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Chairwoman Murkowski, Ranking Member Cantwell, honorable members of the Senate Committee on Energy and Natural Resources, thank you for inviting me to testify on this panel. It is a privilege to be able to share perspectives with you on the subject of today's hearing, "Terrorism and the Global Oil Markets."

Events of the past month, including the November 13 terrorist attacks in Paris and the terrorist attack on December 2 in San Bernardino, California, have brought home that the United States today faces no greater terrorist threat than the Islamic State. Between the Islamic State's base in Syria and Iraq and its ability to use the internet and online communications to organize and inspire terrorist attacks around the world, the Islamic State has become the leading force of the global jihadi movement. The United States and our allies must defeat it.

Defeating the Islamic State will require us to apply the full range of American power: military, economic, and diplomatic. We must work with allies and partners to defeat ISIS on the battlefield in the Middle East; to sanction ISIS's sources of revenue and deny ISIS the ability to procure supplies and move funds around the world; to enlist the support of allies and partners to build a broad international coalition to fight ISIS; and to turn potential ISIS sympathizers around the world and here at home in the United States away from ISIS's radical ideology.

I have studied ISIS's finances for nearly two years, beginning in 2014 when I had the honor of serving at the State Department as the Deputy Assistant Secretary for Counter Threat Finance and Sanctions and, along with Treasury Official Danny Glaser, served as co-Chair of the U.S. government working group to counter ISIS financing. This year, with the Center for a New American Security, I have conducted extensive research on ISIS's finances and written and spoken about ISIS's financial operations.

I intend to focus my remarks today on the Islamic State's oil trade, which is a principal source of revenue for the terrorist organization and one that must be shut down. But before describing the Islamic State's oil trade in detail and recommending several steps to combat it, I would like to place the Islamic State's oil business into the broader context of ISIS's overall financial picture.

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ISIS Financial Overview

ISIS is the best-funded terrorist organization in history, drawing income from several sources. Unlike many of the other terrorist groups the U.S. has fought, which raise funds principally from external sources like donations, criminal smuggling, or kidnapping for ransom, ISIS derives its income principally from the territory it controls in Syria and Iraq.

The single largest source of ISIS revenue to date appears to be robbery and taxation of the people and businesses that live and operate in ISIS-controlled territory. The U.S. Treasury Department has estimated that ISIS has seized at least \$500 million and potentially up to \$1 billion by looting bank vaults in territory under ISIS control, including the Mosul branch of the Iraqi Central Bank. In addition, ISIS extorts taxes from the people who live in its territory amounting hundreds of millions of dollars per year or more.¹ According to press reports and U.S. government officials, this extortion included millions that ISIS skimmed off of Iraqi government salary payments to Iraqi civil servants in ISIS-controlled territory (at least prior to July 2015 when the Iraqi government at least temporarily ceased paying some salaries in ISIS-controlled territory).² ISIS also has a robust system in place to tax local business owners, collect road tolls, charge for electricity and other services, and to collect other fees from the people who suffer under its rule.

Turning to oil revenue, which is the second largest source of ISIS funding, there is a widespread consensus that, at least prior to the escalated coalition airstrikes against ISIS oil targets that began last month, ISIS has been earning between \$1 million and \$1.5 million per day from its oil industry. For example, Treasury Assistant Secretary Daniel Glaser estimated in July 2015 that ISIS pulls in \$40 million per month, or approximately \$500 million per year, from oil.³ Glaser indicated that this estimate was based on information collected during the May 2015 raid against Abu Sayyaf, an ISIS financial official who managed much ISIS's oil enterprise. (U.S. government officials and newspaper accounts have indicated that the raid provided a treasure trove of information on ISIS's financial operations). In October of this year, an independent analysis of ISIS oil revenues by journalists and researchers from the *Financial Times*, using estimates of ISIS oil production and sales prices of crude oil in ISIS territory, also reached the conclusion that ISIS made roughly \$1.5 million per day from oil sales.⁴ And a just released IHS study of ISIS's current revenue estimated that oil and natural gas sales accounted for 43% of ISIS's \$80 million monthly revenue, or just over \$1 million per day.⁵

Aside from extortion/taxation and oil revenues, ISIS derives income from kidnapping for ransom, looting antiquities and selling them on international markets, other criminal activity, and by raising money from donors and financiers in the Middle East and beyond. These other sources of revenue,

¹ Daniel Glaser, "Remarks on Aspen Institute Panel Regarding Iraq/Syria: Worse Now Than Before?" (The Aspen Institute, Aspen, Colorado, July 23, 2015), <http://aspensecurityforum.org/wp-content/uploads/2015/07/Iraq-or-Syria-Worse-Now-Than-Before.pdf>.

² Damian Paleta and Adam Entous, "Militants in Iraq Siphon State Pay," *The Wall Street Journal*, March 23, 2015, <http://www.wsj.com/articles/militants-in-iraq-siphon-state-pay-1427154029>.

³ Glaser, "Remarks on Aspen Institute Panel Regarding Iraq/Syria: Worse Now Than Before?" <http://aspensecurityforum.org/wp-content/uploads/2015/07/Iraq-or-Syria-Worse-Now-Than-Before.pdf>.

⁴ Erika Solomon, Robin Kwong and Steven Bernard, "Inside ISIS Inc.: The Journey of a Barrel of Oil," *The Financial Times*, October 14, 2015, <http://ig.ft.com/sites/2015/isis-oil/>.

⁵ "Islamic State Monthly Revenue Totals \$80 million, IHS Says," IHS, press release, December 7, 2015, <http://press.ihs.com/press-release/aerospace-defense-security/islamic-state-monthly-revenue-totals-80-million-ihs-says>.

however, are relatively less significant. For example, the Treasury Department estimated in early 2015 that ISIS earned \$20 million from kidnapping for ransom in 2014—a significant sum for many terrorist groups, but a small fraction of ISIS’s total income.⁶

ISIS’s Oil Enterprise

There are three key facts that need to be understood in order to develop an effective strategy to disrupt ISIS’s oil revenue: First, ISIS’s oil infrastructure is technically simple—this is low-tech oil production and oil refining. Second, the bulk of oil *produced* within ISIS-controlled territory is *consumed* within ISIS-controlled territory. As a result, ISIS generates most of its oil revenue indigenously from the territory it controls, not from selling oil to buyers in Turkey, Iraq, or other countries susceptible to U.S. sanctions pressure. Third, ISIS has proved to be an adaptable adversary, adjusting its oil operations to military strikes and other coalition pressure. I will elaborate on each of these issues in detail.

Let me begin by providing some basic estimates of the scale of ISIS’s oil enterprise: Estimates of oil production in ISIS territory, prior to the escalated bombing of ISIS oil infrastructure that began last month, generally run between 40,000 and 50,000 barrels per day, with production concentrated in Syria’s Deir Ezzor province. U.S. government officials have estimated that ISIS produces at least 40,000 barrels per day, virtually all of it in Syria, while an in-depth investigation by the *Financial Times* in October 2015 estimated that ISIS produces between 34,000 and 40,000 barrels per day in Syria and approximately another 8,000 barrels per day in Iraq.⁷ These volumes are significant, but a dramatic decline from the volumes of oil produced in the same fields prior to ISIS’s rise. For example, Syria’s total oil production prior to the current war was approximately 385,000 barrels of oil per day. As I said earlier, estimates of ISIS’s revenue from its oil generally run over \$1 million per day, or some \$500 million per year.

The operations that produce oil within ISIS territory are low-tech. The primary oilfields under ISIS control in Syria are simple, straightforward to operate, and rich in oil resources. Industry experts describe the fields as ones where oil essentially rises to the surface when tapped by basic pipes, and the oil can be lifted into trucks by simple pumps or, in a pinch, buckets.⁸ Furthermore, ISIS has shown that it has the expertise needed to repair damage done to the fields following limited military strikes. Indeed, I have heard anecdotal reports that ISIS can repair some individual bombed wellheads in as little as 24-48 hours after a coalition strike. I have also heard reports that ISIS has taken to basing repair technicians near wellheads in order to expedite repairs and return wellheads to operation.

⁶ Jennifer Fowler, “Remarks of Deputy Assistant Secretary for Terrorist Financing Jennifer Fowler at the Washington Institute for Near East Policy on U.S. Efforts to Counter the Financing of ISIL” (Washington Institute for Near East Policy, Washington, D.C., February 2, 2015), <https://www.treasury.gov/press-center/press-releases/Pages/j19755.aspx>.

⁷ Solomon, Kwong and Bernard, “Inside ISIS Inc.: The Journey of a Barrel of Oil.”

⁸ See, e.g., Michael Lynch, “The Oil War Against ISIS: Why Bombs Won’t Cut Off The Flows,” *Forbes*, November 20, 2015, <http://www.forbes.com/sites/michaelylynch/2015/11/20/the-oil-war-against-isis-why-bombs-wont-cut-off-the-flow/>.

The refineries that operate in ISIS territory are also low-tech enterprises, often little more than home-made oil stills that refine crude by boiling it to produce low-grade diesel and other fuels for sale. Estimates are that hundreds if not thousands of these refineries have been built in ISIS territory over the past two years, and publicly-available aerial imagery shows them scattered throughout the Syrian desert.⁹ These refineries are built using equipment widely available in the region and can be readily repaired or rebuilt in case of damage.

Finally, the transportation of crude oil and refined petroleum products in ISIS territory does not involve complex equipment. Oil is generally shipped by trucks that have had tanks welded onto them, or by general-purpose utility trucks that simply carry oil in stacked barrels or in plastic jugs.

ISIS appears to control wellheads directly and profits off the sale of oil from them. It also appears to maintain control of many of the larger oil and gas facilities in territory under its control. However, while ISIS maintains direct control of oil *production* inside its territory, ISIS does not appear to directly operate the *distribution* network for oil in its territory. Instead, ISIS sells oil at the wellhead to independent distributors, who load crude oil into trucks and either sell the oil to local small refineries or on to other middlemen who distribute it further afield. Public reports suggest ISIS may charge anywhere between \$15 and \$45 per barrel at the wellhead, depending on the quality of the oil and local market conditions.¹⁰ Although ISIS does not directly control this distribution of crude oil and refined product, ISIS is able to generate additional revenue from the oil distribution network by charging road tolls to trucks and by taxing fuel merchants. I should note that ISIS oil trade is heavily cash based, with purchasers paying cash at the wellhead and refiners and distributors operating largely on a cash basis—this is not a business with significant linkages to banks or other financial institutions.

I estimate that the bulk of the oil produced in ISIS territory is consumed within ISIS territory. Five or six million people live in ISIS's territory, including several significant cities in both Syria and Iraq, such as Raqqa, Palmyra, and Mosul. Assuming ISIS territory produces 45,000 barrels of crude oil per day, oil production would amount to only about a third of one gallon of crude oil per resident per day—a quantity that could be easily consumed by local needs. There are numerous reports of thriving fuel markets inside ISIS territory, including trade of Syrian origin oil being transported into ISIS territory in Iraq, and ISIS also needs fuel to support its own military operations. In addition, since most of the ISIS crude oil is refined in primitive local refineries, the diesel and other oil products made in ISIS territory are generally low-grade and unattractive in markets where higher-grade products are also available.

The fact that a majority of ISIS-origin oil is consumed within ISIS's own territory, however, does not mean that there is *no* smuggling of ISIS oil into adjacent territory: there clearly is cross-border smuggling, and the U.S. and our partners need to take steps to curtail it.

To give just a couple of examples of cross-border smuggling, journalists in Turkey and Syria have documented trucks, stock animals, and individual people hauling containers of oil across the border

⁹ Matthew M. Reed, "Taking Stock of ISIS Oil: Part 2," *The Fuse*, October 29, 2015, <http://energyfuse.org/taking-stock-of-isis-oil-part-2/>.

¹⁰ See, e.g., Solomon, Kwong and Bernard, "Inside ISIS Inc.: The Journey of a Barrel of Oil."

and using informal pipe networks that straddle the border to send oil from ISIS territory into Turkey.¹¹ There have been similar reports of oil flows from ISIS territory into the Kurdish Autonomous Region in northern Iraq. I should note, however, that there is not credible evidence to support Russia's recent allegation of "industrial scale" oil trade between ISIS and Turkey, either directly or through the Kurdish Autonomous Region in Iraq. Nor is there credible evidence that meaningful quantities of oil smuggled into Turkey from ISIS territory are entering global energy markets. Instead, it appears likely that oil smuggling into Turkey and KRG territory occurs at a local scale and that the smuggled products are consumed locally.

Oil is also moving from ISIS-controlled territory into territory controlled by the Assad regime, which is not surprising given that the Assad regime has lost control of most major Syrian oilfields to ISIS. Just last month, on November 25, the Treasury Department sanctioned a Syrian businessman, George Haswani, for serving as a middleman for Syrian regime oil purchases from ISIS.¹²

In addition to oil, ISIS is in the natural gas business in Syria. Over the last year, ISIS captured important Syrian natural gas fields, including near the Syrian city of Palmyra, and appears to be continuing to produce natural gas, though at levels well below Syria's pre-war natural gas production.¹³ Multiple sources indicate that ISIS sells natural gas to the Assad regime, largely to fuel electricity production, and I have heard from U.S. government sources that the natural gas trade between ISIS and the Assad regime is at this point significantly larger than the oil trade between them.¹⁴

It is important to remember that the oil industry provides ISIS with benefits *in addition* to cash revenue. The oil industry employs thousands of truckers, refiners, and merchants in ISIS territory, creating wealth that ISIS can tax and maintaining a semblance of economic order. ISIS also depends on oil and natural gas for its own electricity production and on oil to power the trucks and other vehicles that ISIS relies on to support military operations in Syria and Iraq. I think there is also a harder-to-quantify propaganda benefit that ISIS derives from managing its oil enterprise, which ISIS can use to project the image that it is succeeding in its quest to establish a modern-day caliphate.

Recommended Actions:

Over the past year, the U.S. and our coalition partners have taken several important steps to begin fighting ISIS's oil enterprise. U.S. sanctions programs today give the U.S. government the authority to sanction companies trading with ISIS, including oil trade. U.N. Security Council Resolutions 2070 (2014) and 2199 (2015) highlight ISIS's oil revenues and direct all states to take steps to ensure that

¹¹ Mike Giglio, "This is How ISIS Smuggles Oil," *Buzzfeed*, November 3, 2014, <http://www.buzzfeed.com/mikegiglio/this-is-how-isis-smuggles-oil#.kraqXG6X4>.

¹² "Treasury Sanctions Networks Providing Support to the Government of Syria, Including For Facilitating Syrian Government Oil Purchases from ISIL," U.S. Treasury Department, press release, November 25, 2015, <https://www.treasury.gov/press-center/press-releases/Pages/jl0287.aspx>.

¹³ Yezid Sayigh, "The War Over Syria's Gas Fields," (Carnegie Endowment for International Peace, June 8, 2015), <http://carnegieendowment.org/syriaincrisis/?fa=60316>.

¹⁴ The *Financial Times* has reported publicly on this issue. Solomon, Kwong and Bernard, "Inside ISIS Inc.: The Journey of a Barrel of Oil."

they are not facilitating ISIS's oil trade. The U.S. government and our allies have launched an international working group to counter ISIS financing, which provides a valuable forum to share information and develop a collective strategy to pressure ISIS revenues, including oil. Next week, Treasury Secretary Jack Lew will preside over a meeting of U.N. Security Council Finance Members to coordinate strategy in countering ISIS finance.

Unfortunately, however, we also have to acknowledge that U.S. and coalition efforts to date have had at most limited success in actually reducing ISIS oil revenues. The current estimates of \$1 million to \$1.5 million per day are largely unchanged from an estimate of \$1 million per day that then-Treasury Under Secretary David Cohen estimated ISIS earned from the oil trade over a year ago, in November 2014.¹⁵ The early phases of the U.S. military campaign against ISIS oil infrastructure that began in 2014—prior to the escalated strikes that began last month—appear to have had little systematic impact on ISIS oil infrastructure as ISIS adapted to the strikes and developed the expertise to quickly repair damaged infrastructure. The U.S. and our allies have had some success in pressing Turkey and the Kurdish Regional Government in Iraq to increase border enforcement to stop oil smuggling from ISIS territory, but, as I have discussed, only a minority of ISIS oil production is smuggled out of ISIS territory in the first place.

Saying that the U.S. government has had only limited success in fighting ISIS's oil revenues is not to say that the U.S. has had no success in countering ISIS financing more generally: the U.S. has achieved important progress on some issues. For example, the Treasury and State Departments have brought significant pressure to bear to ensure that ISIS is not able to access the international banking system from its territory in Iraq and Syria and to crack down on money changers and exchange houses that either deliberately or blindly help ISIS move cash into and out of its territory. The U.S. government, the Financial Action Task Force, and other regulatory bodies have also engaged with banks and money service businesses to restrict the flows of funds related to foreign fighters who travel to Syria and Iraq to join ISIS. But the fact remains that our efforts to combat ISIS's ability to generate funds within its own territory have had limited impact.

Clearly, more needs to be done. What steps can the U.S. and our coalition partners take?

First, the single most important step that the U.S. government can take to undercut ISIS's oil and gas revenue is to keep escalating the military action against oil and gas targets in ISIS territory. ISIS generates most of its oil revenues in cash from operations within the territory it controls, limiting the ability of financial sanctions and other traditional counter terrorist finance tools to attack this source of ISIS revenue. Instead, we need to impact ISIS's oil enterprise where it occurs, inside ISIS territory in Syria and, to a lesser extent, Iraq.

One of the lessons of the last year is that limited strikes on ISIS's oil infrastructure are not strategically effective over time, given ISIS's ability to repair wellheads and build new low-tech refineries. The recent U.S. and coalition campaign to strike tanker trucks is a valuable escalation of military pressure that is already disrupting ISIS's oil operations and making it harder for ISIS to earn

¹⁵ Deb Riechmann, "Islamic State group earning \$1 million per day in black market oil, U.S. says," *Associated Press*, October 23, 2014, <http://www.pbs.org/newshour/rundown/islamic-state-group-taking-1-million-per-day-black-market-oil-report-says/>.

oil revenue. I also commend the military's recent decision to begin striking larger pieces of ISIS's oil infrastructure that are more difficult to repair or replace, such as the November 2015 strikes against oil and gas separation plants in ISIS territory. Comprehensive bombing of these facilities is an important tool to shut down ISIS's oil enterprise.

But more needs to be done. Strikes against tanker trucks, like strikes against oil infrastructure, must be sustained in a widespread way over time—or else the oil distributors operating in ISIS territory will simply be able to acquire replacement trucks and get back to business. Strikes on oil infrastructure need to be comprehensive, not limited. While I understand that government officials have concerns about avoiding permanent damage to Syrian oil infrastructure given that oil will be a key piece of rebuilding a post-conflict Syria, those long-term concerns should not outweigh the immediate need to put ISIS's oil enterprise out of business.

The U.S. should also look at further widening the set of military targets and considering installations like the cash accounting houses where ISIS stores its oil proceeds and other revenues. Raids against high value targets, like the May raid on Abu Sayyaf, should also be considered. Some of these targets may ultimately prove infeasible given intelligence gaps and the potential for disproportionate civilian casualties. But the U.S. military and our coalition partners should target ISIS's oil infrastructure to the maximum extent possible and there should be no part of ISIS's oil enterprise where people feel safe to work.

Second, the U.S. government should continue to put pressure on Turkey and the Kurdish Regional government in northern Iraq to crack down on the oil smuggling that does exist.

The fact that most ISIS oil is consumed within ISIS's own territory does not mean that smuggling is not a problem: clearly, any oil exiting ISIS territory brings revenue into ISIS territory and should be stopped. The U.S. should continue to put pressure on regional governments to fully seal their borders to oil smuggling and it should offer technical assistance on counter-smuggling controls. Regional governments, meanwhile, should adopt a zero-tolerance policy for oil and oil trucks trying to cross from ISIS-controlled territory. Trucks and oil should not simply be turned back—only to attempt a subsequent border crossing in the future. Instead, trucks and oil seeking to leave ISIS-controlled territory should be seized and destroyed in order to increase costs against ISIS oil smuggling. U.S. officials, meanwhile, should continue working to identify oil smugglers for sanctions; sanctions against even one or two oil smuggling networks would have an important deterrent effect. The U.S. should also continue its sanctions and other efforts to highlight and expose the links between ISIS's oil enterprise and the Assad regime.

Third, the U.S. and our allies need to escalate our efforts to target the flow of oil-related equipment to ISIS territory. As the U.S. and our coalition partners increase military strikes against ISIS oil infrastructure, ISIS will increasingly seek to procure replacement oil equipment. The U.S. needs a robust campaign to sanction ISIS procurement networks and to reach out to businesses in Iraq, Turkey, and elsewhere in the region to ensure that they are taking appropriate steps to avoid selling oil equipment to ISIS-linked buyers. This will not be an easy task, given that the region is awash in oil equipment, that much of the equipment is not heavily regulated, and that identifying the grey- and black-market dealers who sell to ISIS is not straightforward. But it is important that the U.S. and our coalition partners do not simply allow ISIS to repair and replace infrastructure damaged by U.S. airstrikes.

In addition to direct outreach and targeted sanctions, a practical step would be to use a future U.N. Security Council resolution to prohibit the transfer of any oil-related equipment to ISIS territory and authorizing states to seize and destroy oil equipment bound for ISIS territory. Current resolutions prohibit the sale of such equipment *to ISIS*, but a broader prohibition on the sale of such equipment *to ISIS territory* would be easier to enforce and would help address potential legal issues that limit governments' ability to restrict the export of such goods to ISIS territory.

Finally, U.S. and coalition efforts to fight ISIS's oil revenues cannot and should not be addressed in a vacuum. They must be embedded in a comprehensive strategy to fight all of ISIS's primary funding streams. This should include an overall expanded military campaign against ISIS economic targets and continued robust sanctions enforcement.

Other Linkages Between Terrorism and the Global Oil Trade:

Although I have focused my remarks to the Committee today on ISIS and its ability to generate revenue from the oil trade in Syria and Iraq, I should briefly note that the experience with ISIS's oil enterprise is by no means the first time terrorism has intersected with the global oil trade. While ISIS is the first terrorist group to effectively operate its own ongoing oil industry, there is a long and dispiriting history of linkages between terrorist organizations and the global oil industry. These connections include:

- **Kidnapping for ransom (KFR) of oil workers:** Kidnapping for ransom is a major source of revenue for terrorist organizations globally. Oil industry employees work in some of the most politically unstable parts of the planet and have often been targeted for kidnapping, despite the rigorous efforts of oil companies to protect their employees. In recent years, for example, oil workers have been kidnapped in Colombia, Libya, Nigeria, and Algeria, among other countries. While it is often difficult to identify reliable information about specific ransom payments, the specific groups ransoms are paid to, and indeed whether a ransom was even paid to secure a hostage's release, oil workers certainly make attractive targets for terrorist groups seeking to generate funds through KFR.
- **Terrorist attacks targeting oil infrastructure:** Key oil infrastructure has long been a potential target for terrorist attacks, either to prevent governments or rival groups from generating revenue or to disrupt markets. This year, for example, ISIS's Libyan affiliate has launched multiple attacks against Libyan oil infrastructure, apparently in an effort to damage facilities and prevent other groups from profiting from Libya's oil wealth. And there has long been concern that major terrorist attacks against key global energy infrastructure installations could disrupt global oil markets and have significant price and economic ramifications.
- **State sponsors of terrorism:** Finally, although ISIS is the first terrorist group to manage its own ongoing oil industry, all three of the currently designated State Sponsors of Terrorism, Iran, Syria, and Sudan, have significant oil industries—though as discussed, much of Syria's oil industry is now under ISIS control. Any comprehensive examination of the links between

terrorism and global oil markets must also consider how oil sales affect these countries' ability to support terrorist activities.

Conclusion:

Senator Murkowski, Senator Cantwell, and other distinguished members of the Committee, in closing I would like to thank you again for giving me the opportunity to speak today as a member of such a distinguished panel. Attacking ISIS's oil enterprise is not a simple task, and, by itself, will not defeat ISIS. Steps to attack ISIS's oil enterprise are, however, a critically important element in an overall strategy to end this terrorist movement.

I would be honored to answer any questions.