermediate) is down by 50%, the US oil rig count is down by close to 50%, but US liquids production continues to rise, albeit at a slower pace. Growth has slowed and on a month to month basis, we will see declines in 2015 oil output. But overall, average 2015 US oil production will still show a gain over average 2014 US oil production; at an oil price which is almost 50% of the average oil price in 2014.

Compared with 2014, IHS expects investment capital in US shale oil plays to be 65% more efficient at the start of 2016 than the start of 2015 due to compounding productivity and cost cuts. IHS anticipates cost reductions to reach 30% over this year with productivity enhancement as much as 15%. In 2016, one US dollar of investment will have the same production impact as \$1.65 did in 2014.

US shale production is thus highly competitive. Paradoxically, the current low oil prices (and the continuing low gas prices) have served to greatly strengthen shale's competitiveness, triggering the commercial response generating these results. Of course, a change in the policy toward crude oil exports would full un-lock this potential. A lower to medium oil price world acts to ensure that this situation will persist for years. It is this very competitiveness which underscores the opportunity for new US energy diplomacy objectives and realizations.

The sustainability of this opportunity (the duration of the competitive factor and its commercial viability) will provide the greatest scope for the success of the policies envisioned in this energy diplomacy initiative. The more competitive and open the US sector is, the more options US energy diplomacy will have.

US – Mexico cross-border energy flows are an excellent example of what is possible. Currently, Mexico is pursuing an ambitious energy reform which has fundamental implications for upstream – midstream – downstream segments of its energy sector. Not surprisingly, the “Opening” of the E&P sector and the reversal of seventy year+

monopoly held by PEMEX, the national oil company of Mexico, has received the most attention. This is understandable; the changes are significant and as the process goes forward, foreign operators will invest and hold equity in Mexican oil and gas resources. But the bigger story at least for the next five to seven years may not be the Opening. Instead it may be the changes in Mexico's midstream and downstream segments. The US already exports nearly 80 Bcf a month to Mexico via pipeline, up more than 300% from 2005, with a prospect for greater increases in the future.

A highly competitive US shale business will generate long term supplies of natural gas exports to Mexico (potentially 3 times that of today) which in turn will (with successful reform) provide lower cost feedstock to gas-fired power projects. The ultimate aim of Mexican policymakers is to lower the cost of electricity to the entire Mexican economy. A Mexican economy with electricity costs which are 10% to 30% lower than that today is a much more competitive economy with all of the associated positives both for that country and for cross-border trade.

Mexico does have substantial undeveloped natural gas resources, both conventional and unconventional. But for the most part these resources are higher cost. At the current time, the political and economic logic for Mexico to import greater volumes of US natural gas (due to its competitive offering) to support higher GDP growth (with positive impacts for a greater range of Mexican citizens) is much more compelling than investing scarce financial and operating capacity into higher cost, domestic (Mexican) resources. The Mexican government chose the more competitive option.

Competitiveness in the US onshore shale business will drive (with critical trade, permitting and pipeline agreements) a substantial expansion of gas-fired power capacity in Mexico, along with a lower per kilowatt hour cost for consumers and businesses. This will be a major achievement for the Mexico political economy and a triumph for US energy diplomacy and foreign policy. Without the sustained commercial competitiveness created by the US shale industry, this opportunity to further enhance the US-Mexico strategic relationship would not exist. The US-Mexico relationship would have fewer options. Competitiveness creates options.

My main arguments today are: US shale production is not a high price phenomena; intrinsic to the dramatic increase in supply volumes is the competitiveness of the shale industry; US competitiveness provides the sustainable viability which will undergird any successful US energy diplomacy initiatives; and US infrastructure, processes, regulation et al must be equally competitive in order to support not retard the proposed energy diplomacy.

What can the US Government do to leverage the competitiveness created by the US shale industry for energy diplomacy objectives in the areas of infrastructure, including natural gas and liquids pipelines, electrical transmission lines, safety, LNG export capacity and more? US competitiveness, properly and appropriately supported by US government legislation and regulation can provide more sustainable options for the national energy sectors of US friends and allies.

Mr. Chairman, Ranking Member, members of this Committee, thank you for the opportunity to testify in front of you. I welcome the chance to respond to your questions.

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