



Fossil fuel exploration subsidies: South Africa

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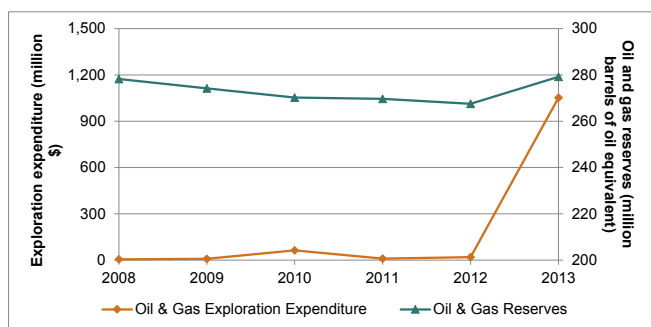
This country study is a background paper to the report **The fossil fuel bailout: G20 subsidies for oil, gas and coal** by Oil Change International (OCI) and the Overseas Development Institute (ODI).

For the purpose of this report, exploration subsidies include: national subsidies (direct spending and tax expenditures), investment by state-owned enterprises and public finance. The full report provides a detailed discussion of technical and transparency issues in identifying exploration subsidies, and outlines the methodology used in this desk-based study.

The authors would welcome feedback on the full report and on this country study, to improve the accuracy and transparency of information on G20 government support to fossil-fuel exploration.

Argentina
Australia
Brazil
Canada
China
France
Germany
India
Indonesia
Italy
Japan
Republic of Korea
Mexico
Russia
Saudi Arabia
South Africa
Turkey
United Kingdom
United States

Figure 1: Oil and gas exploration expenditure and reserves in South Africa



Source: Rystad Energy, 2014

Background

South Africa has the world’s ninth largest proved reserves of coal (3.4% of global total) (BP, 2014). In addition, recent government support for the exploration of offshore fields and onshore shale deposits may increase the country’s petroleum reserves. In particular, discovery of the Karoo shale formation has contributed to claims that South Africa has the eighth largest shale-gas reserves in the world (U.S. EIA, 2013). Nonetheless, despite the growing focus on oil and gas, the vast majority of the South African energy sector remains dominated by coal, with this domination set to continue into the medium-term despite the growth of renewable and other fossil energy sources (Department of Energy, 2013). As well as being consumed directly for power generation, coal is also transformed into synthetic gas and petroleum fuels that are widely consumed for a multitude of end uses.

South Africa’s national development plan includes a number of energy-related targets, including improving energy access and ensuring energy availability for economic activity. In FY2013/14, reported expenditure by the Government on all fuels and energy totalled \$745 million, and expenditure is set to grow at 11.4% annually in the medium term (Government of South Africa, 2013).¹ The Department of Energy oversees the oil and gas industry and, together with the Department of Mineral Resources, oversees the coal mining industry (Department of Mineral Resources, 2011). These departments also fund a number of state-owned entities (SOEs) that either facilitate or actively engage in exploration for fossil-fuels. For example, the Central Energy Fund (CEF) is a SOE

that oversees a range of exploration activities via its subsidiaries. These include: the Agency for Promotion of Petroleum Exploration and Exploitation (PASA) which currently promotes and markets the licensing of offshore and onshore exploration and production activities;² the South African National Energy Development Institute (SANEDI) which funds exploration-related research and development (R&D) directly; and the Council for Geosciences which ‘aims to stimulate the minerals industry in order to increase exploration expenditure’ (Council for Geosciences, 2012).

National subsidies

There are a number of direct budgetary transfers that appear to benefit exploration activities in South Africa. CEF’s budget includes an allocation of \$36.8 million to SANEDI between 2011 and 2016, of which \$20.7 million is for research into hydraulic fracturing (fracking) and carbon capture and storage (CCS) (National Treasury, 2013).³

Although the SOE Eskom is focussed mainly on research for electricity generation, \$1.6 million (or 11% of its R&D budget) is allocated to research into ‘primary energy’, though the portion of this attributed to exploration is unclear. However, the company’s 2014 *Integrated Annual Report* also notes that the majority of the \$15.3 million expenditure for ‘Demonstration and Pilot Projects’ was spent on its underground coal gasification project (Eskom, 2014).⁴

The state-owned oil and gas company PetroSA also received a government grant for project-based personnel training of \$0.43 million in 2013, which could include support for exploration (CEF, 2013b; PetroSA, 2013). Similarly, the Department for Trade and Industry (DTI) offers a number of financial incentive schemes to companies that include those engaging in the exploration and development of fossil-fuel reserves (ECIC, 2014a; Department of Trade and Industry, 2013). It was not possible to determine the portion of these funds, if any, received by PetroSA or offered by the DTI, that supports fossil-fuel exploration.

A number of tax expenditures are provided for fossil-fuel exploration. In the oil and gas sector, exploration expenditure attracts a deduction equal to 200% of the investment (EY, 2013; Deloitte, 2013). Although the estimate of total foregone revenues that are the result of

1 ‘Fuel and energy’ includes all energy sources and electricity.

2 However, this function may soon be carried out under the purview of the Department of Mineral Resources (McKay, 2014).

3 In South Africa’s Budget, research into hydraulic fracturing (fracking) for shale gas and ‘clean coal’ are funded under the ‘Renewable Energy’ sub-programme of CEF’s ‘Clean Energy’ programme.

4 Underground coal gasification (UCG) involves the partial burning of unmineable coal in situ to release a mixture of combustible gases. This mixture can then be burned in power stations—producing CO₂—or used as a chemical feedstock. Although the development of UCG promotes the use of previously inaccessible fossil-fuel reserves, it was difficult to ascertain whether this falls within ‘exploration’ as detailed in the methodology. Therefore, although noted in this section, research funding for UCG was not added to the total for national subsidies.

Table 1. South Africa's national subsidies

Subsidy	Subsidy type	Targeted fossil-fuels	Estimated annual amount (million \$)	Timeframe for subsidy-value estimate	Stage
Direct spending					
Funding for hydraulic fracturing (fracking) research	Direct government funding for research	Gas	0 – 20.7*	2013	Exploration
Tax expenditure					
Super deduction for exploration	200% of exploration costs can be deducted from taxable income across many companies assets	Oil and gas	Up to 295	2013	Exploration
Super deduction for research and development (R&D)	150% of R&D costs can be deducted from taxable income across many companies assets	Oil and gas	n/a	n/a	n/a
Accelerated depreciation/expensing	A number of exploration activities for coal, oil and gas can be expensed in the year in which they occur or can benefit from accelerated depreciation	Oil, gas and coal	n/a	n/a	n/a
Total annual national subsidies			0 – 315.7		

* A range is given because the precise research portion for hydraulic fracturing that is supported alongside carbon capture and storage (CCS) is unclear.

tax incentives (\$228.6 million) and tariff expenditures (\$1.9 billion) are published, budgetary estimates of foregone revenue by individual exemptions were not available. However, we estimate that the potential expenditure for just the super deduction for exploration activities for that year could be up to \$295 million (EY, 2013; Deloitte, 2013; Rystad Energy, 2014).⁵ Similarly, R&D expenditure attracts a 150% deduction (Deloitte, 2014; EY, 2013; Deloitte, 2013), though no data could be found that estimated the cost of this expenditure to the Government.

As well as these 'super' deductions, oil and gas companies benefit from accelerated depreciation rates and tax breaks from other South African exploration, production or even refining activities. Companies may deduct costs in full in the year in which they occurred or carry them forward (EY, 2013; Deloitte, 2013). Similar accelerated depreciation rates for capital exploration activities are also in place in the coal industry for activities such as prospecting and the sinking of mine shafts (Curtis, 2009).

Investment by state-owned enterprises

It is not possible to determine the full amount spent by South Africa's Central Energy Fund (CEF) and its subsidiaries on exploration activities from CEF's *Annual Report*, as exploration expenditure linked to successful developments are either expensed or capitalised and included alongside other expenditure under the headings of 'costs' or 'production assets'. However, the report does note that CEF holds assets worth \$4.04 million for exploration expenditures that are pending a decision (whether successful or not).

In addition, reporting at the level of CEF's subsidiaries does not include sufficient information to determine the level of support specific to fossil-fuel exploration. However, there is information demonstrating that PetroSA, the state-owned oil and gas company, has exploration activities in South Africa and, via subsidiaries, in Equatorial Guinea, Namibia, Egypt and Ghana (Reuters, 2012). Similarly, the mission of the African Exploration Mining and Finance Corporation (AE) is 'to acquire, hold and develop all exploration and mineral rights' (CEF, 2013a; CEF, 2013b).⁶ Following investment in previous years and

5 The calculation is based on exploration expenditure in 2013 of \$1.05 billion and a corporate tax rate on profits for oil and gas companies of 28%.

financing from the state-owned Industrial Development Corporation, production began at the Vlakfontein mine, with AE producing 1.6 million tonnes of coal in the year to 2013 (CEF, 2013b; van Vuuren, 2012; CEF, 2012). Other activities include a number of ‘resource evaluations’ and the development of the T-Project, a coal-to-liquids operation (CEF, 2012; CEF, 2013a).

Public finance

Domestic

South Africa has a number of state-owned development finance institutions, including the Development Bank of Southern Africa (DBSA) and the Industrial Development Corporation (IDC).

In 2012/13, DBSA held ‘development assets’ valued at \$4.49 billion and allocated \$715 million to energy projects in that year alone (DBSA, 2013). Although the majority of this funding was for the development of the state-owned utility company Eskom’s electricity generating projects, the development of liquid natural gas resources is a priority area for DBSA, and it is possible that some of its support is directed toward exploration.

While the IDC does not fund ‘discovery type’ exploration, it does invest in the detailed exploration required to evaluate whether a resource is economic (IDC, 2014a). Although IDC does not provide a breakdown of its funding, its integrated *Annual Report* shows a commitment to the development of fossil-fuels: 32% of the IDC’s ‘risk profile’ is associated with ‘mining, chemicals and petroleum’ (IDC, 2014b); \$476 million was committed to ‘chemicals, mining and downstream metals industries’ (IDC, 2014c); and coal finance is noted as a specific focus in its strategy, with developments in coal mines in the Waterberg area highlighted as specific examples (IDC, 2014d).

International

DBSA and IDC provide international public finance alongside domestic support, but it is unclear what portion is linked to fossil-fuels. IDC, for example, has provided a number of lines of credit for mining activities in Kenya, Namibia, Swaziland, Togo, Zambia and Zimbabwe, but it is unclear if these include support for coal, let alone coal exploration (IDC, 2014e).

The Government of South Africa also owns the Export Credit Insurance Corporation (ECIC) in full, and (via a combination of direct shareholding and shareholding by other SOEs) is indirectly the major shareholder in the Credit Guarantee Insurance Corporation of

Box 1. The role of the Government of South Africa in Sasol

Although Sasol is not majority state-owned, the South African Government, directly or through other shares in state-owned enterprises (SOEs) and government pension funds, controls 33.6% of Sasol shares (Sasol, 2013). Through its subsidiary, Sasol Petroleum International (SPI), Sasol controls exploration or development projects in Mozambique, South Africa, Canada, Gabon, Botswana and Australia. Sasol itself owns six coal mines, is active in coal exploration research and development (R&D), and reports exploration expenditure and feasibility costs of \$128.6 million for 2013 (Sasol, 2012).

Africa Limited (CGIC), Africa’s foremost trade-credit insurer (CGIC, 2014). Although these entities do not provide detailed information on sector-level support, the ECIC lists exposure to equity risk for the ‘oil and gas’ and ‘basic resources’ sectors of \$5.8 million and \$8.94 million respectively (ECIC, 2014b), while CGIC notes that 1.2% of its exposure is to ‘other mining and quarrying activities’ (CGIC, 2014). In 2014, ECIC released a dedicated research document that analysed the natural-resource sector, including exploration investment opportunities, for South African companies (ECIC, 2014a).

South Africa contributed an average of 0.5% of funding to multilateral development banks (MDBs) that invested in fossil-fuel exploration projects between 2010 and 2013. These contributions render South Africa responsible for average annual spending on exploration for fossil-fuels of \$3.8 million across this period (Oil Change International, 2014).⁷

Finally, the recently announced New Development Bank, to be led by the BRICS countries,⁸ will have authorised lending up to \$34 billion annually (mainly for infrastructure), which may include support for fossil-fuel exploration activities (Khanna, 2014). South Africa is slated to pledge \$5 billion of the initial \$100 billion total capitalisation of the bank (José Romero, 2014).

Major companies

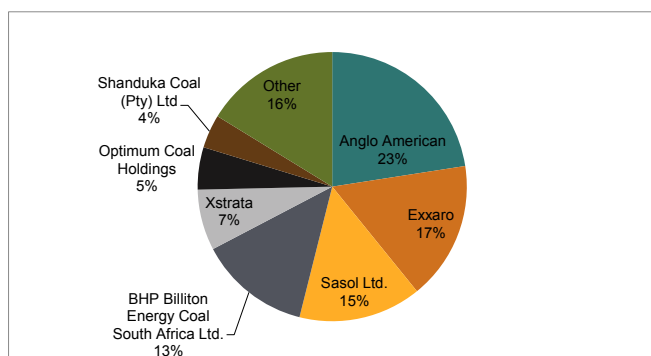
Oil and gas

South Africa’s relatively nascent oil and gas industry is almost completely dominated by PetroSA. PetroSA was responsible for South Africa’s entire oil and gas production in 2013, and the resulting \$746 million in revenue.

6 AE is in the process of being hived off as a standalone SOE under the Department of Mineral Resources.

7 Data are based on shares of multilateral development banks (MDBs) held by each G20 country from the respective MDB annual reports and replenishment agreements.

Figure 2: Major shares of South African coal production in 2011



Source: Rystad Energy, 2014

PetroSA lost \$27 million that year, while the South African Government received \$146 million in income taxes and \$18 million in royalties from the company. South Africa's oil and gas reserves were estimated at 281 million barrels of oil equivalent (BOE) at the start of 2014, of which 77% were held by PetroSA. The one area of South Africa's upstream industry where PetroSA is not the major actor is exploration, which is dominated by Eni (minority-owned

by the Italian Government) which spent nearly \$1 billion on exploration activities in 2013.

Coal

South Africa's coal industry is dominated by a small number of large operators. The 2011 data below show that the five largest operators were responsible for three-quarters of the 252.8 megatonnes of production in 2011 (Yager, 2011). According to the Department of Energy, this fraction is 85% with slight rearrangement of the companies following changes to ownership and mergers. The top five coal producers are listed by the Department of Energy as: Ingwe Collieries Limited (a BHP Billiton subsidiary); Anglo Coal; Sasol; Eyesizwe; and Kumba Resources Limited (Department of Energy, 2014). The U.S. Energy Information Administration reports that total production rose to 261 million tonnes in 2012 (U.S. EIA, 2014).

Little comprehensive data were found on coal exploration activities. However, in 2013 Glencore-Xstrata were reported to be investing \$100 million in developing South African coal mines with an annual capacity of almost 60 million tonnes (Jamasmie, 2013).

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