

AFRICA'S BOOMING OIL AND NATURAL GAS EXPLORATION AND PRODUCTION: NATIONAL SECURITY IMPLICATIONS FOR THE UNITED STATES AND CHINA

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The frenetic search for hydrocarbons in Africa has become so intense and wide ranging that there is planned or ongoing oil and gas exploration in at least 51 of the continent's 54 countries. Knowledge about Africa's geology is improving rapidly, generating great optimism about the continent's energy future. Onshore and offshore rifts and basins created when the African continent separated from the Americas and Eurasia 150 million years ago are now recognized as some of the most promising hydrocarbon provinces in the world. Offshore Angola and Brazil, Namibia and Brazil, Ghana and French Guyana, Morocco and Mexico, Somalia and Yemen, and Mozambique and Madagascar are just a few of the geological analogues where large oil fields have been discovered or are believed to lie. One optimistic but quite credible scenario is that future discoveries in Africa will be around five times their current level based on what remains unexplored on the continent versus currently known sub-soil assets. If proven true, this could have a profoundly positive impact on Africa's future growth and strategic position in the global economy.

Africa had proven oil reserves of 132.4 billion barrels at the end of 2011, an increase of 154 percent over the 1980 figure of 53.4 billion barrels. Because of definitional issues of what constitutes "proven reserves," however, this figure likely grossly underestimates Africa's oil and gas potential and does not include likely future reserves in the Mauritania Basin in the country of the same

name (discovered in 2001); the Albertine Basin in Uganda, which straddles the Democratic Republic of the Congo (DRC) and the Kenyan part of the East African Rift (2006 for Uganda, 2012 for Kenya); the Tano Basin in Ghana (2007); the Rovuma Basin in Mozambique and Tanzania (2010 in both countries); and the Sierra Leone/Liberia Basin in both countries (2010 for Sierra Leone, 2012 for Liberia). Moreover, no unconventional reserves have been added to these "proven reserve" estimates despite the fact that the continent has substantial, proven heavy oil/bitumen in several countries, including Congo (Brazzaville), Nigeria, and Madagascar, and potential shale gas, most notably in South Africa, Algeria, Libya, Tunisia, and Ethiopia.

Africa has already become a crucial element in the energy diversification strategies being adopted in major consuming regions, notably China, and offers relative freedom for international oil companies (IOCs) to invest and operate. Africa will be the world's fourth most important region for oil production from 2010 to 2035, after the Middle East and Europe/Eurasia, not far behind North America, and ahead of Latin America and East Asia/Australia. Africa is also starting to play a more prominent role in international markets for natural gas, which is currently characterized by disparate regional markets but is slowly moving toward a more interconnected, global gas market. One reason for this is the Panama Canal expansion, which will allow much larger PANA-

MAX LNG tankers to unite the Atlantic basin and the Pacific basin—much as the advent of oil supertankers fostered a global market in oil. Africa’s total natural gas production will increase rapidly over the next 2 decades, from 188.1 million tons of oil equivalent (TOE) in 2010 to 257.2 million TOE in 2020 and 356.8 million TOE in 2030.

Because of a domestic boom in shale oil and gas in the United States, our nation’s energy imports from Africa have been falling rapidly in recent years, raising the key strategic issue of whether Africa matters as much to U.S. energy security as it once did. Around 2030, North America is forecast to become a net oil exporter—an outcome that also means the United States will enjoy an order of magnitude greater energy security in 20 years than it does at present and will have little dependence on Africa for its energy needs. The answer may be that, while Africa may be becoming less important for U.S. energy security, it is becoming more important for broader U.S. national security. This is so for a variety of reasons, such as the extraordinary trade and investment opportunities that this rapidly growing continent represents, including the need for \$2.1 trillion in oil and gas sector investments between now and 2035 to realize its potential. Already, U.S. investments in African oil and gas in at least 22 countries on the continent are enormous, with prospects for future rapid growth.

Africa is also playing an increasing—not decreasing—role as an energy supplier to both our western allies and China. Africa’s natural resources, above all oil and gas, are already China’s top national security interest in the continent and will remain so in the coming decades. In December 2012, China overtook the United States as the world’s largest oil importer. Africa’s importance for Beijing’s energy security continues to rise because China, despite shale discoveries of its own, will increasingly depend on energy imports until well past 2040. As superpower rivals in the 21st century, Washington’s increasing energy security will make Beijing’s own increasing energy insecurity be felt even more acutely, pushing the People’s Liberation Army to accelerate adoption of a “two ocean” military strategy that includes an enduring presence in the Indian Ocean as well as in the Pacific Ocean.

Up to now, China’s “oil diplomacy” in Africa has been most successful in niche markets such as Angola (due to corruption and to its \$14 billion in infrastructure-for-oil deals) and in other African countries with fields that have been ignored as politically sensitive or too marginal by major Western companies, such as Sudan and Niger. Chinese oil companies are rapidly increasing their energy investments in several other African nations, however, and already have a significant presence in three major oil and gas producing countries—Algeria, Angola, and Nigeria—and in four smaller producers—Cameroon, Chad, Gabon, and Sudan.

At the end of this monograph, taking up almost two-thirds of its length, is an appendix with a series of country profiles on oil and gas exploration and production in 51 of 54 African nations and the disputed territory of the Western Sahara. The profiles focus on U.S. and Chinese energy companies, but also discuss those from other developed and emerging nations.

ENDNOTE

1. The three African countries where the author could find no evidence of planned or on-going oil or gas exploration or production were the inland nations of Burkina Faso in West Africa, and Lesotho and Swziland in southern Africa. There is also planned oil and gas exploration in the disputed territory of the Western Sahara.

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