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SOUTH SUDAN

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The Mineral Industry of South Sudan

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In January 2011, the autonomous region of Sudan known as Southern Sudan, which was composed of the States of Central Equatoria, Eastern Equatoria, Jonglei, Lakes, Northern Bahr el Ghazal, Unity, Upper Nile, Warrap, Western Bahr el Ghazal, and Western Equatoria States, held a referendum on independence from Sudan. The people of Southern Sudan voted for secession, and the new country became independent with the name of the Republic of South Sudan on July 9, 2011 (Kron and Gettleman, 2011; Pitt, 2011).

Prior to the split, the mineral sector's influence on Sudan's economy was significant because of petroleum production and refining. Sudan was not a globally significant producer or consumer of mineral commodities in 2011. As a result of the referendum, the oilfields were divided between South Sudan and Sudan, but disputes between the countries regarding petroleum remained unresolved at yearend. Control of the Abyei Area was disputed by the Governments of South Sudan and Sudan. In May 2011, Sudanese military forces moved into Abyei (Pitt, 2011).

Investment in Sudan's petroleum and petrochemical industries by U.S. individuals and organizations was banned by Executive Order 13412, which was issued by the President of the United States on October 13, 2006. The alleged use of revenues from petroleum sales to finance military operations in the Darfur conflict constituted one of the reasons for the Executive Order. U.S. individuals and organizations were banned from participating in the refining of South Sudanese crude petroleum in refineries located in Sudan (Bush, 2006; U.S. Office of Foreign Assets Control, 2011).

Minerals in the National Economy

In 2010 (the latest year for which data were available), crude petroleum exports amounted to 98% of total exports and 71% of South Sudan's gross domestic product. About 98% of the Government of South Sudan's revenues was attributable to crude petroleum production (South Sudan National Bureau of Statistics, 2011).

Production

South Sudan produced an estimated 380,000 barrels per day (bbl/d) of crude petroleum in 2011. Gold and such crude construction materials as brick clay were also produced (European Coalition on Oil in Sudan, 2011, p. 8–10).

Structure of the Mineral Industry

Crude petroleum was produced by joint ventures of state-owned companies from China, India, Malaysia, and South Sudan. Gold was produced by artisanal miners.

Commodity Review

Industrial Minerals

Cement.—South Sudan's cement consumption was estimated to be about 530,000 metric tons (t) in 2010. Cement prices were estimated to be about $400 per metric ton compared with $120 per metric ton in Kenya and $130 per metric ton in Tanzania. South Sudanese cement prices were also substantially higher than nearby landlocked countries with high power and transportation costs, such as Burundi (about $350 per metric ton), Rwanda (about $300 per metric ton), and Uganda (nearly $200 per metric ton). The relatively higher costs in South Sudan could be attributable to the lack of domestic cement production; all Sudanese cement plants were located north of the boundary between Sudan and South Sudan (Renaissance Capital LLC, 2011, p. 9).

Mineral Fuels

Petroleum.—From 2007 to 2010, Sudan produced an average of about 470,000 bbl/d of crude petroleum. Historically, Sudan's production was limited by low recovery rates; the average recovery rate of oil in place was 23% compared with the worldwide average of 30% (European Coalition on Oil in Sudan, 2010, p. 18–19; Sudan Petroleum Corp. Ltd., 2011).

The Greater Nile Petroleum Operating Co. [China National Petroleum Corp. (CNPC) (40%), Petronas Carigali Overseas Shd. Bhd. of Malaysia, (30%), ONGC Videsh Ltd. of India (25%), and Nile Petroleum Corp. (Nilepet) (5%)] produced crude petroleum in Blocks 1, 2, and 4 in south-central Sudan. In 2011, production in Blocks 1, 2, and 4 declined to an estimated 130,000 bbl/d from 151,000 bbl/d in 2010 (European Coalition on Oil in Sudan, 2010, p. 17; 2011, p. 8, 10; Sudan Petroleum Corp. Ltd., 2011).

After the referendum on South Sudan's independence, Blocks 1, 2, and 4 were divided between Sudan and South Sudan. The Bamboo, the Bamboo West, the Garaad, the Heglig, the Taiyib, and the Toma oilfields are located north of the national boundary and remained in Sudan. In the first half of 2011, production from the oilfields south of the national boundary was estimated to be about 75,000 bbl/d, and in the disputed Abyei Area, about 5,000 bbl/d. The El-Haar, the El-Nar, the El-Toor, the Khairat, the Khairat Northeast, the Toma South, and the Unity oilfields are located in South Sudan (European Coalition on Oil in Sudan, 2010, p. 10, 11, 25; 2011, p. 8, 10; Mazen, 2011).

CNPC held Block 6, which is located to the northwest of Muglad in northern Sudan. In early 2011, production in Block 6 was estimated to be about 60,000 bbl/d compared with 41,000 bbl/d in 2010. Output increased because of a new oilfield that opened in November 2010. Block 6 remained in Sudan after the referendum on South Sudan's independence (Mazen, 2011; Sudan Petroleum Corp. Ltd., 2011).

Blocks 3 and 7 in eastern Sudan were held by the Petrodar Consortium [CNPC (41%), Petronas (40%), Nilepet (8%), China Petroleum and Chemical Corp. (6%), and Tri-Ocean Energy of Egypt (5%)]. In 2011, production in Blocks 3 and 7 amounted to an estimated 280,000 bbl/d. Production in Blocks 3 and 7 is likely to decrease to 250,000 bbl/d in 2013 and 100,000 bbl/d by 2018. Block 3 is in South Sudan and Block 7 was divided between Sudan and South Sudan. All the currently operating oilfields in Blocks 3 and 7 are located south of the national boundary (European Coalition on Oil in Sudan, 2010, p. 10–11, 17, 25; 2011, p. 8, 10; Sudan Petroleum Corp. Ltd., 2011).

Block 5A is located in the Muglad Basin in South Sudan. Block 5A was held by White Nile Petroleum Operating Co. [Petronas (67.9%), ONGC Videsh (24.1%), and Sudapet (8%)]. Output was about 17,000 bbl/d in 2010 compared with 20,000 bbl/d in 2009. The low quality of petroleum from Block 5A limited its production; it was necessary to blend Block 5A's output with higher quality petroleum from other blocks to avoid a price discount (European Coalition on Oil in Sudan, 2010, p. 11, 16, 25; Sudan Petroleum Corp. Ltd., 2011).

In September 2011, Star Oil Co. (Ansan Wikfs Investments Ltd. of Yemen, 66%, and Sudapet, 34%) was drilling a third well on Block 17, which is adjacent to Block 6. Star Oil could start production at the rate of 15,000 bbl/d in Block 17 by mid-2012. Block 17 remained in Sudan after the referendum on South Sudan's independence (Africa Energy Intelligence, 2011).

Total S.A. of France and its joint-venture partners held Block B in South Sudan. In mid-2011, Total had not started exploration because of security concerns and concerns over the possible effects of U.S. sanctions on Sudan. The Government of South Sudan was considering the division of Block B into smaller blocks, which would be relicensed (Pitt, 2011).

Blocks 8, 9, 10, 11, 12A, 12B, 13, 14, and 15, which were undeveloped, remained in Sudan after the referendum on South Sudan's independence. The national boundary ran through undeveloped Blocks A, C, and E (European Coalition on Oil in Sudan, 2010, p. 11, 24–25).

CNPC operated a petroleum refinery at Jali in northern Sudan with a capacity of 100,000 bbl/d; the company accounted for most of Sudan's refined petroleum products output. All petroleum refineries remained in Sudan after the referendum on South Sudan's independence (European Coalition on Oil in Sudan, 2010, p. 13; Petroleum Economist, 2011).

All South Sudan's crude petroleum production was exported through pipelines that ran through Sudan. South Sudan paid a pipeline transit fee of $4 per barrel for existing oilfields and $7 per barrel for new oilfields. The Government of Sudan demanded that South Sudan pay $32 per barrel as compensation for revenues lost after secession. The Government of South Sudan was considering the construction of a new pipeline through Kenya as an alternative to exporting through Sudan. Completion of the new pipeline was unlikely in less than between 3 and 5 years (Petroleum Economist, 2011).

Outlook

South Sudan's crude petroleum production is likely to be between 360,000 and 370,000 bbl/d in 2012 and to decline to about 250,000 bbl/d by 2015 and 160,000 bbl/d by 2018 without substantial new investments. Production peaked in Blocks 1, 2, and 4 in 2004, and the new oilfields that could partially offset declining production from existing oilfields starting in 2012 are located in Sudan. In Blocks 3 and 7, output is expected to decline sharply starting in 2013. Higher levels of production may be sustained with new discoveries or increased recovery rates. The disputes between South Sudan and Sudan over the national boundary and pipeline transit fees remained unresolved at the end of 2011; the lack of a resolution could affect production from existing fields and investment in new capacity (European Coalition on Oil in Sudan, 2011, p. 8–10; Mazen, 2011; Pitt, 2012).

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TABLE 1

SOUTH SUDAN: PRODUCTION OF MINERAL COMMODITIES[1, 2]

Commodity[3]		2011[e]
Petroleum, crude	thousand 42-gallon barrels	67,000

[e]Estimated; estimated data are rounded to no more than three significant digits.

[1]Table includes data available through August 28, 2012.

[2]Data for 2011 cover the period from July 9 to December 31; South Sudanese production was included in Sudan until independence on July 9.

[3]In addition to crude petroleum, gold and such construction materials as brick clay were produced, but available information is inadequate to estimate output.

TABLE 2

SOUTH SUDAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2011[1, 2]

(Thousand 42-gallon barrels)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum, crude	Petrodar Consortium [China National Petroleum Corp. (CNPC), 41%; Petronas Carigali Overseas Shd. Bhd., 40%; Nile Petroleum Corp. (Nilepet), 8%; China Petroleum and Chemical Corp., 6%; Tri-Ocean Energy, 5%]	Blocks 3 and 7 in Upper Nile State	110,000
Do.	Greater Nile Petroleum Operating Co. [China National Petroleum Corp. (CNPC), 40%; Petronas Carigali Overseas Shd. Bhd., 30%; ONGC Videsh Ltd., 25%; Nile Petroleum Corp. (Nilepet), 5%]	Blocks 1, 2, and 4 in Unity State[3]	27,000
Do.	White Nile Petroleum Operating Co. [Petronas Carigali Overseas Shd. Bhd., 67.9%; ONGC Videsh Ltd., 24.1%; Nile Petroleum Corp. (Nilepet), 8%]	Block 5A in Unity State	7,300

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[1]In addition to the facilities listed, about 1.8 million barrels per year of crude petroleum was produced in the Abyei Area, which was claimed by both South Sudan and Sudan.

[2]Starting on July 9, 2011. South Sudan was part of Sudan until July 8, 2011.

[3]El-Haar, El-Nar, El-Toor, Khairat, Khairat Northeast, Toma South, and Unity oilfields only. The Bamboo, the Bamboo West, the Garaad, the Heglig, the Taiyib, and the Toma oilfields remained in Sudan.