U.S. Senate Committee on Energy and Natural Resources Hearing
Terrorism and Global Oil Markets

Testimony by:
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Chairman Murkowski, Ranking Member Cantwell, and members of the Committee, I appreciate the opportunity to testify before you on global oil markets and the potential and actual impacts of terrorism on oil prices and energy security.

I appear before you in my capacity as Senior Director for IHS where I lead the company's short term crude oil markets team. IHS is a global research consultancy that specializes in energy, capital-intensive industries, data and analysis with a worldwide presence.

The current era of oil abundance and low oil price does not eliminate the issues associated with geopolitical and terror risk. With the rise of ISIS, via the gaining of significant Iraqi and Syrian territory in 2014 and an increase in terrorism globally, geopolitical and terror risk is likely to be a growing issue for oil markets over the next several years. The capture of Iraqi territory by ISIS in summer 2014 was quickly followed by the start of the oil price decline in summer of 2014. However it was the rise of US shale oil production amid OPEC policy inaction, plus weaker demand growth that has helped keep the price at lower levels. Because of the surplus supply there is much less talk of a "risk" or "fear" premium in oil markets than has been the case in years past. However, this does not mean that the current era of abundance eliminates the issues associated with geopolitical and terror risk. Instead it has temporarily expanded

the markets ability to cope with such stresses. However, geopolitical and terror risk have not gone away and are likely to be a much bigger issue over the next several years.

A large and still growing global stockpile of oil and petroleum products, and the looming full return of Iranian oil have allowed the market to internalize a view that oil prices will remain lower for longer. Despite this view, risks are rising. According to IHS Country Risk raw data, terrorist attacks on upstream and downstream oil infrastructure have risen 5% since 2012, while total terrorist attacks have increased 25% through November of this year. These numbers may make it appear that energy infrastructure is not a key priority for terrorists, but the outsized impact a successful attack could have on energy security is a concern.

For now, successful attacks are largely concentrated in just a few countries-more than 90% of attacks have occurred in ten countries each year—though those countries have shifted over the last several years. Among the top 10 countries sustaining the most attacks since the start of the Arab Spring, Iraq, Nigeria and Egypt are of particular concern given their importance for crude oil supply or oil transit.

In November 2014, OPEC took a stance that it would not cut production in the face of oversupply given the view that it could not compete against the large volumes of higher cost oil elsewhere in the world amid weak demand growth. There was also some concern from Saudi Arabia about maintaining exported volumes in the face of potential and actual production increases from Iraq and Iran. This stance was reaffirmed in the meeting on December 4 of this year, with the organization abandoning any attempt at identifying a production target. Despite the lack of policy action, the OPEC countries as

a whole have rapidly increased production. As a result, production from OPEC members is up approximately 1.5 million barrels per day since last fall, with significant increases from Saudi Arabia and Iraq. These increases have helped to push prices down further but are also coming at a cost -- lower OPEC spare capacity or the amount of additional production a country could bring on should it choose to do so. This past summer, increased OPEC production caused their spare capacity to reach levels as low as 2.6%. The historic rule of thumb for adequate spare capacity for OPEC was around 4%. Recent low spare capacity occurred in an oversupplied market with the added cushion of more than 700 million barrels of additional crude and refined products in inventories since the beginning of last year.

Lower oil prices are slowing supply growth, and by the middle of next year the calculus will shift as the daily oversupply likely vanishes from the tightening market as supply slows enough to meet demand growth and OPEC spare capacity again decreases seasonally. This thin spare capacity level means that in a time of heightened supply risks, it will be incumbent upon available stockpiles, both commercial and strategic reserves, as well as any available incremental US supply, to assuage any real or perceived supply shortfalls. This shift from OPEC spare capacity to a new form of supply security that is provided, in part by US productive capacities, will take time for the market to calibrate and be able to assess effectively.

The flexibility of US production growth comes from a timing issue on both the up and down side. 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 bringing more oil onto the market, and reducing supply through lower investment when prices turn downward can reduce supply.

Production outages have plagued the oil market for the last several years and have been caused by war, strife as well as terrorism and sanctions. Historically, outages have generally been assumed by IHS to be about half a million barrels per day, but since early 2011 with the decline of Libyan production due to the civil war, this number has been much higher, with some months since then as high as 3.5 million barrels per day. Historically, one would expect this number to decline, but due to the greater instability in the region, there is just as much likelihood that it could rise. Some of these production outages have since been captured by ISIS, which uses these revenues to help fuel its operations.

IHS released a new report that ISIS, before the most recent campaign, was deriving about 45% of its revenues from oil, around $33 million dollars per month, with the bulk of revenue coming from taxation and confiscation[1]. This figure assumes about 30,000 barrels per day of oil, a number that provides significant revenues to the group but does not impact global oil markets. For comparison US production increased last year by 1.4 million barrels per day. It is likely the ISIS volume has since declined in recent weeks from recent bombing attacks. The group has also established a foothold in Libya. With Libya production, now at about 400,000 b/d, well down from the pre-civil war level of 1.6 million barrels per day, there is much less production downside for oil markets, but it creates immense potential additional revenues should it be able to secure some of the

[1] See IHS press release at http://on.ihs.com/1TS9esP

multiple terminals along the coast. In addition, the country is well positioned to be a springboard to launch attacks against energy assets in Egypt and Algeria, in line with the strategy employed in Iraq and Syria

Given the risks posed by terrorism and outages in the future, addressing energy security issues in oil markets is key to ensure available energy to meet demand in the future without the deleterious effects of high prices. The United States production growth helped to push prices lower. These lower prices have brought dramatic benefits for consumers and put additional pressure on groups that have traditionally relied on oil revenue to sustain their economies.

The shift from OPEC toward the United States, in terms of oil supply response contains within it a huge opportunity for the United States to help shore up not just national energy security but global energy security. US imports of crude and refined products have diminished markedly over the past several years but this does not mean that the country has disconnected from global oil markets. Increasing US and global energy security can be helped by assisting the capacity for a rapid supply response from the United States when needed. Market incentives alone will help push US oil producers to produce more as prices rise, but the current crude oil export policy can also limit the full upside of this production increase.

The US has a liberal trade policy for natural gas, coal, refined products and processed condensate. It is seeking new agreements to further promote trade with both Asia and Europe. It also allows crude 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, while supporting job growth across many industries and in places far from the oil fields. It would 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 as U.S. gasoline prices are linked to the Brent world price, not the domestic WTI price.

To fully maximize US savings at the pump, exports should be liberalized to ensure this dated policy does not cause an unnecessary drag on American productivity, while hampering our ability to exploit fully the national security benefits from this energy resurgence. The reasons are intertwined with the nature of the American refinery system and the price discounts that American oil producers must frequently 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 lower cost 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. Allowing crude oil exports increases market efficiencies and ensure higher value US crude oil is unhampered by a price discount to international markets.

The ability to hold crude and refined product stocks is also key to reducing the risk by providing the ability to supply customers if oil supply is disrupted. Inventories are high

with nearly 700 million barrels per day accumulated in stockpiles around the world, but of this most of the stocks that can be easily drawn down are in the United States. This commercial capacity, along with substantial stocks in the US Strategic Petroleum Reserve remains critical in a supply shortfall despite the US' lower imports (as a result of the production boom in the country). Terrorism and instability will become a bigger risk for oil markets over the coming year, but the US has a real opportunity to address these risks in a way not possible prior to the US shale boom.

I appreciate, Chairman Murkowski, 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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