

JANUARY 2015

# Africa's New Energy Producers

*Making the Most of Emerging Opportunities*

PROJECT COCHAIRS

Jennifer G. Cooke

David L. Goldwyn

Sarah O. Ladislaw

AUTHORS

Jennifer G. Cooke

David L. Goldwyn

*A Report of the CSIS Africa Program and the  
CSIS Energy and National Security Program*

CSIS | CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES



# Africa's New Energy Producers

*Making the Most of Emerging Opportunities*

## PROJECT COCHAIRS

Jennifer G. Cooke  
David L. Goldwyn  
Sarah O. Ladislav

## AUTHORS

Jennifer G. Cooke  
David L. Goldwyn

*A Report of the CSIS Africa Program and the  
CSIS Energy and National Security Program*

*January 2015*

CSIS | CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES

ROWMAN & LITTLEFIELD  
Lanham • Boulder • New York • Toronto • Plymouth, UK

## About CSIS

For over 50 years, the Center for Strategic and International Studies (CSIS) has worked to develop solutions to the world's greatest policy challenges. Today, CSIS scholars are providing strategic insights and bipartisan policy solutions to help decisionmakers chart a course toward a better world.

CSIS is a nonprofit organization headquartered in Washington, D.C. The Center's 220 full-time staff and large network of affiliated scholars conduct research and analysis and develop policy initiatives that look into the future and anticipate change.

Founded at the height of the Cold War by David M. Abshire and Admiral Arleigh Burke, CSIS was dedicated to finding ways to sustain American prominence and prosperity as a force for good in the world. Since 1962, CSIS has become one of the world's preeminent international institutions focused on defense and security; regional stability; and transnational challenges ranging from energy and climate to global health and economic integration.

Former U.S. senator Sam Nunn has chaired the CSIS Board of Trustees since 1999. Former deputy secretary of defense John J. Hamre became the Center's president and chief executive officer in 2000.

CSIS does not take specific policy positions; accordingly, all views expressed herein should be understood to be solely those of the author(s).

© 2015 by the Center for Strategic and International Studies. All rights reserved.

ISBN: 978-1-4422-4061-2 (pb); 978-1-4422-4062-9 (eBook)

Center for Strategic & International Studies  
1616 Rhode Island Avenue, NW  
Washington, DC 20036  
202-887-0200 | [www.csis.org](http://www.csis.org)

Rowman & Littlefield  
4501 Forbes Boulevard  
Lanham, MD 20706  
301-459-3366 | [www.rowman.com](http://www.rowman.com)

# Contents

Acknowledgments	iv
Executive Summary	v
1. Africa and the Changing Energy Landscape	1
2. U.S. Interests in Africa’s Energy Future	11
3. Big Potential and Big Opportunities	13
4. Challenges for Investors, Producers, and Citizens	16
5. Best Practices and Models for Partnership	25
6. Recommendations for U.S. Policy	32
7. Conclusion	36
About the Project Cochairs and Authors	38

# Acknowledgments

This report was authored by Jennifer Cooke, director of the CSIS Africa Program, and David Goldwyn, president of Goldwyn Global Strategies, LLC (GGS), who together with Sarah Ladislaw, director and senior fellow of the CSIS Energy and National Security Program (ENSP), cochaired the CSIS project on Africa's New Energy Producers

In the course of the project, many individuals generously contributed their time, ideas, and comments, although the views expressed in the report (and any errors) should be understood to be solely those of the authors. The authors are grateful to the guest speakers featured in the roundtable sessions: Harris Utne, partner with Rystad Energy; Jamie Webster, senior director for research at IHS and head of PFC Energy's Market Intelligence Service; Lance Crist, global head of oil and gas at the International Finance Corporation; Mark Y. Rosenberg, senior Africa analyst at the Eurasia Group; Leonardo Bellodi, former executive vice president of government affairs with ENI; Ian Gary, senior policy manager for extractive industries with Oxfam America; Paulo De Sa, manager for oil, gas and mining in the Sustainable Energy Department at the World Bank, and Philip Daniel, adviser to the Fiscal Affairs Department at the International Monetary Fund. The authors are also grateful to all participants of the roundtable sessions, who were drawn from the NGO community, energy companies, the U.S. government, and academia, and included independent experts on energy, development, and regional African affairs.

The authors wish to thank David Pumphrey, senior associate and former codirector of ENSP, and Richard Downie, deputy director of the CSIS Africa Program, for helping shape the project and roundtable discussions; as well as Ben Hubner, program coordinator with the CSIS Africa Program, Michelle Melton, research associate with ENSP, Cory Gill and Leigh Hendrix, senior associates with GGS, for their thoughtful comments on successive report drafts; and CSIS Africa Program research interns Amanda Caldeira and Anna Van Niekerk for their able assistance in finalizing the report.

This project and report have been made possible by the generous support of the Chevron Corporation.

# Executive Summary

Sub-Saharan Africa is on the verge of an energy boom. World-class natural gas finds off the coast of East Africa, deep-water oil discoveries off of upper West Africa, and promising geology along the East African Rift from Somalia to Madagascar—all make Africa one of the most promising continents for energy development in the world. The possibility of significant new revenues has raised hopes that these new discoveries will accelerate poverty reduction and enhance Africa’s status as a destination for much broader industrial investment capable of facilitating economic development beyond the energy sector. Yet the risk that these newfound resources will fail to live up to their full production potential, create rentier states, deepen corruption, and distort nonenergy sectors within producer economies—risks that have dogged many of Africa’s more established producers—remains. The question that African governments, citizens, and international partners confront is whether this time will, or can, be different. Will the harsh lessons offered by Africa’s more-established producers and the continent’s previous energy booms be absorbed? If so, are there practices that producer states, partner governments, companies, and nongovernmental organizations (NGOs) can apply to succeed where others before them have failed?

The CSIS Africa Program and the CSIS Energy and National Security Program gathered African and global energy analysts, representatives from oil and gas companies, NGOs and advocacy groups, and officials from several branches of the U.S. government to study these questions. We conclude that the management of energy development *can* produce different, more positive and inclusive results for Africa’s new energy producers. However, these results can be realized only if key stakeholders, including host governments, their international partners, and oil and gas companies, embrace a significantly different approach than they have in the past.

Africa’s experience in oil and gas development has shown that governments need to build the capacity to manage revenues and the business of energy development early on, and implement structures and processes that promote transparency and integrity to deter corruption. Prudent fiscal management can mitigate what is often termed the “resource curse”<sup>1</sup> by setting clear ceilings for resource revenues in annual budgets and sequestering

---

1. The term “resource curse” is now frequently used, but was initially coined in Richard Auty, *Sustaining Development in Mineral Economies: The Resource Curse Thesis* (New York: Routledge, 1993). It is generally understood to include a constellation of factors that undermine growth and broad-based development—corruption and rent-seeking, exchange rate inflation that makes other sectors of the economy less competitive, the creation of enclave economies, and vulnerability to global commodity price fluctuations.

excess revenues in transparent and countercyclical or long-term investment funds. Companies and countries will need to strike sustainable bargains that fairly balance risk and reward. Fiscal terms must ensure that the windfall of high hydrocarbon prices is shared between them when the market permits, but also allow projects to survive low price cycles to the extent possible. Among the strongest safeguards against rent-seeking will be transparent publication of payments and revenues, an informed citizenry, and protection of political space for challenge and dissent. Finally, ensuring shared value—or the need for societies that may be far from the production area or unconnected to it to see benefits from massive investment flows years before those investments generate profit—is necessary to sustain and can even enhance investors’ social license to operate.

Although there are lessons learned and best practices that *can* produce better results than Africa’s resource-rich countries have achieved in the past, this does not mean they *will* be applied. The challenge of managing public (and government) expectations of wealth and other material benefits stemming from expected resource revenues through the long period of energy development is formidable. Political leadership may change over the many years of early exploration, development, and production, and sustaining political will and long-term strategic vision may prove challenging. In many cases, projects will not earn profits for nearly a decade, and the willingness and ability of investors—especially small- and medium-sized exploration companies—to invest substantially in societies while spending billions in resource development costs is unproven. Political motives and social needs will also be buffeted by commodity price swings and other aboveground challenges, potentially including political unrest or security risks to operations.

The ability of governments to manage energy development differently this time will depend on the quality of national governance, the sustainability of donor and external government support for better governance, and the ability of local societies, NGOs, and investors to have civil and productive interactions. Past experience should temper exuberant expectations, but a number of new producer nations, from Ghana to Tanzania, are seeking to chart a new, more prudent course. Other nations will require support, encouragement, and coordinated programmatic interventions from the international community to succeed. Following an analysis of the prospects for Africa’s new producers and the challenges they face, this report catalogues examples of new best practices and work already underway and suggests a course of action for the U.S. government, donor nations, and international finance institutions (IFIs) to help maximize the benefits of Africa’s current energy boom.



# 1 | Africa and the Changing Energy Landscape

North America, especially the United States, has enjoyed dramatic growth in oil and gas production in recent years. At the same time, global oil and gas demand is projected to increase markedly in the coming years and decades. The U.S. Energy Information Administration's (EIA) recently released *International Energy Outlook*<sup>1</sup> forecasts that the world will consume 119 million barrels per day (bpd) by 2040, an increase of about 28 million bpd from today's consumption levels of around 91 million bpd.<sup>2</sup> Yet new supply must exceed 28 million bpd to offset production declines in mature fields. Natural gas demand is projected to rise as well. The International Energy Agency's (IEA) 2014 Medium-Term Natural Gas Market Report<sup>3</sup> projects that global natural gas demand will increase from around 3.5 trillion cubic meters (tcm) in 2013 to over 4 tcm by 2020. Seaborne liquefied natural gas (LNG) trade is forecast to grow from 322 billion cubic meters (bcm) in 2013 to 450 bcm by 2019. This growth rate of 40 percent far outpaces that of interregional pipeline trade.<sup>4</sup> LNG trade is expected to continue on this upward growth trajectory in subsequent years. Thus, the nature of projected growth in global oil and natural gas demand clearly indicates that there will be room—and the necessity—for Africa's energy to help meet demand needs. This will remain the case even if short- and medium-term price fluctuations, including the current rapid decline in global oil prices,<sup>5</sup> make timelines uncertain.

During much of the oil price rise of the 2000s, energy companies were in search of access to new oil and gas resources in frontier areas to meet ever-rising demand. Africa presented a promising opportunity, particularly in deepwater exploration and production. In recent years, the onset of tight oil and shale gas production in the United States presented an attractive alternative and drew a large amount of investment and attention from industry. Although there have long been concerns about the high costs associated with unconventional energy production, improvements in hydraulic fracturing techniques

---

1. U.S. Energy Information Administration (EIA), *International Energy Outlook 2014* (Washington, DC: EIA, September 2014), [http://www.eia.gov/forecasts/ieo/pdf/0484\(2014\).pdf](http://www.eia.gov/forecasts/ieo/pdf/0484(2014).pdf).

2. Current consumption data is derived from EIA, "Short-Term Energy Outlook," September 9, 2014, [http://www.eia.gov/forecasts/steo/report/global\\_oil.cfm](http://www.eia.gov/forecasts/steo/report/global_oil.cfm).

3. International Energy Agency (IEA), *Medium-Term Gas Market Report 2014: Market Analysis and Forecasts to 2019* (Paris: IEA, 2014), <http://www.iea.org/Textbase/npsum/MTGMR2014SUM.pdf>.

4. EIA, *International Energy Outlook 2014*.

5. The Brent oil benchmark price declined from approximately \$115 per barrel in June 2014 to \$60 per barrel in December 2014 as this report goes to print.

and drilling strategies have reduced break-even prices for U.S. production.<sup>6</sup> Deepwater oil and gas production is also costly relative to conventional production, but produces at a large scale and is free from many of the issues around water, land use, and social impact that surround onshore energy development. Deepwater exploration therefore remains a core part of every serious exploration and production company's portfolio, even as companies work to improve the cost and complexity issues associated with those projects. This factor, coupled with East Africa's proximity to growing demand centers in East and South Asia, makes Africa a prime location for energy exploration, provided that the geology is good, the terms are internationally competitive, and the country of interest is stable and secure.

## Traditional Producers Still Have Growth Potential

Africa's traditional producers remain important to global oil and gas supply, although new investment flows have varied over time largely because of aboveground challenges. Nigeria and Angola remain sub-Saharan Africa's largest oil producers, at 2.3 million bpd and 1.8 million bpd, respectively, in 2013.<sup>7</sup> Other established Gulf of Guinea producers are much smaller, and include Equatorial Guinea (290,000 bpd and 1.1 billion in reserves<sup>8</sup>); Gabon (242,000 bpd and 2 billion in reserves<sup>9</sup>); and the Republic of the Congo (278,000 bpd and 1.6 billion reserves<sup>10</sup>).

West Africa has significant, if underexploited, reserves of natural gas as well. Nigeria, with 187 trillion cubic feet (tcf) in proven natural gas, is Africa's largest holder of proven natural gas reserves, and ninth largest in the world.<sup>11</sup> In 2012, Nigerian exports of LNG accounted for 8 percent of globally traded LNG, and there is potential for expansion if it is able to further increase processing capacity.<sup>12</sup> Angola is moving to capitalize on its gas reserves, having completed its first LNG facility, with a capacity of 5.2 million tons, in 2013.<sup>13</sup>

---

6. Tom Randall, "Break-Even Price for U.S. Shale Oil," Bloomberg, October 17, 2014, <http://www.bloomberg.com/news/2014-10-17/oil-is-cheap-but-not-so-cheap-that-americans-won-t-profit-from-it.html>.

7. Nigeria, with 37.2 billion barrels in recoverable oil reserves, produced 2.3 million bpd in 2013, two-thirds produced onshore, and a growing proportion from off-shore facilities. Angola, with 10.4 billion in recoverable reserves, came in a close second, producing 1.8 billion in 2013, almost entirely off-shore.

8. EIA, "Country Report: Equatorial Guinea," updated August 2014, <http://www.eia.gov/countries/country-data.cfm?fips=EK>.

9. EIA, "Country Report: Gabon," updated January 2014, <http://www.eia.gov/countries/country-data.cfm?fips=GB>.

10. EIA, "Country Report: Congo (Brazzaville)," updated January 2014, <http://www.eia.gov/countries/country-data.cfm?fips=CF>.

11. EIA, "Country Report: Nigeria," updated December 30, 2013, <http://www.eia.gov/countries/analysisbriefs/Nigeria/nigeria.pdf>.

12. For many years natural gas was largely seen as an inconvenient by-product of oil production in Nigeria. Electricity prices were highly subsidized, and there was no market signal to value or capture natural gas. While this is changing, Nigeria remains the world's second-largest flarer of gas, behind Russia. Recently efforts have been made to capture and process gas for export as LNG. Ibid.

13. A series of technical problems, however, have led to a suspension of operations until mid-2015.

New project investment in Nigeria's offshore oil reserves has slowed in recent years, largely because of the government's continued failure to pass the Petroleum Industry Bill (PIB), which aims at a fundamental restructuring of the national oil company and a revision of the fiscal regime governing joint ventures and production-sharing contracts. The bill is now in its nineteenth iteration, and with the legislation in limbo, investors lack certainty on fiscal terms and a clear organizational structure through which the Nigerian government administers the sector. Some companies have expressed concern that the terms of the bill that is eventually passed will deter private investment,<sup>14</sup> and there are fears that the strong transparency and governance provisions of the original draft will be diluted.

Other issues have hindered investment as well. Oil theft remains a serious problem in the Niger Delta, robbing both the Nigerian government and industry investors of resource revenues. Estimates project that somewhere between 100,000 and 215,000 barrels of oil are stolen in Nigeria each day.<sup>15</sup> The situation has deteriorated to an extent where companies such as Shell have considered shutting down some of their pipelines due to rampant theft and the damage it inflicts on infrastructure.<sup>16</sup> These problems are demonstrative of broader security concerns in the Niger Delta, including the presence of militant groups, which are also a serious problem for investors.

Continued security challenges have led international companies, which have been the mainstay of exploration and production, to draw down their onshore assets and make way for local companies, many composed of Nigerian veterans of international oil company (IOC) operations. Although exploration activities in Nigeria have slowed with the exodus of international companies,<sup>17</sup> new deep-water finds elsewhere in the off-shore West Africa region continue to boost reserve estimates, and new technologies and successful exploration in Brazil's sub-salt region have prompted companies to look more closely at the geologically similar Gulf of Guinea. Exploration thus far has led to promising new discoveries in Angola and the possibility of bringing declining producers like Gabon, the Republic of Congo, and Cameroon back into play.

## . . . But the Recent Excitement Is in New Areas

The most noteworthy development in sub-Saharan Africa's energy sector has been significant new oil and gas discoveries. These discoveries have opened the continent up to a new surge of exploration and brought a broader array of oil and gas companies into the mix,

---

14. Eleanor Whitehead, "Nigeria Petroleum Bill: Still Causing Consternation," *Financial Times*, November 21, 2013, <http://blogs.ft.com/beyond-brics/2013/11/21/nigeria-petroleum-bill-still-causing-consternation>.

15. Ugochukwu Ugwuanyi, "Alison Madueke says oil theft, shutdowns cost Nigeria N1.3trn," *Daily Post*, August 6, 2014, <http://dailypost.ng/2014/08/06/alison-madueke-says-oil-theft-shutdowns-cost-nigeria-n1-3trn>; Sarah Kent and Michael Haddon, "Theft Threatens to Shut Nigeria Oil Pipeline," *Wall Street Journal*, March 4, 2013, <http://online.wsj.com/news/articles/SB10001424127887324178904578340193332814474>; Christina Katsouris and Aaron Sayne, "Nigeria's Criminal Crude: International Options to Combat the Export of Stolen Oil," Chatham House, September 1, 2013, <http://www.chathamhouse.org/publications/papers/view/194254>.

16. Kent and Haddon, "Theft Threatens to Shut Nigeria Oil Pipeline."

17. Femi Asu, "Nigeria's crude oil reserves target goes awry," *Business Day*, March 29, 2014, [http://businessdayonline.com/2014/03/nigerias-crude-oil-reserves-target-goes-awry/#.VC2Eiue6\\_M1](http://businessdayonline.com/2014/03/nigerias-crude-oil-reserves-target-goes-awry/#.VC2Eiue6_M1).

especially in the exploration phase, as small- and mid-size Western companies and indigenous African firms now play a larger role. This has significant implications for future collaboration between companies, the host government, civil society organizations, and local communities to ensure that resource development generates shared value for the host government's citizens, including those far away from the production area.

Ghana was the first of the new oil producers, with the discovery by Kosmos Energy in 2007 of the offshore Jubilee Field, with proven reserves of 2 billion barrels. Tullow Oil developed the field, and Ghana moved quickly from discovery to production, which began in 2010. Production, which averaged 103,000 bpd in the first half of 2014, is forecast to reach 110,000 bpd by the end of 2014<sup>18</sup> and the government anticipates that it will more than double national production by 2021 as the Jubilee Field is further developed and new discoveries come online.<sup>19</sup>

In the wake of the Jubilee discoveries, West Africa has drawn renewed exploration interest: Anadarko has found oil in the waters off Sierra Leone,<sup>20</sup> and the Australian-based company African Petroleum, Chevron, ExxonMobil, and others are engaged in exploration off Liberia's coast.<sup>21</sup> Cairn Energy, ConocoPhillips, and FAR Ltd. began drilling off the coast of Senegal in 2014.<sup>22</sup>

Interest has also been rising in the possibility of new finds across the Sahel, from Mali to Sudan and South Sudan. While exploration activities have begun in Mali, they have been delayed by insecurity and the threat of violent extremist groups in the broader region.<sup>23</sup> The formerly unified Sudan was a relatively mature oil producer, and production averaged around 490,000 bpd in 2010. Yet both exploration and production in Sudan and South Sudan have been severely constrained in recent years, largely by hostilities between the countries following South Sudan's independence in 2011, disputes between the two countries over borders and oil transit fees, and the outbreak of civil war in South Sudan.<sup>24</sup>

---

18. Matthew Mpoke Bigg, Kwasi Kpodo, and Jason Neely, "Ghana oil output to hit up to 110,000 bpd in 2014," Reuters, April 8, 2014, <http://uk.reuters.com/article/2014/04/08/ghana-oil-idUKL6N0N01ZJ20140408>; Ron Bousso and Jason Neely, "UPDATE 2 – Tullow sinks into red but confident Africa strategy will pay off," Reuters, July 30, 2014, <http://uk.reuters.com/article/2014/07/30/tull-oil-results-idUKL4N0Q525B20140730>.

19. Ekow Dontoh, "Ghana Oil Output to More Than Double by 2021 With New Fields," Bloomberg, April 23, 2013, <http://www.bloomberg.com/news/2013-04-24/ghana-oil-output-to-more-than-double-by-2021-with-new-fields.html>.

20. See Anadarko, "Anadarko Provides Deepwater Update," news release, April 19, 2012, <http://www.anadarko.com/Investor/Pages/NewsReleases/NewsReleases.aspx?release-id=1684883>.

21. "Update: African Petroleum looks to revive W Africa drilling with partners," *Platts*, July 11, 2014, [http://www.africanpetroleum.com.au/sites/default/files/u1/Platts\\_11\\_July\\_2014.pdf](http://www.africanpetroleum.com.au/sites/default/files/u1/Platts_11_July_2014.pdf).

22. Robert Grattan, "ConocoPhillips strikes oil off Senegal," *Fuel Fix*, October 7, 2014, <http://fuelfix.com/blog/2014/10/07/conocophillips-strikes-oil-off-senegal>.

23. Diakaridia Dembele, "Mali Oil Exploration is 'Well Advanced,' Prime Minister Says," Bloomberg, November 8, 2011, <http://www.bloomberg.com/news/2011-11-08/mali-oil-exploration-is-well-advanced-prime-minister-says.html>; "Full stop on Taoudenni basin," *Africa Intelligence*, January 14, 2014, <http://www.africaintelligence.com/AEM/oil/2014/01/14/full-stop-on-taoudenni-basin,108003231-ART>.

24. An overview of ongoing violence in Sudan and South Sudan and its impacts on each country's oil sector is available at: <http://www.eia.gov/countries/cab.cfm?fips=su>.

In East Africa, Uganda has led the way in oil, with significant discoveries in 2006 and 2007 by Heritage Oil and Tullow Oil in the Lake Albert basin in the country's west. Further discoveries have raised estimates of recoverable reserves to 1.4 billion barrels and 6.5 billion barrels in total estimated reserves.<sup>25</sup>

Discoveries in Uganda in turn prompted a rush of exploration in the East African Rift Valley, which extends from Somalia and Eritrea in the north, and southward into Lake Malawi and central Mozambique. In Kenya, Tullow has led exploration; the company currently estimates its holdings at 600 million barrels, and possibly as high as 1 billion.<sup>26</sup> Exploration in Ethiopia's Ogaden Basin holds some promise,<sup>27</sup> while discoveries in Somalia's semi-autonomous states of Somaliland and Puntland are geologically promising, although already a source of heated political contention with possible destabilizing effects.<sup>28</sup>

In natural gas, Mozambique and Tanzania are at the center of attention, and massive new offshore finds have the potential to transform both countries from fairly inconsequential gas producers<sup>29</sup> into global LNG players. While the resource base is promising, both countries to date have little to no infrastructure in place near the prospective areas, and their governments have very limited experience in hydrocarbons sector governance.<sup>30</sup> Both the host governments and industry stakeholders will therefore be challenged to avoid significant delays as they work to build East Africa's first LNG terminals. Avoiding such delays is necessary for Mozambique and Tanzania to acquire and sustain global market share, as they face competition from new LNG terminals expected to come online elsewhere in the world in the coming years, including in the United States, Russia, and Australia.<sup>31</sup>

Anadarko launched the East Africa gas revolution in 2010 with a globally significant discovery in the Rovuma Basin off the coast of northern Mozambique. Exploration by the Italian company Eni led in 2012 to another significant find, the largest operated discovery in the company's exploration history.<sup>32</sup> With subsequent discoveries, the two companies'

---

25. Ronald Musoke, "Uganda oil reserves now estimated at 6.5 billion barrels," *The Independent* (Kampala), August 28, 2014.

26. See Tullow Oil, "Special Feature: Kenya," 2013, [http://www.tullowoil.com/files/pdf/special\\_feature\\_Kenya.pdf](http://www.tullowoil.com/files/pdf/special_feature_Kenya.pdf).

27. Kaleyesus Bekele, "Ethiopia: New UK Company Acquires Oil Exploration Blocks in Ogaden," *The Reporter* (Addis Ababa), September 13, 2014, <http://allafrica.com/stories/201409150831.html>.

28. Ilya Grindeff, "UN Says Oil Search in Northern Somalia Risks Stoking Tension," Bloomberg, June 10, 2014, <http://www.bdlive.co.za/africa/africanews/2014/06/11/oil-discovery-in-two-somalia-areas-may-fuel-violence-says-un>.

29. According to EIA, in 2012 Mozambique produced 154 bcf of gas from two onshore fields, while Tanzania produced 33 bcf. EIA, "Country Report: Mozambique," updated July 2014, <http://www.eia.gov/countries/country-data.cfm?fips=mz>; EIA, "Country Report: Tanzania," updated April 2014, <http://www.eia.gov/countries/country-data.cfm?fips=tz>.

30. Nina Chestney, "Smaller firms will lead East Africa's oil and gas development," Reuters, June 10, 2014, <http://www.reuters.com/article/2014/06/10/africa-gas-idUSL5N0OR35920140610>.

31. Jacinta Moran, "East Africa must avoid LNG delays to compete with rivals," *The Barrel*, July 18, 2014, <http://blogs.platts.com/2014/07/18/mozambique-tanzania-lng>.

32. See Eni, "Where has Eni most recently discovered oil?," updated August 5, 2013, [http://www.eni.com/en\\_IT/faq/exploration-and-production/activities/faq-ep-eni-recently-discovered-oil.shtml](http://www.eni.com/en_IT/faq/exploration-and-production/activities/faq-ep-eni-recently-discovered-oil.shtml).

combined estimated recoverable resources in their respective areas are thought to total 125 to 155 tcf.<sup>33</sup> Both have announced their intention to plan and construct an onshore LNG facility in northern Mozambique<sup>34</sup> with a projected capacity of 50 million tons per annum, more than twice Nigeria's current capacity. Enabling legislation was passed in December 2014.

In neighboring Tanzania, discoveries on the northern edge of the Rovuma Basin off the country's southern coast, by partnerships between UK-based BG Group and Ophir Energy and between Norway's Statoil and Exxon Mobil, have led the government to estimate recoverable reserves at an estimated 53.2 tcf.<sup>35</sup> The Ministry of Energy and Minerals expects reserves to rise to 200 tcf over the next two years.<sup>36</sup> BG Group and Statoil, together with their partners, are jointly backing an LNG processing facility and export terminal, currently expected to begin shipping around 2020.<sup>37</sup> The government has also had recent talks with both Total and BP regarding their potential future participation in Tanzania's hydrocarbons sector.<sup>38</sup>

South Africa adds yet another dimension to the energy picture. EIA estimates that the country's Karoo Basin holds an estimated 390 tcf of recoverable shale gas reserves,<sup>39</sup> although estimates by the Petroleum Agency South Africa (PASA) are far more conservative at 40 tcf.<sup>40</sup> The discoveries have generated domestic controversy over the environmental impacts of hydraulic fracturing, and the vast quantities of water needed for the process in the semi-arid Karoo Basin will pose logistical and environmental challenges. Yet the South African government has indicated a willingness to address these challenges, and it is expected to open the way for further exploration as deliberations on a comprehensive regulatory framework are concluded.<sup>41</sup>

---

33. Ibid.; see Anadarko operations, "Mozambique LNG project," <http://www.anadarko.com/Operations/Pages/LNGmozambique.aspx>.

34. See Eni, "Eni signs heads of Agreement with Anadarko for the development of common gas reservoirs in Mozambique," December 21, 2012, [http://www.eni.com/en\\_IT/media/press-releases/2012/12/2012-12-21-eni-signs-agreement-development-natural-gas-mozambique.shtml](http://www.eni.com/en_IT/media/press-releases/2012/12/2012-12-21-eni-signs-agreement-development-natural-gas-mozambique.shtml).

35. Ilya Grindeff, "UN Says Oil Search in Northern Somalia Risks Stoking Tension," Bloomberg, June 10, 2014, <http://www.bdlive.co.za/africa/africanews/2014/06/11/oil-discovery-in-two-somalia-areas-may-fuel-violence-says-un>.

36. "Tanzania Now Set to Strike More Gas Fields," *Tanzania Daily News*, April 1, 2014, <http://allafrica.com/stories/201404010234.html>.

37. Karolin Schaps and David Goodman, "Ophi Energy says Tanzania LNG project could be expanded," Reuters, March 20, 2014, <http://www.reuters.com/article/2014/03/20/lng-tanzania-ophir-idUSL6N0MH1G620140320>.

38. Fumbuka Ng'wanakilala, "Tanzania talks with Total, BP on hydrocarbon exploration," Reuters, October 25, 2014, <http://www.reuters.com/article/2014/10/25/tanzania-total-bp-idUSL2N0SK09E20141025>.

39. EIA, "Country Report: South Africa," updated February 28, 2014, <http://www.eia.gov/countries/cab.cfm?fips=SF>.

40. Paul Vecchiatto, "SA petroleum agency's Karoo shale-gas estimate 'far lower,'" BDLive, February 21, 2014, <http://www.bdlive.co.za/business/energy/2014/02/21/sa-petroleum-agencys-karoo-shale-gas-estimate-far-lower>.

41. Fiona Forde, "SA to be fracked 'within weeks,'" *IOL News*, March 23, 2014, <http://www.iol.co.za/news/politics/sa-to-be-fracked-within-weeks-1.1665020>.

# A Proliferation of Energy Investors

The changing nature of Africa's energy investors has consequences for the scope and sustainability of public/private partnerships, and may shift greater burdens to donor countries and IFIs in the early stages of capacity building for new producing countries. Large international companies have long held a dominant position in Africa's hydrocarbon exploration and production and will continue to play a critical role. Western majors retain a strong position, particularly in deep and ultra-deep offshore operations, where they have technologies and technical capacities that some non-Western companies and smaller firms lack. The major IOCs are long-term investors; nearly all are members of various international standards, such as the Extractive Industries Transparency Initiative (EITI) and the Voluntary Principles on Security and Human Rights.<sup>42</sup> Such companies are globally leveraged, and their behavior in each individual country where they are carrying out operations has implications for their international reputation.

It is the nature of the energy industry to look for new large-scale resources, where the risk of failure exists, but the reward for being an early finder is great. Often exploration is done by small- and mid-size companies, who then sell all or part of their interests to larger companies that have the capital and size to produce those assets.<sup>43</sup> This industry structure keeps exploration interest fresh, but also means that the companies that first find oil may be highly leveraged and have limited capital for long-term social investment. It is this new profile of investors—a nimble and expeditionary mix of small independent companies, national oil companies (NOCs), and indigenous African operators—that has been at the forefront of many of the continent's new discoveries and will likely continue to drive exploration in areas the majors may have written off as too small to be of commercial interest. Discoveries continue to be made by these less risk-averse companies, with majors potentially coming in behind them as operators. Owing to their inclination to sell off

---

42. EITI is a coalition of governments, companies, and civil society organizations that supports a global standard on transparency and accountability in the extractive industries sector. An introduction to EITI and the EITI standard is available on the EITI website at <http://eiti.org/eiti>. The Voluntary Principles on Security and Human Rights offer a guide to companies seeking to ensure the safety and security of their operations while also ensuring respect for human rights and addressing adverse impacts that their operations might have. An introduction to the Voluntary Principles and the framework they espouse is available at <http://www.voluntaryprinciples.org/what-are-the-voluntary-principles>.

43. An account of some of Triton's earliest discoveries in Equatorial Guinea is found at "Equatorial Guinea's Ceiba discovery reveals another deepwater province," *Offshore Magazine*, February 1, 2000, <http://www.offshore-mag.com/articles/print/volume-60/issue-2/news/exploration/equatorial-guineas-ceiba-discovery-reveals-another-deepwater-province.html>. Information regarding Triton's subsequent acquisition by Hess Corporation is available at Michael Brick, "Hess to Buy Triton Energy For \$2.6 Billion in Cash," *New York Times*, July 11, 2001, <http://www.nytimes.com/2001/07/11/business/hess-to-buy-triton-energy-for-2.6-billion-in-cash.html>. Accounts of Tullow's activities in Uganda and its subsequent work to farm out assets there is available at Tullow Oil PLC, "Uganda: Key Statistics," <http://www.tulloil.com/index.asp?pageid=282>, and Tullow Oil PLC, "\$2.9bn Farm-down of Uganda licenses completed," press release, February 21, 2012, <http://www.tulloil.com/index.asp?pageid=137&newsid=737>. Information about Anadarko's initial discoveries in Sierra Leone is available at Anadarko, "Anadarko Discovers Oil Offshore Sierra Leone," news release, November 15, 2010, <http://www.anadarko.com/Investor/Pages/NewsReleases/NewsReleases.aspx?release-id=1496051>; and a report of its efforts to farm out assets there can be found at "Sierra Leone: Anadarko sells 10% stake in offshore Block SL-07B-10 to Mitsubishi," *Energy-pedia News*, May 4, 2011, <http://www.energy-pedia.com/news/sierra-leone/anadarko-sells-10pc-stake-in-offshore-block-sl-07b-10-to-mitsubishi>.

commercially viable assets soon after they are discovered, such Western independents may see themselves as shorter-term partners with host governments than the majors typically do. Some of the smaller Western independent companies are members of multi-stakeholder groups, but others are not.

The presence of Chinese NOCs on the African energy scene has rapidly expanded, as China seeks to gain access to sufficient energy supplies to account for growing demand at home. But contrary to popular media narratives, China is not taking over Africa's energy sector or sidelining U.S. or other Western companies. Chinese energy companies have generally lacked the capacity to serve as operators in technically challenging deep-water fields and have been too risk-averse to participate in the big breakthrough discoveries. In all but a few onshore cases, they have typically joined existing consortiums as nonoperating partners or purchased already established Western companies (for example, CNOOC's partnership with Total in Uganda, and CNOOC and Sinopec's purchases of the Canadian companies Nexen and Addax, respectively) They have not been averse to joining with Western companies on production and infrastructure projects, and in many of these partnerships have played a critical role in providing much-needed capital.

African NOCs do not have as strong a region-wide presence as Western majors or Chinese NOCs. Yet some, including Angola's Sonangol and the Nigerian National Petroleum Corporation (NNPC), are playing increasingly important roles within their domestic markets and further afield. Sonangol, for example, has acquired stakes in fellow Lusophone countries Mozambique and, through its subsidiary Sonangol Starfish, Brazil. Both of these NOCs have come under criticism from investors and citizens alike for their dual responsibilities as commercial players and industry regulators, and both too are accused of being among the foremost sources of political and personal patronage, corruption, and fiscal opacity in their respective countries. Despite all this, Sonangol is commercially successful and has been the government's major source of new investment funding, serving essentially as the country's sovereign wealth fund.<sup>44</sup> Nigeria's NNPC has been more problematic, and its future structure is uncertain pending passage of the PIB.

Finally, as noted above, as traditional IOCs have begun to sell off assets in Nigeria's onshore operations because of security concerns, a raft of indigenous Nigerian companies—including Seplat Petroleum Development Company, Energia, Shoreline, and Oando—have entered the fray, some with considerable early success. Seplat, for example, which listed on the Lagos and London stock exchanges in 2014, has more than tripled production in the blocks it acquired from Shell in 2010. Oando, the largest of Nigeria's exploration and production companies, went public in Johannesburg, Toronto, and Lagos and has expanded with subsidiaries in Ghana and Togo. Not all of these companies will be successful, and not all will operate with integrity. Some will benefit more from political connections than

---

44. George C Lwanda, "Oiling economic growth and development: Sonangol and the governance of oil revenues in Angola," Working Paper Series No. 21, Development Planning Division, Development Bank of Southern Africa, 2011, 28.



technical expertise. But others bring real competence and insight in navigating Nigeria's oil sector and have built strong links to local communities that give considerable social license and have proven to be valuable assets in exploration and production partnerships.

## Global Energy Markets in Flux

Africa's new and prospective energy producers are coming online at a time of major change in global energy markets. In oil, there is already evidence that the precipitous drop in global prices in the second half of 2014 is delaying some investments in new producers worldwide.<sup>45</sup> As companies grow more selective in allocating their capital, projects in new African producer states may face delays ranging from several months to even a few years, depending on the duration of the low-price cycle. Nonetheless, most expect oil prices, and by extension, regular investment flows, to normalize over the medium to long term. Yet uncertainties are even more significant in natural gas markets, where projections for future demand, contract structures, and price are more ambiguous. Unlike oil, which once extracted can generate revenue relatively quickly, natural gas intended to be shipped as LNG requires enormous up-front infrastructure investment, and there is a long lead time before companies recoup their investments and begin to see returns. To eliminate uncertainties around long-term returns, investors and partner governments in Asia and Africa have typically identified downstream buyers before signing a deal and embedded strict terms for gas pricing (linked to a global oil price benchmark) within the contract. The surge in global gas production being experienced today, in the United States and elsewhere, as well as questions about future demand put pressure on that system, and may limit the ability of relatively high-cost producers (like some African nations) to enter the market in the future.

Global demand for LNG has grown 7.6 percent annually since 2000, driven largely by soaring demand in Asian markets. Strong demand growth is expected to persist over the coming decades.<sup>46</sup> The IEA projects that demand for gas in China will double in the next five years alone as the country seeks to diversify away from coal-powered electricity.<sup>47</sup> But at the same time, numerous natural gas-producing and exporting nations have emerged worldwide. Indeed, global LNG capacity has more than doubled since 2000,<sup>48</sup> with major new projects in the United States, Australia, and East Africa due to be completed by 2020. Capital costs for LNG projects are rising steeply—by some estimates, average costs for prospective projects will be more than double those of currently operating LNG facilities<sup>49</sup>—and these projects take many years to progress from design, permitting, and approval to final investment decision, construction, and operation.

---

45. For one example, see Tsvetelia Tsoleva, "Total delays Bulgaria exploration citing oil price tumble," Reuters, December 16, 2014, <http://www.reuters.com/article/2014/12/16/bulgaria-gas-total-idUSL6N0U01OX20141216>.

46. See Ernst & Young Global, "Global LNG: Will new demand and new supply mean new pricing?," EYG no. DW0306, 2013, 20.

47. IEA, "'Golden Age' of gas coming to China, IEA says in latest five-year outlook," press release, June 10, 2013, <http://www.iea.org/newsroomandevents/pressreleases/2014/june/name-89800-en.html>.

48. Ibid.

49. Deutsche Bank, quoted in *ibid.*

The upshot has been that global LNG prices are in a state of flux, with increasing divergence among U.S., European, and Asian markets. Global demand growth is centered in Asia, where LNG prices have traditionally been linked to the global oil price, but pressures are emerging to delink the two and move to a more flexible and market-driven pricing regime. This uncertainty around pricing creates financing challenges for LNG investors, who seek a relatively reliable long-term rate of return as they prepare to make major upfront investments in new facilities. Some of the new Asian buyers are less credit-worthy than traditional offtakers, making it additionally difficult for LNG producers to get financing for projects. On the other hand, Asian sovereign wealth funds, like Singapore's Temasek, are increasingly investing in the upstream production of oil and gas as well as purchasing the production themselves. This is a positive trend, allowing Asian buyers to spread the risk of commodity price fluctuations and giving them a shared interest in host-government stability.

## 2 | U.S. Interests in Africa's Energy Future

The United States has multiple and compelling interests in Africa's energy future. The United States is fortunate to be self-sufficient in both natural gas, and, for some time to come, the kind of light sweet crude oil that Africa produces. Yet Africa's evolving energy landscape has implications for important U.S. energy security and diplomatic and development interests and opens opportunities for new kinds of engagement.

Although U.S. imports of African oil have fallen dramatically over the last three years, the United States continues to have an enduring interest in a steady and predictable global energy market. Oil prices are set globally, spare capacity remains low,<sup>1</sup> and with geopolitical disruptions sidelining 2–3 million bpd of current production in recent years, diversity of supply will remain important to global oil price stability for the foreseeable future.

Additionally, U.S. energy and energy service companies will continue to play a major role in exploration and production in Africa, even as a growing number of non-U.S. companies enter the market and create an increasingly competitive field. In commercial diplomacy, the U.S. government will want to ensure U.S. companies are well positioned to compete, that contract and procurement procedures are fair and transparent, that the playing field is even, and that investment opportunities do not become unduly politicized. Over the longer term, Africa's new oil- and gas-producing states will have the potential to realize increased investment inflows, growth rates, and economic diversification that may open significant opportunities for U.S. trade and investment beyond the energy sector, an increasingly important component of U.S.-Africa policy.

In development terms, the United States will want to help ensure that new resources and revenue flows are managed in a way that drives long-term, broad-based economic growth and expands opportunities for employment and human development. With development assistance budgets increasingly constrained, U.S. policymakers will want to strategically target scarce resources in ways that will leverage and amplify private sector investments, build the technical capacities of producer governments to manage the regulatory and fiscal duties of energy development, and help producer country citizens hold their

---

1. A review of spare capacity levels over the last decade and a forecast of spare capacity through 2019 are available in IEA, *Medium-Term Oil Market Report 2014: Analysis and Forecasts to 2019* (Paris: IEA, 2014), <http://www.iea.org/publications>.

governments accountable for sound resource management, environmental stewardship, and economic diversification. The need for producer governments to sustain attractive and enabling investment environments offers an entry point to engage more practically on good governance issues such as transparency, rule of law, curbing corruption, and building a professional civil service.

In the political and security realms, the United States will want to mitigate the potential for these new resources to create or deepen tensions within or between producer states. And within global governance structures, the United States will want to continue to champion national, regional, and international standards and rules to increase transparency by governments and private investors; strengthen dispute-resolution mechanisms; and create incentives for sound and equitable natural resource management.

# 3 | Big Potential and Big Opportunities

International investors and African producer states have a lot to gain from the continent's hydrocarbon boom, and both sets of actors will have a keen interest in getting production up and running. Yet the challenges are formidable as well, and in a competitive market companies will need to see a clear path to managing serious aboveground risk before they make multi-billion dollar final investment decisions.

## For Investors

Africa is an attractive oil and gas investment destination, primarily due to the fact that it is largely undeveloped to date and due to its proximity to Asian markets. Companies recognize the sheer volume of Africa's available reserves as well as the possibility of future discoveries and new production to offset declines in more mature oil and gas provinces. Sub-Saharan Africa is estimated to contain some 20 percent of the world's undiscovered but technically recoverable oil and 17 percent of its undiscovered but technically recoverable natural gas.<sup>1</sup> Global demand for oil and natural gas will continue to grow, driven by China, India, and other emerging economies. Energy consumption within Africa is currently low, but economic growth in some of its larger markets and rapid urbanization are likely to drive demand growth in future.<sup>2</sup>

Globally, access to reserves by IOCs is on the decline, with NOCs taking increasing ownership, leaving Western majors and independents in search of prospective frontier acreage. Sub-Saharan Africa is one of the last frontier areas that is both willing to grant substantial access to IOCs and has a strong resource base allowing for reserve replacement. To date, the average government shares of revenues received by African nations have compared relatively well with other regions.<sup>3</sup> This reflects, at least in part, that in deep- and ultra-deepwater projects African governments have a strong incentive to attract

---

1. U.S. Geological Survey, "An Estimate of Undiscovered Conventional Oil and Gas Resources of the World, 2012," March 2012, <http://pubs.usgs.gov/fs/2012/3042/fs2012-3042.pdf>.

2. Petroleum and other liquid fuels consumption on the continent is forecast to grow from 3.4 million bpd in 2010 to 6.2 million bpd by 2040, an increase of over 82 percent (EIA, *International Energy Outlook 2014*). Natural gas demand on the continent, which currently totals around 120 bcm, is expected to reach approximately 160 bcm by 2020 (IEA, *Medium-Term Gas Outlook Report 2014*).

3. Presentation to CSIS by Jamie Webster, PFC Energy, October 29, 2013.

participation of the major IOCs, which possess unique technical capacities that are a prerequisite to developing these reserves.

Africa's new natural gas reserves are not only significant in quantity but are relatively easy to access. Gas discoveries off the coast of Mozambique and Tanzania are in deep water but relatively close to shore—less than 60 miles, compared to projects up to 200 miles offshore in Australia.<sup>4</sup> East Africa's proximity to growing Asian markets is an additional draw.

Opportunities in oil-field services are expected to grow dramatically over the next 15 years, particularly demand for subsea equipment and installation, procurement, construction, installation, and operational and professional services.<sup>5</sup>

## For African Producer States

For governments and citizens in energy-producing states, the potential benefits of new oil and gas discoveries are immense. The export of energy resources has obvious potential to increase government revenues through bonuses, production shares, royalties, and taxation, which can be reinvested in critical infrastructures, social services, and sectors that generate employment, including agriculture and manufacturing. Even in those countries with relatively modest energy reserves—Liberia and Sierra Leone, for example—development of those resources coupled with wise investment of revenues could prove transformative for their respective economies and make important contributions to both domestic and global supply.

Upstream exploration and investments in Africa's energy sector could draw \$1.5 trillion to the continent by 2030, according to Standard Bank.<sup>6</sup> Beyond revenue generation, these investment flows bring additional benefits in training and on-the-job experience, technology transfer, and new infrastructures—roads, pipelines, deep-water ports—that will have economic impact well beyond the energy sector. Discoveries in Kenya, Uganda, and Ethiopia, for example, have spurred renewed regional interest in the Lamu Port Southern Sudan-Ethiopia Transport Corridor (LAPSSET), an ambitious infrastructure project that will link member countries together to a deep-water port in Manda Bay, with a railway line, a road network, oil pipelines to South Sudan, Uganda, and Ethiopia, airports, and an oil refinery. Even if only some components of the plan are ultimately completed, the project will open up new possibilities for trade and growth and serve as a big step forward in regional integration and cooperation.

Energy resources offer a range of domestic uses that provide opportunities for social benefit, economic diversification, and consumer use. Liquefied petroleum gas (LPG), a component of natural gas, is an increasingly important source of cooking and home heating fuel, far less harmful to the environment than wood or coal. An estimated 70 percent of

---

4. Presentation to CSIS by Harris Utne, Rystad Energy, October 29, 2013.

5. Rystad Energy presentation.

6. See William Blackie, "Africa remains a bright spot on global investment landscape," Standard Bank, June 24, 2014, <http://www.blog.standardbank.com/node/60442>.

sub-Saharan Africans live without access to electricity, and average per capita consumption in sub-Saharan Africa (outside South Africa) is 180 kilowatts per hour (compared to 13,246 in the United States and a global average of 313). Africa's need for reliable electricity is enormous, and gas-fueled power plants offer a more efficient and environmentally sustainable alternative to coal-fueled plants. Given the right economics and incentives, Africa's domestic natural gas could be a boon for power needs and environmental concerns. With rapid urban expansion and economic growth, demand will continue to rise, and the new natural gas producers could become significant sources of regional power generation. Tanzania, even before the new discoveries, has been using gas from the Songo Songo field to fuel the Songas Ubungo power plant, which provides 30 percent of the country's electricity.<sup>7</sup>

Finally, energy resources provide opportunities for building links between the energy sector and other commercial sectors, most notably industry and agribusiness, which are far more labor-intensive and will ultimately be critical to economic transformation and reduced dependence on a single primary commodity. Nigeria in recent years has had a number of promising gas-to-industry projects, particularly in building a growing and successful petrochemical and fertilizer industry. Notore Chemical Industries, which took over a Nigerian fertilizer parastatal in 2005, is now an important bridge between the energy and agricultural sectors, using natural gas to produce fertilizer, with distribution and education outreach to small holder farmers across the country.<sup>8</sup> The Indorama Eleme plant, poised to become the largest petrochemical company in Africa, uses gas to produce feedstock for plastics both for export and for secondary industries within Nigeria.<sup>9</sup> The Dangote Group plans construction of sub-Saharan Africa's largest refinery as well as a petrochemical and fertilizer plant.<sup>10</sup> In addition to job creation, these efforts have the potential to help revive Nigeria's agricultural sector (in which some 70 percent of Nigerians work) and help build the foundation for a domestic manufacturing sector. Nigeria is somewhat unique in Africa because of the size of its domestic market, but its success in this regard could provide a generalized model for East Africa's new producers to consider in future years, as they look for ways to construct links between their hydrocarbons sectors and other, more labor-intensive sectors of their economies.

None of these potential benefits is guaranteed, but the opportunity is present for governments and entrepreneurs with strategic vision, advance planning, and a commitment to national development.

---

7. See Songas official website: <http://www.songas.com>.

8. Contracting with the Nigeria Gas Company, Notore produces a range of fertilizers and works with transport service companies, agricultural dealers, and retail outfits across Nigeria to distribute its products. The company trains local teams of "village promoters" to reach rural farmers, set up demonstration plots, and offer information on use of fertilizer and best farming practices. The company's power division, initially created to support only the company's electricity needs, is now taking advantage of Nigeria's power sector reforms to expand generation capacity and distribution further afield. See Notore, "Notore Distribution Channel," <http://www.notore.com/index.php/revolution/channel>.

9. "Indorama Eleme Petrochemicals plans N192b expansion project," *The Guardian*, July 16, 2013, <http://www.theguardianmobile.com/readNewsItem1.php?nid=15407>.

10. Omoh Gabriel with Agency Report, "Nigeria: Dangote's Oil Refinery Loan Has Seven-Year Tenor-Services," *allAfrica.com*, September 9, 2013, <http://allafrica.com/stories/201309090272.html>.

# 4 | Challenges for Investors, Producers, and Citizens

Exuberant expectations for Africa's energy provenance are tempered by the many challenges ahead. The progression from exploration and production to growth and development is not guaranteed. African governments will need to be competitive to persuade companies to make the massive upfront investments in infrastructure needed to monetize the new discoveries, especially in countries where power and roads must be built from scratch, where there are security risks for operators, or where governments have demonstrated willingness to adjust investment terms well before exploration has even been completed.

Governments must finalize their frameworks through law and implementing regulations swiftly and ensure that they are internationally competitive, as Africa's new resources are coming on stream at a time of major change in global energy markets: global demand is currently weak, shareholders are punishing companies for high expenditures and low profitability, and uncertainties persist concerning oil and natural gas pricing and market projections.

For investors looking at Africa, these market uncertainties are compounded by the risk of doing business in states where technical capacities are low, infrastructure is underdeveloped, and regulatory and oversight institutions are weak. The prospect of big new revenue streams raises the political stakes within producer states, and incentives for rent-seeking and competition for access and control will likely intensify, with potentially destabilizing effects. In those cases where production does come on stream, the conversion of new resource revenues into development and employment is not a given. The continent has a poor record in this regard, and few, if any, of the established African energy producers have managed to avoid the resource curse.

Responsibility for overcoming these many challenges lies first and foremost with African producer governments. But they are not alone in this endeavor. Energy companies, citizens, and international commercial and development partners all have a stake in maximizing the current hydrocarbon opportunity, and each has a role to play in helping to navigate the course from exploration to sustained development.

In both oil and gas, investors and producer states alike will have to grapple with the challenges of weak government capacity; political and security risks; management of



public (and sometimes government) expectations; and striking the optimal balance between maintaining commercial competitiveness and pursuing long-term development objectives. For citizens and communities in producer states, the bigger challenge will be building the leverage and capacity to hold their governments to account in setting standards for investment, and in managing these new resource finds in a way that generates long-term inclusive growth.

## Capacity and Regulatory Challenges

Investors entering new producer states must engage with partner governments that are essentially building an energy sector from scratch. What capacity and knowledge exists on energy issues is often concentrated within a very small segment of the political elite, often the NOC, ministry of energy, or presidency, with very little understanding of how the sector works in other critical ministries, in the legislature, or in the judiciary.

Many of the new producers lack adequate legal and regulatory frameworks clarifying fiscal regimes, land and resource ownership rights, dispute-resolution mechanisms, or the respective responsibilities of different governmental bodies. Few have the capacity or expertise to negotiate big, complex agreements that involve multiple partners and that must endure over the long term. While producer countries may fear getting locked into long-term agreements that cede more than necessary to oil and gas companies, the imbalance in negotiating capacity does not always play out to the advantage of corporate players. In fact, the lack of negotiating capacity on the part of the host government is a frequently reported source of consternation among investors, since poorly negotiated contracts may lead to misunderstandings or misplaced expectations by government partners, or renegotiation of terms down the line as the project progresses. The lack of capacity can also fuel government distrust of corporate partners and lead to protracted delays in finalizing or implementing agreements.

For producer countries with no history of hydrocarbons development, a first challenge is quickly setting up legal and regulatory frameworks and fiscal regimes that are robust and will stand the test of time. Most do not have the luxury of getting appropriate frameworks in place before deal-making begins, and creating the rules on the fly has led in some cases to costly losses for producer states and investors. In Ghana, ambiguity on capital gains taxes in the oil sector is estimated to have cost the government some \$70 million in revenues in just the first two years of production.<sup>1</sup> In Uganda, ambiguity in the tax law led Heritage Oil to refuse to pay capital gains tax on the sale of its 50 percent share in an exploration license to Tullow Oil, which owned the other half, claiming that because the sale was transacted in London the company was not liable for Ugandan taxes. The sale resulted in a series of interlocking legal disputes that has been one of the principal factors

---

1. ActionAid Ghana, *Investment Incentives in Ghana: The Cost to Socio-Economic Development* (Accra: ActionAid, February 2014), [http://www.actionaid.org/sites/files/actionaid/investment-tax\\_incentives\\_in\\_ghana\\_-\\_an\\_actionaid\\_research\\_report.pdf](http://www.actionaid.org/sites/files/actionaid/investment-tax_incentives_in_ghana_-_an_actionaid_research_report.pdf).

responsible for delaying production.<sup>2</sup> Uganda has changed its tax rules multiple times since 2010 as the system is tested and areas of ambiguity emerge. Beyond establishing rules, governments lack the institutional and human capacity to ensure that companies abide by contract terms, audit or value assets, or enforce fiscal rules and environmental standards.

Changes in terms and a legal framework subject to change causes major headaches for investing companies. Mozambique's updated hydrocarbons law, passed in August 2014, requires for the first time that future projects set aside 25 percent of all energy produced for the domestic market.<sup>3</sup> Tanzania recently issued a new model Production Sharing Agreement with fiscal terms that are less friendly to investors than the model used in the past.<sup>4</sup> The country has also faced delays in clarifying its broader gas investment framework, which will likely be affected by ongoing efforts to rewrite the constitution.<sup>5</sup> As in Mozambique, Tanzania has signaled that it would like to set aside a considerable quantity of gas for domestic consumption.<sup>6</sup> Such provisions could dissuade investors, who can secure more reliable returns on their investments by exporting gas to international markets rather than subjecting their returns to the conditions and machinations of one domestic market. Beyond the specifics of the legal changes, uncertainty in the rules of the game quickly corrodes investor confidence.

## Political Risks

Many of the continent's new energy finds are in countries that have emerged from protracted conflict and insecurity, where governance structures and state legitimacy are weak, and where rules around political participation, succession, and oversight are contested. Sierra Leone and Liberia, already struggling with fragility and post-conflict recovery, now face the possibility of total economic and even political collapse because of the ongoing Ebola epidemic. In Somalia, the lack of a permanent constitution and any clarity on federal versus regional authorities has thrown the issue of ownership and legitimate negotiating authority into doubt, compounding an already difficult security situation in which the longevity of any particular governing regime is highly uncertain. Madagascar has only recently emerged from a five-year political crisis, and few of the underlying causes of the crisis have been resolved.

---

2. Alexander Keepin, Lisa O'Neill, and Theo Jones, "The deal risks of a disputed tax bill: Tullow Uganda v. Heritage Oil and Gas," Berwin Leighton Paisner LLP, September 4, 2013, <http://www.blplaw.com/expert-legal-insights/articles/the-deal-risks-of-a-disputed-tax-bill-tullow-uganda-v-heritage-oil-and-gas>.

3. Pascal Fletcher and Peroshni Govender, "Mozambique to offer new oil and gas licenses after law rejig," Reuters, August 15, 2014, <http://www.reuters.com/article/2014/08/15/mozambique-gas-idUSL6N0QL1LH20140815>.

4. Nina Howell, "East Africa: Tanzania introduces new model Production Sharing Agreement and Mozambique prepares to enact new Petroleum Law," *King & Spalding Energy Newsletter*, January 2014, <http://www.kslaw.com/library/newsletters/EnergyNewsletter/2014/January/article3.html>.

5. Katrina Manson, "Tanzania faces delays to export natural gas," *Financial Times*, June 10, 2014, <http://www.ft.com/intl/cms/s/0/4c189b4a-f080-11e3-b112-00144feabdc0.html?siteedition=intl#axzz3EvrWf6R>.

6. Anthony Long, "Tanzania's Natural Gas Policy," *King & Spalding Energy Newsletter*, February 2014, <http://www.kslaw.com/library/newsletters/EnergyNewsletter/2014/February/article4.html>.

Political risks include the potential for instability and uncertainty—from mounting challenges to authoritarian rulers or a turnover in government leadership. Uganda’s regime faces mounting protests as President Yoweri Museveni, now in office for 29 years, appears likely to run for a fifth term in 2016. Uncertainty around presidential succession processes and new leadership in Tanzania, Mozambique, and the Democratic Republic of the Congo is a source of concern for investors. In Kenya, ambiguities around devolution and the fundamental restructuring of political authority are still being worked out, with future adjustments and modifications very likely over the next five years. New energy resources, potentially a windfall for patronage and self-enrichment, may exacerbate existing tensions as political elites see higher stakes in access to revenues and rents. In Uganda, Parliament was temporarily suspended after a scuffle among lawmakers over legislation that would give the energy minister sole authority in granting and revoking oil licenses.<sup>7</sup> Corruption and undue political interference in the awarding of licenses and contracts may tip the playing field in favor of companies with less technical competence or weak performance records, and can also put most Western companies at risk for prosecution under their home countries’ anti-corruption laws. Beyond legal risks, partnering with governments with a poor record on human rights can carry damaging reputational risks. Pervasive government corruption can raise doubts around security of tenure and sanctity of contracts.

## Security Risks

In the security realm, the advent of new resources and investors may compound existing social and political tensions or create new means and motives for criminal activity. Militia groups in Nigeria’s oil producing Niger Delta, for example, have co-opted the rhetoric of economic and political grievance to build an increasingly sophisticated criminal industry of oil theft, kidnapping, and arms trafficking. In the Niger Delta, local residents, not necessarily associated with militias, tap into pipelines in a bid to sell to local markets or provide fuel to their communities or households.

Company personnel and energy infrastructure can also become high-value targets for militia or criminal groups seeking payouts or garnering attention to their cause. Kidnappings and targeted killings of oil workers have occurred in Nigeria, Ethiopia, and Sudan. Piracy, once largely confined to the Gulf of Aden off the coast of Somalia, has in the past extended its reach as far south as the Seychelles. Although Somali piracy is currently in decline, piracy is a growing concern in West Africa’s Gulf of Guinea.<sup>8</sup>

Civil war in South Sudan has reduced the country’s annual oil production by some 30 percent since December 2013, according to the country’s petroleum ministry, and average

---

7. Moses Mulondo, “Why Speaker left oil debate to her deputy,” *New Vision* (Kampala), December 8, 2012, <http://www.newvision.co.ug/news/637960-why-speaker-left-oil-debate-to-her-deputy.html>.

8. International Chamber of Commerce Commercial Crimes Service, “IMB [International Maritime Bureau] warns of West Africa piracy threat,” March 7, 2014, <https://www.icc-ccs.org/news/911-imb-warns-of-west-africa-piracy-threat>.

production is down more than 50 percent since the country gained independence in 2011.<sup>9</sup> In Somalia, discoveries along the disputed border between the semi-autonomous regions of Somaliland and Puntland have inflamed regional animosity and raised the prospect of violence, even as the fragile national government in Mogadishu seeks to assert its primacy in allocating contracts and collecting revenues. In Kenya, oil infrastructure and major investments in Port Lamu and the northern development corridor risk becoming a highly attractive target for al Shabaab as it extends its regional reach beyond Somalia.

While interstate conflict over energy resources is at present unlikely, the advent of new discoveries has spurred a number of disputes over territorial or maritime boundaries, generating delays, raising political tensions, and placing companies in legal limbo.

## Managing Expectations and Engaging Communities

An important challenge for governments and companies will be to manage expectations—both their own and those of the public and local communities—of what these newfound resources can bring, and in what timeframe.

Few of the new oil producers are likely to move as quickly as Ghana, where resources are offshore and where, compared to some of the other new producers, institutions and capacity are relatively strong, from exploration to production. Yet even in Ghana, production has not met early expectations (the operator cited technical difficulties with flow lines<sup>10</sup>), and revenues have so far fallen well below projections and budget expectations, with multiple downward revisions on national growth projects in the last two years.<sup>11</sup> Uganda, where finds are well inland and require significant investments to bring resources to market, is a case in point. The lack of pre-development infrastructure, the tax disputes noted above, territorial disputes with neighboring Democratic Republic of the Congo over reserves under Lake Albert, and debates around refining options and development plans keep pushing back the expected production start date. The intergovernmental agreements

---

9. Annual average production in South Sudan was 340,000 bpd in 2011. Today it is estimated between 150,000 to 160,000 bpd. In January 2012, the government of South Sudan deliberately shut down all oil production to gain leverage in a dispute with Sudan, and subsequent military clashes between Sudanese and South Sudanese forces in oil-producing Unity State did major infrastructural damage. In 2013, average annual production was some 130,000 bpd, but by the third quarter, production had recovered to some extent, reaching 240,000 bpd, according to the South Sudan petroleum ministry. According to the EIA, the country is unlikely to reach 2011 production levels any time soon because of physical damage, maturing fields, and lack of new exploration caused by insecurity. See Ilya Grindeff, “Aid Workers Caught in Crossfire of Civil War in South Sudan,” Bloomberg, October 2, 2014, <http://www.bloomberg.com/news/2014-10-01/aid-workers-are-caught-in-crossfire-of-civil-war-in-south-sudan.html>; and EIA, “Country Analysis Brief: Sudan and South Sudan,” updated September 3, 2014, <http://www.eia.gov/countries/analysisbriefs/Sudan/sudan.pdf>.

10. “Ghana: Government should watch these risks to the economy,” Africa Growth Institute, 2002, [http://www.africagrowth.com/news\\_article269.htm](http://www.africagrowth.com/news_article269.htm).

11. Robert Looney, “Can Ghana’s Democracy Save It from the Oil Curse?,” *Foreign Policy*, May 1, 2014, [http://www.foreignpolicy.com/articles/2014/05/01/can\\_ghanas\\_democracy\\_save\\_it\\_from\\_the\\_oil\\_curse](http://www.foreignpolicy.com/articles/2014/05/01/can_ghanas_democracy_save_it_from_the_oil_curse).

required to build a pipeline across Kenya or Tanzania to the Indian Ocean could take years to negotiate and implement. Neighboring Kenya will need certainty around Uganda's production and refining plans before going forward with its regional infrastructure plans. For natural gas production and LNG export, the time lag is even longer, with many large and critical components—financing, adequate infrastructure and port capacity, and liquefaction facilities, to start with—vulnerable to delays.

Among the general public, there is often a strong expectation that the new resource finds should deliver immediate improvements in employment opportunities, delivery of basic services, and road and housing improvements. In fact, oil and gas production is not highly labor-intensive, particularly after the initial construction of infrastructure is completed. The rush of foreign investors to national capitals and energy-producing regions can actually drive up housing and food costs, pushing lower-income residents to urban peripheries. Indeed, Luanda, N'Djamena, and Juba are among the most expensive capitals in the world. Even in a best-case scenario, the social and development benefits of new resources may take years to materialize, and in the short-term are more likely to increase income inequality than decrease it.

Where government presence or provision of services at the local level are absent, communities will often turn to private sector investors to fill the void and provide development and employment dividends. Companies operating in Nigeria's Niger Delta have long experience of such expectations and the costs they entail. In Kenya, Tullow Oil was forced to suspend exploration operations when Turkana communities launched demonstrations to protest the company's perceived failure to provide employment opportunities—even before the onset of production.<sup>12</sup> Disputes, misunderstandings, or antagonism between local communities and oil and gas investors can delay implementation of projects, damage companies' reputational standings, and in extreme cases lead to heightened security challenges.

While large Western IOCs have had substantial (but not always successful) experiences with community engagement, this work will be new for the small- and mid-sized Western companies and indigenous African firms that make up Africa's new class of investors. Engaging communities on issues of land use, compensation, employment, and environmental impact can be particularly difficult where there is long-standing (often legitimate) distrust of government authorities or where there is uncertainty about who serves as appropriate community interlocutors. Defining what constitutes free, informed, and prior community consent can be ambiguous and contested.<sup>13</sup>

---

12. Washington Akumu, "Tullow Oil's woes in Turkana expose the soft underbelly of EA," *The East African* (Nairobi), November 9, 2013, <http://www.theeastafrican.co.ke/business/Tullow-Oil-woes-in-Turkana-expose-the-soft-underbelly-of-EA-/2560/2066904/-/4jyjr9z/-/index.html>.

13. For more information, see Emily Greenspan, *Free, Prior, and Informed Consent in Africa: An Emerging Standard for Extractive Industry Projects* (Boston, MA: Oxfam America, January 2014), <http://www.oxfamamerica.org/static/media/files/community-consent-in-africa-jan-2014-oxfam-americaAA.PDF>.

# Confronting Difficult Trade-offs

Even the most well-intentioned governments will face difficult choices and competing pressures in determining how best to derive maximum national benefit from resources to fulfill development goals and at the same time remain competitive among investors.

The new producers are among the least-developed countries in the world. Despite its recent growth surge, for example, Mozambique ranks 178th on the Human Development Index. Tanzania and Liberia rank only slightly higher, while Sierra Leone is ranked even lower at 183rd.<sup>14</sup> Pressures on governments for jobs, services, and rapid development are immense, and the desire to show quick and tangible impact from new resource finds is thoroughly understandable. These pressures may be even more intense in countries with space for open political debate and strong legislatures and leaders.

Unchecked expectations can result in the politicization of energy issues, revenues, and investment, creating risk and uncertainties for potential investors. New African producers, aware of high oil and gas demand and under domestic pressure to maximize returns, feel increasingly empowered to strengthen local content requirements and negotiate for additional favorable terms of oil and gas deals. They are learning from countries like Brazil, home to some of the most stringent local content requirements in the world, and insisting on greater shares of locally sourced materials and domestic labor to be used in oil- and gas-related infrastructure deals. The impulse is understandable, given a decidedly mixed record by international companies operating in extractive industries to grow domestic industries. For companies, however, the likelihood of rising “resource nationalism” is a source of uncertainty and prospective risk. Local content requirements can carry operational costs for companies, particularly when the requirements exceed current domestic capacities. Overly rigorous requirements may deter potentially valuable partners, raise production costs, or lead to delays and inferior performance of contractual obligations. Brazil has had unsuccessful bid rounds and a drop-off in its production targets, both of which are attributable to its high local content requirements.<sup>15</sup> Mexico, through its newly enacted energy reforms, has adopted more flexible and competitive local content requirements that are more reflective of the capacities of the domestic industry and may serve as a better model for African producers to emulate.<sup>16</sup>

Governments will also face hard choices in balancing oil and gas production for export versus using resources for domestic consumption or for power generation, a trade-off that is particularly acute in countries so desperately short on reliable electricity. With

---

14. UN Development Program, “Human development index (HDI),” 2014, <http://hdr.undp.org/en/content/human-development-index-hdi-table>.

15. EIA, “Brazil Energy Profile: 8th Largest Energy Consumer in World—Analysis,” *Eurasia Review*, October 1, 2013, <http://www.eurasiareview.com/01102013-brazil-energy-profile-8th-largest-energy-consumer-world-analysis/>.

16. For a thorough discussion of Mexico’s local content requirements as established in its new energy reforms, see David L. Goldwyn, Neil R. Brown, and Megan Reilly Cayten, *Mexico’s Energy Reform: Ready to Launch* (Washington, DC: Atlantic Council, August 2014), 20–21, [http://www.atlanticcouncil.org/images/files/MexEnRefReadytoLaunch\\_FINAL\\_8.25.\\_1230pm\\_launch.pdf](http://www.atlanticcouncil.org/images/files/MexEnRefReadytoLaunch_FINAL_8.25._1230pm_launch.pdf).

demographic growth and urbanization, African domestic energy demand will rise steeply in coming decades. Many host governments, including Mozambique and Tanzania, have signaled their intention of expanding gas-to-power programs, or initiatives to set aside a share of their gas resources for domestic power generation. Such efforts face significant headwinds. Over two-thirds of consumers in sub-Saharan Africa lack electricity access,<sup>17</sup> but those with access can often only pay for it through costly subsidy regimes, and transmission and distribution infrastructure is often subject to heavy losses. To offset subsidized rates for the broader public, gas producers will need a strong commercial anchor industry that can guarantee consistent electricity demand, but few have an adequately strong industrial base. Poor domestic market conditions make it difficult to obtain financing to build gas-fired power plants, pipelines to feed those plants, and electricity transmission and distribution infrastructure. Such conditions have long contributed to continued widespread power outages in Nigeria, despite the country's considerable natural gas reserves.<sup>18</sup>

Oil and gas industry participation in building or financing such infrastructure is expensive, deepens their complex relationships with domestic development needs, and can create another source of potential friction with the host government if programs are not implemented as planned. If they are to be successful, gas-to-power programs require significant political will on the host government's part. Host governments must make difficult choices, including possibly revising politically popular power subsidy programs, reforming the state-owned electricity provider, and, where applicable, opening up the generation, transmission, and distribution markets to foreign investment. While such efforts can upset key political constituencies, they are often necessary to creating conditions where financing can be acquired and a more robust domestic power market can be built. With these concerns in mind, industry will be very selective regarding the countries where it may choose to pursue such initiatives.

## Avoiding the Resource Curse

Perhaps the greatest risk for African producer states and their citizens is that the economic and development opportunities provided by the current hydrocarbon boom may be squandered and instead serve to deepen inequality, raise incentives for corruption, and generate an enclave economy in which only a small elite benefits. Few African countries endowed with high-value commodities have escaped the "resource curse," and in many instances the advent of oil production has been accompanied by the collapse of other critical economic sectors. Nigeria, in part because of its sheer size, provides among the starkest illustrations of the resource curse: as political elites focused their energies on the lucrative oil industry, exchange rate appreciation and chronic neglect and underinvestment in agriculture,

---

17. Remarks by President Obama at the University of Cape Town, June 30, 2013, <http://www.whitehouse.gov/the-press-office/2013/06/30/remarks-president-obama-university-cape-town>.

18. Patrick Atuanya, "Failure to move on gas keeps power generation stuck at 3,000 MW," *Business Day*, August 4, 2014, [http://businessdayonline.com/2014/08/failure-to-move-on-gas-keeps-power-generation-stuck-at-3000-mw/#.VC2jK0e6\\_M1](http://businessdayonline.com/2014/08/failure-to-move-on-gas-keeps-power-generation-stuck-at-3000-mw/#.VC2jK0e6_M1).

textiles, and manufacturing—once mainstays of the Nigerian economy, particularly in the country’s north—led those sectors to collapse, with devastating impacts on employment, national development, and ultimately national security. Only recently has the Nigerian government gotten serious about economic diversification and improving access to reliable electricity. Among new producers, Ghana has made concerted efforts to preempt the resource curse, although it has been unable to keep inflation in check and has had to turn to the IMF for help. Other governments, with much weaker democratic credentials, will remain very much at risk.



# 5 | Best Practices and Models for Partnership

The history of oil and gas exploration in Africa is replete with cautionary lessons regarding the challenges of managing public expectations and the economic, political, and social costs of mismanagement, corruption, and short-sighted leadership. Today's new producers have the benefit of hindsight. In addition, the shared objective of maximizing the economic and developmental impact of Africa's newfound energy resources offers the possibility of a range of partnerships among companies, producer and partner governments, multilateral institutions and private banks, international NGOs, and African domestic constituencies and regional organizations.

Through trial, error, research, and creativity, companies, governments, and civil society groups have devised new approaches to three fundamental pillars of sustainable energy development: building government capacity in the energy sector; prioritizing transparency and accountability; and creating shared value at national and local levels.

## Building Government Capacity

One key lesson learned is that producer governments must develop the capacity to manage the early exploration and subsequent development of energy resources—and the funds that come with them—before exploration begins or developments get into full swing. This is a serious and especially challenging timing issue, as all governments find it hard to appropriate funds before revenues arrive and when success is uncertain. Donor governments, IFIs, and civil society groups have learned to support early capacity building in these areas to maintain public trust and ensure stable agreements. Today host governments can turn to an expanding array of institutions for assistance in building energy sector capacity, from support in getting the contract terms right to revenue management. The African Development Bank, through its Africa Legal Support Facility, deploys teams to work with African governments to build legal expertise in extractive industries management and contracting. In some cases, the facility will advance funds to governments to hire top-shelf legal counsel as they negotiate complex natural resource deals.<sup>1</sup> (The U.S. Agency for International Development—USAID—contributed \$3 million to the fund in May 2014,

---

1. See African Development Bank, “African Legal Support Facility,” <http://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/african-legal-support-facility>.

under the Power Africa Initiative.) The World Bank has a similar facility, the Trust Fund for the Legal and Local Sustainable Development Aspects and Transparency of Extractive Industry Development,<sup>2</sup> which helps partner governments secure optimal contractual terms and offers an Upstream Institutional Diagnostic to identify critical gaps in legal and regulatory capacities related to extractives.

Bilateral partner governments are likewise stepping up provision of technical assistance and advice in the oil and gas sector. Norway has a long history of providing resource management assistance to oil producers through the Norwegian Agency for Development Cooperation (NORAD). The agency's Oil for Development Program twins domestic Norwegian agencies—the Norwegian Petroleum Directorate, Norwegian Environment Agency, and Petroleum Safety Authority, for example—to work long term with counterpart institutions in partner countries. The program currently operates in nine African producer states, including new producers Ghana, Mozambique, Tanzania, and Liberia.<sup>3</sup>

On a more modest scale, the U.S. Energy Governance Capacity Initiative (EGCI), managed by the U.S. State Department, offers technical support and capacity building to assist producer governments in revenue management, legal and regulatory best practices, and environmental stewardship. Examples of current projects include pairing U.S. agencies with Ugandan counterparts to offer advice on environmental risk assessment and mitigation, studies, disposal of drilling waste, and community consultations on land use. In Tanzania, EGCI is working with tax authorities to strengthen investigative and enforcement capacities, and in Mozambique it seeks to encourage transparent and effective fiscal management systems.<sup>4</sup> The initiative has a fairly low profile among U.S. assistance programs, and resources to date are limited.

Private companies too are entering new partnerships to build capacity in the sector. Private banks have been increasingly drawn to the upside potential of African oil and gas, and often go well beyond straight project financing to provide advisory services in negotiation and planning to support implementation and maximize returns. Energy and energy-associated companies have implemented a range of in-house training programs, scholarships in oil- and gas-related fields, collaborations with host-country universities to build technical and managerial curricula, and education modules for young and mid-level public servants.<sup>5</sup> Some governments have outsourced complex planning and procurement positions. In Gabon, the government has commissioned the infrastructure firm Bechtel to

---

2. See World Bank, "Proposed Trust Fund for the Legal and Local Sustainable Development and Transparency of Extractive Industry Development," concept note, n.d., [http://siteresources.worldbank.org/INTAFRICA/Resources/257994-1355584290521/Concept\\_Note\\_Trust\\_Fund\\_Proposal.pdf](http://siteresources.worldbank.org/INTAFRICA/Resources/257994-1355584290521/Concept_Note_Trust_Fund_Proposal.pdf).

3. NORAD, "Oil for Development," October 29, 2011, updated June 30, 2014, <http://www.norad.no/en/thematic-areas/energy/oil-for-development>.

4. D.A. Barber, "What is Power in Africa's Oil and Gas Governance Role?," *AFK Insider*, September 29, 2014, <http://afkinsider.com/73858/power-africas-oil-gas-governance-role>.

5. In Mozambique, GE is partnering with the Eduardo Mondlane University to provide scholarships in technical and engineering fields, and the GE Oil and Gas University has organized specific training modules for professionals in the National Hydrocarbons Agency and National Petroleum Institute (e-mail from GE government affairs representative, March 16, 2014). Tullow Oil offers scholarships for energy-related fields (technology and engineering, oil and gas economics, logistics and supply chain management, and tax administration)

create a master infrastructure plan and establish, essentially from scratch, a government agency to implement national infrastructure projects with an eye to transparency and best practices.<sup>6</sup>

NGOs are implementing a number of projects to strengthen government mechanisms of oversight and accountability. In Ghana, for example, the Natural Resources Governance Institute (NRGI, formerly Revenue Watch Institute) has established the Parliamentary Center to provide parliamentarians and their staff with technical assistance in analyzing petroleum legislation and contracts.<sup>7</sup> NRGI has also collaborated with the Ghana Institute of Management and Public Administration to carry out similar efforts.

These kinds of partnerships will be important in building a broad base of expertise and understanding of energy sector dynamics in institutions and agencies directly involved in the sector as well as those less directly engaged—legislatures, central banks, finance ministries, judicial sectors—that are nonetheless critical. Some analysts warn, however, that given the many and diverse demands on weak African bureaucracies across multiple sectors, it is equally important to find ways to streamline processes and be efficient in managing “capacity demand”—that is, how many new regulatory agencies countries should establish. Institutional complexity can add to the capacity deficit, and producer governments, partner governments, and donors should be wary of creating complex and fragmented regulatory institutions that may seem appropriate on paper but in reality may be understaffed and counterproductive.

## Prioritizing Transparency and Accountability

The economic and development benefits deriving from new oil and gas finds will be seriously undercut if rules and mechanisms to ensure transparency and accountability in the sector are not embedded early in the exploration and production phases. The most effective safeguard against corruption in Africa’s new producers will be to establish, at the outset, institutions and practices that ensure transparency in the energy sector and strengthen the capacity of government institutions, NGOs, civil society groups, and local communities to hold governments accountable in how they manage the sector. Key lessons learned here are the creation of transparent petroleum funds that report payments in and out; auctions for acreage where bids are visible and technical criteria are specified; clear separation of NOCs from regulatory agencies; and adherence to multistakeholder efforts, including EITI.<sup>8</sup>

---

to African public servants. (See Tullow Oil, “Tullow Group Scholarship Scheme,” <https://tullowgroupscholarship.com/scheme.org>.)

6. See Bechtel, “Gabon National Infrastructure,” <http://www.bechtel.com/gabon>. This partnership goes well beyond the energy sector and includes transportation, housing, and facilities, but may offer a model that could be replicated on a smaller scale within the energy sector.

7. See National Resource Governance Institute, “Strengthening Parliamentary and Civil Society Oversight of Oil, Gas and Mining Revenues in Ghana,” 2009, <http://www.resourcegovernance.org/grants/strengthening-parliamentary-and-civil-society-oversight-oil-gas-and-mining-revenues-ghana>.

8. Mexico’s recent energy reforms are an example of international best practices in these respects. The structure of Mexico’s auctions and the separation of its national oil company from its regulatory agencies are

Some governments are already on the right track. Over 20 sub-Saharan African countries are either current EITI members or “candidate” countries working through the process of joining the initiative.<sup>9</sup> In Ghana, an EITI member, for example, the Petroleum Revenue Management Act requires the government to publish quarterly petroleum receipts, and parliament must review and approve all petroleum agreements. Liberia has made adherence to the voluntary EITI principles a legal requirement. But many governments may be less inclined to transparency.<sup>10</sup> Even in those countries with good laws on the books, there will need to be concerted efforts—by national, regional, and international players—to apply pressure and provide incentives for sound and open management of the sector.

At the national level, as citizens in producer countries become more informed and better connected through technology and social media, they will be more empowered to influence how resources are ultimately managed. A number of nongovernmental groups are working with domestic constituencies to give them better capacity and leverage to hold their respective governments to account. In Ghana, NRGI, together with Penplusbytes, is working with journalists to deepen their understanding of the oil sector and improve the quality and quantity of news coverage on extractive industries. Oxfam America and other nongovernmental groups are working in Ghana, Uganda, and Tanzania to help build civil society platforms that can monitor, analyze, and report on developments in the oil sector and more fully participate in national debates on legal, regulatory, and revenue management issues.

Standards at the global level are evolving. EITI was established in 2003 as a coalition of governments, companies, and civil society that sets standards for member governments, including full disclosure of extractive industry revenues and disclosure of all material payments to government by oil, gas, and mining companies. EITI’s actual impact on governance is a matter of debate. Some observers argue that it has been an important effort to shift public expectations for transparency and reporting and to set a global norm for greater disclosure. Others are more skeptical, arguing that the credibility of such voluntary initiatives is undercut when they fail to uphold basic standards among participants.

The United States has fairly stringent rules guiding U.S. companies’ engagement overseas, as do the UK and other OECD countries. The UK, in its leadership of the G-8 in 2013, launched an effort to improve global transparency and exchange of information to prevent

---

discussed at length in Goldwyn, Brown, and Cayten, *Mexico’s Energy Reform*, 9–23. The Mexican Petroleum Fund for Stabilization and Development is noted in this report, but it is discussed in more detail in an earlier report, David Goldwyn, *Mexico Rising: Comprehensive Energy Reform at Last?* (Washington, DC: Atlantic Council, December 2013), <http://www.atlanticcouncil.org/news/press-releases/atlantic-council-report-analyzes-landmark-mexican-energy-reform>.

9. A full list of EITI members and candidate countries is available at <http://eiti.org/countries>.

10. For example, both nongovernmental organizations and local citizens have expressed recent concern regarding transparency practices in Uganda and are skeptical of the government’s efforts to pass a Public Finance Bill that will create a national petroleum fund and finance training programs for welders and drivers. A general overview of these concerns is available at <http://www.voanews.com/content/uganda-oil-sector-faces-criticism-over-transparency/2423542.html>.

tax evasion and aggressive avoidance through shell companies and transfer pricing. In 2013, the Africa Progress Panel, chaired by Kofi Annan, brought much-needed high-profile attention to the enormous losses to African economies and citizens from government undervaluation of assets, secret deals, and mismanagement in the oil, gas, and mineral industries. Changing global norms on tax and transparency will be a long and uphill battle, but efforts such as these may begin to create a coalition for reform and encourage some African governments to demand and enforce higher standards from investors.

## Creating Shared Value

A third key lesson learned is that citizens of a country must see the benefits of energy development not only if they live close to it, but also if they do not. Sharing value on a national level helps avoid internal competition for rents. Companies have also learned that they must show the value of investment even in the early days—when exploration is just under way—to help manage public expectations and to ameliorate the pressure on governments to spend money they do not yet have. Companies have also learned they are not always good at either community engagement or development. Partnerships have evolved between companies and development organizations to help bridge this divide. At a national level, producer governments need to plan, implement, and communicate a national strategy that builds linkages between the energy sector and the broader economy and generates shared value for indigenous businesses, citizens, and communities. This entails using oil and gas revenues to invest in critical infrastructure, social services, and other, more labor-intensive economic sectors. Success in this regard can create more sources of stable, unsubsidized electricity demand, thus alleviating some of the risks that industry faces when supplying domestic African power markets. But there are also opportunities to create more direct linkages.

A first step is assisting local small- and medium-sized enterprises (SMEs) to become sourcing platforms for larger energy investors. Governments, companies, and communities have a strong interest in building the capacity of local businesses to provide high-quality goods and services to the industry. These linkages offer national governments the possibility of delivering quick and visible benefits from the nascent oil sector by generating jobs and local economic opportunity. For companies, such links help ensure compliance with local content regulations and can raise the quality and affordability of goods and services provided. At the same time, they can enhance the company's reputation within the host country and their license to operate in local communities. The IFC supports an Oil and Gas Linkages Program in a number of African countries to help SMEs access sourcing opportunities.<sup>11</sup> In Mozambique, Anadarko is working with international development company Pyxera to help local enterprises meet multinational company procurement and contracting standards. It is also building a database of registered local suppliers upon which it can draw as it begins construction of its LNG facility.

---

11. International Finance Corporation, "IFC Oil, Gas and Mining Linkages Program," [http://commdev.org/userfiles/OGM\\_Factsheet.pdf](http://commdev.org/userfiles/OGM_Factsheet.pdf).

Offering opportunities for local beneficiation of oil and gas resources and facilitating gas-to-industry projects have the potential to drive economic transformation, generate employment opportunities, and create positive interdependence among regions and commercial sectors. Nigeria has a number of promising examples, including aforementioned gas-to-industry projects (Indorama Eleme, Notore, and Dangote Group) that have facilitated growth in the country's petrochemical and fertilizer industry. While the new gas producers do not have the luxury of Nigeria's huge domestic market, there are possibilities of tapping into local, regional and international demand.

Overcoming the challenge of creating sustainable gas-to-power projects will not be easy, but the urgency of increasing access to reliable and affordable electricity and the long-term economic benefit of doing so mean that this area will warrant greater attention, analysis, and support. Governments will need to have a long-term strategic plan for the sector that connects such projects directly to productive industries and sectors, that can incentivize private investors and public-private partnerships, and that can attract a mix of development and commercial financing. The Banda Gas to Power Project is an early example of partnership. The initiative aims to develop natural gas resources from the Banda field off the Mauritanian coast to generate 300 megawatts of electricity for use in Mauritania's domestic industrial sectors and for export to Senegal and Mali. Tullow Oil is operator and major stakeholder in the consortium that controls the Banda field (along with Petronas, Kuwait Foreign Petroleum Exploration Company, and Premier Oil); Mauritanian Société de Production d'Electricité à partir du Gaz (SPEG—a partnership of the Mauritanian national mining company, the national power company, and the Canadian mining firm Kinross Gold) will develop and operate the gas-to power project and power plant. The World Bank Group is providing \$585 million in partial risk guarantees.<sup>12</sup> Success of the project is far from assured, since disputes among partners over terms are unresolved, but it may offer valuable lessons for future endeavors.

Finally, it is vitally important that local host communities see real benefit from oil and gas production. Failure to engage communities has generated major costs for companies and governments alike, creating distrust and antagonism, political and security challenges, and in the worst cases insurgency, sabotage, kidnappings, and other criminal acts that have led to significant and recurrent shut-ins. One possibility for creating shared value, a model that has been tried in the mining sector, is for investors to bring host communities into exploration and production projects as shareholders, giving them an economic stake in the success of the enterprise. But as pressures for employment and economic opportunity mount, companies will increasingly see broad-based economic development within surrounding communities as a factor that directly affects their bottom line. In Nigeria, for example, Chevron is moving away from traditional corporate philanthropy to a more strategic approach to social investment, exploring ways to encourage private sector investment and economic activity in labor-intensive sectors such as agriculture. Through the Niger Delta Partnership Initiative, Chevron partners with Nigerian state and federal government agencies, Nigerian

---

12. A project description is available at World Bank, "Banda Gas to Power Guarantee," <http://www.worldbank.org/projects/P145664?lang=en>.

nongovernmental organizations, U.S. and other international donor development agencies, and local community groups to strengthen local agricultural value chains, focus on market efficiencies and build a strong regional economic base. In new producers, early and meaningful consultation with host communities will be essential. Oxfam America, in partnership with the Center for Public Interest Law, has launched an effort to capture best practices in early community consultations and set standards across extractive industry projects for defining (and obtaining) free, prior, and informed consent.

# 6 | Recommendations for U.S. Policy

For U.S. policymakers, Africa's evolving energy landscape raises new possibilities for engagement in the commercial, diplomatic, and development spheres.

## Shift development assistance flows to place greater emphasis on building capacity for sound and transparent management of natural resources and revenues.

The U.S. government will want to help ensure that producer governments have the basic capacities to manage complex oil and gas infrastructure projects, put in place legal and regulatory frameworks that will stand the test of time, and have adequate competence within their respective civil services to plan, structure, and manage the energy sector. Efforts to fulfill this goal should include:

- Improving donor coordination to both minimize capacity demand on new producers and ensure the services provided by different international donors are complementary rather than duplicative.
- Increasing the profile and reach of the Energy Governance Capacity Initiative.
- Engaging the U.S. Treasury Department, the U.S. Geological Survey, the Federal Energy Regulatory Commission, the Environmental Protection Agency, and other relevant U.S. agencies to assist producer government counterparts in building regulatory and enforcement capacity.
- Leveraging the support that the World Bank and the IFIs continue to provide frontier states in their efforts to develop and manage their natural resources. Examples include the World Bank's recently launched Development Dialogue Series in Mozambique, which includes a focus on ways to develop natural gas in the country in a sustainable way that renders shared benefits throughout the population.<sup>1</sup>

---

1. World Bank, "World Bank Launches Development Dialogue Series in Mozambique and Discusses Sustainable Management of Natural Resources," press release, April 9, 2014, <http://www.worldbank.org/en/news/press-release/2014/04/09/world-bank-launches-development-dialogue-series-in-mozambique-and-discusses-sustainable-management-of-natural-resources>.



- Supporting national or regional training centers for public officials and aspiring technocrats directly or indirectly engaged in the energy sector in disciplines such as oil and gas economics, logistics and supply chain management, tax administration, and strategic planning. Here, the U.S. government could seek to catalyze or combine efforts with energy companies, host governments, multilateral institutions, and U.S. and African universities, creating a broad cadre of energy expertise that can ultimately provide a pool of talent available to both the private and public sectors.

## Step up commercial engagement in new producer states.

The U.S. government will want to ensure U.S. companies get fair and equitable access to new investment possibilities on the continent. Specific steps the U.S. government can take include:

- Providing information, support, and risk mitigation to small and medium-sized U.S. investors who may be new to the African investment environment.
- Working toward signing bilateral investment treaties with new producer states, which provide a mechanism to arbitrate potential disputes between U.S. companies and host governments and send a signal to potential investors that their interests will be protected.
- Prioritizing deployment of U.S. Department of Commerce personnel to embassies in new oil and gas producers to serve as facilitators for U.S. businesses. In a promising step, Commerce Secretary Penny Pritzker recently announced that new offices would be set up in Mozambique, Tanzania, and Angola.
- Championing a level playing field for U.S. energy and energy service companies, and using high-level visits and public diplomacy to convey the benefits of U.S. business partnerships in training and technology transfer, corporate social responsibility, and legally enforced standards of transparency and integrity.

## Support linkages between the energy sector in producer countries and other strategic economic sectors.

The U.S. government will want to help ensure new resources and revenue flows are managed in a way that drives long-term, broad-based economic growth and expands opportunities for employment and human development. Working through existing programs, it can seek to prioritize linkages between oil and gas production and other sectors of the economy. For example:

- The Millennium Challenge Corporation can place special emphasis on building upon energy infrastructure investments—including deep water ports and roads—to strengthen other trade and investment opportunities.
- Power Africa can expand its roster of partner states to more of the new producers and assist with strategic planning and power sector reforms that will make gas-to-power investments more commercially attractive.
- Feed the Future and Trade Africa can seek to strengthen intra-African fertilizer networks, upping the economic attractiveness of gas-to-fertilizer enterprises.
- Trade Africa can work with small and medium enterprises to increase their ability to feed into energy company supply chains at the national or regional levels.
- In addition to leveraging existing programs, the United States should encourage companies to offer shared value to host-country populations from the earliest phase of development that is feasible. In select cases, including those where U.S. independents may be too highly leveraged to make significant investments in this regard, USAID should offer partnerships, which allow for close donor coordination and resource sharing.

## Support institutions and constituencies that provide oversight and ensure government accountability.

The U.S. government will want to help ensure safeguards against corruption and mismanagement are in place and that citizens have adequate information and voice to hold governments to account. Policies to help fulfill this interest include:

- Elevating accountability in extractive industries as a priority in democracy and governance assistance.
- Supporting the inclusion of civil society, legislators, and investigative journalists in training on energy sector economics, budgeting, contracting, and planning to encourage informed debate on national energy policies and management.

## Use diplomatic capital to champion transparency among producer governments and investors.

The U.S. should seek to support regional and global standards for transparency, corporate responsibility, environmental stewardship, and community engagement in extractive industries. The need for producer governments to sustain attractive and enabling investment climates offers an entry point to engage more practically on good governance issues such as transparency, rule of law, curbing corruption, and building a professional civil service. Recommended efforts include:

- Encouraging African governments and regional bodies to set norms and standards for transparency, environmental stewardship, and natural resource management. This may include exploring the possibility of working with the African Union or the New Economic Partnership for African Development (NEPAD) Africa Peer Review Mechanism on energy governance or extractive industry governance indicators.
- Supporting the Africa Progress Panel, led by Kofi Annan, and the G8 Initiative on Transparency, Tax, and Trade in strengthening global norms in transparency, tax compliance, disclosure of beneficial ownership, and responsible investment.

# 7 | Conclusion

Past experiences of oil and gas exploration and production in Africa yield several lessons learned, which new producer governments, companies, donor governments, IFIs, NGOs, and civil society groups must apply to better ensure the region's newfound energy resources deliver positive, inclusive economic and developmental impacts. Yet success requires significant political will on the part of all stakeholders. One paramount insight from past difficulties is that producer governments must find the will to begin appropriating requisite funds and developing institutional capacity to manage exploration and development of oil and gas *before* revenues begin to accrue. Donor governments, IFIs, and civil society groups have applied this lesson and developed programs and means of engagement to assist producer governments in building this will. Among them are the U.S. State Department's Energy Governance Capacity Initiative and the Norwegian Agency for Development Cooperation's Oil for Development Program. Past experiences with these government-to-government cooperation programs demonstrate that the donor government does not have to expend significant resources for them to be successful. Other options producer countries can pursue include the African Development Bank's Legal Support Facility and the National Resources Governance Institute's capacity-building efforts.

Much work remains to be done to help new producer governments build the capacity they need to oversee and manage hydrocarbons activities. While the precise way forward varies in each national context, international engagement efforts have brought about progress in Ghana, Kenya, Tanzania, Mozambique, Sierra Leone, and Liberia. Work is underway in Uganda to help strengthen its capacity in these respects. Although South Africa has yet to issue any exploration permits for its shale gas reserves in the Karoo Basin, the time is ripe for the government to ensure it has requisite capacity to enforce the regulatory regime it has in place and manage future resource revenues.

Another challenge is ensuring shared value, or the imperative that citizens of the host country experience the benefits of investment flows at the earliest possible stage of development. Ways that shared value can be provided include investing oil and gas revenues in building new infrastructure, improving social services delivery, or boosting additional sectors of the economy that are more labor-intensive and capable of rendering broad-based positive economic impacts. In addition, linkages within the oil and gas sector can be developed with indigenous SMEs.

Yet stakeholders will face increasing difficulties in their work to provide shared value due in large part to the changing nature of companies investing in African oil and gas plays. While Western majors still have a strong presence on the continent, especially in deep and ultra-deepwater operations, small- and mid-size Western companies and indigenous African companies are carrying out an increasingly large share of exploration activities and conventional production. Such firms are often highly leveraged and lack the requisite capital to offer long-term social investment to the host government. The inclination of small- and mid-size Western companies to sell their most prospective assets to larger firms with the necessary capital to carry out large-scale production often leaves them less willing to provide such assistance, as they perceive themselves as only a short-term partner with the host government.

These emerging challenges will require host governments, partner governments including the United States, the IFIs, and other stakeholders to ramp up their engagement with companies so that shared value is provided. The difficulty of this task should not be underestimated, as demonstrated by the challenges the United States faced in implementing programs with private sector stakeholders in Angola, and the challenges facing efforts to implement gas-to-power initiatives.<sup>1</sup> However, best practices and lessons learned from past experience are clearly evident and provide a path forward to better ensuring that Africa's new energy producers realize more benefits from oil and gas exploration and development than traditional producers enjoyed in the past. The biggest challenge remains building political will among all stakeholders to make sure all of these lessons are taken into account beginning in the earliest phases of development and sustained through the entire exploration and production life cycle.

---

1. USAID Office of Inspector General, "Audit of USAID/Angola's Public-Private Partnerships for Development," February 27, 2012, <http://oig.usaid.gov/node/381>.

# About the Project Cochairs and Authors

**Jennifer G. Cooke** is director of the CSIS Africa Program, which she joined in 2000. The program provides balanced and forward-looking analysis of political and economic dynamics within African states to better inform U.S. policy choices. Ms. Cooke covers a broad range of U.S.-Africa policy issues, including security engagement, health assistance, conflict diplomacy, and support for good governance. She currently leads the CSIS Nigeria Election Forum, a two-year project that examines the major challenges associated with Nigeria's 2015 elections, and a study analyzing the intersection of religion and politics in Africa. With Africa Program senior associate David Goldwyn and Energy and National Security Program director Sarah Ladislaw, she also cochairs a CSIS project on Africa's new oil and gas producers and the implications of the continent's changing energy landscape for U.S. Africa policy. Ms. Cooke has authored numerous CSIS reports, including most recently *Africa at a Crossroads: Overcoming Obstacles to Sustained Growth and Economic Transformation* (May 2014) and *Launching a New Chapter in U.S.-Africa Relations: Deepening the Business Relationship* (February 2014). With J. Stephen Morrison, she is coeditor of *U.S. Africa Policy beyond the Bush Years* (CSIS, 2009) and *Africa Policy in the Clinton Years* (CSIS, 2001). She is a frequent public speaker and commentator in print, on radio, and on television, and she has testified before Congress on Boko Haram in Nigeria, the political crisis in Côte d'Ivoire, and the African Union. Prior to CSIS, she worked at the National Academy of Sciences in the Office of Human Rights and the Office of News and Public Information and at the U.S. Congress on the House Subcommittee on Africa. She has lived in Côte d'Ivoire and the Central African Republic.

**David L. Goldwyn** is president of Goldwyn Global Strategies, LLC, an international energy advisory consultancy. Mr. Goldwyn is a member of the National Petroleum Council and an alternate member of the U.S. Extractive Industries Transparency Initiative (EITI). He is a senior associate with the Africa Program at the Center for Strategic and International Studies and serves as a nonresident senior fellow with the Brookings Institution's Energy Security Initiative. Mr. Goldwyn is also the chair of the Atlantic Council's Energy Advisory Group. He has authored a series of works on energy security issues, including (with Jan Kalicki) *Energy and Security: Strategies for a World in Transition* (Wilson Center Press, 2013) and *Drilling Down: The Civil Society Guide to Extractive Industry Revenues and the EITI* (Revenue Watch Institute, 2008). Mr. Goldwyn served as the U.S. State Department's special envoy and coordinator for international energy affairs from 2009–2011, reporting

directly to Secretary of State Hillary Clinton, where he conceived and developed the Global Shale Gas Initiative and the Energy Governance and Capacity Initiative and led ministerial-level energy dialogues with Angola, Canada, China, India, Iraq, Mexico, Nigeria and Brazil. Prior to his appointment, Mr. Goldwyn served in the U.S. Department of Energy as assistant secretary for international affairs (1999–2001) and counselor to the U.S. secretary of energy (1998–1999), and with the U.S. State Department as national security deputy to U.S. Ambassador to the United Nations Bill Richardson (1997–1998), chief of staff to the under secretary of state for political affairs (1993–1997), and an attorney-adviser in the Office of the Legal Adviser (1991–1992).

**Sarah O. Ladislaw** is director and senior fellow in the CSIS Energy and National Security Program, where she concentrates on the geopolitics of energy, energy security, energy technology, and climate change. She has been involved with CSIS's work on the geopolitics portion of the 2007 National Petroleum Council study and the CSIS Smart Power Commission, focusing particularly on energy security and climate issues. She has published papers on U.S. energy policy, global and regional climate policy, and clean energy technology, as well as European and Chinese energy issues, and she teaches a graduate-level course on energy security at George Washington University. Ms. Ladislaw joined the Department of Energy (DOE) in 2003 as a presidential management fellow, and from 2003 to 2006 worked in the Office of the Americas in DOE's Office of Policy and International Affairs, where she covered a range of economic, political, and energy issues in North America, the Andean region, and Brazil. While at the department, she also worked on comparative investment frameworks and trade issues, as well as biofuels development and use both in the Western Hemisphere and around the world. She also spent a short period of time working at Statoil as senior director for international affairs in the Washington office. Ms. Ladislaw received her bachelor's degree in international affairs/East Asian studies and Japanese from the George Washington University in 2001 and her master's degree in international affairs/international security from the George Washington University in 2003 as part of the Presidential Administrative Fellows Program.







CSIS | CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES

1616 Rhode Island Avenue NW | Washington, DC 20036  
t. 202.887.0200 | f. 202.775.3199 | [www.csis.org](http://www.csis.org)

---

ROWMAN & LITTLEFIELD

Lanham • Boulder • New York • Toronto • Plymouth, UK

4501 Forbes Boulevard, Lanham, MD 20706  
t. 800.462.6420 | f. 301.429.5749 | [www.rowman.com](http://www.rowman.com)

Cover photo: An oil rig in Table bay harbor in Cape Town, South Africa.  
Credit: <http://www.flickr.com/photos/barbourians/6124733847>.

