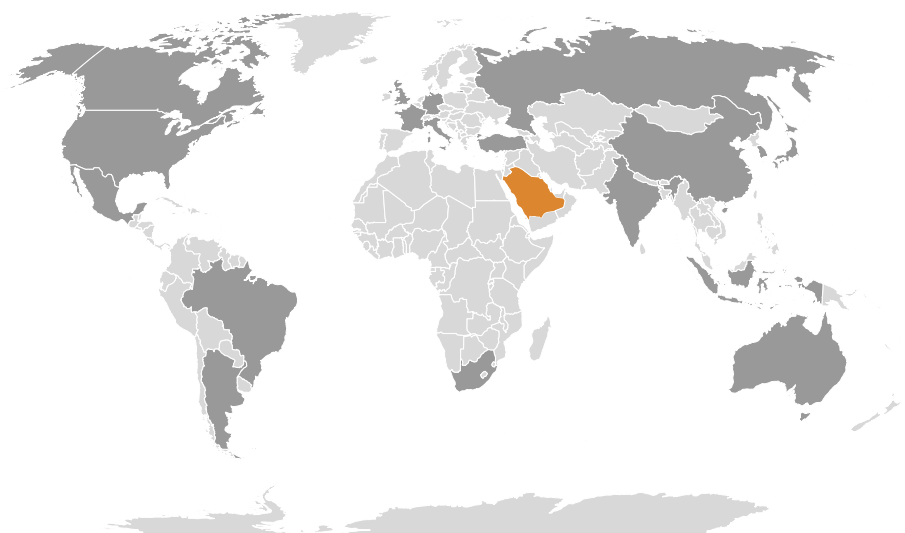




G20 subsidies to oil, gas and coal production: Saudi Arabia

Sam Pickard and Laurie van der Burg



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

This country study is a background paper for the report **Empty promises: G20 subsidies to oil, gas and coal production** by Oil Change International (OCI) and the Overseas Development Institute (ODI). It builds on research completed for an earlier report **The fossil fuel bailout: G20 subsidies to oil, gas and coal exploration**, published in 2014.

For the purposes of this country study, production subsidies for fossil fuels include: national subsidies, investment by state-owned enterprises, and public finance. **A brief outline of the methodology can be found in this country summary.** The full report provides a more detailed discussion of the methodology used for the country studies and sets out the technical and transparency issues linked to the identification of G20 subsidies to oil, gas and coal production.

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

A Data Sheet with data sources and further information for Saudi Arabia's production subsidies is available at:
<http://www.odi.org/publications/10082-g20-subsidies-oil-gas-coal-production-saudi-arabia>

priceofoil.org
odi.org

Country Study
November 2015

Background

Saudi Arabia is the world's largest exporter of petroleum liquids and maintains the world's largest crude oil production capacity, both of which are exclusively controlled by the state-owned Saudi Aramco, the world's largest energy company. The country holds 16% of the world's proven oil reserves and often holds half of global spare capacity (the volume of production that can be brought on within 30 days and sustained for at least 90 days) (EIA, 2015a). This spare capacity allows Saudi Arabia to effectively manage supply to the global market which can significantly impact global prices, as witnessed since late 2014 (EIA, 2015a; Al Darwish et al., 2015). Although the country holds the fifth largest natural gas reserves worldwide, natural gas production is limited, and the produced gas is only used domestically. As domestic demand for gas grows, partly to offset crude oil use for power generation, conventional gas production is set to increase as well as production from shale and tight reserves (EIA, 2015b). No coal is produced in Saudi Arabia.

Changes to global oil prices impact the country's finances significantly because oil revenues generally account for at least 90% of Saudi Arabia's fiscal revenues and 80% of export revenues (IMF, 2015a; EIA, 2015b). Although revenue from the oil sector was worth \$234 billion in 2014, as a result of the recent low oil prices this represented a 7.2% fall in value compared to 2013 (Ministry of Finance, 2014, 2015). IMF figures show that exports of oil and refined products fell from \$322 billion in 2013 to \$285 billion in 2014 and are projected to fall to \$184 billion in 2015 (IMF, 2015b). Generating sufficient revenue to balance government spending requires an oil price of \$97 to \$106 per barrel and the significant drop in oil prices in 2014 led to a deficit of \$17 billion, the first since 2009 (Evans-Pritchard, 2015; Jadwa Investment, 2014; SAMA, 2015b). The Ministry of Finance had predicted that continued low prices would result in a budget deficit of \$39 billion, however, the government has been forced to cut non-essential spending as the estimated deficit has since been increased to \$107 billion (Ministry of Finance, 2014; Nereim, 2015).

Prior to the oil price crash, the loosely followed Long-Term Strategy for the Saudi Economy had aspired to nearly double per capita income between 2004 and 2024, by adding value to oil-derived exports through investing significantly in increasing domestic refinery capacity, and by developing the petrochemical industry (MEP, 2010: 43-44). The trend looks likely to continue throughout the Tenth Development Plan (2015–2019) which, in line with the Long-Term Strategy, has the objective of 'encouraging manufacturing industries which depend on hydrocarbon and mining raw resources', increasing activities associated with the production and refining of natural resources, and 'maximizing the value added of oil and gas resources' (MEP, 2014).

Significant subsidies to the consumption of fossil fuels are provided in Saudi Arabia. These consumer subsidies were estimated at more than \$60 billion in 2011, and are in place in a range of sectors including transport, electricity and potable water produced by desalination plants (EIA, 2015b; Krane, 2014; Nachet and Aoun, 2015). The Saudi Arabian Monetary Agency (SAMA) has acknowledged the link between growth in demand for fossil fuels and consumer subsidies and has called for their reform, looking to the wider reform experience in the neighbouring United Arab Emirates (Körner, 2015; MEP, 2014; Reuters, 2015b).

Saudi Aramco controls the country's oil and gas production and distribution networks, owns 72% of the country's eight refineries, and owns a further 2.4 million barrels per day of refining capacity overseas through equity and joint ventures in Japan, China, South Korea, the United States and Indonesia (EIA, 2015b; Saudi Aramco, 2015a). Although income from crude oil exports fell by 15% in 2014, exports from refined products increased by 22% (SAMA, 2015a). Moves to increase competition and investment in natural gas exploration has seen the 'Empty Quarter' opened to private exploration investment; however, poor exploration results have meant that foreign companies have stopped their activities in the country (EIA, 2015b).

A number of other industries that rely on domestic support to fossil fuel production are dominated by state-owned enterprises (SOEs) in Saudi Arabia. These include the Saudi Electricity Company (SEC, 80% government-owned); the integrated chemicals company, Saudi Arabia Basic Industries Company (SABIC, 70% government-owned); and the Saline Water Conversion Corporation (SWCC, 100% government-owned).

National subsidies

Only foreign companies pay tax in Saudi Arabia. There is limited publicly available information on direct government support or tax concessions offered to the oil and gas industry and for fossil-fuelled power production. Although state-owned Saudi Aramco currently controls oil and gas production, some companies have been permitted to undertake exploration activities in some areas. No extraction is currently taking place by private companies, but if it were, it would be covered by royalty rates and support measures set out in Petroleum Concession Agreements (PCAs), which are issued for every field (Ernst and Young, 2015). The country's tax codes also mention that a range of incentives are available for oil and, particularly, gas producers, including accelerated depreciation and instant tax deductions for a variety of exploration activities (*ibid.*). However, estimates of the value of these support measures are not published.

The government also supports R&D relevant to oil and gas production through investment in research and research institutions. The King Fahd University of

Table 1: Saudi Arabia's national subsidies to fossil fuel production, 2013–2014 (\$ million except where stated otherwise)

Subsidy	Subsidy type	Targeted energy source	Stage	2013 estimate	2014 estimate	Estimated annual average amount
Net change in gross fixed capital formation for oil sector	Direct investment	Oil and gas	Cross-cutting	15,088	N/A	Not quantifiable - included in SOE expenditure
Investment in R&D institutes	Direct investment	Oil and gas	Cross-cutting	N/A	N/A	
Investments in Port Authority	Direct investment	Oil and gas	Cross-cutting	N/A	N/A	
Investment in Geological Survey Authority	Direct investment	Oil and gas	Cross-cutting	N/A	N/A	
Total national subsidies						N/A

Sources and additional data are available in the Data Sheets that accompany each Country Study.

Note: N/A indicates data was not publicly available at the time of publication.

Petroleum and Minerals (KFUPM) is just one example of a government-funded research institute that benefits oil and gas production. In 2013 and 2014, the Saudi government funded KFUPM at an average annual cost of \$351 million (SAMA, 2015b). Similarly, central funding supports government agencies that may engage in activities that benefit the production of fossil fuels – such as the Saudi Ports Authority or the Saudi Geological Survey Authority, which received average annual funding of \$468 million and \$67 million, respectively (ibid.). The portion of these funds that can be directly attributed to fossil fuel production is unclear.

State-owned enterprise investment

Generating more than \$1 billion a day in revenue prior to the fall in the oil price, state-owned Saudi Aramco is by far the biggest oil and gas company in the world with capacity to produce 3.5 billion barrels of oil and 4.1 trillion cubic feet of gas annually (EIA, 2015b; Forbes, 2015; Saudi Aramco, 2015a). The company also has subsidiaries and affiliates in China, Egypt, Japan, India, the Netherlands, the Republic of Korea, Singapore, the United Arab Emirates, the United Kingdom and the United States as well as other operations further afield (Saudi Aramco, n.d.).

Despite already holding reserves of 261 billion barrels of oil and 294 trillion standard cubic feet of gas, Saudi Aramco is investing heavily in exploration with a record number of drilling and production rigs in use in 2014 (Atanasova, 2015a). In 2014 the company discovered eight new oil and gas fields, the most in its history, taking its total to 129 and resulting in the largest reserves ever recorded (Saudi Aramco, 2015a). In line with company targets of maintaining current oil production levels and increasing gas production, Saudi Aramco is commencing a range of on- and offshore exploration and development activities for conventional and unconventional sources (EIA, 2015b; Saudi Aramco, 2015a; Atanasova, 2015b).

In 2014 Saudi Aramco announced that it would spend \$100 billion on expanding its refining activities domestically and internationally, with the aim of becoming the largest refiner in the world in the coming years (MEES, 2014; Reuters, 2015d). As well as its substantial interests in overseas refineries, Saudi Aramco has overseas R&D Centres and Technology Offices in the United States, the United Kingdom, the Netherlands, France, China and South Korea (Saudi Aramco, 2015a).

The company also has significant investments in oil and gas transportation networks. In 2014 the company completed projects including the upgrade of a platform at the Ras Tanura Sea Island Terminal, design work to recommission the Al-Mu'ajjiz Terminal, and three pipeline projects (Saudi Aramco, 2015a). Since 1990, Saudi Aramco's pipeline network has nearly doubled and the company aims to increase this by a further 31% by 2020 (ibid.).

Saudi Aramco is also investing in a carbon capture and storage (CCS) project linked to enhanced oil recovery at its Uthmaniyah field, which is due to start in 2015 (Saudi Aramco, 2015b).

Until recently, the Ministry of Petroleum and Mineral Resources (MPMR) and the Supreme Council for Petroleum and Minerals (SCPM) had oversight of Saudi Arabia's oil and gas sector and of Saudi Aramco's operations (Lahn and Stevens, 2011; Critchlow, 2015). However, the SCPM was dissolved earlier this year and has since been replaced by the Saudi Aramco Supreme Council, a move that has also separated the company from MPMR (Reuters, 2015f). While there was effective transparency between Saudi Aramco and the government through the SCPM, detailed or disaggregated information relating to Saudi Aramco's investments, revenues and tax payments is not available to wider society or many other parts of government (World Bank, 2007). In light of this, the best estimates we have for government support for fossil fuel production through SOE investment come

from the amount Saudi Aramco invested in projects. In 2013 and 2014 material procurement by Saudi Aramco was \$8.4 billion and \$5.1 billion, respectively, while the values for contract procurement totalled \$33 billion and \$43 billion (Saudi Aramco, 2015a). Taking these together, Saudi Aramco's estimated annual investment in oil and gas production in 2013 and 2014 averaged \$45 billion.

The Saudi Electric Company (SEC) is 80% government-owned and oversees the electricity network in the country, which is almost entirely powered by oil and gas. A number of ownership arrangements are in place, including generating plants that are owned outright by SEC, plants that are jointly owned by SEC and private partners, and plants that are owned by other smaller SOEs (e.g. the Saline Water Conservation Corporation) or companies where the state holds a minority stake (e.g. through its partial ownership of ACWA Power via PIF and the Saudi Pension fund which together own 16.7% of the company's stock) (Arabian Business, 2015; Reuters, 2015c; IFC, n.d.).

Although the Tenth Development Plan (2015–2019) includes an objective of developing renewable energy sources for use in electricity generation and water desalination, a project to establish solar-powered electricity in the country has been delayed by eight years (from 2032 to 2040), which, combined with the fact that SEC's current generation projects are all oil- or gas-fired, suggests power production will remain dependent on fossil fuels for the foreseeable future (MEP, 2014; Dipaola, 2015). To put this in context, between 2013 and 2014 SEC transferred an annual average of \$17 billion to Saudi Aramco to cover fuel costs, which remain significant in spite of the fact that SEC benefits from below-market fuel prices (SEC, 2015). In an attempt to increase export revenues, there has been a push to reduce the use of crude oil and its derivatives in power generation in Saudi Arabia, and to shift to other energy sources, particularly natural gas, though this is in competition with other demand for the resource.

Between 2013 and 2014, the net change in value of SEC's generation assets was \$4.8 billion, which was mainly due to increased capital detailed as 'equipment and machinery' suggesting significant investment in power generation (SEC, 2015). The latest SEC annual report notes six projects with a total capacity of more than 14 GW under construction though no data regarding specific investments could be found (ibid.).

Saudi Arabia Basic Industrial Chemicals (SABIC) is 70% state-owned and is the second largest diversified chemical company in the world with assets valued at \$85 billion (SABIC, 2015). As well as access to cheap energy in Saudi Arabia, the company benefits significantly from cheap fossil fuel inputs, which, particularly for natural gas used for fertiliser production, releases significant quantities of

carbon dioxide (SAGIA, n.d.; SABIC, 2015). Investment in the petrochemicals sector is outside of the scope of this report, so no investment by SABIC is therefore included in our estimates of SOE investment.

Public finance

Saudi Arabia has several public finance institutions that each provide some finance to fossil fuel production. Information for most institutions was incomplete. Nonetheless, finance averaging \$7.2 billion per year for fossil fuel production activities was identified, all of which was provided for downstream activities – namely, fossil fuel-based electricity generation and oil refining.

Domestic

The government of Saudi Arabia provides loans directly to a number of SOEs. SEC currently has access to interest-free loans from the government totaling approximately \$35 billion, including a \$13 billion loan agreed in 2014 'to help fund its generation projects' (SEC, n.d.; Reuters, 2014). It is likely that this loan will solely benefit fossil fuel-based electricity generation, given that all of Saudi Arabia's electricity is fossil fuelled, all of the 14 GW of ongoing capacity development is fossil fuelled, and there are no large-scale renewable energy projects or nuclear energy projects under active planning or construction in Saudi Arabia (SEC, n.d.; Dipaola, 2015; Nacet and Aoun, 2015; Reuters, 2015g).

The Public Investment Fund (PIF) is one of a number of domestic institutions responsible for providing finance for the production of fossil fuels. Detailed project data is not made publicly available for most projects, although in 2011 domestic projects financed by PIF included local refineries, petroleum products storage tanks, crude oil and petroleum distribution networks, export-oriented refineries, petrochemical factories and water and electricity projects (Ministry of Finance, 2015). PIF disbursements per year and total outstanding loans averaged \$3.5 billion and \$18 billion, respectively, from 2010 to 2014 (SAMA, 2015b). SEC holds an outstanding loan from PIF for \$662 million, though it is unclear when this loan was finalised (SEC, n.d.). PIF is also a listed investor in at least three electricity generation companies alongside ACWA and SEC, although its level of investment could not be identified (ACWA Power, n.d.).¹ The only transaction by PIF for fossil fuel production that could be identified was in 2014 for a \$206 million investment in a Saudi refinery expansion project.

PIF is also the sole shareholder of the Saudi Arabian Investment Company (also known as Sanabil al-Saudia), a sovereign wealth fund launched in 2009 with a share capital of approximately \$5.3 billion and target investment sectors

1 The companies are Shuaibah Water and Electricity Company, Jubail Water and Electric Company and Shuqaiq Water and Electric Company.

Table 2: Saudi Arabia's state-owned enterprise (SOE) investment (\$ million except where stated otherwise)

Name of SOE	Project / investment	Description	Fossil fuel sector	2013 estimate	2014 estimate	Average annual amount
Saudi Aramco	Investment	Total material and contract procurement	Oil and gas	41,443	48,047	44,745
Saudi Electric Company	Rabigh-1, Mecca	1.2 GW plant.	Oil and gas (electricity)	N/A	N/A	N/A
Saudi Electric Company	Riyadh-11, Darma, Riyadh	1.7 GW plant.	Oil and gas (electricity)	N/A	N/A	N/A
Saudi Electric Company	Qurayyah, Eastern Province	3.9 GW plant.	Oil and gas (electricity)	N/A	N/A	N/A
Saudi Electric Company	Rabigh-2, Mecca	2.1 GW plant.	Oil and gas (electricity)	N/A	N/A	N/A
Saudi Electric Company/Saudi Aramco	Fadhili	1.4 GW plant.	Oil and gas (electricity)	N/A	N/A	N/A
Saudi Electric Company/Saudi Aramco	Jazan	3.8 GW plant.	Oil and gas (electricity)	N/A	N/A	N/A
Totals						
Total SOE investment (\$ m)						44,745
Total SOE investment (Riyal m)						174,573

Sources and additional data are available in the Data Sheets that accompany each Country Study

Note: N/A indicates data was not publicly available at the time of publication.

that include both energy and chemicals (Sanabil, 2013). Aside from part-ownership of ACWA, as mentioned in the SOE section, no data on Sanabil's investment activities was available.

The Saudi Industrial Development Fund (SIDF) also does not provide detailed information on its lending activities. Data aggregated by sector suggests that the majority of its lending portfolio is dedicated to non-fossil fuel industries. However, in 2013 SIDF extended a loan valued at \$2.6 million to a project in the oil and gas sector and two projects in 2014 with a value of \$2.3 million, taking the total value of its current investments in the oil and gas sector to \$870 million (SIDF, 2014, 2015a). It is not clear over what period these investments have been made.

Saudi Arabia's National Commercial Bank (also known as AlAhli Bank or NCB) is a state-owned bank, one of the largest banks in the Arab world. Between domestic and international investments, NCB provided \$492 million in domestic finance for fossil fuel production between 2013 and 2014.

International

The Saudi Fund for Development (SFD) provides guarantees and export credit insurance services to help mainly non-oil sector exporters by covering 90% of the value of their exports. Across 2013 and 2014 support to the chemicals and plastics sectors in terms of finance and insurance averaged

\$550 million annually, although it is not possible to determine which portion is linked to fossil fuel production (SAMA, 2015a). SFD provided finance to two natural gas-fired power plants between 2013 and 2014, which amounted to an average of \$48 million in finance for fossil fuel production annually.

NCB also provided international public finance for fossil fuel production, in the form of a \$168 million loan for a refinery expansion in Oman.

Saudi Arabia also contributed to fossil fuel production via shareholdings in the multilateral development banks, including through shares in the African Development Bank and the World Bank Group institutions. Through these multilateral shares, Saudi Arabia provided support of \$69 million annually to fossil fuel production.

Saudi Arabia is also a major shareholder of the Arab Petroleum Investments Corporation (APICORP), owning a 17% stake. APICORP invests in fossil fuel-producing projects, but these investments were not covered by this analysis, and so are not included in the calculation of Saudi Arabia's public finance for fossil fuel production.

Finally, Saudi Arabia holds 2.6% of the shares in the Asian Infrastructure Investment Bank, a new international financial institution scheduled to begin operations in 2016, with \$100 billion in total capital. The Asian Infrastructure Investment Bank could be a potential source of public finance for fossil fuel production in the future.

Table 3: Saudi Arabia's public finance for fossil fuel production, 2013-2014 (\$ million except where stated otherwise)

Institution name	Coal mining	Coal-fired power	Upstream oil and gas	Oil and gas pipelines, power plants and refineries	Total fossil fuel finance 2013 & 2014	Annual avg. fossil fuel finance
Domestic						
Ministry of Finance	-	-	-	13,200	13,200	6,600
National Commercial Bank	-	-	-	492	492	246
Public Investment Fund	-	-	-	206	206	103
Subtotal domestic	-	-	-	13,898	13,898	6,949
International						
National Commercial Bank	-	-	-	168	168	84
Saudi Fund for Development	-	-	-	96	96	48
Multilateral Development Bank share	0.5	14	41	82	138	69
Subtotal international	0.5	14	41	346	402	201
Totals						
Total public finance (\$ m)						7,150
Total public finance (Riyal m)						27,896

Sources and additional data are available in the Data Sheets that accompany each Country Study.

Private companies

Private upstream oil and gas companies

No private companies are currently exploring for or producing oil and gas in Saudi Arabia. In 2003 a number of blocks were opened up to private multinational oil and gas companies in partnership with Saudi Aramco. However, poor exploration results in the so-called 'Empty Quarter' appears to have caused all operations to cease by 2014 (EIA, 2015b). In 2013 and 2014, the state-owned Bahrain Petroleum Company also produced a limited amount of oil and gas in Saudi Arabia. However, this was less than 1.5% of that produced by Saudi Aramco (Rystad Energy, 2015).

Private midstream/downstream oil and gas companies

Saudi Aramco (an SOE) owns 72% of the refining capacity in the country. The remaining portion is divided among a number of international companies that have joint ventures with Saudi Aramco including: Total (France); Sumitomo Chemical (Japan), ExxonMobil (United States); Sinopec (China); and Shell (Netherlands) (Saudi Aramco, 2015a).

Private coal companies

There is no coal production in Saudi Arabia.

Private electricity companies (fossil fuel-based)

Saudi Arabia does not have any private fossil fuel-based electricity companies.

Methodology

(for detailed methodology see Chapter 3 of main report)

This report compiles publicly available information on G20 subsidies to oil, gas and coal production across G20 countries in 2013 and 2014. It provides a baseline to track progress on the phase-out of such subsidies as part of a wider global energy transition. It uses the following terms and their definitions.

Production subsidies

Government support for fossil fuel production. For the purpose of this country study, production subsidies include national subsidies, investment by state-owned enterprises (SOEs) (domestic and international) and public finance (domestic and international) specifically for fossil fuel production.

Fossil fuel production

Production in the oil, gas and coal sectors. This includes access, exploration and appraisal, development, extraction, preparation, transport, plant construction and operation, distribution and decommissioning. Although subsidies for the consumption of fossil fuels can support their production, this report excludes such subsidies as well as subsidies for the consumption of fossil fuel-based electricity.

National subsidies

Direct spending, tax and duty exemptions and other mechanisms (such as forms of capacity markets) provided by national and sub-national governments to support fossil fuel production. Normally, the value assigned for a national subsidy is the number provided by the government's own sources, by the OECD, or by an independent research institution.

State-owned enterprise (SOE) investment

A SOE is a legal entity created by a government to undertake commercial activities on its behalf. SOEs can be wholly or partially owned by governments.

It is difficult to identify the specific component of SOE investment that constitutes a subsidy, given the limited publicly available information on government transfers to SOEs (and vice-versa), and on the distribution of investment within their vertically integrated structures. Therefore, this report provides data on total investment by SOEs in fossil fuel production (where this information is available from the company), which are presented separately from national subsidies.

For the purpose of this report, 100% of the support provided to fossil fuel production through domestic and international investment by an SOE is considered when a government holds >50% of the shares.

Public finance

Public finance includes the provision of grants, equity, loans, guarantees and insurance by majority government-owned financial institutions for domestic and international fossil fuel production. Public finance is provided through institutions such as national and multilateral development banks, export credit agencies and domestic banks that are majority state-owned.

The transparency of investment data for public finance institutions varies. Assessing the portion of total financing that constitutes a subsidy requires detailed information on the financing terms, the portion of finance that is based directly on public resources (rather than raised on capital markets) or that depends on the institutions' government-linked credit rating. Few of the institutions assessed allow public access to this information. Therefore, we report the total value of public finance from majority government-owned financial institutions for fossil fuel production separately from 'national subsidy' estimates.

For the purpose of this report, 100% of the support provided to fossil fuel production through domestic and international financing is considered when a government holds >50% of the shares in the bank or financial institution.

References

- ACWA Power (n.d.) *Our Investments: Overview ACWA Power*. (www.acwapower.com/our-investments.html)
- Al Darwish, A., Alghaith, N., Behar, A., Callen, T., Deb, P., Hegazy, A., Khandelwal, P., Pant, M., Qu, H. (2015) *Saudi Arabia: Tackling Emerging Economic Challenges to Sustain Growth*. Washington, D.C.: International Monetary Fund (IMF). (<https://www.imf.org/external/pubs/ft/dp/2015/1501mcd.pdf>)
- Arabian Business (2015) 'Saudi Electricity Company'. ArabianBusiness.com, 11 August. (www.arabianbusiness.com/companies/saudi-electricity-company-66578.html)
- Atanasova, S. (2015a) 'Saudi Arabia ramps up rig count'. *Arabian Oil and Gas*, 22 March. (www.arabianoilandgas.com/article-13745-saudi-arabia-ramps-up-rig-count/)
- Atanasova, S. (2015b) 'Aramco explores Red Sea for gas with seismic study'. *Arabian Oil and Gas*, 10 February. (www.arabianoilandgas.com/article-13552-aramco-explores-red-sea-for-gas-with-seismic-study/)
- Atanasova, S. (2015c) 'Saudi Arabia cuts Asian crude prices to record low'. *Arabian Oil and Gas*, 9 February. (www.arabianoilandgas.com/article-13543-saudi-arabia-cuts-asian-crude-prices-to-record-low/)
- Bailey, T. (2015) 'Saudi troughs into bonds to fight oil price pain'. *World Finance*, 7 August. (www.worldfinance.com/home/saudi-troughs-into-bonds-to-fight-oil-price-pain)
- Bast, E., Makhijani, S., Pickard, S. and Whitley, S. (2014) 'The Fossil Fuel Bailout: G20 Subsidies for Oil, Gas, and Coal Exploration'. London: Overseas Development Institute. (<http://www.odi.org/publications/8678-fossil-fuel-bailout-g20-subsidies-oil-gas-coal-exploration>)
- Carey G., and Almashabi, D. (2014) 'Saudi Arabia's 2015 Budget Will Finance "Massive" Projects'. Bloomberg, 17 December. (www.bloomberg.com/news/articles/2014-12-17/saudi-arabia-s-2015-budget-to-fund-massive-projects-spa-says)
- Charles, C., Moerenhout, T., and Bridle, R. (2014) *The Context of Fossil-Fuel Subsidies in the GCC Region and Their Impact on Renewable Energy Development*. Geneva: Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD). (www.iisd.org/gsi/sites/default/files/ffs_gcc_context.pdf)
- Critchlow, A. (2015) 'Saudi Arabia splits state oil company'. *The Telegraph*, 3 May. (www.telegraph.co.uk/finance/oilprices/11580636/Saudi-Arabia-splits-state-oil-company.html)
- Dipaola, A (2015) 'Saudi Arabia Delays \$109 Billion Solar Plant by 8 Years'. Bloomberg Business, 20 January. (www.bloomberg.com/news/articles/2015-01-20/saudi-arabia-delays-109-billion-solar-plant-by-8-years)
- Dipaola, A. and Shenk, M. (2015) 'Saudi Arabia Deepens Asia Oil Discount to Record Low'. Bloomberg Business, 6 February. (www.bloomberg.com/news/articles/2015-02-06/saudis-deepen-asia-oil-discount-to-a-a-record-low)
- Energy Information Administration (EIA) (2015a) *Energy & Financial Markets: What Drives Crude Oil Prices. An analysis of 7 factors that influence oil markets, with chart data updated monthly and quarterly*. Washington, D.C.: EIA. (www.eia.gov/finance/markets/supply-opec.cfm)
- EIA (2015b) *Saudi Arabia Country Analysis*. Washington, D.C.: EIA. (www.eia.gov/beta/international/analysis_includes/countries_long/Saudi_Arabia/saudi_arabia.pdf)
- El Katiri, L. and Fattouh, B. (2015) *A brief political economy of energy subsidies in the Middle East*. Oxford: The Oxford Institute for Energy Studies. (www.oxfordenergy.org/wpcms/wp-content/uploads/2015/02/MEP-11.pdf)
- Ernst and Young (2015) *Global oil and gas tax guide 2015*. ([www.ey.com/Publication/vwLUAssets/EY-2015-Global-oil-and-gas-tax-guide/\\$FILE/EY-2015-Global-oil-and-gas-tax-guide.pdf](http://www.ey.com/Publication/vwLUAssets/EY-2015-Global-oil-and-gas-tax-guide/$FILE/EY-2015-Global-oil-and-gas-tax-guide.pdf))
- Ernst and Young (2014) *Corporate taxation in the Middle East and North Africa 2014*. (http://vae.ahk.de/fileadmin/ahk_vae/2015/01_Laenderportal/Oman/CT-MENA_2014_Final_v32.pdf)
- Evans-Pritchard, A. (2015) 'Saudi Arabia may go broke before the US oil industry buckles'. *The Telegraph*, 5 August. (www.telegraph.co.uk/finance/oilprices/11768136/Saudi-Arabia-may-go-broke-before-the-US-oil-industry-buckles.html)
- Financial Times (2015) 'Saudi Aramco ramps up unconventional gas funding'. *Financial Times*, 27 January. (www.ft.com/fastft/267952/saudi-aramco-ramps-up-unconventional-gas-development)
- Forbes (2015) *The World's 25 Biggest Oil Companies*. (www.forbes.com/pictures/mef45ggld/1-saudi-aramco-12-5-million-barrels-per-day/)
- International Finance Corporation (IFC) (n.d.) *ACWA Equity: Summary of Investment Information*. Washington D.C.: International Finance Corporation. (<https://ifcndd.ifc.org/ifcext/spiwebsite1.nsf/78e3b305216fcd85257a8b0075079d/ee61f762e8ce719d85257bec0062766d?opendocument>)
- International Monetary Fund (IMF) (2015a) *Regional Economic Outlook - Update*. Washington, D.C.: IMF. (www.imf.org/external/pubs/ft/reo/2015/mcd/eng/pdf/mreo0515.pdf)
- IMF (2015b) Press release 15/383: 'IMF Executive Board Concludes 2015 Article IV Consultation with Saudi Arabia'. 17 August. Washington, D.C.: IMF. (<https://www.imf.org/external/np/sec/pr/2015/pr15383.htm>)
- Jadwa Investment (2014) *Saudi Arabia's 2015 Fiscal Budget*. Riyadh: Jadwa Investment. (www.jadwa.com/en/download/2015-budget/2015-saudi-budget)

- Kelly, C. (2015) 'Saudi Petrochemical profits fall 31%'. *Arabian Oil and Gas*, 2 August. (www.arabianoilandgas.com/article-14339-saudi-petrochemical-profits-fall-31/)
- Körner, K. (2015) 'Subsidy cuts in the UAE: A model for the GCC?' Deutsche Bank Research Briefing, Frankfurt am Main. (https://www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD000000000359704/Subsidy+cuts+in+the+UAE+-+A+model+for+the+GCC%3F.PDF)
- Krane, J. (2014) 'Navigating the perils of energy subsidy reform in exporting countries.' Baker Institute Policy Report No 58, James A. Texas, USA: Baker III Institute for Public Policy of Rice University. (<http://bakerinstitute.org/files/8679/>)
- Ladislav, S.O., Leed, M., Walton, M.A. (2014) 'New Energy, New Geopolitics: Background Report 2', *Geopolitical and National Security Impacts*. Washington, D.C.: Center for Strategic & International Studies. (http://csis.org/files/publication/140605_Ladislav_NewEnergyNewGeopolitics_background2_Web.pdf)
- Lahn, G. and Stevens, P. (2011) *Burning oil to keep cool. The hidden energy crisis in Saudi Arabia*. London: Chatham House. (https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/1211pr_lahn_stevens.pdf)
- Middle East Economic Survey (MEES) (2015) 'Weekly Energy, Economic & Geopolitical Outlook', *Middle East Economic Survey* (MEES), 7 August, 58(32). (<https://www.mees.com/> (Behind paywall))
- Middle East Economic Survey (MEES) (2014) 'Cost Blow-Out For NZ Steam Injection Project', *Middle East Economic Survey* (MEES) February 14. Cited in EIA, 2015.
- Ministry of Commerce and Industry (2015) *Incentives for Investment in the Kingdom*. (www.mci.gov.sa/en/AboutKingdom/Pages/InvestmentInKingdom.aspx?AspxAutoDetectCookieSupport=1)
- Ministry of Environment and Planning (MEP) (2014) *Objectives of the Tenth Development Plan (2015–2019)*. Riyadh: MEP. (www.mep.gov.sa/inetforms/themes/clasic/file/download.jsp?sessionId=1B86BCA30F9E642140A01F367BD27FD4.beta?DownloadTranslation.ObjectID=1351&FileAttribute=DownloadTranslation.Content&TableName=DownloadTranslation)
- Ministry of Environment and Planning (MEP) (2010) *Ninth Development Plan (2010–2014)*. Riyadh: MEP.
- Ministry of Finance (2015) *Public Investment Fund (PIF)*. (www.mof.gov.sa/english/Pages/investment.aspx)
- Ministry of Finance (2014) Press Release: 'Recent Economic Development and Highlights Fiscal Years 1435/1436 (2014) & 1436/1437 (2015)'. (<https://www.mof.gov.sa/English/DownloadsCenter/Budget/Ministry's%20of%20Finance%20statment%20about%20the%20national%20budget%20for%202015.pdf>)
- Nachet, S. and Aoun, M.-C. (2015) 'The Saudi electric sector: pressing issues and challenges'. Institut français des relations internationales (Ifri). (https://www.ifri.org/sites/default/files/atoms/files/note_arabie_saoudite_vf.pdf)
- Nereim, V. (2015) '\$50 Oil Puts Saudi Budget Deficit Beyond Reach of Spending Cuts', Bloomberg Business, 16 September. (www.bloomberg.com/news/articles/2015-09-16/-50-oil-puts-saudi-budget-deficit-beyond-reach-of-spending-cuts)
- Organization of the Petroleum Exporting Countries (OPEC) (2015) *Annual Statistical Bulletin*. Vienna: OPEC. (www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2015.pdf)
- Raval, A. (2015) 'Kingdom built on oil foresees fossil fuel phase-out this century'. *Financial Times*, 21 May.
- Reuters (2015a) 'Saudi Aramco starts testing parts of Wasit Gas Programme'. *Gulf Business*, 15 April. (<http://gulfbusiness.com/2015/04/saudi-aramco-starts-testing-parts-wasit-gas-programme/#.VcnDrRNViko>)
- Reuters (2015b) 'UAE savings from fuel price reform to swell in coming years – IMF'. Reuters, 4 August. (www.reuters.com/article/2015/08/04/emirates-budget-oil-idUSL5N10F3SR20150804)
- Reuters (2015c) 'Saudi government studying Saline Water Conversion Corporation privatization'. Reuters, 12 January. (www.reuters.com/article/2015/01/12/saudi-ipo-swcc-idUSL6N0UR10V20150112)
- Reuters (2015d) 'Saudi Arabia rewrites its oil game with refining might'. Reuters, 22 May. (www.reuters.com/article/2015/05/22/saudi-refining-evolution-idUSL5N0YC4AI20150522)
- Reuters (2015e) 'Saudi Aramco names leader in struggle for oil market share'. Reuters, 17 September. (www.reuters.com/article/2015/09/17/energy-saudi-aramco-idUSL5N11N04L20150917)
- Reuters (2015f) 'Saudi Aramco gets new supreme council headed by deputy crown prince – statement', 1 May. (www.reuters.com/article/2015/05/01/saudi-oil-aramco-idUSL5N0XS0LR20150501)
- Reuters (2015g) 'Disagreements over scope and ownership delay Saudi solar projects' 8 September. (<http://uk.reuters.com/article/2015/09/08/saudi-solar-idUKL5N10Y0OU20150908>)
- Reuters (2014) 'Saudi Electricity Co gets \$13.2 bln interest-free govt loan'. 20 March. (www.reuters.com/article/2014/03/20/saudielectricity-loans-idUSL6N0MH3U920140320)
- Rystad Energy (2015) 'Rystad Energy UCube Upstream Database'. Oslo: Rystad Energy. (www.rystadenergy.com/Databases/UCube)
- SABIC (2015) *Annual Report: 2014*. Saudi Arabian Basic Industries Company. (www.sabic.com/system/aspx/)

- ImageHandler.aspx?file=/corporate/en/images/SABIC-annual-report-2014-english.pdf)
- SAGIA (n.d.) *Fertilizers. Saudi Arabian General Investment Authority*. (www.sagia.gov.sa/en/Key-sectors1/Energy/Fertilisers-/)
- SAMA (2015a) *Fifty First Annual Report 1436H*. Saudi Arabian Monetary Agency. (www.sama.gov.sa/en-US/EconomicReports/AnnualReport/5600_R_Annual_En_51_Apx.pdf)
- SAMA (2015b) *Yearly Statistics*, publish date: 18 June. Saudi Arabian Monetary Agency. (www.sama.gov.sa/en-US/EconomicReports/Pages/YearlyStatistics.aspx)
- Sanabil (2013) *Investments: Target Sectors*. (www.sanabil.sa/en/whatwedo/Pages/TargetSectors.aspx)
- Saudi Aramco (2015a) *Annual Review 2014*. (www.saudiaramco.com/content/dam/Publications/annual-review/2014/AR-2014-SaudiAramco-English-full.pdf)
- Saudi Aramco (2015b) *Launching the Kingdom's first carbon capture project*, 29 July. (www.saudiaramco.com/en/home/news-media/news/capturing-carbon.html)
- Saudi Aramco (n.d.) *Who we are*. Saudi Aramco. (www.saudiaramco.com/en/home/about/who-we-are.html)
- Saudi Electric Company (SEC) (n.d.) 'Facilities' SEC. (<https://www.se.com.sa/en-us/invshareholder/Pages/Facilities.aspx>)
- SEC (2015) *Annual Report: 2014*, Riyadh: Saudi Electric Company (SEC). (<https://www.se.com.sa/en-us/Pages/AnnualReports.aspx>)
- Saudi Industrial Development Fund (SIDF) (2014) *Annual Report for the Fiscal Year 1434/1435H (2013G)*, SIDF. (www.sidf.gov.sa/En/MediaCenter/Documents/SIDF%20ANNUAL%20REPORT%202013.pdf)
- Saudi Industrial Development Fund (SIDF) (2015a) *Annual Report for the Fiscal Year 1435/1436H (2014G)*, SIDF. (www.sidf.gov.sa/En/MediaCenter/Documents/SIDF%20AR2014%20ENGLISH.pdf)
- Saudi Industrial Development Fund (SIDF) (2015b) 'The Saudi Industrial Development Fund approved 6 6 industrial Loans totaling S.R. 3.2 billion'. SIDF. (www.sidf.gov.sa/En/MediaCenter/news/Pages/Fund_News201525.aspx)
- The Economist (2015) 'A day of reckoning for fuel prices in the Gulf: The Emirates move to improve its federal budget'. *The Economist*, 5 August. (www.economist.com/news/middle-east-and-africa/21660490-emirates-move-improve-its-federal-budget-day-reckoning-fuel-prices-gulf#Jj1Z7EgDPjzC7XO0.99)
- US Department of State (2015) *Saudi Arabia Investment Climate Statement 2015*. (www.state.gov/documents/organization/241938.pdf)
- UK Export Finance (2013) Press Release: 'Massive boost to British industry in biggest ever petrochemical project', 21 June. UK Export Finance. (<https://www.gov.uk/government/news/massive-boost-to-british-industry-in-biggest-ever-petrochemical-project>)
- World Bank (2007) *Investing in Oil in the Middle East and North Africa: Institutions, Incentives and the National Oil Companies*. World Bank Report 40405-MNA. Washington D.C.: World Bank. (www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2007/09/19/000020953_20070919115824/Rendered/PDF/404050MNA.pdf)



Overseas Development Institute
 203 Blackfriars Road
 London SE1 8NJ
 Tel +44 (0)20 7922 0300
 Fax +44 (0)20 7922 0399
www.odi.org
info@odi.org



Oil Change International
 714 G Street SE Suite 202
 Washington, DC 20003 USA
 Tel: +1 202 518 9029
 Fax: +1 202 330 5952
www.priceofoil.org
info@priceofoil.org

Readers are encouraged to reproduce material for their own publications, as long as they are not being sold commercially. As copyright holders, ODI and OCI request due acknowledgement and a copy of the publication. For online use, we ask readers to link to the original resource on the ODI website. The views presented in this paper are those of the author(s) and do not necessarily represent the views of ODI or OCI. © Overseas Development Institute and Oil Change International 2015. This work is licensed under a Creative Commons Attribution-NonCommercial Licence (CC BY-NC 4.0).

ODI is the UK's leading independent think tank on international development and humanitarian issues. Oil Change International is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition towards clean energy.