U.S. Senate Foreign Relations Subcommittee on Multilateral International Development, Multilateral Institutions, and International Economic, Energy, and Environmental Policy

"American Energy Exports: Opportunities for U.S. Allies and U.S. National Security"

Testimony by:

Jamie Webster

Senior Director, IHS

June 23, 2015

Chairman Barrasso, Ranking Member Udall, and members of the Committee, I appreciate the opportunity to testify before you on the immense changes in the energy market, how it has already impacted the United States, its allies and partners, and the importance of a liberal crude export policy and free markets to fully maximize its positive impact, regardless of the global price of oil.

I appear before you in my capacity as Senior Director for IHS where I lead the company's short term crude oil markets team. In that role I travel regularly, meeting global exporters and importers, plus participating in policy discussions in Washington, as well as OPEC meetings. This provides me with a perspective on North America's changing role in energy and its global context. IHS is a global research and consultancy firm, with 9000 employees around the world, that specializes in energy, capital-intensive

industries, data and analysis with a worldwide presence. My work through IHS has involved me in two landmark studies on crude oil exports.[1][2]

Today I want to address how free trade has already changed the flow of oil and petroleum products, and how allowing crude oil to join gasoline, diesel, natural gas, electricity and coal as a fuel that can be readily exported would benefit US interests and consumers.

The catalyst for the oil price decline that started last summer was the partial (and temporary) return of Libyan production. But it was the underlying growth in US oil production from 5.6 million barrels a day (MMb/d) in 2011 to the current 9.5 MMb/d that sustained this price drop. OPEC's decision last November 27 to not cut production in the face of growing volumes, not just from United States shale oil, but also the Gulf of Mexico as well as Canada further hastened the price decline. It seems unlikely that OPEC will reverse itself in its upcoming Ministerial meeting on June 5th. OPECs decision, reaffirmed on June 5th, appears to have marked the beginnings of a serious shift in how supply and demand is balanced in the global market, potentially allowing the oil market to be a market-based system rather than relying on a balancer as has often been the case in the past. The balancer as defined here is that group, regulatory body or other organization that is willing and able to quickly reduce or increase oil supply in an attempt to keep the market balanced.

[1] US Crude Oil Export Decision: https://www.ihs.com/Info/0514/crude-oil.html
[2] Unleashing the Supply Chain: https://www.ihs.com/Info/0315/crude-oil-supply-chain.html

The boom in US production has the potential to upend the need for a formal market balancer, leading to lower oil prices for consumers, while increasing energy security for not just the US but the world. This is possible not only because of the large production volumes that US producers have brought to the market, but because of the character of those flows. Conventional production projects can take years to finance, plan and bring to the market. US shale producers can do it in 4 months. Globally, conventional production has a decline rate of 5-6%, meaning a project will be producing that much less each year. US shale production has an initial decline rate of about 50%. These two factors allow the US shale system to react quickly to market signals to bring more oil onto the market, and a lack of investment when prices turn downward can quickly reduce supply. This shift from OPEC to the market-driven forces of shale oil is far from certain and far from complete and it could be reversed.

One of the key policy changes needed to help support this shift is the liberalization of US oil exports. Energy flows into and out of the United States have already provided partial benefits to the region and the world. In July 2010, the United States imported 1.1 MMb/d of oil from Nigeria. Because of US supply, this has shrunk to nearly nothing, while at the same time we are exporting a large share of its refined products (diesel, gasoline, etc). The change in refined product flows to Nigeria reflects a broader change in U.S. flow patterns for gasoline, diesel and other important consumer fuels. Ten years ago this month, the United States net imports of refined products was over 2 million barrels per day. This has now reversed direction and the US net export balance is over 2 million barrels per day of exports. US refiners are some of the most advanced in the world, and with low cost inputs they have been able to further exert their global

standing, providing not just US consumers with valuable fuels, but consumers around the world.

The US has a liberal trade policy for natural gas, coal, refined products and processed condensate. It also allows oil exports to other countries in certain, very specific cases. Allowing US producers to seek out international markets for their product will allow them to receive global prices, keeping the "laboratory" of US shale technology and production fully open for business, while supporting job growth across many industries and in places far from the oil fields. It will also help to lower the price of Brent, the benchmark price for global oil, much as the increase in production already has. Lowering the Brent price is the access point to lower US gasoline prices because U.S. gasoline prices are linked to the Brent world price, not the domestic WTI price.

Moreover, maintaining the ban increasingly undercuts U.S. credibility in its three-decades endeavor to persuade other nations to permit free flows of energy trade and not constrain trade in strategic commodities with political restrictions and resource nationalism. The United States, for instance, has launched numerous complaints under the WTO against China exactly because of these kinds of restrictions on natural resources that China imposes.

The IHS report, *Unleashing the Supply Chain,* **[1]** documents the benefits across the economy from 2016-2030:

- $86 billion in additional GDP,
- about 400,000 new jobs annually,

- 25% higher pay for workers in the energy industry supply chain – an additional $158 per household, and
- $1.3 trillion in federal, state and municipal revenue from corporate and personal taxes.

The benefits accrue across most of the United States, not just oil producing states. States like Illinois, Washington State, Massachusetts, and Michigan – with little or no oil production -- also benefit substantially in terms of economic activity and jobs, owing to the interconnected nature of U.S. supply chains. The report affirms earlier research that eliminating the export ban would reduce gasoline prices by 8 cents per gallon.

Eliminating the crude oil export ban proves even more important when oil prices are low. For example, if Brent crude (the international standard) trades in the range of $55/barrel and WTI trades in the United States at around $45/barrel, many companies will be on the margins of their new well investment breakeven point. In such a case, a small price change can have a major impact on supply because it can make or break the profitability of a significant share of tight oil producers and because it may determine whether an investment decision is made or not.. Crude oil production thus drops even more sharply when prices are low and producers must take further price cuts to sell to domestic refiners if they cannot export. A $3 per barrel change in a $50 per barrel price environment can have the same effect as a $10 change in a $100 per barrel environment.

Liberalization of the US crude export policy could potentially mitigate this risk, though this option would depend (as do refineries, pumping stations, etc) on ready access to electricity- a key reason the 2008 disruption was so acute.

So why do we have the ban, and given the current tight spread between Brent and WTI is there any reason to modify it? Its existence is due to an anachronism that grew out of a period of scarcity in the 1970s when the United States imposed price controls on oil and banned the export of oil in order to support the price controls. In the wake of the 1973 Arab oil embargo, the Emergency Petroleum Allocation Act of 1973 allowed President Nixon to set price controls and allocate oil to end users in the United States. The Energy Policy and Conservation Act of 1975 prohibited the export of crude oil and natural gas produced in the United States, with some exceptions. The US system of price controls on oil was abolished in 1981, as was, a few months later, the ban on the export of oil products. However, illogically, the ban on crude oil exports was retained even though the rationale provided by price controls had disappeared. The United States now has the fastest growing oil productionin the world. Since 2008, American entrepreneurship has increased U.S. crude oil output by ~ 81% -- 4.4 million B/D principally of light tight oil, such as Eagle Ford in south Texas, Bakken in North Dakota and West Texas Intermediate (WTI). This increase is the fastest in US history and exceeds the combined production gains from the rest of the world. The commercial and technical reasons for this increase in production are well documented, including the May 2014 IHS report, called U.S. Crude Oil Export Decision. The conditions that justified the crude oil export ban in 1973 no longer apply.

More importantly, continuation of this ban hurts American consumers, causes an unnecessary drag on American productivity, and does not let the United States exploit fully the national security benefits from our energy resurgence. The reasons are

intertwined with the nature of the American refinery system and the price discounts that American producers must take in order to sell their products competitively to refineries, particularly along the Gulf Coast, which holds over half of the nation's total refining capacity. Over $85 billion has been spent in the past quarter century to reconfigure these refineries to process heavy oil imported from countries like Venezuela, Mexico and Canada. The United States contains the largest refining capacity of any country in the world, with 140 operating refineries with a combined crude oil distillation capacity of about 18 million B/D. The US refining system is characterized not only by the number and size of refineries but also by a high number of world-class, high-complexity, full conversion refineries with a substantial degree of petrochemical and specialty products integration.

In this complex refining system, if the crude quality varies enough, the refineries cannot run optimally within their designed operating parameters. In the Gulf region, most refineries are configured to process heavy crude oil. When using light tight oil, Gulf refineries operate inefficiently.

Unfinished products are the result of this crude mismatch, which have a lower value because they require further processing to be upgraded into gasoline, jet and diesel fuels. In some cases the crude quality mismatch is large enough that a refinery will have to reduce the crude oil throughput to process additional volumes of light tight oil. As a result, there are limits to how much of the new, domestically produced light tight oil the refining system can efficiently and effectively process. To fully use light tight oil, many Gulf Coast refiners often require a price discount. Allowing crude oil exports would allow light tight oil (i.e., WTI) to sell at higher world prices. In *U.S. Crude Oil*

Export Decision, IHS estimates that eliminating the WTI discount would incentivize nearly $750 billion more in investment from 2016 to 2030—and increase oil production by 1.2 million B/D.

This brings me to Mexico. That country is eager to extend its imports of US natural gas to include oil. For now, Mexican oil production is in decline and gaining access to US light tight oil will help boost those refineries supply options, particularly as they are now best suited to use American light tight oil instead of its own heavier Maya oil. Mexico could enter into a "swap" arrangement, exporting its own oil in exchange for American light tight oil. However the constraints of the crude export policy as well as the commercial requirements to put in this specific swap are causing difficulties in effecting a trade that would benefit both countries. Liberalizing US oil exports would allow a more simple transaction, while retaining all the benefits.

While we are now contending with an over-supplied global oil market, additional volumes from countries like Mexico and Canada will continue to be important in the coming years particularly with supply from these nations potentially being heavier than US supply allowing it to be complementary to US production growth

I appreciate, Mr. Chairman, your leadership and that of this Committee to address these critical issues for US, regional and global energy security. Thank you for this opportunity to testify before your committee. I welcome the chance to respond to your questions.

###

About IHS (www.ihs.com)

IHS (NYSE: IHS) is the leading source of insight, analytics and expertise in critical areas that shape today's business landscape. Businesses and governments in more than 150 countries around the globe rely on the comprehensive content, expert independent analysis and flexible delivery methods of IHS to make high-impact decisions and develop strategies with speed and confidence. IHS has been in business since 1959 and became a publicly traded company on the New York Stock Exchange in 2005. Headquartered in Englewood, Colorado, USA, IHS employs almost 9000 people in 32 countries around the world.