

Climate change and trade risk: South Africa's trade with China

SUMMARY

Exports to China have fluctuated between 9% and 12% of South Africa's exports between 2010 and 2020. South Africa's main exports to China comprise metal products. China is the largest emitter of greenhouse gas (GHG), for both production and consumption. This stems mainly from coal-based electricity generation and mining. While both China's domestic and foreign policies depict a leniency towards coal-fired power generation, the country is a leading global investor in renewable energy production both domestically and abroad. At the centre of China's climate change regulation is the issuance and monitoring of energy efficiency standards, particularly for cars. This brief is based on a comprehensive review of China's climate change policy framework in relation to industries, [available here](#), as well as a review of South Africa's climate and trade risks, [available here](#).

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info@tips.org.za
+27 12 433 9340
www.tips.org.za

Country Brief by
Kudzai Mataba

SOUTH AFRICA'S EXPORT BASKET TO CHINA

In 2013, exports to China accounted for 13% of South African exports, and declined to 9% in 2014, when it stabilised, with a slight peak to 10% in 2017 and 11% in 2019.

South Africa's top five exports to China combined constitute 78% of the South Africa's export to China. In 2019, iron ore comprised 35% of exports to China, followed by manganese (21%), chromium

ores (11%), ferro-alloys (9%) and niobium, tantalum, vanadium and zirconium (2%).

There was a sharp fall in the export value of iron ore from 2014, attributable to low Chinese growth, which impacted output and demand for iron ore. Since 2016, iron ore exports have been on an upward trend (Stanwa, 2015).

South Africa's export to China are overall highly carbon intensive. This is particularly the case for mining and metal products, which account for the bulk of South African exports to China.

Figure 1: South Africa's exports to China (left)

Figure 2: Mining export per country per carbon intensity, share of exports and export value (right)

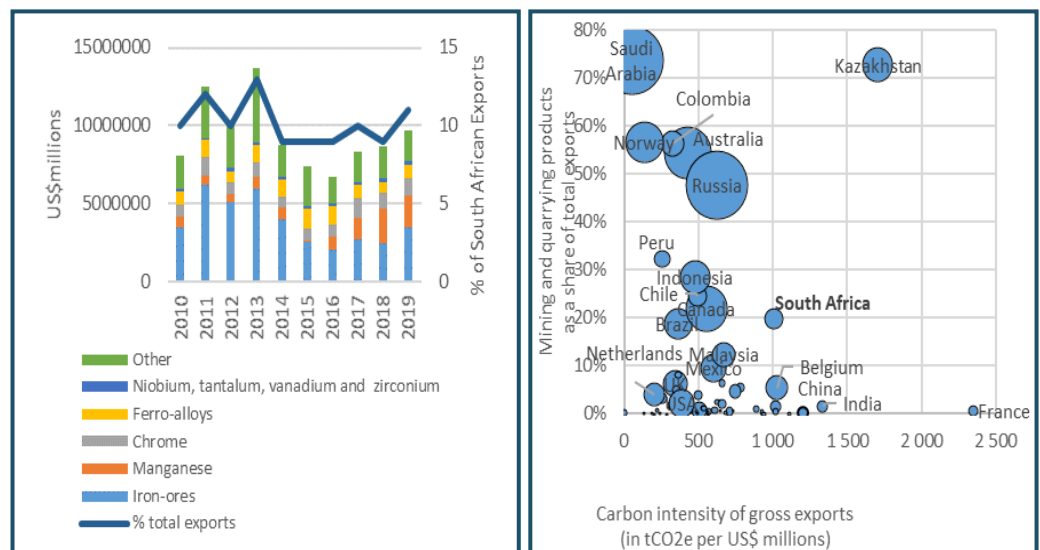


Figure 1 source: Author, based on data from Trade Map, dataset on bilateral trade between South Africa and China, downloaded from <https://www.trademap.org> in June 2020.

Figure 2 source: Montmasson-Clair, 2020, based on data from the OECD, dataset on carbon dioxide emissions embodied in international trade, downloaded from <https://stats.oecd.org> in March 2020.

Figure 2 note: bubbles indicate the relative value of countries' mining and quarrying export in US\$.

China's climate change policies have been driven primarily by domestic considerations that include a growing energy demand, severe air pollution problems and industrial restructuring.

INDUSTRY-RELATED CLIMATE CHANGE LEGISLATION IN CHINA

China is the world's largest emitting country, accounting for more than a quarter of global annual GHG emissions. The country has adopted an inconsistent iron-fist approach to climate change regulation. Policies are tough for some sectors (such as energy efficiency for motor vehicles and buildings), yet leniently enforced for production facilities.

China's climate change policies have been driven primarily by domestic considerations that include a growing energy demand, severe air pollution problems, and industrial restructuring as production is shifting to higher value-added and lighter industries, such as robotics and aerospace under its Made in

China 2025 initiative. This policy aims to make China a dominant global high-tech manufacturing hub by 2025. China has also faced international pressure to address climate change. The global public outcry in recent years against air pollution has given urgency to the need for a cleaner growth path (Williams, 2014).

Until recently, the key policies relevant to climate change focused on energy efficiency and energy supply. In November 2009, China committed to cutting its GHG emissions by between 40 and 45% per unit of gross domestic product from 2005 to 2020.*

**In a new element beyond the 2015 US-China deal, Beijing said it would cut its CO² emissions per unit of gross domestic product by 60 percent to 65 percent from 2005 levels by 2030. That would deepen a 40 percent to 45 percent cut already set by Beijing for 2020 (Ponthus, 2015).*

Table 1: China's key climate change policy instruments in relation to industries

POLICY NAME	CORE GOALS OF THE POLICY	COSTS OF POLICY ADAPTATION	PENALTIES FOR LACK OF CONFORMANCE TO POLICY
Energy Conservation Law	Energy efficiency – This law aims to strengthen energy conservation, particularly for key energy-using entities, promote the efficient use of energy and the adoption of energy conservation technology. The law requires the government to encourage and support the application of renewable energy in various areas.	An energy management regime is prescribed for key energy-using entities. Regulated plants must fulfil industry-specific and region-specific reporting and monitoring procedures that regulate overall energy consumption. Key energy-using entities must appoint professional managers for energy conservation and report on their energy use regularly to the government agency.	Products that fail to meet the compulsory standards of energy efficiency face penalties by authorities. The authorities can order a halting of business activity and confiscation of products and equipment; the imposition of a fine; and in serious circumstances, the revoking of business licences.
Law on the Prevention and Control of Atmospheric Pollution	Carbon mitigation: The law regulates pollution "caused by the burning of coal in the production of energy, industrial production, motor vehicles and vessels, dust as well as agricultural activities" by setting emission caps on these activities. Subsidiary goals include improving the energy structure, mainstreaming clean energy, reducing the coal proportion of the energy mix, and reducing pollution from coal activities.	All industrial plants are mandated to report emissions data to their local environmental protection department.	Violations or non-compliance with the law may result in fines between ¥5 000 (US\$760) and ¥1 000 000 (US\$152 000), based on severity of offense, type of entity, operation and recurrence of offense.

Source: Author, based on Hu, 2016 and Zhang, 2016.

China's climate change regulations, which look to penalise imports that do not meet prescribed energy efficiency specifications, have a strong bias towards the regulation of motor vehicles.

China has also pledged to increase the contribution of renewable energy to 15% of the country's energy mix by 2020 (and 20% by 2030). Accordingly, China accounted for almost half of the solar photovoltaic technology expansion in 2016, according to the International Energy Agency.

To give effect to China's commitments, the 12th Five Year Plan (2011-2015) was the first to set a carbon intensity target. The current 13th Five Year plan (2016-2020) has built on these commitments, in particular strengthening policies on controlling coal consumption. Subsequently, the government announced other measures, at varying stages of implementation. These include pilot emissions trading schemes; energy and coal consumption caps; carbon capture and storage projects; support for improving the efficiency of coal-fired generators; renewable energy projects; residential energy use caps; and support for smart grids and electric vehicles (Grantham Research Institute, n.d).

China is financing and building both fossil fuel and renewable energy infrastructure worldwide through the Belt and Road Initiative. China began constructing new coal-fired power capacity in 2018 after lifting a previous construction ban, bringing its total coal capacity under construction to 245 GW. In addition, of all coal-based plants under development outside of China, a quarter of capacity (102 GW) has committed or proposed funding from Chinese financial institutions and companies.

The Renewable Energy Law, established in 2005 and revised in 2009, set a national renewable energy target and provided for government financial support. It also required grid companies to foster renewable energy and establish feed-in tariffs (Timperley, 2018).

RISKS FOR SOUTH AFRICA'S EXPORTS TO CHINA

South Africa's exports to China comprise chiefly metal products, which within the context of the high-energy consumption of mining and beneficiation processes in South Africa, would normally place South African exports at risk.

However, at present, China's climate change regulations, which look to penalise imports that do not meet prescribed energy efficiency specifications, have a strong bias towards the regulation of motor vehicles. Raw materials are currently beyond the ambit of existing climate change-related regulations and are not affected. The Chinese government has made no indications that it intends to completely abandon fossil fuels as an energy source, despite increasing its commitment to international climate change regulation. This reduces South African exports to policy risks for the time being.

Chinese authorities enforce climate change regulations, inconsistently leaving transgressions unpenalised for long periods. However, when enforcement does happen, this is done strictly.

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This Country Brief forms part of a research project for the Department of Trade, Industry and Competition examining the vulnerability of South African trade to evolving climate change legislation. The research comprises a main report on *The global climate change regime and its impacts on South Africa's trade and competitiveness: A data note on South Africa's exports*; case studies on various sectors; detailed briefs that explore South Africa's trade risks with different countries; and key data in Excel format. The reports, country briefs and excel sheets are available on the TIPS website (see link).