



2015 GLOBAL ENERGY FORUM

REVOLUTIONARY CHANGES AND SECURITY PATHWAYS

Wilson Center
Washington, DC

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REGIONAL TURMOIL AND REALIGNMENT: Middle East Conflicts and the New Geopolitics of Oil

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This paper examines how regional conflicts in the Middle East, including the Syrian civil war and the rise of Islamic State of Iraq and Syria (ISIS), are shifting the geopolitics of oil and raising serious new risks that regional oil facilities will be considered both strategic assets and spoils of war not only in the greater battle for Syria and Iraq and the struggle against ISIS but also potentially in the wider superpower “Cold War” context. Current diplomacy to resolve the conflict in Syria faces serious challenges but is increasingly imperative not only on humanitarian grounds but also as a key to preventing a continued destruction of major regional oil and gas infrastructure that could represent a major challenge to global energy security in the three to five year time frame. Energy dimensions must be considered carefully to ensure Russia does not gain increased leverage over the energy supplies of the industrialized West.

The Middle East is experiencing a period of great transformation that is fueling rivalry for influence among both the major regional powers such as Saudi Arabia, Iran, Turkey, the United Arab Emirates and Qatar and also importantly, among external global powers such as the United States, Europe and Russia. As local borders and ruling institutions in the Middle East have become contested, so have the geopolitical levers provided by oil. The risks posed by accelerating conflicts in the Middle East are multifold. In this paper, we examine how current trend lines raised the possibility that influence over Middle East oil and gas resources could become contested as part of the conflict, with dire consequences for the stability of global trade, the global economy and well-functioning global financial markets.

Geopolitical rivalries over the influence of oil are not new. They span decades and cover a wide range and scale of international conflict.¹ The academic literature on oil and war in the Middle East is extensive, ranging from studies on conflict between state actors as well as oil’s central role in intra-state civil war violence.² Jeff Colgan in his book *Petro-Aggression: When Oil Causes War* notes that “petro-states are among the most violent states in the world” and while his study qualifies that not all petro-states have a propensity to

aggression, he notes that oil and gas producing countries are “targets of attack 30 percent more frequently than non-petro-states.”³

What makes the oil element to current conflicts in the Middle East particularly problematical to global energy security is the more precarious backdrop of the Arab Spring and dashed expectations of a new generation of youth from the Middle East. Today’s Middle East is characterized by heightened political instability where borders and identity politics in the region have become blurred in a manner that will be hard to reconstitute. Institutions and infrastructure are being rapidly destroyed all across the region, making diplomacy and conflict resolution more challenging than in the past. Involvement of distant geopolitical actors comes in the context of this regional and sectarian complexity, with adverse impacts to oil development. For oil resource development, a business that requires huge capital inflows, long lead times and complex engineering, the rising instability and devolution of government organizations in key Mideast countries bode ill for future economic progress for the region and for continued oil market surpluses in the long run.

Regardless of the promise of new oil and gas supplies from shale formations in North America and beyond, a third of global oil production is still sourced from the Middle East and North Africa. While this might be able to be reduced over time, for the next few years, the fate of Middle East oil will still have huge impacts on the global economy. This fact colors the calculation of all actors in the various conflicts across the Middle East and needs to be better understood. Since many of the major parties to the wars in Syria, Iraq, Yemen and Libya are oil producing states themselves, the zero sum nature of eliminating oil productive capacity in any given location via war must be fully taken into account in analyzing not only the motivations of various actors but also in understanding any unintended oil-related consequences that might come to pass from continuation or escalation of the conflicts.

Moreover, unlike past regional wars, like the 8-year Iran-Iraq war or Iraq’s invasion of Kuwait, which involved mainly state-to-state conflict, this time

around subnational groups, like ISIS, Al Qaeda and other local militias, are among the warring parties focused on maintaining or gaining control of oil production and refining installations in contested areas. Initially an outgrowth of disunity inside Iraq, warring militias, ISIS, and Al Qaeda know that access to oil is critical to their ability to challenge state actors. The political impermanence of these sub-groups creates unique problems, not the least of which is the inclination to use force to deny others access to the facilities by regional rivals or the devolved state government. To date, 1.905 million barrels per day (bpd) of oil productive capacity in Yemen, Syria, Libya and western Iraq has been lost in the last year due to violence and operational mismanagement. So far, the negative economic consequences of this destruction of energy infrastructure has been limited to the countries in question, since rising production from the United States and Saudi Arabia has more than replaced lost production in the Middle East. But there continue to be high energy security risks at stake, given that the Middle East and North African (MENA) region produces 32.5 million bpd, about a third of total world production. Saudi Arabia's Eastern province, which has been targeted by ISIS, is the home to over 90% of the Kingdom's oil production and the vast majority of world's spare oil production capacity. Saudi infighting about how to approach wars and sub-groups could cause the Kingdom itself to fray in ways that could negatively impact its oil industry which employs a high proportion of citizens of Shia faith in its workforce.⁴

The energy security consequences of Russia's involvement in this morass of instability and conflict have been masked by the breadth and complexity of its differing interests in the outcomes.⁵ On the one hand, Russia appears to have the same strategic interest as the United States in containing the threat of jihadist extremists in the Middle East and beyond.⁶ On the other hand, Moscow is also motivated to eliminate the threat that Saudi Arabia and Qatar can collude with the United States to weaken Moscow via an energy market share war.⁷ Russian president Vladimir Putin appears to be keenly aware of the role such a policy played in the collapse of the Soviet Union.⁸ Russian dependency on oil and gas revenues is substantial.⁹ Oil and natural gas comprised 68% of Russia's export revenue in 2013 and accounted for

about half of the federal budget.¹⁰ Russia's high dependence on oil and gas income gives Russia the additional interest to escalate conflicts militarily beyond a "jihadist containment" goal to a broader level that threatens oil and gas infrastructure, thereby underpinning the very oil and gas prices that are the lifeblood of the Kremlin. A Russian victory against jihadists that unfolds in a manner that destroys local Middle East oil and gas infrastructure would be a double boon to Moscow. By creating escalation in conflicts, Russia de facto accelerates the current trend where conflicts with Islamic militants are leading to the destruction of oil and gas facilities. Under this scenario, Russia can score a giant strategic and economic victory, if it survives as one of the leading major international oil and gas industries fully intact in a world where substantial Middle East oil export capacity is destroyed by war. In the recent past, Russia has tried to tap its large energy resource endowments to reassert its place as a global superpower.¹¹

Russia's military intervention in Middle East conflicts gives Moscow an additional optionality beyond the destruction of infrastructure, however. To the extent that escalating conflicts destabilize the governments of rival oil and gas producers such as Saudi Arabia, Kuwait, the United Arab Emirates and Qatar, the greater the possibility that the world will have fewer energy allies to align with to weaken Russia's own petro-power. To achieve this aim, Russia doesn't have literally to take over the Persian Gulf by force. All it needs to do is credibly intimidate the Gulf Arab states that it can impose negative costs on them, should they continue to align their energy policies with the West instead of with Moscow. The escalating war in Syria and Yemen could potentially achieve this goal, were it to drain economic resources and internal support for existing Gulf Arab regimes to the point where these governments are forced to capitulate to Moscow's authority or interests. The U.S. posture in the conflict is pivotal to this process and the prospects of a U.S. withdrawal or disengagement in the region would strengthen Russia's hand.

The risks to Russia in this strategy are also huge, however, since it is unclear who can better survive the escalation of conflict, the Kremlin or the ruling governments of the Gulf. Conflicts have already spilled over into global oil

markets as Saudi Arabia and its Gulf allies have initiated a market share war that has brought about a collapse in oil prices, intended in large measure to influence military and geopolitical outcomes in the regional wars on the ground. Russia's economy is highly battered by the combination of economic sanctions from the West and the 50 percent collapse in the price of oil. Moreover, Moscow also has to concern itself with the possibility that its direct military engagement in the Middle East raises the risks to both its economy and its internal security. As Russian attacks on Islamic militants escalate in the Middle East, its citizens could become more susceptible to terrorist attacks at home.¹²

The longer these conflicts fester, the more energy infrastructures could potentially become at risk. Combined with lost investment in other parts of the world like Canada's oil sands and the Arctic due to low oil prices, the destruction of the oil sector in many locations around the Middle East may be laying the seeds for a future oil supply crunch in the three to five year time horizon. The level of damage will be related to the effectiveness of the United States and its allies to contain the spread of ISIS to new locations and the possibility of peaceful resolution to regional proxy wars among regional powers including Saudi Arabia and Iran.

Russia's buildup of troops in Syria has complicated the limited options facing the United States as it tries to build coalitions for a political transition in Syria. Since the United States might wind up with few levers to protect the various societies from the destruction of energy infrastructure in the region, Washington needs to avoid complacency about global energy security. Ironically, the recent success of the U.S. shale industry has created optimism about oil supplies just at a time when they are increasingly threatened. Talk of U.S. energy independence has fostered a domestic political atmosphere where Washington appears less apt to intervene to defend the free flow of oil from the Middle East. But U.S. power, national security and economic health are still tied to its vast architecture of global alliances and trade relations. The U.S., by virtue of these alliances and dependence on the health of the global economy, still needs to care about the safety of existing oil and gas

production and export infrastructure in the Middle East. Moreover, the U.S. needs to consider energy carefully in its role as a major ally to Europe and membership in the North Atlantic Treaty Organization (NATO). The U.S. needs to recognize the energy elements in Moscow's calculations in the Middle East and to fashion strategies that reduce its influence on energy markets not only in the short term, but also over the next five to ten years. Russia, by contrast, also needs to realize that the vast potential of the U.S. shale industry, combined with the aggressive renewable energy policy of Europe is a serious threat to its long term energy future and therefore continuation of current military policies is likely to eliminate potential export markets forever to substitution.

First and foremost, given the high risk that more oil and gas production and export infrastructure could be affected by escalating conflicts in the Middle East, the United States needs to position itself to fill any supply gaps that might emerge from the troubled region by lifting the decades-old ban on U.S. crude oil exports. Lifting the ban on crude oil exports would allow U.S. oil producers to reap the benefits of any supply hole that might come after 2016 as a result of escalating conflicts in the Middle East. In addition, to optimize this policy, the U.S. must stay the course on the successful energy security policies that are currently driving down U.S. domestic oil demand, such as promoting adoption of advanced alternative fuel vehicles and stricter performance standards for cars and trucks. By lowering demand generally, the United States can contribute to lowering the oil intensity of the global economy and also free up a large volume of its own production that can supply its allies either directly or via displacement.

U.S. exports strengthen our ties to important allies and trading partners and thereby enhance American power and influence. U.S. exports would be an important strategic replacement to any lost Middle East supplies, much the way the U.S. served as an oil swing producer back in the 1960s, rendering an Arab oil boycott during the 1967 Arab-Israeli war infeasible. Our ability to serve as a source for critical swing energy supplies – oil and natural gas--enhances our importance to our energy trading partners in other geopolitical

and economic spheres and allows us to help our allies in times of market instability.¹³ U.S. exports also constrain Russia's ability to use its energy supplier role as a wedge between the United States and its European allies.

Europe is also playing its own important role by lowering its own oil and gas demand through substitution and efficiency standards. Russia announced recently that its gas sales to Europe were hitting historical lows.¹⁴ To the extent that Europe can continue to diversify its energy mix away from Russian oil and gas, the less exposed it will be to undue Russian leverage.

War, Oil and ISIS

Data shows that military conflicts over oil can result in significant oil supply disruption in the medium term and beyond, driving prices higher for some period of time until markets can adjust. In a study with co-author Mahmoud El-Gamal, who utilizes Discrete Wavelet Transform (DWT) analysis to measure the effects of price and investment return variables on oil production at various frequencies, we found that wars in which oil production and export infrastructure are damaged or destroyed, can produce significant oil market discontinuities.¹⁵

Analysis conducted by Peter Toft reveals similar findings. By recording oil production changes during the course of the 39 civil wars in oil producing countries between 1965 and 2007, Toft concludes that intrastate conflict intermittently leads to oil supply disruptions – around fifty percent of the time.¹⁶ Toft's assessment covers the short-term impacts of civil war. Our work adds an element by considering the long-term political and social changes that drive down oil production post factum. A protracted process of consolidating power that follows the transformation of internal politics can be far more harmful to oil sector investment – and thus production capacity – than simply the infrastructural damage incurred during the initial course of the conflict. Our research indicates that war damaged facilities often remain offline for prolonged period of years following conflict, if not for an indefinite timeframe.¹⁷

Militias throughout the Mideast have learned they can undermine the authority of existing political leadership in the region by overtaking oil facilities.¹⁸ A prime example of this strategy has been amply demonstrated in Libya where what might have been a successful transitioning government fell into disarray as rebel factions grabbed and turned off key oil installations and denied access to eastern Libyan export ports. The battle for key oil facilities by ISIS is another example of how conflicts in other parts of the Middle East are creating a threat to oil facilities not only in Iraq, Syria and Libya, but also potentially along the borders of Iraq and Iran with Saudi Arabia, Qatar, the United Arab Emirates, and Kuwait, should the conflict spread more directly to its principal sponsors. ISIS has already attacked soft civilian targets, including Shia populations, inside Saudi Arabia and Kuwait. Saudi Arabia has fortified its northern borders with Iraq with more military hardware and troops, while Iranian forces have moved into positions near the southern Iraqi oil fields, raising the risks of border skirmishes. The militarization of border areas so heavily populated with oil fields and export infrastructure brings with it unique risks, were the conflict to spread.

As Jeff Colgan notes, “externalization of civil wars” in petro-states and “financing for insurgencies” are contributing to violence across the region.¹⁹ And the oil revenue of Saudi Arabia, the United Arab Emirates, Qatar, Russia and Iran has to some degree insulated rulers from domestic opposition, potentially making them, as Colgan’s and others’ analysis would suggest, “more willing to engage in risky foreign policy adventurism.”²⁰

The acceleration of conflict targeting of oil facilities is rooted in the history of repression of sectarian economic interests in key countries such as Iraq, Libya and Syria. In many cases, sectarian communities living in local oil producing regions did not receive an equitable share in wider national budgets during the reign of authoritarian regimes, and this reality has created larger problems in the post-Arab Spring environment. Disagreements over the divisions of state oil revenues have exacerbated ongoing sectarian conflict in not only Iraq, but in Libya and Syria.

In the case of Libya, long standing historical grievances from citizens of eastern Libya about the sharing of oil revenues under strongman Muammar Qaddafi undermined the initial coalition government and put military competition for control of oil facilities at the center of the civil conflict over power sharing. Without an effective Libyan government, a proxy war erupted in the country as rival nearby Arab states support competing leaders and militias (Qatar and Turkey backing the provisional government based in Tripoli and the United Arab Emirates and Egypt backing the opposition government and parliament situated in the eastern part of the country). The resulting chaos and violence created opportunity for extremist groups like Al Qaeda and ISIS who have been able to build their operations in the country and are currently engaged in a military campaign to seize control over Libyan oil infrastructure or deny it to competing factions. One theory suggests that depriving any potential Libyan unity government of oil wealth is aimed to prevent a new government from effectively fighting and defeating ISIS.²¹

Given the political instability and the fact that armed militias and air forces from both sides of the government struggle have targeted the country's oil fields and infrastructure, Libya's oil production has understandably fluctuated widely, with output currently at around 370,000 bpd, down from 1 million bpd produced in October 2014. Approximately 800,000 bpd of crude storage capacity at the eastern port of Es Sidr was demolished, leaving 3 million barrels, and both the ports at Es Sidr and Ras Lanuf have not been operating. This has resulted in the loss of some 600,000 bpd of export capacity.²²

Armed forces affiliated with ISIS have conducted a string of attacks on energy facilities in central and eastern Libya, including on fields run by joint-ventures with Western companies.²³ One such attack occurred on March 6, when gunmen with allegiance to ISIS stormed the Ghani oil field, located in the prolific eastern Sirte Basin and operated by state oil firm Harouge Oil Operations in a joint venture with Canada's Suncor Energy, kidnapping at least nine foreign oil workers and reportedly beheading eight guards. Such attacks prompted Libya's National Oil Corp. (NOC) to declare force majeure at 11 fields operated by both Waha Oil. Co. and Mabruk Oil Operations,

while state oil firm Zuetina Oil Co. announced it had evacuated personnel from its NC-74A license.²⁴ The most serious damage occurred at surface facilities at the Total-operated Mabruk field in the Sirte Basin.²⁵

ISIS is also engaged in a turf battle in Yemen with the more established AQAP, and first made its presence known in the country this March by taking credit for suicide bombings at two Sanaa Shi'ite mosques in which 137 people were killed and another 357 wounded.²⁶ ISIS militants have said they were responsible for a string of bombings in Sanaa and elsewhere in the country during this spring and summer, including a car bomb that exploded outside of an Ismaili mosque in Sanaa on July 29 that killed four people and wounded another six.²⁷

The deteriorating situation caused by the multitude of warring factions in Yemen has raised the specter of extremist groups capturing oil infrastructure. In mid-April, the Yemeni army ceded control of a group of oil fields to a coalition of armed tribes to protect the acreage from being captured by AQAP, which had made territorial gains in the area.²⁸ The proxy war being fought between Saudi Arabia and Iran in Yemen has caused the country's oil production to fall off sharply, from capacity of 150,000 bpd in the first quarter of 2015 to around 16,000 bpd at present with production potentially totally stopping as storage becomes full and exports are embargoed.²⁹ The conflict has prompted Yemen LNG Co. to declare *force majeure*, halting output and exports from the country's single LNG facility.³⁰

ISIS' Failure to Maintain Captured Oil Facilities in Iraq and Syria

When ISIS began its campaign in June 2014 to form an Islamic caliphate by seizing large swathes of land in northern Iraq and eastern Syria, of paramount interest to the group was gaining control of producing oil fields and capitalizing on existing oil smuggling operations out of Iraq and Syria to help fund the group's high operating costs. Initial high estimates of \$1 to \$3 million a day for ISIS' oil earnings were based on one time gain from "... draining down pipelines, storage tanks and pumping stations in northern Iraq."³¹ But more recently, the extremist group is finding it cannot sustain oil

production, both because it lacks the technical know-how and also because its fighters cannot stave off attacks to recapture key installations. Few people with strong technical expertise have remained in ISIS-controlled territory and the group's efforts to coerce skilled staff into staying by threatening the lives of their families or seizing the assets of engineers who have fled in hopes of prompting their return have proved ineffective. ISIS has relied upon junior engineers whom it has either pressured to stay on at their jobs or recruited.³²

However, anything involving serious repair or more complex procedures, such as water injection at Syria's mature producing fields, is proving a challenge for ISIS. As of the summer of 2014, ISIS had control over half a dozen Syrian oilfields (al-Furat, al-Omar, and Deir ez-Zor) that prior to the war had a capacity of 114,000 bpd.³³ In September 2014, the U.K. risk management firm Maplecroft assessed that the militant group controlled six out of Syria's ten oil fields, notably the largest, the al-Omar field, and in conjunction with the oil fields it had seized in Iraq, was selling up to 80,000 bpd of oil through the black market.³⁴ The fields most affected by the Syrian crisis are the fields formerly operated by Royal Dutch Shell and France's Total in Deir ez-Zor, which collectively contributed around 90,000-100,000 bpd in 2011 and today appear to be averaging between 15,000-35,000 bpd.³⁵ Gulfsands' Block 26 and some of state oil firm Syria Petroleum Co.'s fields in northeastern Syria are controlled by the Kurds and the Syrian regime and these fields have reportedly not been damaged but are also not officially producing.³⁶

Through the course of the summer of 2014, ISIS had captured six oil fields in northern Iraq—the Ajeel, Himrin, Ain Zalah, Safiyah, Batmah, and Qayara fields, which collectively had pre-war nameplate production capacity of 58,000 bpd. But by early September of 2014, ISIS had relinquished three of those fields to Iraqi forces, leaving the Ajeel, Himrin and Qayara fields under the group's control, with production from these fields averaging less than 15,000 bpd.

The largest of the three remaining fields in ISIS' control was the 25,000 bpd capacity Ajeel field, located near Tikrit in the Salahuddin province. In early

August of last year, the Iraqi government bombed and damaged the Ajeel control room³⁷, with field production reduced to just under 5,000 b/d.³⁸ Prior to Ajeel having been seized, the field had produced 25,000 bpd of crude that was transported to the Kirkuk refinery as well as 150 million cubic feet a day of natural gas that was piped to the Kirkuk power station. Fearful that their lack of technical expertise could inadvertently result in the gas being ignited, ISIS militants operating the field purposefully had been pumping lower volumes of oil.³⁹

During the assault made in March of this year by Iraqi forces as they moved to reclaim Tikrit and the surrounding towns, ISIS soldiers abandoned the Ajeel field and set oil wells in the field on fire as a means to protect themselves from aerial attack by Iraqi military helicopters.⁴⁰ Firefighting teams from Iraqi state-owned National Oil Co. (NOC) extinguished those fires at Ajeel, in addition to well fires lit by ISIS rebels as they also rushed to leave the Himrin field, which was producing around 6,000 bpd.⁴¹ Retreating ISIS soldiers relinquished Qayara, the last Iraqi oil field the extremist group had under its control, in late April, again setting oil wells on fire as they left. The heavy oil Qayara field, had pre-war capacity of around 5,000 bpd, but was believed to be pumping at a mere 2,000 bpd,⁴² and the field may have not been of great use to ISIS given that the crude quality from the field is similar to asphalt.⁴³

The high value of Iraq's Baiji refinery to both ISIS and the Iraqi government cannot be overestimated. The 270,000 bpd capacity refinery located in the Anbar province has been the focus of intense fighting between ISIS militants and Iraqi government forces since June of last year and control of the refinery has exchanged hands several times. ISIS has held the town of Baiji for the past year and the town is strategically important because it lies on the road to ISIS-secured Mosul. The refinery, however, continues to be contested.

The Baiji refinery is critical to both sides as it is Iraq's largest refinery and processes one third of the country's crude output. Although Iraqi government forces had recaptured portions of the refinery in early June from ISIS militants and looked to be gaining total control over the facility in mid-June, a report

on June 24 claimed that ISIS soldiers had taken control and were offering 460 Iraqi troops near the refinery safe passage to Irbil in Kurdistan if they surrendered their weapons. Iraqi Foreign Minister Hoshyar Zebari denied this report, insisting that Iraqi special forces soldiers were in control of the refinery.⁴⁴ The Baiji facility, which was relatively unscathed during fighting in 2014, has apparently experienced major damage during the latest struggle for ownership of it.⁴⁵

Iran and Iraq: Source of Rising Oil Supply or Chimera?

Global oil markets are currently sanguine about the losses in oil productive capacity taking place across the Middle East, anticipating rising supplies from a variety of sources including U.S. shale, Iran and Iraq. Indeed, over the past five years, U.S. oil production has risen by over 4 million barrels per day to close to 9.4 million bpd currently, more than replacing lost production from the Middle East and North Africa that has averaged between 1.5 to 4 million bpd since the start of the Arab Spring. And Iraq's oil production has made steady gains despite the escalating war against ISIS and widespread social unrest that has included major country-wide protests against corruption and electricity shortages. Iraq's production hit 4.2 million bpd this summer (including 235,000 bpd for direct crude burning for electricity), up significantly from year ago levels of 3.5 million bpd. Average Iraq crude oil exports from the southern fields around Basra via the Persian Gulf are only slightly higher so far this year at 2.72 million bpd, up from 2.46 million bpd in 2014, with most of the balance of the increase coming from new independent exports by the Kurdish Regional Government (KRG). In recent months, despite the ongoing war with ISIS, the KRG has been able to maintain mastery of their region, generally ensure continued protection and use of its own pipeline export infrastructure to Turkey, and last year even expanded the territory under its control to include oil producing areas previously in dispute in and around Kirkuk.⁴⁶

But the risks that escalating conflicts or sabotage could disrupt Iraqi Northern

exports again in the future remain. Last year, Kurdish reinforcements managed to roll back ISIS incursions near the Mosul Dam region and keep its border areas near its oil industry uncontested.⁴⁷ The prospect of continued violence caused some Western oil companies to evacuate staff, raising the possibility of future interruptions to operations. Fields in eastern KRG remain in operation, including areas where key natural gas fields are located. Exports through the main oil pipeline to Turkey were cut off temporarily in March 2014 following a sabotage attack, and again this year sabotage and theft on the export line from Iraq to Turkey have risen with the outbreak of fighting between Turkey and the Kurdish insurgent group PKK. This summer, as the peace process broke down, PKK began bombing energy infrastructure all over eastern Turkey including the Iraq-Turkey pipeline.⁴⁸ The KRG's crude production capacity in 2014 was estimated at about 350,000 bpd, with roughly 140,000 bpd refined and consumed domestically. But now the KRG is also in control of the Bai Hassan and Avana fields at Kirkuk. KRG exports to Turkey have averaged 245,000 bpd in 2015 despite the PKK attacks. The KRG hopes to increase production to raise exports to a target 2 million bpd by 2019,⁴⁹ but this may prove ambitious given a slowdown in foreign investment in the face of regional instability. Oil export infrastructure remains at risk from any escalation in hostilities in the region.

Oil prices have also been under pressure in anticipation that post-sanctions, Iran will be able to significantly increase its oil production and exports. A recent report released by Harvard University's Belfer Center for Science and International Affairs on the "Energy Implications of a Nuclear Deal between the P5+1 and Iran" suggested that Iran might be able to supplement its current 2.8 million bpd production as sanctions are lifted by bringing on an additional 800,000 bpd of crude oil and condensate production in 2016. About 150,000 bpd of that would represent new oil production, with the rest achieved through improved technology for enhanced oil recovery (EOR) techniques, presumably with foreign assistance.⁵⁰ Last May, National Iranian Oil Company (NIOC) managing director Rokneddin Javadi told International Oil Daily at a conference in Kuala Lumpur that Iran's production would be able to pump an additional 1 million bpd within three

to six months but that marketing the oil might be more of a challenge than producing it. Javadi said that all of Iran's fields would be able to be restored to production levels seen prior to the 2012 sanctions regime.

Sara Vakhshouri of SVB Energy International says that Iranian engineers are suggesting the resting of some of Iran's older fields shut in because of sanctions has "enabled reservoir pressures to increase and allow production to resume at high rates." She writes "Gas injection might also boost production in mature fields in 3 to 6 months." Vakhshouri's published estimate is that Iran could physically boost crude oil production by 500,000 bpd to 700,000 bpd within three months, and 800,000 bpd within six. Iran is currently said to be producing 2.8 million bpd of crude oil and 679,000 bpd of condensates. Estimates are that domestic refining capacity totals about 1.8 million bpd, suggesting exports now range around 1 million bpd. Embedded in official Iranian estimates and other optimistic ones like Vakhshouri's is belief that Iran will be successful in bringing on new fields along the Iraqi border and achieve at least 200,000 bpd to 300,000 bpd of production from new fields quickly and then be able to accelerate at least another 200,000 bpd or more from enhanced oil recovery (EOR) at older fields, bringing 2016 production increases to at least 800,000 bpd of liquids, of which 600,000 bpd could be new or restored crude oil output and 200,000 bpd condensates. By 2020, an additional 1.2 million bpd of liquids is projected, allowing Iran to get to total production of 5.5 million bpd including condensates.

Vakhshouri and others have noted that Iran's industry has made strong progress on its own without international assistance. Iranian officials say that they have reduced production mainly by stopping natural gas reinjection programs at key fields. They suggest that a resumption of injection can quickly restore production while new fields near the Iraqi border are also coming on line this year. Still boasting of domestic industry competencies belie at least some problems that have made it to the public domain. Chinese upstream Iranian oil field projects have faced massive delays and the massive South Pars project has also had its own engineering difficulties including a very public embarrassment of a major platform sinking into the ocean.

WoodMackenzie Consultants, known for their field by field bottom up approach, tout far more conservative numbers of a growth in crude oil exports of only 120,000 bpd by the end of this year and a boost of an additional 260,000 bpd by end-2016, based on views that Iran's geologically complex, mature fields face a decline rate of 8 to 11% a year that is hard to reverse quickly. Citibank is projecting that Iran will try to surge its production immediately upon the lifting of sanctions but will have difficulty sustaining more than a 500,000 bpd incremental increase in 2016 and likely closer to 250,000 bpd average.

To date, Iran has focused its oil capacity expansion efforts on its West Karun fields, which include the giant multi-billion barrel North and South Azadegan and Yadavaran fields, which are currently producing about between 50,000 to 80,000 bpd and targeted to increase slightly in the coming months. Both fields were developed under buy-back agreements with Chinese NOCs but have experienced substantial setbacks and delays. Iran ended CNPC's contract for South Azadegan last year. Other fields on the Iraqi border are also targeted such as the Yaran field now producing 40,000 bpd. The Darquain field, which requires water and gas injections and was a project initiated with help from Italy's ENI, is another field on the Iraqi border that Iran is counting on to contribute to higher output as well as Jofier.

Part of the optimism about Iran's oil potential focuses on the many Western and Eastern oil companies gathering to negotiate for the new deals under the proposed "Iran Petroleum Contract" (IPC), a new service risk integrated exploration, development and production contract that is supposedly going to allow international companies to "book reserves." The large reserve potential in Iran is an attractive enticement for majors like ENI-Agip and BP who need a quick fix to their future reserve additions and believe that they could potentially return to fields they are familiar with and think have potential to be repaired quickly with Western intervention. The problem is that this kind of "afraid to miss out" reserve management, reserve replacement fantasy deals have lured these companies before to gloss over enormous technical and geological barriers, ending in writedowns or worse, in the Caspian, Iraq,

Venezuela and Saudi Arabia's gas initiative.

Past history has shown that oil fields are harder to rehabilitate quickly when they have been shut-in, regardless of the promise of "Western technology and know-how." Restoration of lost capacity in Libya by European firms was slow going in the 1990s and 2000s. And the concept that shutting Iranian fields is "enhancing" their pressure may be wishful thinking. When Saudi Arabia demothballed its giant, less complex fields in the 1980s, it encountered the stark reality that resting fields leads to field pressure problems and lost capacity, not pressure enhancement.

Iraq's own oil field expansion program was slow to recover in the first year after sanctions, and, for years after, companies operating in Southern Iraq have been hampered by many factors, including bureaucratic difficulties getting needed equipment procured and into the country, a problem more than likely to plague firms working with Iran's massive bureaucracy as well. Any return to Iran for upstream work will also have to overcome Iran's many local content provisions at a time when the lifting of sanctions will be complex and confusing. U.S. secondary sanctions related to terrorism and human rights will still be in effect and the Iranian Revolutionary Guard Corps (IRGC), which has several commercial enterprises in the Iranian oil sector, is deemed a terrorist organization by the U.S. The United States has also been aggressive in its foreign corrupt practices act (FCPA) prosecutions in recent years – as have its European counterparts – and European firms such as Total and Statoil have already run amok of Iranian corruption over the last decade.

In the late 1990s/early 2000s, Iran needed 100 (tcf) of natural gas (tcf) for field rehabilitation and the needs for future expansion will be higher still. Water encroachment and pressure problems plagued major fields such as Marun, Karanj, and Ahwaz, Parsi. Gachsaran and Bibi Hakimeh fields also depend on gas injection EOR. Iran has announced that it intends to increase gas injection to 330 million cubic meters per day by end-2016 and that the gas is available from the Iranian domestic natural gas grid from domestic associated natural gas production. However, in past years, the

country faced severe natural gas shortages and was banking on increases in foreign investment in the North and South Pars projects. Natural gas use by consumers has also been rising with the government's "resiliency" program for replacing gasoline and diesel with compressed natural gas (CNG) for vehicles and higher use in the residential sector.

Thus, it remains unclear how easily Iran will be able to access the natural gas it needs to drive a large EOR program which relies on large quantities of natural gas for injection. Moreover, Iran's fields have suffered strain and damage over the years and may take longer to restore and expand than expected, as has been the case in other countries like Iraq and Libya. Bureaucratic barriers may also slow the return of foreign investment, reducing the chances of a quick turnaround with the advanced technologies needed to enhance existing Iranian equipment and capacities.

In summary, although rising exports from Iraq and Iran may fill any supply gap created by the ongoing conflicts across the Middle East in the coming years, these supplies themselves are also subject to similar risks, leaving markets with a higher level of uncertainty for the future than may be currently recognized.

Oil Geopolitical Elements to Russia's Role in Conflicts

By backing Iran militarily over the past decade, Russia gained leverage with a regional proxy who could directly influence the security of Saudi Arabia and Qatar, Russia's main competing energy suppliers to Europe and China. Russia's alliance with Iran, while somewhat tenuous, is, from Moscow's perspective, a counterweight to the threat that Saudi Arabia and Qatar can collude with the United States to weaken Moscow via an energy market share war.⁵¹ Russia is also motivated to support Iran to constrain the success of Sunni jihadist movements that might spread to its borders, as discussed above.

In 2009, Saudi Arabia began hinting that an oil price war could be in the

cards, should Moscow continue to provide military and nuclear assistance to Iran.⁵² The Saudi threat was made in the historical context of similar Saudi strategic moves against the Soviet Union and Iran. Saudi Arabia provided financial and logistical support to the counter-insurgency that contributed to the Soviet failure in Afghanistan.⁵³ Saudi Arabia's ability to flood oil markets at will has also been instrumental to its role as a U.S. ally to weaken the Soviet Union after its invasion of Afghanistan and to lessen the impact on oil prices of the U.S. invasion of Iraq.⁵⁴ Saudi Arabia also pushed oil prices lower to pressure Iran during its eight year war with Iraq.

To date, the United States' close security relations with Saudi Arabia and Qatar have limited Moscow's ability to achieve resource rent-seeking alliances in the Middle East. In the aftermath of the Russian invasion of Ukraine, Qatari liquefied natural gas (LNG) exports to Europe have actively lessened Moscow's geopolitical influence, and Saudi Arabia recently announced new oil sales to Poland.⁵⁵

The diplomatic back and forth between Saudi Arabia and Russia on the oil issue has been intensive over the past two years. In 2013, Saudi Arabia approached Moscow to end its support for the regimes in Damascus and Tehran in exchange for close coordination with Riyadh. The Saudi diplomatic overtures to the Kremlin came amidst Saudi displeasure with Washington for its lack of commitment to an intervention in Syria and Washington's pursuit of a diplomatic agreement with Iran regarding Tehran's nuclear aspirations. According to one media account, Saudi Arabia offered a guarantee that a post-Assad Syria would not become a transportation hub for competing Gulf natural gas shipments to Europe in exchange for a Russian withdrawal of military support for the Syrian regime.⁵⁶ An accommodation on oil price levels might also have been in the cards, had Russia been willing to trade its political stance on Syria for some sort of cooperation with the Saudis in energy markets. The initiative was a non-starter.⁵⁷

By 2014, Saudi Arabia began to reduce its crude oil export prices to maintain market share. U.S. oil imports had been tumbling to their lowest levels in

16 years, with oil from the Organization of Petroleum Exporting Countries (OPEC) losing significant market share. By summer 2014, U.S. crude imports from Saudi Arabia lost about 440,000 bpd of market share, and state oil company Saudi Aramco responded by lowering its premium for Arab Light, Arab Medium and Arab Heavy crude oils relative to U.S. Gulf Coast benchmarks by 45 cents a barrel. The Saudi price reductions for U.S. customers were widely interpreted at the time as a sign that the Kingdom was starting to implement its price war for market share. The effort to defend U.S. sales came in the wake of similar moves earlier in the year when Saudi Arabia eased its premiums to Asia to ensure that the Kingdom could maintain its sales in the face of increased competition from other Mideast producers in Asia. By early 2015, oil prices had cratered to \$50 a barrel.

Geopolitically, the fall in crude oil prices to \$50 a barrel has been influential but not definitive. Lower oil prices have created fissures in the unity of the inner circle of Vladimir Putin as the Russian economy has faltered but Russia is still escalating its support for the Syrian regime of Bashir Al-Assad and so far, peace talks have failed to make progress. Tehran also expanded its regional power through proxy wars since the beginning of the oil price war. Iran's support for an escalation in the Yemen war contributed initially to a significant rebound in oil prices to \$60 a barrel earlier this year, up from lows of around \$40 a barrel. The Iranian military moves created a war premium since oil movements through the Suez Canal have to traverse the Bab El-Mandeb chokepoint which borders Yemen and Djibouti. Estimates are that roughly 3 to 4 million bpd of oil travels through the Bab El-Mandeb. Shippers can bypass the Suez Canal, but the escalation of the Yemen conflict unnerved oil markets for several reasons beyond fears of physical disruptions to tanker movements. Firstly, it demonstrated that the conflict between Saudi Arabia and Iran is likely to spread more widely across the Middle East, with potentially negative consequences for additional regional oil production. Secondly and most importantly, the escalation in Yemen and later in Syria revealed that both Russia and Iran were willing to use military force as a means to counter Saudi efforts to lower oil prices.

The successful conclusion of the P5+1 nuclear deal negotiations with Iran encouraged renewed efforts by the United States to broker a peace initiative regarding the war in Syria. The Obama Administration had a high domestic political incentive to show that the politically controversial Iranian deal could pave the way for a better Middle East. In doing so, the administration believed it could outflank Russia, especially in Syria, and restore broader support for U.S. policy across the Gulf and the wider Middle East.

A flurry of diplomatic activity included high level meetings between Russian and Saudi diplomats, Iran's foreign minister Javad Zarif and Syrian President Bashar al-Assad and Iranian and Lebanese officials. The blogosphere was buzzing with rumors, including one that Riyadh and Tehran might be able to agree on a formula that would restrict Hezbollah back to Lebanon, cordon Bashar al-Assad off to a limited titular role and begin serious negotiations for an inclusive political transition in Syria. The possibility that all parties might consider a change in Syria led to speculation that Saudi Arabia and Iran might be able to work more cooperatively inside OPEC, with rumors that Saudi Arabia might be inclined to consider an OPEC floor price of \$60 to \$65 a barrel, were Iran's actions in Syria to demonstrate a serious commitment to a peace process.

Russia had other ideas, unfortunately. As predicted by Robert Blackwill and Meghan O'Sullivan, "... a weaker Russia will not necessarily mean a less challenging Russia...Russia could seek to secure its regional influence in more direct ways – even through the projection of military power."⁵⁸ Russia has changed the facts on the ground, adding to its military base at Latakia and increasing the number of its military advisors in Syria. The move has so far staved off a sudden collapse of the Assad regime. Russia's military involvement is said to aim to prevent any armed opposition to Assad to gaining power and jeopardizing Russian interests including its preference for an Iranian bulwark against Sunni jihadists.⁵⁹

Some analysts suggest that Moscow is overly optimistic that ISIS and the non-ISIS opposition will battle each other in eastern parts of the country, giving Russia and the current Syrian regime a reprieve in Western Syria. Instead, it is suggested speculatively that the war in Afghanistan may prove instructive with all opposition forces still focusing in earnest on the Assad camp, and saving energies against each other for a later day.⁶⁰ In any case, it is not clear whether Russia intends to use its military role to gain a leading role in peace talks on Syria (as suggested by Pavel Baev and Jeremy Shapiro of Brookings)⁶¹ or whether the Russian engagement on behalf of Assad is meant to hold Iran and Moscow in a position to use Syria to assert themselves against the Kingdom and restore oil prices via the uncertainty surrounding regional conflict. While the outcome in Syria is uncertain, the Russian move clearly complicates the landscape in the region, and leaves open the possibility of escalating violence.

Implications for US Strategy

As conflicts continue to simmer in the Middle East, militias and extremist groups will aim to capture oil fields and infrastructure for their territorial domain. This turn of events is a serious challenge to stability across the Middle East and for the global economy.

The parties to the conflict in Syria may be so numerous and the dynamic fueling conflict across the wider region so complex, it is hard to see how the United States would be able to influence the outcomes it might consider desirable. It has been argued that “complementary international missions to degrade ISIS from the air, and train and equip the group’s local adversaries,” are the key to the needed ingredients to containment.⁶² And, the U.S. continues to seek diplomatic solutions to the conflict.

But whereas the United States’ military strategy on Syria may be complicated by the unanticipated actions of other parties to the conflict, the U.S. response to the energy security challenges posed by violence in the Middle East is clearer.

The United States has a leading role to play in ensuring global energy security and is not doing all it can to avoid a crisis down the road. It runs the risk that it could inadvertently assist Russia in gaining more energy leverage over our allies and trading partners, and this situation needs to be more carefully assessed and dealt with more comprehensively in a manner that the U.S. can control and implement itself with as little dependence on Middle East oil and gas assets as possible.

The outlines of a U.S. policy aimed to address the risks to global oil supply described in this article are straightforward:

1. The United States needs to increase its own energy supply -- both of renewable energy and of oil and gas - and then make this energy available not only at home but also to U.S. allies and major trading partners both directly and by displacement.
2. The United States needs to end its decades-old ban on crude oil exports.
3. The United States needs to maintain the Strategic Petroleum Reserve (SPR) and upgrade and update its facilities and operational triggers to be effective under new market circumstances.
4. The United States needs to stay the course on policies designed to lower oil demand and promote energy efficiency and substitution.

The United States can prepare itself for the energy consequences that might come of continued violence and destruction in the Middle East. The United States has hampered its own leadership in global energy security by maintaining the U.S. crude oil export ban. U.S. tight oil could be a major factor benefiting U.S. allies and global free trade in energy, were the Congress to lift the 40 year old crude oil export ban. The U.S. should also maximize its own energy production and surpluses by preserving the intangible drilling credit (IDC) that assists smaller operators to maintain investment in U.S. oil and gas shale development and maintain existing tax credits for renewable energy.

The United States is not properly tapping its advantageous energy position to enhance its global power and leadership role. As Blackwill and O'Sullivan note, the U.S. shale boom provides the U.S. with the tools to "sharpen the instruments of U.S. statecraft."⁶³ Our current policies of limiting natural gas exports and banning crude oil exports must be considered in the global context of our international leadership role. Hoarding crude oil supplies inside our borders sends the wrong message to other countries. It is in no one's interests that all nations hoard their energy. Such attitudes were precisely what worsened the economic damage to the global economy during the 1979 oil crisis. America is bound by our membership in the International Energy Agency (IEA) emergency stockpile system to share crude oil stocks in times of emergency or major disruption. Thus, it is irrational to be currently hoarding our supplies now while energy supply is plentiful.

But as falling oil prices have shown, it is not enough to have our own oil resources which in themselves are also vulnerable to the globalized oil price cycle. The U.S. must stay the course on policies that are actively lowering oil demand. By lowering the amount of oil that might be needed in three to five years through efficiency and substitution, the U.S. could lessen the impacts of any supply gap that could emerge if conflicts in the Middle East continue to escalate. By improving its own energy balance and increasing exports of oil and gas, the U.S. can counter Russian leverage that might be gained from losses in oil production capacity in the Middle East.

U.S. demand-side management policies are already making a significant contribution to the lessening of oil intensity of the global economy. As U.S. Energy Information Administration (EIA) analysts Shirley Neff and Margaret Coleman show in the lead analysis article in the Special Issue of *Energy Strategy Reviews* on "U.S. Energy Independence: Present and Emerging Issues", U.S. oil consumption has fallen almost 10 percent between 2005 and 2013 and is expected to decline further in the coming decades.⁶⁴ U.S. oil demand could fall as much as an additional 20 to 30 percent over the

next twenty years, Neff and Coleman argue, demonstrating the importance of well-designed transportation policies. Significant savings can take place as tightening corporate average efficiency standards kick in but loopholes should be eliminated to broaden momentum. The U.S. government is currently working on new performance standards for heavy duty trucks which carry roughly 19 billion tons of freight a year. More ambitious targets for all trucks should be immediately sought. Stricter targets for efficiency of large and medium trucks could significantly lower U.S. future oil use, as the freight sector is expected to constitute a key sector for growth in oil use out to 2040. Globally, ExxonMobil projects that total world energy demand from heavy duty vehicles will increase 65 percent by 2040, compared to 2010 levels.

There is no question that technological innovation and new investment strategies by U.S. independent oil companies have brought about a renaissance in U.S. domestic oil and gas production, creating a prolific U.S. energy supply outlook. But without government intervention to curb our appetite for oil, this rising production might have done little more than meet increases in incremental demand.

The consequence of the U.S. oil export ban has generally been the accumulation of high, surplus crude oil inventories that tend to depress U.S. crude oil prices relative to global markets. The extra revenue that might come from export access would benefit the U.S. trade deficit. Exports might also sustain some marginal investment for some domestic oil that might have gotten shut-in as falling oil prices dent drilling economics for small U.S. domestic producers. If and when the destruction of oil production capacity in the Middle East contributes to a tightening market, allies such as Mexico and Europe will be eager to have access to U.S. condensates and tight oil. Such energy trade strengthens our ties to important allies and trading partners and thereby enhances American power and influence.

Years of conflict have taken their toll on the state of the oil industries across the Middle East. Take the case of Iran, for example: Iran's oil production averaged around 6 million bpd in the late 1970s. Following the Iranian Revolutions of 1978-1979, Iranian output fell to 1.5 million bpd; three decades later, the country's oil output capacity stands at less than 60% of its pre-revolutionary levels. In Nigeria, regime change prompted a similar outcome: the Biafran civil war in 1967 sank oil production by around 40%.⁶⁵ During the transition from military rule in 1979, oil production dropped 30%, continuing its decline until 1983.⁶⁶ In Libya, the historical links between regime change and oil output offer a prelude for today's revolutionary state: Muammar Qaddafi's ascension to power in 1969 led to a rapid evaporation of foreign investment and operations in the oil sector. By 1975, the previous regime's average output of 3.2 million bpd had sunk over fifty percent; and by 1985, oil production had dropped to a mere 430,000 bpd.

The possibility that Middle East production may decline instead of increase in the coming years needs to be considered in fashioning new policies for the Strategic Petroleum Reserve (SPR). Any sell-down of the SPR, now contemplated in bills passed by the U.S. Congress, needs to factor in the possibility that a Mideast oil supply disruption could reemerge as a problem for the already tenuous global economic situation. SPR policy and U.S. export policy must also consider Russia's motivations in its widening engagement in the Middle East and the possibility that the U.S. will need to counter Russia's using its energy exports as a geopolitical lever or "weapon" of blackmail or as a means to create a wedge between the U.S. and its allies. The existence of the SPR, combined with the surge potential of U.S. crude oil exports, is a key asset to constrain the petro-power of Russia to the detriment of the U.S. and its allies. A strong U.S. oil and gas sector provides greater diversity to global oil supply at a time when Russia's military involvement in the Middle East and beyond increases the chances of an oil supply disruption down the road. The United States needs to give more serious attention to the role of oil and gas in the current conflicts and consider its own energy policies in that context.

Finally, U.S. diplomacy needs to provide more active engagement regarding the distribution of oil revenues inside war torn societies. To date, the U.S. diplomatic efforts to resolve conflicts over revenue sharing in Iraq and Libya have failed miserably and this failure has crippled American efforts to stabilize those countries. As this paper and other studies on the links between oil and gas show, conflict resolution activities that consider oil aspects could prove a fruitful element to resolving the larger dimension of ongoing military conflicts.

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