

**U.S. House of Representatives Subcommittee on the Western Hemisphere
Energy Revolution in the Western Hemisphere: Opportunities and Challenges for
the U.S.**

Testimony by:

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Chairman Duncan, Ranking Member Sires, and members of the Committee, I appreciate the opportunity to testify before you on the immense changes in the energy market, its impacts on the Western Hemisphere, and the importance of crude exports in this change.

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 not only across the Western Hemisphere but also internationally, meeting global exporters and importers, plus participating in policy discussions in Washington, as well as OPEC meetings, 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.

Today I want to address the recent changes in the global oil market, North America's critical place in it, and what it means for energy security and energy independence. I will also address the importance of the crude export issue, the market issues related to Keystone XL, and given I am just returning from Mexico, a brief update on the ongoing energy reforms there.

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 9.2 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. OPEC's decision 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 purpose of the market balancer in concept is an entity that can quickly add and remove oil supply in order to balance it against changing demand.

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 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 providing a large share of their refined products (diesel, gasoline, etc) from the United States. In the same time frame, our liberal natural gas export policy has allowed us to further supply Mexico with fuel for industry and electricity, with volumes growing from 21.6 billion cubic feet a month to nearly 75 billion cubic feet a month. Soon the nation's burgeoning LNG infrastructure will allow this fuel to travel globally, providing an alternative source of supply and increasing regional and global energy security. Our energy ties with Canada have only deepened over this period. Although the majority of crude oil flows south, US has increasingly provided oil to Canada's central and eastern refiners, a trade that has grown from about 30 mb/d in 2010 to 491 mb/d earlier this year. Imports from Canada have also grown in recent years. Canada has been the single largest source of foreign imports to the United States just over a decade ago (2004). And as of September last year Canada overtook the combined imports from all of OPEC nations into the United States. And Canada supply is not anticipated to slow because of lower prices. We expect to see nearly 800 mb/d of new production by 2020 most of which could come to the United States through Keystone XL, one potential additional link in the tight interconnection between the countries, which extends from power lines to rail lines to pipelines. The Keystone XL pipeline can help economically move heavy oil to the Gulf Coast of the United States, home to the world's most sophisticated refining system, and an eager buyer of heavy oil. Given this is a natural buyer of this oil, we find that the vast majority of this oil will be refined in the United States, with at least 70% of the resulting refined produces being consumed in the United States, with the rest pushing into global markets, competing with now waning Venezuelan production¹. The decision on Keystone is really a

¹ See: IHS 9 Mar 2015 report: "North America's Heavy Crude Future: Western Canadian access, the US refining system, and offshore supply"

decision between importing oil from our near neighbor Canada, our largest trading partner, or a Venezuela whose hostility to the United States is manifest. The competitive oils between the two countries have about the same carbon footprint.

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, 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 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. 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.

So why do we have the ban? In short, it is 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 economy in the world. Since 2008, American entrepreneurship has increased U.S. crude oil output by ~ 81% -- 4.1 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 139 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. The 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. Mexico could enter into a “swap” arrangement, providing some of its own heavier Maya 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. Mexico is working hard at its reforms, particularly as it relates to the upcoming bid rounds. The success of these reforms are very important to the United States, because they will make the Mexican economy stronger, which will bring many benefits to US-Mexican relations.

The Mexican prospects represent some of the last, attractive unexplored areas of the world and while the lower oil price does represent some near-term challenges, the government appears committed to delivering terms that will allow a successful bid round for all parties. 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.

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