

Increasing Taxes on Fossil Fuel Consumption

Increase taxation of fossil fuel consumption

Support clean energy

FEATURED COUNTRIES



SAUDI ARABIA
CHINA
SOUTH AFRICA

Key numbers

USD 5.3 trillion globally in 2015

This is the estimated under-taxation amount of fossil fuel use in 2015 (Coady, Parry, Sears, & Shang, 2015) through non-internalization of negative impacts such as air pollution, traffic congestion and climate change.

USD 16 billion in China

This is the value of revenues raised through the electricity surcharge in 2016.

FEATURED REFORMS AND THEIR PERIOD

- Introduction and increase of Renewable Electricity Surcharge in China from 2006 to present
- The evolution of the Electricity Levy, Fuel Tax, Road Traffic Levy and the Carbon Dioxide Tax on New Vehicles in South Africa
- The introduction of a value-added tax (VAT) in Saudi Arabia in 2018

STAGE OF FOSSIL FUEL LIFE CYCLE

- Consumption

SECTORS AFFECTED BY REFORM

- Electricity generation
- Households
- Transport

Context

All taxes on fossil fuel consumption play a major role in determining their end price. If their rates vary for different energy sources, taxes can also distort the level playing field for different fuels and energy technologies and promote fuel switching. Carbon taxes are the tools most frequently referred to in the context of climate change, including in many countries' Nationally Determined Contributions. But in fact, economy-wide taxes such as VATs, excises and other levies on energy use may have a much bigger effect on the end prices of different fuel types. The recent developments in China, South Africa and Saudi Arabia serve as illustrations of taxes on fossil fuel consumption as a tool to change the balance between fossil fuels and clean energy.

Drivers of reform

The main policy objectives for increasing taxes on fossil fuel consumption are the need to raise revenues (that are sometimes earmarked for specific purposes), the desire to apply the “polluter pays” principle or a combination of these two objectives. In Saudi Arabia, the main motivation behind the introduction of the VAT on all goods, including energy, was the need to decrease the budget deficit. In China, electricity surcharges were introduced to mobilize finance for renewables. In South Africa, taxes on fossil fuel consumption serve both fiscal and regulatory functions.

Changes in consumption taxes

Saudi Arabia has long provided residents with tax-free consumption and subsidized energy. In the period of low oil prices after 2014, the government faced budget deficits of 14.8 per cent, 12.8 per cent and 8.9 per cent in 2015, 2016 and 2017, respectively (Trading Economics, 2018). This created pressure to raise revenues to balance the budget. On January 1, 2018, a VAT of 5 per cent was introduced alongside a freeze in major building projects financed by government and a pay restraint for senior government officials. In this case, as the newly introduced VAT did not favour one fuel type over another, the main impact was to raise revenues, not encourage fuel switching.

China has introduced a charge on electricity consumption to fund structural change in the sector. China's 2006 Renewable Energy Law stipulated that the additional cost of integrating renewable energy sources should be shared across

the electricity system. The revenues from the charge are returned to the power distribution companies and utilities to reflect the higher prices they face for procuring renewable energy. The renewable energy premium was originally introduced in 2006 at CNY 0.001/kWh, equivalent to USD 0.00015. By January 2016 the level rose to CNY 0.019/kWh (Coady, Parry, Sears, & Shang, 2017).

In **South Africa**, taxes on fossil fuel consumption include the Fuel Tax, Road Traffic Levy and the carbon dioxide tax in the transport sector as well as the Electricity Levy in the electricity sector. The Road Traffic Levy is collected on behalf of the road accident fund, which compensates road users for losses or damage associated with road use. The Electricity Levy was introduced in 2009 and the carbon dioxide tax was introduced in 2010. The rates of these two taxes have gradually increased over time (National Treasury, Republic of South Africa, 2017). South Africa also charges a carbon dioxide tax, an environmental levy on new motor vehicles with the objective “to influence the composition of South Africa's vehicle fleet to become more energy efficient and environmentally friendly” (National Treasury Republic of South Africa, 2017). It is reported that South Africa plans to introduce a carbon tax in 2020 (South African, 2018).

Did the reform generate fiscal or financial space? How was it used?

It is early to assess the revenues raised by the introduction of the VAT in **Saudi Arabia**. However, its introduction marks a significant step toward moving from a rentier state to a more balanced mix of revenues (Gulf News, 2017).

In 2016 **China**'s Renewable Energy Surcharge was raised to CNY 0.019 per kWh on each unit of electricity sold. Electricity consumption in China was 5,898.89 TWh in 2016 (Braathen, Borkey, Ravazzi, & Steenblik, 2017). Assuming a 100 per cent collection rate, the revenues generated from the surcharge were CNY 112 billion (USD 16 billion), around 0.7 per cent of total tax revenues in 2016 (State Council, 2017).

These revenues substantially moved the burden of the renewable energy transition from the national budget to consumers, creating fiscal space for the government. Revenues from the surcharge are used to fund the system of feed-in tariffs. The level of the applied surcharge is designed to cover the costs of the subsidized portion of electricity from renewable energy and is monitored and revised by the pricing department of the National Development and Reform Commission (NDRC) (Ming, Ximei, Na, & Song, 2013). In addition, it is reported that China plans to place charges of CNY 46 billion (USD 6.6 billion) on existing coal plants and allocate these revenues to fund the resettlement of former coal workers (Huffpost, 2018). The central government of China has earmarked CNY 100 billion (USD 15 billion) to deal directly with the layoffs in the coal and steel sectors, assisting workers affected by the transition away from coal (Huffpost, 2018).

In financial year 2016/17, **South Africa**'s revenues from the electricity levy were ZAR 8,458 million (USD 563 million); the carbon dioxide tax on new vehicles was ZAR 1,209 million (USD 80.5 million); and the fuel levy was ZAR 62,779 million (USD 4,178 million). Total environmental consumption tax revenues in South Africa were ZAR 72,446 million (USD 4,821 million). Total tax revenues were ZAR 1,144,081 million (USD 76,139 million), so these taxes accounted for approximately 6 per cent of total tax revenues in South Africa (South African Revenue Service, 2017).

Watching brief

Conflicting systems: In the case of blanket taxes or levies on all types of electricity, as in force in **China**, it is difficult for consumers to switch to other energy sources, so consumers are left with the option either to pay more, further contributing to funding the delivery of the renewable energy targets, or invest in domestic energy-efficiency technologies, such as energy-saving lightbulbs. Both of these outcomes further the government's objectives. The renewable energy surcharge has been a key mechanism for funding the deployment of renewable energy in China. In 2018 a new system of renewable energy certificates and obligations placed on utilities was introduced (Gulf News, 2017). It remains to be seen how these two systems will operate together.

Oil price increases: In **Saudi Arabia**, a period of low oil prices and budget deficits led to pressure to balance the books and raise revenues from non-oil sources. With oil prices back to above USD 80 per barrel, as of October 2018, there is some uncertainty over whether the commitment to taxing consumption will endure (Oilprice.com, 2018).

Other countries in and outside of the G20 that implemented similar reforms

The evolution of taxes on fossil fuel use, including the introduction of carbon taxes, occurs in many countries. Leaders in this area include:

- The EU – Since 1980 transport fuel prices in the EU have averaged around 60 per cent tax (European Environment Agency, 2017). Tax on fuel in the EU is mainly in the form of excise duties.
- Global – Carbon taxes and trading schemes are now estimated to cover approximately 20 per cent of global carbon emissions through 51 initiatives, including 25 emission trading schemes and 26 carbon taxes. Some of the higher effective prices include USD 139 per tonne in Sweden, USD 101 per tonne in Switzerland, USD 77 per tonne in Finland and USD 64 per tonne in Norway (Goyal et al., 2018).

Sources

Braathen, A., Borkey, P., Ravazzi, A., & Steenblik, R. (2017). Environmental fiscal reform: Progress, prospects and pitfalls. Retrieved from <http://www.oecd.org/tax/tax-policy/environmental-fiscal-reform-G7-environment-ministerial-meeting-june-2017.pdf>

European Environment Agency. (2017). Transport fuel prices and taxes. Retrieved from <https://www.eea.europa.eu/data-and-maps/indicators/fuel-prices-and-taxes/assessment-7>

World Bank. (2018). *State and trends of carbon pricing 2018*. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/29687/9781464812927.pdf?sequence=5&isAllowed=y>

Gulf News. (2017, February 12). GCC nations aiming for simultaneous VAT adoption in January – UAE official. Retrieved from <https://gulfnews.com/business/economy/vat/gcc-nations-aiming-for-simultaneous-vat-adoption-in-january-uae-official-1.1977100>

Huffpost. (2018). China plans to lay off millions of state workers: Report. Retrieved from https://www.huffingtonpost.com/entry/china-lay-off-workers-curb-pollution_us_56d5e8c0e4b03260bf78453e

International Energy Agency. (2017). Renewable Electricity Surcharge: China. Retrieved from <https://www.iea.org/policiesandmeasures/pams/china/>

Coady, D., Parry, I., Sears, L., & Shang, B. (2015). *How large are global energy subsidies?* (WP/15/105). Washington, DC: IMF. Retrieved from <https://www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf>

Ming, Z., Ximei, L., Na, L., & Song, X. (2013). Overall review of renewable energy tariff policy in China: Evolution, implementation, problems and countermeasures. *Renewable and Sustainable Energy Reviews*, 25, 260–271. doi: 10.1016/J.RSER.2013.04.026

National Treasury, Republic of South Africa. (2017). 2017 tax statistics. Retrieved from <http://www.treasury.gov.za/publications/taxstatistics/default.aspx>

Oilprice.com. (2018). Crude oil prices today. Retrieved from <https://oilprice.com/>

South African. (2018, February 21). Carbon tax is on its way to South Africa: Here's what you need to know. Retrieved from <https://www.thesouthafrican.com/carbon-tax-sa-budget-speech-2018/>

South African Revenue Service. (2017). 2017 tax statistics. Retrieved from www.sars.gov.za/about/sataxsystem/pages/tax-statistics.aspx

State Council. (2017, January 24). China's fiscal revenue grows 4.5% in 2016. Retrieved from http://english.gov.cn/archive/statistics/2017/01/24/content_281475550097250.htm

Trading Economics. (2018). Saudi Arabia Government Budget 1969–2018. Retrieved from <https://tradingeconomics.com/saudi-arabia/government-budget>