

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

SUMMARY

South Africa's top exports to India are coal, manganese, chemical wood pulp, platinum and spark-ignition engines. India is a key export partner of South Africa, accounting for 5% of exports over the 2010 to 2019 period. India's transition towards increased consumption of domestic thermal coal and reduced thermal coal imports, combined with investments into additional renewable energy capacity, place South African coal exports at significant risk. India is a significant importer of South African coal, accounting for 53% of South African coal exports in 2019. This brief is based on a comprehensive review of India'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](#).

SOUTH AFRICA'S EXPORT BASKET TO INDIA

Top South African exports to India are coal, manganese, chemical wood pulp, and platinum and spark-ignition engines. Combined, these exports amounted to 78% of exports to India in 2019. India is one of South Africa's major export destinations, accounting for 4% to 5% of South African exports between 2010 and 2019.

Coal and manganese exports have risen over the period, with notable increases in coal and manganese. Coal exports grew from US\$1.8 billion (238 million tonnes) in 2010 to US\$2.6 billion (433 million tonnes)

in 2019. Manganese exports increased from US\$ 170 million (933 thousand tonnes) to US\$299 million (1.7 million tons) over the same period. Spark-ignition engine and chemical wood pulp exports have also increased over the period. Exports of engines grew from US\$71 million (61 867 units) in 2015 to US\$84 million (68 591 units) in 2019. Chemical-wood pulp exports increased from US\$53 million (54 796 tonnes) in 2010 to US\$173 million (308 225 tonnes) in 2019.

Mining dominates South African exports to India, and are relatively carbon-intensive due to South Africa's coal-based electricity generation and high-energy intensive

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

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

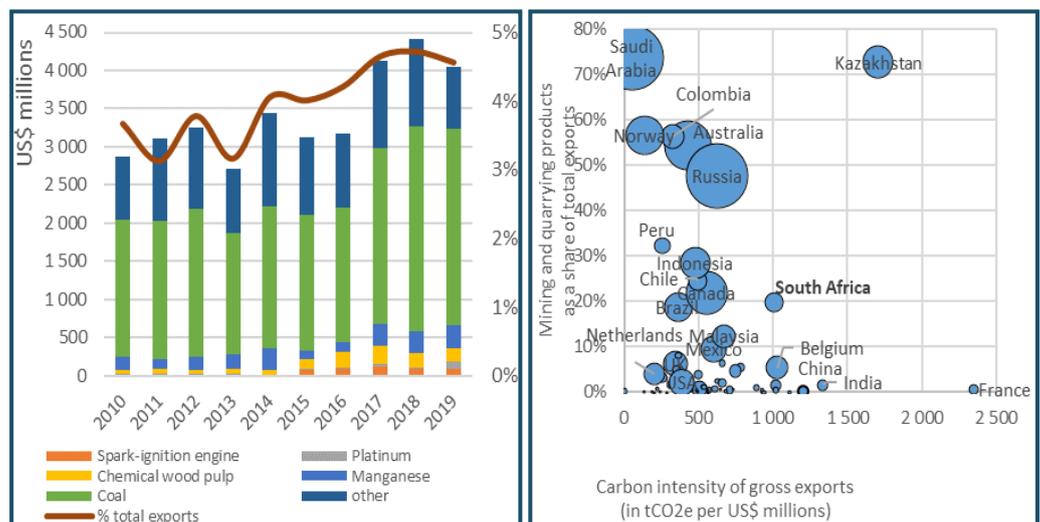


Figure 1 source: Author, based on data from Trade Map, dataset on bilateral trade between South Africa and India, downloaded from <https://www.trademap.org> in June 2020.

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\$.

India has committed to reducing its emissions intensity by 33 percent to 35 percent below 2005 levels by 2030 and increasing its non-fossil energy sources to 40 percent by 2030.

mining value chains (Montmasson-Clair, 2016). South Africa forms part of a group of high-carbon intensity countries with an emissions carbon intensity of about 1 000 tCO₂e per US\$ millions of exports. In addition, South Africa's exports to India are predominantly coal, which is increasingly threatened by renewable energy technologies.

INDUSTRY-RELATED CLIMATE CHANGE LEGISLATION IN INDIA

India's climate change policy framework for industries can be described as a carrot and stick approach. India has performance-based reduction targets, taxes and ambitious renewable energy targets while providing support to industries, primarily to increase energy efficiency and clean energy use.

India has committed to reducing its emissions intensity by 33%-35% below 2005 levels by 2030 and increasing its non-fossil energy sources from 10% in 2018 to 40% by 2030 (Climate Action Tracker, 2018; Climate Transparency, 2019). The National Action Plan on Climate Change (NAPCC) and the National Electricity Plan are the driving policies for achieving these targets.

PAT is the flagship initiative of the National Mission for Enhanced Energy Efficiency, one of the eight missions under NAPCC. PAT differs from traditional cap-and-trade systems in that it sets intensity-based energy targets. PAT cycle 1 (2012-2015) covered eight high-energy intensive sectors, known as DCs: thermal power plants, iron and steel, cement, fertiliser, aluminium, textile, pulp and paper, and chloralkali. In cycle 2 (2016-2019), petrochemicals, railways and refineries were added.

The trading of ESCs is central to PAT. ESCs can be traded or banked for the next PAT cycle. In September 2017, one ESC was worth IRs 200 (US\$16) but the price declined to Rs450 (US\$6) by January 2018, due to an influx of ESCs. As companies started registering on the trading site, low demand led to prices gradually declining (Indian Energy Exchange, 2018).

The Clean Energy Cess lasted from 2010 to 2018, and was abolished in 2018 when GST was introduced. GST retained the coal tax price at Rs400 per tonne. The coal tax doubled three times from Rs50 (US\$0.8) per tonne in 2010 to Rs400 (US\$5.3) per tonne in 2018.

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

POLICY NAME	CORE GOAL(S) OF THE POLICY	IMPLEMENTATION MEASURES	COSTS/BENEFITS/ PENALTIES OF POLICY ADAPTATION
Performance Achievement and Trade (PAT)	PAT is a market-based mechanism which intends to enhance the energy efficiency of energy-intensive industries through the certification of tradable excess energy savings.	PAT establishes mandatory sector-specific energy efficiency targets for designated consumers (DCs) for a three-year cycle. Energy Saving Certificates (ESCs) are awarded to DCs that surpass their targets, based on quantified energy savings verified by an accredited energy auditor. An ESC is equivalent to a tonne of oil equivalent energy (toe). In 2018, the price was Rs450 (US\$6). DCs have to appoint an energy manager, conduct annual energy audits, and file energy consumption returns	Facilities that fail to achieve targets or purchase enough ESCs to cover the shortfall face a penalty of Rs1 million (about US\$13 000) plus the value of the energy savings that have not been obtained. In cases when entities continue to fail, further financial penalties would be levied.
Goods and Services Tax (GTS), formally Clean Energy Cess	GTS aims to achieve climate change mitigation through a tax on the production and import of coal.	The GTS is levied at the source and is applicable to coal, lignite and peat. In 2018, the tax stood at Rs400 (US\$5.4) per tonne.	Non-compliance is sanctioned by a financial penalty not exceeding Rs25 000 (US\$334) and an imprisonment term of no less than six months.

Source: Author, based on Bureau of Energy Efficiency, 2016; Dey, 2019; International Energy Agency, 2019; International Institute for Sustainable Development, 2018.

India is a major importer of South African coal, and its climate change mitigation efforts to cease thermal coal imports will adversely impact coal exports.

CHANGES IN INDIA'S ENERGY SECTION

India's National Electricity Plan intends to aggressively increase the country's renewable energy capacity from 86 GW in 2020 to 450 GW by 2030, leveraging the decline in solar-based technology prices. Investments in renewable energy are currently more than investments in fossil fuel energy. In 2018, public and private funding for energy projects amounted to US\$4.4 billion, of which 80% was attributable to renewable energy projects.

For the first time, in 2018, solar energy-related investments exceeded investment in coal, amounting to Rs14 578 crore (US\$1.9 billion) while coal investments stood at Rs6 081 crore (US\$810 million) (Centre for Financial Accountability, 2019).

Although renewable energy capacity is set to increase, the National Electricity Plan anticipates a continued rise in coal capacity as India aims to achieve nationwide electrification.

The increase in coal capacity is intended to be met mainly through the use of domestic coal. In May 2020, the Indian Coal Ministry announced that the government would stop the import of thermal coal from the 2023-2024 financial year. This announcement is intended to persuade coal-based utilities to use domestic coal (Ministry of Power, 2018; 2008).

RISKS FOR SOUTH AFRICA'S EXPORTS TO INDIA

Overall, given the role of coal, South Africa's export risk is high. The largest risk presents with coal exports. India is a major importer of South African coal, and its climate change mitigation efforts to cease thermal coal imports will adversely impact coal exports.

Other key exports are less at risk in the short term, although the export of engines is likely to be negatively affected by the shift to e-mobility in the long run.

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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).