TRADE & INDUSTRIAL POLICY STRATEGIES

INDUSTRY STUDY

Electrical Equipment

November 2023

TIPS industry studies aim to provide a comprehensive overview of key trends in leading industries in South Africa. For each industry covered, working papers will be published on basic economic trends, including value added, employment, investment and market structure; trade by major product and country; impact on the environment as well as threats and opportunities arising from the climate crisis; and the implications of emerging technologies. The studies aim to provide background for policymakers and researchers, and to strengthen our understanding of current challenges and opportunities in each industry as a basis for a more strategic response.

This note provides an overview of the electrical equipment sub-sector in South Africa.

Author
Nishal Robb, TIPS Economist

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ABBREVIATIONS

dtic (the)	Department of Trade, Industry and Competition
DMRE	Department of Mineral Resources and Energy
EPC	Engineering, Procurement and Construction
GFCF	Gross Fixed Capital Formation
GVA	Gross Value Added
IDDR	Imports-Domestic Demand Ratio
IPP	Independent Power Producer
IRP	Integrated Resource Plan
RCA	Revealed Comparative Advantage
RE	Renewable Energy
SIC	Standard Industrial Classification
SOC	State-Owned Company
TDP	Transmission Development Plan
QES	Quarterly Employment Survey
QLFS	Quarterly Labour Force Survey

Disclaimer

SECTION 1: MAPPING THE SUB-SECTOR

1.1 Overview

The electrical equipment sub-sector in South Africa encompasses a wide range of products and services related to the generation, transmission, distribution, and utilisation of electrical power. Its history dates back to the discovery of gold and diamonds in the late 19th century and associated requirements for lighting, telecommunications and electrification. The establishment of Eskom in 1922, gradual electrification of the Transnet (then the South African Railways) rail network from the mid-20th century, and the growth of heavy manufacturing industries linked to minerals and energy laid the foundation for subsequent development. Given the sub-sector's historically close relations to mining and state-owned companies (SOCs), a number of factors are likely to shape the sub-sector in profound ways. These include:

- The escalating crisis in Eskom and contestation over the future of the country's energy system. This is often framed as a tussle between entrenched interests rooted in the coal value chain and public sector electricity generation, and emerging interests rooted in renewable energy (RE) value chains, private sector generation and related financial interests;
- The future trajectories of other SOCs (Transnet in particular) and of public procurement policy more generally;
- The future trajectory of the South African economy more broadly, particularly in relation to:
    - Continued reliance on mineral extraction and processing or success in growing the industrial base and diversifying manufacturing value chains;
    - Capacity and fiscal space for large-scale public infrastructure spending; and
    - Private investment patterns and state capacity to channel investment into light manufacturing; and
- The effectiveness of trade policy in facilitating access to regional and overseas markets, and of industrial policy in supporting the sub-sector to become more competitive, both against imports and in export markets.

The sub-sector consists of a range of different value chains. These value chains can be organised according to Standard Industrial Classification (SIC) codes for overview purposes (ranked by domestic manufacturing sales as at March 2023):

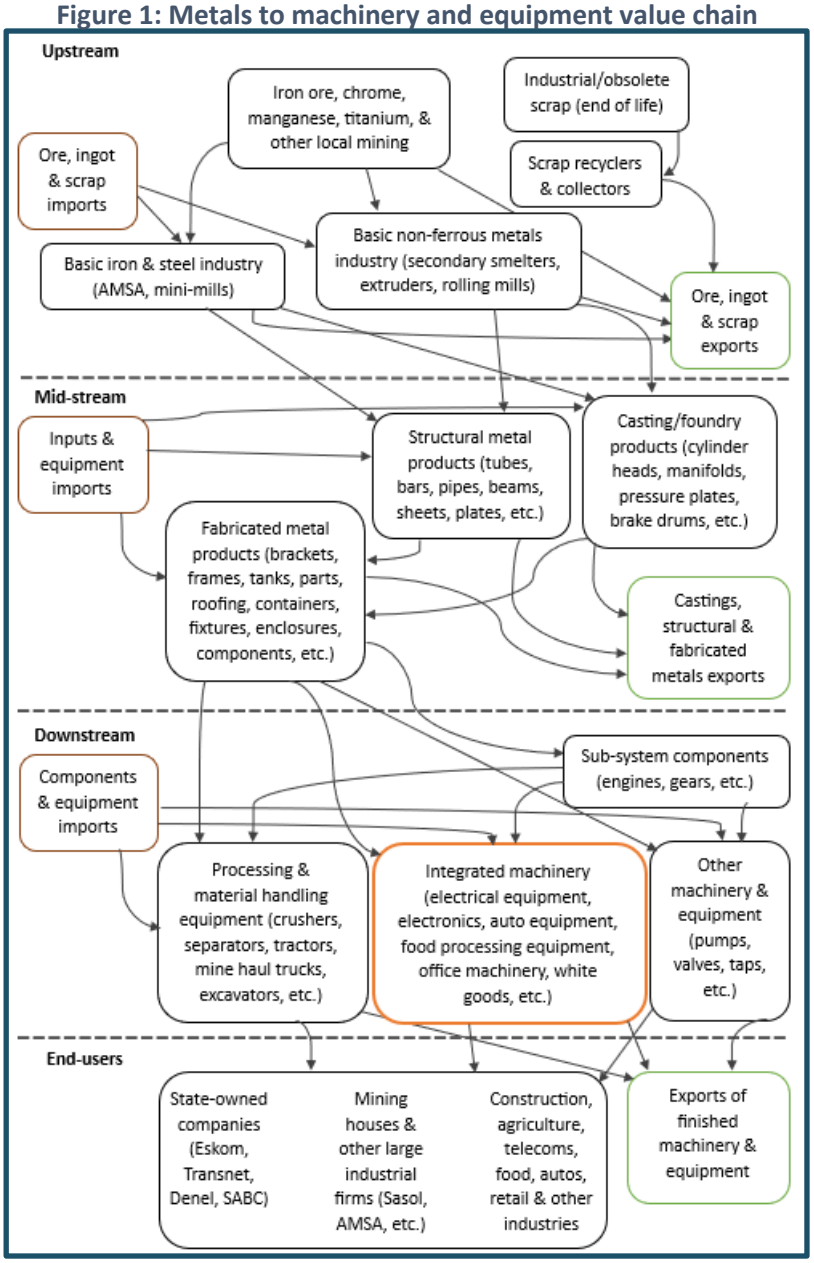
- Insulated wire and cables (SIC 363)
- Electric motors, generators and transformers (SIC 361)
- Electricity distribution and control apparatus (SIC 362)
- Accumulators, primary cells and primary batteries (SIC 364)
- Electric lamps and lighting (SIC 365)

Figure 1 situates the electrical equipment sub-sector as a whole within the broader metals to machinery and equipment value chain (highlighted in orange).

Though considerable differences exist within and between electrical equipment value chains, each follows a similar pattern. Various inputs, such as raw materials (extracted and processed domestically or imported), packaging and capital equipment (largely imported) are sourced. Relevant components, manufactured or imported, are then brought together in the product assembly phase of the value chain. More complex products undergo a system design/integration phase before reaching end-users, either through direct procurement, specialised installation/rigging contractors, retailers or through

exporters. Operations, and repair and maintenance services take place during the product's life cycle. Finally, certain products are subject to recycling and/or refurbishment, or even, in the case of certain types of cable, large-scale theft.

Figure 1: Metals to machinery and equipment value chain



Source: Adapted from Rustomjee et al., 2018, and Andreoni et al., 2021, author's highlight.

1.2 Contribution to GDP

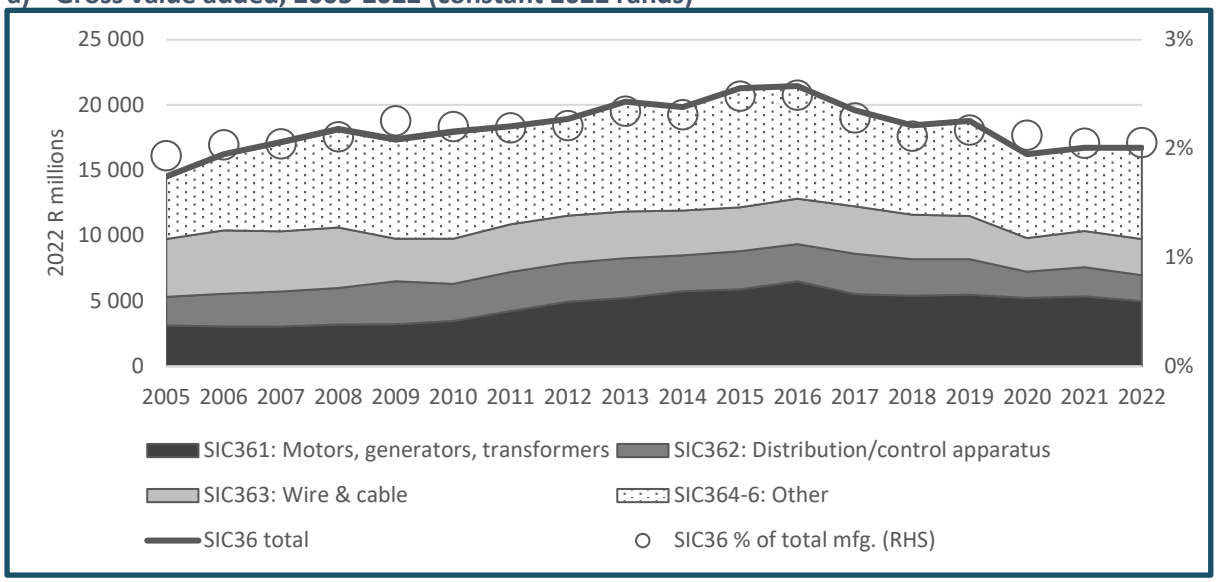
The electrical equipment sub-sector is relatively small, contributing around 2% of gross value added (GVA) in the manufacturing sector from 2005-2021 as illustrated in Figure 2a. In real terms, value added in electrical equipment peaked in 2016 at around R21.5 billion in constant 2022 rands. Its share of GVA in the broader capital goods industries (i.e., SIC 356-359 and SIC 36 combined) has fallen substantially over the last two decades, from 43% in 2000 to 23% in 2022.

The sub-sector's contribution to gross fixed capital formation (GFCF) in manufacturing was consistently between 0.8%-0.9% until 2016 (Figure 2b). Since then, GFCF in electrical equipment has

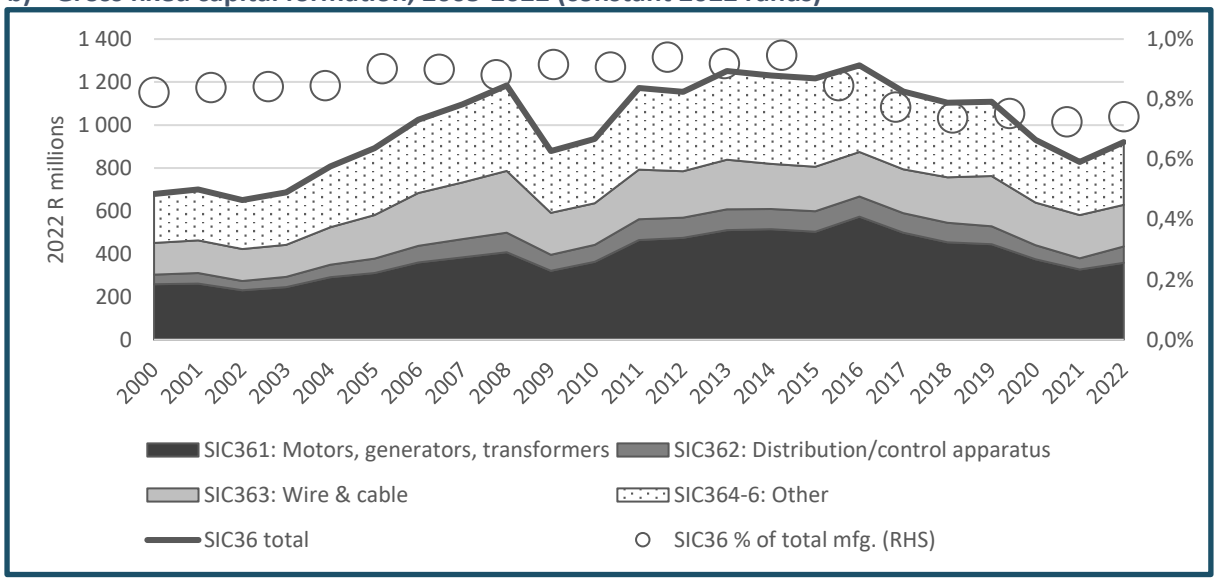
fallen as a share of manufacturing GCFC and in real terms from a peak of R1.3 billion in 2016 to R920 million in 2022. The timing of this inflection point for the sub-sector broadly coincides with downturns in capital spending by public institutions – SOCs from 2014, and national, provincial and local governments from 2016[1] – and likely reflects its linkages with activities like construction that are driven in part by government expenditure on infrastructure. By 2021, GVA had fallen to 2006/2007 levels and GFCF to levels last seen in the aftermath of the global financial crisis.

Figure 2: Gross value added and gross fixed capital formation [2]

a) Gross value added, 2005-2022 (constant 2022 rands)



b) Gross fixed capital formation, 2005-2022 (constant 2022 rands)



Source: Calculated from Quantec. EasyData. Interactive dataset. Industry service. Accessed at www.quantec.co.za in August 2023.

Geographically, output is highly concentrated in the four provinces that host major metropolitan municipalities. Of these, Gauteng is by far the most significant for the production of electrical

[1] See Sachs, 2021.

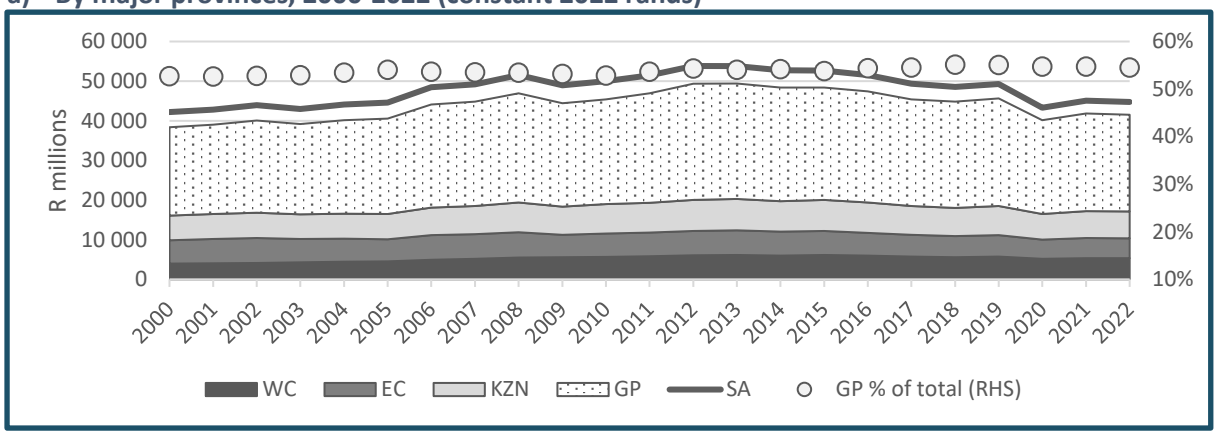
[2] It should be noted that since all the industries within the sub-sector are small, the data presented relies on Quantec modelled estimates based primarily on official statistics for sales and employment.

equipment, accounting for above 50% of total output throughout the past two decades and increasing its share slightly over this period (Figure 3a).

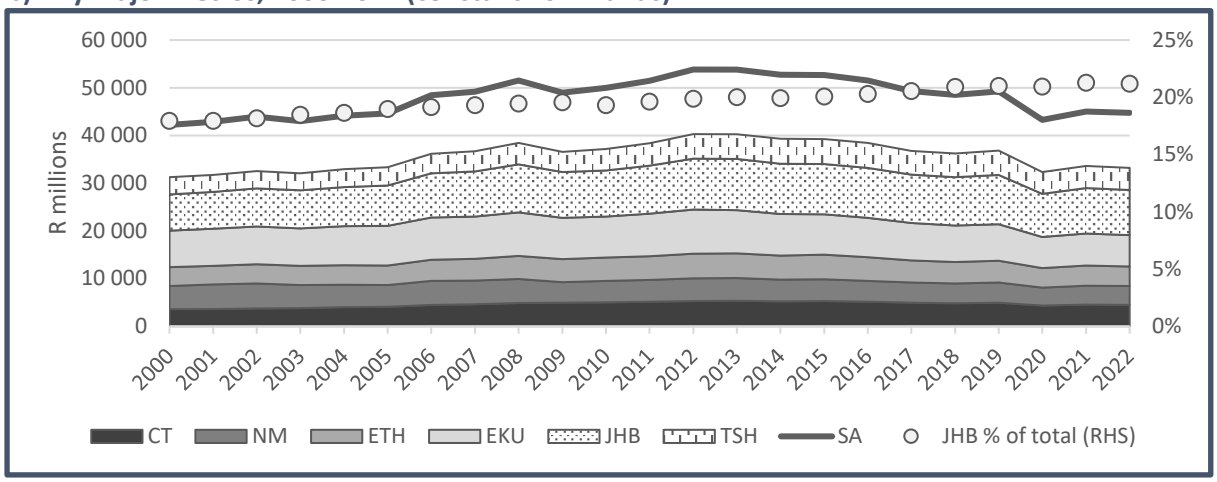
Among the metros, the City of Johannesburg dominates production, reaching 22% of total output as of 2021 (Figure 3b). Output data also reflects a mid-2010s peak followed by stagnation from 2016 onwards, a sharp drop due to the COVID-19 shock and a partial recovery in 2021-2022.

Figure 3: Geographical distribution of output in electrical machinery and apparatus

a) By major provinces, 2000-2022 (constant 2022 rands)



b) By major metros, 2000-2022 (constant 2022 rands)



Source: Calculated from Quantec. EasyData. Interactive dataset. Regional service. Accessed at www.quantec.co.za in August 2023.

Figure 4a below presents data on profitability for overall manufacturing, the electrical equipment sub-sector and the industries within it from 2008-2021. The overall trend is one of long-term decline in profitability, as measured by return on non-current assets.

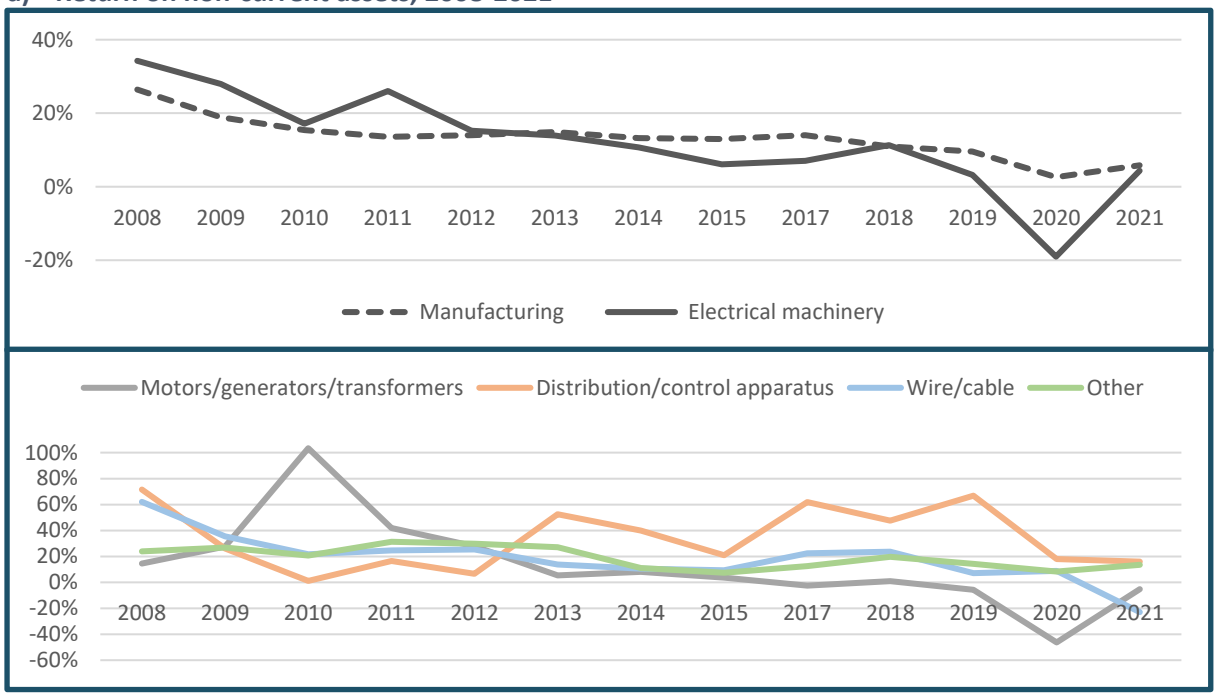
While profitability in electrical machinery was higher than in manufacturing as a whole prior to 2013, it has tended to be lower since then, and underwent a far deeper shock when COVID-19 arrived in 2020. Profitability across each industry within the electrical equipment sub-sector is down from 2008 to 2021. These results may, however, need further investigation and verification before firm conclusions are drawn – the volatility in profitability for some industries suggests a need to look more closely at the underlying data.

The electrical equipment sub-sector and manufacturing as a whole maintained fairly consistent levels of capacity utilisation around 80% from 2015 to 2019, with electrical equipment declining slowly over

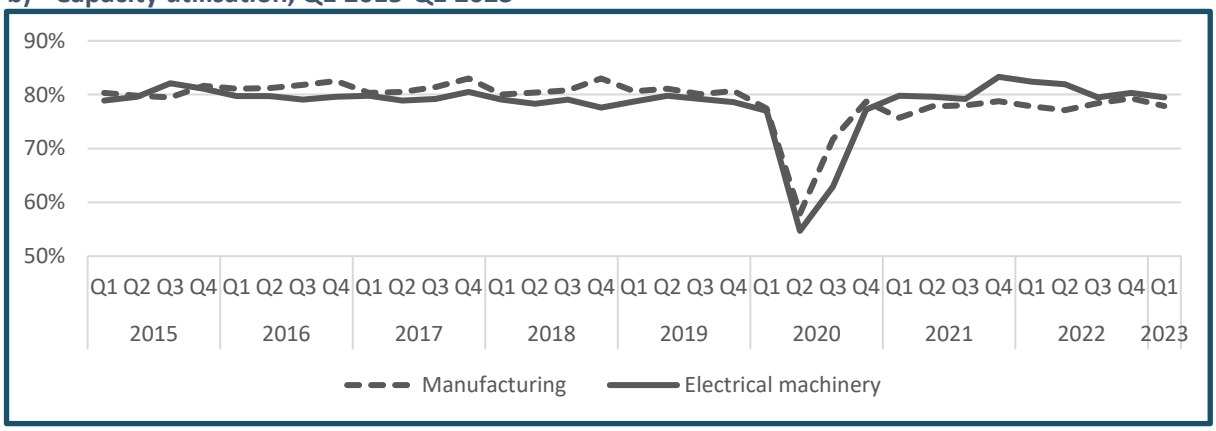
this period and tending to be marginally lower than manufacturing. Utilisation fell dramatically in the second quarter of 2020, with production disrupted by COVID-19 lockdowns. Recovery to pre-COVID-19 levels of utilisation occurred fairly quickly, with overall manufacturing capacity utilisation tending to be slightly lower than the electrical equipment sub-sector in a reversal of the pre-COVID-19 norm. Insufficient demand is the overwhelming reason given by producers for what has driven under-utilisation across the period presented in Figure 4b.

Figure 4: Profitability and capacity utilisation

a) Return on non-current assets, 2008-2021



b) Capacity utilisation, Q1 2015-Q1 2023



Source: Calculated from Statistics SA. a) Annual Financial Statistics. b) Manufacturing: Utilisation of production capacity. Data accessed via Quantec. EasyData. Interactive dataset. Macroeconomic service. Accessed at www.quantec.co.za in August 2023.

1.3 Trade patterns

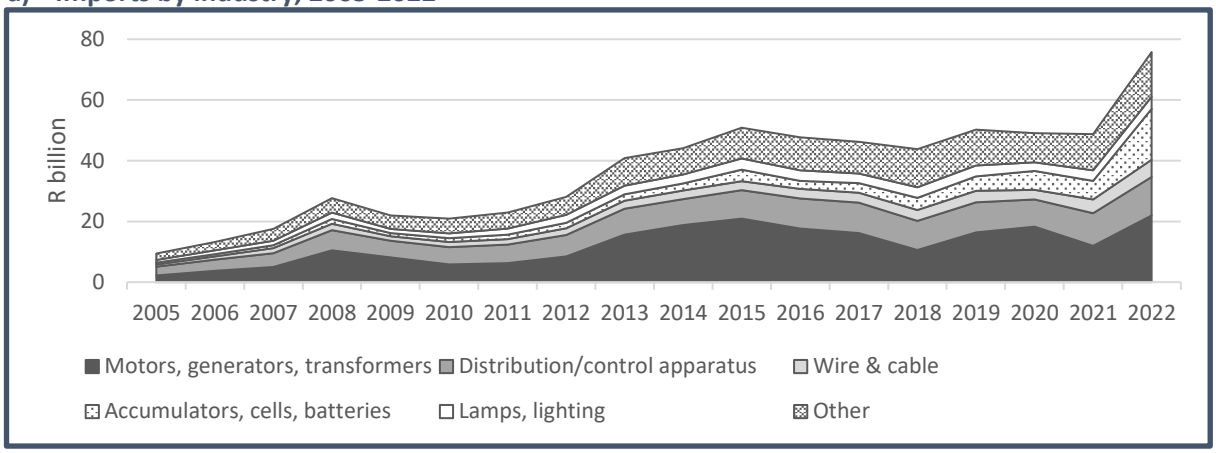
In relation to trade, the most striking trend for the electrical equipment sub-sector over the last decade and a half or so has been the extent to which imports have outstripped exports. The three charts in Figure 5 below illustrate this trend and the industry composition of imports, exports and the trade balance.

Since 2005, the declining trade balance in the sub-sector has been driven largely by the growth of imports in electric motors, generators and transformers (SIC 361) from around 2011, and of accumulators, primary cells and primary batteries (SIC 364) from around 2016.

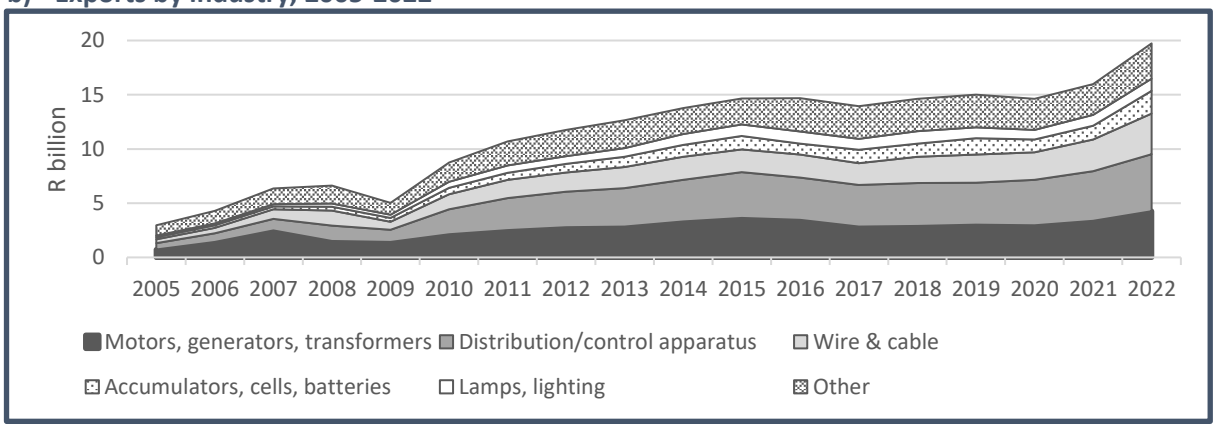
Distribution and control apparatus (SIC 362) has been the most important export industry in the sub-sector, with exports of insulated wire and cable (SIC 363), and electric motors, generators and transformers also significant.

Figure 5: Trade trends within electrical machinery and apparatus (SIC 36), current rands

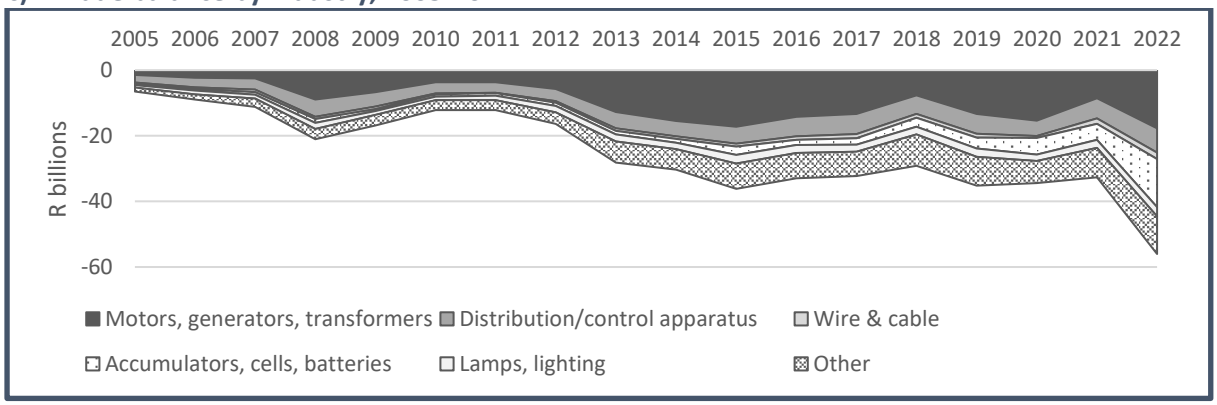
a) Imports by industry, 2005-2022



b) Exports by industry, 2005-2022



c) Trade balance by industry, 2005-2022



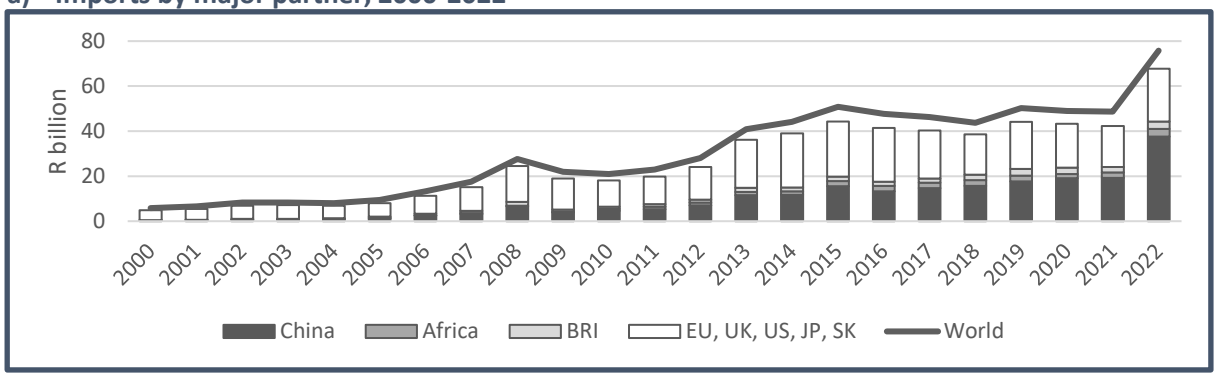
Source: Calculated from SARS. Data accessed via Quantec. EasyData. Interactive dataset. International trade service. Accessed at www.quantec.co.za in August 2023.

Data on trade disaggregated by trade partner, presented in Figure 6, illustrates a few important points. First, Figure 6a shows that imports are dominated by countries with advanced productive capabilities.

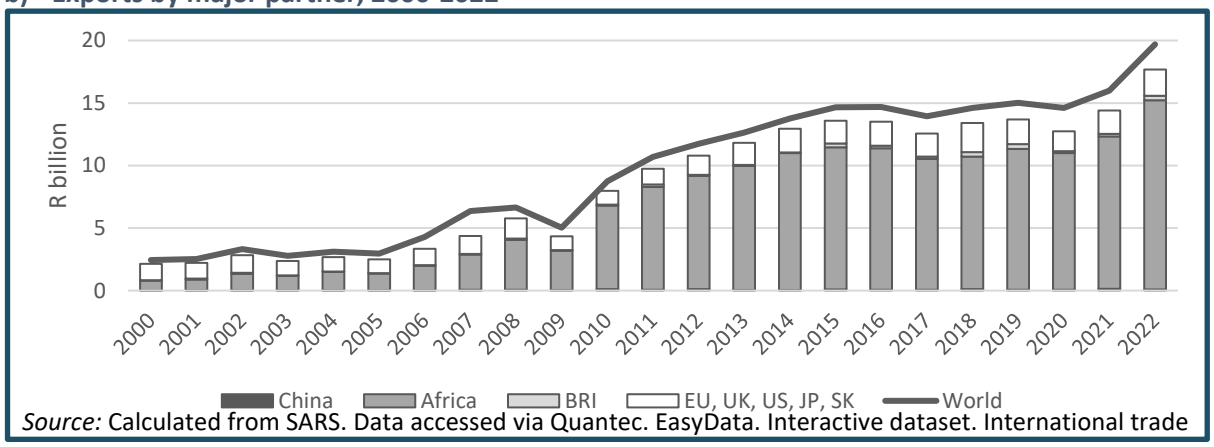
This has meant that imports of electrical equipment to South Africa have largely been produced in developed countries in the Global North – the European Union (EU), United Kingdom (UK), United States (US), Japan (JP) and South Korea (SK) – which are grouped together in Figure 6. However, imports from China have grown rapidly since the late-2000s to play a more important role; Chinese imports have been larger than total imports from the developed economy group each year since 2020. As of 2022, Chinese imports are decisively more significant – R38 billion worth compared to R23 billion from the developed economy group.

Figure 6: Major import and export partners for SIC 36, current rands

a) Imports by major partner, 2000-2022



b) Exports by major partner, 2000-2022



Source: Calculated from SARS. Data accessed via Quantec. EasyData. Interactive dataset. International trade service. Accessed at www.quantec.co.za in August 2023.

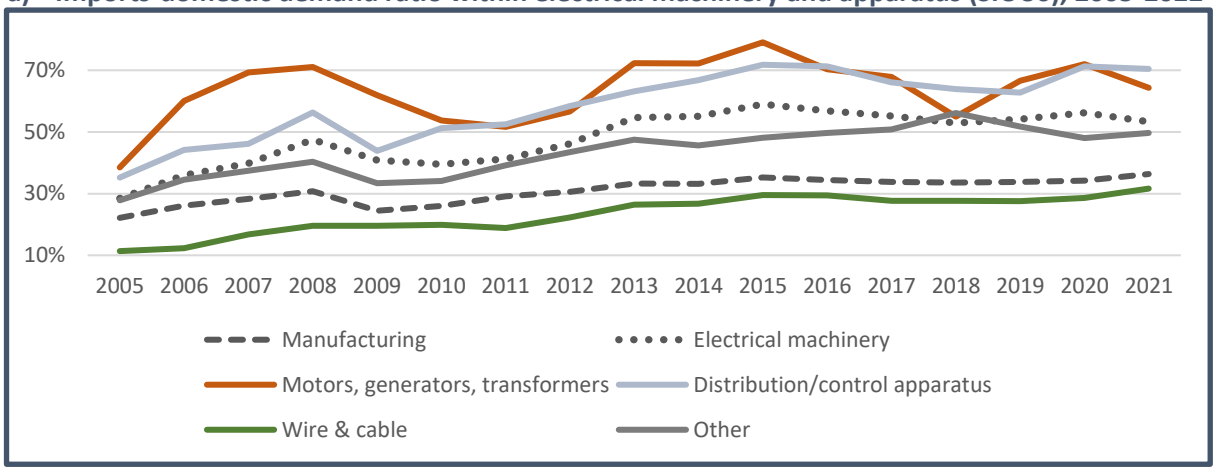
Figure 6b shows exports of electrical equipment disaggregated by trade partner. Unlike in 6a, there are no major shifts in composition across two decades. South African exports of electrical equipment go overwhelmingly to other African countries, largely within the Southern African Customs Union. A small share of presumably niche, high-spec products are exported to the advanced economy group.

Figure 7 presents two important trade-related indicators – imports-domestic demand ratio (IDDR) and revealed comparative advantage (RCA). IDDR (Figure 7a) measures the extent to which domestic demand for a given product is met by imports.[3]

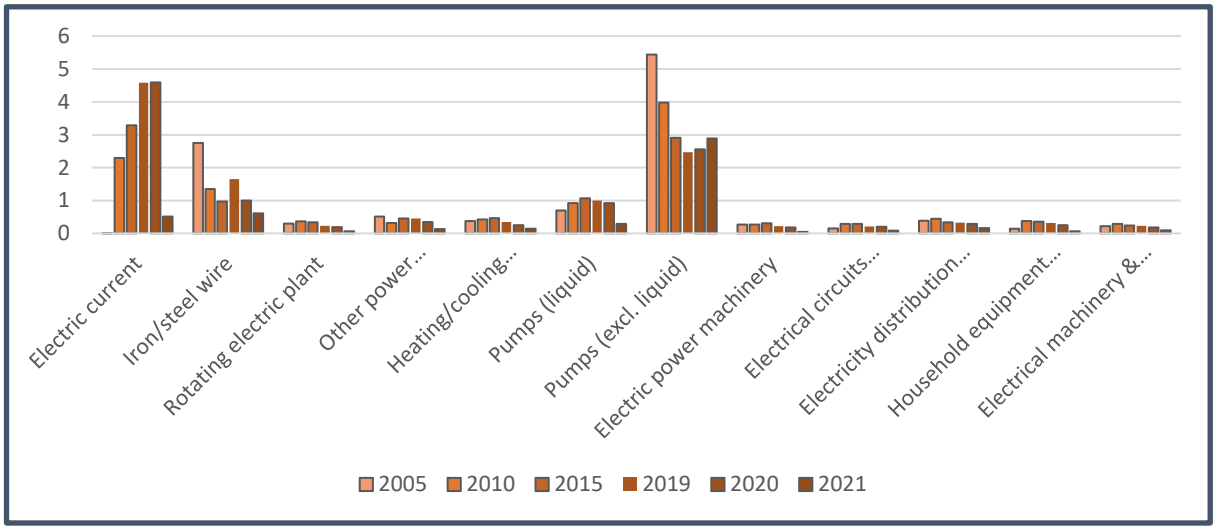
[3] Where domestic demand is defined as total output plus imports minus exports.

Figure 7: Imports-domestic demand ratio and revealed comparative advantage

a) Imports-domestic demand ratio within electrical machinery and apparatus (SIC 36), 2005-2022



b) Revealed comparative advantage by SITC code, 2005-2021



Source: a) Calculated from Quantec. EasyData. Interactive dataset. Industry service. Accessed at www.quantec.co.za in August 2023. b) Calculated from UNCTAD. UNCTADStat. Revealed comparative advantage index. Accessed at https://unctadstat.unctad.org in August 2023.

Figure 7b's illustration of RCA includes a number of products produced by industries outside of but related to electrical equipment. Most notable among these are pumps used for non-liquid applications, in which South African exporters have enjoyed a deteriorating but still significant comparative advantage, with RCA between 2.5 and 5.5. Further research on the sub-sector will seek to clarify the relation between the electrical equipment sub-sector and production of these and other products outside of SIC 36. Figure 7b also illustrates the RCA of the export of electric current – i.e., electricity – from South Africa, which has declined precipitously since 2020 presumably due to the crisis in Eskom and falling demand associated with the COVID-19 shock.

As for those products within SIC 36 (iron/steel wire, rotating electric plant, electricity distribution equipment, etc.), Figure 7b shows that RCA has been low (<1) and declining in the period from 2005 to 2021. The timing of the decline, which sharpened significantly from 2019, suggests that it has been driven and sustained by the combination of the COVID-19 shock and the crisis in Eskom.

Figure 7a illustrates the IDDR for manufacturing, the electrical equipment sub-sector, and the industries within it. The IDDR has risen across all these categories between 2005 and 2021. This could be interpreted in a few ways. It may suggest that local manufacturers have lost market share in existing

markets, e.g., imports of cables used for high-voltage electricity transmission lines have increasingly displaced locally manufactured cables. It may also suggest that new products within a given category that local manufacturers may lack the capabilities to produce competitively have begun to be imported over this period, e.g., imports of fibre-optic cables have increased, and local manufacturers are as yet unable to compete with these at scale.

RCA (Figure 7b) measures the competitiveness of a country's exports of a given product relative to other exporters – if RCA for a given product is greater than 1, it suggests that the country's exports of that product are more competitive than average.

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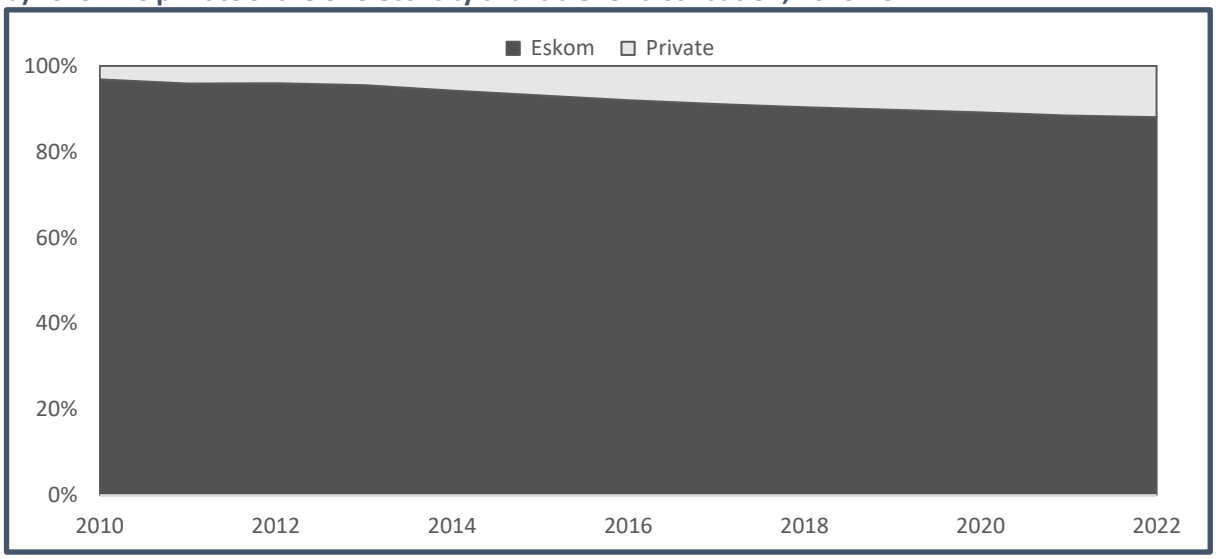
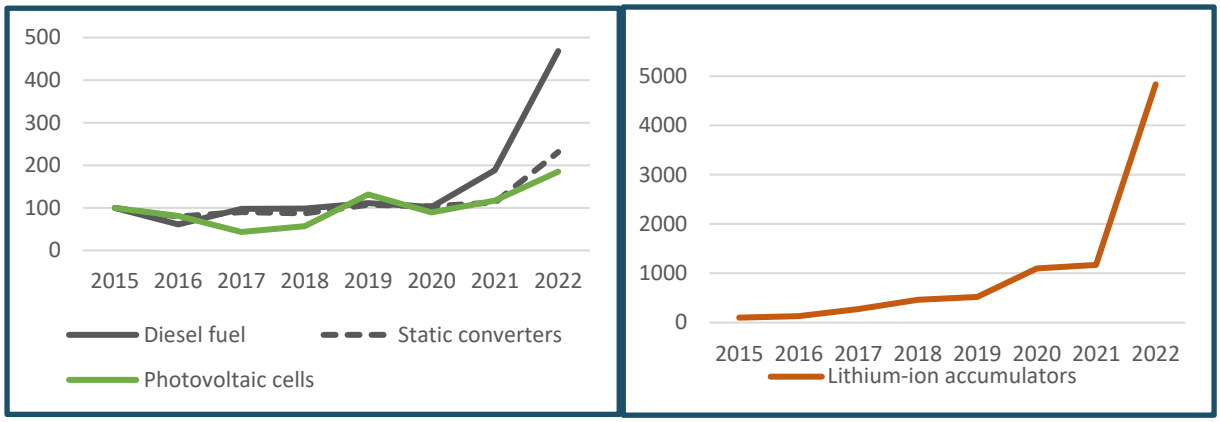
One of the key dynamics shaping the sub-sector is the gradual shift in electricity generation from Eskom to private actors – independent power producers (IPPs), households and firms. Both dynamics are illustrated in Figure 8. Figure 8a illustrates the shift in generation, with Eskom's share falling from 97% in 2010 to 88% as of 2022.

Figure 8: Trends in electricity production and off-grid generation imports

a) Eskom vs private share of electricity available for distribution, 2010-2022



b) Index of imports of inputs for off-grid generation (2015 = 100)



Source: a) Calculated from Statistics South Africa. P4141. Electricity generated and available for distribution. Excel spreadsheet. Accessed at www.statssa.gov.za in August 2023. b) Calculated from SARS. Data accessed via Quantec EasyData Interactive dataset. International trade service. Accessed www.quantec.co.za August 2023.

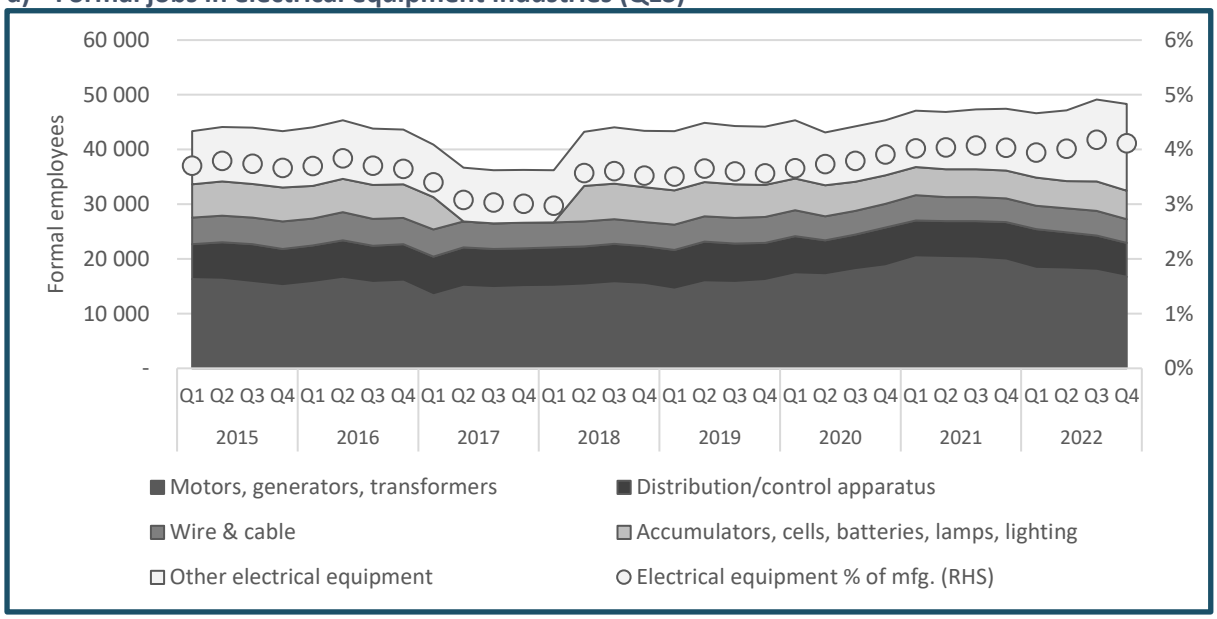
Figure 8b shows a set of indices of growth in imports of products associated with Eskom's falling share of generation. Imports of static converters (which include inverters) and photovoltaic cells (i.e., solar panels) have both escalated since 2015, while growth in imports of diesel to fuel generators and of lithium-ion accumulators, i.e., rechargeable lithium batteries, has been exceptional, particularly since 2021. The identification and capture of opportunities in meeting growing demand for these products, particularly those related to the generation and storage of renewable energy, will be critical for the future growth and socioeconomic contribution of the electrical equipment sub-sector (Creamer, 2023a; Winkler, 2023).

1.4 Employment trends

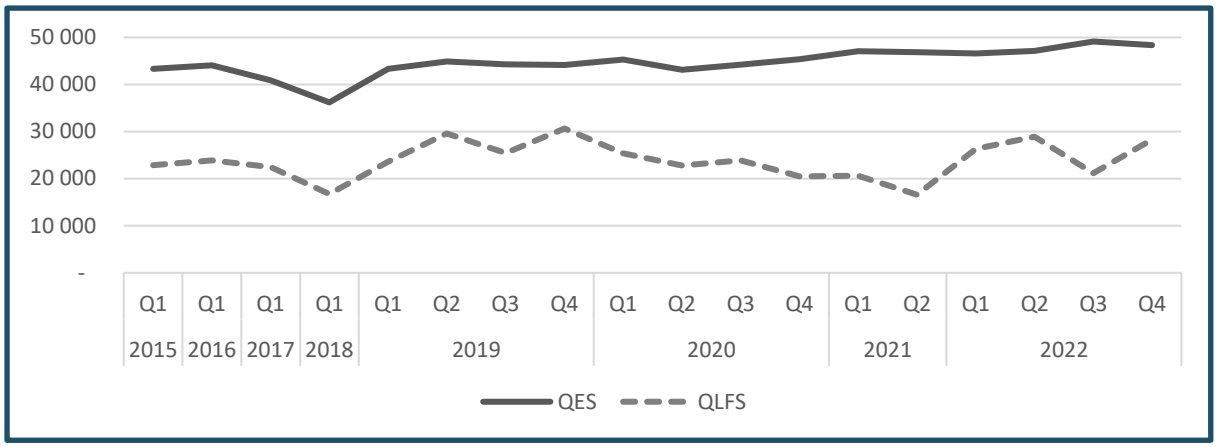
Figure 9 illustrates employment trends in the electrical equipment sub-sector and its constituent industries, as well as the share of total employment in the sub-sector in overall manufacturing employment. Figure 9a, which is drawn from StatsSA's Quarterly Employment Survey (QES) and reflects formal employment, shows that the sub-sector had gained jobs by the end of 2022 on a net basis, as compared with 2015.

Figure 9: Employment trends in electrical equipment sub-sector, 2015-2022

a) Formal jobs in electrical equipment industries (QES)



b) QES vs QLFS data on employment in electrical equipment sub-sector



Note: Q3 and Q4 of 2021 have been excluded due to an exceptionally low QLFS response rate in those quarters. Source: a) Calculated from Statistics South Africa. Quarterly Employment Survey. Data accessed via Quantec EasyData Interactive dataset. Macroeconomic service. Accessed at www.quantec.co.za in August 2023. b) Calculated from Statistics South Africa. Quarterly Labour Force Surveys for relevant years. Interactive datasets. Accessed at Nesstar facility at www.statssa.gov.za in August 2023.

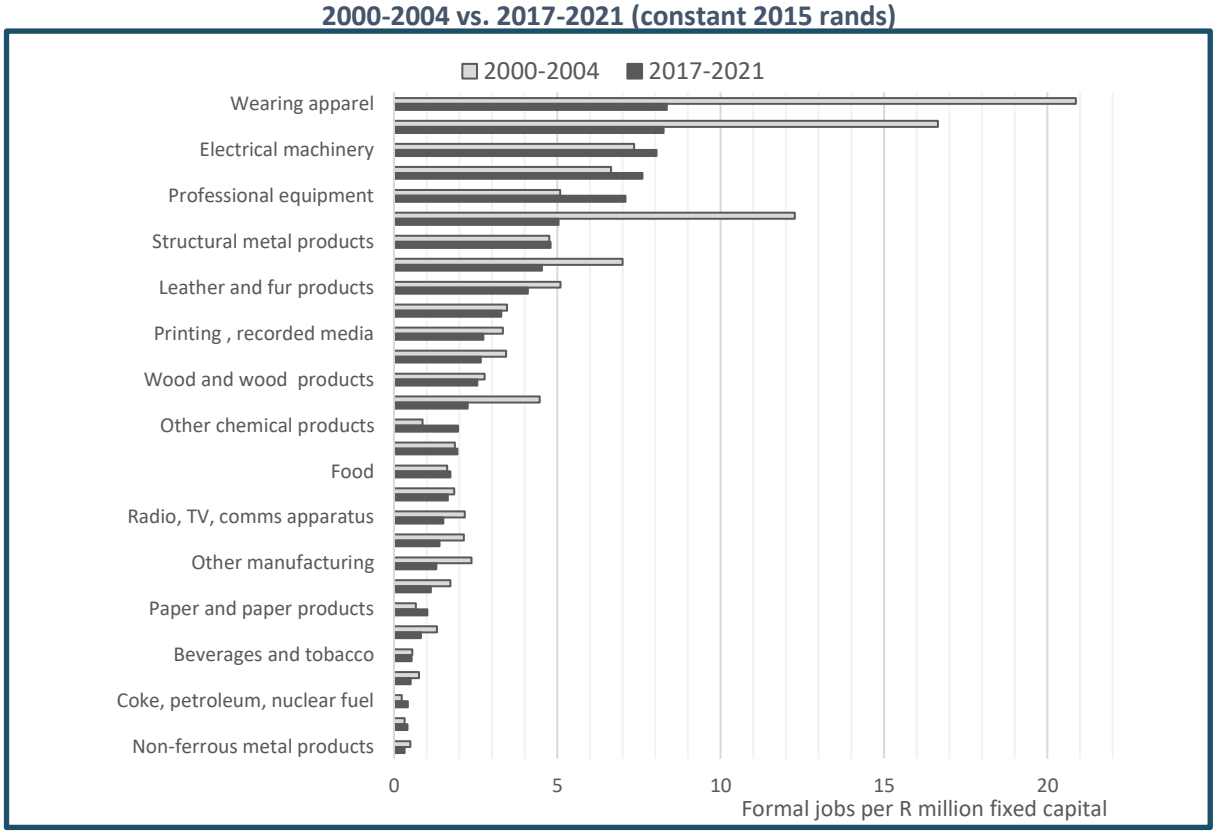
The sharp decline from the first quarter of 2017 until the first quarter of 2018 appears to be almost entirely due to the disappearance of jobs in the accumulators, primary cells and primary batteries industry (SIC 364) from the data. This dramatic decline and sudden recovery seem unlikely to be an accurate reflection of that period, and further research will be required to establish a clearer picture.

As a share of total manufacturing employment, employment in the sub-sector appears to have maintained a fairly steady share at around 4% throughout the period. The slight upward trend that is visible from 2020 to 2022 reflects a gain of around 5 000 formal jobs in the sub-sector but is likely also a reflection of a slow recovery in formal manufacturing jobs more broadly.

Figure 9b shows employment data from the QES compared with data from the Quarterly Labour Force Survey (QLFS). There is a striking difference between the two datasets, with the overall trends moving in opposite directions from the third quarter of 2020 until the first quarter of 2022. Where the QES data reflect jobs exceeding pre-COVID levels, the QLFS data reflect that jobs in the fourth quarter of 2022 remain fewer than in the fourth quarter of 2019. While the gap between the two is likely due to sampling issues in the QLFS (where very few individuals report working in the electrical equipment sub-sector), it is unusual for trends to move in opposite directions. Further research will be required to understand this apparent contradiction. The QLFS figures should therefore be interpreted as indications of order of magnitude, rather than as precise figures.

Figure 10 provides a measure of labour intensity across manufacturing sub-sectors, as measured by the number of formal jobs sustained by fixed capital stock in each sub-sector. As with Figure 9b, the data in Figure 10 show some unexpected results: as of 2021, electrical equipment is the third most labour-intensive sub-sector of all, outstripping a number of sub-sectors such as food and plastics that tend to be more labour-intensive than sub-sectors producing machinery and equipment. Fully understanding the reasons for this unusual result will again require further research.

Figure 10: Labour intensity in manufacturing sub-sectors, average 2000-2004 vs. 2017-2021 (constant 2015 rands)



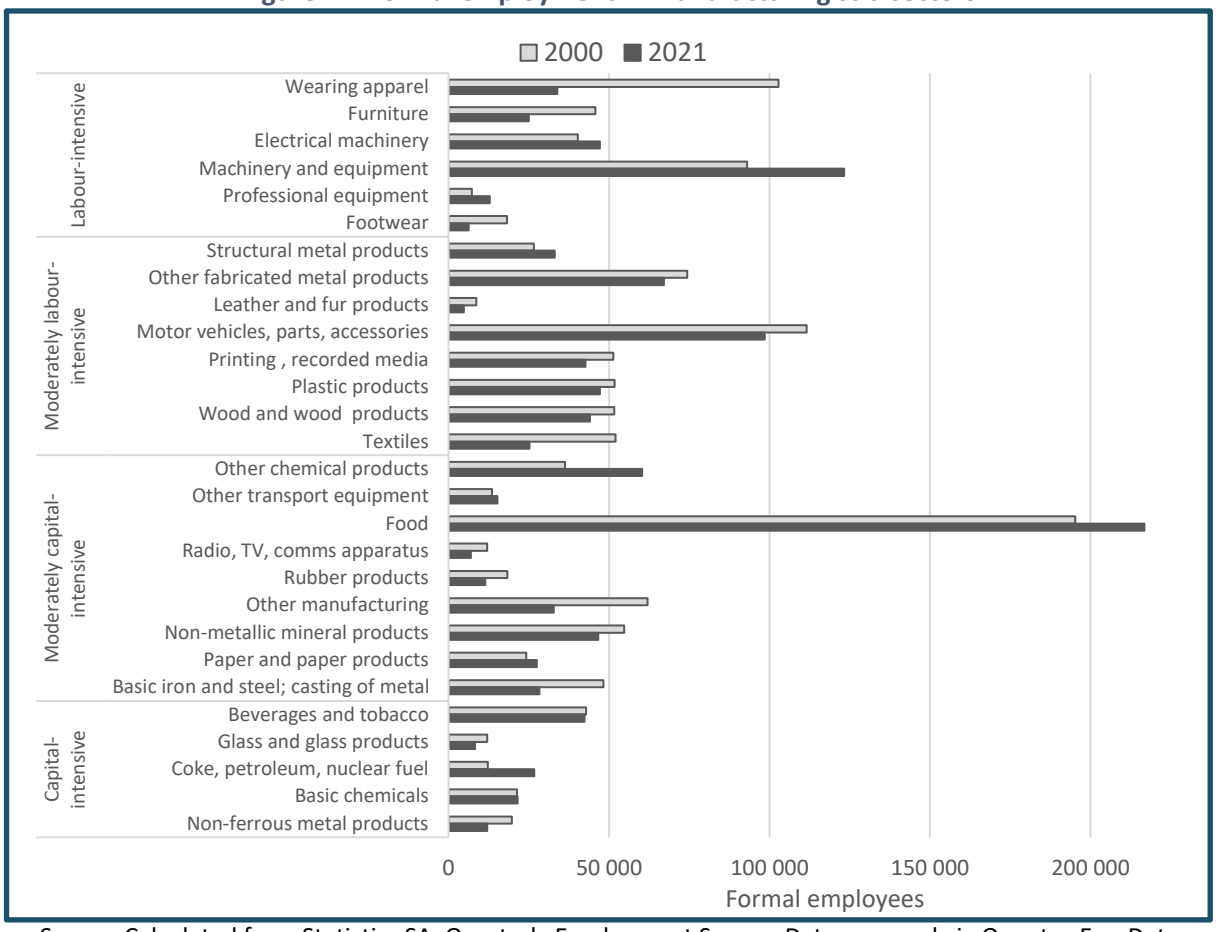
Source: Calculated from Quantec. EasyData. Interactive dataset. Industry and Macroeconomic services. Accessed at www.quantec.co.za in August 2023.

Setting aside the ranking of the sub-sectors for now, it is notable that manufacturing as a whole and the overwhelming majority of sub-sectors have become less labour-intensive between 2000 and 2021. While gradual increases in capital-intensity are commonplace, the trend remains a challenge for manufacturing-led job creation in South Africa that industrial policy and development strategy more broadly ought to remain cognisant of.

Figure 11 retains the ranking set out in Figure 10, providing an overview of trends in formal employment across manufacturing sub-sectors. Using data presented in Figure 10, manufacturing sub-sectors have been categorised as either labour-intensive (>5 jobs per constant R million of fixed capital as of 2021), moderately labour-intensive (2-5 jobs per R million), moderately capital-intensive (one-two jobs per R million) or capital-intensive (less than 1 job per R million).

The overall picture is negative, with manufacturing jobs (not included in the chart) down 11% between 2000 and 2021. Very few sub-sectors have sustained or improved their employment over this period, with machinery and equipment, and food most notable among these. Electrical equipment has also grown but has gained only around 7 000 formal jobs between 2000 and 2021.

Figure 11: Formal employment in manufacturing sub-sectors



Source: Calculated from Statistics SA. Quarterly Employment Survey. Data accessed via Quantec EasyData Interactive dataset. Macroeconomic service. Accessed at www.quantec.co.za in August 2023.

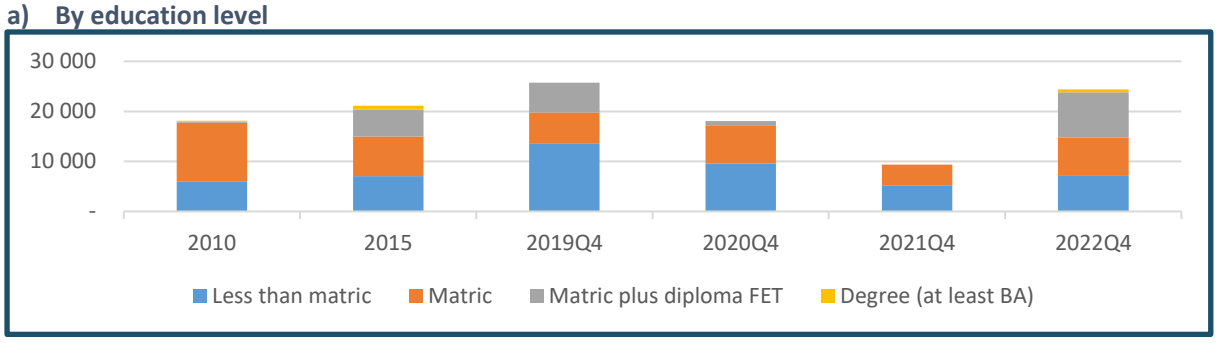
The demographic characteristics of those employed in the electrical equipment sub-sector are illustrated in Figure 12. The same caveats as applied to Figure 9b apply here – i.e. that QLFS data for the sub-sector is based on such a small sample that figures are unlikely to be accurate and are only included here to provide an indication of demographic details due to a lack of other sources. They should be interpreted as indications of order of magnitude, rather than as precise figures.

Figure 12a shows an interesting change in the educational composition of employees in the sub-sector, with the proportion of workers with post-matric but non-degree qualifications growing substantially between 2010 and 2015.

In terms of population group, the sub-sector is largely African, and substantial variation in the participation of other groups that may be due to the sampling issues discussed in the context of Figure 9b. In terms of gender, workers in the sector are overwhelmingly men, with varying but low levels of participation by women.

Figure 12: Employment in electrical equipment sub-sector by demographic characteristics, 2010-2022

a) By education level



b) By population group and gender

Note: Q4 of 2021 has been excluded due to an exceptionally low QLFS response rate in those quarters. *Source:* Calculated from Statistics South Africa. Quarterly Labour Force Surveys for relevant years. Interactive datasets. Accessed at Nesstar facility at www.statssa.gov.za in August 2023.

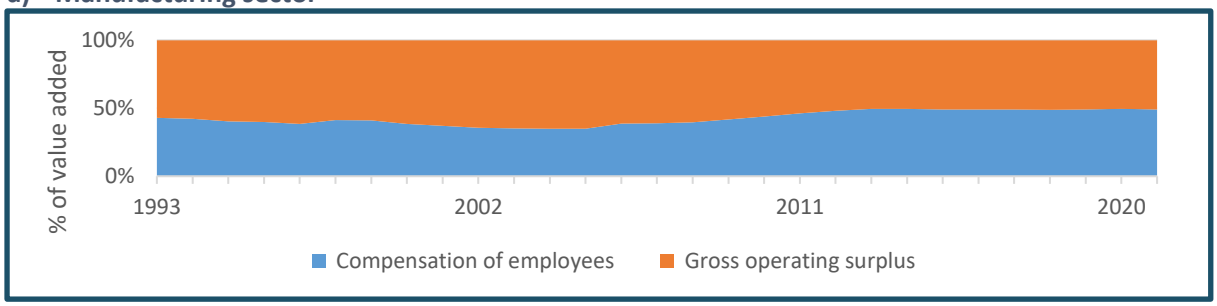
Figure 13 presents data on capital vs. labour share of value added between 1993 and 2021, as measured by gross value operating surplus vs. compensation of employees both as a percentage of value added at factor prices. Figure 13a covers the manufacturing sector as a whole, with Figure 13b covering the electrical equipment sub-sector. In the manufacturing sector overall, the data shows a rise in the labour share from 43.7% in 1993 to a peak of 51.1% in 2002, followed by stagnation in the mid-2010s and a marginal rise to 47.9% by 2021 – a net gain in the labour share over the period.

For the electrical equipment sub-sector, the trend is both more volatile and more striking, to the extent that the data likely need to be assessed and verified in subsequent research. While the labour share suffered two sharp declines – from 1994 to 1997 and from 2006 to 2007 – on a net basis it has increased massively over the period. The labour share was 55.5% in 1993, rising to 88% by 2021.

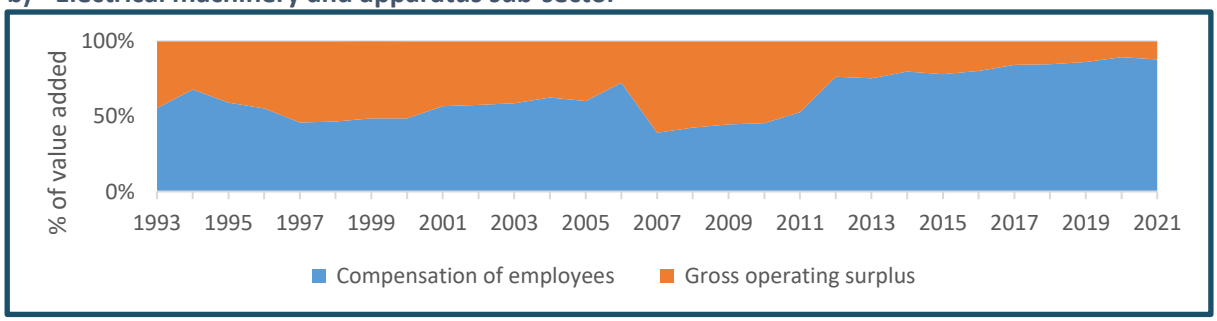
While the overall trend aligns with the negative profitability trends shown in Figure 4a, the net change in functional shares is an exceptionally large shift compared with manufacturing as a whole. However, taking Figure 13a and Figure 4a together, it seems reasonable to conclude that profitability in the sub-sector has fallen to an extent that is concerning for its sustainability and job creation potential.

Figure 13: Capital vs. labour share of value added at factor prices, 1993-2021

a) Manufacturing sector



b) Electrical machinery and apparatus sub-sector



Source: Calculated from Quantec. EasyData. Interactive dataset. Industry service. Accessed at www.quantec.co.za in August 2023.

SECTION 2: GOVERNANCE STRUCTURES AND STAKEHOLDERS

2.1 Government stakeholders

The policies of a number of government departments and SOCs – National Treasury, the Department of Mineral Resources and Energy (DMRE), Eskom and Transnet are key among these – affect the electrical equipment sub-sector through a range of mechanisms. Several of these mechanisms are discussed in further details in the section on policy and infrastructure initiatives.

However, the main government department engaged and directly mandated with the development of the electrical equipment sub-sector from an industrial policy perspective is the Department of Trade, Industry and Competition (the dtic). The dtic and its various agencies are responsible for a range of programmes, policies, and regulations that directly impact the sub-sector. These government stakeholders and some key mandates/outputs/documents are summarised in **Table *1***.

Table 1: Key dtic programmes, agencies and reports

PROGRAMME/AGENCY/REPORT	MANDATE/OUTPUT/DOCUMENTS
the dtic Electrotechnical Sector Desk	Supports development of manufacturing in technical industries including IT, communication, electronics and electrical manufacturing (including renewable energy and white goods). Full scope of activities is unclear, but include the production of an annual business plan, an annual sector profile aimed at potential investors in the electrotechnical industries, and a five-year review of these industries.
Annual Performance Plan (APP) 2023/24	Electrical equipment industries only included by implication through broader electrotechnical sector mention in APP outputs 1 (R200 billion in investment pledges secured across the state) and 2 (R40 billion in additional local output committed or achieved). No detailed programmes or targets.
Estimates of National Expenditure (ENE) 2023	No explicit mention of sub-sector, but average nominal growth rate of expenditure in Sectors sub-programme that houses Sector Desks was -5.6% from 2019/20-2022/23 and is only projected to grow at 2.2% from 2022/23-2025/26.
Annual Incentive Report (AIR) 2020/21	No overall breakdown of incentives by sub-sector/industries. Mention of approved support for some relevant projects. Support Programme for Industrial Innovation (SPII): 1. Manufacture of Internet-of-Things-capable lithium-ion batteries; and 2. Hybrid bus utilising hydrogen fuel cells. Critical Infrastructure Programme (CIP): 1. Upgrading electricity supply infrastructure in Vhembe, Cape Town, Tshwane and Ekhurhuleni. Industrial Parks Revitalisation Programme (IPRP): 1. Installation of electricity supply infrastructure in 12 Industrial Parks since 2016/17. Technology and Human Resources for Industry Programme (THRIP): 1. Support for research into development of rechargeable batteries.
Industrial Policy Action Plan (IPAP) – Sectoral Focus Area: Electro-technical industries	Key Action Programmes: 1. Local procurement of high voltage switchgear 2. Localisation of LED lighting 3. White Goods industry cluster
Industrial Development Corporation (IDC) – Machinery, Equipment and Electronics Strategic Business Unit (SBU)	Provides funding to the following sub-sectors: 1. Electrical equipment 2. Capital equipment (incl. yellow goods) 3. Pumps, valves, instrumentation 4. Logistics, lifting and handling equipment 5. Electronics and digital equipment

PROGRAMME/AGENCY/REPORT	MANDATE/OUTPUT/DOCUMENTS
	6. Household appliances According to IDC Corporate Plan 2022/23-2024/25, 7% of approved funds over last five years allocated to machinery, equipment and electronics firms.[4] However, its Funded Business Partners list for 2022 shows no firms in electrical equipment sub-sector.
South African Bureau of Standards (SABS) – Sector units	Certification, assessments, product testing, local content grading and training by the following units: 1. Electronics and appliances 2. Energy efficiency 3. Engineering 4. Lighting technology 5. Solar water heating Also the only entity able to test high- and low-voltage electrical equipment in Africa according to its 2020/21 Annual Report
International Trade Administration Commission (ITAC)	Mandate to conduct customs duty investigations, trade remedy investigations and import/export control subject to policies set out in the NDP, NGP, IPAPs, TPSF, MTSF 2019-2024, ERRP and TPIDEG. As per 2022/23 Annual Performance Plan, monitors the impact of trade measures taken by partners on key sectors, including electrical equipment.

Source: Accessed at relevant organisational websites in August 2023. See hyperlinks provided in table.

2.2 Main business associations, unions and platforms for industry engagement

Given that the electrical equipment sub-sector comprises a number of different industries, it is important to know and engage with a range of stakeholders and platforms to establish an in-depth understanding of the sub-sector. An overview of key stakeholders and platforms active in the sub-sector is provided in Table 2.

Table 2: Key stakeholders and platforms

NAME	MANDATE	CONTACT
BUSINESS ASSOCIATIONS		
Steel and Engineering Industries Federation of Southern Africa (SEIFSA)	SEIFSA is a federation representing 19 independent employer associations in the metals and engineering industries, with a membership of 1 223 companies employing around 167 000 people.	Tafadzwa Chibanguza (COO) 011 298 9432 082 343 7817 tafadzwa@seifsa.co.za
South African Electrotechnical Export Council (SAEEC)	SAEEC is a non-profit established as a Public Private Partnership between business and the DTIC to facilitate export growth and internationalisation of its members.	Chiboni Evans (CEO) 011 315 0209 081 451 9534 chiboni@saeec.org.za

[4] See Appendix C.

NAME	MANDATE	CONTACT
Association of Electric Cable Manufacturers of South Africa (AECMSA)	AECMSA represents cable manufacturers in interactions with government, supplier and customer associations and other industry bodies.	Miekie Dames (Chairperson) 012 381 1408 083 636 1694 mdames@cbitele.com
Electrical Engineering and Allied Industries Association of South Africa (EEAIA)	EEAIA was established in 1936 to promote members' interests and the industry in general. EEAIA also represents members in negotiations with trade unions	Rouane Herselman (Vice chairperson) 021 761 6176 082 569 1120 rouane@montsi.co.za
South African Metering Industry Association (SAMIA)	Established by the DTIC, which coordinates SAMIA and acts as the secretariat, it meets on a quarterly basis and engages with various stakeholders on industry-related topics.	Matsotso Vuso (Chairperson) Matsotso.vuso@nyamezela.co.za
Electronics Development and Manufacturers Association of Southern Africa (EDMASA)	EDMASA aims to coordinate the activities of its members, the private sector and government to promote local economic opportunities, transformation, skills development and to facilitate trade initiatives through the country's capacity to design, develop and manufacture electronic goods.	083 550 1172 malesela@czelectronics.co.za info@edmasa.org.za
UNIONS		
National Union of Metalworkers of South Africa (NUMSA)	Formed in 1987, NUMSA is South Africa's largest metalworkers union, affiliated to the South African Federation of Trade Unions (SAFTU) and party to the MEIBC Main Agreement (see below).	011 689 1700 info@numsa.org.za
Solidarity	Formerly the Mine Workers' Union (the largest affiliate of the white-only South African Confederation of Labour), Solidarity is a general union and party to the MEIBC Main Agreement.	0861 25 24 23 diens@solidariteit.co.za
Metal and Electrical Workers Union of South Africa (MEWUSA)	Formed in 1988, MEWUSA is affiliated to the National Council of Trade Unions (NACTU) and is party to the MEIBC Main Agreement.	011 331 6739 info@mewusa.org.za
United Association of South Africa (UASA)	Formed in 1998, UASA is a general union affiliated to the Federation of Unions of South Africa (FEDUSA) and is party to the MEIBC Main Agreement.	Rick Grobler (Sector contact) 011 472 3600 r.grobler@uasa.org.za

NAME	MANDATE	CONTACT
SA Equity Workers' Association (SAEWA)	Formerly an electrical workers' association founded in 1929 and subsequently affiliated to the racially segregated Trade Union Council of South Africa (TUCSA), SAEWA is a general union and is party to the MEIBC and NBCEI Main Agreements.	011 827 5353 headoffice@saewa.co.za
Congress of South African Trade Unions (COSATU) Trade and Industry Forum	COSATU's Trade and Industry Forum coordinates its members' response to sector-specific policy issues.	Tengo Tengela (Coordinator) 010 219 1358 Tengo@cosatu.org.za
STAKEHOLDER PLATFORMS		
Manufacturing, Engineering and Related Services Sector Education and Training Authority (merSETA)	merSETA facilitates the process of training by paying grants, registering moderators and assessors, identifying scarce skills, accrediting providers, monitoring the quality of training and implementing projects to close the skills gap. Of six merSETA sub-sectors, three are relevant for electrical equipment: metals and engineering; components manufacturing and potentially auto manufacturing	Head Office 0861 637 738
Metal Industries Collective Bargaining Summit	Organised by SEIFSA to discuss and coordinate members on collective bargaining processes	Tafadzwa Chibanguza (COO) 011 298 9432 082 343 7817 tafadzwa@seifsa.co.za
Metals and Engineering Industries Bargaining Council (MEIBC)	The Metal and Engineering Industries Bargaining Council (MEIBC) is a statutory body created under the Labour Relations Act (LRA) to provide for the co-regulation of stable and productive employment relations in the metal and engineering industries. See Main Agreement 2021-2024 including parties and industries covered including electrical equipment.	National Office 011 639 8000
National Bargaining Council for the Electrical Industry of South Africa (NBCEI)	NBCEI is a Bargaining Council that aims to maintain industrial peace and stability in the Electrical Industry. It provides the following services: 1. Forum and facilities for Collective Bargaining 2. Settlement of Labour Disputes 3. Provision of Social Benefits for the upliftment of all persons falling within the industry	General Secretary's office 011 339 2312

NAME	MANDATE	CONTACT
	NBCEI consists of representatives from both employers' and employees' organisations and has equal representation from both groups. See Main Agreement for details.	

Source: Accessed at relevant organisational websites in August 2023. See hyperlinks provided in table.

2.3 Major policy and infrastructure initiatives

Several policy and infrastructure initiatives have important implications for developing the electrical equipment sub-sector. This section provides some details on two of these areas: on the policy side, the designation of certain products to support local production through preferential procurement regulations; and on the infrastructure side, a set of key documents at the centre of national energy system planning. These areas are significant for electrical equipment industries primarily from a demand perspective – the former as a policy tool for stimulating demand for local producers and the latter as an indicator of future demand from a central stakeholder in the electricity value chain.

Designation for local production

In terms of Section 5 of the Preferential Procurement Policy Framework Act No. 5 of 2000 and Preferential Procurement Regulations (published and amended by National Treasury from time to time), the dtic has been empowered (with concurrence from National Treasury) to identify certain products or sectors that must meet specified local production thresholds when they are procured by government departments and agencies.

In other words, when an organ of state advertises an invitation to tender in a designated product or sector, it has been required to state that only goods or services that meet the stipulated minimum threshold for local production and content will be considered for procurement.

Prospective bidders have been required to calculate the local content embodied in their product or service as a share of the total bid price (see Figure 14) and illustrate that it meets the specified threshold. In some cases, local content thresholds have also been stipulated for specified components and activities associated with the production of the designated product.

Figure 14: Local content formula

The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the following formula which must be disclosed in the bid documentation:

LC = (1 – x/y) * 100

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Source: National Treasury. Designated Sectors Circular Number 4 of 2019/2020. Accessed at www.ocpo.treasury.gov.za in August 2023.

Several products produced in the broader electrotechnical sector (including several in the electrical equipment sub-sector) have been designated for local production in this manner – see Table 3.

Table 3: Summary of designated product in electrotechnical sector

DESIGNATED PRODUCT	LOCAL CONTENT THRESHOLD	ADDITIONAL DETAILS
Industrial lead batteries	50%	Components (lead, pasting materials, plastic, labels, other acid content) and battery assembly "must be executed locally". Unclear if thresholds apply or must be 100% local.
Medium-voltage switchgear	50%	Specified thresholds for components: instrument transformers (15%), busbars (5%), housing (25%), switching devices (5%)
Set top boxes	30%	Components (PC board, connecting cables and enclosures) and set top box assembly "must be executed locally". Unclear if thresholds apply or must be 100% local.
Cable products	90%	Power transmission and telecoms cables both 90% across all types.
Residential electricity and water meters	40-70%	70% for pre- and post-paid electricity meters; 50% for SMART meters 40% for pre- and post-paid water meters
Pumps, medium-voltage motors and associated accessories	70%	70% for 14 types of pumps 70% for electric motors of 185-20 000KW and greater than 1000V; 100% for components
Solar PV systems and components	15-90%	Specified thresholds for components: laminated PV modules (15%), module frame (65%), DC combiner boxes (65%), aluminium mounting (90%), inverters (40%)
Two-way radio terminals and associated equipment	20-100%	Around 45 separate components specified for portable radios, mobile radios and repeaters.
Solar water heater components	70%	Storage tanks and solar collectors
Transformers, shunt reactors and associated equipment (repealed)	10-100%	Class 0 (90%), class 1-2 (70% rising to 80%), class 3 (45% rising to 80%), class 4 (10% rising to 20%), components for all classes (100%)

Source: National Treasury. Designated Sectors. Accessed at www.ocpo.treasury.gov.za in August 2023.

Since this policy operates exclusively through government procurement, the impact of designation for local production depends directly on trends in government expenditure. As noted in Section 1, there has been a sharp downturn in capital spending by public institutions in recent years, with further fiscal consolidation planned over the medium term. As such, the impact of designation on targeted products and sectors is likely to be constrained and alone is unlikely to generate rapid employment and output growth in local manufacturing.

In addition, bidders may apply to the dtic for exemptions on local content thresholds provided they provide reasons for why they cannot meet the thresholds. It is not clear how decisions on exemptions are made, and there does not appear to be publicly available data on how many exemptions are applied for, how many are granted and on what basis, total value associated with exemptions, etc. Access to information on these questions would be important for developing a full understanding of how the designation policy operates in practice.

It is also noteworthy that exceptions to local content thresholds are built into designation instructions in some cases. For electricity and water meters, certain imported electronic components are excluded;

for cable products, copper, aluminium, PVC and optical fibre are excluded. While exclusions of this nature make sense where there is clear evidence that local production is unviable, some of the excluded products do not appear to fit this description.

Evidence on the impact of designation for local production is limited (Makgetla, 2023). Moreover, its future as a tool through which industrial policy can shape public procurement appears uncertain. Through a set of November 2022 amendments to the Preferential Procurement Regulations, National Treasury removed clauses that had set out the DTIC's role in designating "a sector, sub-sector or industry or product in accordance with national development and industrial policies for local production and content" (National Treasury, 2017:27). The new regulations appear to leave decisions regarding the prioritisation of local production up to the organ of state undertaking procurement, without setting out how or if such decisions are to relate to industrial policy.

Industrial policymakers and industry players concerned with supporting industrialisation in the electrical equipment sub-sector ought to explore the implications of these developments and may need to investigate alternative support mechanisms should existing designations indeed wither away.

Energy system planning

Two key documents on national energy system planning can provide important insights into the future that local manufacturers of electrical equipment are likely to have to operate in. These are the Integrated Resource Plan (IRP) produced by the DMRE and the Transmission Development Plan (TDP) produced by Eskom.

The IRP is an electricity infrastructure development plan that aims to achieve a balance between least-cost electricity supply, national demand projections and broader socioeconomic issues including affordability of supply and environmental concerns. The initial version of the IRP, called the IRP 2010-2030, outlined the preferred generation technologies needed to meet the projected growth in demand until 2030. It also incorporated government objectives such as ensuring affordable electricity, reducing greenhouse gas emissions, minimising water consumption, diversifying electricity generation sources, localisation and regional development.

The TDP evaluates network requirements and proposes plans to meet projected demand and integrate new generation over a 10-year period, detailing completed and upcoming projects aimed at extending or reinforcing the transmission system. The TDP 2023 to 2032 identifies infrastructure needs to sustain the existing customer base and accommodate future demand growth, integrating new generation from Eskom-owned facilities, provincially- or municipally-owned facilities and IPPs, and efficiently transmitting power from connected power stations to load centres. It also describes various projects related to refurbishing aging infrastructure, strategic initiatives, acquiring sites and servitudes, establishing facilities, procuring production equipment, and maintaining strategic capital spares.

Taken together, these documents can provide valuable insights for electrical equipment manufacturers and industrial policymakers alike as the implementation or otherwise of these plans will shape demand in key electrical equipment industries (Vajeth and Tlhatlhetji, 2023). See for key takeaways from each document.

Table 4: Energy system planning relevance for electrical equipment sub-sector

SOURCE	KEY DETAILS	RELEVANCE
IRP (2019)	Coal 72.2% of installed capacity as of 2018; projected to be 45% of installed capacity by 2030 Renewable energy (wind, solar and concentrated solar power) 0.7% of installed capacity as of 2018; projected to be 26% of installed capacity by 2030 Scale of projected renewable energy installation will require utility-scale storage capacity to manage intermittency and mismatch of supply-demand timing As wholesale and retail tariffs rise, more users expected to look for alternatives like rooftop (residential) or utility scale solar generation (mines and other big industrial users) and leave the national grid	Shrinking of coal value chain; implications for manufacturers of coal plant equipment Opportunities to get a foothold and build capabilities in critical value chains with long-term relevance Opportunities to get a foothold and build capabilities in critical value chains with long-term relevance Increasingly decentralised grid implies need for greater proportion of certain machinery/equipment – important to identify local opportunities and deficits
TDP (2023-2032) (see also presentation)	Significant transmission investment required for simultaneous renewable energy integration and network sustainability, especially in the northern, central, southern corridors For 2023-2032, projected need for additional 14 000km of transmission lines - total R72 billion of transmission capex required in initial five-year period alone (2023-2027) Capacity constraints in engineering/procurement/ construction VCs required to execute plans	Changing regional patterns of electricity generation and transmission – opportunities for training and jobs Medium- to long-term opportunities for cable and distribution/control manufacturers – and incentive for govt. to ensure they produce competitively Need to plan for skills and scaling up in critical non-manufacturing industries

Source: Accessed at relevant organisational websites in August 2023. See hyperlinks provided in table.

As shown in Table 4, energy system planning processes and documentation can provide important insights into market conditions over the medium- to long-term. Even though in practice, not all targets and projections contained in planning documents are met according to stated timeframes or indeed at all, they nonetheless can be useful to policymakers and industry stakeholders alike.

Drawing on these documents, stakeholder engagements and industry data, a value chain mapping study commissioned by the Localisation Support Fund identifies a few key points relevant for local manufacturing in transmission and distribution equipment in particular (Vajeth and Tlhatlhetji, 2023). First, it notes a shift in procurement strategy, with increased private sector involvement in both generation and transmission segments of the energy system – generation in terms of IPPs and embedded private generation, and transmission in terms of Eskom Transmission's procurement model increasingly outsourcing engineering, procurement and construction (EPC) functions to the private sector. In short, this entails private contractors completing transmission infrastructure design based on Eskom specifications, procuring materials and equipment, managing construction and commissioning, and then turning over a "a fully functional and compliant asset" back to Eskom (Creamer, 2023b). Second, in identifying opportunities for expanding existing local manufacturing capabilities and acquiring new capabilities that replace certain imports, the report notes that local manufacturers will require "workload certainty" – i.e., some assurances about demand – to enable this (Vajeth and Tlhatlhetji, 2023:6). Together these points suggest the need for detailed sub-sector and industry-level industrial policies to support positive industrialisation outcomes. With expanded private involvement in the energy system and the governance of value chains that feed into it, policies dependent on leveraging public procurement may prove insufficient to drive growth and structural transformation in local manufacturing.

2.4 Main policy debates in the industry

Due to the variety of industries within the electrical equipment sub-sector, a comprehensive review of policy debates within these is difficult to produce without further engagement with industry stakeholders in labour, business, government and other relevant industry platforms/institutions. For this reason, this section provides a brief overview of two cross-cutting debates in the sub-sector and the machinery and equipment value chain more broadly. The first and most longstanding debate concerns dynamics between the upstream, midstream and downstream producers in the machinery and equipment value chain. Throughout the post-apartheid period, government has identified the critical importance of growing downstream segments of the value chain. These are more jobs-intensive with offer greater scope for diversification into higher value-added and more complex activities. However, in practice most incentives and strategic support have gone to upstream, more basic and more capital-intensive producers (Andreoni et al., 2021; Roberts and Rustomjee, 2009).

Ensuring cheap electricity, low input costs and generous incentives for upstream producers, particularly in basic iron and steel, was ostensibly aimed at establishing a foundation for growth in downstream machinery and equipment industries. In reality, dominant upstream producers like ArcelorMittal South Africa (AMSA) have been able to subject the downstream to high prices while continuing to receive investment incentives and avoiding conditionalities designed to ensure that benefits were passed on down the value chain. The growth of those industries within the electrical equipment sub-sector that make use of significant amounts of steel (e.g., cables) are likely to have been significantly constrained by these dynamics.

A second, more recent debate has revolved around government's localisation policy, of which the sector designation process described in the previous section is a key component. Localisation policies have been criticised in some quarters as market-distorting, likely to raise costs for local consumers and to protect inefficient local producers from international competition. In the more specific context of the crisis in Eskom and associated loadshedding, localisation policies have been criticised as unnecessarily delaying procurement of RE equipment from overseas by IPPs.

Both general and specific forms of the critique of localisation raise fundamental questions about the extent of government's role in shaping the economy, the trade-off between investment in industrial capabilities over the medium/long-term vs. consumption to satisfy immediate needs as quickly as possible, and the contending theories, processes and interests that shape economic policymaking decisions. From an industrial policy perspective, the general critique is straightforward; industry policy is inherently and necessarily market-distorting; recent economic history suggests government ought to have a large role in shaping economic outcomes; and the critical question is how to evaluate when and for whom the benefits of localisation policies outweigh the costs.[5] The debate on the trade-off between developing local industrial capabilities in critical RE value chains and the need to add RE generation capacity as rapidly as possible to alleviate loadshedding is a useful case study of how debate on general principles and conflicting ideologies has overshadowed the need for evaluation of costs, benefits and the distribution of these.

For the electrical equipment sub-sector, both debates discussed above have important implications. If government succeeds in shifting the balance of state support in favour of downstream industries and away from the capital-intensive upstream, electrical equipment industries are likely to benefit substantially from increased incentives and possibly lower input costs. Similarly, if the legitimacy of localisation policies is defended and these are expanded in scale and scope (i.e., beyond designation for preferential public procurement and beyond purely demand-side measures), electrical equipment industries should also benefit substantially in light of their relative labour-intensity and projected large investments in electricity transmission infrastructure and RE generation capacity.

[5] See Makgetla, 2022 for a recent discussion of the localisation debate in South Africa.

SECTION 3: MAIN CONSTRAINTS

The electrical equipment sub-sector, comprising several distinct industries, faces a wide range of industry-specific constraints. While future research will provide space to explore industry-level dynamics at the required level of detail, this section will remain limited to a brief overview of broad, cross-cutting constraints. These will be organised according to whether they are primarily international or domestic in nature.

On the international front, the constraints facing the sub-sector are largely trade related. A number of these were illustrated in Figures 6a and 6b in Section 1 of this paper. These showed that the value of imported electrical equipment is much larger than exports, and that on the whole South African manufacturing is not internationally competitive.

Trade in high-tech, niche products is dominated by advanced economies and increasingly by China, which also dominates trade in low- and medium-tech electrical equipment industries. In contrast, South African exports are not only small but are limited almost entirely to other African countries – the data suggests no evidence of progress in breaking into significant overseas markets, especially those in other large developing countries. Lastly, access to critical raw materials such as copper may become increasingly difficult over time as the global shift to RE and associated increases in electrification boost copper demand and prices substantially.

On the domestic front, a more diverse range of constraints faces manufacturers of electrical equipment. As discussed in the first section, the fortunes of the industry are quite closely linked with investment in electricity, rail and telecommunications infrastructure, and with construction more broadly. Sluggish growth throughout the 2010s followed by the COVID-19 shock is likely to damage economic prospects for a significant time to come.

The combination of constrained fiscal space, constrained SOC balance sheets and depressed private capital expenditure suggests that investment is unlikely to boom in the foreseeable future. In addition, loadshedding poses a challenge for local manufacturers that their overseas competitors simply do not have to reckon with. While loadshedding is likely to provide a powerful demand stimulus for some products (e.g. batteries, various renewable energy-powered products), local manufacturers contend that disruptions to production and the costs of mitigation damage competitiveness (SEIFSA, 2023).[6]

Further, according to some industry stakeholders, a severe skills shortage threatens to undermine existing capabilities and the ability to keep up with the latest technological developments (Muller, 2018). Lastly, the data presented in Figure 4a suggests that industries across the sub-sector have suffered unstable and declining profitability since at least 2008, and if not addressed this may undermine future investment, capabilities and competitiveness in the sub-sector.[7]

[6] See Appendix B for consolidated results of a SEIFSA survey on the impacts of loadshedding on manufacturers in the broader metals and engineering sector. It should be noted that the results, while striking, are based on a small non-random sample.

[7] Which is not to assume that profitability will translate into higher investment without appropriate measures to support this outcome.

In conclusion, Table 5 provides a brief SWOT analysis for the sub-sector.

Table 5: SWOT analysis for the electrical equipment sub-sector

Strengths ○ Relative labour-intensity ○ Modest growth in employment ○ Policy support through designation ○ Well-organised industry stakeholders	**Weaknesses** ○ Small as percentage of manufacturing GVA, GFCF, employment, etc. – lack of profile ○ Industry has raised concerns about critical skills shortages ○ Large firms mostly importers, distributors and foreign-owned[8] ○ Lack of more extensive industrial policy – no targeted Master Plan, incentives or explicit strategy for growth
Opportunities ○ Large state-led investments in transmission infrastructure planned in next 10 years, alongside private business and household investments in energy generation and storage equipment – can be leveraged for local industrial development. ○ Potential to develop capabilities in key RE value chains ○ Clarify and scale-up industrial policy support for relevant industries – could be considered for a Master Plan of its own, or for inclusion in SAREM	**Threats** ○ Fortunes linked to growth and state, SOC and private investment in particular – all likely to be weak for foreseeable future ○ Falling profitability undermining future investments in capabilities, competitiveness, technology ○ Cost and reliability of electricity, and related costs of investment in alternate supply ○ Cost and availability of critical raw materials – e.g. copper ○ Difficulty of implementing industrial policy in areas exposed to conflict/contentious debates over future of energy system ○ Continued growth of imports from countries with large-scale production, dominance of key intellectual property and productive capabilities, similar wage costs and more extensive industrial policies

[8] See Appendix A for non-exhaustive list of large firms involved in electrical equipment manufacturing.

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APPENDICES

A. Large manufacturers (ranked by number of employees)

COMPANY	DESCRIPTION	EMPLOYEES	HEADQUARTERS	SHAREHOLDER TYPE
ACTOM (Pty) Ltd	Manufactures, repairs and distributes electro-mechanical equipment, offering a combination of manufacturing, repairs, maintenance, projects and distribution throughout southern Africa.	7700	Gauteng	Institutional: Old Mutual is largest shareholder (JSE-listed)
Power Technologies (Pty) Ltd	Supplier of electrical and electronic equipment used for the creation, management, distribution, storage and use of electricity. Manufactures and supplies electrical and thermal insulation, conductor material and related mechanical products and services. Substation projects for MV, HV and EHV and substations up to 440KV from concept to commissioning	1807	Gauteng	Institutional: 100% owned by Altron Ltd (JSE-listed)
ABB South Africa (Pty) Ltd	Imports, supplies and assembles power and automation technologies solutions and installs building management systems. The company's portfolio of products includes systems and services for rolling stock, including traction transformers, generators, converters, motors, pumps and other components.	1472	Gauteng	Foreign: ABB Ltd (Switzerland) is 100% shareholder (5% of ABB Ltd owned by BlackRock Inc)
Siemens (Pty) Ltd	An integrated technology company involved in electrification, automation and digitalisation. Global supplier of electrical power products, systems, solutions and services for transmission and	1410	Gauteng	Foreign: 70% owned by Siemens AG (Germany)

COMPANY	DESCRIPTION	EMPLOYEES	HEADQUARTERS	SHAREHOLDER TYPE
	distribution of electrical power.			
SGB Smit Power Matla (Pty) Ltd	Manufactures, installs and distributes large power transformers, reactors and bushings, offering aftersales services. Major clients are Eskom, local councils, and the private sector.	1305	Gauteng (manufacturing facility in Western Cape)	Foreign: 40% owned by SGB Smit New Ventures GmbH (Germany)
Voltex (Pty) Ltd	Wholesale, manufacture and retail of electrical goods such as switches, cables, tubing, plugs and related items.	1300	Gauteng	Institutional: Bidvest Group is 100% shareholder (JSE-listed)
Metindustrial (Pty) Ltd	Manufactures batteries for vehicles and trucks as well as for industrial mining. Industrial batteries are supplied to materials handling fork-truck OEMs. The company operates two branches, three battery manufacturing plants and has 150 Battery Centre franchises.	1200	Gauteng	Institutional: 100% owned by Metair Investments Ltd (JSE-listed)
Aberdare Cables (Pty) Ltd	Manufactures power cables. The company's customer base includes power supply authorities, railway and transport organisations, municipalities, and industries such as petrochemical, mining, wholesale, industrial, construction and domestic building.	977	Gauteng	Foreign: 75% owned by Hengtong Optic-Electric International Co Ltd (China)
A T C (Pty) Ltd	Installs and maintains aluminium electrical cables, and manufactures low-voltage, medium-voltage and high-voltage cables. Manufactures and distributes closures for copper and optical fibre cables.	652	Gauteng (two plants, one in Western Cape)	Institutional: largest shareholder is Reunert Ltd (JSE-listed)

COMPANY	DESCRIPTION	EMPLOYEES	HEADQUARTERS	SHAREHOLDER TYPE
AutoX (Pty) Ltd	Manufactures and supplies automotive, industrial, leisure, and motorcycle batteries.	600	Gauteng (one plant in Eastern Cape)	Private: 100% owned by Trinitas Fund General Partner (Pty) Ltd
Diesel Electric Services (Pty) Ltd	Manufactures and supplies diesel generators and control panels, maintaining and repairing existing diesel generators as well as installing distribution boards and UPS systems. Aftersales and turnkey services are also offered.	502	Gauteng	Private: 100% owned by Mr K.J. Donaldson
Cummins South Africa (Pty) Ltd	Imports, designs, manufactures and supplies power generation equipment, power systems, gasoline engines and custom power supplies. Activities also include parts warehousing and distribution, engineering and sales and marketing operations.	432	Gauteng	Foreign: 100% owned by CMI Africa Holdings BV (Netherlands)
Babcock Ntuthuko Engineering (Pty) Ltd	Manufacturing of turnkey high voltage transmission infrastructures and components thereof; design, maintenance and refurbishment of HV power lines and towers, construction of steam generation plants and supply of components	400	Gauteng	Foreign: Babcock International Group PLC (UK) is largest shareholder
Zest WEG Electric (Pty) Ltd	Manufacture, installation, maintenance, distribution and after-sale service of transformers, electric motors, automation and power generation. The company also imports and distributes electrical motors.	400	Gauteng	Foreign: 100% owned by WEG S.A. (Brazil)
BEKA Schreder (Pty) Ltd	Assembly of amenity lighting, street and public lighting, floodlighting of sports areas, emergency	375	Gauteng	Foreign: Schreder SA (Belgium) is

COMPANY	DESCRIPTION	EMPLOYEES	HEADQUARTERS	SHAREHOLDER TYPE
	lighting, functional lighting, parking areas and facade lighting, industrial lighting and commercial interior and exterior lighting.			100% shareholder
Hitachi Energy South Africa (Pty) Ltd	Manufactures, supplies imports, and exports engineering equipment such as high voltage products and transformers for the engineering industry.	200	Gauteng	Foreign: 100% owned by ABB South Africa – itself 100% owned by ABB Ltd (Switzerland)

Source: Who Owns Whom. Industries reports. Accessed at https://www.woweb.co.za in August 2023.

B. Consolidated results of SEIFSA (2023) survey of 206 firms in the metals and engineering sector

EMPLOYMENT	OUTCOME
Number of companies indicating that they have reduced head account as a result of the energy crisis	24,2%
Weighted average employment reduction	-25,32%
Employment reduction (number)	9432
Number of companies that have implemented short time	33,20%
Vulnerable (companies that have already reduced head count AND are working short time)	16,90%
Number of companies that have not reduced head count, but working short time (leading indicator for job losses)	17,30%
PRODUCTION	
Impact to production (over the last 12 months) - attributable to the energy crisis (Weighted)	-34,30%
INVESTMENT	
Companies that have cancelled investment/expansion plans (motivated by the energy crisis)	42,70%
Value of Investment Cancelled	R2,64 billion
Potential jobs not created due to cancelled investments	1620
INPUT COST	
Increase in monthly operating costs (from companies operating generators)	24,90%
ALTERNATIVE ENERGY SOURCE INVESTMENT	
Companies that have invested in alternative energy solutions (in the last 12 months)	79,20%
Capital Cost of alternative energy	R 985,9 million
Extent to which alternative power source meeting consumption	53,60%
Installed capacity (Generator)	116,6 MW
Installed capacity (Solar)	36,2 MW

Source: SEIFSA. Loadshedding impact assessment. Accessed at www.seifsa.co.za in August 2023.

C. IDC Corporate Plan 2022/23-2024/25 - Capital allocated to different sectors (R million)

SBU	Historical approvals (5-years)		Allocation				
			2022/23	2023/24	2024/25	3 years total	% of total
Agro-processing and Agriculture	3 998	5%	1 981	2 159	2 664	6 805	9%
Media and Audio-Visual	1 226	2%	602	894	1 082	2 578	3%
Tourism and Services	3 869	5%	802	1 190	1 403	3 395	4%
Automotive and Transport	5 357	7%	2 069	2 155	2 490	6 714	9%
Chemicals, Medical Products & Industrial Mineral Products	15 055	19%	2 125	2 451	2 836	7 412	10%
Machinery, Equipment & Electronics	5 389	7%	1 303	1 573	1 888	4 764	6%
Textiles and Wood Products	3 529	4%	1 064	1 233	1 432	3 729	5%
Energy	5 662	7%	3 874	4 016	4 727	12 616	16%
Infrastructure	5 522	7%	3 291	3 766	4 454	11 511	15%
Mining and Metals	26 006	32%	2 738	3 744	4 568	11 051	14%
Industry Planning & Project Development	3 18/8	4%	886	1 390	1 892	4 169	5%
Small Business	2 423	3%	458	773	934	2 165	3%
Total	**81 224**	**100%**	**21 194**	**25 344**	**30 370**	**76 908**	**100%**

Source: IDC. Corporate Plan 2022/23-2024/25. Accessed at www.thedtic.gov.za in August 2023.