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GLOBAL ENERGY CENTER

DOWNSTREAM OIL THEFT

Global Modalities, Trends,
and Remedies

Dr. Ian M. Ralby

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Cover photo: Reuters/Rafael Marchante. Donkeys cross the closed border between Morocco and Algeria carrying petrol in Beni Drar, near Oujda, November 26, 2007.

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This report is the first comprehensive study of the theft of refined oil products around the globe. It provides insight into the modalities and trends in oil theft, the culprits responsible, the stakeholders affected by illicit activities, and recommendations that could change the dynamics. It is divided into three parts.

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Part I: Culprits, Modalities, and Amounts Page 3

Part I focuses on refined oil theft in ten case studies: Mexico, Nigeria, Ghana, Morocco, Uganda, Mozambique, Thailand, Azerbaijan, Turkey, and the European Union (including the United Kingdom). Together, these cases illustrate the nature and scale of illicit activities that take place on a global basis.

Part II: Trends in Illicit Hydrocarbons Activity Page 79

Part II analyzes the myriad methods of stealing refined oil products and considers a taxonomy to group them by trends. Not every form of theft is indicative of a trend and not all the groupings are discrete, but this undertaking frames the activity of refined oil theft in a way that enables some of the dynamics that underpin it to be better understood.

Part III: Stakeholders and Recommendations Page 93

Part III concentrates on who has the power to change the status quo and how they might go about doing so. By identifying the stakeholders who have an interest in refined oil theft, we are able to see who might alter the dynamics of downstream illicit activity. This part also reviews some of the recommendations others have made in the past, and offers a series of recommendations for how to address some of the exigent issues presented in Parts I and II of the report.

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EXECUTIVE SUMMARY

At peak prices, tapping a Mexican pipeline of refined oil for only seven minutes could earn a cartel \$90,000. In 2012 alone, hydrocarbons fraud cost the European Union €4 billion in lost revenues. In Nigeria, 30 percent of all hydrocarbons products are smuggled into neighboring states. An estimated 660,000 cars in Morocco and Tunisia run all year long on fuel smuggled from Algeria.

In its first year, a fuel marking and vehicle tracking program in Uganda reduced the amount of adulterated fuel from 29 percent to as little as 1 percent. But at the same time, the regulators who test the state's fuel marking program routinely steal 22 liters per truckload, amounting to 1.2 million liters per year at one border crossing alone.

Theft, fraud, smuggling, laundering, corruption. Hydrocarbons crime, in all its forms, has become a significant threat not only to local and regional prosperity but also to global stability and security. Combating this pervasive criminal activity is made only more difficult by the reality that many of those in a position to curb hydrocarbons crime are the ones benefiting from it.

This is the first major study of refined oil theft around the globe, and while Part I provides only a limited snapshot of the problem, it offers useful insight into the modalities of theft, the culprits responsible, the stakeholders who suffer, and the approaches that could change the illicit dynamics. Part I examines the contours of illicit hydrocarbons activity in ten case studies: Mexico, Nigeria, Ghana, Morocco, Uganda, Mozambique, Thailand, Azerbaijan, Turkey, and the European Union (including the United Kingdom).

The modalities of theft across these geographically and contextually disparate cases range from low-level tapping, siphoning, adulteration, and smuggling to extremely sophisticated maritime operations involving extensive networks of actors to brazenly corrupt dynamics in which states lose billions of dollars per year while their officials profit from those losses.

Illicit activity is highest in states where oil is refined, but the most common determinant of oil theft is a significant price discrepancy between one state and its neighbor. Other factors in neighboring states—instability, currency imbalances, and lack of border controls—also impact the extent to which a state experiences downstream illicit activity. Areas where there are few fuel distribution centers are particularly ripe for organized criminal groups to fill the void. At the same time, security forces, regulatory authorities, company insiders, terminal workers, and officials at every level are all potential participants in illicit hydrocarbons schemes that rob governments of revenue and enrich the individuals involved.

Some mitigation efforts—most notably fuel marking and vehicle tracking—have proved extremely useful in efforts to stem illicit activity and regain lost tax revenue. But others, including closing borders, have had little, if any, effect.

This report is divided into three parts. The first focuses on the culprits, modalities, and amounts of downstream illicit hydrocarbons activity. It details each of the case studies and examines the forms of hydrocarbons crime, highlighting who benefits, who suffers, and, to the extent possible, how much is being lost by governments in the process.

Part II draws on the details of the case studies to analyze trends in the global illicit market. Part III then focuses on the various stakeholders and their reasons and opportunities for mitigation, and provides concrete recommendations about what might be done.

Fuel is vital to human life, and everyone wants a discount. Across the globe, people are willing to break the law in order to pursue that discount.

The global scourge of illicit downstream hydrocarbons activity remains relatively invisible. This study, in shining a light on it, constitutes the first step toward effectively addressing this pervasive, yet unrecognized threat to global security, stability, and prosperity.

PART I

CULPRITS, MODALITIES, AND AMOUNTS



INTRODUCTION

This is the most extensive and in-depth study ever conducted concerning the global theft of refined oil products. It is also one of the first. While crude oil theft has been the subject of countless articles, reports, seminars, and speeches, the matter of refined oil theft and other downstream illicit hydrocarbons activity has largely been ignored. It is far more difficult to collect reliable information on downstream illicit activities, and the perception remains that it is not a significant issue. That perception, however, is wrong.

Since 2014, the global context has changed. The precipitous decline in the price of crude oil—from \$110.48 per barrel in June 2014 to the ten-year low of \$26.55 on January 20, 2016—fundamentally altered the criminal incentives behind illicit hydrocarbons activities. The low price and general abundance of crude have made it a far less attractive commodity to steal. Refined oil products, on the other hand, continue to provide successful thieves with significant financial windfalls, all the while depriving governments of billions of dollars in tax revenues. As this study has found, refined oil theft poses significant threats to the global economy and to the stability of states and regions in which it is prevalent. Indeed, current trends are untenable.

The ten case studies explored in Part I of the report provide examples of the modalities of theft, as well as the interconnectedness of illicit markets. Their geographic range shows that the theft of refined oil products is not limited to any one portion of the globe. The mechanics and impact of illicit hydrocarbons activity in the developed world may differ from what is experienced or at stake in developing states, but oil theft and fraud still occur regardless of gross domestic product (GDP).

In light of the commonalities among the cases examined, it seems that even the most highly developed states can learn from some of the least developed states when it comes to mitigation. This study, therefore, affords all states—not just those reviewed—the opportunity to identify potential weaknesses and possible approaches to confronting their own problems.

Collecting data on illicit activities involving refined oil requires an array of both quantitative and qualitative approaches. This study has employed a mix of open source analysis and a variety of interviews. It

is, however, by no means exhaustive. A key theme throughout is that illicit hydrocarbons activity heavily depends on national and international contexts, and as Turkey, one of the case studies, has recently epitomized, those contexts can literally change overnight. Indeed, it is possible that the details of all the case studies will be substantially out of date within days of publication. All the information herein, therefore, is subject to revision. Similarly, as several examples indicate, when states proceed to implement counter-criminal tactics, new modalities of theft may arise as well. Nothing, therefore, is stationary, and nothing can be taken for granted.

Efforts have been made to independently verify the accuracy of the open source resources cited, but such verification has not always been possible. This report, therefore, presents information representative of both the actual and possible dynamics surrounding global illicit hydrocarbons activity. While this narrative is presented through the case studies, the subsequent analysis is not confined to those ten contexts. The findings of this study, therefore, are intended to be applicable throughout much of the world.

A key feature of Part I of this report is understanding the narrative that arises when examining the various case studies side by side. Each of the case studies tells part of the story; together, they provide a significant understanding of the global dynamics. Mexico and Nigeria are most frequently associated with crude oil theft, but they paint an interesting picture when the focus is shifted to refined products. Mexico has had to stop moving refined oil through pipelines because of the danger associated with the frequent tapping, and Nigeria loses roughly 30 percent of its refined products to smuggling into neighboring states—an unsustainable dynamic given the increasing financial challenges facing that country.

Ghana presents an example of a transshipment hub for laundering stolen oil and transferring it into the legitimate market. Its challenges with smuggling also highlight how reducing price discrepancies, but not eliminating them, can force low-level smugglers to become organized syndicates in order to pursue sustainable profit margins on their illicit activity. Morocco exemplifies how closed borders are not necessarily closed to illicit activity, as the smuggling of fuel from Algeria is so significant that it currently offsets Morocco's national import requirements.

Uganda presents a good example of criminal actors being seen as public servants, filling a void in national fuel distribution. It also offers important insight into the shifting of illicit modalities when mitigation measures are implemented. Mozambique, on the other hand, highlights the “presource curse”—the preemptive economic devastation that can occur before hydrocarbons wealth even meets fruition.

Thailand paints a picture of top-to-bottom involvement in illicit hydrocarbons activity and shows how much maritime routes can be exploited for criminal purposes—in a manner that contrasts with the piracy

and armed robbery at sea off West Africa. Azerbaijan shows that the total control of governing forces over both the resources and finances of a country provides an intense disincentive against tolerating any downstream theft. And Turkey, while in flux, shows how difficult maintaining control over illicit activity can be when bordering states are in conflict.

Finally, the European Union and the United Kingdom (UK) demonstrate that even the wealthiest, most developed states are susceptible to extensive and costly illicit hydrocarbons activity.

MEXICO



Mexico is a country of just under two million square kilometers and just over 120 million inhabitants. It boasts an approximately \$2.2 trillion economy, the fifteenth-largest in the world. Since the inception of the North American Free Trade Agreement in 1992, Mexico has risen to rank second among the United States' export markets and third among its sources of imports; that trend is reflected in the Mexican economy's increasing reliance on manufacturing. The government of current President Enrique Peña Nieto has begun to phase in economic and regulatory reforms, which have involved increasing privatization of major industries. Though a number of forces, including slow recovery from the 2008-2009 economic crisis, low global oil prices, and various domestic obstacles, have retarded the growth of Mexico's economy, the country is an enthusiastic promoter of free trade, most recently entering into negotiations for the Trans-Pacific Partnership. These attempts to stimulate economic growth have not, however, overcome a striking disparity in wealth between an educated, cosmopolitan elite and large numbers of urban and rural Mexicans who live in or near poverty.

Mexico has a strong democratic system; though the Institutional Revolutionary Party (PRI) has long been dominant, in many ways the country's nuts-and-bolts electoral process is exemplary. In recent years, however, the country has been plagued by widespread crime and corruption, much of which involves organized criminal groups. These cartels and gangs are so powerful, and often so ruthless, that the rule of law is precarious throughout much of the country, especially in less developed areas. Domestic and international efforts to curb this criminal activity, which has often reached the international press through reporting on spectacularly violent crimes and criminal leaders whose notoriety merges with celebrity, have had only limited success. Mexico's image, both as a place to do business and as a tourist destination, has suffered as a result, perhaps excessively.

The Hydrocarbons Context

With proven reserves of nearly ten billion barrels, Mexico is a significant oil producer, and hydrocarbons account for a third of the country's budget.¹ Production

in recent years has rated at just under 2.5 million barrels per day (bpd), with exports at about 1.2 million bpd and imports at approximately 10,000 bpd. It is, however, a net importer of refined petroleum. Though Mexico produces roughly forty-five million cubic meters of natural gas annually, it is also a net importer of this resource.²

One state-owned company, *Petróleos Mexicanos* (Pemex), has held a monopoly on all of Mexico's refining and fuel trading for the last eighty years. The close relationship between the PRI government and both Pemex executives and the leaders of the oil workers' union means that the parastatal has been well-protected. While that has recently changed, Pemex is largely still the principal player in Mexican oil and gas.³

As of March 2016, Pemex's refining capacity stands at approximately 1.576 million barrels per day, spread across six refineries: Salina Cruz (Salina Cruz, Oaxaca), Tula (Tula de Allende Hidalgo), Minatitlán (Minatitlán, Veracruz), Cadereyta (Cadereyta Jiménez, Nuevo León), Salamanca (Salamanca, Guanajuato), and Ciudad Madero (Ciudad Madero, Tamaulipas).⁴ While all the refineries contribute to the overall output, three refineries—Minatitlán, Cadereyta, and Ciudad Madero—are capable of deep conversion of heavy crude into marketable products.

As of April 2016, thanks to President Peña Nieto's economic reforms, private companies have been allowed to distribute imported gasoline—previously the exclusive purview of Pemex. As part of those changes, Pemex's complete monopoly on refining is also being released; starting in 2018, private enterprise will be allowed to refine, as well as sell, products at market price. Unfortunately, however, these reforms are not generating either the enthusiasm or the

1 Tracy Wilkinson, "Mexico, Which Depends Largely on Oil Revenue, Cuts Public Spending," *LA Times*, January 30, 2015, <http://www.latimes.com/world/mexico-americas/la-fg-mexico-budget-20150130-story.html>.

2 *The World Factbook: Mexico*, United States Central Intelligence Agency, <https://www.cia.gov/library/publications/the-world-factbook/geos/mx.html>.

3 Lincoln Brown, "Two New Gas Companies Break Pemex Monopoly in Mexico," *Oil Price*, June 9, 2016, <http://oilprice.com/Latest-Energy-News/World-News/Two-New-Gas-Companies-Break-Pemex-Monopoly-in-Mexico.html>.

4 "How Many Oil Refineries Does Pemex Have?" *Geo-Mexico*, September 22, 2012, <http://geo-mexico.com/?p=7797>; Adriana Barrera, "Exclusive: Pemex Refineries to Boost Output in 2014, Maintenance Peaks in October, November," *Reuters*, April 15, 2015, <http://www.reuters.com/article/us-mexico-oil-refineries-idUSBREA3E1FS20140415>.

activity the president expected, as investors have voiced legitimate concerns about oil theft.⁵

With the exception of a gas pipeline between Reynosa and El Paso, Texas, there are no international pipelines carrying refined products into or out of Mexico. Consequently, most trade happens by sea, with the principal hydrocarbons shipping occurring at Dos Bocas in Tabasco, Pajaritos in Veracruz, Salinas Cruz in Oaxaca, and Cayos Arcas offshore near Campeche.⁶

Illicit Hydrocarbons Activity

Illicit hydrocarbons activity is endemic in Mexico. Refined products can be stolen with relative ease and sold at a discount from market prices with little fear of punishment. In other words, refined oil theft in Mexico is low risk, low effort, high reward—an attractive proposition for any criminal network looking to diversify or supplement its finances. Sale of illicit products is common on the street and even from criminal networks to fuel stations. Given the profitability and ease of the domestic marketplace, most of the criminal activity stays localized within Mexico, but some stolen products are also sold in other jurisdictions.⁷

In the fallout from the global economic collapse of 2008, the domestic marketplace in Mexico has become heavily reliant on the “discounts” offered by gray market and black market goods. Consequently, even with the decline in oil prices in 2014, the Mexican economy continues to rely heavily on illicit hydrocarbons activity.⁸

Modalities of Hydrocarbons Crime

Theft

The principal means of oil theft in Mexico—both crude and refined—has been the tapping of Pemex pipelines,

frequently referred to as “milking.” While Pemex has reported the number of taps over time, such reporting fails to paint an adequate picture of the scale of illicit activity.⁹ At peak prices, sophisticated criminals with tapping skills were able to drain \$90,000 worth of refined gasoline in less than seven minutes, making fuel tapping even more lucrative than the narcotics trade.¹⁰

In the first five months of 2016, Puebla State alone recorded 395 pipeline taps, the most of any state in Mexico, with Guanajuato coming in next with 290 and then Tamaulipas with 155.¹¹ According to local media, pipeline tapping is “a multibillion peso business, practiced by professionals and amateurs alike, wherever Pemex pipelines run.”¹² One media outlet obtained refinery data via a freedom of information act request and examined reported losses from the bidirectional pipeline system between the Ciudad Madero and Cadereyta refineries from 2009 to 2015. The losses, which were mainly from illicit tapping, were approximately 2.7 million barrels worth roughly 5 billion pesos, or \$287 million, for Pemex.¹³ Losses on the Tamaulipas-Nuevo León pipeline were even worse at 3.86 million barrels. The pipeline between the Salamanca refinery in Guanajuato and the storage terminal in Guadalajara sustained staggering losses of 5.6 million barrels.¹⁴ The pipeline between the Minatitlán refinery and the Azcapotzalco storage terminal lost 5.36 million barrels. Interestingly, 1.36 million barrels were lost on that pipeline during the last four years of the presidency of Felipe Calderón while 4 million barrels were lost in the first three years of President Peña Nieto’s tenure.¹⁵ Finally, and most incredibly, the Cadereyta-Reynosa pipeline lost 6.16 million barrels in that period.¹⁶ According to Pemex’s November 2015

5 Amy Stillman, “Mexico’s Fuel Market Is Open, but the Imports Aren’t Flowing,” Bloomberg, June 28, 2016, <http://www.bloomberg.com/news/articles/2016-06-28/mexico-s-fuel-market-is-open-but-the-imports-aren-t-flowing>.

6 David Alire Garcia, “Mexico’s Pemex Hails Crude Swap with U.S., Expects Permit This Month,” Reuters, August 17, 2015, <http://www.reuters.com/article/mexico-oil-idUSL1N10P2KM20150814>; Eduardo León, Iván Martén, Raul Livas, and Marcelo Mereles, “The Promise of Mexico’s Energy Reforms, Bcg,” *Persepectives.com*, April 9, 2014, https://www.bcgperspectives.com/content/articles/energy_environment_promise_mexicos_energy_reforms/; Adriana Barrera and David Alire Garcia, “Exclusive: Mexico’s Pemex Sees Crude Refining Up More Than 6 Percent in 2016,” Reuters, March 31, 2016, <http://www.reuters.com/article/us-mexico-pemex-refining-idUSKCN0WX2NS>.

7 “Petrol Smuggling: Oiling the Wheels of Organized Crime,” *Global Initiative*, August 14, 2014, <http://globalinitiative.net/oil-smuggling/>.

8 “Boom or Bust? The Impact of Oil on Illicit Economies,” *Global Initiative*, March 18, 2015, <http://globalinitiative.net/boom-or-bust-the-impact-of-oil-on-illicit-economies/>.

9 Dwight Dyer, “Has Pemex Solved the Illegal Pipeline Tapping Puzzle?” *El Daily Post*, April 27, 2016.

10 Luke B. Reinhart, “The Aftermath of Mexico’s Fuel-Theft Epidemic - Examining the Texas Black Market and the Conspiracy to Trade in Stolen Condensate,” *St Mary’s Law Journal*, Vol. 45, No. 4, 2014, http://www.stmaryslawjournal.org/pdfs/Reinhart_Step12.pdf.

11 “Puebla Ocupa el Primer Lugar en Robo de Hidrocarburos,” *PueblaDiario.com*, May 20, 2016, <http://www.puebladiario.com/puebla/puebla-ocupa-primer-lugar-robo-hidrocarburos/>.

12 Dwight Dyer, “Has Pemex Solved the Illegal Pipeline Tapping Puzzle?”

13 Ibid.

14 “New Evidence on Illegal Pipeline Tapping,” *El Daily Post*, May 9, 2016, <http://myinforms.com/en-us/a/32946124-new-evidence-on-illegal-pipeline-tapping/>.

15 “The New Illegal Pipeline Tapping Superhighway,” *El Daily Post*, May 19, 2016, <http://myinforms.com/en-us/a/33879509-the-new-illegal-pipeline-tapping-superhighway/>.

16 “How Bad Can Illegal Pipeline Tapping Get,” *El Daily Post*, May 24, 2016, <http://myinforms.com/en-af/a/34456174-how-bad-can-illegal-pipeline-tapping-get/>.

Downstream Oil Theft: Global Modalities, Trends, and Remedies

Sustainability report, there was an increase of 4,125 taps—approximately 43.7 percent—between 2013 and 2014.¹⁷

The Mexican government estimates that, as of March 2016, hydrocarbons theft yields \$1.17 billion in illicit revenue. The rate of theft is roughly 23,500 barrels per day.¹⁸ Even in 2016, Pemex has recorded a 12.3 percent increase in taps over the first four months of the year compared to the same time period in 2015, averaging at least fifteen taps per day.¹⁹

While some taps are conducted in rudimentary fashion, many involve highly skilled operations requiring extensive technical knowledge about pipeline layouts and depressurization. Such skills are normally acquired during prior or even ongoing employment at Pemex. One report explains the process:

1. Once the petroleum products leave the processing center or refinery, they are distributed through the national pipeline network, either to another refining complex, a Storage and Distribution Terminal, or a large business.
2. Illegal tapping is often carried out while no product is transiting the pipelines. On some occasions, criminals are able to locate pipeline valves that have been pre-installed by the company, either by chance or by leaks of information.
3. The tools and instruments needed to conduct the taps are costly such that only a criminal organization can afford them. The information on the time and location when the oil will not be flowing, as well as the best time and place for tapping, is uniquely known by Pemex employees.
4. Once nothing combustible is flowing, criminals take advantage of the moment to drill openings and clean away any residue that might cause a fire. Criminals can either install a single tap, or a double in which one is to draw out the oil while the other is to inject water and thereby maintain pressure on the pipeline.
5. Finally, criminals will install an outer tube or “nipple” connected to a high-pressure or fast-closing valve or stopcock, which, in turn, is connected to a hose

approximately one or two inches in diameter, which leads directly to fuel drums, tankers, or other pre-installed illegal pipelines.²⁰

Another report supports this process and suggests collusion between Pemex employees and organized criminal groups. “Former and current Pemex employees install tapping machines for third parties who pay up to \$6,000 dollars for a single tap—a considerable amount given that after taxes, households have an average yearly disposable income of approximately \$13,000 dollars.”²¹

Tapping, however, is not the only form of hydrocarbons theft. Armed hijacking of Pemex tankers, kidnapping of Pemex employees, and exploitation through threats of violence are all common tactics to forcibly obtain oil.²² Additionally, theft at refineries and storage facilities, either by deception or force, is a regular problem.²³

Attacks on tanker trucks have become a major problem, particularly on the roads of Tabasco State, which saw twenty attacks in the first quarter of 2016 alone. The volatility of the fuel in the trucks means that many of the incidents result in explosive accidents. In March 2016, for example, an attack caused a tanker truck to roll over, enticing local residents to rush in to steal fuel using jerry cans. A spark ignited a blaze, however, killing at least twenty people, many of whom were children.²⁴

Smuggling and Distribution

Once oil is stolen, it has to be sold, so market access is vital to successful criminal enterprise. Frequently, the stolen product is stored in remote rural areas before it is moved, in one of several manners, to sell. The first method of sale is to bottle it, even in used plastic water bottles, and sell it on the street at a discounted rate. The second is to sell it in bulk quantity to major fuel consumers like factories, or transportation companies. The third is to sell it to fuel retailers, offering a discount from legitimate fuel. The fourth is to establish either

17 “Informe de sustentabilidad 2014,” Pemex, November 11, 2015, http://www.pemex.com/responsabilidad/sustentable/informes/Documents/informeresponsabilidad_2014.pdf.

18 “Robo de Hidrocarburos en México genera ganancias por 1.177 mdd anuales a delincuencia,” Spanish.xinhuanet.com, April 11, 2016, http://spanish.xinhuanet.com/2016-03/11/c_135177737.htm.

19 Israel Rodríguez, “Detectó pemex 12.3 percent más tomas clandestinas en su red de ductos,” *La Jornada*, May 9, 2016, <http://www.jornada.unam.mx/2016/05/09/economia/017nleco>.

20 Fernando Pérez, Lourdes López, Patricia Briseño, and Fabiola Xicoténcatl, “Cárteles controlan 90 percent de la ordeña”; Tamaulipas y Guanajuato, los Más Afectados,” *Excelsior*, <http://www.excelsior.com.mx/nacional/2016/04/11/1085795#imagen-1> (Translated and paraphrased by the author).

21 Cecilia Farfán, “Who Buys Stolen Oil?” Trends Institution, August 26, 2015, <http://trendsinstitution.org/?p=1389>.

22 Reinhart, “The Aftermath of Mexico’s Fuel-Theft Epidemic.”

23 José Ignacio Montero Vieira, “El robo de combustible en México en el contexto del narcotráfico: una vía alternativa de financiación,” *IEEE.es*, June 22, 2016, http://www.ieee.es/Galerias/fichero/docs_opinion/2016/DIEEE055-2016_Robo_Combustible_Mejico_MonteroVieira.pdf.

24 “Federal Police, chips to monitor tankers,” *Mexico Daily News*, April 16, 2016, <http://mexiconewsdaily.com/news/federal-police-chips-monitor-tankers/>.

makeshift and clearly illicit “pirate stations” or “clone” Pemex stations and offer a discount.²⁵ At times, that discount could be as much as 50 percent.²⁶ A fifth modality is to move the stolen fuel across an international border. Stolen fuel is moved across the US border, frequently in tanker trucks using false documentation,²⁷ and sold at below-market prices.²⁸

US companies have been complicit in the cross-border smuggling of Mexican fuel, and Pemex has taken legal action against a number of them.²⁹ In one suit, the owners pled guilty to fuel trafficking, and one of the defendants actually detailed the means by which the illicit activity was carried out: “The [U.S.] import companies sent semi-truck tankers loaded with stolen condensate from Mexico into the U.S. via border ports of entry. The import companies then directed the tanker trucks to deliver the condensate to U.S. companies.... The import companies were then paid by wire transfer to various accounts.”³⁰ This case underscores the sophistication of the corporate involvement in illicit hydrocarbons activity, as well as the value of using strong legal jurisdictions to stop it.

Recent law enforcement operations have discovered that thieves have been developing tunnels under pipelines for stealing oil. The discovery of one such tunnel, in Guanajuato State in April 2016 was also connected to the camouflaging of a truck for the fuel’s transport. The product would be moved through the tunnel and then carried by a gravel truck with a hidden fuel tank welded inside.³¹

Even at the bottom of the supply chain there are considerable issues. The owners of Pemex fuel stations

“... Mexican consumers now use online newspapers and mobile phone apps that keep track of which fuel stations can be trusted.”

have been known to modify their pumps to deliver less fuel than the price indicators on the pumps register, so that customers pay for fuel they never get. The practice has become so ubiquitous that Mexican consumers now use online newspapers and mobile phone apps that keep track of which fuel stations can be trusted.³² In other words, hydrocarbons crime is so endemic that it has generated the development of apps to navigate it.

Organized Crime

Mexico is widely known to struggle with organized crime, so it is unsurprising that illicit hydrocarbons activity is also heavily dominated by organized criminal groups. Foremost among those groups is the Zetas. Originally defectors from the Army’s Airborne Special Forces Group, the Zetas have been a leading player in narcotics, weapons, and human trafficking since the late 1990s. They allegedly control 38.88 percent of the illicit hydrocarbons market.³³ They tap pipelines for crude and refined products alike, hijack road tankers, and sell both wholesale and retail. In other words, they are involved in all aspects of the black market, and are alleged to collect 7 billion pesos, or \$372 million, annually from their illicit hydrocarbons activities. They are also notorious for violence.

Law enforcement efforts have begun to chip away at the Zetas network. In April 2013, for example, eighteen members of a Zetas-affiliated cell were arrested in Hidalgo State for engaging in illicit hydrocarbons activity. Their confiscated product and infrastructure included 8.6 million pesos (\$475,000) worth of stolen fuel, six tankers, five tractor trucks, six pickup trucks, ninety-one miscellaneous vehicles, fifteen lengths of pipe, and eight properties.³⁴ Other crackdowns on the drug trade, however, have actually had an inverse impact on the illicit hydrocarbons trade. As the ease of opportunity and the profitability of narcotics

25 Luis Carriles, “La logística del robo de combustibles,” *El Economista*, September 28, 2014, <http://eleconomista.com.mx/industrias/2014/09/28/logistica-robo-combustibles>; Kyra Gurney, “Grupos criminales de México dirigen sofisticadas redes de distribución de petróleo robado,” *InSightCrime.org*, June 18, 2014, <http://es.insightcrime.org/noticias-del-dia/grupos-criminales-mexico-dirigen-sofisticadas-redes-distribucion-petroleo-robado>.

26 *Ibid.*

27 Reinhart, “The Aftermath of Mexico’s Fuel-Theft Epidemic.”

28 Meagan Clark, “Organized Crime to Profit from Mexican Oil Reform: US Department of Energy,” *IB Times*, February 12, 2014, <http://www.ibtimes.com/organized-crime-profit-mexican-oil-reform-us-department-energy-1554911>.

29 Raúl Tortolero, “El asalto a pemex,” *Reporte Indigo*, August 2, 2012, <http://www.reporteindigo.com/reportes/mexico/el-asalto-pemex>.

30 “Pemex Exploracion y Produccion v. BASF Corporation et. al, No 4-2010cv01997 - Document 607 (S.D. Tex. 2014),” *Justia*, <http://law.justia.com/cases/federal/district-courts/texas/txsdce/4:2010cv01997/767755/706/>.

31 “Mexico Oil Thieves Use Camouflaged Trucks to Steal Oil,” *Oil and Gas People*, April 12, 2016, <http://www.oilandgaspeople.com/news/8124/mexico-oil-thieves-use-camouflaged-trucks-to-steal-oil/>.

32 Farfán, “Who Buys Stolen Oil?”

33 “Situación actual y perspectivas sobre el robo de hidrocarburos en México,” *Etellekt*, July 15, 2016.

34 Mariana Escobedo, “Detiene PGR a 18 por robo de hidrocarburos,” *W Radio México*, April 29, 2013, http://wradio.com.mx/radio/2013/04/29/judicial/1367275500_890050.html.

trading have decreased, the Zetas have increased their interests in hydrocarbons activity, which is seen to be of much lower risk.

After the Zetas, the Jalisco New Generation Cartel holds the next most significant stake in the illicit hydrocarbons market with roughly 21.39 percent and more than 4 billion pesos or \$212 million in annual yields.³⁵ Like the Zetas, they engage in both crude and refined theft through pipeline tapping and by force, but they use modified “cloned” vehicles to transport the stolen goods, making the vehicles look legitimate.

The third major group is the Gulf Cartel, which is based in and focused on Tamaulipas and is tied to cross-border trade with refineries in the United States.³⁶ They control approximately 16.34 percent of the illicit market. In addition to the tactics employed by the other groups, the Gulf Cartel is known for co-opting legitimate suppliers into selling stolen products, and laundering their money through front companies.

Smaller market players in the illicit trade include the Beltrán-Leyva Organization with 7.57 percent; the Sinaloa Cartel, which controls roughly 6.29 percent; La Familia Michoacana with 2.52 percent, the Knights Templar with 1.26 percent, and the Juárez Cartel with 0.70 percent.³⁷ The Sinaloa Cartel is known to sell stolen hydrocarbons products to private homes, while the Knights Templar are known for re-selling stolen product by falsifying supply orders.³⁸ The Knights Templar also once seized control of a gas station in Tumbiscatía, seemingly as retribution for the efforts of its lawful owner—also a former mayoral candidate—who had actively sought to dismantle the Knights Templar.³⁹

Smaller groups are also involved in the illicit trade, though not with the same breadth of activity or scope of impact.⁴⁰ In a case from January 2015, for example, a group of former federal police officers were found to be exploiting their official contacts as a sophisticated intelligence network to steal oil. They were ultimately arrested and found in possession of forty thousand liters of diesel and gasoline, as well as military-grade advanced weaponry.⁴¹

The prevalence and impact of organized criminal groups on refined oil theft in Mexico is intense and ongoing. In the first two months of 2016, for example, the president of the Union of Pemex Retailers in Tabasco, Northern Chiapas, and Western Campeche identified six hundred assaults on 220 fuel stations throughout the region.⁴² As some commentators have argued, the scope and effectiveness of illicit hydrocarbons activities by organized criminal groups to not only steal but also successfully distribute fuel have made them genuine competitors in the marketplace and broken Pemex’s monopoly on the trade.⁴³

While Pemex has suffered tremendously from the extensive illicit activity in Mexico, some of its officials and employees have benefited personally from helping facilitate criminal efforts. In one instance, hundreds of Pemex employees were alleged to have worked with criminal groups to siphon fuel and steal from tankers.⁴⁴ Between 2012 and 2015, thirty-three Pemex workers were arrested for their involvement in fuel theft.⁴⁵ Overall, ninety-seven Pemex employees have been implicated in illicit hydrocarbons activity over the last decade.⁴⁶

Community Crime

As is often the case in places with inadequate fuel distribution, the communities in rural parts of Mexico with limited resources have either taken to stealing fuel as a means of filling the gap in supply or collaborating with organized criminal groups to do so. In the latter case, communities may become so reliant on the discounted fuel offered by the criminal enterprises that they actually work to protect the criminal groups from law enforcement interference. In the so-called Red Triangle of Puebla State, for example, the community goes to considerable lengths, even pouring stolen oil down drains at times, to evade the authorities’ efforts to interrupt the extensive theft there. The 50 percent discount off fuel costs is sufficiently important to the community that they are effectively bought into the criminal enterprise.⁴⁷

banda-de-robo-de-hidrocarburos-formada-por-ex-policias-federales-9448.html.

42 Pérez et al., “Cárteles Controlan 90 Percent.”

43 Víctor Hugo Michel, “‘Narco’ vende a \$5 el litro de gasolina en tamaulipas,” *Grupo Milenio*, June 16, 2014, http://www.milenio.com/policia/gasolina_Tamaulipas-robo_combustibles-ordena-ductos-Zetas-cartel_del_Golfo-Pemex_O_318568192.html.

44 Reinhart, “The Aftermath of Mexico’s Fuel-Theft Epidemic.”

45 Noel Maurer, “Higher Penalties Will Not Stop Oil Theft,” *The Power and the Money*, December 15, 2015, <http://noelmaurer.typepad.com/aab/2015/12/higher-penalties-will-not-stop-oil-theft.html>.

46 “Policía federal detiene a líder de banda dedicada al robo de combustible,” *Expansión en Alianza con CNN*, June 13, 2010, <http://expansion.mx/nacional/2010/06/13/policia-federal-detiene-a-lider-de-banda-dedicada-al-robo-de-combustible>.

47 Elvia Cruz, “El robo de hidrocarburos en Puebla: una bomba

35 “Situación actual,” *Etelekt*.

36 Vieira, “El robo de combustible en México.”

37 “Situación actual,” *Etelekt*.

38 “New Evidence on Illegal Pipeline Tapping,” *El Daily Post*.

39 Adán García, “Controlan templarios gasolinera,” *Reforma*, October 4, 2014, <http://www.reforma.com/aplicacioneslibre/articulo/default.aspx?id=357429&md5=d87702f2e29f44efeadc743a84109176&ta=0dfdbac11765226904c16cb9ad1b2efe>.

40 Vieira, “El robo de combustible en México.”

41 José Antonio Román, “Cae banda de robo de hidrocarburos formada por ex policías federales,” *La Jornada*, January 19, 2015, <http://www.jornada.unam.mx/ultimas/2015/01/19/cae>



A policeman inspects barrels containing stolen diesel fuel, stored in a tire repair shop, during an operation in the municipality of Apodaca, neighbouring Monterrey July 4, 2011. *Photo credit: Reuters/Josue Gonzalez.*

As another example of this community-based protection of illicit hydrocarbons activity, organized gangs will intentionally leave the pipeline taps flowing to allow farmers to come fill up. Even though the spillage has a negative environmental impact, Pemex pays the farmers compensation for the damage to the land and livestock from the spill. So the community essentially double dips, in getting free fuel and payment for the property damage. This is a key “hearts and minds” approach on the part of the criminal groups to ensure community support and loyalty.⁴⁸

Government and Law Enforcement

Well-known instances of police collusion in major criminals’ evasion of or escape from law enforcement, along with cases like the one mentioned above in

which former federal police officers established their own criminal network exploiting their links with law enforcement, suggests that corruption and official complicity in the illicit hydrocarbons trade remain a problem.

In July 2015, two senior police officials from Puebla State were caught in the midst of an operation involving thirty-one tanker trucks of siphoned fuel.⁴⁹ Similarly, in April 2016, the Army interdicted a stolen fuel convoy being guarded by two state police officers in Hidalgo. The police, together with three civilians, were arrested, and two truckloads with over 4,300 liters of stolen fuel were recovered.⁵⁰

Between January 2014 and April 2016, most of the law enforcement personnel arrested for hydrocarbons

de tiempo en el triángulo rojo,” *Expansión*, May 3, 2016, <http://expansion.mx/politica/2016/05/02/el-robo-de-hidrocarburos-en-puebla-una-bomba-de-tiempo-en-el-triangulo-rojo>.

48 Carlos Loret de Mola, “Como ganar 90 mil dólares en 7 minutos,” *El Universal*, July 7, 2015, <http://www.eluniversal.com.mx/entrada-de-opinion/columna/carlos-loret-de-mola/nacion/2015/07/7/como-ganar-90-mil-dolares-en-7>.

49 “Chief of State Police Arrested for Fuel Theft,” *Mexico News Daily*, July 15, 2015, <http://mexiconewsdaily.com/news/chief-of-state-police-arrested-for-fuel-theft/>.

50 Juan Ricardo Montoya, “Capturan a policías en hidalgo por transportar combustible ‘ordenado’,” *La Jornada*, April 10, 2016, <http://www.jornada.com.mx/ultimas/2016/04/10/capturan-a-policias-en-hidalgo-por-transportar-combustible-ordenado>.

crime were state-level or municipal police officers, though two ex-federal officers were arrested in the state of Guanajuato in early 2015.⁵¹

That same year, when a fuel theft network in the state of Puebla involving local police officers was brought to light, the criminal operation was found to have been abetted by the Puebla secretariat of public security—yet the case resulted only in administrative dismissals, not criminal proceedings.⁵²

Mitigation

Law Enforcement

Law enforcement in Mexico faces enormous challenges. Not only is there widespread corruption and collusion with cartels, but the general populace is often uncooperative with efforts to curb hydrocarbons crime. A widespread lack of confidence in the justice system's ability or willingness to punish actors in hydrocarbons crime has led to what one legal scholar calls "a cycle of criminal impunity," in which citizens decline to speak out against criminal activity. Attempts to break this cycle, such as "anonymous hotlines," have failed.⁵³

The Mexican government has stiffened the relevant penalties. Toward the end of 2015, the Mexican legislature made oil theft a serious crime and increased its penalty from eight to fourteen years to fifteen to twenty-five years.⁵⁴

In some cases, neither Mexican law enforcement nor Pemex has demonstrated much discernible interest in following through on allegations of hydrocarbons crime. Between 2004 and 2014, the United States Treasury's Office of Foreign Assets Control blacklisted nineteen Mexican filling stations for laundering the profits of Mexican cartels. As of March 2015, nine of those stations still held contracts with Pemex. While it may be that investigations by Mexican authorities did not turn up sufficient evidence for legal action, their seeming inaction, along with that of Pemex, raises questions.⁵⁵

In recent years, the Mexican government has adapted anti-cartel approaches used in the past in Colombia,

most notably the strategy of pursuing high-profile cartel leaders so as to precipitate disorder and collapse in their organizations. One consequence of this approach is that cartels have devolved into smaller networks capable of maneuvering more quickly. As noted above, this has been the case with the Zetas. Critics have suggested that targeting cartel leaders actually exacerbates criminal violence by collapsing established hierarchies and chains of command and providing openings for the most violent contingents within cartels to assert themselves without organizational checks—in effect, forcibly deregulating a criminal industry.⁵⁶

Nonetheless, these policies have resulted in some success. The state of Sinaloa saw a 59 percent decline in hydrocarbons theft from 2014 to 2015. Experts credit this significant decrease to the successful disruption of the Sinaloa Cartel, the most visible development of which was the July 2015 recapture of Joaquín "El Chapo" Guzmán.⁵⁷

In some parts of the country, specialized enforcement units have been created for the sole purpose of tackling hydrocarbons theft. In May 2016, for instance, the military integrated fifty elements of the National Army into a newly created Zacatecas Military Garrison that would work in coordination with Pemex officials to guard key central pipelines.⁵⁸

In May 2015, President Peña Nieto unveiled Plan Tamaulipas, which involved sending four quadrants of special Army and Navy units to patrol against narco-blockades and protect strategic industry from interference in the northeast.⁵⁹

Corporate Responses

As mentioned above, Pemex employees have been alleged to participate in the illicit hydrocarbons trade. Regardless, the company has taken some measures to combat trafficking. In February 2015, Pemex announced it would stop transferring "engine-ready" fuel through its pipelines and leave the final mixing stage to the company's storage plants.⁶⁰ It is not yet

51 "Situación actual," *Etellect*.

52 *Ibid*.

53 Reinhart, "The Aftermath of Mexico's Fuel-Theft Epidemic."

54 Jan Martínez Ahrens, "México castigará el robo de gasolina con el doble de años que la violación," *El País*, December 14, 2015, http://internacional.elpais.com/internacional/2015/12/13/mexico/1450037740_277854.html.

55 David Gagne, "Blacklisted by the US, Mexican Gas Stations Still in Business," *InSight Crime*, March, 23 2015, <http://www.insightcrime.org/news-briefs/blacklisted-by-the-us-mexico-gas-stations-still-in-business>.

56 Geoffrey Ramsey, "'Acapulco Cartel' Emerges to Compete with Mexico's Disorganized Crime," *InSight Crime*, February 3, 2011, <http://www.insightcrime.org/news-analysis/acapulco-cartel-emerges-to-compete-with-mexicos-disorganized-crime>.

57 "Situación Actual," *Etellect*.

58 "Inauguran en zacatecas guarnición militar para combatir el robo de hidrocarburos" *El Sol de Zacatecas*, May 9, 2016, <http://www.oem.com.mx/elsoldezacatecas/notas/n4159586.htm>.

59 Arron Daugherty, "Why Success of Mexico's Oil Security Plan May Not Matter," *InSight Crime*, February 3, 2015, <http://www.insightcrime.org/news-analysis/why-success-of-mexico-oil-security-plan-may-not-matter>.

60 Roberto Ontiveros, "Pemex Announces the End of Ready-to Use Fuel Shipping to Fight Mexico Gasoline Theft,"

clear, however, whether this shift has had any impact on the rate of illegal pipeline tapping.

Conclusion

Hydrocarbons crime in Mexico, especially as it involves entrenched and highly adaptive criminal networks functioning in collusion with corrupt law enforcement and government officials, can seem an intractable problem that functions as a vicious cycle. *El Daily Post* has framed this dynamic in terms of “enforcement

swamping”—a concept of illicit activity first explored by Professor Mark Kleiman of New York University in 1993: “If enforcement resources are constrained, the expected value of the penalty facing potential violators falls as the frequency of violation rises. Thus trends in rule-breaking will tend to be self-reinforcing.”⁶¹ Until law enforcement, the political class, and ordinary Mexicans summon the political will to present a united front against hydrocarbons crime, it will remain a fixture in the Mexican economic and political scene.

Latin Post, February, 18, 2015, <http://www.latinpost.com/articles/38385/20150218/pemex-announces-end-ready-use-fuel-shipping-fight-mexico-gasoline.htm>.

61 “Fuel Theft: a Democratic Crime,” *El Daily Post*, January 19, 2016, <http://www.eldailypost.com/security/2016/01/fuel-theft-a-democratic-crime/>.

NIGERIA



No country on earth is more frequently associated with oil theft than Nigeria. Recently called “fantastically corrupt” and one of the two most corrupt countries in the world by former British Prime Minister David Cameron,⁶² Nigeria has experienced a constant ebb and flow of violence and turmoil since it gained independence from the United Kingdom in 1960. Between 1967 and 1970, Nigeria’s brutal civil war, often called the Biafran War, saw the eastern part of the country—or Biafra—attempt to break away from the other two regions of the west and the north. Despite casualties of as many as three million people, the country stayed together.⁶³ In 2016, after years of institutionalized corruption and large-scale oil theft, resulting in the loss of billions of dollars per year, the combination of Boko Haram in the north, the Niger Delta Avengers in the east, and a government that is struggling with massive deficits and governance challenges in the west has reignited some of the same tensions of east versus west versus north that nearly tore the country apart four decades ago. Oil and illicit hydrocarbons activity are therefore at the heart of Nigeria’s current instability, and together may ultimately prove the deciding factor in the success or failure of Nigeria as a state.

The Hydrocarbons Context

With roughly 180 million inhabitants, Nigeria is, by population, the seventh-largest country on earth. It is located in the heart of the Gulf of Guinea, which for the purposes of this report will be defined as including the twenty-five state signatories to the June 2013 Code of Conduct Concerning the Repression of Piracy, Armed Robbery Against Ships, and Illicit Maritime Activity in West and Central Africa, often referred to as either the Gulf of Guinea Code of Conduct or the Yaoundé Code of Conduct.⁶⁴ Until 2016 when Angola surpassed it, Nigeria had long been the top producer of oil in Africa. In light of illicit activity, it is impossible to determine

“Oil and illicit hydrocarbons activity are therefore at the heart of Nigeria’s current instability, and together may ultimately prove the deciding factor in the success or failure of Nigeria as a state.”

exactly how much oil Nigeria produces or exports, but it is a major producer on the world market. In 2016, even after a decline, it was budgeted to produce 2.2 million barrels per day.⁶⁵ Over the past four decades, approximately 90 percent of the country’s total export earnings and 70 percent of government revenues have come from oil.⁶⁶ Just before the 2015 elections that brought current President Muhammadu Buhari to power, Standard & Poor’s downgraded the country’s credit rating from B+ to BB-.⁶⁷ The national debt stands at \$65 billion, with an additional \$15 billion projected for 2016.⁶⁸

The Illicit Context

Nigeria is an oft-cited exemplar of what is commonly known as the resource curse: the enormous wealth accruing from its extractive industries has indirectly undermined and even devastated other economic sectors, and allowed the government to remain unresponsive to its citizens and saturated with patronage and other forms of corruption. Oil theft, therefore, should be seen in light of a broad and deep culture of corruption that has pervaded Nigeria’s political class and its associates in the private sector.

62 Sewell Chan, “David Cameron Calls Nigeria Corrupt, and Its President Agrees,” *New York Times*, May 11, 2016, http://www.nytimes.com/2016/05/12/world/europe/david-cameron-calls-nigeria-corrupt-and-its-president-agrees.html?_r=0.

63 Greenberg Research, “Country Report: Nigeria,” International Committee for the Red Cross, 1999, <https://www.icrc.org/eng/assets/files/other/nigeria.pdf>.

64 “Code of Conduct Concerning the Repression of Piracy, Armed Robbery Against Ships, and Illicit Maritime Activity in West and Central Africa,” International Maritime Organization, http://www.imo.org/en/OurWork/Security/WestAfrica/Documents/code_of_conduct_percent20signed_percent20from_percent20ECOWAS_percent20site.pdf.

65 “Nigeria Seeks \$40-\$50 Billion in Oil Investment as Output Rises,” Bloomberg, June 27, 2016, <http://www.bloomberg.com/news/articles/2016-06-27/nigeria-seeks-40-50-billion-in-oil-investment-as-output-rises>.

66 Augustine Ikelegbe, ed., “Oil, Environment, and Resource Conflicts in Nigeria,” *Politics and Economics in Africa Series* (Berlin: LIT Verlag, 2013), 5.

67 “Global Daily: S&P Downgrades Nigeria’s Credit Rating,” World Bank, March 23, 2015, <http://blogs.worldbank.org/prospects/global-daily-sp-downgrades-nigeria-credit-rating>.

68 “Nigeria Total Debt Rises to \$65 Bln by End of December—DMO,” Reuters, February 3, 2016, <http://af.reuters.com/article/nigeriaNews/idAFL8N1513J3>.

In Nigeria, the distinction between public and private sectors has been blurred so often, and so thoroughly, that it could be said to barely exist. Under the government of Goodluck Jonathan, from 2010 to 2015, corruption reached unprecedented levels; the prevailing narrative is that Jonathan, who had risen to the presidency without establishing sturdy credentials like those of his predecessors, had to line the pockets of the political class even more deeply to maintain his authority.

In what one commentator has called “contractocracy,” the allocation of contracts has become the chief mechanism for oil fraud at the national level.⁶⁹ Contractual arrangements, orchestrated by the government and nicknamed “safe sex transactions,” are used as a way to screen companies from the taint of doing business with local players involved in corrupt, fraudulent, or illicit practices. In other words, the company contracts and interacts only with the government, even though the officials involved have a secondary arrangement so that the money passes through the government to a private actor.⁷⁰ The relatively limited effort made to legitimize these transactions betrays the degree to which overt corruption and fraud are tolerated.

It is important to note that while national officeholders engage in much of Nigeria’s hydrocarbons fraud, 25 percent of Nigeria’s oil revenues are distributed to Nigerian states, with oil-producing states getting over 10 percent more than that. The governors of the country’s thirty-six states, who are immune from domestic prosecution, are positioned to siphon enormous amounts of cash, and corruption is also endemic at the state level.⁷¹

Finally, any assessment of hydrocarbons crimes in Nigeria must include corruption and collusion among law enforcement agencies and the military—especially, though not exclusively, the Nigerian Navy and the Joint Task Force in the Niger Delta (JTF).⁷² These two entities in particular are tasked with mitigating the illegal bunkering industry—in which ships are illegally supplied with fuel to be sold on the black market—and other seagoing criminal activity, and both are known to

have, at times, fallen well short in those responsibilities, to put it mildly. Multiple cases and testimonials have revealed how naval personnel have coordinated and collaborated with oil traffickers, and how JTF troops have run their own extortion rackets in which they must be “settled,” or bribed, by criminal operators looking to continue their activities in relative secrecy and security.⁷³

Illicit Hydrocarbons Activity

Costs of Illicit Activity

The scale and costs of hydrocarbons crime in Nigeria are notoriously difficult to quantify, not only because of their pervasiveness but also because Nigerian authorities, as well as industry players, lack consistent and accurate metrics. Estimates of oil and fuel stolen and of revenues lost vary, often widely, and must always be taken as provisional. That said, a 2015 Chatham House report offers some more reliable figures. The total annual cost of stolen oil runs anywhere from \$3 billion to \$8 billion, depending on estimates and circumstances (the recent drop in global oil prices, for instance). The Nigerian National Petroleum Corporation (NNPC), the parastatal charged with management of the industry, spent \$2.3 billion on pipeline repairs and security from 2010 to 2012. Those costs are again mounting on account of the Niger Delta Avengers as discussed below. In the Delta region, the epicenter of the oil industry, thousands of lives have been lost to criminal feuds, insurgent campaigns, and illicit enterprises masquerading as liberation movements.⁷⁴ This particular hazard has taken on a new urgency since the emergence of the Niger Delta Avengers in 2016—a development that threatens to destabilize the entire country.

In addition to the economic losses, the environmental costs of Nigeria’s hydrocarbons crimes have been well publicized, and many arise from bunkering and other criminal activities in the Niger Delta. This dynamic has evolved over the years. A 2001 study indicated that sabotage caused only 21 percent of spills in the Delta, while a later one found that sabotage closely tracked militancy, peaking in 2010 and causing an average of 44 percent of spills between 2004 and 2011.⁷⁵ As much

69 Tom Burgis, “The Looting Machine: Warlords, Oligarchs, Corporations, Smugglers, and the Theft of Africa’s Wealth” *New York: Public Affairs* (2015), 73.

70 *Ibid.*, 190–92.

71 *Ibid.*, 188.

72 Dauda S. Garuba, “Trans-border Economic Crimes, Illegal Oil Bunkering and Economic Reforms in Nigeria,” *Global Consortium on Security Transformation Policy Brief Series*, No. 15, October 2010, http://integritynigeria.org/wp-content/uploads/2012/07/Trans-Border_Economic_Crimes_Illegal_Oil_Bunkering_and_Economic_Reforms_in_Nigeria.pdf, 12.

73 Christina Katsouris and Aaron Sayne, *Nigeria’s Criminal Crude: International Options to Combat the Export of Stolen Oil* (London: Chatham House, 2013), https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Africa/O913pr_nigeriaoil.pdf, 6–7.

74 *Ibid.*, 17.

75 Freedom Chokudi Onuoha, “Oil Resources Management and Illegal Oil Bunkering in Niger Delta, Nigeria, 1999–2011,” Unpublished Dissertation, University of Nigeria (2013), 176, available at http://repository.unn.edu.ng:8080/xmlui/bitstream/handle/123456789/1226/ONUOHA_percent2c_percent20FREEDOM_percent20CHUKWUDI.pdf?sequence=1.

as 80 percent of the stolen crude brought to the many artisanal “bush refineries” in the region is ultimately dumped.⁷⁶ In 2014, Shell claimed that “around 75 percent of all oil spill incidents and 92 percent of all oil spilled from [its] facilities” in the Delta between 2009 and 2013 were caused by “[i]ntentional third-party interference with pipelines and other infrastructure.” Even assuming those numbers are inflated, they are striking.⁷⁷ In 2010 alone, Nigeria spent over \$500 million importing frozen fish; as one Delta resident put it, “All the fish done die finish.”⁷⁸ The environmental consequences, therefore, will place direct and indirect financial burdens on Nigeria for many years to come.

History of Illicit Activity

Illicit hydrocarbons activity in Nigeria dates at least to the aftermath of the Biafran War. At that time, in the early 1970s, the Nigerian government began subsidizing petroleum products as a way to ease economic and social tensions and foster cohesion. As is almost always the case with subsidized fuel, the discrepancy in price between Nigeria and the neighboring states of Cameroon, Niger, and Benin led to rampant cross-border smuggling, as selling subsidized fuel in the high-priced jurisdictions became an easy way to make substantial profit.⁷⁹

By the mid-1980s, fuel smuggling and theft had transitioned from a low-level opportunistic crime into a large-scale organized endeavor. The participants became increasingly high ranking and, during the presidency of Ibrahim Babangida from 1986 to 1993, the military brass came to control much of the crude oil sector. The officers’ involvement, however, was for their personal gain and that of their friends and families, not for the protection of the state’s resources.⁸⁰ Since that period, the military and security forces have continued to be involved in illicit hydrocarbons activity.

Military and Security Involvement

A number of ships impounded by the Navy or JTF have been released due to political pressure, or have vanished and then resurfaced after having been

repainted and reflagged.⁸¹ According to one former air vice-marshal, of the 236 vessels confiscated between May 2005 and May 2008 for illegal bunkering, many were released without facing prosecution, or even adequate investigation.⁸²

In March 2006, a brigadier general and JTF commander was dismissed over allegations of collusion in bunkering operations.⁸³ In July 2007, then Vice-Admiral and Chief of Naval Staff Ganiyu Adekeye reported to a parliamentary commission that two retired vice-admirals and eight officers had come under suspicion of trafficking in illicit fuel in the Delta region. The operation was brought to light by an investigation of suspect vessels vanishing while under naval observation.⁸⁴ Yet three months later, Adekeye himself was accused of being a ringleader in Niger Delta bunkering, collecting royalties from oil companies and enforcing cooperation among subordinates.⁸⁵ The allegations were never substantiated, and Adekeye retired in 2008.

That same year, a member of the Waterways Security Committee—a nineteen-member group tasked with ensuring safety and security on Nigerian waters—said that military personnel in the region often moonlight as soldiers in militant groups. He also stated, “There is no bunkering activity that is taking place in the Niger Delta that the military is not involved in.”⁸⁶ According to local sources, JTF officers sometimes guard illicit pipeline taps and serve as armed escorts for vessels carrying illicit crude. Sources within Nigerian security forces indicate that some officers request assignment to the Delta region so they can profit from hydrocarbons crime, while others are transferred out of the region after failing to demonstrate sufficient effort in combating oil theft.⁸⁷

In a 2009 report, the non-governmental organization (NGO) Environmental Rights Action/Friends of the Earth Nigeria detailed further allegations against security personnel—most notably that active and retired senior naval officers profit from their own

76 Moses Obenade and Gordon Tami Amangabara, “Perspective: The Environmental Implications of Oil Theft and Artisanal Refining in the Niger Delta,” *Asian Review of Environmental and Earth Sciences* 1:2, 2014, 26.

77 *Oil Theft, Spills, and Sabotage*, Shell in Nigeria, 2016, <https://s05.static-shell.com/content/dam/shell-new/local/country/nga/downloads/pdf/2014bnotes/spills.pdf>.

78 “Communities Not Criminals: Illegal Oil Refining in the Niger Delta,” Stakeholder Democracy, October 16, 2013, <http://www.stakeholderdemocracy.org/wp-content/uploads/2015/04/CommunitiesNotCriminals.pdf>, 28.

79 “Fuel Smuggling in Nigeria, Benin and Togo—an Intractable Illicit Trade,” Nigeria Infos, April 26, 2013, <http://nigeriainfos.blogspot.com/2013/04/fuel-smuggling-in-nigeria-benin-and.html>.

80 Garuba, “Trans-border Economic Crimes,” 11.

81 Katsouris and Sayne, *Nigeria’s Criminal Crude*, 5.

82 “Nigeria Loses \$25.5Bn Annually to Illegal Maritime Activities,” *The Nigerian Voice*, June 2, 2010, <http://www.thenigerianvoice.com/news/25743/nigeria-loses-255bn-annually-to-illegal-maritime-activitie.html>.

83 Katsouris and Sayne, *Nigeria’s Criminal Crude*, 5.

84 “Petrol-Bunkering Scandal Rattles Nigeria,” *Mail & Guardian*, July 29, 2007, <http://mg.co.za/article/2007-07-29-petrolbunkering-scandal-rattles-nigeria>.

85 “Corruption: Under Obasanjo Reached a Feverish Crescendo,” Nairaland, September 9, 2007, <http://www.nairaland.com/77898/corruption-under-obasanjo-reached-feverish>.

86 Garuba, “Trans-border Economic Crimes,” 12.

87 Katsouris and Sayne, *Nigeria’s Criminal Crude*, 5.

private pipelines, which run from Port Harcourt (Delta State) to Eket (Akwa Ibom State). The report suggests that these pipelines are used to transport stolen oil to tankers, which then take the crude to foreign refineries.⁸⁸ Markets for the stolen crude flourish in the Gulf of Guinea region and beyond, including Greece, France, Eastern Europe, Russia, Australia, Morocco, the Netherlands, and Venezuela. In one 2009 case, money was followed from Côte d'Ivoire and Senegal through the French financial sector to Lebanon and Syria.⁸⁹

“Collusion among various players, from parastatals to multinational corporations to ship captains, makes it possible to steal oil while it is being lifted from bunkering facilities into ships.”

The precipitous decline in global oil prices since 2014 has profoundly affected Nigeria as a whole and the criminal enterprises connected to its hydrocarbons resources. By accelerating an economic crisis, it created a political crisis that may yet prove salutary, as in 2015, when the government of Goodluck Jonathan, which was infamously corrupt even by Nigerian standards, gave way in elections to that of former dictator Muhammadu Buhari, who has responded to the situation with seemingly earnest efforts to crack down on hydrocarbons crimes.⁹⁰

Militant-Assisted Theft

In the early 2000s, oil theft in Nigeria gained global attention when militant groups in the Niger Delta began tapping pipelines and selling the stolen oil

to finance their operations. Given that not only the Nigerian government but also major corporations were impacted, the problem gave rise to international scrutiny.

In a 2008 interview, a source linked with the former government of President Olusegun Obasanjo (1999–2007) indicated that some of the groups engaged in oil theft in the Delta are controlled by high-ranking political “godfathers” with significant influence over security forces. According to the source, the situation has never been addressed for fear that investigations or prosecutions might trigger a coup d'état or an eruption of violence.⁹¹

The narrative suggests that these powerful individuals have sought to exploit regional instability for personal gain, using the conflict between the government and militants as cover. High unemployment in the Delta has given rise to many local gangs, who can be recruited to provide security for illicit cargos or sabotage pipelines so that illicit taps can be easily installed during the ensuing hiatus in operations. As detailed below, these gangs have also formed protection rackets.⁹²

Complicity among government agencies, security forces, and port authorities tasked with combating the issue makes mitigation even more of a challenge. Officials are known to provide fraudulent documentation and logistical support for hydrocarbons theft. The complicity of security forces is so brazen that barges carrying stolen oil often travel openly, “easily observable from the air or ground.”⁹³

Non Militant-Assisted Theft

The process of loading cargos at terminals or jetties offers a completely different arena for oil theft. Collusion among various players, from parastatals to multinational corporations to ship captains, makes it possible to steal oil while it is being lifted from bunkering facilities into ships.

In some instances, oil is funneled into secret compartments on large-capacity ships capable of carrying tens of thousands of barrels. It is possible to secretly divert a portion of oil into these illicit storage tanks while the legitimate hold is being filled. More directly, a ship can be provided with false documents—often through bribing a customs agent—and loaded entirely with stolen product. Alternatively, the same basic approach can be used to falsify the size of a ship's cargo, loading a tanker with more oil than is

88 “Building a Post Petroleum Nigeria (Leave New Oil in the Soil),” Environmental Rights Action/Friends of the Earth Nigeria, November 25, 2009, <http://eraction.org/publications/presentations/leaveoilproposal.pdf>.

89 Michael Roll and Sebastian Sperling, eds., *Fuelling the World – Failing the Region? Oil Governance and Development in Africa's Gulf of Guinea* (Abuja: Friedrich-Ebert-Stiftung, 2011), 59; Judith Burdin Asuni, “Blood Oil in the Niger Delta” *United States Institute of Peace Special Report 229*, http://www.usip.org/sites/default/files/blood_oil_nigerdelta.pdf, 5.

90 “Wide Support in Nigeria for New Anti-corruption Measures,” *Deutsche Welle*, November 8, 2015, <http://www.dw.com/en/wide-support-in-nigeria-for-new-anti-corruption-measures/a-18641400>; “Obama Gives Nigerian President Buhari Names of Oil Thieves, Goodluck Jonathan Administration Accused of Corruption,” *International Business Times*, July 29, 2015, <http://www.ibtimes.com/obama-gives-nigerian-president-buhari-names-oil-thieves-goodluck-jonathan-2029472>.

91 “‘Blood Oil’ Dripping from Nigeria,” BBC News, August 27, 2008, <http://news.bbc.co.uk/2/hi/africa/7519302.stm>.

92 Ibid.

93 Katsouris and Sayne, *Nigeria's Criminal Crude*, 3.

Table 1. Anatomy of a Typical Large-Scale Nigerian Oil Theft Network

Role	Actions	Alleged common identities
High-level opportunists	Collect profits from theft by virtue of their status and ability to restrict and control others' access to the trade	Mostly government officials and security force personnel; some traditional rulers and local godfathers
Facilitators	Source necessary equipment and cash for operations; serve as paymaster for ground-level operators; launder money	Accountants, lawyers, real estate brokers, money changers, corrupt bank managers, or other staff
Operations	Install illegal taps; man taps and oversee loading; gather intelligence on oil, ship, and state security service movements	Local youths; former IOC employees and contractors (alleged); small consortiums of local elites; militant groups
Security	Stand sentry at tap points; secure the transport corridor; escort vessels in the inland and coastal waters; gather intelligence; otherwise protect the network's "turf"	Local armed groups or "militants"; private security contractors; rank-and-file state security forces personnel (alleged)
Local transport	Provide the smaller ships, trucks, and associated manpower needed to store stolen crude and/or carry it to ship-to-ship points in inland or coastal waters	Some local armed groups or "militants"; local and foreign shipping concerns; current and former politicians
Foreign transport	Provide the commercial-grade tankers and other vessels needed to carry stolen crude to destination points outside Nigeria	Foreign shipping concerns and agents; some private commodities traders?
Sales	Broker sales of stolen parcels to foreign buyers; arrange for financing and shipment; remit profits to others in the network	Well-connected local middlemen, some private commodities traders?
Low-level opportunists	Operate various types of protection/extortion rackets around theft rings to profit by exploiting oil theft's illegitimacy and/or by providing political cover	"Host" and "passage" communities, local elites, local armed groups, and various types of youth gangs, rank-and-file security forces personnel

Source: Christina Katsouris and Aaron Sayne, *Nigeria's Criminal Crude: International Options to Combat the Export of Stolen Oil* (London: Chatham House, 2013), https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Africa/0913pr_nigeriaoil.pdf.

reported in the relevant documentation. In its most audacious form, this modality of theft involves loading unauthorized ships, which have forged bills of lading to facilitate the sale of the stolen product. Most of these modalities involve collusion by officials, either at the administrative level, on-site, or both.

Another modality of theft, one that often involves oil companies themselves, exploits inadequate metering. Spotty metering along the supply chain creates openings for large-scale theft. In one such instance, a local oil company had tapped an NNPC pipeline, diverting large amounts of oil. The lack of any metering system at the pipeline's source made it difficult to ascertain that oil was being diverted before arriving at the terminal, where metering took place.

In one particular instance, a naval surveillance team discovered that an oil company in Westminster (Lagos)

had devised a sophisticated tap on a pipeline delivering oil to the NNPC pipeline, allowing the company to divert significant volumes of oil. Because there was no meter in place at the origin of the NNPC pipeline, some 1,200 liters of oil would be diverted for every 300 liters registered by the meter farther downstream on the NNPC pipeline. This mode of theft is considered commonplace among local oil companies.⁹⁴

Structure of Illicit Hydrocarbons Networks

As one might expect, the exact structure of a criminal network is often hard to ascertain, but some work has been done on anatomizing oil theft operations in Nigeria. According to a 2013 Chatham House report, the networks are more "cellular than hierarchical"; they

94 Roll and Sperling, eds., *Fuelling the World*, 62.

involve not so much the *diktats* of bosses as a fluid set of mutually beneficial arrangements among interested parties.⁹⁵ Such stakeholders occupy a range of roles (see table 1).

Another, even more parasitic, mode of organized criminal network involves protection rackets run by local militias and criminal groups, which extort “rent” from illicit hydrocarbons networks on pain of sabotaging their infrastructure. This ploy was also used in the 2000s to manipulate multinational oil companies operating in the region; in an effort to placate the region, Shell issued contracts to businesses tied to the powerful Militia for the Emancipation of the Niger Delta (MEND).⁹⁶ The Nigerian government has also been known to pay off self-styled militia groups to work, at least nominally, as security for the oil industry in the Niger Delta—a policy that has ended up subjecting the country to this style of violent extortion in the form of the Niger Delta Avengers, who will be discussed further below.

Types of Hydrocarbons Theft

Large-Scale Bunkering and Tapping

The most common method of hydrocarbons theft is tapping oil pipelines or wellheads. In the form known as “hot tapping” or “pressure tapping,” criminals access a high-pressure pipeline and divert a small portion of its oil. If the amount redirected is kept sufficiently low, the pipeline continues to function at close to normal pressure, making it difficult to detect the theft. Oil infrastructure in the Niger Delta region, where the ground is thick with pipelines, is ideal for this mode of theft. Some hot tapping is done underwater by highly skilled operators; these taps are particularly difficult for company inspectors to find. The pressure within a pipeline is often sufficient for a transport barge to be filled with a thousand metric tons of oil in a few hours.⁹⁷ Estimates indicate that around 25 percent of the oil is kept inland, usually refined in one of the region’s countless artisanal refineries;⁹⁸ the rest mostly goes to transport ships, and is usually then transferred to large tankers called “mother ships.” Mother ships may deliver all of the oil at one refinery or distribute it among several, transfer it to one or more other ships at sea, or offload it into storage.⁹⁹ If the illicit cargo is refined, the ship may also serve as an offshore black market filling station. While the amounts of crude oil stolen overall via this method typically vary from

month to month, some estimates suggest that it can reach as high as two hundred thousand barrels per day, or nearly a tenth of the country’s exports.¹⁰⁰ Once more, however, it should be kept in mind that more general estimates of oil theft in Nigeria should be viewed skeptically, as the complexity and opacity of the situation make accurate assessments almost impossible.

Hot tapping is not limited to crude oil pipelines; it can be an effective method for downstream theft as well. According to NNPC, approximately 531 million liters of petrol worth over \$251 million was stolen via taps on the System 2B pipeline (from Lagos to Ilorin, Kwara State) between January and September of 2015.¹⁰¹

Given the physical danger and technical complexity involved, hot tapping requires skills normally confined to current or former employees of oil companies; the former can also provide “inside” information on security measures and inspection schedules.¹⁰² Former employees of multinationals have been known to join illicit networks in the Delta region, providing both technical expertise and precise knowledge of pipeline vulnerabilities. Some industry employees who work in pipeline control rooms can allegedly be paid to lower the pressure in pipelines, creating relatively safe windows for taps to be set.¹⁰³ According to some sources, the fee for this service is approximately \$6,000.¹⁰⁴

The alternative method of “cold tapping” is both less dangerous to the tappers and more extreme in its approach. In this method, the illicit actors will simply blow up a section of pipeline. While the pipeline is disabled, an illegal underground tap will be installed elsewhere on the line, diverting a stream of oil to the criminals’ storage facilities. When service is restored, the constant flow of oil into the illicit pipeline will not cause fluctuations in overall pressure, so the oil company will most likely remain unaware of the tap.¹⁰⁵

Nnamdi Obasi has identified six “hot zones” where illicit bunkering is most prevalent: “Sombreiro-Bonny-BOT/Andoni-Opobo region in Rivers State; Escravos-Forcados-Ramos-Dodo in Delta State;

95 Katsouris and Sayne, *Nigeria’s Criminal Crude*, 6.

96 Burgis, “The Looting Machine,” 195.

97 Onuoha, “Oil Resources Management,” 240.

98 *Communities Not Criminals*, Stakeholder Democracy, 4.

99 Katsouris and Sayne, *Nigeria’s Criminal Crude*, 31.

100 Roll and Sperling, eds., *Fuelling the World*, 60.

101 “Pumps Run Dry - Pipeline Plundered for \$250m of Petrol, Nigerian Oil Company Says,” *MG Africa*, November 26, 2015, <http://mgafrica.com/article/2015-11-26-pipeline-plundered-for-250m-of-petrol-nigerian-oil-company-says>.

102 Onuoha, “Oil Resources Management,” 239.

103 “Shell Pushes Back against Nigerian Oil Thefts,” *Wall Street Journal*, April, 14, 2013, <http://www.wsj.com/articles/SB10001424127887324010704578416593346146824>.

104 “Communities Not Criminals,” Stakeholder Democracy, 12.

105 Onuoha, “Oil Resources Management,” 240-41.

Fishtown-BrassBartholomew-Barbara area in Bayelsa State; Awoye-Aiyetoro-Benin River which straddles Ondo and Delta States; Qua Iboe/Calabar/Rio Del Rey area of Cross River State; and Lagos-Lekki axis in Lagos State.”¹⁰⁶ According to some sources, the Escravos-Forcados zone is the most treacherous in terms of rivalries among armed militias and criminal groups, and the most sophisticated operations can be found in the Sombreiro-Bonny area.¹⁰⁷

Small-Scale Tapping

In small-scale tapping operations, local groups with little technical expertise tap pipelines or other accessible infrastructure. Most of the stolen oil is refined in a makeshift manner in local refineries, which can produce forty to sixty drums per day of low-grade petrol or diesel.¹⁰⁸ This modality of theft is estimated to produce at most around thirty thousand barrels per day.¹⁰⁹ While JTF personnel destroy thousands of these bush refineries annually, illegal refiners can relocate or rebuild their facilities in very short order.¹¹⁰

Major oil companies have taken measures to prevent such low-level theft. Though most oil infrastructure is above ground, Shell and other industry players have opted increasingly for subterranean pipelines four meters below the ground and reinforced by concrete slabs. Another countermeasure is sheathing pipelines in “false pipes” to make tapping more difficult and therefore riskier.¹¹¹

Theft at Export Terminals

As one might expect, theft is most common in areas where oil is directed and stored for transfer to international markets. Unsurprisingly, oil and petrol are also stolen at export terminals owned by industry majors: the Bonny and Forcados Terminals in Delta State (Shell), the Qua Iboe Terminal in Akwa Ibom State (ExxonMobil), the Escravos Terminal in Delta State (Chevron), and the Brass Terminal in Port Harcourt (Eni).

In this modality of theft, which typically involves administrative-level collusion, crude oil, petrol, or diesel is lifted into a tanker, the theft being covered up by counterfeit shipping documents or manipulated meters. Crude can also be siphoned from storage tanks and loaded into trucks.¹¹²

Assessments have differed on both the amount of oil stolen at export terminals and the difficulty of stealing it. While some sources insist that the security and control mechanisms at the terminals are too rigorous to allow for significant theft—tankers, for instance, are reportedly checked by seven or more government agencies before being cleared to load oil—others argue that the scale of oil theft in Nigeria makes it highly unlikely that significant amounts of oil are not being stolen at terminals as well as earlier in the supply chain.¹¹³ On a technical level, oil companies have resisted using flow meters rather than dipsticks to measure volume at export terminals. In declining to use measuring devices that are both more accurate and less vulnerable to manipulation, these companies would seem to be inviting abuse. Some industry workers have suggested, not unreasonably, that the companies prefer more vulnerable forms of volume measurement for questionable reasons.¹¹⁴

The lack of industry-standard metering technology in most comparable oil-producing regions has made it impossible to determine Nigeria’s actual oil output. All twenty-one of the country’s export terminals have been found to have inaccurate metering, giving rise to conflicting estimates and a general vagueness that would allow oil companies and Nigerian officials to skim oil, and therefore revenue, at a score of its otherwise legitimate points of departure from the country.¹¹⁵

According to one study, oil companies have firmly resisted the idea of installing meters anywhere but at export terminals. The failure to also install them at the other key points in the supply line—wellheads and flow stations—means that any significant drop in volume between wellhead and export terminal cannot be adequately gauged. This rules out what should be an obvious measure to guard against oil theft along pipelines.¹¹⁶

Fuel Trucks

Emmanuel Ibe Kachikwu, the state minister for petroleum resources and the managing director of the NNPC, has argued that much of what he estimates as the approximately 30 percent of the country’s refined fuel being stolen is often smuggled by truck into neighboring countries. In Kachikwu’s view, a crucial contributor to this modality of theft is the lack of tracking on trucks transporting fuel around Nigeria.

¹⁰⁶ Ibid, 238.

¹⁰⁷ Roll and Sperling, eds., *Fuelling the World*, 58.

¹⁰⁸ Obenade and Amangabara, op. cit., 26-7.

¹⁰⁹ Roll and Sperling, eds., *Fuelling the World*, 60.

¹¹⁰ “Communities Not Criminals,” Stakeholder Democracy 5.

¹¹¹ “Nigeria’s Booming Illegal Oil Refineries,” *BBC News*, July 26, 2012, <http://www.bbc.com/news/world-africa-18973637>.

¹¹² Katsouris and Sayne, *Nigeria’s Criminal Crude*, 4.

¹¹³ Ibid, 26-27.

¹¹⁴ Musa Abutudu and Dauda Garuba, “Natural Resource Governance and EITI Implementation in Nigeria,” *Current African Issues* 47 (Uppsala: Nordiska Afrikainstitutet, 2011), 44.

¹¹⁵ Onuoha, “Oil Resources Management,” 255.

¹¹⁶ Abutudu and Garuba, “Natural Resource Governance.”



Illegally refined diesel transported on the Niger Delta, in Nigeria, in November 2012.
Photo credit: Stakeholder Democracy/Flickr.

Government proposals to require global positioning system (GPS) trackers on all fuel trucks have been met with skepticism; according to some observers, when a similar strategy was attempted in the past, drivers simply tampered with trackers to conceal their locations. As one industry insider observed, without stiff penalties to deter tampering, tracking devices will be ineffective.¹¹⁷

Certainly, trucks play a key role in the illicit hydrocarbons market. In June 2016, the Nigerian newspaper the *Vanguard*, following up on a 2012 International Monetary Fund (IMF) report indicating that 80 percent of the fuel in Benin was smuggled from Nigeria, confirmed that at least thirty tanker trucks per week were smuggling fuel across the border while Nigeria was in the throes of a shortage.¹¹⁸ The JTF

reported that in the Rivers, Bayelsa, and Delta States it seized 187 tanker trucks in 2012 alone. Most of those trucks were probably carrying diesel or petrol rather than crude.¹¹⁹ Given the JTF's reputation for extorting rent from illicit operators in the region, and for outright collusion, it is not unreasonable to suspect that those 187 trucks represented a fraction of the hydrocarbons being smuggled on wheels. How many tanker trucks eventually crossed borders themselves or supplied border operators as opposed to supplying seagoing vessels or local distributors is unclear.

Piracy and Armed Robbery at Sea

While Somali piracy has been made famous by media attention and Hollywood films, there has not been a reported hijacking of a commercial ship off the Horn of Africa since May 2012. Ships in the Gulf of Guinea, on the other hand, remain under constant threat. Though less well-known, West African piracy is hardly a new phenomenon. The first resolution of the International

117 "Nigeria to Track Trucks as Fuel Stolen During Shortages," Bloomberg, April 25, 2016, <http://www.bloomberg.com/news/articles/2016-04-25/nigeria-plans-to-track-trucks-as-fuel-stolen-during-shortages>.

118 "Nigerian Navy Smashes Petroleum Smuggling Gang, Intensifies Patrols around Badagry," *Vanguard*, June 28, 2016, [http://www.vanguardngr.com/2016/06/nigerian-navy-smashes-](http://www.vanguardngr.com/2016/06/nigerian-navy-smashes-petroleum-smuggling-gang-intensifies-land-sea-patrol-around-badagry/)

[petroleum-smuggling-gang-intensifies-land-sea-patrol-around-badagry/](http://www.vanguardngr.com/2016/06/nigerian-navy-smashes-petroleum-smuggling-gang-intensifies-land-sea-patrol-around-badagry/).

119 Katsouris and Sayne, *Nigeria's Criminal Crude*, 19, n.35.

“Nigeria’s success close to its own shores has created problems farther out at sea.”

Maritime Organization (IMO) that focused on piracy was actually aimed at Gulf of Guinea piracy in 1983.¹²⁰ In recent years, piracy and armed robbery at sea in the Gulf of Guinea have reemerged as major issues. Indeed, evidence indicates the volume of illicit activity in the waters of West and Central Africa has more than overtaken that experienced in the Horn of Africa, the Straits of Malacca, and the South China Sea.

While pirates operating in the Gulf of Aden off the coast of Somalia have engaged mainly in kidnap for ransom, criminals operating off West Africa, particularly in the early years, have almost exclusively attacked tankers carrying hydrocarbons. These groups will commandeer a tanker ship, disable its tracking devices, and transfer its cargo to smaller vessels for distribution on the black market. Significantly, the most sought-after cargoes are downstream products: petrol, fuel oil, and aviation fuel.

Hijacking a tanker for the purpose of hydrocarbons theft is no simple matter: anyone undertaking such an act must have not only considerable skill and logistical support but also connections with illicit networks that can facilitate the distribution of the stolen product. The operation itself requires careful planning, familiarity with the layout and workings of the target vessel, and reliable information on the vessel’s whereabouts. Given the difficulty of accessing information about shipping schedules and routes, it would seem that few such thefts could work without collusion from industry insiders or security forces.

Whereas the United Nations (UN) Security Council Resolutions allowed for international forces to counter piracy all the way to the Somali coastline and for commercial vessels to embark armed guards for protection throughout the troubled waters, neither such approach has been possible in West Africa. The sovereign states of the region have maintained legal control of their territorial waters, meaning that warships cannot enter and commercial ships cannot

be armed within twelve miles of the coast. Until 2016, those territorial seas, in which such prohibitions persist, have also been the locus of the majority of attacks. Legally considered armed robbery at sea and not piracy if perpetrated within twelve miles, such attacks fall within the sovereign responsibility of the coastal forces. In other words, the attacks along the coast of Nigeria have been under the jurisdiction of the Nigerian Navy and maritime agencies—all of which have been heavily implicated in oil theft, as discussed above.

Since taking power in May 2015, the Buhari government has cracked down on hydrocarbons crime, largely to lift potential investors’ confidence in Nigeria. The Nigerian Navy has subsequently shown far more vigorous efforts at mitigation within Nigeria’s territorial waters. According to one authority on maritime security, recently appointed Naval Chief of Staff Ibok Ekwe Ibas has also succeeded in at least disrupting the coordination between corrupt naval personnel and criminal networks. As a result, the criminals have begun to resort to more daring operations on the high seas, including kidnap for ransom and hijacking tankers in international, or at least non-Nigerian, waters. In this sense, Nigeria’s success close to its own shores has created problems farther out at sea. The International Maritime Bureau noted that in the first quarter of 2016, two out of three ship hijackings and all the recorded hostage-taking worldwide occurred in the Gulf of Guinea.¹²¹

The case of the *M/T Maximus* reveals how far Nigerian pirates are now willing to range. In February 2016, the *Maximus*, which was loaded with 4,700 tons of diesel, was hijacked by Nigerian nationals off the coast of Côte d’Ivoire, but the navies of Ghana, Togo, Benin, and Nigeria, together with the United States and France, managed to track the vessel to the waters of São Tomé and Príncipe and eventually intercept it, even after it had unloaded part of its fuel via a ship-to-ship transfer. With the blessing of the São Toméan government, Nigerian Navy special forces performed an opposed boarding of the *Maximus*. The pirates were arrested (though one was shot and killed), the *Maximus* crew were freed, and the cargo recovered.¹²²

120 A.545(XIII) Measures to prevent and suppress piracy and armed robbery against ships. (Deriving from Sweden’s submission to the Council in Document C50/25 and Maritime Safety Committee Meeting 48/23/4 regarding concerns about attacks on ships in West Africa). Any other business: Piracy. Note by the Government of Sweden, *IMO MCS*, March 10, 1983.

121 “Violent Attacks Worsen in Seas Off West Africa Despite Global Piracy Downturn,” *IMB Reports, Commercial Crime Services*, April 27, 2016, <https://icc-ccs.org/news/1179-violent-attacks-worsen-in-seas-off-west-africa-despite-global-piracy-downturn-imb-reports>.

122 “MT Maximus Hijacking,” *Piracy Report*, 2016, http://piracyreport.co.za/MT_Maximus_Hijacking.html.

Mitigation

Mitigation efforts in Nigeria have historically been equivocal at best, but the Buhari government has undertaken the strongest measures to curb hydrocarbons crime that the country has yet seen. In the wake of the disastrous free-for-all of the Goodluck Jonathan years and the decline in global oil prices that began in 2014, there was little choice.

Buhari's efforts at mitigation could be described as both operational and strategic. On the operational level, his replacement of top military commanders and naval crackdown on Niger Delta oil trafficking have changed the criminal landscape and seascape. According to one maritime security source, the case of the *M/T Maximus* revealed an agility and decisiveness few international observers had expected from the Nigerian Navy, and new naval bases charged with interdiction efforts have indicated the resolve behind the rhetoric. In a more aggressive legal move that took on industry players, the government began requiring "letters of comfort" from vessel owners stating that their ships would not be involved in hydrocarbons trafficking. As the letters would position the government to charge the owners with fraud should the mere incidence of oil theft be proven, there was considerable pushback from shippers. While some of them may have been seeking to avoid a check on their illicit activities, others demurred out of a sense of distrust, fearing, perhaps legitimately, that their ships could be caught up in illicit activity without their knowledge.

One effort at domestic mitigation misfired in spring of 2016, when Solomon Arase, Nigeria's inspector-general of police, outlawed the sale or purchase of petrol or diesel in jerry cans. Though the new policy was partly intended to reduce trafficking in black-market fuel, mainly by opportunists who buy fuel at retail outlets and sell it at inflated prices where shortages have occurred, it sparked considerable criticism, as so many Nigerians rely on petrol or diesel generators to make up for erratic supply from the national power grid.¹²³ Within days, Arase had to soften the directive, announcing: "Those with genuine intention to use the products for their legal and genuine business are allowed to purchase the products in Jerry cans."¹²⁴ This effectively negated the policy.

¹²³ "Nigeria's Ban on Jerry Cans for Fuel Will Leave Millions in the Dark," *Quartz Africa*, April 27, 2016, <http://qz.com/671274/nigerias-ban-on-jerry-cans-for-fuel-will-leave-millions-in-the-dark/>.

¹²⁴ "Police Clarifies Statement on Sale of Fuel in Jerrycans," *TV360 Nigeria*, April 29, 2016, <http://www.tv360nigeria.com/police-clarifies-statement-sale-fuel-jerrycans/>.

However, any meaningful effort at mitigating hydrocarbons crime has to involve checks on the political class who profit most from it. In this sense, Buhari's strategic moves have all been in the direction of transparency: adoption of the Open Contracting Data Standard, commitment to the 2016 Standard of the Extractive Industries Transparency Initiative (EITI), and a central registry of foreign entities involved in Nigerian industries and real estate.¹²⁵ The NNPC's governance has been reformed. High-profile prosecutions for corruption have gone forward, but, in July 2016, Buhari complained that elements in the judiciary were undermining the cases and called for change.¹²⁶ Such obstructionism is only one indicator of the deeply entrenched interests seeking to preserve a profitably corrupt status quo.

Given the corrosion hydrocarbons crime in all its forms has inflicted on Nigeria, the Buhari government's efforts can, at best, hope for modest progress in the near term. Worse, some efforts at curbing oil theft have given rise to other criminal enterprises. One such entity, the Niger Delta Avengers, poses a grave threat to national security.

The Niger Delta Avengers

In 2011, President Goodluck Jonathan awarded a lucrative maritime security contract to a militia-turned-security-firm run by Government Ekpomupolo, known as "Tompolo," commander of MEND before the 2009 amnesty for Niger Delta militants, and a relation of Jonathan. The arrangement proved to be one case among many in Nigeria where the fox was invited to guard the henhouse; the firm, Global West Vessel Specialists Nigeria Ltd., was widely regarded as deeply involved in oil theft. During Jonathan's tenure, money and patronage of this sort flowed toward the president's home territory of the Niger Delta.¹²⁷ But when the Buhari government took power in 2015, it not only committed to phasing out the amnesty but also revoked Global West's security contract and indicted Tompolo on forty counts of fraud, to the tune of \$171 million. On January 14, 2016, Tompolo failed to turn up at court, and a warrant was issued for his arrest. He has since been in hiding.¹²⁸

¹²⁵ "Buhari Announces New Measures to Stop Corruption," *This Day*, May 13, 2016, <http://www.thisdaylive.com/index.php/2016/05/13/buhari-announces-new-measures-to-stop-corruption-2/>.

¹²⁶ "Nigeria: Buhari—Corruption Cases Being Scuttled," *all Africa*, July 19, 2016, <http://allafrica.com/stories/201607190124.html>.

¹²⁷ Andrew McGregor, "Back to the Creeks: A Profile of Niger Delta Militant Government Ekpomupolo, aka 'Tompolo,'" *Aberfoyle International Security*, May 30, 2016, <http://www.aberfoylesecurity.com/?tag=niger-delta-avengers>.

¹²⁸ "Who Is Tompolo, the Niger Delta Kingpin Wanted for

On the day of his scheduled court appearance, a group calling itself the Niger Delta Avengers (NDA) launched a campaign of sabotage and intimidation against both government and industry players, targeting Chevron in particular.¹²⁹ In addition to other infrastructure, Chevron's Okan platform was bombed, and in March the Forcados underwater pipeline was expertly sabotaged, costing 300,000 bpd.¹³⁰ By May 2016, Chevron and Shell had suspended operations in the Delta region due to the NDA's relentless and often violent efforts at sabotaging industry infrastructure. In less than a year, the sabotage campaign had cut Nigeria's output of crude from 2.2 million bpd to 1.4 million bpd.¹³¹

Speculation abounds as to who is actually behind the Niger Delta Avengers, but the leading candidate is Tompolo. Although he and the NDA have publicly aired mutual repudiations, and Tompolo has called for an end to the sabotage, the prevailing hypothesis is that the media-savvy former MEND commander is, in fact, linked with his seeming antagonists. The NDA itself is adept at building a media presence; anyone can follow the organization on Twitter.

The NDA has already wreaked serious economic damage on Nigeria, but its most ominous aspect emerged in its hijacking of a Greek tanker early in 2016: the hijackers, identifying themselves as NDA, demanded the release from prison of Nnamdi Kanu, leader and symbol of the Indigenous People of Biafra, a separatist group. The NDA later decried what it regarded as the extremely disproportionate awarding of Delta oil blocs to northern Nigerians, and declared itself determined to set up a sovereign state in the Delta.¹³² The current situation—a ruthless and effective militant group publicly allying itself with a Biafran separatist movement against the north—evokes memories of the catastrophic bloodshed of the Biafra

conflict. In terms of infrastructure, ideology, and media presence, the NDA has quite abruptly become a force capable of destabilizing Nigeria.

On August 20, 2016, however, the NDA declared a conditional ceasefire on its website, expressing an openness to talks with the Buhari government. It should be noted that in a previous post on August 18, the NDA spokesman stated that October 1, 2016, would bring a "declaration of independence."¹³³ Whether the ceasefire holds remains to be seen, and now other groups have begun to engage in sabotage as well, recalling the violent insurrection in the Delta in the 2000s.¹³⁴

Conclusion

Nobel laureate Chinua Achebe opens his book *The Trouble with Nigeria* with a blunt assessment of Nigeria's difficulties:

The trouble with Nigeria is simply and squarely a failure of leadership. There is nothing basically wrong with the Nigerian character. There is nothing wrong with the Nigerian land or climate or water or air or anything else. The Nigerian problem is the unwillingness or inability of its leaders to rise to the responsibility, to the challenge of personal example which are the hallmarks of true leadership.¹³⁵

In a sense, that analysis is reductive. It arguably underestimates the complexity of the relations among corrupt officials, multinationals, criminal networks, poverty, failed industries, disenfranchised regions and peoples, violent ideologies, and environmental degradation that combine to hobble Nigeria today. But in another sense, Achebe is right, because nothing will effect real change in the country until the political class, or at least enough talented and driven and fortunate members of that class, decide to lead with a combination of integrity, political savvy, and vision. Given the increasing fragility of the Nigerian state, such leadership is desperately needed; whether the current government can begin to provide that leadership, or pave the way for it, remains an open—and urgent—question.

Corruption?" *Newsweek*, January 19, 2016, <http://www.newsweek.com/who-tompolo-niger-delta-kingpin-wanted-corruption-417130>; "N34bn Fraud: EFCC Slams 40-counts Charge against Tompolo, Akpobolokemi, Others," *Vanguard Nigeria*, January 13, 2016, <http://www.vanguardngr.com/2016/01/n34bn-fraud-efcc-slams-40-counts-charge-against-tompolo-akpobolokemi-others/>.

129 McGregor, "Back to the Creeks."

130 Ibid.

131 "Vandals Cut Nigeria's Oil Production by 800,000 Barrels Per Day - Kachikwu," *Premium Times*, May 16, 2016, <http://www.premiumtimesng.com/news/top-news/203515-vandals-cut-nigerias-oil-production-800000-barrels-per-day-kachikwu.html>.

132 McGregor, "Back to the Creeks."

133 "The Pan-Niger Struggle and Our Prayer for Buhari," *Niger Delta Avengers*, August 20, 2016, <http://www.nigerdeltaavengers.org/>.

134 "Why We Announced Ceasefire—Niger Delta Avengers," *Punch Nigeria*, August 21, 2016, <http://punchng.com/why/>.

135 Quoted in Burgis, "The Looting Machine," 207.

GHANA



Despite being one of the most developed and stable states in West Africa, Ghana continues to work to overcome governance challenges, corruption, and criminality. A relatively new addition to Africa's list of major oil producers, Ghana has relied on imports for energy needs throughout most of its history. Modalities of illicit hydrocarbons activity in Ghana vary, and while some mirror those of other cases examined, Ghana also serves as an example of a transshipment hub for laundering stolen crude. The Saltpond Field and the Ghana National Petroleum Corporation (GNPC) refinery at Tema have both been used to legitimize illicit shipments of oil. In terms of downstream illicit activity, however, Ghana also presents a case where the state is losing refined products to cross-border smuggling, as opposed to a number of the other countries reviewed in this report where the fuel is entering the local market.

The Hydrocarbons Context

Named "Gold Coast" under British Colonial rule in light of its long history as a key gold production and trading hub, Ghana has a population of roughly twenty-six million and the fifth-largest economy in Africa. An Anglophone state surrounded by Francophone neighbors, Ghana shares borders with Côte d'Ivoire to the west, Burkina Faso to the north, and Togo to the east. It is a member of the Economic Community of West African States and its coastline, replete with significant port infrastructure, makes it an important player in the wider Gulf of Guinea region. Transparency International ranks Ghana seventh in Africa on its Corruption Perceptions Index (and fourth on the continental mainland), suggesting it is one of the least corrupt states on the continent.¹³⁶ Notably, Ghana's development has not relied on oil, as significant reserves have only recently been discovered.

Ghana has proven oil reserves of 660 million barrels,¹³⁷ but estimates of overall reserves vary considerably. In 2011, the head of the GNPC estimated total recoverable resources to be at least 1.25 billion barrels; in 2010, the

head of the Ghanaian parliament's energy committee predicted a total of 5 billion barrels.¹³⁸ The more generous estimates could make Ghana one of the top producers in sub-Saharan Africa. The country also has significant gas reserves, currently estimated by the Ghana National Gas Company (GNGC) at 5 trillion cubic feet.¹³⁹ The Jubilee Field, discovered in 2007, and producing since 2010, sits thirty-two nautical miles off Ghana's coast and represents the single biggest potential, thus far discovered, for high volume oil production. Estimated to have as much as 3 billion barrels, the Jubilee Field produces an average of roughly 102,000 bpd via a consortium led by the UK-based Tullow Oil.¹⁴⁰

Nearby the Jubilee Field, another promising discovery has also come online. The Tano Basin Offshore Cape Three Points (OCTP) is believed to have reserves of roughly 500 million barrels of oil and 1.5 trillion cubic feet of gas.¹⁴¹ The OCTP block is operated by a consortium consisting of Italy's Eni (47 percent), Vitol Upstream Ghana Ltd. (38 percent), and GNPC (15 percent).¹⁴²

Until OCTP or another Ghanaian source is able to meet domestic demand for gas, Ghana will continue to acquire the majority of its natural gas requirements from the West African Gas Pipeline (WAGP). The WAGP, which comes to Ghana from Nigeria, through the waters of Benin and Togo, is owned by a consortium that includes Chevron, Nigerian National Petroleum Corporation, Shell, and Ghana's Volta River Authority.¹⁴³

136 Rachel Beedow, ed., *Corruption Perceptions Index 2015* (Berlin: Transparency International), https://issuu.com/transparencyinternational/docs/2015_corruptionperceptionsindex_rep?e=2496456/33011041.

137 *Oil and Gas in Africa 2014*, (South Africa: KPMG Africa), [https://www.kpmg.com/Africa/en/IssuesAndInsights/Articles-Publications/General-Industries-Publications/Documents/Oil percent20and percent20Gas percent20in percent20Africa percent202014.pdf](https://www.kpmg.com/Africa/en/IssuesAndInsights/Articles-Publications/General-Industries-Publications/Documents/Oil%20and%20Gas%20in%20Africa%202014.pdf). The US Energy Information Administration (EIA), as well as OPEC, rounds the proven reserves to 0.7 billion barrels.

138 "Ghana Oil Target Likely Delayed Again: GNPC," Reuters, October 6, 2011, <http://www.reuters.com/article/ozabs-ghana-oil-delay-idAFJ0E7950CB20111006>; "Ghana Oil Reserves to Be 5 Billion Barrels in 5 Years," Bloomberg, December 1, 2010, <http://www.bloomberg.com/news/articles/2010-12-01/ghana-oil-reserves-to-be-5-billion-barrels-in-5-years-as-fields-develop>.

139 "FAQs," Ghana Gas, GNPC, 2016, <http://ghanagas.com.gh/faqs/commercial/>.

140 "Jubilee Field," Tullow Oil, <http://www.tullowoil.com/operations/west-africa/ghana/jubilee-field>.

141 "Sankofa Field on Track to Deliver First Oil by August 2017," B&FT Online, February 16, 2016, <http://thebftonline.com/business/energy/17375/sankofa-field-on-track-to-deliver-first-oil-by-august-2017.html>.

142 "Offshore Cape Three Points (OCTP) Integrated Oil and Gas Project, Ghana," Offshoretechnology.com, 2016, <http://www.offshore-technology.com/projects/offshore-cape-three-points-octp-integrated-oil-and-gas-project/>.

143 "Guide to Natural Gas in Ghana, Resource Centre for Energy Economics and Regulation," University of Ghana, http://www.beg.utexas.edu/energyecon/IDA/Smart_Development/Guide_to_Natural_Gas_in_Ghana.pdf, n.d., 52-56.

At the moment, the Tema Oil Refinery (TOR) to the east of Accra is the only operational refinery in Ghana, with a capacity of 45,000 bpd. Even with plans to expand its capacity to 60,000 bpd, however, the output at TOR will still not be enough to meet the country's needs. Furthermore, TOR, built in 1963, is frequently offline due to mechanical troubles. Plans were announced in 2016 to build a second refinery near TOR that can process a further 100,000 bpd, part of a larger strategy to make Ghana a regional leader in downstream oil industries.¹⁴⁴ Soon to be completed, however, is a second refinery as part of the Takoradi Port expansion west of Accra; it is expected to process approximately 65,000 bpd.¹⁴⁵

“Vessels known to be involved in oil theft . . . have called repeatedly at the facility, and unloaded oil from Nigeria.”

It is worth noting that Ghanaian ports, especially Tema and Takoradi, are now overburdened, but a \$1.5 billion investment in Tema by APM Terminals, a division of A. P. Moller-Maersk, is expected to expand the port's transshipment capabilities.¹⁴⁶ The addition, farther west, of the Atuabo Free Port, not a refinery complex but a deepwater port dedicated to the oil and gas industry, is another element in this larger energy strategy.¹⁴⁷ As its domestic capacity develops, Ghana will continue to rely on imports to meet domestic fuel needs.

Ghana has been importing more fuel each year for quite some time. Its expenditure hit \$3 billion in 2014 for 3.6 million metric tons of fuel products, but thanks to the decline in commodities prices, it

paid far less—\$1.9 billion, for more than 3.7 million metric tons—in 2015. Roughly 74 percent of the fuel is imported to meet the demands of fuel distribution centers, and the remaining 26 percent to satisfy government requirements according to the National Petroleum Authority (NPA).¹⁴⁸ Technical issues have plagued Tullow's facilities at Jubilee in 2016, dropping production there to as low as 33 percent of prior capacity.¹⁴⁹ Not surprisingly, therefore, this has led to an increase in imports.

Illicit Hydrocarbons Activity

Compared to other states, such as nearby Nigeria, the illicit hydrocarbons activity in Ghana is of a smaller scale, but it is nevertheless significant. More important than the scale, however, is the variety of illicit hydrocarbons activities found in Ghana.

Transshipments

The Saltpond Oil Field, discovered in 1970, producing since 1978, and located roughly seven miles offshore and sixty-five miles west of Accra, the capital city, is Ghana's oldest point of oil production. The field is owned and operated by Saltpond Offshore Production Company Limited (SOPCL), a joint venture between Houston, Texas, based Lushann International Energy Corp and GNPC. On August 22, 2014, the *Wall Street Journal* published an article “Tiny Ghana Oil Platform's Big Output Sparks Scrutiny.”¹⁵⁰ While the allegations were fiercely denied by Lushann,¹⁵¹ the article claims that the small-scale oil field, which produces only one hundred thousand barrels per annum, was exporting at least five times its actual output.

Vessels known to be involved in oil theft, detailed further below, have called repeatedly at the facility, and unloaded oil from Nigeria. That oil was then mixed with Saltpond oil and shipped out as legitimate Ghanaian output. While the *Wall Street Journal* identified refineries in Italy as the destination of at least 470,000 barrels of oil moved in this fashion, evidence suggests there were an array of refineries to which this laundered oil was sold, including Société

144 Anita Fatunji, “Ghana Plans to Construct Second Oil Refinery,” *Oil and Gas*, May 18, 2016, <http://www.ecofinagency.com/production/1805-34409-ghana-plans-to-construct-second-oil-refinery>.

145 “Multi-million Dollar State-of-the-Art Oil Refinery to Be Built at Takoradi Port,” Joy Online, May 8, 2014, <http://www.myjoyonline.com/business/2014/August-5th/multi-million-dollar-state-of-the-art-oil-refinery-to-be-built-at-takoradi-port.php>; “A New Wave of Projects in Ghana, Norton” Rose Fulbright, January 12, 2016, <http://www.insideafricalaw.com/publications/a-new-wave-of-projects-in-ghana>.

146 “Major Port Investment in Ghana Shows APM Terminals' Strong Commitment to Africa,” APM Terminals, June 12, 2015, <http://www.apmterminals.com/news/press-releases/2014/12/major-port-investment-in-Ghana>.

147 “Atuabo Free Port Project to Be Operational in 2017,” *Ghana Business News*, November 26, 2015, <https://www.ghanabusinessnews.com/2015/11/26/atuabo-free-port-project-to-be-operational-in-2017/>.

148 “Fuel Imports Drop to \$1.9bn,” My Joy Online, June 28, 2016, <http://www.myjoyonline.com/business/2016/June-8th/fuel-imports-drop-to-1-9bn.php>.

149 “Ghana: Tullow Slashes Oil Production from Jubilee Field by Over 50 percent,” *All Africa*, May 6, 2016, <http://allafrica.com/stories/201605061306.html>.

150 Benoît Faucon, “Tiny Ghana Oil Platform's Big Output Sparks Scrutiny,” *Wall Street Journal*, August 28, 2014, <http://www.wsj.com/articles/tiny-ghana-oil-platforms-big-output-sparks-scrutiny-1408669517>.

151 “Lushann Rubbishes Wall Street Journal's Saltpond Report,” *Ghana News Citi*, August 29, 2014, <http://citifmonline.com/2014/08/29/lushann-rubbishes-wall-street-journals-saltpond-report/>.

Anonyme Marocaine de l'Industrie du Raffinage's (SAMIR's) refinery in Mohammedia, Morocco. These dynamics have raised concerns from US and Nigerian officials, among others.¹⁵² Given the difficulty of tracing oil, however, the opacity of this laundering operation has made it difficult to fully examine the extent of illicit transshipment, so the quantity of stolen crude that has been moved through the Saltpond facility is difficult to determine.

The maritime evidence supports the notion of Saltpond serving as a transshipment facility for laundering oil. In March 2012, for example, the Ghana Navy received word from the owners of the *M/T Madina*, a Nigerian tanker, that the captain and crew of the vessel were apparently stealing the cargo instead of delivering it to a larger ship as planned. The Ghana Navy found and detained the *Madina* in the process of discharging the stolen cargo at Saltpond.¹⁵³

In another case, the *M/T Akshay* called at Saltpond three times in a four-month period with shipments from Nigeria. This seemingly routine transit was stopped, however, when the Nigerian Navy interdicted the vessel in November 2012 for carrying stolen oil. The captain and the co-owners of the vessel, all Indian nationals, were charged with conspiring to commit oil theft and were tried and sentenced in May 2014. One of the defendants, Mr. Ajay Bhatia, remains at large while the other two are serving the fifteen-year sentence that all three received.¹⁵⁴ According to the *Wall Street Journal*, other vessels partly owned by Mr. Bhatia were also known to have called at Saltpond.¹⁵⁵

In July 2013, further suspicions were raised when the Ghana Navy interdicted the *M/T Mustard* after it called at Saltpond. The cargo aboard the *Mustard* had been acquired in a ship-to-ship transfer from the *M/T Cotton*, which had been hijacked several days prior by pirates off the coast of Gabon.¹⁵⁶ SOPCL claimed to have declined the purchase of 3,500 metric tons of fuel from the *Mustard*, but the various Ghanaians involved in the illicit acquisition of the fuel from the

Cotton seemed to believe that Saltpond would be amenable given the course they sailed from Gabon.¹⁵⁷

Types of Hydrocarbons Theft

Piracy & Oil Tanker Hijacking

While no state in the Gulf of Guinea has a fully operational blue water navy, the Ghana Navy, and now the Ghana Marine Police as well, have shown both the will and the competence to minimize the amount of armed robbery at sea and piracy that occurs in its waters. Additionally, closer cooperation among Ghana and such nearby states as Côte d'Ivoire, Togo, and Benin, partly on account of the Yaoundé Code of Conduct,¹⁵⁸ has allowed for more agile and comprehensive enforcement and deterrence.¹⁵⁹ In some ways, however, Ghana has become a victim of its own success, as Ghanaian waters are now considered a more secure waiting area for ships calling at ports in nearby countries. The increased volume of ships, in turn, creates a greater challenge and a greater risk of attack.

In June 2014, a series of armed attacks took place on the Ghana-Togo maritime border.¹⁶⁰ One such attack involved the Greek oil tanker *M/T Fair Artemis*. The criminals transferred 3,500 metric tons of crude oil from the *M/T Fair Artemis* to a separate vessel, then sought to sell the illicitly obtained oil in Benin. There, they were arrested by Benin authorities.¹⁶¹ A similar attack occurred the following month (July 2014), when the *M/T Hai Soon 6* was hijacked by ten heavily armed individuals while engaged in refueling off Ghana's coast.¹⁶²

152 "Nigeria Puts Pressure on Ghana to Probe Oil Theft," *The Nation*, October 20, 2014, <http://thenationonlineng.net/nigeria-puts-pressure-on-ghana-to-probe-oil-theft/>.

153 "Crude Oil Theft - Ghana Navy Detains Nigerian Vessel," *P.M. News*, March 16, 2012, <http://www.pmnewsnigeria.com/2012/03/16/crude-oil-theft-ghana-navy-detains-nigerian-vessel/>.

154 "Three Indians Bag Fifteen Years Jail Term for Illegal Bunkering," *EFCC Nigeria*, May 14, 2014, <https://efccnigeria.org/efcc/index.php/news/864-three-indians-bag-15-years-jail-term-for-illegal-bunkering>.

155 Benoît Faucon, "Tiny Ghana Oil Platform's Big Output."

156 "Maritime Piracy on the Rise in West Africa," Combating Terrorism Center at West Point, April 28, 2014, <https://www.ctc.usma.edu/posts/maritime-piracy-on-the-rise-in-west-africa>.

157 "SOPCL Declines Purchase of Suspected Stolen Fuel," Ghana News Agency, August 2, 2013, <http://www.ghananewsagency.org/economics/sopcl-declines-purchase-of-suspected-stolen-fuel--62985>.

158 "Code of Conduct Concerning the Repression of Piracy, Armed Robbery Against Ships, and Illicit Maritime Activity in West and Central Africa," International Maritime Organization, http://www.imo.org/en/OurWork/Security/WestAfrica/Documents/code_of_conduct_percent20signed_percent20from_percent20ECOWAS_percent20site.pdf.

159 "IMB Piracy Figures Show Encouraging Trend," IHS Fairplay, January 27, 2016, <http://fairplay.ihs.com/safety-regulation/article/4261106/imb-piracy-figures-show-encouraging-trend>.

160 "Ghanaian Navy Re-assures Mariners of Their Safety while Operating in Ghanaian Waters," Ghana Armed Forces, June 20, 2014, http://www.gaf.mil.gh/index.php?option=com_content&view=article&id=1097:ghana-navy-re-assures-mariners-of-their-safety-while-operating-in-ghanaian-waters&catid=59:press-release&Itemid=92.

161 "Pirated Oil Tanker Safe and Sound at Takoradi Port, Ghana," *World Maritime News*, August 11, 2014, <http://worldmaritimeneews.com/archives/133558/pirated-oil-tanker-safe-and-sound-at-takoradi-port-ghana/>.

162 "Tanker Hijacked Off Ghana Coast," *Maritime Security Review*, July 28, 2014, <http://www.marsecreview.com/2014/07/tanker-hijacked-off-ghana-coast/>.



A ship loaded with refined fuel is anchored after it was seized from suspected pirates at a defense jetty in Lagos August 20, 2013. *Photo credit: Reuters/Akintunde Akinleye.*

Attacks on tankers carrying both crude and refined petroleum products have occurred at increasingly wide geographic ranges. In perhaps the most notorious case, the *M/T Kerala* disappeared after being hijacked off Luanda, Angola, in January 2014, and reappeared in Ghana three weeks later. At some point in that time, it engaged in a ship-to-ship transfer, unloading stolen oil to another vessel.¹⁶³

Again, however, the Ghana Navy has been relatively successful in limiting the threat of hijackings in Ghana's waters. A testament to the improved regional cooperation throughout the Gulf of Guinea, the February 2016 case of the *M/T Maximus* highlights the increased abilities of regional navies. The *Maximus* was hijacked by pirates off the coast of neighboring Côte d'Ivoire, but the navies of Ghana, Togo, Benin, and Nigeria, together with those of the United States and France, managed to track the vessel and eventually interdict it off of São Tomé and Príncipe, even after it

had unloaded part of its fuel via a ship-to-ship transfer. Ultimately the pirates were arrested (though one was shot and killed), the *Maximus* crew were freed, and the cargo was recovered when the Nigerian Navy performed an opposed boarding.¹⁶⁴ In June 2016, the Nigerian Navy arrested the owner of the *M/T Dejikon*, the ship used to hijack the *M/T Maximus*.¹⁶⁵ While the case did highlight some regional vulnerabilities, it serves as a model for how the states of the Gulf of Guinea can work together to mitigate armed robbery at sea and piracy.

Remaining On Board Fuel

Another maritime modality of theft in Ghana has been the illicit sale of "remaining on board" (ROB) fuel. In such operations, the crews of tanker and supply vessels, after unloading the official cargo, proceed to transfer the remaining fuel—often between 100 and

163 "Combating Piracy in the Gulf of Guinea," *Africa Security Brief*, 2015, <http://africacenter.org/wp-content/uploads/2016/06/ASB30EN-Combating-Piracy-in-the-Gulf-of-Guinea.pdf>.

164 "MT Maximus Hijacking," *Piracy Report*, 2016, http://piracyreport.co.za/MT_Maximus_Hijacking.html.

165 "Navy Arrests Owner of Ship Used to Hijack MT MAXIMUS," *Vanguard*, June 18, 2016, <http://www.vanguardngr.com/2016/06/navy-arrests-owner-ship-used-hijack-mt-maximus/>.

170 barrels—onto purpose-built canoes. That illegal fuel is then sold to filling stations in the Takoradi area, making it disappear into the legitimate market. Given the complete evasion of taxes involved, the business is lucrative, and it seems to have gained the support of some law enforcement personnel. Local police allegedly provide secure delivery of the illicit fuel to the filling stations in exchange for a share of the profit.¹⁶⁶

Regional Fallout

Though it is two states away, if Nigeria fails as a state and the Niger Delta Avengers continue to attack oil infrastructure, there could be a spillover effect on Ghana. The concern for Ghana, besides the regional instability and the catastrophic economic and security fallout from Nigeria's collapse, is the potential threat to oil infrastructure along the coast. The militants have already begun attacking farther and farther from their Bayelsa and Delta State strongholds. While there have been no attacks as of yet in Benin, Togo, or Ghana, the WAGP remains a vulnerable target, and these groups could potentially shut down the gas supply to Ghana. Such an eventuality would, in turn, force Ghana to scramble to meet its energy needs, potentially precipitating an uptick in criminal activity and the illicit trade in hydrocarbons.

Fuel Siphoning (Petty Crime)

Fuel siphoning is a rather frequent, although predominantly low-level, problem in Ghana. Most siphoning, even when systematic, constitutes small-scale theft of fuel from generators and storage tanks at industrial and commercial facilities. Telecommunications and utilities companies are frequent victims as their extensive infrastructure is rarely guarded.¹⁶⁷ Even when they are guarded by private security, however, the guards are occasionally involved, as was the case in a March 2016 incident at a Vodafone facility.¹⁶⁸ When tanker trucks are involved in serious traffic accidents, opportunism is at a premium and even police officers have been known to be involved in such ad hoc windfalls of looted fuel.¹⁶⁹

At a more systematic level, the state-owned Bulk Oil Storage and Transportation Company (BOST), with total storage capacity of 425,000 barrels around the country, has been a regular target for illicit operations.¹⁷⁰ In May 2011, for example, four employees at one depot tried to steal two tanker trucks carrying over 27,000 liters of industrial oils, but were arrested in the process.¹⁷¹ In 2013, the head of security for the depot, together with several colleagues, all working for the private security firm Jidem, were arrested in the process of siphoning 4,500 liters of fuel into nineteen barrels. While they intended to steal twenty-four barrels, they were thwarted by police after a vigilante refused a bribe and reported their activity. The siphoning scheme was said to be the work of a syndicate involving other BOST employees, allegedly including the regional BOST manager.¹⁷²

While nowhere near as significant an issue as in Nigeria, tapping and siphoning off of pipelines is also a problem in Ghana. According to BOST, between 2011 and 2013, nearly eight hundred thousand liters of fuel were tapped from the sixty-one kilometer (km) pipeline that runs north from Tema to Akosombo. The illegal taps showed a sophistication that suggested well-organized and technically skilled criminals. At first, state security forces were assigned to conduct constant patrols along the pipeline, but more recently plans have been set in motion to replace the existing pipes and fit the new pipeline with a Supervisory Control and Data Acquisition system, involving closed-circuit cameras and other means of theft detection, obviating the need for military patrols.¹⁷³ In a more detailed exposition of the new approach to pipeline security, in June 2015, BOST Managing Director Kingsley Awuah Darko indicated that extensive security measures, including motion sensors, alarms, and both fiber optic and rapid response surveillance would accompany the laying of the new Akosombo-Accra Plains pipeline. Existing pipelines would also be retrofitted with similar security measures.¹⁷⁴

[stories/201304250902.html](http://www.ghanaweb.com/ghanastories/201304250902.html).

166 "Illegal Oil Bunkering in Takoradi Port," *Ghana Oil Watch*, October 12, 2011, <http://ghanaoilwatch.org/index.php/ghana-oil-and-gas-news/646-illegal-oil-bunkering-in-takoradi-port>.

167 "Ghana - Fuel Siphoning Syndicate Busted At Ejisu," *All Africa*, February 20, 2014, <http://allafrica.com/stories/201402201502.html>.

168 "Gang of Three Go in for Fuel Theft," Ghana News Agency, March 23, 2016, <http://www.ghananewsagency.org/social/gang-of-three-go-in-for-fuel-theft-101898>.

169 "Police Command Takes Over Investigations on Siphoning of Petrol from Tanker by Cops," Graphic Online, April 28, 2013, <http://www.graphic.com.gh/news/general-news/police-command-takes-over-investigations-on-siphoning-of-petrol-from-tanker-by-cops.html>; "Ghana, Police Caught Scooping Fuel," *All Africa*, April 24, 2013, <http://allafrica.com/>

170 "Petroleum Tanker Drivers Worried at Oil Siphoning at Kumasi BOST," My Joy Online, January 24, 2014, <http://www.myjoyonline.com/business/2014/january-24th/petroleum-tanker-drivers-worried-at-oil-siphoning-at-kumasi-bost.php>; "Key Responsibilities," Bulk Oil Storage and Transportation Company, 2016, <http://www.bost.com.gh/key-responsibilities>.

171 "BOST Thieving Staffs Busted," *Ghana Web*, May 15, 2011, <http://mail.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=208554>.

172 "Kumasi - Oil Stealing Syndicate at BOST Busted," *Ghana Web*, October 27, 2013, <http://www.ghanaweb.com/GhanaHomePage/economy/artikel.php?ID=290028>.

173 "Akwamufie Nkosuohene Warns Saboteurs," *The Chronicle*, December 18, 2014, <http://thechronicle.com.gh/akwamufie-nkosuohene-warns-saboteurs/>.

174 "Tight Security for New BOST Pipelines - MD," Ghana News

Fuel Smuggling

While the dynamics seem to be changing, fuel smuggling in Ghana has long been a profitable form of illicit activity. Between 2005 and 2015, Ghana maintained a fuel subsidy of at least 50 percent, driving the price of fuel in Ghana well below that of its neighbors and creating the conditions for profitable smuggling. Furthermore, currency discrepancies have also played a role in ensuring the value of smuggling. While Ghana uses the Ghanaian cedi, all of its neighbors use the West African CFA franc. Since the West African CFA is the currency of an eight-country monetary union, the value difference between the currencies of Ghana and all three of its neighbors remains consistent in every direction, though the price of fuel may still vary somewhat.

Border areas such as Sampa in the Dormaa West District (near the Ivorian border) and Bolotanga, Sankase, Widana, and the Bawku District in the Upper East region (near the Togolese and Burkinabe borders) have unusually high numbers of fuel stations considering the relative sizes of their populations, suggesting that there is a fairly high level of interest in facilitating smuggling operations.¹⁷⁵ For years, fuel has been taken from those stations and illicitly sold for substantial profit across the border in neighboring states. In the Bawku District, for example, smuggling is alleged to be the largest source of income. Similarly, Bolatanga, an area comprised of fewer than 100,000 people, receives shipments of more fuel than the capital Accra, a city of 2.3 million.

The main drivers of systematic smuggling operations in Ghana are licensed distribution companies, which have long been facilitating the illicit movement of refined products. These fuel stations provide lower cost products to affiliated smugglers to sell across the border for profit. In January 2016, Interior Minister Mark Woyongo called attention to this dynamic, noting that a number of these stations are operating without the requisite licenses or authorization from either the National Petroleum Agency or the Environmental Protection Agency.¹⁷⁶ Energy Ministry officials also note the extensive connections between fuel distribution centers and the political class, suggesting that obtaining a license requires political ties. Local residents have even made allegations that many of the

border fuel stations are owned by syndicates headed by powerful politicians or their relatives and business connections.¹⁷⁷ Given that, in 2013, the chairman of the parliamentary Public Accounts Committee found that the high number of licenses being issued for fuel stations near the border violated regulations, and in response, the NPA shifted the blame to other agencies, the charge has considerable merit.¹⁷⁸

One of those other agencies is the Chamber of Oil Marketing Companies (OMC). The OMC retains the strategic responsibility for locating fuel stations. Despite a few attempts, no one has successfully challenged the OMC on this issue. While the figure is difficult to verify, officials have stated that fuel smuggling costs the government roughly 50 million Ghanaian cedis (\$12.6 million) in revenue each year.

In August 2016, a liter of petrol cost the equivalent of \$0.89 in Ghana and \$1.03 in Burkina Faso—a significantly smaller price gap than during the decade of subsidies. In black market terms, this means smaller margins, so smugglers are beginning to work to operate at scale to generate reasonable profits. This development may partly explain reports of smuggling on the border with Burkina Faso increasingly taking the form of tanker trucks rather than smaller modes of transport. Investigative reporters have indicated that while as many as twenty tanker trucks per week enter the town of Paga, near the border, 80 percent of their fuel ends up in Burkina Faso.¹⁷⁹

While most fuel smuggling operations in Ghana take the fuel out of the country into neighboring states, there have been some known smuggling operations into Ghana. Inexpensive or even stolen refined Nigerian fuel, for a while, was being transported in either jerry cans or blue barrels in smuggling flotillas along the West African coast.¹⁸⁰ While most of it went to Benin and Togo, some did make its way into the Ghanaian market. The April 2016 ban on jerry cans in Nigeria, combined with other mitigation efforts such as fuel marking described below, seems to have largely thwarted this operation.¹⁸¹

¹⁷⁷ Ibid.

¹⁷⁸ “Ghana’s NPA Aids Smuggling of Petrol—Official,” Energy Mix Report, August 22, 2013, <http://energymixreport.com/ghanas-npa-aids-smuggling-of-petrol-official/>.

¹⁷⁹ “Fuel Smuggling Syndicate Exposed,” Ghana Web, May 6, 2016, <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Fuel-smuggling-syndicate-exposed-436499>.

¹⁸⁰ Charlotte Bozonnet, “Trade in Smuggled Fuel from Nigeria Oils Economies of West Africa,” *The Guardian*, October 12, 2012, <https://www.theguardian.com/world/2012/oct/02/smuggle-fuel-west-africa>.

¹⁸¹ Yomi Kazeem, “Nigeria’s Ban on Jerry Cans for Fuel Will Leave Millions in the Dark,” *Quartz Africa*, April 27, 2016, <http://>

Agency, June 6, 2015, <http://ghananewsagency.org/economics/tight-security-for-new-bost-pipelines-md-90201>.

¹⁷⁵ “Fuel Smuggling Draining Ghana,” Ghana Web, January 13, 2016, <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Fuel-smuggling-draining-Ghana-407423>.

¹⁷⁶ “Interior Ministry Worried over the Influx of Fuel Stations Close to the Borders,” GBC Ghana, January 12, 2016, <http://www.gbcghana.com/comments-1.8554239>.

“For many years, diesel has been cut with government subsidized kerosene, and gasoline has been cut with premix fuel intended for fishermen and the poor.”

Legislative Fraud

In December 2015, amid considerable controversy, the Ghanaian parliament passed the Energy Sector Levies Act, imposing a steep tax hike on fuels that was intended to cover legacy debts accrued by major entities in the country’s energy sector, such as the Volta River Authority, the Electricity Company of Ghana, and the Ghana Grid Company. Retail prices for fuel rose 22 to 27 percent; the price of liquid petroleum gas (LPG) rose 18 percent. President John Dramani Mahama defended the controversial law, insisting that without such revenue enhancement Ghana’s entire energy sector might collapse.¹⁸²

It did not take long for questions to arise about how revenues from the new levy were being allocated, especially given the stress inflicted on both businesses and private citizens by the attendant price increases. Though economists and industry experts generally applauded the effort to clear outstanding debts, some pointed out that only a portion of the revenue generated by the levy was officially earmarked for debt relief, but there was little or no transparency about the fate of the remaining revenue.¹⁸³ Shortly after the bill’s passage, a ranking member of the Mining and Energy Committee publicly complained about the lack of transparency in the legislative process, and other groups, citing the historic lack of transparency regarding levies used to recover debt for the Tema Oil Refinery, openly questioned the integrity of the process and the fate of the revenue.¹⁸⁴

qz.com/671274/nigerias-ban-on-jerry-cans-for-fuel-will-leave-millions-in-the-dark/.

182 “Energy Sector Levy Was Tough but Necessary—Mahama,” Citi FM Online, February 26, 2016, <http://citifmonline.com/2016/02/26/energy-sector-levy-was-tough-but-necessary-mahama/>.

183 “Concerns Raised over the Energy Sector Levy,” *News Ghana*, July 15, 2016, <https://www.newsghana.com.gh/concerns-raised-over-the-energy-sector-levy/>.

184 “Fuel Price Hikes: ‘NPA Perpetrating Fraud on Ghanaians,’” Ghana Web, January 5, 2016, <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Fuel-price-hikes-NPA-perpetrating-fraud-on-Ghanaians-405478>; “Ghana Civil Society Groups Advocate Accountability of Energy Sector

Mitigation

Adulteration, which goes hand in hand with smuggling and siphoning in many places, is a problem in Ghana, as well. For many years, diesel has been cut with government subsidized kerosene, and gasoline has been cut with premix fuel intended for fishermen and the poor. As is always the case with adulteration, these long-standing practices have led to noticeable economic loss, mechanical issues, health and safety problems, as well as shortages of kerosene in rural Ghana.¹⁸⁵

In an attempt to reduce adulteration of petroleum products, Ghana has launched a Petroleum Product Marking Scheme (PPMS). The PPMS began with a short-term trial in February 2013.¹⁸⁶ The pilot program, overseen by the NPA, was deemed successful, and in early 2014 the NPA fully launched the PPMS under the legal authority granted by Legislative Instrument (LI) 2187.¹⁸⁷ Under the program, molecular markers are mixed into fuels coming into Ghana, enabling NPA field inspectors to screen retail fuel stations efficiently and immediately determine whether their fuel is, in fact, legal. All subsidized fuels are also marked. Part of the program’s logic is that high-octane petrol need not be marked, as the goal is to detect the presence of lower-grade fuels in more expensive ones.¹⁸⁸ Thanks to its legal authority, however, the PPMS is not just about detection, but also about penalizing offenders. The PPMS has had almost immediate effect on the domestic illicit activity in Ghana. Figures indicate that fuel adulteration in Ghana has dropped by 78 percent as a result of the PPMS.¹⁸⁹

The PPMS was rolled out alongside an extensive public awareness campaign about fuel adulteration. Oil majors also participated in the broader push against the activity. As a result, the percentage of

Levies” *All Africa*, February 18, 2016, <http://allafrica.com/stories/201602191583.html>.

185 “Instilling Sanity in the Petroleum Downstream Sector,” National Petroleum Authority, June 3, 2014, http://npa.gov.gh/npa_new/newsitem.php?id=114215.

186 “NPA Introduces Fuel Marking Scheme To Check Adulteration,” *Modern Ghana*, March 11, 2014.

187 “NPA Blocks Criminal Petroleum Adulterations Business,” *Ghana Herald*, March 14, 2014, <http://theheraldghana.com/npa-blocks-criminal-petroleum-adulterations-business/>.

188 “Fuel-Marking Programs - Helping Governments Raise Revenue, Combat Smuggling, and Improve the Environment,” *The Governance Brief 24*, Asian Development Bank, September 2015, <http://www.adb.org/sites/default/files/publication/174773/governance-brief-24-fuel-marking-programs.pdf>.

189 “Imani Africa Report - How to Prevent Fuel Fraud in Africa,” IMANI Center for Policy & Education, April 21, 2016, <http://www.imaniafrica.org/2016/04/21/imani-africa-report-prevent-fuel-fraud-africa/>.

gas stations found to be significantly diluting their fuel dropped from 34 percent to 7 percent within six months.¹⁹⁰ Recovered annual revenue with PPMS fully implemented is expected to be about €33 million, or in current terms about \$8.4 million.¹⁹¹ That said, the PPMS reduces illicit activity, such as adulteration, only within Ghana; it does not provide mitigation of smuggling across the border into neighboring states.

In addition to the PPMS, the NPA has introduced the Bulk Road Vehicle (BRV) Tracking System to monitor vehicles carrying hydrocarbon products. Among other features, the system tracks trucks in real time, identifies outlet locations, and calculates actual volumes of fuel discharged at those outlets. Since its introduction, truck-related illicit activity has become negligible.¹⁹²

190 “Fuel-Marking Programs,” Asian Development Bank.

191 “NPA Introduces Fuel Marking Scheme,” Modern Ghana; “Instilling Sanity,” National Petroleum Authority.

192 “Ghana’s Downstream Petroleum Sector - An Assessment of Key Supply Chain Challenges and Prospects for Growth,” *International Journal of Petroleum and Oil Exploration Research* 1:1, September 2014, <http://internationalscholarsjournals.org/download.php?id=157132351643418445.pdf&type=application/pdf&op=1>.

Conclusion

Ghana is poised to become a much more significant player in the global energy market as it begins successfully extracting its reserves. Given its position as a transshipment hub for the illicit hydrocarbons trade, this dynamic could increase its illegitimate involvement in the energy sector along with its legitimate market share. At the same time, low-level smuggling operations with high-level protection seem to be in the process of becoming more sophisticated. The fuel marking scheme has seemingly reduced the rate of adulteration in fuel, and the BRV tracking scheme has further curtailed opportunities for illicit activity. Ghana’s position on the coast of the Gulf of Guinea makes it susceptible to the maritime crime that has been plaguing the region for years, but recent successes provide some cause for hope. That said, despite efforts to increase patrols and make regional security more effective, theft of oil off ships remains a significant concern for hydrocarbons crime in Ghana.

MOROCCO



The Kingdom of Morocco, the sixth-largest economy in Africa, is located in the Maghreb region in the northwest corner of the continent. Thirty-two years after leaving the African Union (AU) over the yet-to-be-resolved controversy in the Western Sahara, Morocco announced in July 2016 that it now wishes to rejoin the AU, potentially indicating a new interest in collaborating with the rest of the continent.¹⁹³ One of the oldest monarchies in the world, Morocco has long enjoyed independence, though heavy European and Arab influences have helped shape its national culture. It was the first country to recognize the United States and maintains long-standing relations with many Western powers. In the last decade, its cooperation with Spain on immigration dramatically reduced illegal migration flows into Europe and established the Kingdom as a reliable security partner to both individual European states and the European Union at large.¹⁹⁴

Currently, Morocco is engaged in a major infrastructure development project in an effort to establish itself as the principal transshipment hub for trade moving into and out of the Mediterranean, as well as up and down the coasts of Europe and Africa. Casablanca is already the world's largest artificial port, and further investment will soon increase its capacity. Meanwhile, the port of Tangier is also being greatly enlarged and a new Mediterranean port, supported by the European Bank for Reconstruction and Development (EBRD), will be built in Nador West.¹⁹⁵ At the moment, 98 percent of Moroccan trade occurs by sea, and the capacity for such trade will increase dramatically as these port construction and enlargement projects come online.¹⁹⁶ This capacity, combined with the general stability and security of the state, makes Morocco an attractive trading partner and suggests that it will see continued economic growth and development in the years to come.

Ongoing tensions regarding Western Sahara, the disputed territory at Morocco's southern expanse, hamper Moroccan relations with neighboring states and Western powers alike. Tensions are particularly intense with neighboring Algeria, which backed the Polisario Front against Morocco in the Western Saharan War of 1975-1991 and continues to support the Sahrawi, the people of Western Sahara, in their pursuit of self-determination. Moroccan-Algerian relations were further damaged during the Algerian Civil War, in which the Algerian government accused Morocco of supporting rebels. In 1994, Morocco accused Algeria of a bombing in Marrakech in which two Spanish tourists were killed. In the fallout of the incident, the border between the two states was closed and remains so to this day.¹⁹⁷ Recent comments suggest that Morocco's interest in rejoining the African Union is not accompanied by an interest in reopening the border. Algeria, similarly, does not seem at all inclined to change the status quo.¹⁹⁸

The Hydrocarbons Context

Morocco's hydrocarbons production remains negligible, so it has relied heavily on imports. That may be due to change, however, on account of recent discoveries of significant quantities of both offshore and shale oil. The country's one refinery, SAMIR, in Mohammedia, which previously produced 220,000 bpd toward the country's 300,000 bpd requirements—making Morocco the fifth-largest consumer in Africa—was shut down in August 2015 due to unpaid taxes, forcing the state to greatly increase its oil imports.¹⁹⁹ This has bolstered an existing drive toward solar energy, but has also led to significantly increased trade burdens, particularly from neighboring Spain, which has seen a tenfold increase in Moroccan demand.

Production and Reserves

Moroccan oil production has been minimal since oil was discovered there in 1923. Between 1928 and 1958 a total of eight million barrels of oil were extracted. Between 1958 and 1981, drilling operations proceeded according to a hydrocarbon law that helped the newly

193 "Morocco Asks to Rejoin African Union after 32 Years," BBC, July 18, 2016, <http://www.bbc.com/news/world-africa-36822240>.

194 "Africa-Frontex Intelligence Community Joint Report - 2015," Frontex, January 28, 2016, http://frontex.europa.eu/assets/Publications/Risk_Analysis/AFIC/AFIC_report_2015.pdf.

195 "EBRD Invests in Moroccan Port of Nador," European Bank for Reconstruction and Development, October 29, 2015, <http://www.ebrd.com/news/2015/ebird-invests-in-moroccan-port-of-nador.html>.

196 "Morocco Pioneering Economic Growth" *Foreign Affairs*, November 2015, https://www.foreignaffairs.com/sites/default/files/fa_morocco_nov_dec_2015_engl_reprint-single.pdf.

197 "Sealed Borders and Closed Minds between Morocco and Algeria," *The New Arab*, May 8, 2015, <https://www.alaraby.co.uk/english/comment/2015/5/8/sealed-borders-and-closed-minds-between-morocco-and-algeria>.

198 Ibid.

199 "Moroccan Refiner Samir Appeals Court Decision on Liquidation," Reuters, March 27, 2016, <http://www.reuters.com/article/morocco-samir-idUSL5N16Z0EW>.

created Bureau de Recherches et d'Exploitations Minières (BRPM) attract international investment, and an additional nine million barrels were extracted in that period, along with thirty-five billion cubic feet (bcf) of gas. In 1981, the Moroccan government established the Office National de Recherches et d'Exploitation Pétrolières (ONAREP) to explore hydrocarbons reserves; a total of eighty-five wells were dug, fifty of which were pursued with international partners. The hydrocarbon law was amended in 1992 and 2000, further facilitating exploration, most notably offshore. In 2003, the Office National des Hydrocarbures et des Mines (ONHYM) was created as a merger of ONAREP and BRPM and now is the principal government oversight mechanism of the oil and gas industry. As of today, Moroccan oil is considered underexplored, particularly offshore, and its production levels account for less than 1 percent of its oil requirements. In 2013, for example, it produced 5,100 bpd.²⁰⁰

As Morocco is one of the top five energy consumers in Africa, oil and gas imports constitute roughly 20 percent of its total imports. According to one source, its total imports by volume in 2014—prior to the shutting down of the SAMIR refinery in 2015—were 122,900 bpd of crude oil, 143,000 bpd of refined products, and 150 million cubic meters/year of LPG.²⁰¹ Considerable effort is now being placed on renewable power development, with renewables currently providing about 35 percent of the country's power; Morocco hopes to satisfy 43 percent of its electricity needs with renewable power by 2020.²⁰² That said, oil and gas remain the mainstays of the Moroccan energy landscape.

As more exploration is needed, Morocco's oil reserves remain a subject of considerable speculation, but its proven reserves are around a billion barrels. Recent discoveries, however, suggest that its potential offshore reserves may be considerable, with as many as four billion barrels.²⁰³ Though estimates vary, Morocco may also have as many as fifty billion barrels of shale oil.²⁰⁴ A new legal framework for

shale exploration and extraction was passed in 2005, and the country's 2009 National Energy Strategy prioritizes securing foreign investment in that sector, so major international industry players have begun to take increasing interest.²⁰⁵

Refining

A decade ago, Morocco had two operating refineries. The Sidi Kacem refinery, however, which operated at a capacity of 25,600 bpd despite having a theoretical capacity of 50,000 bpd, was shut down in 2008 and then converted into a distribution point in 2011.²⁰⁶ The SAMIR refinery remains the one operational, albeit not operating, refinery in Morocco.

In 2014, the SAMIR refinery, typically referred to as simply SAMIR, posted record losses of roughly \$257 million, following the drop in the price of crude. On August 6, 2015, the Moroccan Tax Administration seized the assets of the refinery on account of unpaid taxes and halted production. Morocco has thus become entirely dependent on imported oil since that time.²⁰⁷ A court ruling in March 2016 put the refinery in liquidation, and the Casablanca Appeals Court confirmed that decision on June 1.²⁰⁸

Saudi billionaire Mohammed al-Amoudi's Corral Holdings has a 67.26 percent stake in SAMIR, which the Moroccan government says owes \$1.3 billion in taxes. SAMIR's total debt is estimated to be about \$4.55 billion.²⁰⁹ Corral had promised to inject \$680 million if the Appeals Court reverses the decision on liquidation.²¹⁰ According to the Confédération Démocratique du Travail, the trade union representing the company's twelve hundred workers, all employees have been receiving their salaries and benefits since the closure in August, but five thousand other sub-contractors may lose their jobs depending on the terms of a future buyout.²¹¹ Furthermore, other

200 "Exploration History," Office National des Hydrocarbures et des Mines, 2016, <http://www.onhym.com/en/conventional-petroleum/exploration-history2.html>.

201 *Morocco Labor Laws and Regulations Handbook, Volume 1: Strategic Information and Basic Laws* (Washington, DC: International Business Publications, 2015), 21.

202 "Morocco on Track for 2020 Renewable Goals," *Forbes*, January 31, 2016, <http://www.forbes.com/sites/christophercoats/2016/01/31/morocco-on-track-for-2020-renewable-goals/#a5ae003bcd50>.

203 "Oil Companies Step Up Drilling Efforts in Morocco," *Worldfolio*, 2014, <http://www.theworldfolio.com/news/oil-companies-step-up-drilling-efforts-in-morocco/3525/>.

204 "Shale Oil and the Middle East," Regional Center for Strategic Studies, Cairo, March 29, 2015, <http://www.rcssmideast.org/en/Article/213/Shale-oil-and-the-Middle-East-#.V7e3nJMrK1s>.

205 "Morocco 2014—Energy Policies Beyond IEA Countries," International Energy Agency, 2014, <http://www.rcssmideast.org/en/Article/213/Shale-oil-and-the-Middle-East-#.V7e3nJMrK1s>.

206 "July Capacity Rise for Morocco Refinery," *Argus Media*, February 2, 2012, <http://www.argusmedia.com/pages/NewsBody.aspx?id=784529&menu=yes>.

207 "Moroccan Tax Authority Seizes Assets of Oil Refinery Samir," Reuters, August 14, 2015, <http://af.reuters.com/article/investingNews/idAFKCN0QJOF20150814>.

208 "Morocco's Sole Refinery to Be Liquidated by Court Order," *Oilprice.com*, June 1, 2016, <http://oilprice.com/Latest-Energy-News/World-News/Morocco-Sole-Refinery-to-Be-Liquidated-by-Court-Order.html>.

209 *Ibid.*

210 Aziz El Yaakoubi, "Owner of Moroccan Refiner Samir Pledges to Inject \$680 Mln," Reuters, May 11, 2016, <http://www.reuters.com/article/morocco-samir-idUSL5N1883KZ>.

211 Aziz El Yaakoubi, "Court Confirms Liquidation of Morocco's Sole Refinery Samir—Lawyer," Reuters, June 1, 2016, <http://www.reuters.com/article/morocco-samir-idUSL8N18T1UM>.

creditors including SOCAR Trading—the trading arm of Azerbaijan’s state-owned oil company—are sustaining losses from the ongoing closure of the refinery. SOCAR reported a \$9 million loss in July 2016 relative to January through July of 2015.²¹² As of June, the court gave Amoudi another six months to find a buyer to rehabilitate the refinery, but so far, there do not seem to be signs of success.²¹³

Facts and Figures on SAMIR’s Refinery

Location: Casablanca, Morocco

Website: <http://www.samir.ma/>

Established: 1959

Capacity: 8.25 million tons/annum & 220,000 billion bpd

Products: 50 Parts per Million Diesel; Unleaded Gasoline; Jet A1; Fuel Oil; Propane; Butane; Base Oil; Bitumen (see figure 1 for breakdown).

According to its website:

SAMIR has storage facilities of nearly 280 tanks, with a total capacity of 2 million m³ of crude oil, intermediate and refined products distributed in three sites:

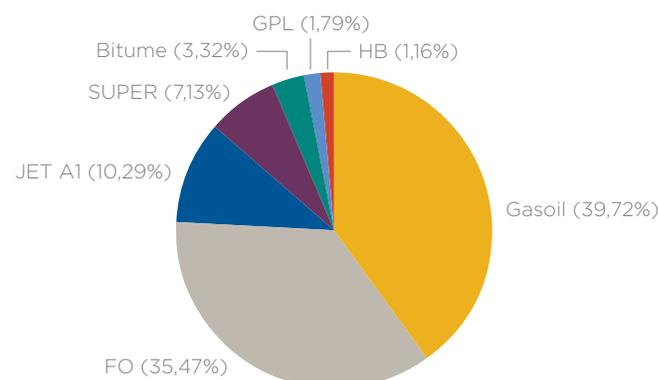
- Main site (refinery): 1.51 million m³
- Mohammedia terminal: 309,000 m³
- Sidi Kacem site: 180,000 m³

SAMIR storage facility is connected to a pipeline network between the petrol terminal, the truck loading installations bays, the ONE power station in Mohammedia and the distributors’ various storage depots. Storage tanks are equipped with metering systems and gauging systems that enable optimal management of different movements (internal and external to the refinery) of petroleum products.²¹⁴

Oil and Gas Imports

Morocco may be Africa’s fifth-largest consumer of oil, but it is extremely difficult to obtain clear data on the breakdown of products or their quantities. Despite its stability and reputation for good governance, Morocco is incredibly opaque with regard to its oil and gas sector, and even more so now that the SAMIR refinery has shut. Statistics provided by the Massachusetts Institute of Technology indicate that, in 2014, 8.1 percent of imports consisted of refined petroleum, 4.9 percent of LPG, and 6.5 percent of

Figure 1. Breakdown of Products Previously Produced at SAMIR



Source: www.samir.ma

crude petroleum; the Moroccan Office des Changes put 2015 hydrocarbons imports as 57.9 percent refined petroleum, 23 percent LPG, and 19.1 percent crude oil—numbers that, once more, precede the shutdown of SAMIR.²¹⁵

Focusing exclusively on the legitimate market, it is possible to garner some information from trading partners. On the gas side, according to *Trade Arabia*:

Morocco produces just 0.06 [billion cubic meters per annum (bcma)], and recent exploration efforts have been disappointing, yielding no significant discoveries from the 10 wells drilled since 2013. But the kingdom has been active in reforming its energy sector and in 2015 phased out all energy subsidies apart from those for LPG. In total, energy subsidies now account for 2 percent of GDP compared with 7 percent in 2012.

Morocco currently imports 0.6bcma of pipeline gas from Algeria to feed its power plants but the construction of a 2.4 [gigawatt] combined-cycle plant in Rabat will require imports of 3.5bcma of [liquefied natural gas (LNG)]. Moroccan utility ONEE has issued a tender for the construction of a regasification terminal as part of its LNG-to-power project. It has also issued tenders for the import of 2.7bcm in 2020 rising to 5bcma by 2023. Morocco’s reliance on renewables in the power sector makes its future LNG demand difficult to forecast and ONEE plans to purchase 20 percent of its requirements on the spot market.²¹⁶

212 “SOCAR Oil Production Drops 9 Percent in 7m; Gas Down 7.2,” *Azerbaijan News Network*, August 11, 2016, <http://ann.az/en/socar-oil-production-drops-9-in-7m-gas-down-72/#.V7fKqpMrK1s>.

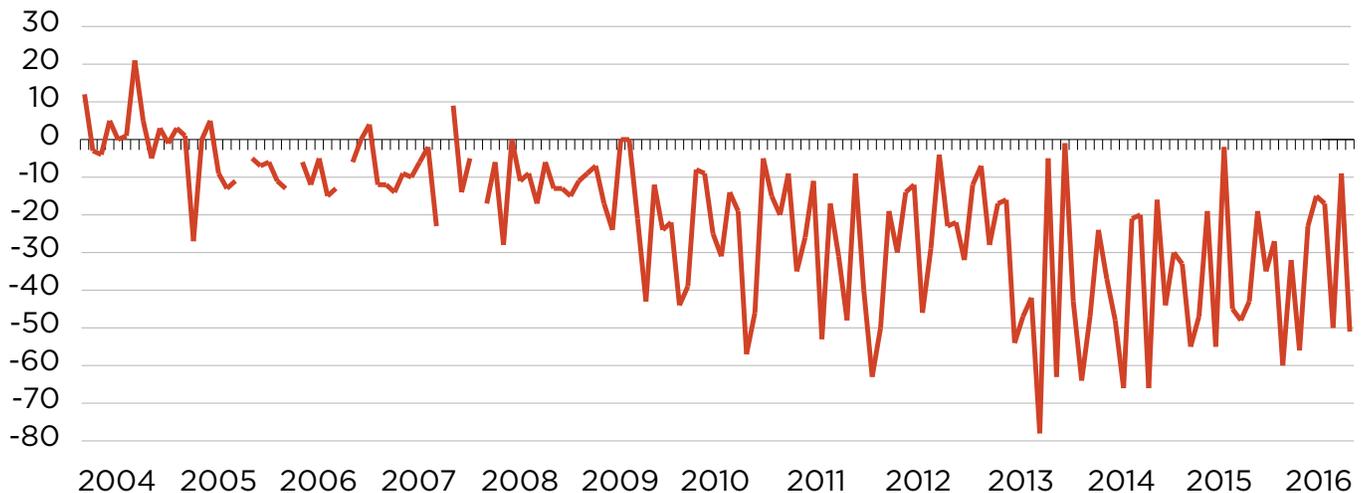
213 “Moroccan Court Gives Oil Refiner Samir More Time to Restart Production,” *Reuters Africa*, June 21, 2016, <http://af.reuters.com/article/investingNews/idAFKCN0Z71U2>.

214 “Storage,” SAMIR, http://www.samir.ma/en/index.php?option=com_content&view=article&id=101&Itemid=229.

215 “Morocco,” The Observatory of Economic Complexity, Massachusetts Institute of Technology, 2016, <http://atlas.media.mit.edu/en/profile/country/mar/>; “Office des Changes,” 2016, www.oc.gov.ma/portal.

216 “MENA: LNG’s Top Growth Market,” *Trade Arabia*, August 3,

Figure 2. US Net Imports from Morocco of Crude Oil and Petroleum Products, Monthly (Thousand Barrels per Day)



Source: US Energy Information Administration

In terms of oil, Morocco has greatly increased its import of refined products since the middle of 2015. As reported in July 2016: “Asesa [a Spanish refinery] is also benefiting from the closure of Morocco’s 220,000 b/d refinery at Mohammedia, forcing the country to import 44,000 [tons] of Tarragona’s bitumen, up tenfold on the same period in 2015.”²¹⁷

According to one commentator, Morocco purchases 48 percent of its oil and gas imports from Saudi Arabia,²¹⁸ but that figure runs in direct contrast to recent trade statistics. According to data from 2015, Morocco purchased \$1.1 billion of oil from Spain, \$1.1 billion from Russia, \$847.5 million from the United States, \$476.6 million from Saudi Arabia, \$235.1 million from Italy, \$225.6 million from Portugal, and \$199 million from the United Kingdom.²¹⁹

The US Energy Information Administration publishes useful data on its trading with other states. As figure 2 indicates, the United States has been exporting an increasing amount of oil products to Morocco over the last decade. The trajectory, however, seems unaffected by the closing of the SAMIR refinery in August 2015.

Illicit Hydrocarbons Activity

Morocco’s oil industry has long been opaque. Indeed, the nature of the illicit hydrocarbons activity in Morocco appears to further mitigate against transparency, even on seemingly simple data like import volumes. The illicit activity in Morocco falls into two main categories: illegal supply chain and smuggling.

Illegal Supply Chain

Informed sources allege that SAMIR is one of the refineries that was involved in the illegal supply chain of stolen crude emanating from Nigeria. Stolen crude would be laundered through Ghana’s Saltpond offshore oilfield and sold on to willing refineries—like SAMIR—to bring the illicit crude into the legitimate market. The Saltpond platform was, as of 2013, producing only 100,000 barrels annually, but at least 470,000 barrels were alleged to have been shipped from it in 2014, indicating that the platform has been used to legitimize stolen crude.²²⁰ This practice would have potentially allowed the purchase of discounted crude, which was then sold as refined products into the local market at full market price, thereby generating considerable profit margins for those involved in the operation. While this information comes from what are believed to be reliable sources, official confirmation and further details are not available at this time. Additionally, since SAMIR’s refinery has not been operating for a year, this dynamic is no longer part of the landscape in Morocco, though it does provide a possible explanation for ongoing opacity concerning hydrocarbons in the country.

2016, http://www.tradearabia.com/news/REAL_311459.html.

217 “Tarragona Crude Imports at Six Year High,” Argos Media, July 4, 2014, <https://www.argosmedia.com/pages/NewsBody.aspx?id=1268940&menu=yes>.

218 “Is Morocco Set to Become an African Energy Leader in Solar Energy?” The Market Mogul, July 7, 2016, <http://themarketmogul.com/is-morocco-set-to-become-an-african-leader-in-solar-energy/>.

219 “Top Morocco Imports,” World’s Richest Countries, 2016, <http://www.worldsrichestcountries.com/top-morocco-imports.html>.

220 Benoît Faucon, “Tiny Ghana Oil Platform’s Big Output.”

Table 2. Monthly Breakdown of US Crude Oil and Petroleum Product Exports to Morocco, Recent Months

	December 2015	January 2016	February 2016	March 2016	April 2016	May 2016
Total Crude Oil and Products	-38	-60	-32	-56	-23	-15
Products	-38	-60	-32	-56	-23	-15
Pentanes Plus						
Liquefied Petroleum Gasses		-29		-18	-13	
Unfinished Oils		0	0	0	0	0
Finished Motor Gasoline	0	0	0			
Conventional	0	0	0			
Motor Gasoline Blending Components						
Conventional						
Distillate Fuel Oil	-31	-9		-9	-3	
15 ppm and under Sulfur	-31			-9	-3	
Greater than 15 ppm to 500 ppm Sulfur						
Greater than 2000 ppm Sulfur						
Special Naphthas						
Residual Fuel Oil		-5	-8	-11		
Naphtha for Petrochem. Feedstock Use						
Waxes					0	
Petroleum Coke	-7	-18	-24	-17	-8	-15
Asphalt and Road Oil						
Lubricants	0		0	0		
Miscellaneous Products						

Source: US Energy Information Administration.

It is worth noting, as well, that in August 2015 the Moroccan news service Hespresse reported an anonymous high-ranking Moroccan official as stating that SAMIR was involved in smuggling one billion tons of illicit fuel per year out of the country while operating.²²¹ While that amount is unrealistic as it would constitute a fifth of the world’s oil production, the allegation itself bears consideration. According to the source no taxes were paid and even the money transferred in the illicit transactions was not paid in Moroccan currency, thereby denying the state of any benefit from the illicit operation. While this claim

cannot be independently verified, such operations would support the notion that the SAMIR refinery was an important part of an illegal supply chain of stolen hydrocarbons.

Smuggling

Overland smuggling along Moroccan borders, inspired by the price disparity created by Algeria’s fuel subsidies, is an ongoing issue. Despite the closed border between Algeria and Morocco, smuggling operations from Algeria into Morocco also skew the Moroccan energy picture. In 2013, it was estimated that 1.5 billion liters of petrol were smuggled out of Algeria, with the majority of it reaching Morocco.²²²

221 “Oil Company SAMIR Accused of Smuggling Oil Outside Morocco,” *Morocco World News*, August 28, 2015, <http://www.morocoworldnews.com/2015/08/166679/oil-company-samir-accused-of-smuggling-oil-outside-morocco/>.

222 “Algeria Loses 1.5 Billion Litres of Fuel a Year to Smuggling—Minister,” *The Africa Report*, July 22, 2013, <http://www.>

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Table 3. Annual Breakdown of US Crude Oil and Petroleum Product Exports to Morocco, Recent Years

	2010	2011	2012	2013	2014	2015
Total Crude Oil and Products	-26	-30	-24	-33	-40	-35
Products	-26	-30	-24	-33	-40	-35
Pentanes Plus						0
Liquefied Petroleum Gasses			-2	-2	-10	-8
Unfinished Oils						0
Finished Motor Gasoline						0
Conventional						0
Motor Gasoline Blending Components	0					
Conventional	0					
Distillate Fuel Oil	-2	-6	-1	-11	-5	-10
15 ppm and under Sulfur	-2	-6	-1	-11	-3	-10
Greater than 15 ppm to 500 ppm Sulfur		-1			-1	
Greater than 2000 ppm Sulfur						
Special Naphthas	0					
Residual Fuel Oil	-8	-8	-10	-9	-10	-2
Naphtha for Petrochem. Feedstock Use		1				
Waxes	0	0	0	0	0	
Petroleum Coke	-16	-18	-11	-12	-16	-14
Asphalt and Road Oil						0
Lubricants	0	0	0	0	0	0
Miscellaneous Products				0	0	

Source: US Energy Information Administration.

According to one well-placed source, in 2013 cross-border fuel smuggling reached a volume of three hundred thousand metric tons, and Morocco's customs administration estimates annual losses at 25 percent of its total revenues. The country's 2015 consumption tax revenue on energy commodities amounted to 15.3 billion dirhams (\$1.58 billion) and its value-added tax, or VAT, revenue to 7.9 billion dirhams (\$817 million); expected consumption tax revenues for 2016 are at 14.9 billion dirhams (\$1.53 billion).

Algeria has experienced fuel shortages due to the amount making its way to Morocco in pursuit of the higher-priced market. That loss effectively serves as

a windfall to the Moroccan economy. According to one Algerian official, some six hundred thousand cars in Morocco and Tunisia run on Algerian fuel. In 2013, frustrated by the situation, the Algerian president announced efforts to end the illicit trade across the closed border. But in January 2016, the minister of energy in Algeria claimed that the smuggling has continued apace, reiterating the 1.5 billion liters per year statistic and indicating losses of \$2 billion.²²³

A 2015 report by the United States Institute of Peace impressively details the smuggling industry along the Morocco-Algeria border. Because of infrastructure, population density, and relative ease of travel, fuel

theafricareport.com/Reuters-Feed/Algeria-loses-1.5-billion-litres-of-fuel-a-year-to-smuggling-minister.html.

²²³ "Algeria Loses \$2bn a Year to Fuel Smuggling," *Middle East Monitor*, January 7, 2016, <https://www.middleeastmonitor.com/20160107-algeria-loses-2bn-a-year-to-fuel-smuggling/>.

smuggling is most concentrated in the Algerian province of Tlemcen and the Moroccan province of Berkane and prefecture of Oujda-Angad, whence contraband can be quickly transported to major Moroccan cities for distribution. Petrol is sourced from Algerian fueling stations in regional cities and towns, and then taken to storage depots not far from the border. At night, the fuel is transferred to jerry cans for transport across the border via cars, trucks, motorcycles, or—an increasingly popular method—donkeys and mules, one of the latter being able to carry up to thirty full jerry cans. The animals also offer the advantages of being able to travel across any terrain, even unaccompanied, and being far more discreet than motor vehicles. Once across the border, the illicit fuel is sold along the roads or transported to urban markets. It is also suggested that border officials are often bribed—so much so that in 2013, as part of its border crackdown, the Algerian government replaced large numbers of border personnel. Profits funnel upward to the heads of smuggling rings, and are reportedly laundered through the real estate market—a practice that explains the building boom in border areas and has allegedly led to syndicate leaders accruing significant political influence.²²⁴

This illicit industry may mean that smuggled Algerian fuel will continue to skew the figures for Moroccan energy consumption and limit the amount it actually needs to import—a net gain for the Moroccan government under the current circumstances—despite the loss in tax revenues. Such a dynamic might also further explain why the Moroccan energy sector remains so difficult to understand.

Mitigation

Recent changes in circumstances, especially border crackdowns, have altered the criminal landscape, but to what extent remains unclear. Any involvement the SAMIR refinery had, either in refining stolen Nigerian crude laundered through Ghana or in smuggling fuel

out of the country, has been stopped, at least as long as the facility remains shut down. Its potential reopening, however, also reopens the possibility for participation in illegal supply chains. Even the presence of a shipment of crude, waiting just off Morocco's coast for nearly a year, however, was not sufficient impetus for the government to allow the refinery to reopen without first resolving some of its debts.²²⁵

Over the past two years, Morocco and Algeria have taken concrete steps to curb cross-border fuel smuggling. In 2015, Morocco erected a 100 km fence at a high-traffic area along its border with Algeria. Not to be outdone, Algeria proceeded to dig a 700 km trench along the border, and in August 2016 began construction of a 3.5 meter (m) high fence blocking a key smuggling route to and from the Moroccan cities of Ahfir and Beni Drar. The stated aim of the new fence is to mitigate the smuggling of fuel from Algeria into Morocco and drugs from Morocco into Algeria.²²⁶ It remains to be seen how effective these measures are, given that, as one Moroccan security official remarked, closed borders “are only closed for legal things.”²²⁷

Conclusion

It is difficult to get authoritative insights into Moroccan energy dynamics. The lack of clarity may have made it difficult for the state to take decisive action. The participation in oil laundering and a broader illegal supply chain is a black mark on the embattled SAMIR refinery, but the smuggling operations across the Algerian border may be continuing to offset the state's needs to import fuel. If Morocco begins extracting meaningful amounts of oil and if the SAMIR refinery comes back online, there would be significant impacts worthy of review.

²²⁴ Querine Hanlon and Matthew M. Herbert, *Border Security Challenges in the Grand Maghreb*, Peaceworks Series (Washington, DC: United States Institute of Peace, 2015), 10-12.

²²⁵ “Moroccan Refiner SAMIR Fails to Reach Oil Cargo Deal, Restart in Doubt,” Reuters, June 28, 2016, <http://www.reuters.com/article/morocco-refinery-samir-idUSL8N19K5F4>.

²²⁶ “Algeria Erects a Fence Along Border with Morocco,” Morocco World News, August 19, 2016, <http://www.morocroworldnews.com/2016/08/194702/algeria-erects-fence-along-border-morocco/>.

²²⁷ Hanlon and Herbert, 7.

UGANDA



The Hydrocarbons Context

Uganda is a new arrival among hydrocarbons producers. In 2006, extensive oil reserves were discovered, which have since proved to amount to at least 3.5 billion barrels, though the Ugandan government's own estimates have placed reserves at 6.5 billion barrels.²²⁸ Over half these reserves are considered recoverable with existing technology, and only 30 percent of the country has been prospected. It is anticipated that Uganda will be able to export some 140,000 bpd out of a total production of 200,000 bpd.²²⁹ The chief logistical difficulty is that Uganda is a landlocked state, and oil must be transported 1,300 km to reach the coast.²³⁰

Infrastructure therefore remains an issue, but the Ugandan government and outside investors have begun, however slowly, to build toward production, which is expected to begin in 2017. Three major firms—the UK's Tullow, France's Total, and China National Offshore Oil Corporation—have undertaken the bulk of development; in the most recent round of bidding, three Nigerian companies and one Australian firm were also granted licenses.²³¹ In a significant sign of progress toward realizing oil revenue, on August 30, 2016, Uganda issued eight twenty-five-year production licenses, five to Tullow and three to Total.²³² Another notable project is the country's one planned refinery, intended to process up to 60,000 bpd; the approximately \$4 billion construction contract first went to the Russian firm RT Global Resources, but in summer 2016, that deal fell apart, leaving the project in the hands of the second-ranked bidder, SK Engineering and Construction of South Korea.²³³

Transporting the oil to the coast has taken the form of a pipeline to the Tanzanian port of Tanga. The Ugandan government had at first indicated Kenya's Lamu as the port of choice, but in 2015, for reasons including port infrastructure, security, and relative costs in both time and money, Tanga was chosen instead. Exporting is slated to begin in 2020.²³⁴

History of Illicit Hydrocarbons Activity

Uganda has a mixed history with illicit hydrocarbons activity. According to industry and government sources, in the early 1990s, cross-border smuggling flourished as Ugandan taxes on fuel created a significant disparity between fuel costs per liter in neighboring states.

While relatively localized issues may abound, they must also be viewed in the context of larger corruption. According to Transparency International, Uganda ranks as one of the most corrupt states in Africa, and in its 2015-2016 survey the NGO found that some 69 percent of Ugandans believe that corruption has only worsened in recent years.²³⁵ In 2013, then United States Ambassador to Uganda Scott DeLisi said in a speech in Kampala that corruption had made American firms reluctant to do business in Uganda.²³⁶ Further, the government's oil dealings remain largely opaque: as one Ugandan report has pointed out, specifics about the allocation of revenues from oil development have grown thin since it was revealed that the funds had been used to purchase fighter jets.²³⁷ The jets, purchased from Russia, were paid for partly with tax revenues from Tullow.²³⁸ Also, despite repeated announcements of its commitment to do so, Uganda has yet to sign on to the Extractive Industries Transparency Initiative. Yet, Uganda has also taken

228 "Uganda," United States Energy Information Administration, <http://www.eia.gov/beta/international/analysis.cfm?iso=UGA>.

229 Silvia Antonioli, "Bulk of Uganda Commercial Oil Production to Start in 2017—Minister," Reuters, May 9, 2014, <http://www.reuters.com/article/uganda-oil-idUSL6N0NV4AW20140509>.

230 "Oil and Gas in Africa: Africa's Reserves, Potential and Prospects," KPMG, [https://www.kpmg.com/Africa/en/IssuesAndInsights/Articles-Publications/Documents/Oil percent20and percent20Gas percent20in percent20Africa.pdf](https://www.kpmg.com/Africa/en/IssuesAndInsights/Articles-Publications/Documents/Oil%20and%20Gas%20in%20Africa.pdf), 7.

231 "Three Nigerian Companies, One Australian Selected as Competent for Uganda Oil Exploration Licensing Round," *Uganda Oil*, August 1, 2016, <http://ugandaoil.co/2016/08/three-nigerian-companies-one-australian-selected-as-competent-for-uganda-oil-exploration-licensing-round/>.

232 Elias Biryabarema, "Uganda Gives Tullow Oil, Total Production Licenses," Reuters, August 30, 2016, <http://www.reuters.com/article/us-uganda-oil-idUSKCN115104>.

233 Fred Ojambo, "Uganda Offers \$4 Billion Refinery Project to Korea-Led Group," *Downstream Today*, July 1, 2016, http://www.downstreamtoday.com/news/article.aspx?a_id=52652.

234 Adjoa Anyimadu, "Tanzania Pipeline Deal Reflects Uganda's Practical and Strategic Concerns," Chatham House, May 4, 2016, <https://www.chathamhouse.org/expert/comment/tanzania-pipeline-deal-reflects-uganda-s-practical-and-strategic-concerns>.

235 "2015 Transparency International Africa Report," Transparency International, 11.

236 "Fears of High Levels of Corruption Holding Back US Investment in Uganda," *The East African*, <http://www.theeastafrican.co.ke/business/Fears-of-high-levels-of-corruption-holding-back-US-investment/2560-1709272-view-printVersion-avwwwnwz/index.html>.

237 Isaac Imaka and Frederic Musisi, "Following the Oil Money: How Much Has It Done?" *Daily Monitor*, December 3, 2013.

238 Nicholas Bariyo, "Uganda Buys Fighter Jets," *Wall Street Journal*, April 7, 2011, <http://www.wsj.com/articles/SB10001424052748704013604576248094099823846>.

significant steps to combat fuel smuggling as well as adulteration, with mixed results.

The Opec Boys

The so-called Opec Boys present a revealing case in how a hydrocarbons criminal network can become a fixture in a regional community. Since the 1980s, this network of low-level street criminals and former rebels has operated a thriving cross-border smuggling operation, at varying scales. A 2007 report by Els Lecoutere and Kristof Titeca details the Opec Boys' origins and entrenchment around the city of Arua, near the border with the Democratic Republic of the Congo (DRC). In the mid-1980s, when a good portion of the formerly displaced West Nile population returned to the region around Arua from Sudan and the DRC, young men—many of them former rebels—developed a cross-border smuggling business exploiting the marked difference in fuel prices between DRC and Uganda. Since fuel supplies in the area were otherwise inconsistent, the Opec Boys quickly entrenched themselves as reliable suppliers, selling fuel from jerry cans in plain sight. Given that the network was providing a public service and that its members were capable of creating violent unrest, local authorities chose to work with rather than against it. Eventually, the Opec boys became not only preferred fuel providers but also a kind of informal supplier of social services, even serving as a trusted alternative to police in resolving disputes. This popular sentiment arose partly from locals' resentment of the government of longtime Ugandan President Yoweri Museveni.²³⁹

In 2005, a liter of petrol cost 1,000 shillings in DRC and 2,100 shillings in Uganda; a liter of diesel, 800 shillings²⁴⁰ in DRC and 1,790 shillings²⁴¹ in Uganda. Exploiting that differential, the Opec Boys could count on net profits per two-hundred-liter drum from 98,500 shillings²⁴² to 138,500 shillings²⁴³ for petrol and 65,000 shillings²⁴⁴ to 125,000 shillings²⁴⁵ for diesel. Unlike in some other stretches of the border, where smugglers could be shot on sight, in the West Nile area Ugandan patrols were instructed that if they could not intercept the smugglers at the border, they were not

“Eventually, the Opec boys became not only preferred fuel providers but also a kind of informal supplier of social services. . .”

to interfere in their business within Uganda.²⁴⁶ In the ensuing years, though, a number of trends converged to make the Opec Boys' position more precarious. In 2006, they attempted to legitimize their business and form a credit bureau, even applying for government assistance.²⁴⁷ In 2011, rising fuel taxes in DRC shrank the network's profits to the point that the Opec Boys nearly went out of business.²⁴⁸ Shortly thereafter, Ms. Allen Kagina, the commissioner general of the Uganda Revenue Authority (URA), stiffened measures against fuel smuggling as well, clamping down to some effect on the estimated three hundred smuggling routes in West Nile.²⁴⁹ But in 2014, the Opec Boys were gouging consumers during a fuel shortage in Gulu District, selling petrol at nearly three times the market price.²⁵⁰

Other Border Smuggling

DRC is not the only source of fuel smuggled into Uganda. A 2009 report cited the Uganda Petroleum Dealers Association as stating that no less than 25 percent of the petroleum fuel in Uganda was smuggled in from Kenya.²⁵¹ The fuel is only part of an extensive informal trade system woven into the social fabric on

239 Els Lecoutere and Kristof Titeca, “The Opec Boys and the Political Economy of Smuggling in Northern Uganda,” *Research Gate*, January 2007, https://www.researchgate.net/publication/5098503_The_Opec_Boys_and_the_political_economy_of_smuggling_in_northern_Uganda, 2-9.

240 \$0.24

241 \$0.53

242 \$29.19

243 \$41.04

244 \$19.26

245 \$37.04

246 “Uganda: Smuggling Fuel,” *New Vision*, August 21, 2005, <http://allafrica.com/stories/200508220464.html>.

247 David Rupiny, “Notorious Arua Fuel Smugglers Come Clean, Form Credit Society,” Uganda Radio Network, October 20, 2006, <http://ugandaradionetwork.com/story/notorious-arua-fuel-smugglers-come-clean-form-credit-society#ixzz4H3juULlh>.

248 Ronald Batre, “Rising Fuel Prices in Congo Push ‘Opec’ Boys Out of Business,” Uganda Radio Network, June 23, 2011, <http://ugandaradionetwork.com/story/rising-fuel-prices-in-congo-push-opec-boys-out-of-business>.

249 Felix Warom Okello and Clement Aluma, “Why Smuggling Thrives in West Nile,” *Daily Monitor*, July 8, 2013, <http://www.monitor.co.ug/News/National/Why-smuggling-thrives-in-West-Nile/688334-1908226-doghbrz/index.html>.

250 Julius Ocungi, “Fuel Shortage Hits Gulu District,” *Daily Monitor*, February 18, 2014, <http://www.monitor.co.ug/News/National/Fuel-shortage-hits-Gulu-District/-/688334/2210368/-/vf442x/-/index.html>.

251 Lesser, C. and E. Moisé-Leeman, *Informal Cross-Border Trade and Trade Facilitation Reform in Sub-Saharan Africa*, OECD Trade Policy Papers, No. 86, OECD Publishing, 2009, <http://dx.doi.org/10.1787/225770164564>.

both sides of the border; even children take part in the smuggling.²⁵²

While considerable smuggling also takes place along the Uganda-South Sudan border, fuel does not appear to be nearly as important a commodity in that market as in West Nile or on the Kenyan border.

Siphoning and Adulteration

Siphoning and adulteration are also chronic problems in Uganda, and they often go together, arising partly from the simple desire to maximize profits and partly from the country's intensely competitive downstream industry, which in 2014 involved an estimated 134 players.²⁵³ In most cases, fuel coming into Uganda from Kenya is siphoned on entry. The remaining fuel is then topped off with water or kerosene and enters the domestic market. In late 2009, it was estimated that 29 percent of all fuel introduced to the Ugandan market was adulterated.²⁵⁴ Fuel marking, introduced that year, has since helped reduce that figure: in November 2015, Peter Kitimbo, the supervisor of the Uganda National Bureau of Standards (UNBS), stated that the percentage of adulterated fuel on the market had dropped by half since 2012, from 10 percent to 5 percent.²⁵⁵

Those figures are all the more striking given reports of widespread adulteration in 2013 after legislators, citing the cost of living in outlying regions, eliminated a tax on kerosene.²⁵⁶ In October 2013, Ben Mayindo, the executive director of UNBS, summarized the difficulty of mitigating adulteration in those circumstances: "You may have a good product from Mombasa or Kisumu and also at your depot but anything can happen between here [the depot] and the fuel station."²⁵⁷ After stiff opposition from Museveni, however, the kerosene tax was restored in 2014, which might explain the UNBS numbers.

Mitigation

Legislative efforts at mitigation in Uganda, like those involving development, have been mixed, largely because of political infighting, much of it between parliament and ministers. The Museveni government has largely resisted efforts at transparency. To take one example, parliamentarians attempted to add to the 2012 Petroleum Exploration, Development, and Production Bill an amendment allowing parliament to examine new oil contracts before they were inked and vet appointments to a new regulatory agency; when the attempt was stymied, one energy analyst likened the eventual bill to "handing an ATM machine" to the Museveni government.²⁵⁸

However, such obstructionism at the top has not prevented the government from taking measures elsewhere. With as much as a quarter of the hydrocarbons market in Uganda being smuggled into the country, and an additional 29 percent of the legitimate fuel being adulterated, the Ugandan government, recognizing its own losses on account of the extensive illicit activity, began in 2009 to take affirmative steps to curb oil theft and smuggling. The Ministry of Energy and Mineral Development (MEMD) drew on the legal authority granted to it under sections 6 and 44 of the Petroleum Supply Act of 2003 and promulgated the Petroleum (Marking and Control) Regulations, 2009.²⁵⁹ The regulations, which were amended in 2012, require that all petroleum products to be sold in Uganda be marked with a marker approved by the ministry. Marking fuel actually began in Uganda as early as 1999, but the 2009 regulations provided for systematic monitoring and far more extensive oversight of the domestic hydrocarbons market.

To effectively administer the regulatory mandate from 2009, an interagency process was first needed to ensure that the relevant government ministries were working together toward the shared aim of reducing oil theft and smuggling. In November 2011, the MEMD and the UNBS—in collaboration with Oil Marketing Companies—signed a memorandum of understanding to enact and oversee the Fuel Marking and Quality Monitoring Program. The program requires the marking and subsequent monitoring of all petroleum products entering the country to prevent adulteration, contamination, and smuggling. It also aids in the

252 "Smuggling Thrives at the Kenya-Uganda Border," *New Vision*, June 29, 2012, http://www.newvision.co.ug/new_vision/news/1303139/smuggling-thrives-kenya-uganda-border.

253 "Value for Money Audit Report on Implementation of the Fuel Marking Programme (FMP) by the Ministry of Energy and Mineral Development," Office of the Auditor General, <http://www.oag.go.ug/wp-content/uploads/2016/07/Fuel-Marking.pdf>.

254 Lesser and Moisé-Leeman, *Informal Cross-Border Trade*.

255 Justus Lyatuu, "Fake Fuel Dealers Warned," *The Observer*, November 20, 2015, <http://www.observer.ug/business/38-business/41135-fake-fuel-dealers-warned>.

256 Isaac Khisa, "Kerosene Tax Waiver Fuelling Adulteration," *The East African*, October 26, 2013, <http://www.theeastafrican.co.ke/business/Kerosene-tax-waiver-fuelling-adulteration/2560-2047920-dyv14xz/index.html>.

257 Edgar Angumiya, "Adulterated Fuel Causes Concern," *The Observer*, October 22, 2013, <http://www.observer.ug/business/38-business/28156-adulterated-fuel-causes-concern>.

258 Elias Biryabarema, "Ugandan Lawmakers Pass Oil Bill, Worry about Corruption," Reuters, December 7, 2012, <http://www.reuters.com/article/uganda-oil-idUSL5E8N7AJH20121207>.

259 Government of Uganda, "Statutory Instruments Supplement No. 28," Entebbe: OPPC, 2009, [http://energyandminerals.go.ug/downloads/The%20Petroleum\(Marking%20&%20Quality%20Control\)Regulations,09.pdf](http://energyandminerals.go.ug/downloads/The%20Petroleum(Marking%20&%20Quality%20Control)Regulations,09.pdf).

oversight of petroleum retail facilities, providing the government with a means of monitoring national standards compliance.²⁶⁰

The following year, in November 2012, a company was contracted to supply molecular marking technology, while MEMD and UNBS oversee its use. Fuel is marked by UNBS at the customs entry points of Malaba (Tororo District, Eastern Region), Busia (Eastern Region), and Mutukula (Rakai District, Central Region). Fuel samples are taken from trucks and tested at mobile testing facilities.²⁶¹ The testing process is monitored with live video feed, and the chemical analysis takes roughly five minutes to indicate the presence, absence, or diluted state of the fuel marker. In other words, not only can the test show whether the fuel is marked legitimate or not, it can also indicate whether it has been adulterated.

Tracking Shipments

In 2013, the Uganda Revenue Authority also began tracking shipments coming into the country from Mombasa using electronic tracking equipment. TradeMark East Africa, a not-for-profit whose mission is to support trade aspects in the East African Community (of which Uganda is a member), worked with the URA to establish an Electronic Cargo Tracking System (ECTS).²⁶² Through a multi-million dollar program run by ECTS in conjunction with a contractor, tracking devices are affixed to goods-laden vehicles and information regarding the voyage and certain tampering with the cargo is recorded.²⁶³ The program tracks tanker trucks partly through four mobile labs, all equipped with GPS tracking units.²⁶⁴ The tracker, however, does not provide evidence of fuel adulteration at the molecular level, as the marking does, but tampering with the tracker indicates illicit smuggling and other illegal practices. As detailed below, this aspect of mitigating illicit hydrocarbons activity recently led to one of the most important law enforcement operations concerning fuel smuggling to date.

260 Office of the Auditor General, "Report of the Auditor General on the Financial Statements of Fuel Marking and Quality Monitoring Program (FMQMP) for the Year Ended 30th June 2015," Kampala: Office of the Auditor General, 2015, <http://www.oag.go.ug/wp-content/uploads/2016/03/FUEL-MARKING-QUALITY-MONITORING-REPORT-OF-THE-AUDITOR-GENERAL-2015.pdf>.

261 "Fuel Marking and Quality Monitoring Program," Uganda National Bureau of Standards, August 23, 2012, <http://www.unbs.go.ug/index.php/fuel-marking-and-quality-monitoring-program>.

262 "Uganda Electronic Cargo Tracking System," Trademark East Africa, <https://www.trademarkea.com/projects/uganda-electronic-cargo-tracking-system/>.

263 "URA Launches an Electronic Cargo Tracking System," *BSmart Solutions*, http://www.bsmart-solutions.com/news/cargo_final.pdf.

264 Khisa, , "Kerosene Tax Waiver Fuelling Adulteration."

Significant Improvement

With the increase of fuel taxes in DRC helping to equalize fuel prices between the neighboring states, the use and monitoring of fuel markers, and a variety of governance initiatives aimed at countering corrupt practices, illicit hydrocarbons activity in Uganda has fallen considerably since 2009. High-level official and industry sources have indicated that at most 1 million of the 150 million liters of fuel consumed in Uganda each month is smuggled. The UNBS 2015 estimate that 5 percent of the fuel products on the market were adulterated has further declined: the stated figure for 2016 has fallen to 0.6 percent, partly due to a crackdown on fuel stations engaged in adulteration.²⁶⁵ As discussed below, those figures may be optimistic, but motor fuel, in particular, is now said to be more frequently of the expected quality, as opposed to when it was generally found to have been adulterated in 2009.

Overall, while the Ugandan government has made little evident headway against the potential for massive fraud at the top of the political hierarchy, it has enjoyed some success "in the field." It should be noted that one contributing factor to that success is that Uganda has no coastline, and therefore no offshore operations. As a result, the multinationals that dominate the market, such as Tullow and Total, can act effectively to mitigate fraud when they choose to, and they have, by and large, made that choice. That said, problems remain, as discussed below.

Current Problems

Ongoing Theft

Smaller instances of theft, such as hijacking tankers and opportunistic siphoning from trucks, certainly occur. Private security companies hired to protect industrial sites have also been accused of fuel theft, as in a 2009 case in which two guards with the firm Ultimate Security siphoned fuel from transformers at a power station.²⁶⁶

The fuel marking program has, on the whole, seen measurable success, though it does not involve marking of fuel that travels through Uganda toward other countries, especially Rwanda and DRC. But it has also led to creative modalities of fuel theft, especially by the regulators charged with marking and testing fuel.

In 2011, the Ugandan newspaper the *Daily Monitor* conducted a two-month investigation into corruption

265 "Fuel Adulteration Drops to 0.6 percent," NBS TV Uganda: YouTube, July 1, 2016, <https://www.youtube.com/watch?v=6zHeunpjTpk>.

266 Charles Jjuuko, "2 Kayunga Guards Held over Oil Theft," *New Vision*, June 20, 2009, http://www.newvision.co.ug/new_vision/news/1210986/kayunga-guards-held-oil-theft.

in the actual practice of marking and testing fuel. It found that UNBS inspectors at Kenyan border crossing points were, in fact, stealing fuel. While each tanker truck was to have five hundred milliliters of fuel extracted for testing, the inspectors were siphoning twenty-two liters of fuel from each truck. The stolen fuel was then given to “border boys” to sell on the black market for a small commission. Border officials and even some drivers were also involved in the scheme. Given that up to 150 tanker trucks crossed one such border point, Busia, daily, a year’s worth of siphoning amounted to 1.2 million liters of stolen fuel. And that was just one border checkpoint.²⁶⁷

Ongoing Adulteration

Despite the fuel marking program and other measures, and regardless of the Ugandan government’s upbeat statistics, fuel adulteration is still seen as an issue. As noted above, the reinstatement of the kerosene tax in 2014 brought down the preceding year’s spike in adulteration, but the past two years have still seen episodes of tampering that suggest continued widespread activity. In 2014, reports indicated that adulteration, mainly with kerosene, was still widespread in outlying areas; in the absence of filling stations, fuel was often sold directly from tanker trucks, allowing for adulteration by middlemen.²⁶⁸ Closer to the capital of Kampala, 140 filling stations were closed by regulators in April 2016 for having sold adulterated fuel over the preceding months.²⁶⁹

Given the marking program, it is hard to envision how the ongoing adulteration and smuggling of fuel in Uganda could occur without the negligence if not collusion of the UNBS. As one law enforcement source frames it, “If someone imports 5 million liters of petrol, and also another 5 million liters of kerosene; you need to ask where they are going to sell all that kerosene. In this day and age of candles, gas and solar, there is not that much demand for kerosene.”²⁷⁰ That same source also mentioned Petrocity, a firm that owns more than eighty stations and claims 12 percent of the total fuel

market in the country, as knowingly selling adulterated fuel. Perhaps the most damning, if ironic, evidence of the failure to completely curb adulteration came in July 2016, when UNBS drivers were instructed to use only Shell, Total, and City Oil stations so as to avoid damage to official vehicles.²⁷¹

Ongoing Smuggling

Smuggling of fuel, though significantly reduced, also remains a problem in Uganda. One impediment to its eradication may be the ongoing involvement of officials, particularly security and customs officials, who are able to derive personal benefit from either protecting the operations, turning a blind eye toward them, or providing falsified documents legitimizing them.²⁷² While the state may suffer from the loss of tax revenue, state officials may be benefiting enough to maintain the status quo.

Among other groups, the Opec Boys continue to exist, though in a considerably reduced form from the height of their operations. At this point, their role is largely to provide fuel in places where there is limited access to commercial supplies. As noted previously, they have demonstrated a willingness to gouge customers during fuel shortages.

A more sophisticated form of smuggling has been perpetrated by a petroleum marketing company called Fuelex Uganda, Limited. The company’s participation, and particularly that of its director, John Imaniraguha, in illicit activities has long been common knowledge, going back until at least 2008,²⁷³ but political, intelligence, and security connections seem to have protected these operations until recently.²⁷⁴

On June 1, 2016, the URA arrested John Imaniraguha for smuggling fuel into Uganda.²⁷⁵ He disappeared from jail

267 “UNBS Officials Siphon Fuel into Black Market,” *Daily Monitor*, July 8, 2011, <http://www.monitor.co.ug/News/National/-/688334/1214370/-/view/printVersion/-/pjudla/-/index.html>.

268 Julia Burpee, “UNBS Broadens Campaign against Adulterated Fuel,” *Daily Monitor*, August 14, 2014, <http://www.monitor.co.ug/Business/Commodities/UNBS-broadens-campaign-against-adulterated-fuel/-/688610/2417914/-/2ymlegz/-/percent2523>.

269 David Rupiny, “140 Pump Stations Unmasked for Selling Adulterated Fuel,” Uganda Radio Network, April 21, 2016, <http://ugandaradionetwork.com/story/140-petrol-stations-selling-adulterated-fuel-unmasked>.

270 Interview with Ugandan law enforcement official, date. Interview conducted in confidentiality, and the name of interviewee is withheld by mutual agreement.

271 Benon Herbert Oluka, “UNBS Cars Damaged by Fake Fuel,” *Observer*, July 13, 2016, <http://www.observer.ug/news-headlines/45301-unbs-cars-damaged-by-fake-fuel>.

272 Kristof Titeca, “Tycoons and Contraband: Informal Cross-border Trade in West Nile, North-Western Uganda,” *Journal of Eastern African Studies*, 6:1, p. 54 (2012) (indicating a history of collusion between smugglers and security agencies).

273 “Fuelex Boss Arrested at Entebbe While Fleeing Out of Uganda,” *Insider*, June 6, 2016, <http://www.theinsider.ug/fuelex-boss-arrested-at-entebbe-while-fleeing-out-of-uganda/>; Gee Mukana, “Fuelex Boss John Imaniraguha Arrested,” *Howwe*, June 6, 2016, <http://www.howwe.biz/news/showbiz/12285/fuelex-boss-to-be-charged-with-tax-evasion>.

274 Isaiah Mwebaze, “Top Security Chiefs in Panic Over Fuelex Boss’ Arrest,” *Eagle Online*, June 6, 2016, <http://eagle.co.ug/2016/06/06/top-security-chiefs-panic-fuelex-boss-arrest-2.html>.

275 Charles Etukuri, Jeff Andrew Lule, “Fulex Boss Arrested Over Fuel Smuggling,” *New Vision*, June 1, 2016, http://www.newvision.co.ug/new_vision/news/1425953/fuelex-boss-arrested-fuel-smuggling.

under “mysterious circumstances,” however, and was re-arrested several days later at Entebbe International Airport with his family, leaving the country.²⁷⁶ He was charged on June 6 and, while released on bail, he was deemed a flight risk and his passport was confiscated. The investigation is ongoing, but Imaniraguha claimed he was tortured at a hearing on June 20 in an attempt to halt the proceedings.²⁷⁷

Regardless of what happens with the trial, however, the incident that led to Imaniraguha’s arrest is instructive as to the modalities of large-scale smuggling in Uganda. On a tanker truck coming from Kenya, Fuelex removed the ECTS tracker when it reached the Ugandan border. The tracker was then handed off to a single courier known as a “boda boda man” (named for the distinctive East African “boda boda” motorcycle). In this case, the courier was paid in advance to proceed from the border crossing between Kenya and Uganda through Uganda and into South Sudan. In the meantime, the tanker, free from URA monitoring, intended to make an illicit delivery of the cargo into the local market. Having already been paid, however, the courier proceeded instead to Kampala, setting off alarms at the URA, given that the truck was supposed to transit Uganda, not stop in the capital. Police arrested the boda boda man with the tracker, and he implicated Fuelex and Imaniraguha.

While it remains to be seen what overall impact the Imaniraguha arrest will have—especially since he has avoided prosecution in the past—the case does indicate that the mitigation approaches by the government are of value. Tracking and tracing are both decreasing the opportunities for fuel theft, smuggling, and adulteration. In addition, a second set of arrests in June 2016 suggests that Ugandan law enforcement are becoming more serious about pursuing illicit hydrocarbons activity. Three individuals were arrested on June 27, 2016, for siphoning fuel off the fuel storage trucks for a construction company. While this could be considered an ad hoc incident, it was the second arrest in 2016 concerning theft from that same company, which claims to have three thousand liters of fuel stolen per month.²⁷⁸

Recently, authorities also made arrests in another new form of smuggling: fraudulent customs documentation. Aviation fuel is not taxed and often gets little scrutiny as it crosses borders. A tanker truck entering Uganda from Kenya was found to be carrying diesel though it was marked as transporting aviation fuel.²⁷⁹

Ethos

As the perceived benevolence of the Opec Boys’ operation suggests, community-based smugglers may be viewed, not as criminals, but as free traders and entrepreneurs fighting against the oppressiveness of the government. In other words, fuel smuggling can be seen as a way of cutting the government and the political class out of the equation and allowing for communities to become self-sufficient. This sentiment, however, fails to recognize that, frequently, it is the same individuals in the political class that marginalized the community in the first place that may be benefiting from the smuggling operations.

Conclusion

Uganda is clearly at a crossroads in terms of hydrocarbons crime. While some mitigation measures, especially marking and tracking, have shown promise, small-scale theft, adulteration, and smuggling are likely to continue indefinitely, especially while infrastructure remains largely undeveloped. But these activities are not the major issue. As the oil revenues start to roll in, large-scale fraud involving well-connected Ugandan industry players and the ministerial class will almost certainly flourish. The unwillingness of the Museveni government to adopt transparency in its oil dealings has not only raised the suspicions of industry players, who generally prefer the stability of a more transparent system; it has stirred political opposition just as Museveni is beginning to wind down his thirty-year tenure as president. Parliamentarians have been dismissed from the ruling party for opposing the Museveni government’s lack of transparency, and rural farmers displaced by oil infrastructure development have been outraged at their treatment by officials. Uganda has a chance to avoid the “resource curse,” but doing so will require meaningful reforms that have been met with resistance from the class best positioned to enrich themselves through corruption. As one Ugandan watchdog group recently put it: “For once, let us get this right.”²⁸⁰

276 Anthony Wesaka, “Wanted Fuelex Boss Arrested at Entebbe Airport Fleeing Country,” *The Monitor*, June 5, 2016, <http://www.monitor.co.ug/News/National/Wanted-Fuelex-boss-arrested-at-Entebbe-Airport-fleeing-country/688334-3233614-vynk8tz/index.html>.

277 Betty Amamukirori and Barbra Kabahumuza, “Charged Fuelex Boss Trial Stopped,” *New Vision*, June 23, 2016, http://www.newvision.co.ug/new_vision/news/1427669/charged-fuelex-boss-trial-stopped.

278 Jessica Sabano, “Uganda: Three Arrested over Katosi Road Fuel Theft,” *The Monitor*, June 27, 2016, <http://allafrica.com/stories/201606270129.html>.

279 “Fuelex Boss John Imaniraguha in Court over Smuggling,” *The Investigator News*, June 8, 2016, <http://theinvestigatornews.com/2016/06/fuelex-boss-john-imaniraguha-in-court-over-smuggling-as-ura-recovers-16-030-litres-worth-sh10-9m-and-fines-worth-sh33-8m/>.

280 Black Monday Team, “THEFT: The Major Threat to Oil Benefits,” *Black Monday Newsletter*, No. 12, November 12, 2013, http://www.actionaid.org/sites/files/actionaid/bm_nov_2013_oil.pdf, 1-3.

MOZAMBIQUE



Mozambique, located in East Africa, is bordered by several states: South Africa, Zambia, Malawi, Tanzania, and Swaziland. It covers about 800,000 square kilometers of territory, including an approximately 2,500-kilometer coastline. While it is rich in resources, especially minerals and hydrocarbons, it remains largely undeveloped and impoverished. The vast majority of its population is rural; some 80 percent of Mozambicans earn their livelihood from agriculture and about 86 percent are considered working poor, in the sense that they earn less than the equivalent of \$2 per day.²⁸¹ In some rural areas, less than 1 percent of people have access to electricity; 85 percent of Mozambicans rely primarily on biomass for fuel. Diesel generators power regional centers, and many public service centers, such as hospitals, operate without electricity.²⁸²

Mozambique has been hyped in the past decade as a potentially wealthy player in hydrocarbons, especially coal and gas. Though its economy has grown over the past two decades at an average annual rate of 7 percent, poverty has increased, with wealth concentrated in the hands of an urban economic and political elite.²⁸³ Yet, the country now seems more a cautionary example than a promising newcomer; in some ways it epitomizes the difficulties a developing country can face when newly discovered hydrocarbons catapult it into global attention.

Some of the problems the country faces result from poor infrastructure, both of interior transport and export facilities. But the more significant, even potentially devastating, difficulties involve corruption and mismanagement on the one hand and political violence on the other.

In 2016, revelations of staggering fiscal mismanagement and fraud brought international aid to Mozambique very nearly to a halt.²⁸⁴ This crisis, coupled with ongoing concerns about cronyism and other forms of corruption, will be discussed in more detail below.

A more pressing development is the apparent resurgence of political violence involving Mozambique's two dominant political parties: Frelimo, originally the Marxist Front for the Liberation of Mozambique, and Renamo, the Mozambican National Resistance. The conflict between these groups dates back to the country's bloody post-independence civil war, in which an estimated one million Mozambicans died. In 1992, a peace accord was signed, and elections were held in 1994. Frelimo won those elections and, despite regular accusations by Renamo of electoral fraud, has held power ever since. Most recently, Renamo leader Afonso Dhlakama denounced as fraudulent the 2014 election of current president Filipe Nyusi.²⁸⁵

For over twenty years, despite this lingering antagonism, Mozambique was regarded as stable. As recently as 2012, the security firm Control Risks dismissed civil war in the country as "a thing of the past."²⁸⁶ But since that year, a low-intensity insurrection by Renamo has taken hold, especially in its home territory in the north of the country, and 2016 saw an underreported but nonetheless alarming escalation of violence, including highway ambushes and attacks by government forces on Dhlakama's personal convoy.²⁸⁷ A recent investigative report published in *Foreign Policy* found evidence of violence and intimidation by government troops in rural areas, including mass murders; some of the twelve thousand Mozambican refugees now in Malawi spoke of indiscriminate killing and entire villages destroyed.²⁸⁸ Both sides may yet opt to exercise more restraint, but if they do not, the country could again collapse into violence.

The Hydrocarbons Context

Mozambique's hydrocarbons industry is state-controlled, primarily through the state oil company Empresa Nacional de Hidrocarbonetos (ENH), which controls upstream operations, and the Empresa Nacional de Petroleos de Mozambique, or Petromoc, the state importation and distribution arm, which

281 "Work for Human Development: Mozambique," United Nations Development Program, 2015, http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/MOZ.pdf, 8.

282 "Mozambique," Energising Development, 2016, <http://endev.info/content/Mozambique>.

283 Alex Vines, Henry Thompson, Soren Kirk Jensen, and Elisabete Azevedo-Harman, *Mozambique to 2018: Managers, Mediators and Magnates*, (London: Chatham House, 2015), 1, 14.

284 Ibid.

285 Tom Bowker, Simon Kamm, and Aurelio Sambo, "Mozambique's Invisible Civil War," *Foreign Policy*, May 6, 2016, <http://foreignpolicy.com/2016/05/06/mozambiques-invisible-civil-war-renamo-frelimo-dhlakama-nyusi/>.

286 "A New Frontier: Oil and Gas in East Africa," Control Risks, 2012, 6.

287 "War in Peace: The Return of Civil War in Mozambique?" Sicherheits Politik-blog, April 27, 2016, <http://www.sicherheitspolitik-blog.de/2016/04/27/war-in-peace-the-return-of-civil-war-in-mozambique/>.

288 Bowker et al., "Mozambique's Invisible Civil War."

manages downstream operations. The country serves as a transshipment hub for destinations in the interior; imports come through the ports of Maputo, Beira, and to a lesser extent Nacala before being shipped to locations in South Africa, Malawi, Zambia, and Zimbabwe.²⁸⁹

Oil is not a major part of the resource picture in Mozambique. Only in 2014 was oil found offshore—a small pocket, expected to produce only 2,000 bpd.²⁹⁰ The country's known hydrocarbons resources consist mainly of coal, its current chief export, and natural gas, of which it holds some of the world's largest reserves.

The country's onshore gas reserves have already begun to be monetized, primarily in cooperation with the South African company Sasol. The 865 km Sasol pipeline (also known as the Rompco pipeline, after the Republic of Mozambique Pipeline Investments Company), developed in 2014 and expanded in 2015, transports gas from a processing plant in Temane, Mozambique, to a power plant and distribution hub in Secunda, South Africa.²⁹¹ In March 2016, Sasol announced that it would be significantly expanding its onshore operations at Temane.²⁹²

The recent rush on Mozambique, however, is primarily about offshore discoveries of natural gas, which are estimated to form the bulk of the country's total reserves of about 170 trillion cubic feet. The gas has been found in the Rovuma Basin off the northern coast, primarily in "Area 1," developed by the American firm Anadarko, and "Area 4," operated by Italian company Eni.²⁹³ Revenues from these discoveries are not expected to hit their stride for a few years, not least because they will require a massive investment in LNG infrastructure; figures on this vary, but Anadarko and Eni have estimated an outlay of \$30 billion to begin producing approximately twenty million tons

of LNG per year.²⁹⁴ Development has slowed in 2016, however, due to a range of factors, including the low price of gas, the expense of erecting the necessary infrastructure in the north of the country, and falling confidence in the Mozambican government's ability to manage its finances. Nonetheless, in March 2016 a consortium consisting of ENH, the China Petroleum Pipeline Bureau, South Africa's SacOil, and the Dutch firm Profin committed to constructing the \$6 billion, 2,600 km African Renaissance Pipeline linking the Rovuma gas fields with South Africa.²⁹⁵

Concern remains, though, that Mozambique is less than ideally positioned to take advantage of its gas reserves. Though the government's 2014 revision of its hydrocarbons legal framework included tax incentives and a sliding scale on revenue sharing in which the state's take increased between 40 percent and 85 percent pegged to the production rate of return,²⁹⁶ much remains unclear. The many Asian industry players who have minor shares in Mozambique's gas fields are also aware that the United States and Australia are beginning to inject vast quantities of LNG into the market much sooner than Mozambique, not only providing an attractive alternative source but also conceivably keeping prices down.²⁹⁷ For those reasons alone, Mozambique's window may be closing for now.

Delays were aggravated in 2016, when Mozambique's credit and credibility took a massive hit. In April and May, the revelation of hidden outstanding debts, nonpayment on loans, misappropriated funds, and a completely failed \$850 million bond issue for an alleged tuna-fishing fleet added up to nearly \$10 billion in total debt—90 percent of the country's GDP.²⁹⁸ It was clear that the prospect of untold riches from natural gas had inspired a binge of speculative borrowing that collapsed along with commodity prices. Combined with the rising political violence and a severe drought in parts of the country, this scandal put Mozambique's future in doubt.²⁹⁹ Industry

289 "Mozambique Biofuels Assessment," Eenergy, May 1, 2008, http://www.globalbioenergy.org/fileadmin/user_upload/gbep/docs/BIOENERGY_INFO/0805_WB_Italy_-_Mozambique_biofuels_assessment.pdf, ES-11.

290 "Mozambique Due to Become Oil Producer in 2014," Macauhub, January 6, 2014, <http://www.mcauhub.com.mo/en/2014/01/06/mozambique-due-to-become-oil-producer-in-2014/>.

291 "Mozambique Gas Line in US\$210 Million Expansion," *Sasol.com*, November 30, 2015, <http://www.sasol.com/media-centre/media-releases/mozambique-gas-pipeline-us210-million-expansion>.

292 "Sasol Investing \$1.4bn to Grow Mozambique Gas Platform," *MiningWeekly.com*, May 30, 2016, <http://www.miningweekly.com/article/sasol-investing-14bn-to-grow-mozambique-gas-platform-2016-05-30>.

293 "New Petroleum Law: The Future of Oil and Gas in Mozambique," Clifford Chance, October 2014, https://www.cliffordchance.com/briefings/2014/10/new_petrolium_lawthefutureofoilgasi.html, 1.

294 Manuel Mucari, "Mozambique Sees \$30bn Investment for 2018 LNG Exports Startup," Reuters, August 21, 2014, <http://www.reuters.com/article/mozambique-gas-idUSL5N0QR49C20140821>.

295 "Analysis: A Sign of Life from Mozambique's Energy Sector," Further Africa, March 3, 2016, <https://furtherafrica.com/2016/03/03/analysis-a-sign-of-life-from-mozambiques-energy-sector/>.

296 Nuno Cabeçadas, "Mozambique: The Hottest Frontier," *Miranda Correia Amendoeira & Associados*, November 2014, http://www.mirandalawfirm.com/uploadedfiles/20150205_2521af.pdf.

297 Alex Vines et al., *Mozambique to 2018: Managers*, 3-4.

298 Alex Vines, OBE, "How Can Mozambique Manage Its Debt Crisis?" Chatham House, May 16, 2016, <https://www.chathamhouse.org/expert/comment/how-can-mozambique-manage-its-debt-crisis>.

299 Ibid.

players already struggling to adjust to continued low oil prices had to rethink their development strategies in Mozambique. Aid organizations, including the IMF, suspended contributions to the country, and despite government denials, a sovereign default remains a possibility.³⁰⁰ Ultimately, the industry players held to their commitments, and projections that annual GDP growth could reach 24 percent from 2021 to 2025, and that the size of the Mozambican economy could increase nine times over by 2035, remain possibilities.³⁰¹

Hydrocarbons Crime

Cronyism and Corruption

Mozambique is beset with corruption at every level, from the field—one recent report suggests that 54 percent of all cargo movements in Maputo involve bribes³⁰²—to the highest levels of government. As of 2014, its latest available ratings, the World Bank ranked the country at 27.9 percent on control of corruption—an unpromising score, reinforced by Mozambique’s negative score in regulatory quality.³⁰³ According to one assessment, “behaviours which are usually considered conflicts of interest, nepotism, and favouritism are not generally viewed as corrupt practices in the country. Instead, Mozambicans who achieve ‘important’ positions are commonly expected to use their position to help family members and friends.”³⁰⁴ While one recent study found that corruption, mainly in the form of missing customs revenue and fraudulent procurement contracts, cost the Mozambican government \$4.9 billion between 2002 and 2014,³⁰⁵ this probably does not account for the full fiscal drain inflicted by cronyism. A 2012 assessment predicted that such patronage is so entrenched in Frelimo that the first use to which the Nyusi government would be inclined to put

hydrocarbons revenues would be to reward donors and other loyalists.³⁰⁶

Efforts to achieve reform and transparency have achieved some success on paper, but relatively little in practice. Mozambique campaigned for years to join the Extractive Industries Transparency Initiative, finally doing so in 2012, but the EITI itself does not address many transfers of money between governments and private industry players.³⁰⁷ And though the EITI has recently piloted a “beneficial owners” program to promote transparency concerning where industry revenues actually go, Mozambique has expressed interest but does not yet participate.³⁰⁸ The 2014 Petroleum Law, while building the scaffolding for more accountability and transparency, has not been fleshed out in such a way as to actually provide those things. A 2014 review of the new legislation by Clifford Chance revealed that the law requires far more transparency from oil and gas companies—which must, among other stipulations, publish all their payments to the state—than it does from the Mozambican government. In short, the Petroleum Law does precious little to mitigate corrupt or reckless practices on the Mozambican side of the equation.³⁰⁹ It is this sort of opacity that fuels widespread suspicion of “pay to play” kickbacks in the extractive industries,³¹⁰ and that made all too possible the concealment of the massive debts that, though taken on before passage of the Petroleum Law, only came to light in 2016.

Hence the conspicuously mixed results for Mozambique on the Resource Governance Index, in which the country gains a “Partial” (rather than “Satisfactory”) score on “Institutional and Legal Setting” but failing marks on “Reporting Practices,” “Safeguards and Quality Controls,” and “Enabling Environment.”³¹¹ As the Centre for Public Integrity framed the issue in 2015, “Anti-corruption laws in Mozambique are weak. Enforcement of those laws is weaker still. The more

³⁰⁰Ibid.

³⁰¹ “Gas May Transform Mozambique Even as Debt Darkens Confidence,” Bloomberg, June 3, 2016, <http://www.bloomberg.com/news/articles/2016-06-02/gas-could-transform-mozambique-even-as-debt-threatens-confidence>.

³⁰² *Mozambique Reshaping Growth and Creating Jobs through Trade and Regional Integration*, World Bank Report No. 59356-MZ, 2012, <http://documents.worldbank.org/curated/en/871311468279905359/pdf/593560ESWOMZOPC0disclosed080200120.pdf>, 55.

³⁰³ “Worldwide Governance Indicators,” World Bank, <http://databank.worldbank.org/data/reports.aspx?source=Worldwide-Governance-Indicators>.

³⁰⁴ “U4 Expert Answer: Overview of Corruption and Anti-corruption in Mozambique,” U4 Anti-Corruption Resource Center, March 5, 2012, <http://www.u4.no/publications/overview-of-corruption-and-anti-corruption-in-mozambique/>.

³⁰⁵ “Weekly Media Review No. 136: 17 June to 24 June 2016,” Rhula Intelligent Solutions, [http://www.rhula.net/pdf/Mozambique percent20Weekly percent2017 percent20JUNE percent20TO percent2024 percent20JUNE percent202016.pdf](http://www.rhula.net/pdf/Mozambique%20Weekly%202017%20JUNE%20TO%2024%20JUNE%202016.pdf), 25.

³⁰⁶ “A New Frontier,” Control Risks, 12.

³⁰⁷ “Mozambique: Overview of Corruption and Anti-corruption,” Transparency International, September 30, 2014, http://www.transparency.org/files/content/corruptionqas/Country_Profile_Mozambique_2014.pdf.

³⁰⁸ “Beneficial Ownership Pilot Evaluation Report,” EITI Board paper 30-4-B, October 2015, https://eiti.org/sites/default/files/documents/BP/board_paper_30-4-b_beneficial_ownership_pilot_-_evaluation_report.pdf, 3.

³⁰⁹ “New Petroleum Law,” Clifford Chance, *passim*.

³¹⁰ Charles Goredema, “Getting Smart and Scaling Up: The Impact of Organized Crime on Governance in Developing Countries, a Case Study of Mozambique,” Center for International Cooperation, June 2013, http://cic.nyu.edu/sites/default/files/kavanagh_crime_developing_countries_mozambique_study.pdf, 144.

³¹¹ “Mozambique,” Natural Resource Governance Institute, 2016, <http://www.resourcegovernance.org/our-work/country/mozambique>.

serious the corruption, the more senior the offender, the more money is involved, the less likely that state institutions will investigate and prosecute.”³¹² The upshot is a perception that, given the pervasiveness of corruption, Mozambique is at serious risk of becoming “Angola lite.”³¹³

Corruption will likely continue to compromise Mozambique’s progress as the development of its gas reserves unfolds. For the near term, these will mainly be large-scale activities involving revenues rather than physical resources—theft, especially downstream, is unlikely to play a significant role—but as more refined product enters storage and transit infrastructure, that dynamic may change.

Theft

At this point, oil theft is not a major issue in Mozambique, for the simple reason that there is not enough fuel to make it a worthwhile enterprise at any sort of scale. Imported fuels, particularly the diesel that runs generators as well as vehicles all over the country, are subject to small-scale opportunistic theft, but not to exploitation by large criminal networks.

According to one report, Beira’s petroleum terminal has seen chronic thefts, even incidents as simple as petty burglars siphoning fuel into buckets.³¹⁴ In June 2016, a tanker truck driver was arrested for having sold off, for private gain, the diesel he was transporting out of Beira and claiming he had been robbed.³¹⁵ In neighboring Malawi, large crowds of villagers have engaged in blocking or diverting trains out of the Mozambican port of Nacala in order to siphon diesel.³¹⁶ But more extensive and sophisticated thefts have been known to take place. In December 2015, thieves started a deadly fire while attempting to siphon large quantities of fuel from a pipeline near a terminal at the Maputo port complex. In a mistake one can only attribute to inexperience, one of the

would-be thieves apparently lit a candle to see better in the darkness and inadvertently ignited the blaze. However, the intended operation itself was extensive, including both a small fleet of fishing boats and a collection of land vehicles to make off with the illicit fuel, and participants included port security and law enforcement personnel.³¹⁷ The scale, planning, and players involved in the theft indicate that it was part of a long-term operation that might never have been broken up if not for the fire, which left seventeen thieves dead.

Smuggling

Like theft, smuggling is largely a small-scale and opportunistic activity in Mozambique. It mainly happens along the borders with Malawi, Zimbabwe, and Zambia, where fluctuations in fuel prices can create profitable disparities and shortages on one side of the border that can be filled by the other. The Zambia-Malawi-Mozambique Growth Triangle, formalized in 2014 as a way to accelerate development through enhanced cooperation in border areas, may, over time, mute the dynamics that incentivize small-scale smuggling in these areas.³¹⁸

Actors

Criminal Networks

In Mozambique, organized crime and its links to the political elite seized the headlines in 2000, when investigative journalist Carlos Cardoso was gunned down while investigating bank fraud, and the son of former Mozambican President Joaquim Chissano was tied to the killing but, at least as of yet, has not been brought to trial.³¹⁹ In 2002, an Institute for Strategic Studies report described transnational criminal networks as deeply embedded in Mozambique, which serves mainly as a transshipment hub for the illicit drug trade. The report specifically mentions networks involving international actors from as far afield as Nigeria, Chile, Columbia, Europe, and Pakistan, and offers a grim overall assessment, indicating that criminal networks had gained extraordinary influence in the Mozambican government through bribery, influence peddling, patronage, and intimidation.³²⁰

312 “Fighting Corruption in Mozambique’s Extractive Sector: Can Foreign Laws Work Where Mozambique’s Laws Fail?” Centre for Public Integrity, Edition January, 2015, [http://www.cip.org.mz/cipdoc/percent5C349_spinformacao_2015_01_en/percent20\(3\).pdf](http://www.cip.org.mz/cipdoc/percent5C349_spinformacao_2015_01_en/percent20(3).pdf), 1.

313 Anne Frühauf, “Mozambique’s LNG revolution: A Political Risk Outlook for the Rovuma LNG Ventures,” (Oxford: The Oxford Institute for Energy Studies, 2014), 39.

314 Carrie Davies, “Matola Grain Terminal Fire, Port Security and International Trade,” US Agency for International Development, SPEED Program, January 6, 2016, <http://www.speed-program.com/blogs/by-author/carrie-davies/matola-grain-terminal-fire-port-security-and-international-trade>.

315 “Malawi Police Nab Truck Driver Over K21Mil Fuel Theft from Mozambique,” *Nyasa Times*, June 15, 2016, <http://www.nyasatimes.com/malawi-police-nab-truck-driver-k21mil-fuel-theft-mozambique/>.

316 “Trains under Siege,” *The Nation*, March 10, 2016, <http://mwnation.com/trains-under-siege/>.

317 “Damage in Port Fire Put at US\$2.4 Million—Mozambique,” Club of Mozambique, February 4, 2016, <http://clubofmozambique.com/news/damage-in-port-fire-put-at-us2-4-million-mozambique/>.

318 “Zambia, Malawi, and Mozambique’s Growth Triangle,” The Borgen Project, April 4, 2015, <http://borgenproject.org/mercedes-practice-zambia-malawi-and-mozambiques-growth-triangle/>.

319 “The Case of Carlos Cardoso,” The Committee to Protect Journalists, May 11, 2016, <https://cpj.org/reports/2006/05/cardoso-nov02.php>.

320 Peter Gastrow and Marcelo Mosse, “Mozambique: Threats Posed by the Penetration of Criminal Networks,” Institute

“... [I]t may be that Renamo fighters will engage in more systematic theft of fuel, predominantly diesel, to run their operations, or smuggle large quantities to finance their campaigns.”

More recently, a 2013 study sponsored by the Center on International Cooperation at New York University confirmed a general perception in Mozambique that many of the political elite were either tied to or actively involved with such criminal networks.³²¹ None of the networks, however, is mentioned as trafficking in fuel. In June 2016, a regional campaign coordinated by the International Criminal Police Organization (INTERPOL), called Usalama III, resulted in some 4,500 arrests for transnational crimes including human, drug, and weapons trafficking, and even cattle rustling. Fuel theft and smuggling were not addressed.³²² That said, if revenues from gas begin to accrue, organized criminal groups will presumably take increasing interest in such a profitable arena.

State Actors

As indicated above, corruption is endemic in Mozambique, and the 2014 Petroleum Law has done little to ameliorate the situation. The patronage system to which most state actors adhere dates back to the presidency of Armando Guebuza (2005-2015), who reportedly made active membership in Frelimo a precondition for participation in political power and access to profitable contracts. A systematic steering of revenues toward the executive branch of the government, vitiating the legislature and judiciary, has also concentrated power within an elite who operate beyond scrutiny and keep large quantities of resource rent to themselves.³²³ The fact that the

Petroleum Law has not led to meaningful transparency or accountability when it comes to the awarding of contracts or the allocation of revenues is generally taken to mean that state officials are customarily engaged in a number of activities they would prefer not to see the light of scrutiny. Entities such as the National Petroleum Institute, the regulatory agency for the hydrocarbons industry, as well as ENH and Petromoc, offer ideal platforms for industry-related corruption, but the nature of a patronage system is such that other members of the political elite will take advantage as well. Again, this sort of corruption is more likely to involve revenues and graft than the actual theft or smuggling of fuel, but given the government's reputed links with transnational criminal groups, these activities may in time involve state actors more directly.

Pirates

Piracy is not currently an issue for Mozambique, for multiple reasons. The slump in oil prices since 2014 has made hijacking tankers a less profitable enterprise, and increased patrols and international cooperation off the coast of East Africa have made it more dangerous for would-be pirates as well. In 2012, Tanzania, Mozambique, and South Africa signed a memorandum of understanding securing cooperation in maritime security.³²⁴ A South African naval vessel has been dispatched to patrol the Mozambique Channel as a constant, and thus far successful, deterrent. As with other issues though, a rise in oil prices may well serve as an enticement to pirates in coming years, requiring an even more robust security response.

Insurgents

The escalating conflict between Frelimo and Renamo, detailed above, certainly creates an unstable environment in the center and north of Mozambique, and it may be that Renamo fighters will engage in more systematic theft of fuel, predominantly diesel, to run their operations, or smuggle large quantities to finance their campaigns. While there is no verifiable evidence of such moves on the part of Renamo, they are not out of the question.

Mitigation

As there is still relatively little production in Mozambique, and little in the way of downstream theft, there have been very few mitigation efforts to note. The concern here, however, is that the culture

for Security Studies, 2002, https://www.files.ethz.ch/isn/145170/2002_08_19.pdf, 5; “Has Mozambique Become a Haven from Criminals?” *Southern Times*, April 11, 2016, <http://southernafrican.news/2016/04/11/has-mozambique-become-haven-from-criminals/>.

321 Goredema, “Getting Smart and Scaling Up,” 141.

322 “1,500 Police in Operation Targeting Crime Networks across Eastern and Southern Africa,” Interpol, July 12, 2016, <http://www.interpol.int/News-and-media/News/2016/N2016-092>.

323 Goredema, “Getting Smart and Scaling Up,” 140, 144.

324 “SA, Mozambique, Tanzania Sign Agreement on Maritime Security,” SABC, February 8, 2012, <http://www.sabc.co.za/news/a/bf869a804a16d413aba7fb539151daea/SA,-Mozambique,-Tanzania-sign-agreement-on-maritime-security-20120802>.

of corruption and impunity that pervades the government, along with weak law enforcement and security institutions, will handicap any such efforts if and when they do become necessary. The key to successful mitigation in Mozambique, therefore, is political and regulatory reform. While the 2014 Petroleum Law creates a framework in which such reform could be worked out, the political will has so far been lacking. The embarrassing debt fiasco of 2016, however, has brought increased scrutiny from donors and hesitancy from industry players, so it may be that enough international leverage might be applied to force some meaningful and lasting change.

Conclusion

A recent article rather neatly referred to Mozambique as being an example of the “presource curse”: in this case, not actual but anticipated wealth from the country’s gas reserves has already led to economic

and political crisis.³²⁵ There is no denying that the term fits. Mozambique has jeopardized its very stability with corrupt and heedless conduct at the highest levels of government, well before the much-hyped gas revenues are expected to arrive. Anticipatory hydrocarbons crime is by definition abstract, an offense made amid tenders, contracts, loans, and promissory notes. In that sense, oil theft (or gas theft) is not the issue. But if Mozambique weathers its current political and economic storm, physical theft will doubtless become a problem. The question for Mozambicans and their industry partners, then, is how best to lay the groundwork for future accountability, transparency, and security in the hydrocarbons sector as a whole.

³²⁵ “Mozambique and the ‘Presource Curse,’” Interfax Global Energy, May 20, 2016, <http://interfaxenergy.com/gasdaily/article/20380/mozambique-and-the-presource-curse>.

THAILAND



The past decade has seen considerable unrest in Thailand, including two military coups. A 2006 coup overthrew the government of Prime Minister Thaksin Shinawatra; a subsequent restoration of elections led to the election of Thaksin's youngest sister, Yingluck Shinawatra, whose government grew unpopular amid accusations of widespread corruption. In 2014, another military coup overthrew Yingluck's government. Since then, Thailand has been ruled by a military junta known officially as the National Council for Peace and Order (NCPO). Declaring itself committed to combating corruption, the NCPO has since cracked down on dissent, and has taken a hard line on migrant workers and certain illicit activities. One immediate outcome of the coup was the prosecution of a number of high-level officials on charges of corruption, including involvement in hydrocarbons crime. It remains unclear how much that campaign was intended simply to root out malfeasance as opposed to dismantling the Thaksin political machine, which had always been regarded as linked with corruption in Thai law enforcement agencies.³²⁶

On August 7, 2016, the NCPO held a national referendum on a new Thai constitution. Many regard this initiative as further entrenching the authority of the military, which has hinted at new elections in 2017 but may well continue postponing them. Despite protests in advance, the new constitution passed with the support of just over 61 percent of voters.

The Hydrocarbons Context

Resources

Thailand is not a major oil producer. According to the US Energy Information Administration, the country's proven oil reserves total around four hundred thousand barrels; the vast majority of that oil is found offshore in the Gulf of Thailand. In 2015, overall daily production of oil and other liquid petroleum products ran at just over half a million barrels per day. The state-owned PTT Group, the largest energy entity in Thailand, has a share in much of the oil production; Chevron is the main multinational involved in the Thai oil industry.³²⁷

There are several operating oil refineries in Thailand; their total capacity of around 1.2 million barrels per day makes Thailand's output second only to Singapore in Southeast Asia.³²⁸ PTT Group has significant stakes in three of those refineries.³²⁹

The Thai government has shown some regional ambitions in terms of infrastructure, including taking measures to transform the country into a hub for hydrocarbons processing and shipping.³³⁰ The Isthmus of Kra, once touted as the potential route for a pipeline, has recently come to play a potentially prominent role in China's New Silk Road project. Amid a good deal of buzz, reports have surfaced that China and Thailand have inked a memorandum of understanding about exploring the feasibility of a canal crossing the isthmus, a project that may take up to a decade to complete but would allow Chinese shipping to bypass the Strait of Malacca. Such a major addition to the region's infrastructure would impact not only Thailand but other states such as Myanmar, Malaysia, and Singapore.³³¹

Consumption

According to some estimates, in 2014-2015, Thailand was consuming approximately 1.3 million barrels of oil per day; in the first quarter of 2016, demand rose by about 4 percent.³³² The most widely used hydrocarbons product in Thailand is diesel. In 2015, Thailand's Energy Policy and Planning Office issued a report listing diesel as the top petroleum product consumed in the country (41 percent), followed by LPG (27 percent), gasoline (17 percent), jet petroleum (11 percent), and fuel oil (4 percent).³³³ Thanks in part to government price controls, LPG is commonplace in the industrial, transportation, and residential sectors, and it serves as a relatively reliable power source for

³²⁸ Ibid.

³²⁹ "Thai Refineries to Run Flat Out in Q3 to Meet Demand after Maintenance," *Downstream Today*, July 7, 2016, http://www.downstreamtoday.com/news/article.aspx?a_id=52447&AspxAutoDetectCookieSupport=1.

³³⁰ "Oil Refining in Thailand—Overview," MBendi, 2016, <https://www.mbendi.com/indy/oilg/ogrf/as/th/p0005.htm>.

³³¹ "The New China Silk Road," Oilpro.com, 2016, <http://oilpro.com/post/20809/new-china-silk-road-one-belt-one-road-changing-face-oil-gas-se-as>.

³³² "Thailand," EIA; "Thai Refineries," *Downstream Today*.

³³³ "Energy Policy and Planning Office, Energy Statistics of Thailand" EPPO, 2015, <http://www2.eppo.go.th/info/cd-2015/pdf/cha2.pdf>.

³²⁶ "Thai Police's Internal Investigation into Corruption Widens Following Arrests," *The Guardian*, November 25, 2014, <https://www.theguardian.com/world/2014/nov/25/thai-senior-police-officer-corruption-charges>.

³²⁷ "Thailand," United States Energy Information Administration, 2016, <http://www.eia.gov/beta/international/analysis.cfm?iso=THA>.

small businesses. Consumers have been known to use it in automobiles when oil prices rise.³³⁴

Illicit Hydrocarbons Activity

Historically, the most common modality of hydrocarbons crime in Thailand has been smuggling. Large amounts of diesel and petrol are smuggled into the country from Malaysia, either across the Thailand-Malaysia border or by boat. In Thailand's southern, so-called Malay Provinces, on the border with Malaysia, the problem is part of a complex web of issues, including militant activities. Smuggling also takes place from Thailand into neighboring states, mainly in the form of state-subsidized LPG being smuggled into Myanmar and Cambodia.³³⁵

Petrol and Diesel Smuggling

Since the mid-1990s, Thai authorities have detected massive smuggling of diesel and petrol, especially in the country's southern provinces. One source suggests 80 percent of that fuel comes in overland, though that figure may underestimate the role of maritime smuggling, which is extensive and often sophisticated.³³⁶

Overland Smuggling of Petrol and Diesel across the Thailand-Malaysia Border

Much of the overland smuggling of fuel is undertaken by smuggling rings equipped with modified vehicles and local connections. In October 2014, Thai authorities seized nearly fifty thousand liters of petrol and about eight hundred liters of diesel after uncovering four large syndicates operating across the Malaysia border. Members of the criminal groups detailed how they would customarily begin working at 8:00 a.m. so as to start transporting the illicit fuel as soon as border checkpoints opened. Malaysian nationals involved in the operation would be paid 50 sen (approximate \$0.13) for each liter of illicit fuel they supplied to the Thai operatives taking it across the border.³³⁷

“Large amounts of diesel and petrol are smuggled into the country from Malaysia, either across the Thailand-Malaysia border or by boat.”

In some operations, petrol or diesel has been purchased in Malaysia, Indonesia, and Singapore, where prices are lower than in Thailand, and then delivered to storage facilities just inside the Thai border, from which the products can be distributed around the country.³³⁸

According to one official source, the three million liters of fuel smuggled daily into the country from Malaysia come primarily through busy checkpoints at Sadao District in Songkhla Province, Suhaigo-lok District, and Wang Prachan in Kondon District, Satun Province. There are also reportedly illicit pipelines running into Tak Bai District. Trucks modified to carry barrels filled with two to three thousand liters of petroleum and diesel are also used.³³⁹ In February 2016, for example, two Thai nationals were arrested in Satun Province for smuggling five thousand liters of petrol by truck from Malaysia into Thailand.³⁴⁰ On the same day, another truck was seized, this one in Surat Thani Province, for having smuggled three tons of petrol across the border.³⁴¹

An array of forces and trends have contributed to this thriving smuggling industry. The most decisive of these is the disparity in fuel prices between Malaysia and Thailand; prices for petrol and diesel are markedly lower in Malaysia than in Thailand. For many years, this disparity arose from Malaysia's policy of subsidizing the cost of fuel. Malaysia's decision to end those subsidies in December 2014 has yet to resolve the price discrepancy.³⁴² According to one Thai government report, in February 2015, high-octane unleaded petrol

334 “Ruangwud Jarungsipong and Nopalak Rakthum, Price Controls Support LPG Fuel Consumption,” *Tris Rating*, 2012, [http://www.trisrating.com/en/pdf/articles/Price percent20Controls percent20Support percent20LPG percent20Fuel percent20Consumption.pdf](http://www.trisrating.com/en/pdf/articles/Price%20Controls%20Support%20LPG%20Fuel%20Consumption.pdf).

335 “LPG Smuggling from Thailand to Neighbours Continues,” *Thailand Tonight*, June 15, 2008, <http://thailandtonight.blogspot.co.uk/2008/06/lpg-smuggling-from-thailand-to.html>.

336 Woraluck Lalitasivimol et al., “The Distribution for Illegal Transnational Petrol Importation Business of Retailers in Thailand—Malaysia Southern Border Customhouses,” ASEAN 7th International Conference on Humanities and Social Sciences, 2015, <https://goo.gl/pE6LSc>.

337 吉坡破4集團 起總值160萬走私燃油, *China Press*, October 16, 2014, <http://www.chinapress.com.my/20141016/吉坡破集團起總值萬走私燃油/>.

338 Lalitasivimol et al., “The Distribution for Illegal Transnational Petrol Importation Business of Retailers in Thailand.”

339 “Thai Report Details Illegal Oil Trading in Southern Provinces,” *WikiLeaks*, March 11, 2013, https://wikileaks.org/gifiles/docs/25/2587323_thailand-asia-pacific-thai-report-details-illegal-oil.html.

340 “Satun Captured 5000 Liters of Gasoline Smuggling,” *China Press*, February 9, 2016, <http://www.udnbkk.com/article-28104-1.html>.

341 “Surat Thani Seized 3 Tons of Smuggled Petrol,” *China Press*, February 9, 2016, <http://www.udnbkk.com/article-30847-1.html>.

342 “Malaysia to End Petrol and Diesel Subsidies,” *BBC News*, November 12, 2014, <http://www.bbc.co.uk/news/business-30140728>.

(ULG 95) in Malaysia cost 18 baht per liter; the same fuel in Thailand cost 35.66 baht per liter, nearly double the Malaysian price.³⁴³ As of August 2016, the price of a liter of ULG 95 in Malaysia was the equivalent of 15.5 baht, while in Thailand it was 30.3 baht.³⁴⁴

Smuggling of Petrol and Diesel by Boat

Smuggling by boat often involves fishermen from Thailand and Malaysia, who are paid by smugglers to transport illicit fuel into Thailand. For fishermen, trafficking in both humans and commodities offers the promise of higher and steadier income than the vagaries of small-scale commercial fishing allow, especially given the ongoing depletion of Thailand's fish stocks.

According to one source, 80 percent of this maritime fuel trafficking runs through the Gulf of Thailand, while the remainder enters the country along the Andaman Sea coastline. Much of the maritime smuggling involves fishing trawlers retrofitted to hold large amounts of oil, which is transferred from other vessels for surreptitious delivery to the mainland.³⁴⁵ In a slightly different approach, the fishermen themselves are unnecessary; boats are actually purpose-built to look like fishing vessels while smuggling petrol or diesel; one such boat was detained in February 2013 and found to be carrying fifty thousand liters of diesel.³⁴⁶

One typical smuggling boat was captured by the Thai authorities in February 2016 while holding 70,000 liters of Malaysian diesel destined for Thailand. The boat had initially carried 120,000 liters of diesel, but by the time it was seized, a portion of its illicit cargo had already been sold on the water.³⁴⁷ This modality also featured in the July 2015 interception by the Vietnamese coast guard of Thai vessels transferring illicit fuel to local Vietnamese fishing boats off Phu Quoc Island.³⁴⁸

A particularly large-scale form of open-sea trafficking involves "open sea fuel stations" in Malaysian waters, where oil tankers set up shop selling Malaysian diesel to

Thai boats, which then smuggle the fuel into Thailand for distribution. On one day in May 2014, four such "fuel stations" were seized by Malaysian authorities in Malaysian territorial waters; the ships, three of which were registered in Panama and one in Malaysia, carried a total of 3.7 million liters of illicit diesel. According to Malaysian authorities, from mid-November to mid-May 2014, five operations against fuel smuggling in the open sea resulted in the seizure of both large quantities of illicit diesel and a number of boats; the combined assets totaled over 4.9 million ringgit, or \$1.1 million.³⁴⁹ A similar incident occurred in July 2012 off Racha Noi Island, when authorities impounded a tanker carrying 230,000 liters of smuggled diesel, worth some 7 million baht, or \$200,000, on the retail market.³⁵⁰

Means of Distribution of Illicit Petrol and Diesel

Within Thailand, smuggled fuel follows three main paths to distribution. One involves putting the illicit petrol into one-liter soft drink bottles and selling the bottles along the roads throughout Songkhla and Satun Provinces.³⁵¹ The Thai retailers involved can purchase the products from smugglers at twenty-five to thirty baht per liter and sell it at thirty to thirty-five baht per liter. Given this price is still around ten baht per liter cheaper than petrol at legitimate Thai gas stations, roadside distribution is popular among local residents.³⁵²

Another distribution method involves setting up small gasoline stations.³⁵³ Sellers buy illicit fuel from smugglers and load it into vehicles fitted with sizable tanks, distributing it at about two hundred liters per delivery to small gasoline stations, often poorly equipped, in Thailand's countryside. These small gasoline stations, which operate mostly in remote areas without many legitimate retail stations, then sell the petrol at the going black market rate of thirty to thirty-five baht per liter.³⁵⁴

The most ambitious mode of distribution takes the form of legitimate-looking gasoline stations.³⁵⁵ In this scenario, the owners of the stations use their own

343 Lalitasivimol et al., "The Distribution for Illegal Transnational Petrol Importation Business of Retailers in Thailand."

344 "Petrol Prices around the World," My Travel Cost, August 1, 2016, <http://www.mytravelcost.com/petrol-prices/>.

345 Caroline Liss, "Oceans of Crime: Maritime Piracy and Transnational Security in Southeast Asia and Bangladesh," IIAS/ISEAS, 2011, 181.

346 "Diesel Smugglers Arrested Off Phuket," *Phuket News*, February 8, 2013, <http://www.thephuketnews.com/diesel-smugglers-arrested-off-phuket-36939.php>.

347 "Diesel Smuggling Vessel Detained Near Pattani," *Sun Daily*, February 23, 2016, <http://www.thesundaily.my/news/1708106>.

348 "Thai Boats Caught Smuggling Oil in Vietnam Waters," *Than Nien News*, July 27, 2015, <http://www.thanhniennews.com/society/thai-boats-caught-smuggling-oil-in-vietnam-waters-49426.html>.

349 破“海上添油站”起370万公升走私柴油, *Sin Chew News*, May 28, 2014, <http://www.sinchew.com.my/node/1390139>.

350 "Smugglers Caught with Tanker of Diesel," *Phuket News*, July 11, 2012, <http://www.thephuketnews.com/smugglers-caught-with-tanker-of-diesel-31960.php>.

351 Lalitasivimol et al., "The Distribution for Illegal Transnational Petrol Importation Business of Retailers in Thailand."

352 Ibid.

353 Ibid.

354 Ibid.

355 Ibid.

trucks to purchase illicit fuel, a thousand or more liters at a time. These gasoline stations use petrol diffusers like those found at legitimate retail stations, but they price the fuel at about one baht per liter below the going retail rate. As with the smaller outlets, these illicit gas stations are found in rural areas or in regions largely without legitimate gas stations.³⁵⁶

LPG Smuggling and Illegal Retailing

While petrol and diesel are smuggled into Thailand to take advantage of lower prices elsewhere, LPG is generally smuggled out of Thailand into neighboring countries where it is more expensive. Subsidizing in Thailand has driven this dynamic.

Smuggling of LPG

Subsidized LPG from Thailand is often smuggled overland into Myanmar, Laos, and Cambodia. The *Cambodia Daily* reported in 2014 that almost every day cars could be seen lining up on the Cambodian side of the border, waiting to purchase LPG in Thailand for resale on the black market in Cambodia, and that recent crackdowns by the NCPO had been hard on Cambodian locals.³⁵⁷

Thai law enforcement has in recent years dealt with smuggling on the border with Myanmar.³⁵⁸ As with Cambodia, LPG subsidies in Thailand create an easily exploited price disparity.

That said, LPG has occasionally been smuggled into Thailand, primarily from Malaysia. According to one report, 40 percent of the 2015 LPG subsidy allocation in Malaysia was lost to smuggling activities, the illicit fuel being smuggled into Thailand as well as other nearby countries. The chief method was transferring subsidized LPG from appropriately marked smaller cylinders into industrial-sized cylinders; much of the smuggled LPG was alleged to be destined for the hotel and restaurant industries.³⁵⁹

Smugglers also transfer LPG from Thailand to neighboring countries via sea routes. Like illicit diesel and petrol, the LPG is loaded onto specially modified fishing boats to avoid attracting unwanted attention.³⁶⁰ Presumably, bribery of Thai officials and

law enforcement personnel also plays a key role in this activity.

Illicit LPG Retailing

Illicit downstream activities in Thailand are not limited to cross-border operations; gas compression plants and gas stations within the country have been known to collaborate in illegal LPG retailing, i.e., buying LPG at the subsidized household rate and selling it as transportation or industrial fuel. In May 2013, Thai authorities reportedly charged no fewer than forty-seven gas stations and seventy-six LPG compression plant operators, as well as 111 individuals, with illegally drawing a profit from gas price disparities—one indicator of how common this practice is in Thailand.³⁶¹

Opportunistic employees of Thai energy companies have also been known to engage in LPG smuggling. In one typical case, drivers from the Thai gas company Tantichai Petroleum Limited were caught smuggling stolen LPG across the border into Cambodia. The drivers had falsified their company documents, loading their trucks with more LPG than was indicated so they could sell the remainder in Cambodia for personal profit.³⁶²

Significant Illicit Actors

Organized Criminal Groups

Some organized criminal groups in Southeast Asia participate extensively in this lucrative illicit trade, securing subsidized petrol and diesel in Malaysia and selling the fuel at a higher price in Thailand. They are well positioned to take advantage of the smuggling networks they have established for other commodities, allowing for rapid distribution of the illicit fuel into the market. Another advantage of the recent development of Thailand's transportation infrastructure: more roads are open, and few of them are adequately policed.³⁶³ It is worth keeping in mind how diversified these networks can be: in 2013, Thai officials broke up one fuel smuggling ring that not only engaged in both drug and human trafficking but also may have been involved in funding southern insurgents.³⁶⁴

Thailand," *Ministry of Finance—Thailand*, April 11, 2012, http://www2.mof.go.th/www2picture_news_detail.php?id=5527.

361 "LPG Case to Reach Court in 3 Months," *The Nation*, May 18, 2013, <http://www.nationmultimedia.com/national/LPG-case-to-reach-court-in-3-months-police-30206431.html>.

362 "Gas Guzzling LPG Crooks Caught at Thai Border," *Pattaya Daily News*, February 17, 2013, <http://pattayadailynews.com/gas-guzzling-lpg-crooks-caught-at-thai-border/>.

363 Thomas Fuller, "Thai Border on Guard for Drugs from Myanmar," *New York Times*, November 6, 2009, http://www.nytimes.com/2009/11/07/world/asia/07thai.html?_r=0.

364 "Police Chief Says Oil Smugglers Funding Insurgency," Thai PBS, September 13, 2013, <http://englishnews.thaipbs.or.th/police-chief-says-oil-smugglers-funding-insurgency/>.

356 Ibid.

357 Cross-Border Gas Smugglers Stymied by Junta, *Cambodia Daily*, 2 July 2014, <https://www.cambodiadaily.com/archives/cross-border-gas-smugglers-stymied-by-junta-62937/>.

358 "LPG Smuggling from Thailand to Neighbours Continues," *Thailand Tonight*, June 15, 2008, <http://thailandtonight.blogspot.co.uk/2008/06/lpg-smuggling-from-thailand-to.html>.

359 "Press Digest: 40 percent of LPG Subsidy Allocation Gone Due to Smuggling Activities," *Sun Daily*, January 3, 2016, <http://www.thesundaily.my/news/1654209>.

360 "Customs Announced the Seize of LPG Smuggled Out of



Thai policemen stand guard over fishing boats of the kind used to smuggle petrol and diesel from Malaysia, December 23, 2015. *Photo credit: Reuters/Surapan Boonthanom.*

Malaysia's Klang Valley syndicates are among the most prolific of these groups. Malaysia's Kedah Anti-Smuggling Unit has indicated that these syndicates have, in recent years, come to dominate smuggling activities on the Malaysia-Thailand border. The syndicate members have transferred contraband goods, including fuel, a thousand kilometers between the Thai border and the Klang Valley, an area centered on Kuala Lumpur. Often relying on false declarations to clear customs, the syndicates have brazenly smuggled fuel in forty-foot containers and trailers. They have also used tanker trucks without company logos to smuggle fuel.³⁶⁵

The large syndicates associated with smuggling petrol and diesel have also participated in the illicit LPG trade. In a May 2016 raid on a syndicate in Lukut that was smuggling LPG, Malaysian police seized trucks

that had been converted into mobile LPG stores; the trucks held some thirty tons of product.³⁶⁶

In recent years, these large smuggling rings have been linked with altogether different security problems at oil facilities in Thailand—most notably, attacks on jet fuel tanks in domestic oil facilities. In April 2010, an M79 grenade struck the jet fuel tank owned by Thai Petroleum Pipeline Co. (Thappline) that supplies fuel to the Suvarnabhumi Airport. As Thai authorities have noted, incidents such as this, along with kidnappings and shootings, tend to happen shortly after Thai authorities destroy illegal oil depots or disrupt fuel smuggling networks.³⁶⁷

365 "Smuggling at Malaysia-Thailand Border Dominated by Klang Valley Syndicates," *Malay Mail*, December 17, 2015, <http://www.themalaymailonline.com/malaysia/article/smuggling-at-malaysia-thailand-border-dominated-by-klang-valley-syndicates>.

366 "LPG Smuggling Syndicates Smashed," *New Straits Times Online*, May 31, 2016, <http://www.nst.com.my/news/2016/05/148898/lpg-smuggling-syndicate-smashed>.

367 "Reporters Uncovered in Thailand, Illegal Insider Trading," *Sina*, November 5, 2012, <http://news.sina.com.cn/w/2012-11-05/170925514288.shtml>.

Thai and Malaysian Officials

The difficulty in tackling hydrocarbons crime in Thailand arises partly from widespread collusion among law enforcement authorities in Malaysia and Thailand. Thai law enforcement personnel, politicians, and government officials, especially in the southern provinces bordering Malaysia, have been implicated in the smuggling of fuel and other illicit goods.³⁶⁸ Fuel smugglers are estimated to spend over 100 million baht, or nearly \$3 million, each year bribing Thai authorities.³⁶⁹ According to some accounts, as many as 80 percent of fuel smugglers in Thailand's southern province of Songkhla negotiate arrangements whereby customs officials turn a blind eye to contraband fuel in return for a share in the resulting profits. Officials at border checkpoints are offered the same incentives.³⁷⁰ In one recent case, an investigative reporter had to seek police protection after reporting on a smuggling network allegedly run by politicians, oil traders, and business entrepreneurs in the southern provinces.³⁷¹

The involvement of Thai officials and law enforcement personnel extends very high up the chain of command. No less prominent people than Pol. Lt. Gen. Pongpat Chayaphan, a former commissioner of the Central Investigation Bureau (CIB), and two other senior law enforcement officials were arrested in November 2014 on charges including the taking of bribes from fuel smugglers. The officials, including a former chief of the Marine Police Division, were convicted of a range of crimes, including taking bribes of over 147 million baht (about \$4 million) from oil smugglers between 2012 and 2014. They received varying sentences: Pongpat was eventually sentenced to thirty-one years in prison, the Marine Police chief six years.³⁷² Even the monarchy was tainted by the scandal. Pongpat is the uncle of Princess Srirasmi, wife of the Thai crown prince; some of her siblings were implicated, and Srirasmi and her family were stripped of their royal status.³⁷³

“In one recent case, an investigative reporter had to seek police protection after reporting on a smuggling network allegedly run by politicians, oil traders, and business entrepreneurs in the southern provinces.”

As one might expect, Malaysian law enforcement personnel have also benefitted from smuggling operations. In March of 2015, the Malaysian Anti-Corruption Commission (MACC) arrested twenty-six Malaysian police officers, including sergeants, sergeant-majors, and corporals, for involvement in smuggling and bribery at the Thailand border. The officers arrested had, in return for bribes, provided protection to fuel smugglers and facilitated the sale of illicit product. Thirteen of the men arrested worked for the General Operations Force and the Home Ministry's Anti-Smuggling Unit (UPP), and one was a former UPP officer.³⁷⁴ It is worth noting that in this case, as in the 2014 scandal in Thailand, the smuggling operations involved not only current officials and law enforcement personnel, but also retired officials, suggesting that profits from smuggling are regarded as a perquisite extending beyond retirement.

Business Tycoons

Influential Thai tycoons have been known to participate in the illicit trade. The most notorious example is Sahachai Jienserminsin, known as Sia Jo, a prominent businessman based in Pattani, who was arrested along with several ranking police officers in 2014 for his involvement in the Pongpat scheme of petrol smuggling and other crimes. Sia Jo was rumored to be the ringleader of the operation. Shortly after being sentenced by a local court to prison for a year and nine months, Sia Jo escaped from a detention cell with the help of at least one police officer.³⁷⁵ He remains at large. In the Pongpat investigation, the subsequently convicted Marine Police Chief confessed to accepting

368 “Oil Smuggling in South Remains Lucrative Illicit Business,” Thai PBS, November 27, 2014, <http://englishnews.thaipbs.or.th/oil-smuggling-south-remains-lucrative-illicit-business/>.

369 “Journalist Reveal Thai Petrol Smuggling,” *Sina News*, November 5, 2012, <http://news.sina.com.cn/w/2012-11-05/170925514288.shtml>.

370 Chinasak Suwan-Acharya and Tasanee Leesahad, “Evaluation of Transaction Cost of Unlawful Business in Southern Thailand,” *Mediterranean Journal of Social Sciences* 2:3, September 2011, DOI: 10.5901/mjss.2011, Vol. 2, No. 3, 24, 26.

371 “Reporters Uncovered,” *Sina*.

372 “Former CIB Commissioner Gets 15 More Years in Jail,” Thai PBS, February 26, 2015, <http://englishnews.thaipbs.or.th/former-cib-commissioner-gets-15-years-more-years-in-jail/>.

373 “Ex CIB Chief Gets 10 Years for Money Laundering,” *Khaosod English*, February 17, 2015, <http://www.khaosodenglish.com/news/crimecourtscalamity/2015/02/17/1424162454/>.

374 “MACC Nabs 11 Cops in Bribery and Fuel Smuggling Crackdown,” *Malay Mail Online*, March 3, 2015, <http://www.themalaymailonline.com/malaysia/article/macc-nabs-10-cops-in-bribery-and-fuel-smuggling-crackdown>.

375 “B1m On Offer for Information On Sia Jo,” *Bangkok Post*, December 2, 2014, <http://www.bangkokpost.com/learning/learning-from-news/446699/b1m-on-offer-for-information-on-sia-jo>.

the equivalent of millions of dollars in bribes from Sia Jo to facilitate the tycoon's fuel-smuggling operations in the south of Thailand.³⁷⁶ It has been reported that Sia Jo customarily paid up to twenty-five million baht per month to bribe officials to overlook his extensive fleet of smuggling vessels disguised as fishing trawlers, which carried fuel drawn from tankers in Malaysian waters.³⁷⁷

Insurgents

A long-simmering insurgency in Thailand's southern provinces escalated in January 2004. Largely concentrated in the country's Muslim-populated region, it has since claimed some 6,500 lives. Separatist insurgents from the Malay Provinces, which were incorporated into Thailand only a century ago, have been demanding, if not independence, at least local autonomy.³⁷⁸ The insurgents are widely believed to participate in fuel smuggling to support their operations against the central government.³⁷⁹ According to the BBC, the insurgents raise funds by trafficking in fuel, drugs, and people along the Malaysian border.³⁸⁰

Thai Retailers

Some Thai retailers are key actors in the illegal hydrocarbons trade. When smuggled fuel arrives in Thailand, smugglers usually can sell it to an established set of retailers.³⁸¹ The retailers can then sell the product on for a sizable profit, mainly in rural regions or in other areas with a dearth of legitimate retail stations.

Detrimental Impact of the Illicit Hydrocarbons Trade

Petrol and diesel smuggling across the Thailand-Malaysia border has proved costly for Thailand. To begin with, extensive smuggling translates into a significant loss in revenues. According to Thailand's Southern Border Province Administration Center, some three million liters per day of fuel was smuggled into southern Thailand in 2011—an amount worth

approximately \$3.9 million, for a loss in tax revenue of \$700,000 per day.³⁸² The Malaysian government has characterized fuel smuggling as “giving foreigners the subsidies intended for Malaysians.”³⁸³

The illicit hydrocarbons trade has also provided significant funds for insurgents in Thailand's southern provinces. In March of 2016, the insurgency escalated again, with a wave of bomb and gun attacks. At least ten bombs were detonated in Pattani's Yaring District, reportedly killing one person and wounding many more, including eleven police officers.³⁸⁴ Human Rights Watch reported that in the same month, separatist insurgents commandeered a hospital in southern Thailand, using it to attack a nearby government post.³⁸⁵ Also in March, gun and bomb attacks took place in the neighboring Narathiwat Province.³⁸⁶ The wave of bombings in tourist centers in August 2016, presumably aimed at damaging the country's tourist industry, has been linked with southern insurgents, but no group has taken responsibility for the attacks, and the Thai government has issued conflicting statements, even blaming the attacks on political opponents rather than insurgents.³⁸⁷

Mitigation

As fuel smuggling is by nature a transnational crime with broad regional impact, coordinated efforts by several countries would offer the most promising mitigation. However, long-entrenched practices of smuggling in Southeast Asia, arduous border terrain, and corruption among both national and local officials hamper any such efforts.

Malaysian Authorities

Malaysian authorities have tended to acknowledge openly that fuel smuggling from Malaysia into Thailand is an ongoing problem, and they have taken practical

376 “Marine Police Exchief Admits He Took Bribes,” *The Nation*, December 18, 2014, <http://www.nationmultimedia.com/national/Marine-police-exchief-admits-he-took-bribes-30250066.html>.

377 “The Plot Thickens as Two Wealthy Businessmen Flee,” *Bangkok Post*, August 12, 2014, <http://www.bangkokpost.com/print/447993/>.

378 “A Look at Southern Thailand's Smoldering Insurgency,” *Deutsche Welle*, July 20, 2015, <http://www.dw.com/en/a-look-at-southern-thailands-smoldering-insurgency/a-18591878>.

379 “Oil Smuggling in South,” Thai PBS.

380 “Putting a Face to the Conflict in Thailand's South,” *BBC News*, February 19, 2013, <http://www.bbc.co.uk/news/world-asia-21504125>.

381 Suwan-Achariya and Leesahad, “Evaluation of Transaction Cost of Unlawful Business in Southern Thailand,” 26.

382 Joao Peixe, “Thailand Uncovers Illegal Oil Trading in Southern Border Provinces,” Oilprice.com, August 25, 2011, <http://oilprice.com/Latest-Energy-News/World-News/Thailand-Uncovers-Illegal-Oil-Trading-In-Southern-Border-Provinces.html>.

383 “Oil Prices and Subsidies: an Explanation,” Unit Perancang Ekonomi, 2005, http://www.epu.gov.my/c/document_library/get_file?uuid=f438db0e-8106-489b-ac5e-2ee3f04d2575&groupId=283545, 8.

384 “One Dead, Dozens Wounded in Wave of Bombs in Southern Thailand,” Reuters, March 31, 2016, <http://www.reuters.com/article/us-thailand-south-idUSKCN0WXOPF>.

385 “Thailand Insurgents Seize Hospital In South,” *Human Rights Watch*, March 15, 2016, <https://www.hrw.org/news/2016/03/15/thailand-insurgents-seize-hospital-south>.

386 “One Dead,” Reuters.

387 Anna Fifield, “With Bombings, Thai Militants Appear to Be Sending a Message to the Junta,” *Washington Post*, August 28, 2016, https://www.washingtonpost.com/world/asia_pacific/with-bombings-thai-militants-appear-to-be-sending-a-message-to-the-junta/2016/08/26/8e3abb48-6978-11e6-91cb-ecb5418830e9_story.html.

measures to mitigate it. Malaysia's Home Ministry Policing, along with the Anti-Smuggling Unit of the Border Security Division, both of which are tasked with combating smuggling, asserted in 2011 that they had succeeded in curbing fuel smuggling along the Thailand border, citing Kedah, Perlis, Kelantan, and Perak areas in particular.³⁸⁸ Strict border controls alone, however, will not be likely to solve the problem.

In December 2014, Malaysia took advantage of a steep decline in oil prices to end its petrol and diesel subsidies. While its stated goal was to reduce its fiscal deficit by saving billions of dollars in fuel subsidies, the end to subsidies was also expected to remove a crucial incentive for fuel smuggling.³⁸⁹ According to the *Malay Mail*, positive results quickly followed the end of subsidies. In 2015, the Perlis Office of the Ministry of Domestic Trade and Consumer Affairs in Malaysia asserted that fuel smuggling had markedly declined. Its director, Khairul Amin Talib, noted that through July 2015, Malaysian authorities had made only six arrests for activities related to fuel smuggling, compared with fifty-four arrests in 2014.³⁹⁰ As noted above, however, the disparity in fuel prices between Malaysia and Thailand has persisted well after the end of subsidies, making this confident assessment somewhat problematic.

On a more local level, in June 2014, Malaysian authorities enacted a regulation limiting by volume the sale of both diesel and petrol in areas near the Thailand border.³⁹¹ Prior to this move, any customer could purchase up to two hundred liters of diesel from any petrol station in Malaysia. This meant that a would-be trafficker could purchase two hundred liters of diesel at a series of petrol stations, easily accumulating thousands of liters of fuel.³⁹² Acknowledging this problem, Malaysia's Domestic Trade, Cooperatives and Consumerism Ministry targeted the Kelantan region in particular, limiting the sale of diesel and petrol by retail kiosks within twenty-five kilometers of the border to a maximum of 600,000 liters per month. Kelantan

was specifically targeted because authorities had found that kiosks near the border were selling some 1.9 million liters of fuel per kiosk every month, a figure that could be accounted for only by considerable illicit activity.³⁹³

Thai Authorities

In recent years, officials in Thailand have started to acknowledge the problem of fuel smuggling, and Thai law enforcement has accordingly made border checkpoints and seagoing patrols more rigorous. Prior to the 2014 coup, a number of high-profile arrests regarding fuel smuggling were made. In July 2012, ten nautical miles off Racha Noi Island, Thai customs officials seized a tanker carrying 230,000 liters of smuggled diesel.³⁹⁴ Between October 2012 and February 2013, authorities captured seven boats smuggling a total of 30 million baht (over \$850,000) worth of diesel.³⁹⁵

As noted above, shortly after the 2014 coup, the NCPO conducted a sweeping anti-corruption campaign that led to the arrest and conviction of several high-ranking officials, including the former chief of the Central Investigation Bureau, and eventually disgraced some Thai royals. While this can be read as an indication that the NCPO is committed to stemming corruption, it remains likely that the investigation and convictions were also politically motivated, a bid by the NCPO to dismantle the opposition's power base.³⁹⁶ In general, the actions taken by the Thai government seldom go beyond making public denunciations of corruption; concrete strategies against fuel smuggling are rare. When practical steps to combat illicit activity are put forth, they are often undermined by corrupt politicians, officials, and law enforcement personnel involved in illicit activity. As will be discussed below, however, since the 2014 coup this has not been the case in relation to LPG.

Just as Thai authorities too often have a vested interest in the fuel smuggling industry, local populations near the Malaysian border consider smuggling ordinary, referring to it as "barter trade."³⁹⁷ Given that many

388 Peixe, "Thailand Uncovers."

389 "Malaysia to End Petrol and Diesel Subsidies," BBC, November 21, 2014, <http://www.bbc.co.uk/news/business-30140728>.

390 "Ministry Says Fuel Smuggling Rate Falls Following Oil Price Flotation," *Malay Mail Online*, August 26, 2015, <http://www.themalaymailonline.com/malaysia/article/ministry-says-fuel-smuggling-rate-falls-following-oil-price-flotation>.

391 Jonathan James Tan, "Sale of Diesel, Petrol at Kelantan-Thai Border Limited," Paultan, June 2, 2014, <http://paultan.org/2014/06/02/sale-diesel-petrol-kelantan-thai-border-limited/>.

392 "Thieving Enforcement Officers Are the Root Cause," *Malaysian Chinese News*, May 23, 2014, <http://www.malaysianchinesenews.com/2014/05/thieving-enforcement-officers-are-the-root-cause/>.

393 Tan, "Sale of Diesel."

394 "Diesel Smugglers Arrested Off Phuket," *Phuket News*, February 8, 2013, <http://www.thephuketnews.com/diesel-smugglers-arrested-off-phuket-36939.php>.

395 Ibid.

396 "Thai Police's Internal Investigation into Corruption Widens Following Arrests," *The Guardian*, November 25, 2014, <https://www.theguardian.com/world/2014/nov/25/thai-senior-police-officer-corruption-charges>.

397 Putting a Stop to Fuel Smuggling, *New Straits Times*, October 8, 2000, https://news.google.com/newspapers?nid=1309&dat=20001008&id=_IRIAAAAIBAJ&sjid=IhQEAAAAIBAJ&pg=5622,3115297&hl=en.

inhabitants of the southern provinces are also resistant to the Bangkok government and often sympathetic to insurgents, the local culture would have to change for measures against fuel smuggling to gain traction in these provinces.

In 2010, the Thai government introduced a simple system of dyes for marking petrol and diesel; interestingly, there are no available official assessments of how effective the measure has proven to be.

Tracking tanker ships has been encouraged by Thai authorities, but not mandated. In December 2014, the head of the Energy Ministry declared that all Thai oil tankers should have tracking devices installed for better monitoring by authorities.³⁹⁸ Additionally, in June 2015 Thailand became the first Association of Southeast Asian Nations, or ASEAN, country to enroll in the World Customs Organization and the Container Control Program of the United Nations Office on Drugs and Crime. The latter program, especially, provides training and facilitation for monitoring illicit activity in global shipping.³⁹⁹

Thai authorities have given much closer attention to LPG smuggling out of Thailand than to diesel and petrol smuggling into the country. Most of these measures have been put in place since the 2014 coup. Prior to the coup, authorities had already begun to enforce stiffer penalties for smuggling LPG, including a fine of 100,000 baht (\$3,000) and prison sentences of as much as ten years.⁴⁰⁰ After the 2014 coup,

the Thai military was dispatched to crack down on LPG smuggling, which then declined sharply that September and October.⁴⁰¹

Around the same time, Thailand also sought to discourage LPG smuggling by allowing authorized LPG traders to re-export imported LPG at the going global price. Consequently, in 2014, legitimate exports of LPG to Laos and Myanmar rose sharply.⁴⁰² If, as anticipated, the exports continue to ease demand for Thai LPG in neighboring countries, the incentive to smuggle LPG will diminish as well.

Conclusion

Like many states in which hydrocarbons theft and smuggling flourish, Thailand must work along many lines if it wishes to mitigate the problem. So far, a grab bag of initiatives, from economic policy changes to law enforcement campaigns to fuel tagging, have been attempted, but the lack of consistency that plagues Thai efforts has made most of these moves largely ineffective. That inconsistency can partly be attributed to political instability, but it also points to collusion by Thai officials in the illicit hydrocarbons trade, a conflict of interest that can result only in anemic and often politically expedient enforcement of laws and commercial regulations. While more sophisticated technologies would doubtless help efforts at mitigation, they must be accompanied by meaningful political reform and a culture of accountability throughout the Thai establishment. It remains to be seen how political developments this month and over the following year will change the culture that contributes to hydrocarbons theft.

³⁹⁸ Ministry of Commerce, People's Republic of China, *Thai Energy Ministry Request Oil Tankers to Install Surveillance Devices*, December 5, 2014, <http://th.mofcom.gov.cn/article/jmxw/201412/20141200822327.shtml>.

³⁹⁹ "Thailand Joins Container Monitoring Programme," *World Maritime News*, January 21, 2015, <http://worldmaritimeneews.com/archives/149997/thailand-joins-container-monitoring-programme/>.

⁴⁰⁰ "Energy Ministry Toughens Law on LPG Vehicle Conversion," *Pattaya Mail*, February 14, 2013, <http://www.pattayamail.com/business/energy-ministry-toughens-law-on-lpg-vehicle-conversion-22223>.

⁴⁰¹ "Thailand Cuts Gas Smuggling," *Phnom Penh Post*, November 13, 2014, <http://www.pressreader.com/cambodia/the-phnom-penh-post/20141113/281616713661165/TextView>.

⁴⁰² Ibid.

AZERBAIJAN



Azerbaijan is a former Soviet Republic located on the Caspian Sea at the intersection of Europe and Asia, where it is bordered by Russia, Georgia, Armenia, Iran, and Turkey. As part of the Caucasus, it has emerged from a long regional history of complicated, often resistant relationships with first the Russian Empire and later the Soviet Union. Territorially non-contiguous, it has a sizeable exclave called Nakhchivan, separated from the rest of the country by Armenia. Azerbaijan's population of roughly ten million, the majority of whom are Shia Muslim, enjoys a high degree of human development and sustained economic development. Oil and gas form the heart of its economy.

The Hydrocarbons Context

Azerbaijan is one of the birthplaces of the oil industry, with evidence of petroleum trading dating back to the third or fourth century. In many respects, the history of oil in Azerbaijan is the history of the oil industry itself. Through much of the twentieth century, development of the industry continued under Soviet authority, moving offshore into the Caspian Sea and initiating gas production as well. Since Azerbaijan's independence in August 1991, the state has pursued an aggressive energy strategy, and it remains one of the top twenty-five producers of oil on earth.⁴⁰³ It has proven reserves of seven billion barrels of oil, of which it produced 841,000 bpd in 2015 (down from a peak of over a million in 2010) along with 129,000 bpd of refinery throughput. The country has 40.6 trillion cubic feet of proven gas reserves, producing 18.2 billion cubic feet in 2015.⁴⁰⁴

In Azerbaijan, all natural resources are considered the property of the state. In the case of oil and gas, over 90 percent of extraction takes place in the South Caspian Basin;⁴⁰⁵ there is very little onshore extraction, though that may increase slightly over time. The South Caspian Basin is an extremely challenging environment for oil production. Not only is the water very deep; the sea bottom is highly unstable, even

throwing up “mud volcanoes” amid tectonic shifts underground. Accordingly, the Azerbaijan government wasted no time contracting with industry majors who possessed the technology to navigate such difficult operations.⁴⁰⁶ The State Oil Company of Azerbaijan (SOCAR), a vertically integrated parastatal, is the principal oil industry stakeholder and the state's nominal participant in all the production sharing agreements (PSAs) that dominate industry activity in the country. PSAs in Azerbaijan are hybrid in that they begin as business deals but then are ratified by the Azerbaijani Parliament and carry the force of law; this arrangement provides an attractive stability that has bolstered confidence among international industry players.⁴⁰⁷

“In 1994, after the establishment of the Heydar Aliyev regime, the first and pivotal PSA, widely known as ‘the contract of the century’ in the industry, was orchestrated.”

In 1994, after the establishment of the Heydar Aliyev regime, the first and pivotal PSA, widely known as “the contract of the century” in the industry, was orchestrated. The agreement, which launched production activity in the three major fields in the South Caspian Basin, established the Azerbaijan International Operating Company (AIOC), a consortium led by BP and now including Chevron, Inpex, Statoil, TPAO, SOCAR, ExxonMobil, Itochu, and ONGC. There was an interesting glitch in the early negotiations, however, when the Azerbaijani government apparently bypassed SOCAR in favor of the new Committee for Oil Development in Azerbaijan.⁴⁰⁸ Upon objections,

403 “Azerbaijan,” United States Energy Information Administration, 2016, <http://www.eia.gov/beta/international/country.cfm?iso=AZE>.

404 BP *Statistical Review of World Energy*, BP, June 2016, <https://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2016/bp-statistical-review-of-world-energy-2016-full-report.pdf>.

405 “Azerbaijan: Law & Practice,” Chambers and Partners, 2016, <http://www.chambersandpartners.com/guide/practice-guides/location/271/8088/2342-200>.

406 Benjamin Sovacool, “Cursed by Crude: The Corporatist Resource Curse and the Baku-Tbilisi-Ceyhan Pipeline,” *Environmental Policy and Governance* 21:1 January-February 2011, 42-57, doi:10.1002/eet.562.

407 Lars H. Gulbrandsen and Arild Moe, “BP in Azerbaijan: A Test Case of the Potential and Limits of the CSR Agenda?” *Third World Quarterly* 28:4, 2007, http://www.fni.no/pdf/lhg_am_twq_2007.PDF, 4.

408 Ibid.

the Aliyev government reverted to using SOCAR, and the PSA was completed.⁴⁰⁹ It might be characterized as a learning experience for Azeri politicians who had cut their teeth in the Soviet system. This first of some twenty-five PSAs now extant was followed by another major deal in 1996 for the Shah Deniz offshore field, which in 1999 was discovered to have massive gas reserves. BP, as the leading shareholder in AIOC and the Shah Deniz field, has been by far the dominant oil company in Azerbaijan ever since.

The first oil produced by foreign companies after the Soviet era arrived in late 1997, the year in which Azerbaijan's largest and most productive asset, the triad of Azeri, Chirag, and Guneshli fields known as ACG, began operations. That same year, the first of Azerbaijan's three oil export pipelines, from Baku to the Russian Black Sea port of Novorossiysk, opened as well. It was followed in 1999 by a pipeline from Baku to the Georgian Black Sea port of Supsa (the Western Route Export Pipeline, or WREP), and in 2005 by the most important current pipeline, the Baku-Tbilisi-Ceyhan (BTC) pipeline. The last, which has transported as much as a million barrels a day to a Turkish port on the Mediterranean, was at its peak the largest construction project on the planet, using more steel than any other endeavor.⁴¹⁰ It is considered to have ended the Russian monopoly on Caspian Basin hydrocarbons exports to Europe.⁴¹¹ A natural gas pipeline now links Azerbaijan's Caspian Basin gas fields, most prominently Shah Deniz, to Turkey as well. This project, the South Caucasus Pipeline, connects with a Turkish pipeline that delivers the gas to Erzurum. It is projected to become part of the Southern Energy Corridor supplying Caspian Basin hydrocarbons to Western Europe by intersecting with eventual pipelines across Turkey and Greece and under the Adriatic to Italy.⁴¹²

Azerbaijan has sufficient refining capacity to meet both domestic need and some export potential. For years it had two refineries, but in 2015 they were merged, officially as part of an effort to both modernize production and streamline SOCAR management. The remaining refinery, the Heydar Aliyev refinery outside Baku, is anticipated to increase production from six

million to seven million tons of fuel per year; by 2020, all the fuel produced is expected to meet the latest European quality standards (Euro-5).⁴¹³ To give a sense of the trade value of the oil industry for Azerbaijan, in 2014, the country exported \$22.4 billion worth of crude oil, constituting 87 percent of its total exports, plus an additional \$1.16 billion in refined petroleum products, or 4.5 percent of its exports.⁴¹⁴

The hydrocarbons industry in Azerbaijan has remained open and welcoming to foreign investment, but it is nonetheless very tightly controlled by the Aliyev government. Current President Ilham Aliyev, who has held office since the death of his father, Heydar, in 2003, appointed Rovnag Abdullayev as chief executive officer of SOCAR. Other relations by kin and long association hold important positions in the government and industry hierarchies. Some commentators have used the term "patronal presidentialism" to describe the functioning of the Azerbaijani government: "political authority [is exercised] primarily through selective transfers of resources rather than formalized institutional practices, idea-based politics, or generalized exchange as enforced through the established rule of law."⁴¹⁵ While this characterization can be, and has been, disputed, there is little question that a close-knit political elite exercises control over the industry.

Illicit Hydrocarbons Activity

Allegations have long existed of a severely underreported black market in crude oil in Azerbaijan, mainly in the form of oil illegally bunkered and then smuggled across the borders of neighboring states—Georgia, Turkey, Russia, Ukraine, and Armenia—by tanker truck and train.⁴¹⁶ Given that those borders are famously porous, and that Azerbaijan is a signatory of the Convention on the Contract for the International Carriage of Goods by Road (CMR Convention), which severely restricts searches of such transport vehicles, any smuggling operation of this kind would encounter little in the way of official obstacles.⁴¹⁷ It is impossible,

409 Ibid, 4-5.

410 Sovacool, "Cursed by Crude."

411 Aitor Ciarreta and Shahriyar Nasirov, "Analysis of Azerbaijan Oil and Gas Sector," United States Association for Energy Economics, 2011, https://www.usaee.org/usaee2011/submissions/OnlineProceedings/Ciarreta_Nasirov-Article1.pdf, 2.

412 Mamuka Tsereteli, "The Southern Energy Corridor: A Strategic Priority for the U.S.?" *The Central Asia-Caucasus Analyst*, May 27, 2015, <http://www.cacianalyst.org/publications/analytical-articles/item/13218-the-southern-energy-corridor-a-strategic-priority-for-the-us?.html>.

413 Robert Brelsford, "SOCAR Lets Contract for Baku Refinery Modernization Program," *Oil & Gas Journal*, April 26, 2016, <http://www.ogj.com/articles/2016/04/socar-lets-contract-for-baku-refinery-modernization-program.html>.

414 "Azerbaijan," The Observatory of Economic Complexity, 2016, <https://atlas.media.mit.edu/en/profile/country/aze/>.

415 Farid Guliyev, "Oil and Regime Stability in Azerbaijan," *Demokratizatsiya*, 21:1, 2013, https://www.gwu.edu/~ieresgwu/assets/docs/demokratizatsiya_percent20archive/GWASHU_DEMO_21_1/R2G1W8R80862KN3H/R2G1W8R80862KN3H.pdf, 122.

416 Alec Rasizade, "Azerbaijan in Transition to the 'New Age of Democracy,'" *Communist and Post-Communist Studies* 31:3, September 2003, <http://www.sciencedirect.com/udel.idm.oclc.org/science/article/pii/S0967067X03000436>.

417 "Organised Crime in Azerbaijan," RPS Partnership, n.d., <http://>



Onshore oil field in Azerbaijan, 2013. *Photo credit:* Hunbille/Flickr.

however, to verify the scale of any such smuggling, and therefore the losses it inflicts on the state and the industry.

Downstream Oil Theft, Fraud, and the State

By the same token, there is little evidence of downstream oil theft as a major enterprise in Azerbaijan. Linking that activity to the Aliyev regime also runs somewhat counter to the logic of the situation. Refined petroleum accounts for about 4.5 percent of exports, bringing in less than 5 percent of the revenue of crude oil exports,⁴¹⁸ and gas supplies around two-thirds of domestic energy needs.⁴¹⁹ Given those numbers, the comparative ease of siphoning off large quantities of crude, and the fact that the Aliyev government exercises firm control over oil revenues and the allocations of those revenues, it seems that any theft by state entities related to refined products would be easier to accomplish through questionable

allocation of funds, rather than physical theft. While various accusations have been lodged against different elements of the government,⁴²⁰ there is no conclusive evidence of such activity. The government's insistence on maintaining a close hold on budget figures contributes to ongoing perceptions of corruption,⁴²¹ but the government has gone to great lengths to appear to be more transparent.

In 2004, Azerbaijan became the first state to sign on to the Extractive Industries Transparency Initiative, and it has had multiple EITI reports since. While this may be admirable, the terms of EITI are rather limited: while they require publication and third-party verification of what oil companies pay and the government receives, the terms do not address where those revenues go afterward.⁴²² Interestingly, in 2015, EITI launched

www.rpspartnership.com/news/organised-crime-in-azerbaijan/.

418 "Azerbaijan," The Observatory Economic Complexity.

419 "Azerbaijan," US Energy Information Administration.

420 "Azerbaijan Snapshot—Business and Corruption," Oilpro.com, 2015, <http://oilpro.com/post/15270/azerbaijan-snapshot-business-and-corruption>.

421 "Azerbaijan," Transparency International, 2016, <http://www.transparency.org/country/#AZE>.

422 Gulbrandsen and Moe, "BP in Azerbaijan," 8-9.

a beneficial ownership pilot, testing new terms in which the “beneficial owners”—the actual human beneficiaries of industry contracts—would also have to be disclosed; Azerbaijan was not one of the eleven EITI states to participate in the pilot.⁴²³ At other times, the government seems to have bowed to pressure from foreign stakeholders. In 2002, for instance, the actual documentation of existing PSAs involving the AIOC were published online; though they were technically laws ratified by Parliament and therefore part of the public domain, they had been impossible to acquire until BP evidently insisted on transparency.⁴²⁴ BP now maintains a page on its site with links to the full text of its PSAs for the Caspian region.⁴²⁵

While these issues do not bear directly on downstream oil theft, they provide valuable windows into the environment in which it may occur, and the efforts afoot to change that environment.

Criminal Groups and Opportunists

Just as possible state involvement in hydrocarbons crime remains at best difficult to ascertain, evidence of extensive operations by organized criminal groups is scarce. Organized crime is certainly well established in the country, as in nearly all former Soviet states; the Caucasus in particular, with its difficult terrain, porous borders, and long history of independent criminal, quasi-criminal, and insurgent networks, is fecund territory for illicit activity of this kind. Azerbaijan is known to serve or have served in the past as both a transshipment hub and a destination for trafficking of other sorts, but hydrocarbons have not been specifically identified as a major issue.⁴²⁶ Though, again, available evidence is thin, it stands to reason that the same criminal networks that work these illicit markets also profit from Azerbaijan’s black market in crude oil.

Ad hoc illicit tapping does occur on the export pipelines leading from Baku to Russia, Georgia, and Turkey. Pipeline security within Azerbaijan is provided partly by the government’s Export Pipeline Protection Department (EPPD), which includes both conventional patrols and, for more remote areas, both a mobile guard post purchased in coordination with BP and about forty mounted horse patrollers for especially difficult terrain. The EPPD is supplemented by Titan D, an Azerbaijani private security company retained by BP.⁴²⁷ While no reliable information on illegal tapping within the country is available, there have been significant instances outside Azerbaijan’s borders. In 2016, a group in the Georgian village of Ruisi were found to have tapped the Baku-Supsa pipeline, diverting crude oil into a 1 km pipeline of their own, which led to an illicit bunkering facility. From there, the oil was taken by truck into Tbilisi, concealed beneath cabbages, and delivered to an illegal refinery that then marketed refined fuel in the area.⁴²⁸

Conclusion

Azerbaijan is something of a paradoxical case study in downstream oil theft: while claims and allegations abound concerning corruption and hydrocarbons crime, including suggestions of significant smuggling of crude oil and more sophisticated forms of industry-related fraud, downstream crime does not seem to figure prominently in the picture. It may be that one lesson to be drawn here is that the combination of a government with tight, vertically integrated control over the hydrocarbons sector and a consortium of international industry players led by a single firm—in this case BP—that insists on some level of transparency is a recipe for minimizing downstream theft.

423 “Beneficial Ownership,” Extractive Industries Transparency Initiative, 2015, <https://guide.eiti.org/en/topic/beneficial-ownership#pilot>.

424 Gulbrandsen and Moe, “BP in Azerbaijan,” 8.

425 “Legal Agreements” BP Azerbaijan, http://www.bp.com/en_az/caspian/aboutus/legalagreements.html.

426 “Organised Crime,” RPS Partnership.

427 *Protecting Our Operations*, BP in Azerbaijan Sustainability Report, 2013, 2014, http://www.bp.com/content/dam/bp/pdf/sustainability/country-reports/BP_Azerbaijan_sustainability_report_2013.pdf.

428 “Is This the Most Intricate Oil Theft Operation Yet?” Oilprice.com, March 23, 2016, <http://oilprice.com/Energy/General/Is-This-The-Most-Intricate-Oil-Theft-Operation-Yet.html>.

TURKEY



Turkey is one of the most pivotal countries with regard to the energy security of Europe. While not a major producer—it is a net importer by a wide margin—Turkey is a crucial transshipment hub and pipeline route for energy supplies. It is effectively the gatekeeper to much of Europe’s oil and gas supplies from the Caspian Basin, Iraq, and Iran; as such, it is a crucial part of any European energy strategy that seeks to avoid dependence on Russian supplies.

Any analysis of Turkey in relation to hydrocarbons crime, however, must be somewhat qualified in light of the country’s political situation. In the wake of the attempted coup on July 15, 2016, the situation has continued to be fluid and to some degree impenetrable. President Recep Tayyip Erdoğan’s crackdown, ostensibly on the Gulenist network but including a range of other opposition elements, may have shored up the stability of his government, but it has also cut deep into state capacity across a number of sectors, from the military to law enforcement to education. While a thorough analysis of such a rapidly evolving context is well beyond the scope of this report, it remains the backdrop for it.

The Hydrocarbons Context

Turkey is not known to have extensive oil reserves; as of 2015, they were estimated to total just under three hundred million barrels. Most of these reserves are inshore, in the southeast of the country.⁴²⁹ While production declined in the 1990s, it began to ramp up again in the 2000s, as the state began to develop offshore prospects in the Black Sea and Mediterranean Sea. Spending on exploration went from a mere \$42 million in 2002 to \$610 million in 2012. The country may hold extensive shale oil reserves as well.⁴³⁰ At no point, however, has the country’s production accounted for more than a fraction of its consumption. While a portion of Turkey’s demands are met by domestic production, Turkey imports most of its oil from a range of sources, as displayed in figure 3 (data from 2014).

Türkiye Petrolleri Anonim Ortaklığı (TPAO) is the state-owned exploration and production agency, and

all industry players are required to partner with TPAO; the chief international players to do so have been Shell and ExxonMobil. Oil and gas pipelines are managed by BOTAS, a subsidiary of TPAO.

Turkey’s main role in relation to oil, however, is as a hub for oil and gas moving into the Mediterranean and Europe from the Caspian Basin and Iraq. This transit takes place via ship, truck, and pipeline. The Turkish Straits are a major thoroughfare for shipping, with about 2.9 million barrels of petroleum products passing through per day in 2013.⁴³¹ More importantly, Turkey serves as an endpoint or throughway for critical pipelines. Three major oil pipelines lead to the Mediterranean port complex of Ceyhan in the southwest of the country: the Baku-Tbilisi-Ceyhan pipeline, which brings oil from the Caspian Basin, and the Kirkuk-Ceyhan and Kurdish Regional Government (KRG) pipelines carrying oil from northern Iraq. While the Kirkuk-Ceyhan pipeline has seldom operated at more than limited capacity due to frequent sabotage, the KRG pipeline was sending over half a million barrels of oil per day to Ceyhan in mid-2015. Ceyhan is, therefore, a major oil hub. In 2014, about 650,000 barrels per day of oil from the Caspian Basin and over 130,000 barrels per day of oil from Iraq passed through its facilities.⁴³²

Turkey has six oil refineries, four of which are owned by the country’s main refining company, Tupras, which also owns the majority of Turkey’s oil storage facilities. The country’s total refining capacity exceeds 650,000 barrels per day.⁴³³

A more recent gas pipeline, the Baku-Tbilisi-Erzurum, is planned to form part of the Southern Energy Corridor, which is projected to transport some sixteen billion cubic meters of gas per year to extensions through Greece and under the Adriatic to Italy by 2019. Turkey has also reportedly negotiated with Israel about serving as a hub for that country’s recently discovered gas reserves.⁴³⁴

Within Turkey, fuel is a significant source of tax revenues. In 2011, for instance, up to 60 percent of the

429 “Turkey,” United States Energy Information Administration, 2016, <https://www.eia.gov/beta/international/analysis.cfm?iso=TUR>.

430 Selcan Hacaoglu and Brian Swint, “Turkey Beating Norway as Biggest Regional Oil Driller: Energy,” Bloomberg, January 10, 2013, <http://www.bloomberg.com/news/articles/2013-01-10/turkey-beating-norway-as-biggest-regional-oil-driller-energy>.

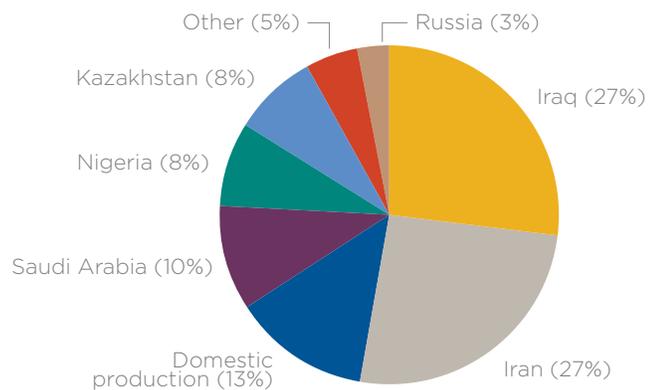
431 Ed Crooks, “Turkey Holds Crucial Place on Oil Routes,” *Financial Times*, July 16, 2016, <http://www.ft.com/cms/s/0/3d5e0c80-4af0-11e6-8d68-72e9211e86ab.html#axzz41v19PgXO>.

432 “Turkey,” US Energy Information Administration.

433 Ibid.

434 Crooks, “Turkey Holds Crucial Place.”

Figure 3. Turkey's Sources of Oil



Source: US Energy Information Administration.

cost of a liter of petrol or diesel was tax—a figure some 18 percent higher than in most Western European countries.⁴³⁵ This pricing accounts for a good portion of the black market activity detailed below.

Illicit Hydrocarbons Activity

As Turkey is not a major oil producer, its role in hydrocarbons crime mostly involves products coming into the country. It has long been a regional, even global, hotspot for smuggling. As one authority puts it, “As a country sitting at a major intersection in global commerce, Turkey acts as a spring, valve and spigot for multiple illicit industries. Weapons, narcotics and undocumented migrants, as well as contraband carpets, petroleum, cigarettes, and precious metals all pass in and through the country’s borders on a regular basis.”⁴³⁶ Hydrocarbons crime takes place within this long-standing context.

Theft

While there is significant black market activity in Turkey, downstream theft does not seem to be a prominent issue. There are no extant open-source reports of pipeline tapping or of siphoning fuel from storage facilities, though these activities likely occur to some extent. The profit in hydrocarbons crime mainly comes by taking advantage of cross-border or internal price disparities.

Smuggling: General

Turkey has long borders that are very difficult to police. Its border with Syria stretches some 822 km, while its borders with Iran and Iraq extend 499 and 331 km, respectively. These southern borders are in addition to smaller borders with Georgia, Armenia, and the Nakhchivan region of Azerbaijan in the northeast and Greece and Bulgaria in the west. The two most noteworthy smuggling areas, however, are in the southwest, where the Hatay Province borders Syria, and the far east, where the Van Province borders Iran.

As noted above, the main incentive for smuggling is the taxes levied on petrol and diesel in Turkey. Smuggled fuel, therefore, can command much lower prices while offering high profits. One official Turkish police report indicated that about 2.7 tons of fuel are smuggled annually into the country, at a cost in tax revenues of some \$2.5 billion.⁴³⁷ In another telling statistic, while the number of cars on the road in Turkey increased by 70 percent between 2003 and 2010, the corresponding rise in fuel consumption was only 20 percent.⁴³⁸ The discrepancy can be explained only by widespread use of smuggled fuel. In August of 2011, twenty-seven thousand liters of illicit fuel were seized in Hatay Province alone.⁴³⁹ As one study put it, there is a huge black market in fuel within Turkey, but no one has yet undertaken a serious study of its extent, modes of operation, and economic effects.⁴⁴⁰

Within Turkey, the dynamics of cross-border smuggling are most evident in the day-to-day reality that fuel is generally cheaper in the south of the country than in the north, creating a domestic space for moving fuel as well as a cross-border opportunity.⁴⁴¹ Reportedly, smuggling of a range of commodities is so commonplace along the southern and eastern borders with Iran and Iraq that if one orders tea in a restaurant or café in those areas, one may well be asked whether that means licit or smuggled tea.⁴⁴²

Smuggling: Syria

Syria has a long tradition of smuggling along its various borders, and the country’s recent collapse into violence has fueled some aspects of this activity.

437 Seibert, “As Economy Booms, Demand for Black Market Fuel Soars in Turkey.”

438 Ibid.

439 Ibid.

440 Erkan Erdogdu, “Motor Fuel Prices in Turkey,” MPRA, 2013, https://mpr.a.ub.uni-muenchen.de/55521/1/MPRA_paper_55521.pdf, 21-2.

441 Mustafa Akyol, “The Truth about Turkey and Islamic State Oil,” *Al Monitor*, September 22, 2014, <http://www.al-monitor.com/pulse/originals/2014/09/turkey-iraq-syria-krq-isis-oil-hostages.html>.

442 Ibid.

According to some sources, fuel smuggling has increased along Turkey's southern border by over 300 percent since the onset of the Syrian civil war, becoming such a lucrative trade that some factions in the conflict have begun levying taxes on fuel that passes through their territory.⁴⁴³ The main issue here is the smuggling into Turkey of fuel, mainly low-grade diesel, from territories held by the Islamic State of Iraq and al-Sham (ISIS).

The nature of smuggling is such that its routes will vary according to the shifting tides of the war. As detailed below, however, studies have indicated two main avenues into Turkey: on the southeastern border in Hatay Province, mainly across the Orontes River; and in the east, from northern Iraq to the E90 highway and thence west toward the coastal ports.

“According to local sources, the diesel transferred through the pipelines amounted to thirty to fifty tanker loads each day, and nearly all the villagers were involved in the thriving trade, some making huge fortunes”

To begin with, ISIS has a limited capacity to produce and refine oil, and its infrastructure has come under increasing attack by airstrikes from Russia and from the US-led coalition. Best estimates put its daily production at about fifty thousand barrels, most of which is sold at the wellhead to middlemen, who pick up the oil at about \$25-35 a barrel and sell it at anywhere from \$60-100 a barrel.⁴⁴⁴ At this rate, a tanker carrying 150 barrels of oil can turn a profit of up to \$5,000, depending on how refined the product is.⁴⁴⁵ A US Treasury official remarked in 2015 that ISIS makes approximately \$40 million a month from this business, with most of the oil going to the Bashar al-Assad regime. “The two are trying to slaughter each other,” said the official, “and they are still engaged in millions and millions of dollars of trade.” Much of

the remaining oil is smuggled into Turkey.⁴⁴⁶ Before crossing the border, it is usually refined in Syria, either into low-grade petrol or into mazut, a low-grade diesel used mostly for powering generators. Close to the border with Hatay Province, the town of Kafr Halab seems to be a major staging area for cross-border smuggling.⁴⁴⁷

There are three main routes for smuggling fuel across the border into Hatay Province, all of which are intensely local. The first is on foot or by horse or donkey, carrying jerry cans of fuel over rough terrain. One such route runs from Kharbet al-Jawz in Syria to Guvecci in Turkey, though it has been largely closed off by Turkish forces since their 2014 border crackdown, discussed below. The second route involves loading jerry cans onto boats to cross the Orontes River, often using a rope suspended across the water as a guide. This method has been seen near the Turkish town of Hacipasa. But Hacipasa, along with Besaslan, also figures in the third and most sophisticated method, that of using irrigation pipes to form pipelines underneath the border.⁴⁴⁸

In one instance of improvised pipeline smuggling, some five hundred small-diameter pipelines were installed between the Syrian village of Ezmerin and the Turkish village of Hacipasa. The pipelines, which were often dug in plain sight with expensive equipment, were about 3 km long and 15 m deep and had to go under the Orontes and then beneath the intervening fields before emptying into storage tanks on the grounds of private homes. The pumps were controlled via cellphones. According to local sources, the diesel transferred through the pipelines amounted to thirty to fifty tanker loads each day, and nearly all the villagers were involved in the thriving trade, some making huge fortunes.⁴⁴⁹

A more industrial-scale smuggling route may have been uncovered by researchers at the University of Greenwich. An extensive 2015 report by George Kiourktsoglou and Alec D. Coutroubis details how oil sold at the wellhead by ISIS is picked up by convoys of trucks, sometimes as many as thirty, for immediate crossing into Turkey. Until recently, the trucks themselves were not targeted by airstrikes, so they could cross the border to the E90 highway and

443 Gingeras, “Corruption, Crime, and Scandal in Turkey.”

444 *Financing of the Terrorist Organization Islamic State in Iraq and the Levant (ISIL)*, Financial Action Task Force, February 2015, <http://www.fatf-gafi.org/media/fatf/documents/reports/Financing-of-the-terrorist-organisation-ISIL.pdf>, 14-15.

445 Ibid., 14.

446 Guy Faulconbridge and Jonathan Saul, “Islamic State Oil Is Going to Assad, Some to Turkey, U.S. Official Says,” Reuters, December 10, 2015, <http://www.reuters.com/article/us-mideast-crisis-syria-usa-oil-idUSKBN0TT2O120151210>.

447 “Inside Isis Inc: The Journey of a Barrel of Oil,” *Financial Times*, February 29, 2016, <http://ig.ft.com/sites/2015/isis-oil/>.

448 Ibid.

449 Ibid.

travel quickly to Ceyhan, possibly delivering some oil along the way. Rather than try to gauge any influx of illicit oil into Ceyhan's extensive storage facilities, which hold upwards of seven million barrels at a given time, Kiourktsoglou and Coutroubis monitored trends in tanker ship charters out of the port. They discovered that from July 2014 to February 2015, the amount of freight spiked in a manner independent of the prevailing trends in legal shipping; each spike coincided with episodes of ISIS fighting close to oil assets in Syria and Iraq and therefore with needing the extra revenue increased oil smuggling will provide. While Kiourktsoglou and Coutroubis are careful not to draw causation from correlation, the circumstantial evidence does suggest that a sophisticated network of smugglers has managed to get oil out of ISIS territory and onto tankers departing from Ceyhan.⁴⁵⁰ Though not in the report, it seems that the fuel being loaded in Ceyhan was not necessarily loaded as cargo, but as shipping fuel. In other words, it moved through Ceyhan with hardly a trace.

That said, it is important to note that once oil or fuel smuggled from ISIS territory is within Turkey, whoever handles it may not be aware of its precise origin. As one journalist put it, "Oil changes hands so quickly that buyers do not know that they are getting oil that originates from [ISIS]."⁴⁵¹

Smuggling: Iran

While Turkey's border with Syria has attracted the most attention in recent years, fuel smuggling has also taken place along the country's southeastern border with Iran, mainly in Van Province. Here the black market is driven by a classic cross-border price disparity. Iran produces a tremendous amount of oil but still has limited, though growing, refining capacity. Fuel in Iran has been subsidized for decades. In recent years, those subsidies have been cut back, but in 2015 petrol still sold for the equivalent of \$0.30 per liter and diesel for only \$0.18 per liter. In Turkey, the retail prices for the same fuels were the equivalents of \$1.81 per liter and \$1.54 per liter, respectively.⁴⁵² For inhabitants of the underdeveloped areas on both sides of the border—in Van Province, per capita income is less than half the national average, and in Iran there is massive

unemployment among the Kurdish population—the incentive to smuggle is enormous.⁴⁵³

Given the rugged terrain and lack of transportation infrastructure in the region, most smuggling takes place on foot, or with donkeys or horses. A typical small operation involves jerry cans on horses coming into Iran from Turkey to a rendezvous arranged via text or mobile phone call. The Iranian sellers often facilitate the smugglers' return trip by bribing border guards at relatively accessible crossings in advance. Once in Turkey, the fuel is taken into cities by trucks, often with hidden storage tanks, and distributed from there.⁴⁵⁴

Despite recent crackdowns elsewhere, in this region mitigation efforts by Turkey have generally been minimal. The decades-old conflict with the Kurdistan Workers Party (PKK) has so inhibited development that Turkish authorities have exercised a kind of benign neglect to allow a somewhat higher standard of living.⁴⁵⁵ Though Iran imposes a penalty for fuel smuggling of three times the cost of the smuggled product, the real hazard of this smuggling is being shot on sight by the country's border patrols.⁴⁵⁶

Occasionally, more direct smuggling methods, reminiscent of Hatay Province, have been practiced. In 2012, authorities broke up an operation in Hattari Province, south of Van Province, that received crude oil from Iran through a 3 km pipeline; the smugglers also operated a small refinery and five 5,000-liter storage tanks.⁴⁵⁷ A similar pipeline, 3.8 km in length, was unearthed in the same area in June 2015.⁴⁵⁸

Adulteration

The high taxes levied on fuel in Turkey have also given rise to widespread adulteration. The most common form of adulterated fuel is "Number 10 oil," originally

450 George Kiourktsoglou and Alec D. Coutroubis, "ISIS Export Gateway to Global Crude Oil Markets," *Maritime Security Review*, 2015, <http://www.marsecreview.com/wp-content/uploads/2015/03/PAPER-on-CRUDE-OIL-and-ISIS.pdf>, passim.

451 Akyol, "The Truth about Turkey and Islamic State Oil."

452 "Fuel Smuggling Triggered by Huge Profits," *Financial Tribune*, June 6, 2015, <http://financialtribune.com/articles/economy-domestic-economy/18263/fuel-smuggling-triggered-huge-profits>.

453 "Fuel Smugglers Run a 'Pipeline of Mules,'" *The National*, June 8, 2009, <http://www.thenational.ae/news/world/europe/fuel-smugglers-run-a-pipeline-of-mules>; Fazel Hawramy, "Border Smuggling Rises in Iranian Kurdistan," *Al Monitor*, October 28, 2013, <http://www.al-monitor.com/pulse/originals/2013/10/iran-kurdistan-smuggling-rises.html>.

454 "From the Shadows into the Snow: Smuggling into Iran," Eurasianet, March 23, 2009, <http://www.eurasianet.org/departments/insightb/articles/eav032409.shtml>.

455 Akyol, "The Truth about Turkey and Islamic State Oil."

456 "Fuel Smuggling Triggered by Huge Profits," *Financial Tribune*; Hawramy, "Border Smuggling Rises in Iranian Kurdistan."

457 "Smugglers Build Three-kilometer Pipeline Between Turkey, Iran," *Hurriyet Daily News*, December 10, 2012, <http://www.hurriyetaidailynews.com/smugglers-build-three-kilometer-pipeline-between-turkey-iran.aspx?pageID=238&nID=36517&NewsCatID=348>.

458 "Fuel-Smuggling Pipeline Found on Iranian Border," *Daily Sabah*, June 2, 2015, <http://www.dailysabah.com/investigations/2015/06/02/fuel-smuggling-pipeline-found-on-iranian-border>.

a specific formula but now the generic name for any number of low-grade diesel substitutes consisting of, among other ingredients, industrial oils, used cooking oils, and even old tires.⁴⁵⁹

In recent years, however, the government has taken measures that have mitigated adulteration to some extent. In 2005, Turkey adopted fuel marking, using sophisticated molecular bonding technology.⁴⁶⁰ By 2010, it had added two more mechanisms: cash register monitoring that links volumes of fuel purchased to specific vehicles by license plate, and pump automation systems that allow distribution companies to collect similar information.⁴⁶¹

While those measures may have limited the amount of adulterated fuel on the retail market, they have little impact on the black market in Turkey, which by its very nature does not pass through established retail outlets and eludes inspection.⁴⁶²

Sabotage

Sabotage, primarily of oil and gas pipelines, has been an ongoing security concern for Turkey. On several occasions, the KRG pipeline in particular has been sabotaged by PKK forces, or irregular groups claiming allegiance to the PKK. While the pipeline is the economic lifeline of the Iraqi Kurds, the PKK is openly opposed to the KRG's economic cooperation with the Turkish government—an internecine conflict that shows little sign of abating.⁴⁶³

Mitigation

While some mitigation measures have been detailed above, the main downstream issue for Turkey remains

smuggling. Since the introduction of an action plan in 2012, the Turkish government has moved more aggressively to counter it. The pivotal year was 2014, when ISIS's capture of a number of oil fields led to a sharp rise in smuggled oil and fuel. According to one source, seizures of smuggled hydrocarbons that year jumped from about seventy-three million liters to over seventy-nine million liters, and the official number of smuggling incidents from approximately four thousand to around ten thousand.⁴⁶⁴ The subsequent crackdown cut deeply into cross-border traffic, especially in and around Hatay Province, where locals engaged in smuggling expressed dismay at how activities that had seemingly been willfully overlooked by authorities were now being uprooted.⁴⁶⁵ Significantly, open sources have offered no indication as to whether the larger operations theorized by Kiourktsoglou and Coutroubis have been mitigated.

Conclusion

Turkey's combination of high fuel prices and long borders, including coastline on three sides and a good portion of rugged terrain that is difficult to police, makes for a seemingly intractable problem with smuggling and black marketeering. While the Turkish authorities have succeeded recently in cutting off, or at least cutting down, a fair amount of smuggling, the full extent of such activity is hard to measure, and the application of internal efforts such as fuel marking has largely been limited to the retail sector—a significant but hardly overwhelming success. Mitigating downstream hydrocarbons crime in Turkey will require a multifaceted approach that encompasses the fiscal necessity for tax revenues, the porosity of some border regions, the instability beyond those borders, and the black market that shadows the Turkish retail market.

⁴⁵⁹ Seibert, "As Economy Booms, Demand for Black Market Fuel Soars in Turkey."

⁴⁶⁰ "Turkey to Use Israeli Technology against Fuel Fraud," *Globes*, November 16, 2005, <http://www.globes.co.il/en/article-1000029806>.

⁴⁶¹ Gilles Valentin, ed., "The Oil and Gas Year: Turkey 2010," Rupert Smith, 2009, 149.

⁴⁶² Seibert, "As Economy Booms, Demand for Black Market Fuel Soars in Turkey."

⁴⁶³ "Kurdish Oil Flows Shut as Pipeline Sabotaged in Turkey," Reuters, February 23, 2016, <http://www.reuters.com/article/us-iraq-oil-pipeline-turkey-idUSKCN0VW24U>.

⁴⁶⁴ *Financing of the Terrorist Organization Islamic State in Iraq and the Levant (ISIL)*, Financial Action Task Force

⁴⁶⁵ "Turkey Cracks Down on Oil Smuggling with ISIS in Mind," CBS News, October 6, 2014, <http://www.cbsnews.com/news/turkey-cracks-down-on-oil-smuggling-with-isis-in-mind/>.

EUROPEAN UNION



With a population of over half a billion inhabitants, an area of over four million square kilometers, and the second-largest economy in the world, the European Union is a massive and complex entity, with great global influence but also considerable inner tensions and conflicts. It consists of twenty-nine countries, nineteen of which have, since 2002, exclusively used the euro as a common currency. The complex and evolving economic ties among European Union (EU) member states, especially since the 1992 Maastricht Treaty, have led to a very deliberative approach to political and economic change.

In recent years, the EU has shown signs of mounting centrifugal forces. The shock of the 2016 Brexit vote is only the most obvious manifestation of a growing resentment among certain voter blocs and political parties toward European unity. This growing nationalism, which has often traded in the discourse of authoritarianism, has been fanned by Russia, the EU's chief geopolitical rival, and the migrant crisis resulting from upheavals in the Middle East, North Africa, and even sub-Saharan Africa has brought those tensions increasingly to the fore.

Germany remains the dominant economic power within the EU, and in many ways it steers EU policy. Some of the tensions within the EU involve smaller, less prosperous states' resentment of what they regard as Germany's imperious, frequently moralizing attitude toward their often, but not always, self-inflicted economic woes. As noted below, some of these states have sharply criticized Germany's alleged willingness to pursue what it sees as its own energy interests without due regard for the economic flourishing of other EU countries.

Nonetheless, the EU remains one of the more transparent political and economic entities in the world, making the problem of hydrocarbons crime less an issue of political corruption or patronage and more one of law enforcement, regulation, and diplomacy.

The Hydrocarbons Context

The European market for hydrocarbons breaks down along two predictable lines: natural gas on the one hand, and petrol and diesel on the other. Both resources are politically charged, but in vastly different ways.

The main issue connected with natural gas is not theft or fraud, but rather the ongoing geopolitical strategy of Russia, Europe's chief supplier of gas, to leverage the resource as a way of increasing its influence in and around the EU. To contextualize the dependency, six European countries imported 100 percent of their natural gas from Russia in 2014, and nine more imported 40 percent.⁴⁶⁶ Russia's extensive network of pipelines can be read as channels of influence, which the EU has taken steps to counteract.

Recent developments have largely revolved around the continuing unrest and disruption in Ukraine. Ukraine has historically served as a key route for Russian giant Gazprom's gas pipelines to Europe, the most prominent of which, Soyuz and Brotherhood, run directly through the center of the country. Gazprom has indicated that, on expiry of its current contracts with Ukrainian entities in 2019, it will cut off both pipelines.⁴⁶⁷ This will eliminate Ukraine as an intermediary, preventing it from collecting transit fees. Of course, the closure will also require alternative supply routes.

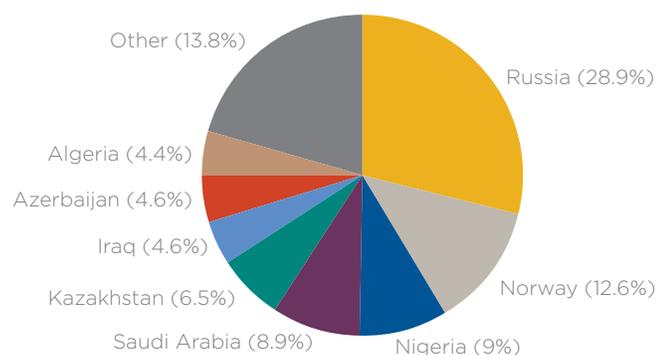
The first such alternative involves a controversial expansion of direct supplies to Germany. The current Nord Stream pipeline, which runs under the Baltic Sea, is slated to be supplemented in 2019 by Nord Stream 2, which will vastly increase the rate of supply. Critics have observed that such a move would not only attenuate supplies to weaker economies in Eastern Europe, but also undercut the EU's goal of weaning itself off Russian gas supplies. Until recently, critics have had little success in holding up the project, but just this past month Polish regulators determined that Nord Stream 2 would inappropriately reduce competition in the fuel market, a decision that has succeeded in at least delaying the project. That said, Germany remains committed to Nord Stream 2, which suggests that the undertaking is likely to be realized.⁴⁶⁸

466 Kevin Ryan, "Event Summary: Southern European Energy Corridor: Status, Prospects, and Geopolitics," Woodrow Wilson International Center for Scholars, April 14, 2015, [https://www.wilsoncenter.org/sites/default/files/Energy percent20Event percent20Summary_formatted.pdf](https://www.wilsoncenter.org/sites/default/files/Energy%20Event%20Summary_formatted.pdf).

467 "Gazprom Reaffirms Plans to Bypass Ukraine in 2019," EurActiv.com, June 10, 2015, <http://www.euractiv.com/section/europe-s-east/news/gazprom-reaffirms-plans-to-bypass-ukraine-in-2019/>.

468 Keith Johnson, "Poland Takes Aim at Putin's Pipe Dreams," *Foreign Policy*, August 5, 2016, <http://foreignpolicy.com/2016/08/05/poland-takes-aim-at-putins-pipe-dreams/>.

Figure 4: EU Oil Importers by Market Share



Source: European Commission.

A second proposed alternative, the TurkStream pipeline, would carry natural gas under the Black Sea to Turkey; Greece has already signed an agreement to connect with TurkStream. But TurkStream has proved problematic for all its stakeholders: recent spats between the Turkish and Russian governments, combined with the July 2016 coup attempt and subsequent massive crackdown in Turkey, put the project on hold. A September 2016 meeting between Turkish President Recep Tayyip Erdoğan and Russian President Vladimir Putin seems to have revived progress on TurkStream, but, given the pace of change in the region, its future remains unclear.

In an effort to mitigate Russian dominance in the natural gas market, Europe has begun developing both internal pipelines among its member nations and along the ambitious Southern Gas Corridor, a supply line linking Caspian Basin producers directly with European markets. This project now presents its own complications, as not only TurkStream but also the Southern Corridor would pass through Turkey, which would assume a powerful role as an energy hub just as its relations with the EU are fraying in the aftermath of recent events. Further, Europe will need to sort out linking the Southern Corridor with the Eastern European states that depend most on Russian supplies. In another infrastructure project, the EU has constructed LNG import terminals for shipping supply. On the regulatory level, the EU is attempting to develop a more interconnected and consistent environment for internal trade and transit so as to level out prices from country to country.⁴⁶⁹

More salient to this study is the market in petrol and diesel, and therefore in crude oil, with which Europe is supplied by a range of producers (see figure 4). Diesel

⁴⁶⁹ "Building a European Energy Market," Stratfor, August 18, 2015, <https://www.stratfor.com/analysis/building-european-energy-market>.

is especially important; no fewer than 53 percent of the EU automobiles sold in 2014 ran on diesel fuel.⁴⁷⁰ The EU remains the world's second-largest consumer market for oil, behind the United States and just ahead of China, and though its demand has decreased in recent years, it still imports some 90 percent of its oil.⁴⁷¹ As with natural gas, the EU has pursued increased ties with suppliers in the Caspian Basin and Central Asia, such as Azerbaijan, Kazakhstan, Uzbekistan, and Turkmenistan. While the trade in natural gas mainly involves negotiations and power plays among European and other states, hydrocarbons fraud in relation to diesel and petrol is the playground of non-state actors, from petty smugglers to large and sophisticated organized criminal groups.

As in many other regions, much of the hydrocarbons fraud and theft in the EU hinges on disparities in the cost of fuel among its member countries. As figures 5 and 6 indicate, in the EU, these often striking differences arise largely from tariffs and value added tax (VAT). Hydrocarbons fraud therefore often takes the rather direct form of purchasing fuel in a state with relatively low tariffs and VATs and selling it in a nearby state with higher rates, or misrepresenting a type of fuel taxed at a lower rate as a fuel taxed at a higher rate; however, it also gives rise to sophisticated carousel schemes involving a series of vendors and purchasers defrauding the state. Linked to these illicit activities is "cocktailing," or chemically altering fuels so that they mimic hydrocarbons products assessed for lower tariffs or VATs, and then selling them as higher-taxed fuels.

Hydrocarbons crime in the EU also involves extensive conventional smuggling operations, sometimes working within the EU but also drawing on supplies from outside Europe, especially North Africa and Russia. These enterprises often take advantage of existing smuggling routes, and have been linked with human and drug trafficking.

The economic costs of hydrocarbons fraud in the EU are considerable. According to some estimates, in 2012 such practices cost the EU nearly €4 billion in tax revenues.⁴⁷²

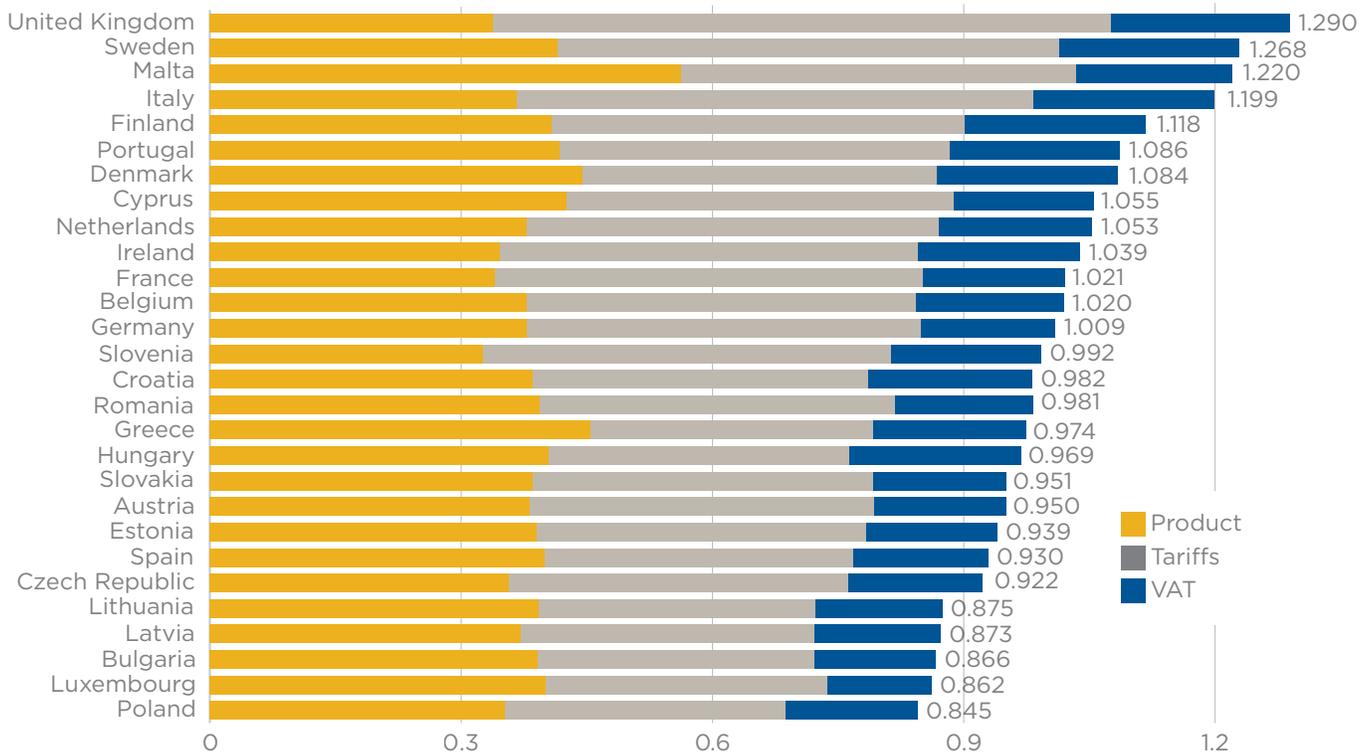
⁴⁷⁰ Peter Kiernan, "Europe's Oil Import Dilemma," The Fuse, October 26, 2015, <http://energyfuse.org/europes-oil-import-dilemma/>.

⁴⁷¹ Ibid.

⁴⁷² "Fuel Fraud Costing Europe More Than \$4 Billion in Lost Taxes," Bloomberg, August 27, 2013, <http://www.bloomberg.com/news/articles/2013-08-26/fuel-smugglers-costing-europe-more-than-4-billion-in-lost-taxes>.

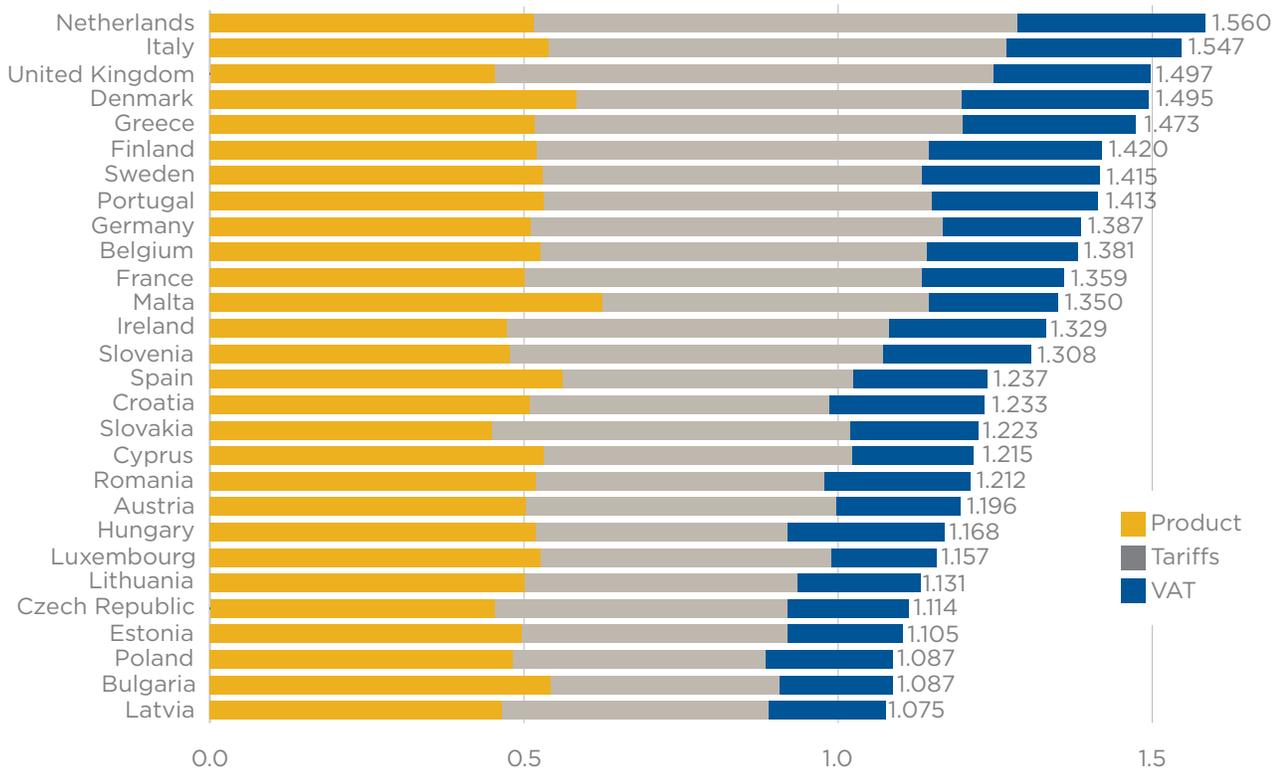
Downstream Oil Theft: Global Modalities, Trends, and Remedies

Figure 5. Comparative Breakdown of EU Diesel Prices as of February 2016 (in euros per liter)



Source: www.fuelseurope.eu.

Figure 6. Comparative Breakdown of EU Gasoline Prices as of February 2016 (in euros per liter)



Source: www.fuelseurope.eu.

Modalities of Illicit Hydrocarbons Activity

Theft

Numerous examples suggest that straightforward theft of fuel remains a common problem within the EU. Between 2011 and 2012, for example, four MiRO oil refinery workers in Karlsruhe, Germany, managed to steal 912,000 liters of diesel worth €1.3 million. Initially, they took the fuel in four thousand-liter trucks, but eventually managed to bring the security guards into their scheme, allowing them to upgrade to ten thousand-liter tankers.⁴⁷³

Bulgaria's state-owned railway company BDZ has experienced similar losses. As of January 2015, the company was losing an average of 120 tons of fuel per month to theft.⁴⁷⁴ As in Germany, the theft was perpetrated by low-level employees, but the losses ultimately prompted the transport minister to order an inquiry.

Spain has had an extensive problem with fuel theft from pipeline tapping. Some noteworthy cases include a 2008 pipeline tap by two men in Madrid who took €35,000 of fuel,⁴⁷⁵ the 2011 arrest of five British nationals who stole 156,700 liters from a pipeline to Malaga,⁴⁷⁶ and a 2013 bust of a gang of fifteen individuals who were systematically tapping energy pipelines.⁴⁷⁷ More recently, a gang of eight, including four Lithuanians, was arrested in May 2016 for stealing at least twenty thousand liters of fuel from pipelines in remote areas. The gang employed a low-tech, but skillful scheme whereby they used metal detectors to identify the ideal spots for puncturing the pipeline and knew just how much to take without causing a drop in pressure.⁴⁷⁸ Their knowledge suggests insider familiarity.

473 Ibid.

474 "Bulgaria's Transport Minister Orders Inquiry into Suspected Diesel Theft at State Railways," *Novinite*, January 26, 2015, http://www.novinite.com/articles/166170/Bulgaria_percentE2percent80_percent99s+Transport+Minister+Orders+Inquiry+into+Suspected+Diesel+Theft+at+State+Railways.

475 Rebecca Carranco, "Dos detenidos por robar miles de litros de gasolina en un oleoducto," *El País*, August 28, 2008, http://elpais.com/diario/2008/08/28/madrid/1219922657_850215.html.

476 Fernando J. Pérez, "Cinco detenidos por robar 156.000 litros de gasoil de un oleoducto," *El País*, November 18, 2011, http://elpais.com/diario/2011/11/18/andalucia/1321572136_850215.html.

477 Jesus A. Canas, "Cae una banda que robó 20.000 litros de combustible pinchando oleoductos en Andalucía," *El País*, May 11, 2016, http://politica.elpais.com/politica/2016/05/11/actualidad/1462962875_129729.html.

478 Ibid.; Sam Dean, "Three Merseyside Men Arrested in Government Probe into Suspected Fuel Smuggling Fraud," *Liverpool Echo*, February 4, 2016, <http://www.liverpoolecho.co.uk/news/liverpool-news/fuel-smuggling-merseyside-men-arrested-10837958>.

Arrests in the UK in 2014 indicated that fuel theft from pipeline tapping is a problem in other parts of the EU as well. That particular incident involved a tap of an Esso pipeline between Southampton and Birmingham.⁴⁷⁹ The thieves took thirty thousand liters of diesel worth about £41,000.⁴⁸⁰

Smuggling

As has been noted, smuggling is almost inevitable when there is an opportunity to bring low-priced fuel into a higher-priced jurisdiction, and the European Union is not immune from this phenomenon. As a number of recent reports have indicated, smuggling into and within the EU is a growing problem. In 2013, a report by Alfa Energy indicated that fuel originating in the Russian enclave of Kaliningrad and in Belarus was being smuggled into the EU jurisdictions of Lithuania and Poland where the cost is twice as high.⁴⁸¹ Supporting that claim, a study conducted by the Lithuanian Free Market Institute found that same year that 29 percent of all people surveyed said they had purchased smuggled black market fuel from "mobile pumps" originating in Russia and Belarus.⁴⁸² In 2016, the European Commission reported that fuel smuggling in Kosovo, though not an EU member, was also a problem,⁴⁸³ and various arrests confirm that Bulgaria is a point of entry for smuggled fuel moving into the EU.⁴⁸⁴ Indeed, these two points—the Baltic through Russia and Belarus, and Eastern Europe through Bulgaria and Romania—along with a trans-Mediterranean route from Libya to Malta and Italy, and a maritime route from Eastern Europe into Ireland, constitute the principal smuggling points for fuel moving into the UK.

The Mediterranean

There is perhaps no smuggling route of any kind that has become more internationally known than the

479 Martin Evans, "Fuel Thieves Steal 30,000 Litres of Diesel from Major Pipeline," *The Telegraph*, April 21, 2014, <http://www.telegraph.co.uk/news/uknews/crime/10778199/Fuel-thieves-steal-30000-litres-of-diesel-from-major-pipeline.html>.

480 "Tapping Device Found on Esso Pipeline after Fuel Theft," *BBC News*, April 22, 2014, <http://www.bbc.com/news/uk-england-hampshire-27108291>.

481 "European Fuel Smuggling," Alfa Energy Group, August 23, 2013 <https://www.alfaenergygroup.com/index.php/uk/news/energy-news/132-european-fuel-smuggling>.

482 Ibid.; Vytautas Žukauskas, "Shadow Economy: Nature and Extent," *Iticnet*, <http://www.iticnet.org/file/document/watch/3652>.

483 "Fourth Report on Progress by Kosovo," European Commission Europa, May 4, 2016, http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-migration/proposal-implementation-package/docs/20160504/fourth_progress_report_on_kosovo_visa_liberalisation_roadmap_swd_en.pdf.

484 "Bulgaria Authorities Seize 9,500 Litres of Smuggled Diesel Fuel in Asenovgrad," *Energy World*, January 3, 2016, <http://www.energyworldmag.com/01/03/2016/bulgaria-authorities-seize-9500-litres-of-smuggled-diesel-fuel-in-asenovgrad/>.

trans-Mediterranean route from Libya. While this path has primarily received attention for the flow of migrant refugees, and to a lesser extent weapons and drugs, fuel is also crossing the sea and illegally entering the EU in considerable quantities using the same channels.⁴⁸⁵ Malta is often used as a transshipment point, before onward transit into Italy where the fuel will make its way to higher-priced jurisdictions like Germany, the UK, the Czech Republic, or Romania.⁴⁸⁶

The *Times of Malta* has published details from expert testimony surrounding modalities of smuggling that claimed that fuel is exchanged, via a ship-to-ship transfer (STS), roughly forty to sixty miles off the Libyan coast, particularly near the port of Zuwara. During the STS, the tanker's Automated Identification System (AIS) is turned off. The illicit fuel then makes its way to Malta or Sicily but before entering territorial waters, another transfer occurs to ships that will take the fuel to shore.⁴⁸⁷ One well-known ship involved in this activity was the Ukrainian vessel *Barbosa*. Once landed in the EU, the fuel is then moved to the most desirable jurisdictions before being sold for illicit profit.

Eastern Europe

Similar tactics to the Libyan modality have been used in the Black Sea. Thanks to an incident in March 2015, it is well-known now that, as in the Mediterranean dynamic, vessels routinely turn off their AIS and engage in STS transfers before landing fuel "off the books." As a result, it is estimated that in Bulgaria, for example, 36 percent of diesel is smuggled.⁴⁸⁸

Belarus has long been associated with smuggling low-cost Russian fuel into higher-priced jurisdictions, particularly Romania and the Baltic States. Since 2008, however, most of that activity has centered on Latvia,

thanks to a limited border arrangement with other neighboring states.⁴⁸⁹

Poland's high taxes on fuel make it an attractive jurisdiction for smuggling fuel, particularly from Kaliningrad, but compared to the rest of the EU, its fuel costs are low, making it an attractive transshipment hub to other, even higher-priced jurisdictions. In Poland, as much as 45 percent of fuel is provided by "white pumpers," or illicit, unbranded fuel stations that often supply smuggled fuel from outside the EU. This dynamic has led to roughly €1.2 billion in losses for the government, and considerable losses for the oil majors operating in the country.⁴⁹⁰ Recognizing these losses, the government in 2014 began inspecting fuel stations and started to crack down on what is known as the "fuel mafia."⁴⁹¹ Part of their modus operandi has been to dilute fuel with lubricating oil and sell it as "diesel." Italy recently busted an operation that moved thirteen million liters of such adulterated, smuggled fuel, involving individuals from Italy, Poland, Germany, the UK, and the Czech Republic.⁴⁹²

Ireland and the UK

Price differences between the Republic of Ireland and both Northern Ireland and Great Britain have created prime conditions for criminal gangs to engage in smuggling. In addition, discrepancies between Eastern European prices and British and Irish prices have inspired maritime smuggling routes. Cocktailing and other forms of adulteration, as discussed below, have been long-standing cross-border issues in Ireland and Northern Ireland, but recent efforts at mitigating this modality have led Irish and British actors to engage in more traditional smuggling. As noted above, much of the fuel smuggled into Ireland comes from Poland. This is made profitable by the significant price gap between the countries; in March of 2016, the estimated price of a liter of diesel in Poland was €0.91, while in the Republic of Ireland it was €1.10.⁴⁹³

485 "Libyans Intercept Suspected Fuel-smuggling Ship," *Yahoo News*, February 13, 2016, <https://www.yahoo.com/news/libyans-intercept-suspected-fuel-smuggling-ship-203310086.html?ref=gs>; Benoit Faucon, *On the Fuel Tanker's Trail: Cracking Oil Smuggling Could Help Stem Flow of Migrants and Weapons*, *The Wall Street Journal*, 10 Mar. 2016, <http://www.wsj.com/articles/smuggling-probe-focuses-on-fuel-tankers-trail-1457576358>.

486 "Italy Arrests Eight over Diesel Smuggling to Malta and Other Countries," *Times of Malta*, March 26, 2016, <http://www.timesofmalta.com/articles/view/20150326/local/italy-arrests-eight-over-diesel-smuggling-to-malta-and-other-countries.561502>.

487 Kurt Sansone, "Fuel Smuggled from Libya Being Brought to Malta – UN," *Times of Malta*, March 12, 2016, <http://www.timesofmalta.com/articles/view/20160312/local/fuel-smuggled-from-libya-being-brought-to-malta-un.605334>.

488 "Organised Crime in Bulgaria and Romania Persists, Cyber Crime and People-Smuggling to Increase in Two-Year Outlook," IHS Jane's 360, July 14, 2015, <http://www.janes.com/article/52968/organised-crime-in-bulgaria-and-romania-persists-cyber-crime-and-people-smuggling-to-increase-in-two-year-outlook>.

489 J.M., "Dark Days for the Black Market," *Economist*, July 1, 2011, <http://www.economist.com/blogs/easternapproaches/2011/07/belarusian-smugglers>.

490 "BP, Shell Suffer Due to Fuel Black Market in Poland," *ValueWalk.com*, September 17, 2013, <http://www.valuewalk.com/2013/09/bp-shell-in-poland/>.

491 "Government Takes Aim at 'Fuel Mafia' Tax Fraud," *The News*, September 28, 2014, <http://www.thenews.pl/1/12/Artykul/182674,Government-takes-aim-at-fuel-mafia-tax-fraud>.

492 Mu Xuequan, "Police Bust Int'l Diesel Smuggling Ring in Italy," *Xinhuanet*, May 3, 2016, http://www.news.xinhuanet.com/english/2016-05/03/c_135329228.htm.

493 Deborah McAleese, "Lauderers Turn to Fuel Smuggling after Diesel Marker Stumps Them," *Belfast Telegraph*, March 28, 2016, <http://www.belfasttelegraph.co.uk/news/northern-ireland/lauderers-turn-to-fuel-smuggling-after-diesel-marker-stumps-them-34576526.html>.



A Russian-flagged oil tanker carrying 5 million liters of illicit fuel, detained off the coast of Libya, September 16, 2015. *Photo credit: Reuters/Hani Amara.*

In Britain, a recent crackdown on a gang engaged in fuel theft, smuggling, and fraud revealed a total of roughly £3 million in evaded taxes. In the midst of the raids, eight men were arrested and fifty-five thousand liters of stolen fuel were recovered.⁴⁹⁴

Adulteration/Mixing

Adulteration is often germane to extensive theft and smuggling operations. By “stretching” fuel, criminals are able to increase its volume with low-cost additives such as kerosene, lubrication oils, or even water that allow them to sell “more” fuel at discounted or even premium prices. A similar, though less destructive, form of adulteration is mixing, blending, or cocktailing duty-rebated fuel with non-duty-rebated fuel.⁴⁹⁵

494 HM Revenue & Customs, “Eight Arrested in Fuel Fraud Raids,” My News Desk, February 4, 2016, <http://www.mynewsdesk.com/uk/hm-revenue-customs-hmrc/pressreleases/eight-arrested-in-fuel-fraud-raids-1309360>.

495 “Illicit Trade in Ireland: Uncovering the Cost to the Irish Economy,” House of Oireachtas, 2013, <http://www.oireachtas.ie/parliament/media/committees/jobcenterpriseandinnovation/Illicit-Trade-in-Ireland-report.pdf>; *Fuel Laundering and Smuggling in Northern Ireland*, House of Commons, 27 Mar.

Adulteration in the EU, particularly stretching, seems to be a growing phenomenon. Between July 2014 and April 2015, for example, the UK’s HM Revenue and Customs received a total of 138 complaints regarding adulterated fuel.⁴⁹⁶ Greece provides another example, as roughly 20 percent of fuel sold has been found to be illegal, and filling stations often sell a blend of legitimate fuel and black market fuels.⁴⁹⁷ Additionally, cocktailing is popular, mixing highly taxed petrol with shipping or heating fuel, which is either not taxed or carries a lower tax.⁴⁹⁸ In addition to these systematic

2012, <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmniaf/1504/1504.pdf>.

496 “Illicit Trade 2015-2016: Implications for the Irish Economy,” Grant Thornton, 2016, <http://www.grantthornton.ie/globalassets/1.-member-firms/ireland/insights/publications/grant-thornton---illicit-trade-2015-2016..pdf>.

497 “Fuel Smuggling through Documentary Frauds,” GR Reporter, January 12, 2015 http://www.grreporter.info/en/fuel_smuggling_through_documentary_frauds/12205.

498 Vasileios P. Karakasis, “Oil Smuggling as a Variable in the Greek Crisis’ Equation,” Bridging Europe, August 1, 2014, http://www.bridgingeurope.net/uploads/8/1/7/1/8171506/oil_smuggling_vasileios_p._karakasis.pdf.

cases in the UK and Greece, some of the smuggling cases mentioned above have also involved adulteration where the smuggled fuel was actually blended to appear as a lower grade and thus avoid taxation when moving through EU national jurisdictions.⁴⁹⁹

Numerous other examples provide further evidence of adulteration as a substantial issue in the EU, particularly as a means of tax evasion, such as the well-known blending in the Czech Republic.⁵⁰⁰ But a new modality of adulteration has taken hold in Poland. The BBC reported in March 2016 that the European green fuel market was in jeopardy due to criminals in Poland systematically blending diesel with black market fuels and selling them as biodiesel.⁵⁰¹ EU regulations stipulate the quantity of crop-based fuel that must be in the product to label it as biodiesel, but it seems that Poland has been mixing diesel with illegal fuels, likely from Russia and Belarus, and selling it as biofuel. This activity seriously undercuts the EU's green initiatives, and constitutes another form of tax evasion.

Organized Criminal Groups

The fuel theft, smuggling, and fraud in Europe, particularly in Serbia, Albania, and Ireland, have long been associated with organized criminal groups.⁵⁰² In Ireland, the proceeds of illicit hydrocarbons activity were a major funding source for terrorist activities during the Troubles.⁵⁰³ Even now, reports indicate that “a considerable portion of criminals involved in fuel smuggling” are republican dissidents.⁵⁰⁴ While such organized criminal groups are involved in theft, smuggling, and various types of fraud, their most common illicit hydrocarbons activity in the EU is known as fuel “laundering” or “washing.” Not to be confused with the sort of laundering in which stolen oil is made

to seem legitimate, laundering in this context means removing a marking dye that denotes a certain tax rate.

As discussed below, fuel markers have been used in the EU for over two decades. Farm diesel, for example, is often known as “red diesel,” as the red marker denotes that it is subsidized for agricultural use. Criminal groups have developed a range of methods, some primitive, some sophisticated, for removing the dye to then be able to sell the originally low cost, subsidized, or low tax product at a premium rate. While this practice occurs throughout the EU, the most extensive known operations are in the UK and Ireland. The Irish Petrol Retailers Association in 2012 claimed that the Irish government lost €150 million to €250 million per year⁵⁰⁵ on account of fuel fraud, and in 2016, the accounting firm Grant Thornton assessed the loss to the Exchequer at €239 million, down from €261 million in 2013.⁵⁰⁶ Across the border in Northern Ireland, HM Revenue and Customs puts the losses at £80 million with 13 percent of the diesel market having been laundered.⁵⁰⁷ Grant Thornton also indicated that ten to twelve criminal gangs control the fuel laundering operations along the Irish border. In 2013, HM Revenue and Customs shut down thirty-eight fuel laundering plants along the border, and seized 574,238 liters of fuel.⁵⁰⁸ As noted, however, the problem continues.

Shipping

One other element of illicit hydrocarbons activity in the EU that deserves increased scrutiny is the facilitation of theft by private enterprise, particularly the shipping industry. Smuggling into Greece is allegedly conducted through ports by the shipping community whereby the port and customs authorities are bribed to ignore the illicit activity.⁵⁰⁹ As noted, a significant portion of fuel sold at petrol stations is illicit, and the shipping industry, all the way to the senior levels, is alleged to play a substantial role in providing that black market fuel.⁵¹⁰

499 “Italian Police Bust Fuel Smuggling Operation,” *Euronews*, March 27, 2015, <http://www.euronews.com/2015/03/27/italian-police-bust-fuel-smuggling-operation/>.

500P. Semerád, “Value Added Tax Evasion and Excise Duty Fraud on Fuel Market in the Czech Republic,” *Acta Universitatis Agriculturae et silvic. Mendel. Brun.*, November 30, 2011, http://acta.mendelu.cz/media/pdf/actaun_2012060020335.pdf.

501 Matt McGrath, “‘Dodgy Diesel’ Threatens EU Green Fuel Market,” *BBC News*, March 7, 2016, <http://www.bbc.co.uk/news/science-environment-35720335>.

502 Frederic Lemieux, Garth den Heyer, and Dilip K. Das, eds., *Economic Development, Crime, and Policing* (Boca Raton: CRC Press, 2015).

503 “Against Organized Crime: INTERPOL Trafficking and Counterfeiting Casebook 2014,” INTERPOL, 2014, [http://www.interpol.int/Media/Files/Crime-areas/Trafficking-in-Illicit-Goods/Against-Organized-Crime-INTERPOL-Trafficking-and-Counterfeiting-Casebook.2014 Interpol Casebook.pdf](http://www.interpol.int/Media/Files/Crime-areas/Trafficking-in-Illicit-Goods/Against-Organized-Crime-INTERPOL-Trafficking-and-Counterfeiting-Casebook.2014%20Interpol%20Casebook.pdf).

504 “Cross-Border Force Urged to Crack Down on Smugglers,” *Irish Examiner*, May 23, 2015, <http://www.irishexaminer.com/ireland/cross-border-force-urged-to-crack-down-on-smugglers-314030.html>.

505 *Report to the Minister of Finance on Its Consideration of Fuel Laundering and the Loss of Revenue to the State, and Its Impact on the Road Haulage Sector and Retailers in the Industry*, Houses of Oireachtas, February 2012, <http://www.oireachtas.ie/parliament/media/committees/environmenttransportcultureandthegaeltacht/Final-JCETCG-Report-to-Minister-for-Finance-on-Fuel-Laundering-Feb-2012.pdf>.

506 *Illicit Trade 2015-2016: Implications for the Irish Economy*, Grant Thornton, 2016, <http://www.grantthornton.ie/globalassets/1.-member-firms/ireland/insights/publications/grant-thornton---illicit-trade-2015-2016..pdf>.

507 Gerry Moriarty, “Authorities on ‘Front Foot’ in Tackling Fuel-laundering,” *The Irish Times*, June 29, 2015, <http://www.irishtimes.com/news/ireland/irish-news/authorities-on-front-foot-in-tackling-fuel-laundering-1.2266824>.

508 *Ibid.*

509 *Fuel Smuggling through Documentary Frauds*, GRR Reporter, January 12, 2015, http://www.grrreporter.info/en/fuel_smuggling_through_documentary_frauds/12205.

510 Richard North, *Corruption: The Elephant in the Room*, EU

While it has already been discussed above, the smuggling route from Libya to Malta and Italy is also relevant to this issue, as elements of the shipping community have been and, indeed, must be complicit to some degree to facilitate that illicit trade.

“Given the new technologies involved, fuel markers can be tailored to tag fuel in a manner specific to any point in the supply chain. . .”

Mitigation

EU member states have adopted a broad approach to mitigating fuel fraud, including not only fuel marking and law enforcement measures but also long-term strategies to diminish price disparities among EU states.

Fuel marking has a history in the EU going back to 1995, when a directive was issued to explore the marking of low-taxed diesel and kerosene intended for heating, so as to combat the fraudulent sale of those fuels as motor diesel. In 2002, the marker Solvent Yellow 124 was mandated for this application. As noted, however, “laundering” the fuel to remove the dye has become a major criminal enterprise. In September 2015, therefore, EU regulators issued a call for expression of interest in manufacturing a marker that would perform better than Solvent Yellow 124, being more difficult to launder and subject to more direct, less destructive testing. Given the new technologies involved, fuel markers can be tailored to tag fuel in a manner specific to any point in the supply chain; it remains to be seen how EU regulations will evolve in this regard.

The Republic of Ireland and Northern Ireland have seen some success from their own initiatives for marking fuel, mainly agricultural diesel, or “red diesel,” that is laundered by illicit actors and resold as automotive diesel, or “white diesel.” This effort has gone a considerable way toward mitigating fuel laundering along the Republic of Ireland-Northern Ireland border. As noted above, the success of the fuel marking initiative has forced illicit actors to pivot to other activities, such as smuggling cheaper fuel in from

Poland and selling it at a profit. The UK has taken up this approach; in 2014 it announced the introduction of a new fuel marker that government spokespersons claimed would put an end to fuel laundering in the UK.⁵¹¹ If developments in Ireland are any indication, British illicit actors may also turn to smuggling oil from Eastern Europe or other cheap sources.

In recent years, law enforcement efforts against smuggling have primarily focused on human trafficking rather than hydrocarbons crime. This obviously reflects the ongoing migrant crisis on Europe’s southern borders, and it has led to repeated calls for coordination among such agencies as INTERPOL and the European Police Office (Europol).⁵¹² While the networks used by human traffickers are widely believed to be used for fuel smuggling as well, hydrocarbons crime has undeniably become less of a priority.

This is not to say that EU authorities, especially Europol, Eurojust, and the European Anti-Fraud Office (OLAF), have failed to pursue the issue. In March 2015, Europol successfully interdicted a multi-national fraud operation that was circumventing EU excise duties in what was termed Operation Sturm Oil. The eight individuals arrested allegedly imported four thousand tons of diesel from Germany into Italy, adulterated it to avoid VAT, and sold it illegally in Italy, Germany, Czech Republic, Romania, Malta, and the UK.⁵¹³ This operation, facilitated by false invoices and transport documents, was worth millions of euros, much of which the authorities recovered in busting the scheme.

As previously noted, EU authorities hope that efforts to build a network of pipelines among states within the EU, coupled with plans to minimize discrepancies among taxes and tariffs, will disincentivize smuggling and excise fraud. These measures will obviously take some time, and their effects will only afterward be open to assessment.

Conclusion

While the EU does not struggle with quite the same kinds or degrees of corruption that abet hydrocarbons

Referendum, July 18, 2015, <http://www.eureferendum.com/blogview.aspx?blogno=85673>; Jen Alic, “Is Oil Smuggling and Organized Crime the Cause of Greece’s Economic Crisis?” OilPrice.com, April 10, 2012, <http://oilprice.com/Energy/Energy-General/Greece-Oil-Smuggling-Helps-Define-the-Parliamentary-Mafiocracy.html>.

511 “HMRC: New Diesel Dye ‘Should Eliminate Fuel Laundering,’” BBC News, November 18, 2014, <http://www.bbc.com/news/uk-northern-ireland-30104476>.

512 “Interpol and Europol Chiefs Issue Joint Call for Urgent Action to Combat People Smuggling Networks,” Europol, September 11, 2015, <https://www.europol.europa.eu/content/interpol-and-europol-chiefs-issue-joint-call-urgent-action-target-people-smuggling-network-0>.

513 Matthew Vella, “Europol Smash Smuggling Ring That Sold German Fuel to Malta,” MaltaToday.com, March 26, 2015, http://www.maltatoday.com.mt/news/court_and_police/51116/fuel-smugglers_sold_black_market_diesel_in_malta#.V34WwY4m8el.

crime in many other regions, it still exhibits many of the same dynamics—price disparities, organized criminal groups, and still-evolving techniques of surveillance and enforcement—that play out in developing states and regions. Its issues with fuel smuggling and fraud also overlap significantly with those of human trafficking, instability in nearby regions, and geopolitical maneuvering among entities that are not only neighbors but also global economic, military, and political powers. The complex forces that emerge from

these dynamics are now, for the most part, very much in a state of flux (the migrant problem, Brexit, the question of effective fuel markers) or even suspension (projected new pipelines). They are also impacted by the generally slow bureaucratic pace at which the EU effects changes. Accordingly, hydrocarbons crime in the EU is best regarded not as a potentially destabilizing force, but as an ongoing law enforcement and regulatory issue.

CONCLUSION

Refined oil theft is a global problem that exists in both oil producing and non-oil producing states, in wealthy developed states and poor developing states. Major exporters of refined oil are plagued by it, and so are states without refineries. States at war are susceptible to it, and so are highly stable, well-regulated states. In other words, where there is fuel, it seems there is fuel theft. The modalities of illicit hydrocarbons activity vary. The actors involved and their level within the national society vary. And the quantity and value lost vary, as well. But this international phenomenon,

at the very heart of both the global economy and world energy security, has received almost no serious treatment until now. Part I of this report has sought to provide a starting point for the discussion by examining snapshots of key case studies to define the contours of who is involved, how much is at stake, and how this illicit activity occurs. Parts II and III will engage in rigorous analysis of the problem and identify trends in illicit activity, stakeholders who could do something about it, and what might actually be done.

PART II

Trends in Illicit Hydrocarbons Activity



Refined oil theft is a problem in virtually every country on earth. The modalities and magnitudes differ considerably, but the underlying attempt to subvert the legitimate hydrocarbons market is seemingly universal. Despite the prevalence of the problem, however, little has been written on the subject and, to the extent anything has been published, it usually focuses on how the issue features within one national context. Ten case studies were explored in Part I of this report; this second part now seeks to analyze the myriad methods of stealing refined oil products and develop a taxonomy for grouping them by trends. Not every form of theft is indicative of a trend and not all the groupings are discrete, but this undertaking attempts to frame the activity of refined oil theft such that some of the dynamics that underpin it can be better understood. The resulting understanding will then inform Part III's analysis of the key stakeholders, and help in developing a set of recommendations for how to reduce both the opportunities for and the effects of this global phenomenon.

In examining the spectrum of methods used to undermine the refined hydrocarbons market, three key trends can be discerned:

1. A trend toward non-dualism;
2. A trend toward using law, regulation, and policy as tools to facilitate illicit activity; and
3. A trend toward countering the concrete countermeasures.

In this case, dualism refers to a contrary relationship as seen in the binary opposition between “lawful” and “unlawful.” Police and criminals typically exist in a dualistic relationship, but as the analysis of the first trend explores, the contrast between such dualistic actors is diminishing in a variety of contexts. The analysis of the second trend then explores not just how criminals exploit gaps and loopholes in law and policy, but how they are proactively using law and policy as mechanisms for perpetrating hydrocarbons theft and fraud. Finally, the analysis of the third trend examines the ways in which criminals have taken to materially overcoming the physical mitigation tactics states have employed. Ad hoc opportunism will always exist, but these three trends must be addressed if the actors who have a genuine stake in the legitimate hydrocarbons market truly want to reduce both the extent and the costs of illicit hydrocarbons activity.

As long as the world remains dependent on hydrocarbons for everything from cooking to transportation to heating and cooling, the value

of fuel to people's lives will make it an enticing commodity to steal. Naturally, therefore, any time there is a discrepancy in price between one source and another—due to geography, type of supplier, or any other reason—there will be a greater risk of illicit activity, as the opportunity for a “discount” increases the appeal of some form of theft or fraud. In each such case, potential criminals will conduct a multi-factor cost-benefit analysis. First is the financial calculation: is the price discrepancy enough to make it worth the effort to obtain the discount? And second is the legal calculation: is that financial discount worth the risk of some form of penalty if caught? If the answer to both questions is yes, the relative risk-reward calculation will then inform the level of sophistication in the modality of theft or fraud to be pursued. When the risk is low, the illicit activity may be conducted openly with little to no concern for consequences. When the risk is high, but the potential reward remains sufficiently attractive, complex networks may engage in extremely sophisticated operations to participate in the illicit hydrocarbons market.

Recognizing this fundamental dynamic underpinning, the choice to engage in illicit hydrocarbons activity is fairly simple; understanding the transition from the risk and reward analysis to actually taking advantage of the illicit opportunity for a “discount” is more difficult. This analysis, therefore, seeks to highlight three trends in how that follow-on step occurs.

Ancient Wisdom

Before delving into current trends and future eventualities, however, a thirteenth century Sufi tale of the “wise fool” Nasruddin may actually help to illustrate the ancient tensions between smugglers and thieves on the one hand and law enforcement on the other. It furthermore helps to color the discussion below of the trend toward non-dualism—a contrast to that historic tension. In this particular tale, which takes place in the borderlands of modern Turkey, Azerbaijan, and Iran, Nasruddin is a well-known smuggler. One day he arrives at a border crossing, and a senior guard recognizes him and alerts the other guards to Nasruddin's reputation. Determined to catch Nasruddin, the guards search his person, they search his donkey, and they even meticulously pull apart and search the bushels of hay the donkey is carrying. But they find nothing and are forced to let him go on his way. This same interaction happens again a week later, and a week after that, and over and over again for years. The guards, despite feeling certain that Nasruddin must be smuggling something, never find anything.

“Increasingly, criminals no longer find themselves in opposition to people trying to stop them; rather they *are* the people who are charged with the responsibility of stopping illegal conduct.”

After many years, Nasruddin, who is by this point an old man, stops coming. Word gets around that he has retired and moved back to his hometown to live out his days. Not long after Nasruddin’s retirement, the senior guard from the border crossing also retires. But the question of Nasruddin’s activities plagues him—he cannot live in peace until he knows what the contraband was all those years. So he sets out for Nasruddin’s hometown and finds him in a café, enjoying a coffee. He approaches Nasruddin and says “Look, we are old men now. We are both retired and there is nothing I can do to you at this point. But I cannot die in peace unless I know what it was you were smuggling all those years. We searched you and your donkey hundreds of times, but we never found anything. Will you please let me go in peace and tell me what you were smuggling?” Nasruddin looks at the old guard, smiles, and says, “Donkeys.”

On the one hand, hiding in plain sight is a sub-trend in refined oil theft. On the other hand, the notion of the diametrically opposed interests of the guard and the smuggler is reductive. As the first macro trend indicates, the illicit hydrocarbons market is facilitated by a trend toward non-dualism.

A Trend Toward Non-Dualism

While it manifests in different forms, a major trend in illicit hydrocarbons activity around the world is the decline of dualism. Traditionally, criminals have operated in a contrary relationship to non-criminal elements, creating a series of dichotomies between two sets of conduct: legal versus illegal, good versus bad, right versus wrong, civilized versus uncivilized. Even the customary practices of corrupt officials and organized criminal groups have tended to inhabit these binary oppositions. But the binary dynamic is shifting. In other words, the line between licit and illicit actors is blurring. This does not mean, however, that the line between licit and illicit conduct is blurring—just that those on either side of the various dichotomies

are often the same individuals. Increasingly, criminals no longer find themselves in opposition to people trying to stop them; rather they *are* the people who are charged with the responsibility of stopping illegal conduct. Similarly, criminals, who traditionally are a threat to the safety, security, and stability of society, are actually finding themselves in the role of providing essential public services.

Security as Criminals

Over the last decade, the age-old question of who guards the guards has become a matter of debate around the world.⁵¹⁴ On the one hand, private security companies, providing armed security in stable and war-torn states alike, have garnered tremendous attention for their perceived lack of accountability.⁵¹⁵ But on the other hand, global trust in police forces seems to be declining. In the United States, for example, a recent Gallup Poll indicated that “confidence in Police [is the] lowest in 22 years,”⁵¹⁶ and in much of Africa, the police are considered to be the most corrupt institution, even if they are still appreciated for the legitimate role they are supposed to play.⁵¹⁷ Throughout the illicit hydrocarbons market, the role of security, both public and private, poses a challenge to anyone seeking to maintain a purely dualistic understanding of criminality.

State Security and Law Enforcement

With the possible exception of Mexico, where hydrocarbons criminality is endemic across so many sectors of society, Nigeria is the country most associated with oil theft, both crude and refined.⁵¹⁸ Notably, one of the institutions most extensively implicated in Nigeria’s large-scale illicit hydrocarbons market is its Navy.⁵¹⁹ The Nigerian Navy, or more accurately Nigerian Naval personnel, have benefited tremendously from effectively facilitating the illicit oil market in the Niger Delta.⁵²⁰ Part of what makes that

514 Susanne Schmeidl and Stephen Brooking, “When Nobody Guards the Guards: The Quest to Regulate PSCs in Afghanistan,” Themenschwerpunkt, 2008.

515 Sarah Percy, “Morality and Regulation,” in Simon Chesterman, Chia Lehnardt (eds.), *From Mercenaries to Market: The Rise and Regulation of Private Military Companies* (Oxford: Oxford University Press, 2007).

516 Jeffrey Jones, “Confidence in Police Lowest in 22 Years,” Gallup, June 19, 2015, <http://www.gallup.com/poll/183704/confidence-police-lowest-years.aspx>.

517 Pauline M. Wambua, “Police Corruption in Africa Undermines Trust, but Support for Law Enforcement Remains Strong,” AFR Barometer, Dispatch No. 56, November 2, 2015, http://afrobarometer.org/sites/default/files/publications/Dispatches/ab_r6_dispatchno56_police_corruption_in_africa.pdf.

518 See, e.g., Katsouris and Sayne, *Nigeria’s Criminal Crude*.

519 Odalonu Happy Boris, “The Upsurge of Oil Theft and Illegal Bunkering in the Niger Delta Region of Nigeria: Is There a War Out,” MCSER Publishing, Vol. 6, No. 3, May 2015, <http://www.mcser.org/journal/index.php/mjss/article/viewFile/6541/6268>.

520 “Corruption: Under Obasanjo Reached a Feverish Crescendo,”

illicit market so intractable, therefore, is that the very individuals and institution charged with the coastal and maritime law enforcement of the state are, in fact, the principal perpetrators. When the law enforcers are outlaws, it is hard to curtail the criminal activity in which they are involved.

While Ghana is far less extreme than Nigeria in many respects, a similar dynamic is visible. Local police are known to escort stolen and illegally sold remaining on board fuel from ports to distribution centers, where it then enters the local market.⁵²¹ In other words, the police, who should be cracking down on the illicit hydrocarbons market, are themselves facilitating it and both conceptually and physically protecting it. Indeed, their involvement as law enforcement officials transporting cargo essentially serves to launder and legitimize the stolen fuel. Again, the dualistic nature of cops versus robbers seems to be breaking down, as the cops themselves are effectively becoming the robbers.

Looking outside of Africa, the same phenomenon is visible in Thailand. The 2014 arrest of Pol. Lt. Gen. Pongpat Chayaphan speaks volumes about the top-to-bottom involvement of the Thai police in the illicit hydrocarbons trade.⁵²² The 2014 coup provided temporary intervention into the criminality of the Thai Police and demonstrated that even the royal family was involved.⁵²³ Indeed, Chayaphan's niece, the wife of the crown prince, was stripped of her royal title for her involvement in the illicit fuel market, among other offenses.⁵²⁴ When the guardians of the rule of law are the most flagrant violators of it, finding a reliable anchor for any sort of interdiction becomes both difficult and dangerous.

Private Security

Just as state forces and law enforcement authorities have blurred the line between “cops” and “culprits,” the private security sector exhibits a similar trend toward non-dualism. Over the last two decades, few industries have enjoyed more unbridled growth than the private security industry.⁵²⁵ In some states, the

ratio between private security guards and police is a staggering seven to one and, particularly in post-conflict states, private security companies frequently constitute the largest form of employment in the entire country.⁵²⁶ Indeed, G4S, a private security company, is now the third-largest private employer on earth, down from second, and once had over 675,000 employees worldwide, though its workforce now stands at roughly 618,000 across 125 countries.⁵²⁷ While such companies provide a wide range of services, from locksmiths to cash transit to “rent-a-cops” to armed convoy protection, and work for a wide range of clients, from private individuals to banks to big companies to governments and international organizations, a major focal point of the private security industry is the oil and gas sector.⁵²⁸

Already by 2000, the extent to which the extractive industry relied on private security had become so pronounced that a collection of states, oil majors, mining companies, and leading civil society organizations came together to establish the Voluntary Principles on Security and Human Rights.⁵²⁹ The Voluntary Principles (VPs) instruct the extractive sector members to assess the risks—to both safety and human rights—of their operations; they also provide guidance on members' interactions with both state and private security.⁵³⁰ The VPs do not, however, provide a comprehensive regulatory framework for the private security companies themselves. Similarly, the 2010 International Code of Conduct for Private Security Service Providers (ICoC),⁵³¹ as well as its affiliated ICoC Association,⁵³² are voluntary in nature, with no

Billion Market,” ASIS International, August 12, 2013, [https://www.asisonline.org/News/Press-Room/Press-Releases/2013/Pages/Groundbreaking-Study-Finds-U.S.-Security-Industry-to-be-\\$350-Billion-Market.aspx](https://www.asisonline.org/News/Press-Room/Press-Releases/2013/Pages/Groundbreaking-Study-Finds-U.S.-Security-Industry-to-be-$350-Billion-Market.aspx).

526 Geoff Burt, “From Private Security to Public Good: Regulating the Private Security Industry in Haiti,” *SSR Issue Papers* No. 9, June 2012, https://www.cigionline.org/sites/default/files/paper_no9.pdf; Mark LaLonde, “Civilian Private Security Services: Their Role, Oversight and Contribution to Crime Prevention and Community Safety,” 2010, https://www.unodc.org/documents/justice-and-prison-reform/Expert-group-meeting-Bangkok/IEGMCivilianPrivateSecurity/UNODC_CCPCJ_EG.5_2011_1_English.pdf.

527 “The World's 10 Largest Employers,” *Fortune*, November 12, 2014, <http://fortune.com/2014/11/12/worlds-largest-employers/>.

528 “Is Private Security Taking Over Africa,” *African Business Magazine*, November 22, 2012, <http://africanbusinessmagazine.com/uncategorised/is-private-security-taking-over-africa/>.

529 “The Voluntary Principles,” Voluntary Principles on Security and Human Rights, <http://www.voluntaryprinciples.org/>.

530 Ibid.

531 *The International Code of Conduct for Private Security Service Providers*, International Code of Conduct Association, 2010, <http://icoc-psp.org/>.

532 *Articles of Association of the International Code of Conduct Association*, International Code of Conduct Association, 2013, http://www.icoca.ch/en/articles_of_association.

Nairaland, September 9, 2007, <http://www.nairaland.com/77898/corruption-under-obasanjo-reached-feverish>.

521 “Illegal Oil Bunkering in Takoradi Port,” Ghana Oil Watch, October 12, 2011, <http://ghanaoilwatch.org/index.php/ghana-oil-and-gas-news/646-illegal-oil-bunkering-in-takoradi-port>.

522 “Former CIB Commissioner Gets 15 More Years in Jail,” Thai PBS, February 26, 2015, <http://englishnews.thaipbs.or.th/former-cib-commissioner-gets-15-years-more-years-in-jail/>.

523 “Ex CIB Chief Gets 10 Years for Money Laundering,” *Khaosod English*, February 17, 2015, <http://www.khaosodenglish.com/news/crimecourtscalamity/2015/02/17/1424162454/>.

524 Ibid.

525 “Groundbreaking Study Finds U.S. Security Industry to Be \$350



A group of men smuggle diesel fuel from Syria to Turkey hoping to sell it at a higher price, across the Al-Assi River in Darkush town, Idlib countryside May 26, 2013. *Photo credit:* Reuters/Muzaffar Salman.

meaningful enforcement mechanisms.⁵³³ Furthermore, the membership of the association is primarily larger international companies rather than smaller local entities in the developing world.⁵³⁴ Consequently, despite the considerable boom in the global private security industry, only a small portion of it is regulated in any meaningful way.

In the absence of effective regulation, oversight, and accountability, the private security industry can pose a significant threat to law and order.⁵³⁵ It does not take sophisticated analysis to understand that poorly paid, overworked security guards, when entrusted with valuable property, might try to steal some or all of it as a means of supplementing their income. Furthermore,

in places where the actual police or state security institutions are generally known to engage in criminal activity themselves, it is not at all surprising that private security guards participate in petty or even organized crime, as well. In Ghana, Mozambique, Nigeria, and elsewhere, there are countless stories of private security guards stealing fuel from the generators they were hired to protect or siphoning off some of the fuel from a truck or storage tank entrusted to them. But the involvement of private security in illicit hydrocarbons activity is not always petty or ad hoc.

In Ghana, for example, the head of security for a fuel distribution center was arrested in October 2013 for running a systematic fuel siphoning operation.⁵³⁶ Similarly, in Mozambique, the private security guards hired to protect a port have been implicated in allowing, if not facilitating, incidents where significant quantities of refined products have been stolen.⁵³⁷

533 All of these instruments and initiatives will be discussed in further depth and detail in Part III of this report: Stakeholders and Recommendations.

534 "Membership," International Code of Conduct Association, 2016, <http://www.icoca.ch/en/membership>.

535 See generally, Ian Ralby, "Accountability for Armed Contractors," *Fletcher Security Review*, January 12, 2015, <http://www.fletchersecurity.org/#!ralby/cliu8>.

536 "Kumasi - Oil Stealing Syndicate at BOST Busted," *Ghana Web*, October 27, 2013, <http://www.ghanaweb.com/GhanaHomePage/economy/artikel.php?ID=290028>.

537 "Damage in Port Fire Put at US\$2.4 Million—Mozambique," *Club*

Nigeria presents the most extreme case regarding the non-dualistic nature of private security and criminality in the illicit hydrocarbons trade; in some ways, however, it exhibits the reverse direction of the normal transition, as existing criminals were turned into private security guards. In 2013, the president of Nigeria entered a contract with one of his kinsmen who had been the leader of an insurgent militia that sought to fracture the state.⁵³⁸ As a means of maintaining stability, the contract offered the militia, rebranded as a private security company called Global West Vessel Specialist, Limited, a sizeable figure of \$103 million per year to guard against oil theft in the Niger Delta.⁵³⁹ In this case, the line between criminal activity, legitimate private activity, and government authorized activity became indecipherable.

Unregulated private security guards taking advantage of their legitimate proximity to fuel and other high-value property to steal it is a common trend around the world. The blurred line between security and criminals, however, becomes even more problematic when private security guards are working for the government on the one hand, and serving as the nucleus of coordinated large-scale criminal activities on the other. When the guards become the thieves, the dualistic line between good and bad disappears. While part of the problem is certainly the absence of regulation, the existence of a regulatory system is not always a panacea for this non-dualistic trend. Indeed, another sub-trend in illicit hydrocarbons activity is for the regulators themselves to become criminals.

Regulators as Criminals

While regulators of the oil market are expected to be guarding its integrity, a number of examples suggest that regulatory officials, at every level, have doubled down on their role to oversee both the legitimate market and the illicit trade in hydrocarbons. In Uganda, for example, the regulatory authority has been known to systematically steal twenty-two liters of oil from each truck crossing the border under the guise of testing for the presence of a molecular marker that can identify legitimate versus illegitimate versus adulterated fuel.⁵⁴⁰ A sample size of no more than five hundred milliliters is all that is necessary, but the regulatory officials who engage in this operation manage to steal roughly 1.2

million liters of fuel per year per crossing.⁵⁴¹ In essence, therefore, the regulatory regime has taken the illicit market out of the control of pure criminals, and has put it under the aegis of criminals who also happen to serve as the official, legitimate regulatory authority.

In Ghana, the regulators' involvement has been of a different nature. There, the regulatory authority that licenses fuel distribution centers has been at the heart of the syndicated illicit oil market.⁵⁴² The authority was so tightly controlled by officials engaged in the illicit trade that licensing came with both the right to operate a fuel distribution center and the responsibility to participate in the black market.⁵⁴³ Given the high-level political connections of these licensing authorities, discerning between licit and illicit became difficult. This non-dualistic structure—top to bottom—has also opened Ghana's border areas to the possibility of more extensive, high-volume smuggling, as is now evident.⁵⁴⁴ If the regulators are actually facilitators of the illicit trade, would-be criminals have relatively little to fear. In the risk-reward calculus, therefore, as long as the criminal activity supports rather than undercuts that of the regulators, criminal activity is a low-risk enterprise.

Criminals as Public Servants

Cross-border smuggling of fuel is unlikely to disappear so long as there are price differences between the jurisdictions involved. But discrepancies in price are not the only attraction to engaging in illicit hydrocarbons trading in border areas. The absence of fuel distribution infrastructure, particularly in remote areas, makes for a natural inclination toward illicit activity as a means to provide a basic fuel supply and meet local demand. In such cases, the illicit trade, which is not always cross border, focuses not on exploiting a price difference to obtain a "discount" but on merely filling a gap in supply to meet demand. This means that the criminal element can essentially set its own prices, and gouge customers based on the monopoly it has on providing the necessary fuel. Even with those inflated prices, however, the entrepreneurial criminals that supply fuel in such contexts are frequently seen as a necessary evil or even as heroes by the local population. Given the vitality of fuel to so many aspects of modern life,

⁵⁴¹ Ibid.

⁵⁴² "Interior Ministry Worried over the Influx of Fuel Stations Close to the Borders," *GBC Ghana*, January 12, 2016, <http://m.gbcghana.com/1.8554239>.

⁵⁴³ Ibid.

⁵⁴⁴ "Petroleum Tanker Drivers Worried at Oil Siphoning at Kumasi BOST," *My Joy Online*, January 24, 2014, <http://www.myjoyonline.com/business/2014/january-24th/petroleum-tanker-drivers-worried-at-oil-siphoning-at-kumasi-bost.php>; "Key Responsibilities," *Bulk Oil Storage and Transportation Company*, 2016, <http://www.bost.com.gh/key-responsibilities>.

of Mozambique, February 4, 2016, <http://clubofmozambique.com/news/damage-in-port-fire-put-at-us2-4-million-mozambique/>.

⁵³⁸ McGregor, "Back to the Creeks."

⁵³⁹ Ibid.

⁵⁴⁰ "UNBS Officials Siphon Fuel into Black Market," *Daily Monitor*, July 8, 2011, <http://www.monitor.co.ug/News/National/-/688334/1214370/-/view/printVersion/-/pjudla/-/index.html>.

even in remote areas, those who overcome the lack of supply are considered to be providing a public service.

The Opec Boys of Uganda provide perhaps the clearest example of this phenomenon. Over the last decade, the aptly named group of young thugs has actually transitioned from smuggling to obtain a discount to gouging to fill a supply deficiency.⁵⁴⁵ Until 2011, the Opec Boys operated in broad daylight as smugglers, taking subsidized fuel from the Democratic Republic of the Congo into Uganda to sell it, tax free, at a price higher than in DRC but lower than normal in Uganda.⁵⁴⁶ While the government was losing tax revenue on account of this operation, many officials either supported it directly or treated it with a degree of salutary neglect—recognizing it was happening, but allowing it to continue, as the Opec Boys were helping to fill a void in fuel supply. When the price of fuel in DRC reached parity with Uganda in 2011, many thought the Opec Boys would go out of business.⁵⁴⁷ But the lack of fuel distribution remained a fundamental issue and led to fuel shortages in the areas where the Opec Boys had long operated. Consequently, the Boys have continued to provide fuel, but no longer at a discount, and frequently at prices well above the Ugandan standard.⁵⁴⁸ Still, they are viewed by many not as criminals, but as entrepreneurs providing a public service.⁵⁴⁹

In a similar situation, the local communities of the Red Triangle of Puebla State, Mexico, actually protect the extensive illicit hydrocarbons activity there.⁵⁵⁰ Because the organized operations, led by the Zetas, sell the stolen fuel at half or less than half of the official price, the communities have an economic interest in ensuring that criminal activity continues. Towns have been known to pour stolen fuel down the storm drains to avoid getting caught—on the one hand a public safety hazard, but on the other, a strong indication of the top-to-bottom commitment to maintaining the status

quo.⁵⁵¹ Again, the thieves are not seen as criminals but businessmen who are helping to relieve the financial burdens of day-to-day life.

Many of these thematic elements, such as seeing criminals as public servants or entrepreneurs, are visible elsewhere as well. Morocco has a long history of cross-border smuggling operations bringing subsidized Algerian fuel into remote areas of the country.⁵⁵² Algeria claims the majority of the 1.5 billion liters it loses to the illicit trade ends up in Morocco.⁵⁵³ At the same time, the Moroccan government is aware that it is losing considerable tax revenue to large-scale smuggling. Again, however, it treats the criminality with a degree of salutary neglect: in other words, it knows of the illicit activity, but chooses not to interdict it.⁵⁵⁴ The illicit hydrocarbons trade in the borderlands of Morocco actually fulfills two public service functions. On the one hand, it provides fuel to areas with limited legitimate distribution infrastructure. And on the other hand, it reduces the amount of refined oil that Morocco must import to meet national requirements, particularly while the SAMIR refinery at Mohammedia is shut down.⁵⁵⁵

Celebrating Criminality

With criminals turning into public servants on the one hand, and security, regulatory, and government personnel acting as criminals on the other, the non-dualism in the illicit hydrocarbons market can produce an intractable and dangerous shift in national ethos. When those tasked with guarding the rule of law are visibly acting outside the law, or, at a minimum, declining to enforce it, and those who are technically breaking the law are helping to meet the population's basic needs, a society's calibration along traditionally dualistic lines becomes difficult to maintain. What is right, what is legal, and, indeed, what should be celebrated all become a bit more difficult to discern. Consequently, in places where the government is perceived not to be looking out for the best interests of the people, criminality in the form of smuggling or other illicit hydrocarbons operations can be seen as a

545 Julius Ocungi, "Fuel Shortage Hits Gulu District," *Daily Monitor*, February 18, 2014, <http://www.monitor.co.ug/News/National/Fuel-shortage-hits-Gulu-District/-/688334/2210368/-/vf442x/-/index.html>.

546 Lecoutere and Titeca, "The Opec Boys," 6.

547 Ronald Batre, "Rising Fuel Prices in Congo Push 'Opec' Boys Out of Business," Uganda Radio Network, June 23, 2011, <http://ugandaradionetwork.com/story/rising-fuel-prices-in-congo-push-opec-boys-out-of-business>.

548 "Fuel Prices Increase as Scarcity Bites," *Daily Monitor*, September 14, 2010, <http://www.monitor.co.ug/News/National/688334-1010300-b9ul6ez/index.html>.

549 Lecoutere and Titeca, "The Opec Boys," 2-9.

550 Elvia Cruz, "El robo de hidrocarburos en Puebla: una bomba de tiempo en el Triángulo Rojo," *Expansión*, May 3, 2016, <http://expansion.mx/politica/2016/05/02/el-robo-de-hidrocarburos-en-puebla-una-bomba-de-tiempo-en-el-triangulo-rojo>.

551 Ibid.

552 "Algeria Loses \$2bn a Year to Fuel Smuggling," *Middle East Monitor*, January 7, 2016, <https://www.middleeastmonitor.com/20160107-algeria-loses-2bn-a-year-to-fuel-smuggling/>.

553 "Algeria Loses 1.5 Billion Litres of Fuel a Year to Smuggling—Minister," *The Africa Report*, July 22, 2013, <http://www.theafricareport.com/Reuters-Feed/Algeria-loses-1.5-billion-litres-of-fuel-a-year-to-smuggling-minister.html>.

554 Querine Hanlon and Matthew M. Herbert, *Border Security Challenges in the Grand Maghreb*, *Peaceworks Series*, United States Institute of Peace, 2015, 10-12.

555 "Moroccan Tax Authority Seizes Assets of Oil Refinery Samir," Reuters, August 14, 2015, <http://af.reuters.com/article/investingNews/idAFKCN0QJ0FE20150814>.

form of rebellion against the experience of injustice. While salutary neglect, as seen in Uganda or Morocco, for example, can seem like a convenient way to avoid infrastructure development and higher oil sector costs, it can also engender a celebration of criminality that seriously undermines the credibility of the government and its ability to maintain the rule of law. Sustained non-dualism, therefore, can cause long-term instability, as restoring the rule of law may require a total upheaval of the status quo.

Official Loss versus Individual Gain

As countless examples demonstrate, the trend toward non-dualism also complicates the notion of “losses” and “benefits.” Officials of both state- and privately owned companies in the oil and gas sector have fiduciary responsibilities. This means that their role imposes on them the obligation to try to ensure that the company does not sustain losses of any kind—from theft, mismanagement, or anything else. Around the world, however, the trend toward non-dualism creates an odd dynamic where the officials sustain losses in their official capacity, but accrue tremendous personal benefits. In other words, increasingly, the individuals best placed to take actions to stop the theft of oil are disinclined to do so, because they are the ones stealing it.

In Nigeria, the state-owned and private companies including the oil majors lose billions a year due to stolen oil—both crude and refined.⁵⁵⁶ But those losses for the government and the companies have translated into major windfalls for government and local corporate officials.⁵⁵⁷ As noted, the Thai royal family has been implicated in large-scale smuggling of refined oil, epitomizing how losses to the state can be obscured by benefits to state leadership.⁵⁵⁸ In Morocco, the SAMIR refinery, a privately owned enterprise, has accrued exorbitant debts while nevertheless participating in illegal supply chains that would have had to benefit at least some of the refinery’s corporate leadership.⁵⁵⁹ In each of these cases, the individuals best placed to stop the theft are the same individuals who are benefitting from, if not directly perpetrating, it. These sorts of situations are the most difficult in which to intervene.

As the coup in Thailand, the change of leadership in Nigeria, and the shutdown of the SAMIR refinery all show, these non-dualistic dynamics are often altered only by a dramatic event at the highest level.

Reversion to Dualism

A fundamental danger to the participants in a non-dualistic criminal system is that some of those participants can, at any time, revert to dualism. If the individuals who wear both the hat of thief and the hat of either security, law enforcement, regulator, or some other type of official see their interests as having changed, they can revert to their traditional position of standing in opposition to criminals. When such a reversion occurs, they are particularly well placed to root out any of the criminal element that has fallen afoul of their good graces or that poses a threat to them. Indeed, they know the criminal system better than officials normally ever would. A dual-hatted criminal always poses a degree of risk for pure criminals, as the official who is responsible for stopping crime will know exactly who they are and what they have done. Consequently, the trend toward non-dualism is of lowest risk for, and thus of greatest appeal to, those who encompass both sides of a traditionally contrary relationship. In Nigeria, an example that will hopefully remain fairly unique, the former militants who were legitimized as a security company have also reverted to their dualistic relationship, posing a significant danger to the stability of the state and underscoring the upheaval that can come with reversing this macro trend.⁵⁶⁰ As Part III will examine, however, there are ways to actually force a reversion to dualism and thus interfere in the seemingly intractable dynamics that sustain the illicit hydrocarbons market. This trend toward non-dualism, however, must be recognized to have a legitimate chance at a successful intervention.

Using Law, Regulation, and Policy as Tools for Illicit Activity

The second macro trend that emerges when examining refined oil theft around the world is the increasing use of laws, regulations, and policies as tools for engaging in illicit activity. Criminals are generally quite adept at finding and exploiting gaps or loopholes in the legal, regulatory, and policy structures pertaining to lucrative industries like the oil and gas sector. They are also increasingly using law, regulation, and policy as means to refine and escalate their illicit activity and maximize their criminal profits. Given the layers of society involved in the illicit hydrocarbons trade, it is perhaps not surprising that this dynamic manifests itself at different levels. On the tactical level, there is

556 “Nigeria Loses \$25.5Bn Annually to Illegal Maritime Activities,” *The Nigerian Voice*, June 2, 2010, <http://www.thenigerianvoice.com/news/25743/nigeria-loses-255bn-annually-to-illegal-maritime-activitie.html>.

557 Burgis, “The Looting Machine,” 188.

558 “Ex CIB Chief Gets 10 Years for Money Laundering,” *Khaosod English*, February 17, 2015, <http://www.khaosodenglish.com/news/crimecourtscalamity/2015/02/17/1424162454/>.

559 “Morocco’s Sole Refinery to Be Liquidated by Court Order,” *Oilprice.com*, June 1, 2016, <http://oilprice.com/Latest-Energy-News/World-News/Moroccos-Sole-Refinery-to-Be-Liquidated-by-Court-Order.html>.

560 McGregor, “Back to the Creeks.”

a trend toward taking new regulations and policies and finding ways to turn them to direct criminal advantage. On the operational level, there is a trend in which larger criminal syndicates use the perceived setbacks created by new laws, regulations, or policies as a means of expanding organized operational capacity to more effectively pursue criminal profits, thereby pushing smaller or ad hoc criminals out of the market. At the strategic level, two dynamics can be seen, sometimes within the same country. In the first, law and policy makers intentionally create or block legislation, regulation, or policy in an effort to create operational- and tactical-level opportunities. In the second, senior officials make use of their expert familiarity with existing laws, regulations, and policies to exploit them for high-level illicit advantage.

Tactical

As noted, fuel marking is one of the principal countermeasures now being used to thwart the illicit hydrocarbons market. Frequently, marking is mandated by law, as is the case in Uganda,⁵⁶¹ Ghana,⁵⁶² Turkey,⁵⁶³ Serbia,⁵⁶⁴ Albania,⁵⁶⁵ the Philippines,⁵⁶⁶ and elsewhere. In most cases, however, certain types of fuel, particularly jet fuel, are exempted from marking. As of yet, no marker has been developed for aviation fuel. The law itself, therefore, creates an opportunity for smuggling that was not available before. By misrepresenting another form of fuel as jet fuel, criminals can avoid both scrutiny and in many cases taxes as well, and drive a truckload of diesel or other refined product straight into the local market. Prior to the creation of the fuel marking law, however, such a tactic would not have been an option.

Similarly, “round tripping,” as exhibited in Nigeria, is a tactical level exploitation of a subsidy policy.⁵⁶⁷ A shipment of refined oil can come into Nigeria,

receive the payout of the subsidy, leave Nigerian waters without unloading, and then return to receive the payout of the same subsidy on the same fuel a second time. This tactic is an effective way of using the government’s own policy to defraud the government of significant money.

Operational

As noted, a key driver of hydrocarbons criminality is the desire to obtain a “discount” on fuel. Consequently, any policies that generate discrepancies in price, usually either through tax or subsidies, are likely to lead to cross-border smuggling and other illicit activities. Such dynamics are visible around the world, in countries like Turkey and Syria, Morocco and Algeria, Thailand and Malaysia, Uganda and DRC, and elsewhere. Governments lose millions if not billions in tax revenue on the incoming side, and similar amounts from fuel shortages and loss of subsidies on the outgoing end of that illicit trade. Even international organizations that have provided subsidized fuel as part of aid packages have unwittingly created opportunities for smuggling. However, as states are beginning to reduce the discrepancies between themselves and their neighbors, new dynamics are developing. Minimal differences, either in actual price or on account of currency exchange rates, are still leading to smuggling operations, but of a different sort. As Ghana demonstrates, the change in policy toward reducing the cost discrepancies between neighboring states is actually serving as an impetus for higher volume trading.⁵⁶⁸ To overcome the shrinking profit margins, criminals are syndicating and scaling up their smuggling—using tanker trucks rather than jerry cans—to make the operations sufficiently profitable.⁵⁶⁹ In other words, organized criminal groups are exploiting the opportunity to either absorb or push aside low-level smuggling in favor of more extensive, networked operations.

Strategic

Legislators, regulators, and policy makers have shown, particularly in countries where corruption is considered endemic, a willingness either to block legislation and policy that would curtail illicit activity, or to create legislation that, while appearing to address problems of oil theft, creates opportunities for operational and tactical level exploitation. In Uganda, for example, parliament has sought unsuccessfully to combat some of the corrupt and ineffective practices at the ministerial level that have led to smuggling and caused

561 Government of Uganda, “Statutory Instruments Supplement No. 28,” Energy and Minerals, 2009,

[http://energyandminerals.go.ug/downloads/The percent20Petroleum\(Marking percent20& percent20Quality percent20Control\)Regulations,09.pdf](http://energyandminerals.go.ug/downloads/The%20Petroleum(Marking%20&%20Quality%20Control)Regulations,09.pdf).

562 “Petroleum Product Marking Regulations,” National Petroleum Authority, 2012 (L. I. 2187)

563 “National Marker Implementation on Oil Market Regulation,” *Official Journal*, No. 26137, April 12, 2006.

564 “Uredba o obeležavanju (markiranju) derivata nafte,” *Official Gazette of RS* no. 46/13, April 13, 2013.

565 “On Excise in Republic of Albania,” Law no. 61, May 24, 2012.

566 “Mandating the Marking of Imported Kerosene and Fuel Oils Which Are Entered Tax and Duty Free to Prevent the Unauthorized Diversion Thereof into the Domestic Market and for Other Purposes,” Department Order No. 23-07, July 26, 2007.

567 “How Nigeria’s Oil Is Stolen,” *African Business*, June 21, 2012, <http://africanbusinessmagazine.com/uncategorised/how-nigerias-oil-is-stolen/>.

568 “Fuel Smuggling Syndicate Exposed,” *Ghana Web*, May 6, 2016, <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Fuel-smuggling-syndicate-exposed-436499..>

569 Ibid.

the government to lose millions in tax revenue. This dynamic is particularly acute as the country prepares to become an oil producer rather than merely an importer.⁵⁷⁰

The second form of using law, regulation, and policy at the strategic level is to engage in the sort of “contractocracy” that has been evident in Nigeria. Not all contracts fit into this trend; some are simply legitimate or corrupt contracts that may or may not affect illicit hydrocarbons activity. But certain contractual arrangements suggest a strategic attempt to create the conditions for large-scale oil theft while protecting all the actors involved from domestic or international scrutiny. A prime example is a “safe sex transaction,” whereby senior officials make use of their intimate familiarity with the workings of the government, its laws and policies, and its institutions to screen movements of money and contractual opportunities into the hands of players who will conduct illicit operations benefiting the officials.⁵⁷¹

“[C]ertain contractual arrangements suggest a strategic attempt to create the conditions for large-scale oil theft while protecting all the actors involved from domestic or international scrutiny”

Finally, it is worth noting Azerbaijan as a counterexample. The near-complete control exercised by the country’s leadership over both state resources and state finances means that both upstream and downstream theft runs counter to the interests of both the state and its leaders. This may explain both why there is relatively little refined oil theft and why state finances remain jealousy guarded.⁵⁷² In other words, Azerbaijan shows how strong legal control over the hydrocarbons sector can provide strategic advantage to the state leaders.

570 Silvia Antonioli, “Bulk of Uganda Commercial Oil Production to Start in 2017—Minister,” Reuters, May 9, 2014, <http://www.reuters.com/article/uganda-oil-idUSL6N0NV4AW20140509>.

571 Burgis, “The Looting Machine,” 190-92.

572 Farid Guliyev, “Oil and Regime Stability in Azerbaijan,” *Demokratizatsiya*, 21:1, 2013, https://www.gwu.edu/~ieresgwu/assets/docs/demokratizatsiya_percent20archive/GWASHU_DEMO_21_1/R2G1W8R80862KN3H/R2G1W8R80862KN3H.pdf, 122-23.

Breakdown of the Rule of Law

When law, regulation, and policy are viewed neither as constraints on conduct the society deems inappropriate nor as facilitators of development that benefits the country as a whole, but rather as tools to engage in illicit activity, the rule of law begins to break down. In states particularly dependent on oil revenues to provide national budgets, this dynamic is especially dangerous. As Nigeria proceeds to confront the destabilization caused by interfering with some of the illicit activities that have been ongoing for years at all levels—strategic, operational, and tactical—the extent to which the rule of law has deteriorated is evident.⁵⁷³ Anyone looking to use law, regulation, or policy to combat oil theft, therefore, must consider the implementation of the law in practice, as well as the likely criminal response. Not doing so could leave any legitimate attempts to curtail the illicit hydrocarbons market susceptible to being blindsided by criminals who use those legitimate initiatives as tools for illegitimate activity.

Countering the Concrete Countermeasures

As state and corporate actors around the world take measures to mitigate the extent and costs of refined oil theft, new modalities of crime begin to arise. In general, as criminals are denied one opportunity, they usually look for others. But rather than merely seeking new avenues to steal refined oil, criminals are exhibiting a third macro trend toward proactively working to counter the concrete countermeasures being put into place. This dynamic is distinct from that of using laws, regulations, and policies as tools for theft, as it is not conceptual, but physical. In other words, rather than looking for ways to exploit the system, the criminals are either tampering with the physical products that are being used to prevent oil theft, or developing their own products to overcome barriers to the illicit hydrocarbons trade.

While there are already numerous examples, this trend highlights that any physical mitigation effort will give rise to second- and third-order consequences. Whenever governments or companies purchase and use a product to try to prevent or reduce refined oil theft, criminals will seek to find a way to render it ineffective.

Boda Boda Men

A prime example of criminals working to counter the concrete countermeasures was just brought into the

573 “Nigeria: Buhari—Corruption Cases Being Scuttled,” AllAfrica.com, July 19, 2016, <http://allafrica.com/stories/201607190124.html>.

spotlight in Uganda in 2016. The boss of Fuelex, a company long associated with the illicit hydrocarbons trade, who was known for bribing his way out of difficult situations, was arrested for smuggling fuel.⁵⁷⁴ The circumstances of his capture, however, revealed a modality of theft that involved actually dismantling a countermeasure. Since 2013, Uganda has used positional tracking devices to monitor the movement of fuel trucks bringing refined hydrocarbons products from the port of Mombasa in Kenya. In the case of the Fuelex boss, the illicit operation proceeded as many do: the tracking device became a means of deceiving regulators. When a tanker truck carrying fuel meant for South Sudan arrived at the Ugandan border, its tracking device was removed and given to a “boda boda man”—a driver of the distinctive East African motorcycles—while the truck headed instead for a destination in Uganda. The boda boda man was paid in advance to take the tracking device through Uganda and to South Sudan, simulating the licit route the truck was to have taken. Instead, he went to Kampala, where authorities monitoring the tracking device had him arrested. He, in turn, exposed the boss of Fuelex as having been behind the operation.⁵⁷⁵

What this incident showed, among other things, is that seemingly sophisticated countermeasures can be quite easily countered. If all it takes to smuggle a truckload of fuel into Uganda is to remove a tracking device and send it on a motorcycle to another country, then the multimillion dollar tracking program is not paying off. At a minimum, the government needs to explore how to limit the opportunities for criminals to counter its concrete countermeasures.

Laundering for Dye Removal

In a number of jurisdictions, fuel marking has been implemented, sometimes in addition to tracking shipments, and sometimes on its own, as a means of monitoring fuel movements and seeking to reduce the prevalence of smuggled and adulterated fuel. Different marking products are available, but they come in two main categories—dyes and molecular markers. The European Union has, for more than a decade, used various dyes to mark fuel.⁵⁷⁶ In particular, several red

dyes are used to mark agricultural diesel, which is taxed at a much lower rate than other fuels. A sizeable criminal element works to counter this mitigation tactic and remove the dye.⁵⁷⁷ This process of “laundering” the fuel in order to remove the red coloring of the low-cost agricultural diesel makes it possible to then sell it as high-cost, undyed, or “white,” fuel. Criminal groups working along the border between Northern Ireland and the Republic of Ireland have been particularly adept in this chemical process, and are known to have engaged in large-scale laundering operations for years. This effort to counter the countermeasure, therefore, has had marked success and bespeaks a likely ongoing effort to tamper with fuel markers, even as they become more sophisticated.

Illegal Pipelines and Fake Fishing Vessels

In addition to the physical interference with countermeasures, criminals have also become adept at developing their own products and infrastructure to circumvent physical barriers to the illicit hydrocarbons trade. In Turkey and Nigeria, for example, illicit pipelines have been laid to move significant volumes of hydrocarbons, both crude and refined, across borders and barriers.⁵⁷⁸ Perhaps more creatively, however, Thai smugglers have developed fake fishing vessels used to smuggle fuel.⁵⁷⁹ Whereas the vessels look like fishing trawlers and are therefore able to move without suspicion through the waters of Thailand and neighboring Malaysia, they are actually retrofitted to be able to transport significant quantities of siphoned or stolen fuel. Estimates suggest that at least 20 percent of the illicit fuel market is supplied via this maritime tactic, as it successfully avoids all conventional impediments.⁵⁸⁰

Cyberattacks

While none of the case studies examined in Part I involved credible indications of cyberattacks, such a modality is an emerging issue that bears noting. Several incidents have occurred in other states that suggest cyber interference in the hydrocarbons supply

574 Anthony Wesaka, “Wanted Fuelex Boss Arrested at Entebbe Airport Fleeing Country,” *The Monitor*, June 5, 2016, <http://www.monitor.co.ug/News/National/Wanted-Fuelex-boss-arrested-at-Entebbe-Airport-fleeing-country/688334-3233614-vynk8tz/index.html>.

575 Charles Etukuri and Jeff Andrew Lule, “Fulex Boss Arrested over Fuel Smuggling,” *New Vision*, June 1, 2016, http://www.newvision.co.ug/new_vision/news/1425953/fuelex-boss-arrested-fuel-smuggling.

576 “Dyeing and Marking System in European Union and Poland,” Chemik International, 2011, http://www.chemikinternational.com/pdf/2011/03_2011/chemik_2011_03_200_203.pdf.

577 Gerry Moriarty, “Authorities on ‘Front Foot’ in Tackling Fuel-Laundering,” *Irish Times*, June 29, 2015, <http://www.irishtimes.com/news/ireland/irish-news/authorities-on-front-foot-in-tackling-fuel-laundering-1.2266824>.

578 “Turkish Villages Smuggle IS Oil Through Makeshift Pipelines,” *Al Monitor*, September 15, 2014, <http://www.al-monitor.com/pulse/fr/originals/2014/09/turkey-syria-iraq-illegal-oil-pipeline.html>; “Building a Post Petroleum Nigeria. (Leave new oil in the soil),” Environmental Rights Action/Friends of the Earth Nigeria, November 25, 2009, http://www.oilwatch.org/doc/paises/nigeria/building_a_post_petroleum_nigeria.pdf.

579 Caroline Liss, “Oceans of Crime: Maritime Piracy and Transnational Security in Southeast Asia and Bangladesh,” IIAS/ISEAS, 2011, 181.

580 Lalitasivimol et al., “The Distribution for Illegal Transnational Petrol Importation Business of Retailers in Thailand.”

chain may be used as a mechanism for both disruption and theft. So far, the most significant instances of cyberattacks in the hydrocarbons industries have involved state actors, most notably Iran, Israel, and the United States. In 2012, a series of cyberattacks on the Iranian oil industry led to the exposure of the Flame virus, a sophisticated cyberweapon allegedly developed jointly by the United States and Israel.⁵⁸¹ Iran had to seal off all its oil operations from the Internet as a result of the attacks.⁵⁸² Within months, Iran had retaliated with cyberattacks on the Saudi oil parastatal Aramco and the joint Qatari-ExxonMobil firm Ras Laffan Liquefied Natural Gas Company, or RasGas, in which a virus subsequently named Shamoon deleted data from computers, replacing the lost material with images of a burning American flag. Though the virus caused some disruption at Aramco, operations were not affected as the virus infected only the company's communications network, which is not connected with its operations networks.⁵⁸³

In 2014, the American security firm Cylance released a detailed report on what they termed Operation Cleaver, an Iranian program tasked with establishing the means to disrupt and disable critical infrastructure in Canada, China, England, France, Germany, India, Israel, Kuwait, Mexico, Pakistan, Qatar, Saudi Arabia, South Korea, Turkey, United Arab Emirates (UAE), and the United States. In Canada, Mexico, Kuwait, Turkey, Qatar, Saudi Arabia, and France, oil and gas infrastructures were specific targets.⁵⁸⁴ A further move in the conflict came in the summer of 2016, when six fires and explosions affecting Iran's oil infrastructure were attributed to a computer virus similar in design to Stuxnet, the virus that sabotaged Iran's nuclear program several years ago. Though Iranian officials sent mixed messages about the origins of the incidents, some of their remarks indicated that cyberattacks were to blame.⁵⁸⁵ Also in the summer of 2016, the

UAE opened a Cyber Security Center after becoming the second-most cyberattacked country in the world behind the United States, mainly due to attempts on its energy companies. It is worth noting that hacktivists are considered a major threat by UAE authorities.⁵⁸⁶ While, as noted above, cyberattacks have so far mostly involved state actors, the UAE assessment points to the breadth of potential entrants into this arena: states, activist groups, militant groups, criminal groups, and even industry competitors may engage in cybercrime, and may turn it to the purposes of theft and fraud as well as sabotage or intelligence gathering. Cyber-related modalities of illicit hydrocarbons activity are, therefore, an emerging threat, further complicating the already extensive criminal picture.

Countering the Countering of Concrete Countermeasures

While Part III will examine approaches to addressing this macro trend, it is vital to recognize its existence. In response to questions concerning the construction of walls, fences, and trenches along the closed border between Morocco and Algeria to reduce fuel smuggling, a Moroccan security official recently quipped that closed borders "are only closed for legal things."⁵⁸⁷ Knowing, therefore, that criminals will look for and frequently find opportunities for perpetuating the illicit hydrocarbons trade, regardless of what measures are taken, governments and companies must be thoughtful and careful in the approaches they take to prevent or mitigate losses. Each action taken will come with a series of consequences. In some cases, the actions taken could, once countered by criminals, actually make it easier to steal refined oil. The Ugandan example is striking. If the state were not relying on positional trackers, it might have been scrutinizing trucks at the border more closely, thereby making it more difficult to simply drive a truckload of fuel into the country and sell it onto the black market. However, because the government was relying on the trackers, Fuelex, at least until its boss was arrested, was able to move shipments of fuel into the country illegally, but with the appearance of legitimacy. Similarly, the countermeasures should not actually create opportunities for criminal enterprises to take root, as the red diesel marking in the EU has. Governments and companies should therefore devote

581 Ellen Nakashima, Greg Miller, and Julie Tate, "US, Israel Developed Flame Computer Virus to Slow Iranian Nuclear Efforts, Officials Say," *Washington Post*, June 19, 2012, https://www.washingtonpost.com/world/national-security/us-israel-developed-computer-virus-to-slow-iranian-nuclear-efforts-officials-say/2012/06/19/gJQA6xBPoV_story.html.

582 Thomas Erdbrink, "Facing Cyberattack, Iranian Officials Disconnect Some Oil Terminals from Internet," *New York Times*, April 23, 2012, <http://www.nytimes.com/2012/04/24/world/middleeast/iranian-oil-sites-go-offline-amid-cyberattack.html>.

583 Nicole Perlroth, "In Cyberattack on Saudi Firm, U.S. Sees Iran Firing Back," *New York Times*, October 23, 2012, <http://www.nytimes.com/2012/10/24/business/global/cyberattack-on-saudi-oil-firm-disquiets-us.html>.

584 "Operation Cleaver," Cylance, 2014, http://cdn2.hubspot.net/hubfs/270968/assets/Cleaver/Cylance_Operation_Cleaver_Report.pdf.

585 Jon Gambrell, "Iran Oil Industry Fires, Blasts Raise Suspicions of Hacking," *Associated Press*, September 22, 2016, <http://>

abcnews.go.com/International/wireStory/iran-oil-industry-fires-blasts-raise-suspicious-hacking-42276447.

586 Naushad K Cherrayil, "UAE Second Most Targeted Country by Hackers after the US," *Gulf News*, August 22, 2016, <http://gulfnews.com/business/sectors/technology/uae-second-most-targeted-country-by-hackers-after-the-us-1.1883164>.

587 Querine Hanlon and Matthew M. Herbert, "Border Security Challenges in the Grand Maghreb, Peaceworks Series," *United States Institute of Peace*, 2015, 7.

serious consideration to how criminals might counter or even take advantage of their countermeasures. Spending money to solve a problem should not lead to the exacerbation of that problem.

Conclusion

Knowing the details of refined oil theft in countries around the world provides an overwhelming picture of the lines of illicit activity. Analyzing that activity and placing it within a taxonomy of trends, however, helps to make sense of what is really going on, and, in turn, what can be done to stop or mitigate it. This part has aimed to do that by identifying three trends into

which most of the current refined oil theft seems to fall: the rise of non-dualism; the increasing use of laws, regulations, and policies as tools for illicit activity; and the countering of concrete countermeasures. Naturally, criminals will always pursue a discount on fuel, and will therefore continue both to exploit discrepancies in price and seek to counter any abstract or concrete barriers to profitable criminality. In Part III, therefore, the details of Part I and trends identified in this Part will help inform analysis of the key stakeholders who can alter the status quo, and of what may realistically be done to intervene in the existing illicit hydrocarbons market.

PART III

Stakeholders and Recommendations



While Parts I and II of this report have focused on the problems associated with the illicit hydrocarbons trade, this section concentrates on who has the power to change the status quo and how they might go about doing so. By identifying the stakeholders who have an interest, whether they recognize it or not, in mitigating downstream hydrocarbons crime, it becomes possible to discern the range of realistic steps that can be taken—both individually and in concert with other stakeholders—to intervene in, reduce the effects of, or seek to eradicate such criminal behavior. This part explores the range of stakeholders who can alter the dynamics of downstream illicit activity, reviews some of the recommendations others have made in the past, and then poses a series of recommendations for how to address some of the exigent issues reviewed in Parts I and II. Those recommendations are then stress tested against the real-world issues identified in the first two parts, demonstrating how the recommendations work in practice.

Just as it helps to group the various modalities of illicit activities by trends, it helps as well to bundle the many stakeholders into different categories. As in the taxonomy for the trends, there is overlap in how various stakeholders can be classified, but in general, there seem to be six main sets: Individuals, Public Sector, Private Sector, Civil Society, Criminals, and Multi-Stakeholder Initiatives. This discussion highlights some of the actors who fall into each of those sets, and what role they have or could have in abating the problems of illicit hydrocarbons activity.

After examining the stakeholders, the discussion reviews the recommendations that other studies of illicit hydrocarbons activity have made in the past. As most of them have focused on upstream rather than downstream activities, not all such recommendations are salient, so the analysis focuses on the proposals that are applicable to the present study of theft and fraud involving refined products.

Based on the information in Part I, the analysis in Part II, and both the identification of stakeholders and review of prior recommendations, this part proceeds to make its own set of recommendations—both about specific actions and about developing a process to discern which actions to take and how to implement them. Those recommendations, however, are not country-specific. Rather, they focus on addressing particular criminal elements and are structured to be as flexible and broadly applicable as possible. Again, a grouping, this time into five categories, helps organize the recommendations into a more manageable menu of options.

Discernment in implementing the recommendations—either independent of each other or in combination—will be crucial to their potential success or failure. As noted, refined oil theft is likely to be an evolving phenomenon, so there is no formula for how to solve it. That said, the process of how to approach the problem must be grounded in an informed understanding of both the problem and its context, and must involve strategic, operational, and tactical elements. Indeed, the very process of confronting illicit downstream hydrocarbons activity may actually be more important than any of the individual actions taken. Actions are often situational, whereas a well-constructed process, involving the appropriate stakeholders, can evolve alongside the problem it is seeking to address. Ultimately, however, if the process is to be successful, it will have to evolve to the point where it is not just running alongside the problem, but getting ahead of it. This part of the report concludes with a practical exercise, applying the recommendations to fact patterns found in the case studies of Part I.

The Stakeholders

In almost any context, it is easy to overlook some of the individuals and entities who may claim to have a stake in an issue. While even direct participants are sometimes unacknowledged, those involved at various degrees of separation from the immediate issue can too often go unnoticed, even when their role is actually vital. This section therefore seeks to identify the general categories of stakeholders who have a role to play in curbing downstream hydrocarbons crime, and to populate those categories with examples of stakeholders from different contexts. It is by no means an exhaustive list, but it is intended to help expand the thinking about who can play a helpful role, who might be unhelpful, and who needs to be involved in the efforts to reduce and eventually eradicate illicit downstream hydrocarbons activity.

Individuals

While it is, in some ways, inaccurate to identify individuals as a separate class of stakeholder, they are included here as they are a potential secondary stakeholder in all the other categories. A common theme throughout the case studies examined in Part I of this report, and a major focus of Part II, is the notion that people may single-handedly embody both sides of an oppositional relationship. They may be both law enforcement and outlaw, regulator and violator, thief and public servant. So, in examining the stakeholders in all the other categories, even the criminals, it is vital to identify people's interests as well as their positions. While, for many reasons, it may be necessary to involve certain governmental or corporate officials in



Workers from the state-owned oil company Pemex work around an oil spill near Rosarito February 10, 2011. Thieves tapping into a Mexican fuel pipeline triggered a large diesel fuel spill south of the border city of Tijuana, Mexico. *Photo credit: Reuters/Jorge Duenes.*

a process to address illicit downstream hydrocarbons activity, caution may be advisable. Indeed, the very officials who in their professional capacity have an interest in mitigating hydrocarbons crime may in their individual capacity be benefiting from or even directly perpetrating that very crime. In analyzing the stakeholders needed for a successful intervention, therefore, the difference between official positions and individual interests must be taken into consideration.

Public Sector

The first proper category of stakeholders is the public sector, which includes governments and international organizations. While the most immediate effects of refined oil theft may be in the country or countries where fuel is being stolen or smuggled, the ripple effects cross the global marketplace. At the higher level of criminal activity, illicit networks themselves are transnational, but given the universal need for refined hydrocarbons, theft and fraud, particularly at scale, have economic, environmental, and other effects that transcend national and regional borders. This examination of public sector stakeholders seeks,

in particular, to identify entities that would otherwise be overlooked.

Locus States

The most obvious public sector stakeholders are, in general terms, the governments of the states in which illicit hydrocarbons activity occurs. It is their laws that have been broken; their borders that have been illegally crossed; their fuel that has been stolen, adulterated, or illicitly sold; their tax revenue or subsidy that is suffering; their environment that may be damaged; their credibility that is at issue; and usually their citizens who are most involved and most directly affected. As the locus of the crimes, such governments are the stakeholders that should be most concerned about stopping the illicit activity.

Governments, however, are not homogenous entities. While the whole government may have an overarching stake in stopping hydrocarbons crime, the departments, agencies, or ministries that make up the government might have their own agendas. Examples of the departments, agencies, and ministries that may

have a particular stake in downstream illicit activity include those related to energy, tax and finance, customs and border patrol, police, coast guard, navy, environment, infrastructure and public works, transport, and the port authority. Further complicating matters, there may also be divisions within those departments, agencies, or ministries. And then, as was cautioned above, the distinction between official and individual interests must also be considered. The locus state, therefore, presents an array of governmental actors—from national leadership to senior officials to mid-level and low-level officials to law enforcement officers to the military to regulatory agencies and others—all of which may have distinct roles and interests in abating illicit hydrocarbons activity. Identifying their stake, therefore, is not a formulaic matter, but one that requires an honest and candid assessment of the real dynamics in play. These same sorts of complexities and divisions are also true of foreign states, removed from the actual locus of the criminal activity.

“If a refinery in one country is shut down on account of illicit activity, for example, the state called upon to help meet the first country’s supply deficit is also affected by the situation and thus has a stake in how it is addressed.”

Foreign States

Obviously, the governments of the states directly affected by illicit downstream hydrocarbons activity are stakeholders, as they are likely either accruing a windfall or sustaining losses, or both. When fuel is smuggled from one country to another, both states have a stake. Similarly, when crude is stolen from one country, laundered through a second, refined in a third, and sold in a fourth, all four states have a stake. Depending on the particular situation, however, countries that are once or twice removed from direct hydrocarbons crime may also be stakeholders. If a refinery in one country is shut down on account of illicit activity, for example, the state called upon to help meet the first country’s supply deficit is also

affected by the situation and thus has a stake in how it is addressed.

To identify the relevant states that have a stake in any particular criminal modality, therefore, focusing solely on the locus of the illicit activity is insufficient. Instead, all the states in both the legal and illegal supply chains must be considered. If fuel is supposed to move from State A to B and on to C, but is stolen in State B and sold in State D at a discount, all four states should be considered in determining which have a stake in ameliorating the theft. States B, C, and D certainly sustain losses of different sorts. It may also be, however, that State A has a vested interest in the supply chain and therefore should be considered a stakeholder as well, perhaps because it will ultimately have to increase its production to meet the unsatisfied needs of States B and C. In other words, identifying sovereign stakeholders requires considering the diversity of interests or stakes a state may have in addressing criminal activity.

International Organizations

There are numerous international organizations that may hold a direct or indirect stake in addressing illicit downstream hydrocarbons activity. Identifying them all is of limited value, but there are a few worth noting as they have a particularly significant role in countering refined oil theft. Certainly the international policing and counter-criminal organizations—INTERPOL, Europol, Frontex, UN Office of Drugs and Crime (UNODC), and others—have a professional interest in the transnational criminal aspects of illicit hydrocarbons activity. International energy sector organizations like the Organization of the Petroleum Exporting Countries (OPEC), the International Energy Agency (IEA), and the International Energy Forum (IEF), among numerous others, all have an interest in overseeing the oil market and ensuring its stability. The UN Development Program, World Bank, International Monetary Fund, and other economic development organizations have an interest in the economic stability of states, in which energy security plays a major role. The UN General Assembly, UN Security Council, NATO, and other international security bodies have an interest in securing global energy supply and reducing conflict, which can arise as a result of resource shortages.

Notwithstanding these fairly obvious organizations, there are numerous others that have a stake in reducing the criminal activity surrounding the refined hydrocarbons market. The International Maritime Organization, for example, has a significant stake in reducing piracy and illicit activities in the maritime space. As explored in Part I of this report, a major driver behind piracy in the Gulf of Guinea has been the

theft of oil. So, while the IMO is not a counter-criminal organization, an energy organization, or a global security organization, it has a significant stake in the reduction of illicit hydrocarbons activity. Similarly, international organizations may, in different contexts, have substantial interest in the environmental impact of refined oil crimes, the public health and safety issues that arise from unregulated treatment of fuel or attempts at artisanal refining, or the impact illicit hydrocarbons activity has on food supply.

In addition to issue-specific international organizations, however, there are some others that may be tapped creatively as a means of addressing aspects of downstream oil theft. In other words, they do not inherently have a stake, but may be given one. The International Organization for Standardization (ISO) is the body that oversees the development of measurable, auditable international business standards. Given the various countermeasures being developed to try to thwart refined oil theft, ISO may be able to provide useful assistance by setting standards for those countermeasures, thus reducing the number of low-quality and ineffective options. In addition, ISO standards for service providers may also help reduce the vulnerability to illicit activity in the hydrocarbons marketplace. In addressing illicit hydrocarbons activity, therefore, it is useful to ask not just who has a stake in seeing the issue resolved, but who could have a stake in actually resolving it.

Private Sector

Whether state owned, locally owned, or foreign owned, the companies that have a stake in reducing or eradicating illicit downstream hydrocarbons activity vary greatly in their standards, interests, and roles. From oil producers to refiners to shippers to marketers to distributors, focusing on the supply chain of refined oil alone brings a large number of private sector actors to the table. Such companies, however, are only some of the relevant private sector stakeholders. Increasingly, the list also includes companies that offer both equipment and services that can be used to help counter refined oil theft. This list includes marking companies who actually mark the oil itself; tracking companies that monitor the movement of the vehicles and vessels that transport oil; surveillance companies that provide equipment including cameras, sensors, and meters for mechanically monitoring stored, piped, or transported oil; and private security companies hired to guard and protect oil in transit, oil in storage, or sites that consume oil.

In addition to oil sector companies, oil transportation businesses, and the companies focused on countering crime in the oil sector, another important set of often

overlooked stakeholders are the major consumers of refined oil products. Particularly in the developing world where power grids are limited and generators are required to meet energy needs, refined oil is vital to many businesses, especially ones that provide essential services. Utility and telecommunications companies, hotels, and hospitals and other medical facilities require constant fuel supply to maintain services. Construction and transportation companies and hubs of any kind—particularly distribution hubs—cannot afford the interruption caused by stolen fuel. If shut down due to lack of fuel, the banking and financial services sectors could cause more widespread economic repercussions. Even accounting and bookkeeping firms who monitor fuel purchases and disbursements have a stake in the protection of the legitimate market.

As ever, a careful analysis of interests is required, as a company's bottom line often involves more than financial profit. In state-owned companies, state interests are also in play. In all cases, though, there may be other motives, including individual motives or even corporate social responsibility motives, that color how private actors engage with the issue of illicit hydrocarbons activity. Oversimplifying the stake a private company holds in the issue is unhelpful to resolving it.

Civil Society

Civil society is a term that is hard to define, as it is often used as a catchall to cover the spectrum of actors who ostensibly look out for the interests of the general public. In this report, it will specifically include NGOs, the not-for-profit sector, academia, think tanks, and the news media as well as the general public itself. These elements of civil society, however, have different roles to play in addressing illicit hydrocarbons activity. And while it might seem as though they share a common interest in mitigating or eradicating refined oil crimes, Part II of this report noted that, in some cases, criminals are seen as public servants, and communities will go to considerable lengths to protect the illicit operations that provide them with heavily discounted fuel. The diversity of interests among the various civil society stakeholders requires that they be examined either individually or in pairs.

NGOs and Not-for-Profits

Often the most active and visible representatives of public interests, NGOs and not-for-profits frequently serve as mouthpieces for the general public, the downtrodden, and the marginalized alike. When it comes to illicit hydrocarbons activity, they have frequently focused their attention on oil majors, crude

oil theft, corruption, and environmental degradation,⁵⁸⁸ but as downstream theft becomes more visible as an issue that robs governments of billions of dollars of both revenue and tax revenue—funds that could be used to provide for enhanced public services—more NGOs and not-for-profits will likely focus more attention on it. Their role in the Voluntary Principles on Security and Human Rights,⁵⁸⁹ a multi-stakeholder initiative for the extractive industry discussed further below, for example, suggests a willingness to work together with government and industry to tackle key issues facing the oil sector. To date, however, NGOs and not-for-profits have shown little interest in downstream oil theft in and of itself.

Academia and Think Tanks

Whereas NGOs and not-for-profits tend to advocate a particular position, academia and think tanks often approach issues with a degree of independence. Some think tanks have an ideological bent, but most seek to exhibit enough rigor to overcome charges of undue bias. This independence and rigor, when applied to illicit downstream hydrocarbons activity, have provided much of the information on the subject to date. That said, most of the studies apply to only one country or even just one aspect or modality of refined oil theft. Part I of this report is the most extensive exposition on the subject ever published, but far more work is needed. Resolving a problem requires understanding it, and downstream oil theft remains poorly understood in many places. Part of the stake that academia and think tanks hold, therefore, is the wherewithal to engage in investigation and analysis to produce useful understanding. Depending on the situation, the individuals involved in that analysis can then consult in developing effective interventions.

News Media

Though this report classifies the news media as an element of civil society, it is, in many respects, cross-cutting. In some states, it is a public sector entity, wholly owned and controlled by the government. In others, it is so heavily controlled by corporate interests that the media content speaks little to the public's interest in any unbiased or neutral fashion. Issues of independence notwithstanding, the media offers the bulk of the information available about illicit

hydrocarbons activity at all levels. In other words, the role of the media is to shine a light on all the other stakeholders and provide a window into their activities. The media becomes a mechanism of transparency, exposing issues and keeping them in the public eye.

General Public

As noted above, the general public may have a stake either in eradicating illicit hydrocarbons activity or in maintaining it. In the first instance, the negative effects of the criminal behavior on the general public may include a diminishment in public services from the government due to lost tax revenue, an increase in criminal activity as the rule of law breaks down, a decline in arable land on account of environmental degradation, and other debilitating results. At the same time, however, criminals and criminal networks may offer communities the opportunity to purchase fuel at a discount or even just the opportunity to purchase fuel when none is supplied by the government. In this light, the interests and stake of the general public regarding illicit hydrocarbons activity are not necessarily clear. The response of the general public to intervention, therefore, must be carefully considered.

Criminals

As this section noted at the outset, too often key stakeholders are overlooked or ignored. When identifying the stakeholders in criminal matters, it is ironically the criminals themselves who are most often forgotten or left out of the discussion. Even if criminals should not have a seat at the table—notwithstanding the exception discussed below—the interests of the criminals must be considered when examining options for intervening in illicit activity. Every action intended to stop illicit activity will produce some sort of effect. If the fundamental interests and motives of the criminals are not considered, however, the intervention chosen may actually have the adverse consequence of making criminal activity even easier by creating exploitable loopholes. In other words, the stakeholders who wish to stop refined oil theft and related crimes must put themselves in the mindset of the criminals on a regular basis throughout the planning and implementation phases of any intervention if they truly want to achieve success. So the criminals' stakes, if not the criminal stakeholders, must feature in the process of mitigating illicit hydrocarbons activity.

As will be discussed in the recommendations on process below, constant consideration of second- and third-order consequences is a crucial element of a well-designed intervention. In many respects, the process of identifying the second- and third-order consequences of counter-criminal activity requires thinking like a criminal. When an action is taken, how

⁵⁸⁸ See, e.g., Audrey Gaughran, "Oil Theft in the Niger Delta Doesn't Explain All the Oil Spills," Amnesty International, September 24, 2013, <https://www.amnesty.org/en/latest/campaigns/2013/09/oil-theft-in-the-niger-delta-doesn-t-explain-all-the-oil-spills/>; "Nigeria: Journalists, Civil Society Groups Seek to End Oil Theft," NGO News Africa, August 26, 2014, <http://ngonewsafrika.org/?p=14656>.

⁵⁸⁹ "The Voluntary Principles," Voluntary Principles on Security and Human Rights.

will the criminals respond? It is important, however, in light of the information contained in Part I of this series, to note that not all criminals are as unsophisticated as many make them out to be. So the answer to the question of how they will respond must be informed by the actual sophistication of the criminal element at issue. Criminals are free from bureaucracy, able to be flexible and creative, and increasingly expert in existing laws and policies. So, this process of involving the criminal mindset to ensure adequate consideration of knock-on-consequences deserves genuine rigor.

While it is almost unthinkable to have criminals seated at the table with the lawful and legitimate stakeholders who are trying to stop illicit activity, there is one important exception in this context. Part II of this series explained in some depth that, regarding downstream criminal activity, there seems to be a trend away from the normal oppositional dynamics between licit and illicit actors. Frequently, a single individual may both be charged with protection or oversight of the fuel market and, at the same time, pose a serious threat to it. In that vein, many of the public sector, private sector, or even civil society stakeholders may simultaneously be stakeholders on the criminal side of the equation. An NGO running health clinics in areas with little infrastructure, for example, may have a vested interest in the “discount” offered by the illicit fuel trade. Consequently, the criminals themselves, given their legitimate role, may be part of the planning process for how to stop criminal activity. Such a complication bodes in favor of either whole-of-government or multi-stakeholder processes. Only when the influence of dual-hatted criminals is outweighed by the presence of stakeholders with a singular interest in stopping illicit behavior can the process have any chance of success.

Multi-Stakeholder Initiatives

As the name implies, multi-stakeholder initiatives (MSIs) involve a collective effort by representatives of the public sector, private sector, and civil society. In formalizing the initiatives, however, the resulting institutions end up becoming their own category of stakeholder. In the course of Part I and II of this series, two MSIs were identified—the Extractive Industries Transparency Initiative⁵⁹⁰ and the Voluntary Principles on Security and Human Rights.⁵⁹¹ A third is discussed below: the International Code of Conduct for Private Security Service Providers⁵⁹² and its affiliated

Association.⁵⁹³ In principle, these hybrid institutions have the potential to bring the relevant stakeholders together to solve the challenging issues on which they are focused. In practice, however, their impact has been limited.⁵⁹⁴ A relatively new creation, they are continuing to evolve and may become more potent as they enhance their capacity and effectiveness. EITI, for example, is wisely piloting a “beneficial ownership” scheme. In many respects, therefore, time will tell exactly what the stake of these MSIs ends up being, but they certainly are stakeholders and have a role to play in addressing downstream illicit activity.

Review of Prior Recommendations

The lack of rigorous research into illicit downstream oil activity—in what has been published, at least—also means that few well-considered recommendations have been posed for how to address it. In the case of stolen crude, however, a number of studies have made such recommendations, particularly related to Nigeria. In the seminal work on stolen Nigerian crude, the 2013 Chatham House report, Christina Katsouris and Aaron Sayne recommended the following:

- Nigeria and its prospective partners should prioritize the gathering, analysis, and sharing of intelligence.
- Nigeria should consider taking other steps to build the confidence of partners.
- Other states should begin cleaning up parts of the trade they know are being conducted within their borders.
- Nigeria should articulate its own multi-point, multi-partner strategy for addressing oil theft.⁵⁹⁵

While tailored to crude rather than refined oil, and limited in scope to Nigeria, there are a few elements here that can be extracted for the purpose of this report. First is the importance of credible information that can bring all the stakeholders onto the same page. As the section below on process highlights, the first step in addressing a crime is to ensure that all relevant participants understand, as much as possible, how much is being stolen, as well as how and why it is happening and what the costs of the crime are for the various stakeholders. Second is the importance

⁵⁹⁰ Homepage, Extractive Industries Transparency Initiative (EITI), <https://eiti.org/>.

⁵⁹¹ “The Voluntary Principles,” Voluntary Principles on Security and Human Rights.

⁵⁹² *The International Code of Conduct for Private Security Service Providers*, International Code of Conduct Association.

⁵⁹³ “The Articles of Association,” International Code of Conduct Association.

⁵⁹⁴ Duncan Green, “How Can You Tell Whether a Multi-Stakeholder Initiative Is a Total Waste of Time,” Poverty to Power, Oxfam Blogs, March 10, 2014, <https://oxfamblogs.org/fp2p/how-can-you-tell-whether-a-multi-stakeholder-initiative-is-a-total-waste-of-time/>.

⁵⁹⁵ Katsouris and Sayne, *Nigeria’s Criminal Crude*.



A trader bottles smuggled fuel on a street of Benin's capital Cotonou, August 2, 2006. Thousands survive by selling fuel that has been illegally imported from the nearby border with Nigeria, Africa's top oil producer. *Photo credit: Reuters/Noel Kokou Tadegnon.*

of collective action; this is stressed throughout the remainder of Part III. What this means is that states with significant problems should look to work with states or international organizations that may be able to help. Finally, and this is again stressed throughout the recommendations below, is the importance of a multi-stakeholder, multi-faceted approach that looks to address the problem from many angles at once.

The Chatham House report breaks down those four recommendations into more specific points, evaluating possibilities and suggesting whether they should be pursued or not. According to Katsouris and Sayne, the list of possible actions that could be taken by foreign actors in the Nigerian context, both advisable and inadvisable, includes: "Control physical movements of oil," "Genetic fingerprinting of oil," "Sanctions," "Maritime security reform," "Regulate oil sales," "Supply-chain due diligence initiatives," "Litigation against buyers and sellers of stolen oil," "Follow the money," "Money-laundering cases and asset forfeitures," "Bribery prosecutions," and

"Support for transparency initiatives."⁵⁹⁶ Most of these recommendations are addressed below, but a number also overlap with the recommendations posed by other studies on crude oil theft in Nigeria.

In a study conducted by the Center for Population and Environmental Development in Nigeria, Odalonu Happy Boris writes: "The international financial flows and networks which profit from these activities need to be traced, understood and targeted."⁵⁹⁷ This approach is extremely important for addressing refined oil theft as well. Boris also writes: "The upsurge of oil theft requires multilateral and concerted efforts to address the problem. All stakeholders in the oil industry, the oil communities, and security forces should be involved in resolving the menace."⁵⁹⁸ While he is talking about the crude oil industry in Nigeria, the same principles

596 *Ibid.*, 5-7.

597 Odalonu Happy Boris, "The Upsurge of Oil Theft and Illegal Bunkering in the Niger Delta Region of Nigeria: Is There a War Out," *MC SER Publishing*, vol. 6 no. 3, May 2015, <http://www.mcser.org/journal/index.php/mjss/article/viewFile/6541/6268>.

598 *Ibid.*

apply to addressing refined oil products globally. The full spectrum of stakeholders who have an interest in stopping illicit downstream hydrocarbons activity must come together to develop approaches to resolve it. They must also work together in implementing those plans. This is a fundamental tenet of the recommendations below.

Collaboration between national and international actors is also the major theme of a series of recommendations by His Majesty Etinyin (Dr.) Etim Okon Edet, paramount ruler of Bakassi LGA and chairman of Cross River State Council of Chiefs. In a paper he presented in November 2015, he argued that solving oil theft in Nigeria required a major international presence, a public awareness campaign, the development of specialist courts, transparent financial reporting, fingerprinting of oil, increased funding and equipping of security forces, routine engagement between stakeholders, close cooperation with relevant shipping associations, and a multinational effort to eradicate oil theft within each government's own territory.⁵⁹⁹ While most of these are addressed below, some are not really applicable to the global dynamic of refined oil theft. International presence, for example, is not a feasible option in most states. Furthermore, the development of specialist courts is inadvisable, as it would create a judicial imbalance and likely mean that criminals perpetrating murder, for example, may have a slower, lower-quality judicial experience than those stealing oil. That would likely decrease rather than increase the sense of justice. That said, cooperation between governments and industry, for example, would be extremely beneficial, and a public awareness campaign is certainly worth considering.

While there have been other recommendations raised over the years concerning crude oil theft, many of them are too specific to be of value in the refined oil context. Armed with the above exposition of the stakeholders, and familiar with these prior recommendations, therefore, this report proceeds to make the first set of recommendations on addressing global illicit downstream hydrocarbons activity.

Recommendations—Actions

Having explored the details of various case studies from around the world, the trends those cases exhibit, the stakeholders in both stopping and to some degree

maintaining illicit hydrocarbons activity, and the recommendations from other studies, this section seeks to identify some of the actions that could be taken to try to address illicit downstream hydrocarbons activity. These recommendations cut across the strategic, operational, and tactical levels and can involve the full spectrum of stakeholders. For the sake of clarity and simplicity, they are grouped into five main categories: Cooperation; Reform; Regulation and Standards; Intervention; and Concrete Countermeasures. Furthermore, legal matters transcend the entire list, as many of the recommendations require, or at least could be enhanced by, legislation that makes them affirmative requirements and not just “best practices.” By no means is this list exhaustive, and, as is discussed in detail in the next section, discernment and expertise are required when determining which of these approaches to take and how to implement them. None are mutually exclusive, and none are definitive solutions. Rather, they are steps that could or should be taken to work toward the overarching aim of reducing or eradicating illicit downstream hydrocarbons activity.

Cooperation

Develop Inter-ministerial/Interagency/Whole-of-Government Processes

In a number of contexts, governments have begun to develop repeatable, documented processes for working across ministries, departments, agencies, or any other structural and bureaucratic divides. The terms inter-ministerial, interagency, and whole-of-government can more or less be used synonymously, but they indicate an approach to addressing issues that overcomes the normal stovepipes of government institutions, allowing all the relevant governmental stakeholders to come together to address an issue collectively. There are three key benefits to such processes: 1) effectiveness, 2) cost, and 3) transparency. In the first instance, it is not hard to see why bringing the relevant parties together to address an issue will make them more effective, but this point is often overlooked. It is also the cheapest way to increase that effectiveness, as it involves negligible cost and reduces duplicated or wasted efforts among government departments. In the case of illicit hydrocarbons activity, however, the transparency piece may be the most important. Bringing together all the government stakeholders and having them collaborate reduces opportunities for some of the non-dualistic behavior identified in Part II. In other words, it can be a lot harder to engage in corrupt practices or to derive individual benefit from abusing an official position when a whole group of peers is watching. Furthermore, even if an official is deriving individual benefit from the perpetuation

⁵⁹⁹ His Majesty Etinyin (Dr.) Etim Okon Edet, “Buying with a Conscience: Curbing Crude Oil Theft in Nigeria,” Paper Presented at University of Manchester, 22-23, November 2-6, 2015, <http://documents.manchester.ac.uk/display.aspx?DocID=26445>.

of the illicit activity, the involvement of all the other officials helps dilute and may override the effects of that individual trying to maintain the criminality. Such inter-ministerial, interagency, or whole-of-government processes are not going to be fail-safe, but they do have the potential to contribute significantly to shifting government culture and moving toward resolving the problem of illicit hydrocarbons activity.

Trans-littoral Cooperation

In many contexts, maritime matters are divorced from land matters and the two are treated independently of each other. However, this creates a potential gap between how things are treated on land and how they are treated on the water. Such gaps are ripe for criminal exploitation and should therefore be avoided. In trying to stop illicit hydrocarbons activity on the water and on land, careful attention must also be paid to the transition between the two. The littoral space is a frequent point of theft and deserves careful consideration.

Intelligence and Security Cooperation

Intelligence and information sharing can quickly help governments enhance their understanding of refined oil theft, not just within their own borders but as a transnational phenomenon. The more intelligence agencies cooperate, the clearer the picture will become. In addition, if security agencies begin to cooperate as well, coordinated, synchronized activities aimed at targeting different portions of the supply chain and different nodes in the criminal networks may be able to produce a far more disruptive effect than any single-state approach ever could.

Public-Private Sector Cooperation

The private sector is central to the legitimate global refined hydrocarbons market, so governments must work with private entities on addressing the *illicit* global refined hydrocarbons market. As an initial matter, lines of communication must be open between government officials and industry actors. That interaction must be transparent, though, as the communication should not be ad hoc between a government official and a corporate officer, but formal between the government at large and the company as a whole. Information sharing alone can help both stakeholders improve the effectiveness of countermeasures by grounding them in a more complete understanding of the threat picture. Cooperation between the public and private sector can also take other forms, and creative approaches should be considered. For example, open communication could allow for the private sector to tailor its corporate social responsibility initiatives to help local communities in a manner consistent with government objectives. Additionally, it may be that one

side or another is simply unaware of certain criminal activity and might actually have the wherewithal to do something to stop it—either independently or collectively.

Community Engagement

One of the most difficult trends to reverse is the community-based protection of illicit hydrocarbons activity. Only by extensive community engagement can a state win back the trust and loyalty of such communities and successfully intervene in intransigent criminality. But states should seek to identify communities that seem to be heading toward such a state of affairs, and engage in positive community engagement and assistance before allowing the endemic criminality to take hold.

International Cooperation

As the section above explored in detail, the stakeholders with an interest in stopping illicit downstream hydrocarbons activity are not just the governments of the states where it is happening. Cooperation among the different stakeholders around the world, therefore, can have tremendous effect. Sharing new ideas, lessons about what has worked, and the problems encountered with failed attempts can all contribute to a transnational approach to this transnational problem. Collaboration among governments, oil industry companies, shipping companies and associations, academic and professional experts, and civil society groups may also open the eyes of the various stakeholders to options and opportunities they had not previously considered.

Reducing Price Imbalances and Distribution Gaps

One of the principal objectives of illicit downstream hydrocarbons activity is to obtain a “discount” on fuel price. The most common criminal activity is consequently the smuggling from a low-price jurisdiction across a border to a higher-priced locale. Reducing the imbalances in price between jurisdictions lowers the incentive for illicit activity. One way to do so is to form cooperative regional trading blocks, or economic pacts, where prices can be standardized across a number of states. Price discrepancies, however, are not the only motivators, as insufficient fuel distribution networks create a gap in supply. Fuel is therefore illicitly sold to meet the demand. Strategic approaches to both pricing and distribution can greatly reduce criminal incentives in the fuel market.

Reform

Legal Reform

While the theft of refined oil is illegal in most jurisdictions—as theft of any kind would be—many legal systems lack adequate penalties for deterring

“While there may be transparency about money coming in, too often the subsequent disbursements remain opaque, providing an opportunity for constructive theft by fraud or corruption.”

illicit hydrocarbons activity specifically. Any state that is serious about reducing downstream illicit activity should ensure its legal system has adequate mechanisms to penalize all forms of illicit hydrocarbons activity, as well as sufficiently substantial penalties to increase the “risk” side of the criminals’ risk-reward calculus.

Security Sector Reform

The possibility that law enforcement officers may be the chief perpetrators in a criminal enterprise is untenable. Security sector reform is essential for eliminating such a state of affairs. Improved vetting, training, management, and oversight are required to ensure that those best placed to stop the problem of downstream hydrocarbons crime do not become invested in its perpetuation.

Law Enforcement and Regulatory Rotations

As noted in Parts I and II, police, military, and other law enforcement officers, as well as regulatory authorities, may become part of the criminal dynamic in certain situations. One way of countering such a phenomenon at the operational level is to introduce random rotations so that such individuals do not have a regular schedule and cannot monopolize a criminal market. Such an operational plan requires administrative sophistication and the logistical capacity to transport people through the system. While that is not possible in many places, some form of variation in schedule may help reduce the opportunities for theft by low-level officials.

Term Limits

One of the key enablers of a corrupt system is the unlimited tenure of officials whose activities are never challenged. If an individual holds the same high-level position for thirty or forty years, they have plenty of time to safeguard their involvement in illicit activity. Setting term limits at least means the same individual cannot monopolize the illicit market for decades.

Conflict of Interest Laws

While in some countries it would be unthinkable for a government official, in his or her private capacity, to own the very infrastructure that the government is funding, or to be deriving private benefit from the public use of that infrastructure, some countries have no prohibition on such conflicts of interest. A vital step toward reducing the official involvement in illicit hydrocarbons activity would therefore be to develop laws that limit government officials’ ability to receive financial benefit from their official actions. Many of the most egregious examples of large-scale refined oil theft involve governmental misappropriation in pursuit of personal financial gain. When such practices become endemic, a government’s foothold on governance is diminished, and a society runs the risk of moving toward poverty and instability even as oil-related money continues to flow into the country. Functional laws militating against conflicts of interest are important for reversing such negative trends.

Transparency

Having already noted transparency in several other recommendations, it might seem redundant to have it as a freestanding recommendation as well, but there are few objectives more important to eradicating illicit hydrocarbons activity, at least at the highest end. The EITI has already put a premium on transparency within the energy sector, but it needs to be expanded and fortified. The “beneficial ownership” pilot⁶⁰⁰ of the EITI may produce positive results, but it is important, for the success of the initiative and for the overarching goal of bringing transparency to the hydrocarbons market, to require publishing the full extent of revenue streams. While there may be transparency about money coming in, too often the subsequent disbursements remain opaque, providing an opportunity for constructive theft by fraud or corruption. In addition to EITI, greater transparency is needed in the private sector supply chain. Trading houses are notoriously opaque and provide a platform by which significant amounts of illicit oil may disappear and reemerge as legitimate.⁶⁰¹ Fuel distribution networks are similarly opaque, as quantities in and quantities out are seldom monitored or reported, allowing for a range of illicit activities. Some of the

600 “Beneficial Ownership Pilot Evaluation Report,” Extractive Industries Transparency Initiative (EITI), October 6, 2015, https://eiti.org/sites/default/files/documents/BP/board_paper_30-4-b_beneficial_ownership_pilot_-_evaluation_report.pdf.

601 Marie Chêne, “Linkages between Corruption and Commodity Trading,” U4 Expert Answer, Transparency International and Chr. Michelsen Institute, April 5, 2016, <http://www.u4.no/publications/linkages-between-corruption-and-commodity-trading/>.

technical recommendations below could help support the effort to shine a light on the supply chain.

Regulation and Standards

Official Standards

Given the potential for corruption or illicit activity on the part of government officials at all levels, governments that are serious about reducing or ending illicit hydrocarbons activity should consider official standards for government positions relevant to the energy sector. Well-implemented vetting, training, and oversight requirements could greatly help reduce the likelihood of official involvement in criminal conduct. Additionally, conscious efforts to improve labor conditions for government employees would also limit the chances of endemic corruption setting in.

National and International Standards

As noted, ISO could help create standards to ensure that the countermeasures—such as tracking, tracing, metering, filming, and documenting described below—meet certain minimum requirements. While ISO certification for companies would likely raise the price of the countermeasures on account of audit costs, mandating standards compliance would ensure a higher quality in the efforts to reduce illicit hydrocarbons activity. If the ISO compliant countermeasures were furthermore required as a matter of law, the opportunities for theft would be further reduced. In addition, the existing ISO standards for private security specifically, and various business aspects generally (management systems, business continuity, etc.), may provide useful tools in addressing aspects of illicit hydrocarbons activity in different countries. In certain circumstances, ISO standards may not be fit for the purpose, so formally drafted and formally audited national standards may also be used to reduce the opportunities for criminality in the hydrocarbons market.

Private Security Regulation

Private security companies are major employers in many states, and private security guards often outnumber police officers by significant margins.⁶⁰² As explored in Parts I and II, unregulated private security companies who underpay, overwork, inadequately vet, and fail to train their employees may actually be placing their clients' property or even human life in the hands of individuals who, for any number of reasons, may be tempted to engage in illicit activity against the very people or property that they have been hired to protect. For many states, however, regulating private

security companies seems a daunting and difficult task. That concern, however, can be somewhat mitigated by the extensive work that has occurred over the last decade to regulate private security companies at the international level. A series of international initiatives provides states with most of the principles, if not the specific mechanisms, to implement sensible, effective regulation of their domestic private security industries.

At the state level, the Montreux Document,⁶⁰³ while focused on armed conflict settings, provides a useful restatement of international laws regarding state obligations—and to some degree corporate obligations—when interacting with the private security industry. In addition, it offers a series of “good practices,” many of which are relevant in a wide variety of contexts. The VPs, an MSI discussed in Part II, was one of the first to bring states, industry, and civil society together regarding security and human rights for the extractive sector.⁶⁰⁴ While limited in scope, the VPs do provide useful guidance regarding private security regulation. That said, a later MSI, the International Code of Conduct for Private Security Service Providers⁶⁰⁵ and the affiliated ICoC Association,⁶⁰⁶ provide a potential mechanism by which states could start to regulate their whole private security sector, not just the portion working for the extractive sector. In addition, the ANSI/ASIS PSC Standards Series⁶⁰⁷ and ISO 18788 provide formal, auditable, measurable standards for private security companies that operate in complex environments. A national standards body could adopt them and amend them to fit the particular context. If certification to the standards is then made a prerequisite for licensing, the state would greatly increase the quality of the private security industry and reduce the likelihood of its involvement in illicit downstream hydrocarbons activity. Any of these regulatory actions, however, must be carefully considered against the backdrop of the needs of the state in question. There is no universally appropriate approach to regulating the private security industry.

602 Geoff Burt, “From Private Security to Public Good: Regulating the Private Security Industry in Haiti,” *SSR Issue Papers*, No. 9, June 2012, https://www.cigionline.org/sites/default/files/paper_no9.pdf.

603 The Montreux Document on Pertinent International Legal Obligations and Good Practices for States related to Operations of Private Military and Security Companies during Armed Conflict, U.N. doc. A/63/467-S/2008/636, 2008, <http://www.eda.admin.ch/psc>.

604 “The Voluntary Principles,” Voluntary Principles on Security and Human Rights.

605 *The International Code of Conduct for Private Security Service Providers*, International Code of Conduct Association.

606 “The Articles of Association,” International Code of Conduct Association.

607 American National Standards Institute (ANSI) PSC.1, PSC.2, PSC.3 and PSC.4.

Licensing Regimes

In addition to the licensing of private security, states should consider licensing regimes for any of the service providers involved in the energy sector. Distribution centers are already frequently licensed, but the oversight of them, in many cases, could be enhanced to prevent abuse of the system. Additionally, fuel truck drivers could be subject to a licensing scheme to allow for greater vetting of the drivers, and banning of drivers who have been found to engage in illicit hydrocarbons activity in the past. Even within private security, perhaps there could be special security licenses for protection of certain energy-related infrastructure such as storage and distribution facilities.

Intervention

Education and Raising Awareness

While illicit downstream hydrocarbons activity is a widespread and significant problem, the information about it is meager. Even if government officials, industry executives, or members of the public wished to inform themselves about the issue, they would have limited means of doing so. Consequently, considerably more effort is needed from academia, think tanks, and the news media to uncover the realities of the situation and expose them. With that should also come a degree of education and outreach to help people understand the full extent of the problem and the associated knock-on consequences.

Leveraging Anti-Money Laundering and Combating the Financing of Terrorism

In some places, corruption, cronyism, and nepotism are so embedded that they are seen simply as the way things are done. One of the ways to disrupt that status quo, however, is to use international leverage provided by the prohibitions on illicit financial flows. Increasingly, rules concerning anti-money laundering and combating the financing of terrorism (AML/CFT) require third parties to reject money of questionable origin. For governments, businesses, and individuals alike who wish to continue to operate in the global marketplace, the rules concerning AML/CFT may be used as a tool to bring transparency into the fuel market as well, requiring stakeholders to prove the provenance of fuel-related funds.

Proactive Use of Legal Process

The law can be used in many ways, but in addressing illicit hydrocarbons activity, it can be an effective tool not only to penalize criminals at the local level, but to interfere with the networks and supply chains that sustain large-scale, organized refined oil theft. In some countries or even areas within countries, the community-based or corruption-driven nature of the

illicit hydrocarbons market is such that criminals act with impunity. Because of vested interests, the legal system will not interfere with their illegal activity. The judiciaries in other areas, however, may have sufficient jurisdiction over portions of the illicit market that a suit or even a criminal case in a court far from the locus of the crimes may have a real impact on how fuel theft proceeds. The legal system, therefore, should be seen as a tool for creative use. In other words, sending a criminal to prison for fuel theft is not the only way to stop him from engaging in illicit downstream hydrocarbons activity. All legal options, angles, and jurisdictions should be considered.

Maritime Security

Given the prevalence of maritime modalities of hydrocarbons theft, it is worth highlighting the need for specific enhancement to maritime security. While interstate security cooperation in the maritime space is extremely important, as is the trans-littoral cooperation discussed above, direct improvement of state capacity and capability to address maritime modalities of hydrocarbons crime—including the illicit sale of remaining on board fuel, hijackings to steal from tankers, illegal ship-to-ship transfers, use of offshore facilities to launder oil, etc.—all deserve direct maritime law enforcement attention.

Cyber Security

While cyberattacks as a mechanism for perpetrating illicit hydrocarbons activity seem to still be in their relative infancy, the increasing use of technology in all aspects of the hydrocarbons supply chain—from drilling to transporting to refining to selling to protecting—as well as in the concrete countermeasures aimed at stopping theft means the industry is becoming evermore susceptible to cyber interference. To reduce this risk, cyber security protective measures must accompany all technological aspects of the legitimate marketplace.

Insurance

Increasingly, insurance providers are offering policies and products to protect their clients against fuel theft. As that market grows and becomes more commonplace, the private sector companies that feel the need to purchase insurance against fuel theft will also look for proactive mitigation approaches to reduce the likelihood of theft as a means of reducing their insurance premiums. Such leverage could help inspire creative and effective approaches to intervening in the illicit hydrocarbons market.

Concrete Countermeasures

Tracking

A concrete countermeasure, which has proven effective in a number of jurisdictions, albeit far from tamper-proof, has been the introduction of tracking devices to monitor the movement of vehicles engaged in the transport of hydrocarbons. Monitoring the movement of the vehicles reduces the possibility of fraud or theft, as an illegal stop at a fuel distribution center, for example, can be detected.

Marking

The marking of fuel is not new, but the technology for doing so has advanced considerably in recent years. Dyes have been used in Europe for decades to identify fuels with differing tax rates, but criminals have established extensive operations to launder the fuel, removing both the dye and the effectiveness of that marking approach. More advanced molecular markers, which cannot be removed, however, have become a useful and effective countermeasure to fight against both theft and, importantly, adulteration. As the technology continues to advance, it would be helpful to be able to layer the markers such that different combinations of markers could provide a more complete narrative as to the supply chain of the fuel.

Metering

A major problem with both crude and refined oil theft is the lack of reliable meters on pipelines. To provide an accurate picture, meters should be placed on all ends of the pipeline with sensors in between, the real-time readings of which are visible in one control center. Eventually, it would be helpful to have the technology to test not just pressure and volume but also chemical composition; this would allow quicker, more precise detection of illegal taps, no matter their level of sophistication.

Cameras

Being filmed is a deterrent against crime. Filming a crime is also an effective means of prosecuting it. The use of recorded and/or live feed cameras can help reduce fuel theft when used at points of vulnerability. When testing for a marker, for example, the test itself may be conducted on camera, but if the process of removing the sample from the truck is unmonitored, systematic theft becomes possible. Extending the filming requirement to include the removal of the sample as well as the testing of it could reduce that opportunity for illicit activity. The more visibility throughout all aspects of the supply chain, the fewer chances for criminality to take hold.

Electronic Documents

A substantial source of theft by fraud occurs in falsified transport documents, both overland and by sea. Standardized electronic documents with counter-fraud measures could significantly help reduce the amount of refined oil stolen in transit.

Low-Tech Backup

Increasingly, operating and security systems for pipelines and other modes of fuel transit are highly computerized. While this shift has obvious advantages, a major danger in relying on technology is its susceptibility both to breakdown and increasingly to cyberattack. So, on the one hand, cyber security measures should be taken and kept current to reduce the risk of a hack or attack. But at the same time, a low-tech backup should ensure that the security of the hydrocarbons is never entirely reliant on technology. Low-cost options should always be considered to ensure continuity of supply.

Recommendations—Process

Having now outlined a range of possible activities to reduce or eradicate illicit downstream hydrocarbons activity, this section of recommendations seeks to provide the template for a repeatable process that will allow for strategic selection of which options to try and how to implement them.

While the interventions required to address refined oil theft are certainly not “one-size-fits-all,” the underlying process for how to approach such energy crimes should be universal. At the outset, the process must be *inclusive*. To have a chance of real success, the development of any intervention—whether originating from the public sector, private sector, or civil society—must involve all the relevant stakeholders who wish to see that success. An aim of this part, therefore, is to help identify who the relevant stakeholders might be.

Once the right individuals and institutions are included in the process, they must come to a common understanding of the problems they are trying to address. This understanding, however, cannot be based on assumptions; it must be based on reality. In other words, the stakeholders must begin with an honest assessment of the situation. That assessment must involve three elements: 1) a fact-based appraisal of the criminal threat, focusing on who is involved and the details of the criminal modalities; 2) a candid self-appraisal, examining the stakeholders’ own challenges as well as their resources, capacity, and capability to engage in intervention activity; and 3) a thorough review of the context. To get somewhere, it is important to have a clear understanding of the point of origin; in the same way, an informed picture of the status quo



A view of an illegal crude oil refinery site in the creeks of an Ogoni community in Nigeria's Niger Delta July 7, 2010. Photo credit: Reuters/Akintunde Akinleye.

is a prerequisite for making a conscious change to it. Parts I and II of this report provide substantial material in support of these assessments. Importantly, Part II is of global applicability, as the classification of trends can help any stakeholder in any country make better sense of what is happening.

Armed with the results of that assessment, the stakeholders must then articulate the *aims* of the process. Is the goal to stop oil theft? Is it to recover lost tax revenues? Is it to abate the public safety or environmental issues posed by illicit hydrocarbons activity? Is it to reduce fuel adulteration and the mechanical problems that result from it? Whatever the aims honestly are, they must be clear and shared by all the stakeholders. Just as it is crucial to understand the starting point of the process, it is impossible to work together to get somewhere if no one knows the end goal.

Once the stakeholders have coalesced around a common vision, they must begin identifying the *ways* of making their aims reality. Unachievable aims are

merely pipe dreams, and the point of the process is not meaningless idealism but effective action. So, the stakeholders must explore exactly what they can do to achieve their aims. The final portion of this part provides some of the fodder for that discussion. It identifies ways of intervening in illicit hydrocarbons activity. When conducting this planning, however, discernment becomes paramount. This is the stage at which the stakeholders must proactively consider the second- and third-order consequences of their actions. Any action taken to combat illicit hydrocarbons activity will produce a response. In some cases, it may be an abatement, even temporarily, of the problem. In other cases, however, it will open the opportunity for new modalities of theft. Only when the range of possible actions has been identified and when the possible second- and third-order consequences have been analyzed should the stakeholders finalize their plan and proceed to resource it.

In implementing the plan, however, the value of focusing on process rather than action comes to the fore. By having constructed the process in

such a way that it is iterative, the stakeholders can engage in real-time assessment of the situation as implementation proceeds and make adjustments as necessary. In other words, as criminals and others respond to the interventions they chose, participants can quickly repeat the key steps of including the right stakeholders, conducting the three-part contextual assessment, identifying aims, selecting ways, and applying resources based on changes in context. This way, stakeholders can always be working to address current and future problems rather than bygone criminal modalities.

With an iterative process that examines not just what can be done but also the likely responses, the stakeholders involved will become increasingly forward-looking, able to anticipate problems before they materialize. This means they can address not just the existing criminal activity, but the foreseeable criminal response to their interventions, as well. Ultimately, this dynamic will allow those trying to reduce or eliminate illicit hydrocarbons activity to get ahead of the criminals and, as long as they do not become complacent in their efforts, succeed in their endeavor.

Conclusion

The criminals who perpetrate illicit downstream hydrocarbons activity range from sophisticated and sinister international networks to well-meaning humanitarian service providers on limited budgets in poor and desperate communities. Refined oil theft is not, therefore, a crime that necessarily involves a desire to do harm; rather it frequently starts and ends with a desire for a discount. This diversity of criminal motives, however, complicates the approach to ending the problem, as communities may wish to preserve the illicit market. In attempting to “solve” downstream hydrocarbons crime, the entire picture

must be taken into consideration. The full range of stakeholders must be brought to bear to address the problem, and criminal motives must be given serious attention. Second- and third-order consequences must be analyzed as well, to ensure interventions do not cause bigger problems than they seek to solve.

Ultimately, the stakeholders who wish to reduce or eliminate downstream hydrocarbons crime must be creative and flexible. The criminals they face, regardless of their motivations, are unencumbered by bureaucracy and institutional constraints. They will find what works to get what they are after. Consequently, the stakeholders on the legal side of the equation must do exactly the same. And they must always fight the tendency to focus exclusively on the physical aspects of the illicit behavior. The illicit hydrocarbons market is highly valuable; that is why it exists in so many places, and why so many different sorts of people are willing to risk participating in it. While creative countermeasures on the ground will be helpful, they should be paired with equally creative countermeasures at the strategic, legal, regulatory, policy, and even international levels. A well-placed series of lawsuits in jurisdictions far away from where the fuel is being stolen, for example, may do more to stop that theft than any amount of technology or manpower surrounding the fuel itself. By creating a repeatable, documented process for approaching illicit downstream hydrocarbons activity, the stakeholders with a genuine interest in mitigating or eradicating that crime will be able to enhance the feedback loop of their interventions to the point that they get ahead of the criminals and are able to curtail criminal opportunities before they fully manifest. Given the global reliance on fuel for so many aspects of life, virtually everyone has at least some stake in addressing the problem. As this criminal matter becomes more visible, therefore, it will be telling to see who steps forward in a genuine effort to try to solve it.

APPENDIX

Applying the Recommendations



To apply the recommendations to all or even any of the ten case studies examined in Part I would be counterproductive. Many of the decisions about how to proceed in addressing an issue as extensive and sensitive as illicit hydrocarbons activity require navigating cultural nuances, institutional vagaries, and complex relationships. A third-party analysis at a distance, therefore, would be of limited value, as even in attempting to be practical, it would be divorced from the subtleties of reality. To bridge the gap between the theoretical or conceptual approaches discussed above and the practical activity that is needed to have any real impact on the current criminal landscape, this section seeks to demonstrate how the recommendations could be applied to some of the situations examined in Part I, but not go so far as to say how each country should proceed.

Cross-border smuggling is one of the major illicit downstream hydrocarbons activities facing many of the states examined in Part I. Several, such as Morocco, Uganda, Turkey, Thailand, and Ireland, experience smuggling into their territory, while others such as Mexico, Nigeria, and Ghana experience smuggling into neighboring states. A realistic hypothetical fact pattern helps illustrate how both of these categories of states—sending and receiving—could apply the recommendations to address a range of issues.

Country Alpha and Country Beta

Country Alpha subsidizes fuel as a means of helping support local economic activity. Its one operable refinery, which is state owned, is frequently shut down and accounts for (at most) only one-quarter of daily national consumption, forcing the country to import most of its refined oil requirements. Country Beta, which shares a border with Country Alpha, has long been taxing fuel, creating a substantial price difference on either side of the border. As a result, well-known smuggling operations have developed in border towns. The disproportionate real estate boom in border areas, as well as the uncanny number of fuel stations on the Alpha side of the border, suggests a thriving smuggling trade.

In addition to a few highly publicized cases of tankers being hijacked off the coast of Country Alpha, coastal communities are also becoming wary of the large number of “fishing” vessels that the local fishermen claim are actually transporting oil from Country Alpha into Country Beta and returning with other contraband, particularly drugs. Many politicians are rumored to own market shares in the illicit oil market, and in some towns makeshift fuel stations operate with impunity. While the fuel sold at those

makeshift stations is known to be cut with kerosene, even motorists buying fuel at standard, “legitimate” pumps are routinely struggling with engine problems due to adulterated fuel. In Country Beta, which has no refinery, the smuggling operations—by land and sea—from Country Alpha have greatly reduced the demand on fuel in the country, but at the same time have significantly undercut the anticipated fuel tax revenue. Furthermore, criminal gangs in border areas have dominated the illicit fuel trade and are beginning to use the criminal proceeds to engage in other criminal activities including narcotics, weapons, and human trafficking.

“Many of the decisions about how to proceed in addressing an issue as extensive and sensitive as illicit hydrocarbons activity require navigating cultural nuances, institutional vagaries, and complex relationships.”

Within a month of each other, Country Alpha and Country Beta elect new presidents, both of whom have strong anti-corruption and anti-crime platforms. While they quickly seek to eliminate the incentives for smuggling by holding a joint press conference to announce a reduction in the price difference in fuel between their countries, they encounter immediate resistance from their respective legislatures. And though they are able to reduce the difference, a gap in price remains. The new president in Country Alpha also mandates a fuel marking program, using a molecular marker, to attempt to reduce the sale of adulterated fuel and the sale of illicit fuel in legitimate stations. In the first few months of the program, the country experiences a dramatic crackdown in adulterated fuel and increase in public confidence in fuel stations.

At the same time, an interagency maritime task force is formed in Country Alpha, bringing together the port authority, customs and border control, the coast guard, the police, the public prosecutor’s office, and the fisheries protection unit of the Ministry of Agriculture. After conducting a review of their collective assets and coming to a shared position on reducing oil smuggling, armed robbery at sea, and piracy in tandem, they devise a plan for how to proceed. Together they

create a small, jointly administered fund and appoint an interlocutor to liaise with the fishing communities to offer rewards for information leading to the arrest of smuggling vessels or individuals engaged in other maritime crime. The fishing community, feeling a newfound sense of respect and inspired by the potential reward, cooperates to help identify the smugglers. Fishermen begin reporting vessels to the coast guard, and the coast guard, knowing that the other agencies are paying close attention, abandons some previously corrupt practices and begins successfully interdicting the illicit vessels. While the focus is on fuel smuggling, the coast guard, working with the police, also makes several high-profile drug, weapon, and human trafficking busts in the process, significantly increasing public trust in law enforcement. Furthermore, on one occasion, the fishermen tip off the coast guard regarding suspicious movement toward a tanker. The coast guard is able to arrive in time to intervene in a pirate attack, killing a pirate in the process of performing an opposed boarding just as the pirates had taken the tanker. Public confidence increases, and pirate attacks decrease after this case.

After a year in office, each of the presidents calls a cabinet meeting to review progress on combating illicit hydrocarbons activity. The president of Country Alpha is frustrated to learn that the regulators charged with monitoring the fuel marking program have been accused of routinely stealing oil under the guise of removing samples for testing. He is further frustrated to learn that, since low-level smuggling is no longer as attractive given the smaller difference in price between Country Alpha and Country Beta, syndicated smuggling networks have become more sophisticated in smuggling larger quantities of fuel, using tanker trucks and fraudulent customs documents. In response to the first matter, he reaches out to the private sector and solicits ideas. As it turns out, the contractor that supplies the marker has a technical solution whereby the fuel sampling is filmed, and the speedy implementation of it seems to eradicate that modality of theft almost instantly. Addressing the syndicated smuggling, however, is more difficult.

The president of Country Alpha meets with the president of Country Beta to discuss whether they can work together to address this problem that is hurting the finances of both their states. They agree to create a bilateral committee on illicit hydrocarbons activity, appointing some of their most trusted officials to work together to focus on the cross-border issues. After a thorough review of the situation, the committee agrees to adopt a joint tanker truck licensing regime whereby tanker truck drivers are required to have

a license that has reciprocal rights, and reciprocal enforcement in both states, providing equivalent penalties for violations. Furthermore, all tankers that cross the border must also be outfitted with a jointly monitored tracking device. If a driver is found not to have a license or to have made a false claim regarding the contents of a truck, or if a truck even attempts to cross the border without a tracking device, the truck and its contents may be confiscated by either state, and the driver charged with a criminal offense.

After six months, the new cross-border program has had some positive effect, but not as much as hoped. Police corruption is identified as a major issue. The bilateral committee explores options for how to proceed. While they initially consider rotating the guards at the borders, they are hesitant to do so on account of cost, but are completely dissuaded from doing so when they discover enthusiasm within the ranks for being assigned to the borders. It seems that enthusiasm is born of the belief that border guards can make considerable money from corrupt practices without concern for consequences. Seeking to avoid such perpetuation of the existing problem, the committee consults with the UN Office of Drugs and Crime. Impressed by the steps already taken in Countries Alpha and Beta, the UNODC appoints a legislative advisor to assist both countries with developing stronger legal frameworks for addressing illicit hydrocarbons activity. While the committee recognizes the value of the legal reform in the long run, they are still left with the exigent issue of reducing corruption in their new border regime. After consulting their respective attorneys general, the committee decides each country should engage the same private security company with similar contracts that expressly indicate the desire for cooperative assistance to the border police on either side of the border. They agree that the company must be certified to ISO 18788 and be a member of the ICoC Association to qualify. Once selected, the company proves helpful in reducing corruption at the border and increasing the effectiveness of the licensing regime. The private security guards check the vehicles, confirm the licenses, and assess the integrity of the tracking device, and the police perform any arrests or seizures as needed.

While issues of oil theft and other criminality continue to arise, both countries, independently and in tandem, begin to move more quickly and effectively to address them. Their ability to do so is also greatly enhanced by considerably more hydrocarbons-related tax revenue.

Review

In this hypothetical, Countries Alpha and Beta implemented a number of the recommendations with varying degrees of success and adapted in response to their relative effectiveness. The maritime committee was a great example of both interagency cooperation and trans-littoral cooperation in pursuit of maritime security. The bilateral committee is a good model for international cooperation, and the request for assistance from UNODC was met with receptivity on account of the positive efforts already underway. The molecular marking program and vehicle tracking serve as reliable examples of concrete countermeasures, but the engagement with the molecular marking company regarding regulator theft, as well as the employment of private security—with regulation

a primary consideration—exhibit effective public-private cooperation. The work with the fishermen is a useful approach to coastal community engagement and has proved effective in a number of jurisdictions. The reduction of price discrepancy on the one hand stopped some of the ad hoc smuggling, but on the other hand, created syndicated smuggling, in turn requiring additional intervention. The licensing regime and legal reform to criminalize certain licensing violations ultimately proved effective. Ultimately, both countries benefited from engaging in an honest assessment, taking full inventory of both internal and external tools and mechanisms at their disposal, and then being creative in planning and implementing approaches to countering the illicit activity.

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