EISAZ

NATIONAL EMPLOYMENT COUNCIL
FOR THE ENGINEERING & IRON AND STEEL INDUSTRY

ENGINEERING, IRON AND STEEL STATE OF THE INDUSTRY REPORT

2025

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2025

EXECUTIVE SUMMARY

An assessment of the Engineering, Iron, and Steel Industry in Zimbabwe was conducted in order to address the key opportunities and challenges faced by EISAZ members, Investors, and the Government; offer policy recommendations; conduct a benchmarking analysis; offer data-driven insights to EISAZ Stakeholders; engage investors by identifying market opportunities, growth prospects, and investment areas in Zimbabwe's iron and steel sector; provide recommendations to enhance the collaboration between EISAZ, Government, NEC Engineering, and academic institutions to ensure a sustainable and competitive industry. Desk study and document reviews, field surveys to a sample of subsector players, key stakeholder/informant interviews and discussions were carried out in coming up with the report. Six subsectors were assessed namely primary steel production, foundry and associated engineering, fabricated metal and steel products, electrical engineered goods and products, equipment manufacturers and machined components, and automotive industry. A SWOT analysis was carried out as part of the assessment approach.

Cross cutting issues revealed from the SWOT Analysis were as follows;

The main objectives of this assignment are:

i. **Erratic power supply** remains an issue with players at different levels of the steel value chain being load shed between 0800 – 1600hrs. A few are on dedicated ZETDC lines which has improved power availability up to 70%, with 30% unavailability due to transmission and distribution faults.

ii. **High cost of electricity:** The price of electricity averaging from USD0.14 – USD0.23/kWh is high for the energy intensive steel sector reducing its competitiveness against regional and global suppliers

iii. **High cost of finance/funding:** Interest rates range from 15 – 25% with short tenures are far higher than regional and global rates of between 3-10% making the industry less competitive.

iv. **Unfair trade practices by regional competitors** who breach bilateral, regional and global trade protocols. For example, neighbouring countries are putting a tariff on imports of steel from Zimbabwe into their countries, yet Zimbabwe imports steel products from these countries duty free

v. **The 70% Export Earnings Retention Policy** making price of exported steel products 10% - 20% more expensive than competitors. As a result, there is very little exported into the region.

vi. **Stiff competition from imports:** Many companies have shut down due to low volumes on the market. The influx of cheap imports (both good and low quality) has threatened the closure of the local manufacturing industry. Often, these products come at very low cost, and duty free. The local manufacturing sector, relying on imports of raw materials, often coming with import tariff, manufactured using inferior technology in a high cost of doing business environment can never compete with imports.

vii. **Failure to tap into opportunities presented by the growth in the mining and infrastructure development industry:** Majority of the investments, coming from China, where their domestic policy favours bringing wholly manufactured components from their host country at the expense of local supplies.

viii. **Zero to low import tariffs on products that are produced locally:** Many products that are produced locally enter the country at zero to low tariffs, threatening the existence of the local manufacturing industry.

A strategic rescue plan has to be put in place as a matter of urgency for local manufacturing in the engineering, iron and steel value chain, otherwise deindustrialization and closure of companies will continue, with many subsectors closing completely and the country becoming merely an end market for finished steel products. The most affected subsectors threatened with extinction include the Automotive Industry, Foundries and associated engineering; electrical engineered goods and equipment manufacturing. Scrap remains a contentious issue for the foundry industry, especially from the cost perspective amidst strong export demand giving rise to unsustainable prices for the subsector. The dilapidated rail infrastructure has given rise to high costs of transportation of the heavy steel products, impacting negatively on competitiveness. Primary steel production; fabricated metal and steel products have been buoyed by growth in the construction industry as well as the commissioning of the new Dinson Integrated Iron and Steel Plant in the last quarter of 2024.

Capacity Utilisation, employment levels and project revenues:

These are summarized below

Capacity Utilisation

Subsector	Baseline (2021)%	Estimated Volumes	Current Range%	Estimated Volumes	Estimated Average%	Current Estimated Employment Levels	Estimated Revenues (USDM/y)
Primary Steel Production	50-90%	~60ktpa	35-70%	~700ktpa	44%	5700	500
Foundry and Associated Engineering	35-75%	~5ktpa	15-60%	~4ktpa	42%	950	20
Fabricated Metal and Steel Products	50-75%	~10ktpa	45-50%	~8ktpa	48%	1900	40
Electrical Engineered Goods	50 - 80%	~1ktpa	40 - 55%	~0.7ktpa	46%	1500	20
Equipment Manufacturers and Machined Components	40 - 60%		25 - 70%		48%	4200	40
Automotive Industry	10 - 80%	<300Units/yr	10 - 35%	<300Units/yr	20%	763	20
Totals						15013	640

The total employment level is 15,013 which is quite low (ZISCO alone used to employ over 5,000 employees in comparison). Capacity utilisation ranges from about 10 – 70%, with the majority of the companies operating below 50%, which is a cause for serious concern. The revenues for the sector are estimated at USD640Million/annum. It was also worth noting of the lack of capacity to produce heavy steel sections and flat products which are required in the construction industry (especially the major projects). This implies heavy reliance on imports which will remain significant despite the huge investment in steel production.

Benchmarking

Cost competitiveness

Globally, steel produced by the BF-BOF Route cost between USD500 and 950/t. Lowest cost producers were India and China (USD500 – 600/t) with the majority of countries between USD600 and 800/t. For the EAF Route, cost ranges from USD600 – 900/t. Lowest cost producers were India and Russia (USD600-700/t). In comparison, local steel cost between USD680 – 900/t. With deliberate improvement of the enabling environment, local steel can be very cost competitive. However, with the major route being BF – BOF, environmental sustainability is inferior to the EAF route. Scrap prices on the export market are up to USD400/t which was way higher than the expected local price of USD200/t. Cost competitiveness is mainly affected by logistics and related enabling environment issues.

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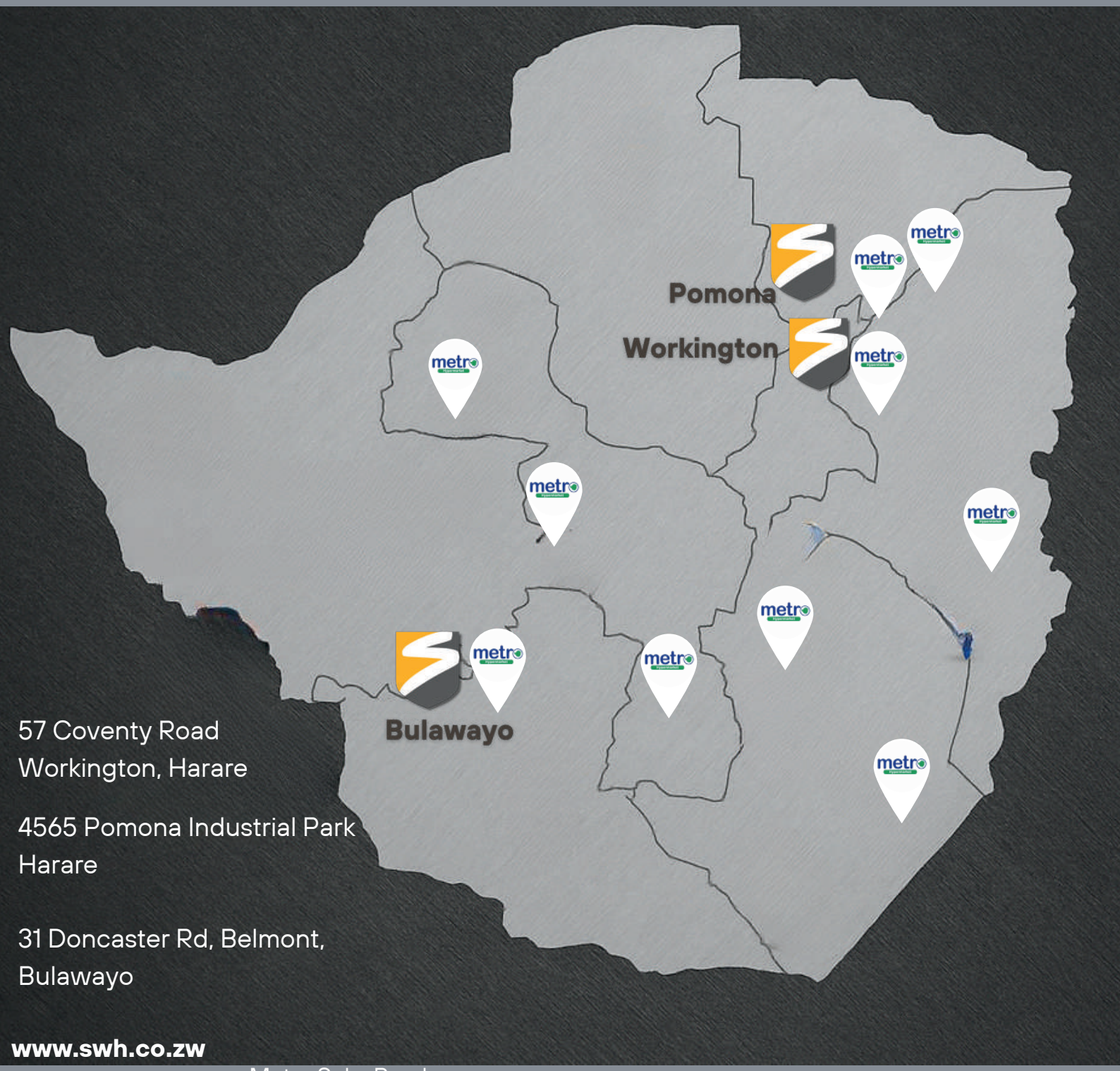

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Production Capacity

Zimbabwe faces stiff competition at both regional and global level in steel production. There is a huge global overproduction of steel standing at over 600Mtpa which will force countries to protect their own local markets as well as adopt shrewd mechanisms to evade trade agreements. China has a capacity of over 1000Mtpa, India, 149Mtpa, Egypt, over 10Mtpa, South Africa, 9Mtpa (with a demand of 4.5Mtpa), Algeria, over 5Mtpa, Zambia, over 0.5Mtpa. Mozambique, Kenya, Namibia and Nigeria amongst others were either at planning stage or construction stage of new steel plants. Thus Zimbabwe at around 0.7Mtpa steel production capacity was still way lower (e.g. 1 SA BF – BOF Plant is 1.8Mtpa). Therefore, the competition was very vicious at both regional and global level, with tariff wars raging on. For example, Zambia, effected a 30% duty on their rebars and light sections to protect their local industry. In retaliation, Zimbabwe imposed a 30% tariff on imported long products, blooms, billets and structural steel products to protect their own industry. Kenya also effected a 2 year stop to the AfCFTA for the imports of billets and wire rod to their country. It generally shows that for the local steel industry has to be extremely competitive to survive the global and regional wars.

Major opportunities

The following opportunities were identified;

i. **Growth in the mining sector towards a 12Billion dollar economy, agriculture and infrastructural development.** The mines offer opportunities for many subsectors and levels of the engineering, iron and steel value chain from structural steel, fabricated metal products, mill balls, automotive, machined components and repairs and maintenance. For the sector to tap into these opportunities, capacitation is fundamental, as well as implementation of the Local Manufacturing Enterprise Development Concept, supported by policy.

ii. **Mobility and the Emergency of Electric Vehicles.** The whole engineering, iron and steel value chain is triggered by this emerging subsector as many components come from the steel industry

iii. **The commissioning of the Dinson Iron and Steel Company (DISCO) and commencement of production of steel.** This has potential to offer low cost, but quality feedstock for the whole engineering, iron and steel value chain, which is critical for the revival of the downstream subsectors of the steel value chain. Synchronisation of the supply source and downstream needs is vital for the revival of the local industry.

iv. **Large pool of trained skilled personnel**. The sector can benefit from the large pool of trained but unemployed graduates, who have great potential to add value to the sector if offered on the job training and exposure to competitive technologies and technology transfer initiatives.

Policy issues:

Whilst it was noted that the engineering, iron and steel sector was fully acknowledged at policy level, implementation of policy was poor. All the sectors lacked practical support to enhance competitiveness. Thematic areas for policy consideration, formulation and implementation included; capacitation and strengthening of policy making and oversight institutions; organic combination of protection and open market policy; enhancement of global competitiveness versus import substitution; market driven rather than resource driven policy; prioritization of strategic subsectors; investment attraction policies and favourable funding mechanisms; security of supply of critical raw materials and inputs; Inclusiveness of SMEs in the steel value chain; Hybrid mix of SOEs and Private Actors; technology transfer, research and development and innovation enhancement mechanisms; and environmental sustainability and decarbonization policy towards netzero goals.

Recommendations

The following was recommended.

Consolidation of primary steel production and enhancement of competitiveness leveraging on the abundant and high-quality raw materials which include coking coal, iron ore and limestone amongst others. The different mix of primary steel producers consisting of the big giants like ZISCO and DISCO, and the small-scale players like Steel Makers, Steel Brand, Haumin, Panelink, etc., is a healthy mix which must be supported at policy level to ensure operational flexibility, resiliency in turbulent times as well as building a locally competitive engineering, iron and steel sector. Competitiveness enhancement is very crucial considering that there exists globally and overproduction of steel, with excess capacity of over 600Mtpa. Therefore, cost and quality competitiveness is a must for the sector to compete at local, regional and global level.

Capacitation of downstream players in the steel value chain. A massive scale of deindustrialization was observed and is still continuing with many companies either scaling down, closing down or transforming themselves into traders of imported goods rather than manufacturers. The competition from imports is just too stiff and the costs and risks associated with local production continue to increase. Cost and quality competitiveness has to be enhanced inevitably. Therefore, the strategic industry must be capacitated to invest in new, efficient and modern technology, otherwise there will not be local offtake of feedstock from the newly commissioned DISCO Steel Plant.

The formation of strategic market driven value chain clusters driven by common goals is recommended. Attractive clusters could be agricultural equipment and machines (primary steel producers, foundries, equipment manufacturers and machined components); infrastructural development (primary steel producers; secondary steel producers, fabricators); automotive (primary steel, foundries, fabricators, etc.); electrical engineered goods (primary steel producers, secondary steel, fabricators, etc.) There are also emerging markets that are growing rapidly like the Electric Vehicle Value Chan and the Solar Value Chain. These new value chains must be incorporated formally into the envisaged value chain clusters.

Policy support is vital to enhance competitiveness of the sector. In the wake of silent but vicious tariff wars and breaches to bilateral, regional and global trade agreements, the local manufacturer is exposed to all kinds of imported products which have threatened the existence of local manufacturing. If this issue is not addressed urgently, deindustrialization will continue unabated till total collapse. An organic combination of open market and protection measures must be carefully crafted, and in a shrewd manner to avoid breaching of trade agreements. These measures must be crafted in sync with the capacitation of strategic clusters to avoid stock outs and suffocation of the local market demand. Therefore, all products that can be manufactured locally must be protected to a certain level, whilst continually addressing competitiveness issues to the anticipated level in a deliberate timeline.

In order to ensure security of supply of critical raw materials for the steel value chain such as coking coal, coke, scrap, iron ore and steel billets amongst others, a proper inventory of the supply demand dynamics including cost structure is proposed in-order to establish the viable price thresholds for both supplier and consumer, as well as the viability gap. Incentives must then be structured to close the viability gap and enhance competitiveness of the local manufacturing sector. Bankable offtake agreements must then be put in place between consumers and suppliers to enhance sustainability and competitiveness.

Export incentives and elimination of export barriers is proposed to enhance competitiveness. Considering that the local market is relatively small, the export market will improve economies of scale and enhance competitiveness. It was acknowledged that the sector has lost most of its traditional regional export market and a lot has to be done to reclaim it. Therefore, exporters must be incentivized and supported through policy to be the least cost producer of regionally and globally competitive export market products. Strategic Value chain clusters involved in exports must be fully supported.

Leveraging on the abundance of resources for iron and steel production, the accelerated development of a Steel Policy to support the rapid resuscitation of the steel industry is proposed. This is important due to the fact that advancement in materials technology (e.g., nanotechnology) is fast rendering conventionally important natural resources obsolete and irrelevant. Iron ore may not be spared this risk and therefore rapid beneficiation and value addition is inevitable.

Classification of steel as a mineral remains a thorny issue and must be addressed as soon as possible to enhance operational flexibility, export competitiveness and associated operational barriers.

Technology transfer, research, development and innovation

The building of local capacity to develop appropriate technologies for local value addition is proposed, emulating the path taken by China (BF – BOF technology); and India and South Korea (DRI Technology). To achieve this goal, strong synergies and collaborations amongst academia, technical colleges and research and development institutions is recommended. The revitalization of apprenticeship programs with the necessary support from government is also recommended, taking a leaf from the industrial training institutions that once existed vibrantly like ZISCO Training Centre, Mashava Training Centre, Morewear Apprentice Program and Delta Training Program.

In conclusion, conceited effort is required from all stakeholders to ensure that the engineering, iron and steel sector is resuscitated and becomes competitive. Without these efforts, the sector is threatened with closure, affecting the viability of the economy. The collapse of the sector would come along with an employment potential loss of over 30,000, revenues of over 8 Billion, huge foreign currency import bills amongst others. The failure would have a significant negative impact to achieving the 2030 Vision.

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Abbreviations

AcFTA....African continental Free Trade Area
ADF....African Development Fund
APF....Agriculture Policy Framework
BF....Blast Furnace
BOF....Basic Oxygen Furnance
CZI....Confederation of Zimbabwe Industries
DAP....Draft Agriculture Policy
DISCO....Dinson Iron and Steel Company
DRI....Direct Reduced Iron
EAF....Electric Arc Furnace
EPZ....Export Processing Zone
IF....Induction Furnace
IPP....Independent Power Producer
KPIs....Key Performance Indicators
NDS....National Development Strategy
NRZ....National Railways of Zimbabwe
NTP....National Trade Policy
SAPP....Southern Afrucan Power Pool
SEZ....Special Economic Zone
TSP....Transitional Stabilisation Programme
ZDF....Zimbabwe Defence Forces
ZETDC....Zimbabwe Transmission and Distribution Company
ZIDP....Zimbabwe Infrastructral Development Plan
ZISCO....Zimbabwe Iron and Steel Company

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Chapter 1

INTRODUCTION

The State of the Engineering, Iron, and Steel Industry Report for Zimbabwe, focuses on the industry's current performance, capacity, challenges, and growth opportunities. The goal is to deliver strategic insights that will benefit EISAZ members, Government, Academic Institutions, Policy Makers, NEC Engineering, Investors, and other key stakeholders in shaping decisions, formulating policies, and pursuing strategic investments.

1.1 Objectives of the Report

The main objectives of this report are:

1. To provide a comprehensive assessment of the Engineering, Iron, and Steel Industry in Zimbabwe, addressing the key opportunities and challenges faced by EISAZ members, Investors, and the Government.
2. To offer policy recommendations aimed at strengthening the industrial policy and trade regulations to support the sustainable growth of the sector.
3. To conduct a benchmarking analysis comparing Zimbabwe's performance with other global and regional industry leaders to highlight best practices and improvement opportunities.
4. To offer data-driven insights to EISAZ Stakeholders, providing them with valuable research on market dynamics, technological advancements, and the outlook for the steel industry.
5. To engage investors by identifying market opportunities, growth prospects, and investment areas in Zimbabwe's iron and steel sector.
6. To provide recommendations for enhancing the collaboration between EISAZ, Government, NEC Engineering, and academic institutions to ensure a sustainable and competitive industry.

1.2 Methodology and Approach

The approach involves the following logical steps

1. Definition of the sector and review based on previous studies

- Review of documents – e.g. EIS Strategy – 2022 – 2026, CZI Documents, ZEPARU Researches, High Impact companies reports, National Policies, etc.
- Value chain map review
- Preliminary Benchmarking
- Policy review
- Ranking and defining priority sectors
- Defining key aspects of status reporting (Sector KPIs)

2. Key stakeholder engagements guided by the review of the baseline

- Selection of key stakeholders per high priority subsectors
- Preparation of simple instruments for engaging key stakeholders for their vital input
- Consultations and visits to high impact actors

3. Report writing

- Presentations and validation
- Submission of final report

1.2.1 Subsectors covered in the survey

The subsectors covered in the survey are presented in the Table below.

Table 1: Subsectors covered in the survey and some 2021 Baseline details

Major Subsector	Notable Players	Notable products and Value
Automotive Industry	Buses and Trucks, Light Vehicles, Coach Works, Upholstery, Repairs, Services and Maintenance, Electric Vehicles	Motor Vehicles; Body works and Trailers; Parts and Accessories **[USD542Million/year]**
Electrical Engineered Goods and Electronic Goods 	Cable Manufacturers, Electric Motors and Transformers, Switchgears, Solar and Batteries, Power Producers, Power Transmission and Distribution Services, Electrical Services, Repairs and Maintenance; Electronics and Controls Engineering; Refrigeration and Air Conditioning	Electronic components and boards; electric motors, generators, transformers, distribution and control equipment; electric wires and cables; computers and peripheral equipment; electric lighting equipment; communication equipment; testing and control equipment; batteries and accumulators **[USD361Million/year]**
Primary Steel Production 	Integrated Iron and Steel Works, Steel Suppliers and Distributors, Rolling Mills, Producers of wires, Coal Producers, NRZ, Ferrochrome Smelters, etc.	Basic iron and steel; flat rolled products; bars and rods; section steels; wires and related products **[USD313Million/year]**
Foundry and Associated Engineering	Foundries, Heavy Engineering involving heavy casts	Quarrying and Construction Equipment; General purpose machinery; pumps, compressors, taps and valves; medical and dental instruments; cutlery, hand tools and general hardware; beverages, food processing and tobacco processing equipment; lifting and handling equipment; agricultural and horticultural equipment; gears, bearings and driving elements; mill balls and liners **[USD461Million/year]**
Equipment Manufacturers and Machined Components 	Agricultural, Water and Irrigation Equipment, Mining Equipment, Industrial Equipment, Earth moving equipment, Engineering Workshops and Jobbing; Engineering Services and Repairs and Maintenance	
Fabricated Metal and Steel Products	Structural Steel Engineering, Tubes, Pipes and pressure vessels; Sheet metal work; Rigging; etc.	Fabricated metal products; tanks, pressure vessels and pipes; Structural metal products **[USD99Million/year]**

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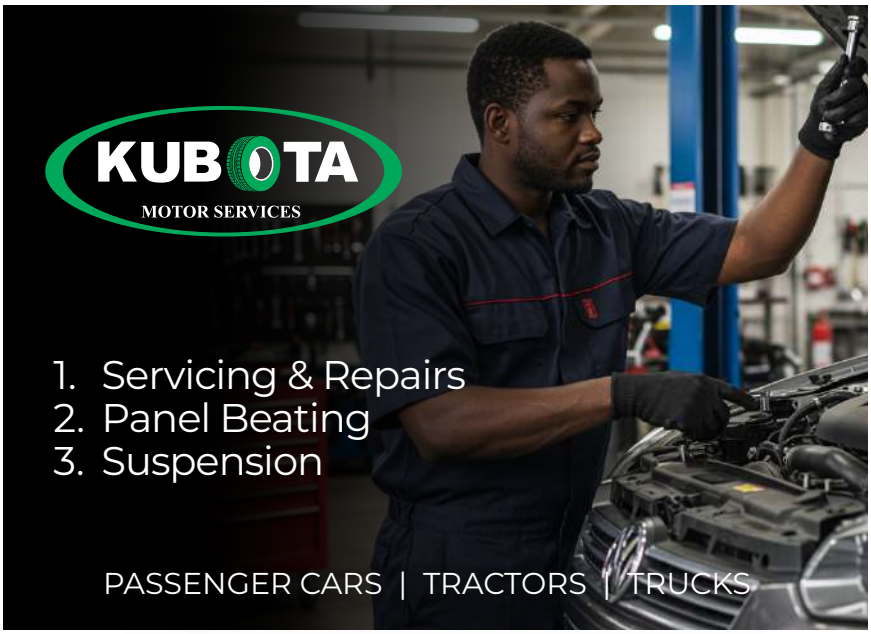
9. Electrical Engineering



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Chapter 2

SWOT ANALYSIS

The SWOT Analysis for the 6 x Main Subsectors namely Primary Steel Production, Foundry and Associated Engineering, Fabricated Metal and Steel Products, Equipment Manufacturers and Machined Components, Electrical Engineered Goods, and Automotive Industry is discussed in this section. The major strengths and opportunities are outlined together with the insights on how to leverage on them. Similarly, the major weaknesses and threats are outlined together with the possible remedial/mitigation initiatives.

2.1 Primary steel production

Since the demise of ZISCO Steel, there has been a new thrust in this subsector with the commissioning of the 0.6Mtpa DISCO Steel Plant in Manhize, Chivhu in the last quarter of 2024. Though at 90-95% complete, the plant is already producing pig iron, steel billets, rebars and other section steels which are vital for the downstream players. Less than 15 players are active in this subsector, with the majority of them being small to medium scale (e.g., ZISCO, DISCO, Steel Makers, Steel Brands, Haumin, Pannelink, Naisonale, RSC Steelforce, Haggie Rand, etc.). With the gap that existed due to lack of local production, the downstream players were supported by local steel merchants like BSI Steel, Steel Warehouse, Africa Steel, Essar and Steel Centre amongst others, who imported and distributed various steel products from China, India and South Africa. The major strengths, opportunities and how the sector could leverage are summarized and discussed below.

2.1.1 Major strengths and opportunities

Major strengths and opportunities	Leveraging on opportunities and strengths
Abundant iron ore resource (>33Bn tonnes) of reasonable grade (40 – 68%Fe [Haematite,Magnetite, Jaspilite and Friable Limonite], coking coal (>2Bn tonnes resource) and other critical raw materials for iron and steel making. Over and above the Manhize Resource, indications are that over 500Mt resource exists in Hwedza	i. Innovative ways of attracting funding for investment into new iron and steel making plants and inclusive participation of key and willing players in the engineering iron and steel sector to make Zimbabwe a Giant/Mega Steel Producer ii. Incentivising investors who invest in iron and steel production to supply all key downstream players in the value chain. iii. Protection and ring-fencing investments against the major risks that threaten viability of operations iv. Establishing subsector support teams through representative and advocacy institutions to help government in overseeing policy implementation for the benefit of the sector
Backing at Policy Level through NTP and NES [2019 – 2023] which explicitly prioritises the iron and steel industry for export development and promotion	
Backing at Policy Level through the NDS [2021 – 2025] which prioritises the resuscitation of the engineering iron and steel industry through; i) securing investors in the iron and steel industry; ii) resuscitation of steel foundries and use of modern technologies in the sector; iii) processing of scrap metals into new steel products; iv) strict control of scrap metal exports to ensure adequate throughput to domestic foundries; v) promotion of manufacturing of steel billets from scrap metal; vi) facilitation of increased supply of coal and electricity to the iron and steel industry;	

Major strengths and opportunities	Leveraging on opportunities and strengths
Commissioning of the Dinson Iron and Steel Company (DISCO) with a capacity of 600,000tonnes per annum of carbon steel, producing rebars (10-32mm), pig iron, and steel billets to feed into the downstream value adding subsectors. 	i. There is opportunity for enhanced competitiveness against imports considering lower raw materials costs for downstream players (e.g., USD680/tonne from DISCO as compared to USD800 – 850/tonne imports) ii. Scrap challenges are notably addressed through substitution by pig iron for cast steel (USD300/ton vs Scrap Export Price of >USD350/tonne) iii. Opportunities for synergistic relationship between DISCO and ZISCO's low hanging fruits like the Foundry, Machining Workshop, Coke Ovens, Rebar Factory, etc iv. Local Enterprise Development Initiative by DISCO and the formation of a vibrant Steel Cluster, e.g., Synergies with Smaller Primary and Secondary Steel Players like Steel Makers, Steel Brands, etc. Synergies with the ailing Foundries, Wire and Rope Producers like Haggie Rand and Lancashire Steel, etc.; Linkages with Fabricators, Structural Steel Producers as well as machined components and equipment manufacturers v. Export market development, leveraging on the new steel production capacity that may exceed the current local demand. Export incentives and elimination of export barriers vi. Technology Transfer and Technical Skills Capacity development for the Engineering Iron and Steel Sector leveraging on the platform presented by the Integrated Steel Works. A Steel Institute may be established leveraging on the new Steel Giant as well as the idle facilities of ZISCO
Construction Projects, Infrastructure Renewal and Urbanisation as envisaged in the Zimbabwe Infrastructral Development Plan (ZIDP) 	i. Identifying major iron and steel products required and establishing value chain linkages and clusters in sync with the requirements of ZIDP. ii. Significant offtake of rebars, channels and sections in housing, civil constructions, dams and road infrastructure. Local capacity for Rebars production is over 0.48Mtpa iii. Innovative financial engineering and fund raising to capitalize players along the value chain to enhance production capacity and product competitiveness against imports to support industrial development iv. Technical Support and Skills Training to enhance product quality through synergies amongst different players including training institutions, research and development, industry and Technology Suppliers
Growth in Mining Industry buoyed by rising gold prices, new and expansion projects in lithium mining and other minerals	Over 11 x Lithium Mines in operation with production potential of over 5Mtpa. Overall, a USD12Billion Mining economy is predicted presenting huge opportunities for the steel industry

Major strengths and opportunities	Leveraging on opportunities and strengths
Power Projects – SAPP and ZETDC Transmission Projects, and Renewable Energy Projects (Solar, Hydropower, Coal Thermal, etc.)	Opportunities in the manufacture of Pylons and structural steel works. For Solar PV Plants, Mounting Structures can be manufactured locally buoyed by the implementation of the MW Projects supported by the Renewable Energy Policy targeting over 1000MW of Solar PV (Steel consumption of solar is 35-45tons of steel/MW translating to a potential demand of over 35 – 45000tons of value-added steel [>USD45Million])
Operational Flexibility and Spreading of Risk offered by the Mix of Small to Medium Scale Producers; and the Large Scale Producers	i. Smaller capacities of plants synchronized to the low volumes of local market segments ii. Smaller capacities of plants synchronized to the smaller capacities of small scale mines and smaller volumes of raw material resources as well as energy and water iii. Huge opportunities of incorporation of small scale players in the steel industry, that would not normally have been possible with the large producers iv. Incentivisation and support for the small scale steel producers is therefore important, recognizing their role in the steel value chain and economy
Resiliency of small-scale steel producers in periods of economic crisis	i. Small scale producers (<0.1Mtpa) have resiliently supported the local steel value chain during periods of economic crisis where the largescale producer find it difficult to thrive. E.g., Steel makers and other smaller plants have survived through the decade long hyper-inflationary period (2000 – 2008) where ZISCO collapsed going down together with a majority of the downstream players.
Resuscitation of ZISCO (taking advantage of existing infrastructure) and possibility of adding up to 1Mtpa Steel Production Capacity. Zimbabwe can be a dominant steel producer in Africa taking advantage of the African Continental Free Trade Area, COMESA and the fact that AccelorMittal South Africa (one of the great players in steel sector) is struggling. 	i. Leveraging on the intact plants at ZISCO like the Sinter Plant, Continuous Caster, the Bar Rod Mill, the Foundry, the Anaytical labs, etc., to resuscitate operations ii. Leveraging on the raw material base owned by ZISCO (from high grade ore remaining at Buchwa, and dotted around Kwekwe, etc., and friable limonite at Ripple Creek. Research and Development into the sustainable use of friable ores like limonite is vital in collaboration with Academia and institutions like SIRDC iii. Existing infrastructure linking ZISCO with sources of raw materials as far as Hwange and the possibility of revamping a significant inventory of wagons iv. Developing local capacity to build, operate and maintain Blast Furnace (BF) Technology in collaboration with technology partners is vital for sustainability. Although China commenced their successful steel story from imported technology from Europe and Japan, they are now amongst the best in BF technology

Major strengths and opportunities	Leveraging on opportunities and strengths
Use of general grade coal in production of steel via the DRI technology	i. Where the demand for coking coal might exceed production capacity, the use of DRI which requires ordinary coal is an opportunity to ensure security of supply of critical raw material for steel production. ii. Research and development and collaboration with Academia and R&D institutions like SIRDC is important to maximise on DRI and similar technologies
Ability of Integrated Steel Plants to generate power for self-consumption and proofing against the negative consenquencies of power shortages 	i. The ability of integrated steel plants to recover waste heat for power generation, the use of raw materials that can also be used for power generation, and the high energy usage makes it easy for such plants to generate their own power. E.g., DISCO commissioned its own 50MW Thermal Power Plant, and 20MW Waste Heat Recovery Power Plant with possibility of feeding excess to the Grid; Steel Makers planning on 43MW of Power Plant. This hedges the integrated steel plants against the devastating effects of power outages to their operations ii. Big integrated steel plants must therefore be protected through government support at policy level and otherwise against power outages since the impact of their collapse is felt across the whole economy
Export market for steel considering the current overcapacity with the introduction of DISCO's 600ktpa Plant	i. Introduce export incentives to enhance export competitiveness on the regional and global market. In the short term, steel exports have potential to earn Zimbabwe over USD250Million in foregin currency ii. Improve rail infrastructure to ensure low cost and faster and efficient transportation of steel. Government must incentivize investment in rail infrastructure as a critical enabler of primary steel production

DINSON IRON & STEEL COMPANY
(PVT) LTD

Where Zimbabwe's Resilience Meets Global Excellence

MANUFACTURER & SUPPLIER OF PREMIUM QUALITY STEEL PRODUCTS

OUR PRODUCTS

- PIG IRON
- CONTINUOUS CASTING BILLETS
- REINFORCING BARS (COILED)
- REINFORCING BARS (IN LENGTH)
- HOT ROLLED ROUND BARS
- MINING MILL BALLS
- HOT ROLLED WIRE RODS

ABOUT US

Dinson Iron & Steel Company (DISCO), strategically located in Manhize-Mvuma, Midlands Province, stands as Zimbabwe's sole integrated steel manufacturing complex. The company's current product portfolio encompasses pig iron, steel billets, and multiple grades of reinforced steel bars (rebar), with strategic expansion plans underway to commence production of steel balls and wire rods by Q3 2025.

Dinson Iron and Steel Company, a Benchmark for Quality and Excellence, proudly holds ISO 9001:2015 certification, as certified by the Standards Association of Zimbabwe (SAZ) on 23 May 2025. Dinson Iron and Steel Company solidifies its reputation for consistently producing high-quality iron and steel products that meet rigorous international standards..

Unwavering Commitment to Quality
Our company's robust Quality Management System (QMS) and independent test certificates from SAZ ensure the uncompromising quality of our finished products, fostering unparalleled trust among our customers.

Catalyst for Economic Growth
As a pivotal component of the DISCO investment program, Dinson Iron and Steel Company has been designated as a Special Economic Zone, poised to attract foreign and local investors. This strategic designation invites manufacturers to establish operations within the zone, driving industrial growth and development.

Anchor for Industrial Development
DISCO is positioned to serve as the anchor industry for the Special Economic Zone, propelling value addition in upstream and downstream industries. By doing so, we aim to make a profound impact on Zimbabwe's economic landscape, while reinforcing our stance as a leader in the iron and steel sector

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The major challenges, threats and weakness and their proposed remedial/mitigation initiatives are presented below.

2.1.2 Major challenges, threats and weaknesses

Major challenges, weaknesses and threats	Remedial Action
Influx of low-priced inferior products imported especially from China into the local market causing unfair competition 	i. Review and enforcement of duties and SIs that eliminates importation and dumping of inferior iron and steel products in Zimbabwe; and discourage the importation of finished engineering iron and steel products which the local sector has adequate capacity to produce. The sector must therefore draw up a clear inventory of products and services that they have adequate capacity to produce locally and in a competitive manner. **N.B: SIs were now Work In Porgress to address the issue and some were already published, e.g. SI 46 of 2025**
Dwindling supplies of scrap metal whilst a lot is being exported to South Africa resulting in low capacity utilization and high cost of raw materials 	i. Establishing the scrap needs of the subsector as a collective with the help of representative institutions like ZIF and EISAZ to help enforce the banning of exports of strategic scrap ii. Advocacy for government support in regulating the exportation of scrap ahead of the needs of the subsector iii. Explore Innovations and restructuring around the scrap collection, value addition and recycling, transportation and distribution and auctioning to ensure improved availability, reliability and reduced cost. **N.B. For Cast Steels, this challenge is now partly addressed by pig iron produced by DISCO, which can be a sustainable substitute for scrap if the price is competitive**
Limited product range due to limited technology and capacity of existing technology for Small to Medium Scale Players paving way for imports gaining huge market share on the local market	i. Increase technical capacity of the subsector through availing of funding for capitalization and retooling, starting with attractive and bankable value chains. ii. Creating a competent skills resource base through training and capacity building initiatives based on strong collaborations amongst training institutions; academia, industry and technology suppliers; supported by funding institutions like Zimdef iii. Strong collaboration amongst research and development; industry and technology/ Original Equipment Manufacturers and Consumers (Large and Medium Scale)
Obsolete equipment which is labour and energy intensive resulting in low quality and expensive product versus imported products. There is failure to attract funding to recapitalize with advanced technologies	
Shortage of skilled manpower and failure to attract the same, thus threatening product competitiveness	
Limited research and development resulting in high dependence on imports for everything; resulting in low value addition of local raw materials	
Erratic Power Supply, Poor Quality, High tariffs (up to USD0.23/kWh) resulting in unsustainable operations and huge losses for the smaller scale energy intensive primary steel production	i. Incentivisation of IPPs to collaborate with ZETDC and the energy intensive consumers in the subsectors for special Power Purchase Agreements and dedicated lines to ensure highly reliable, uninterruptible and quality power for business operations and viable tariffs. ii. Innovative financial packages at competitive rates to support power production to the strategic value chains

Major challenges, weaknesses and threats	Remedial Action
High utility costs and low availability (e.g., power and water) and tax rates for local authorities pushing up cost of product.	i. Fostering of collaboration/ synergies between councils and water supply institutions with industry to ensure reliable and sustainable supply of water to heavy water consumers of the sector
Stiff competition amongst local players especially when the large-scale producers got into the playing field threatening the existence of small to medium scale players	i. Establishing strong value chain linkages and synergies amongst the large and small scale players to ensure a competitive, health and sustainable value chain where everyone is a winner for the overall benefit of the economy
Uneven local playing field due to activities of the informal steel production sector	i. Incentivise formalization of the informal steel production sector through capacitation and policy support considering the high levels of unemployment ii. Foster synergies amongst the formal and informal players to ensure a health and sustainable steel subsector
Lack of protection of local industry from imports and unfair trade practices as competing countries in the region might be violating bilateral agreements as well as SADC, COMESA and Continental Protocols on trade. E.g., when exporting from Zimbabwe to Zambia, the destination country imposes a 5-30% tariff on steel to protect their domestic steel industry, yet when Zimbabwe is importing steel from Zambia, it comes duty free	i. Bilateral and regional talks at government levels to address the unfair trade practices ii. Protection of the local industry from imports through introduction of import tariffs on locally made steel products iii. Incentivisation of exports via review of the Export Retention threshholds to levels that enable export competitiveness. The current 30% Export retention is making exporting of steel products unattractive
Declining exports due to stiff competition and global and regional overcapacity in steel production. SA and the world at large, has overcapacity of steel production, implying that low-cost steel producers can only stand the chance in competitiveness.	i. Enhance cost competitiveness through initiatives like investment in new and highly efficient technologies, ii. Government support through improvements in road and rail networks, water and power iii. Export incentives (the current Export conditions threatens viability and competitiveness)
Dilapidated Rail Infrastructure resulting in high cost of transportation of the heavy steel product 	i. In the absence of rail (which only required 3 x D11 NRZ Locomotives to transport 3600tones of coking coal from Hwange to ZISCO in one trip on a daily basis), use of road requires at least 120 x 30tonne trucks to meet a historical daily demand of 1Mtpa Steel Plant. There is serious need to reinvest in rail infrastructure. Over USD400Million is required to repair and link up strategic resources in the steel value chain.
Lack of capacity to produce heavy steel sections and flat products which are required in the construction industry may imply heavy reliance on imports which will remain significant despite the huge investment in steel production	i. Investment in heavy sections mills as well as downstream players to support local, regional and continental infrastructural development ii. Investment in Mills like Plate, Hot Strip, Cold Rolling Tandem, Welded Pipe, and Seamless Pipe. These investments must be well synchronised with offtake stimulated/ catalysed by local and regional infrastructural development projects

2.2 Foundry and Associated Engineering

In its current state, the industry has very few strengths to talk about and its existence is severely threatened. Since the economic crisis, the subsector has been shrinking on a yearly basis. Historically, Zimbabwe had about 55 Foundries (benchmark against [180, South Africa], [44,000, India], and [215,000, China]) buoyed

by mining and a booming agriculture industry. Currently, the local industry is in the doldrums, with only about 10 x active foundries (e.g., Nimr and Chapman, O'Connoly, Anolle Castings, Midlands Metals, ZISCO Foundry, TA Foundry, Sirtec, etc.) affected by stiff competition from imports, erratic power supplies, scarcity of raw materials, high cost of doing business, old technologies, amongst many others. Former strongholds in the industry like Craster and Clarson are on the verge of closure. The majority of the remaining foundries are on the verge of collapsing if a sustainable rescue plan is not devised as soon as possible. The major strengths and opportunities are discussed below.

2.2.1 Major strengths and opportunities

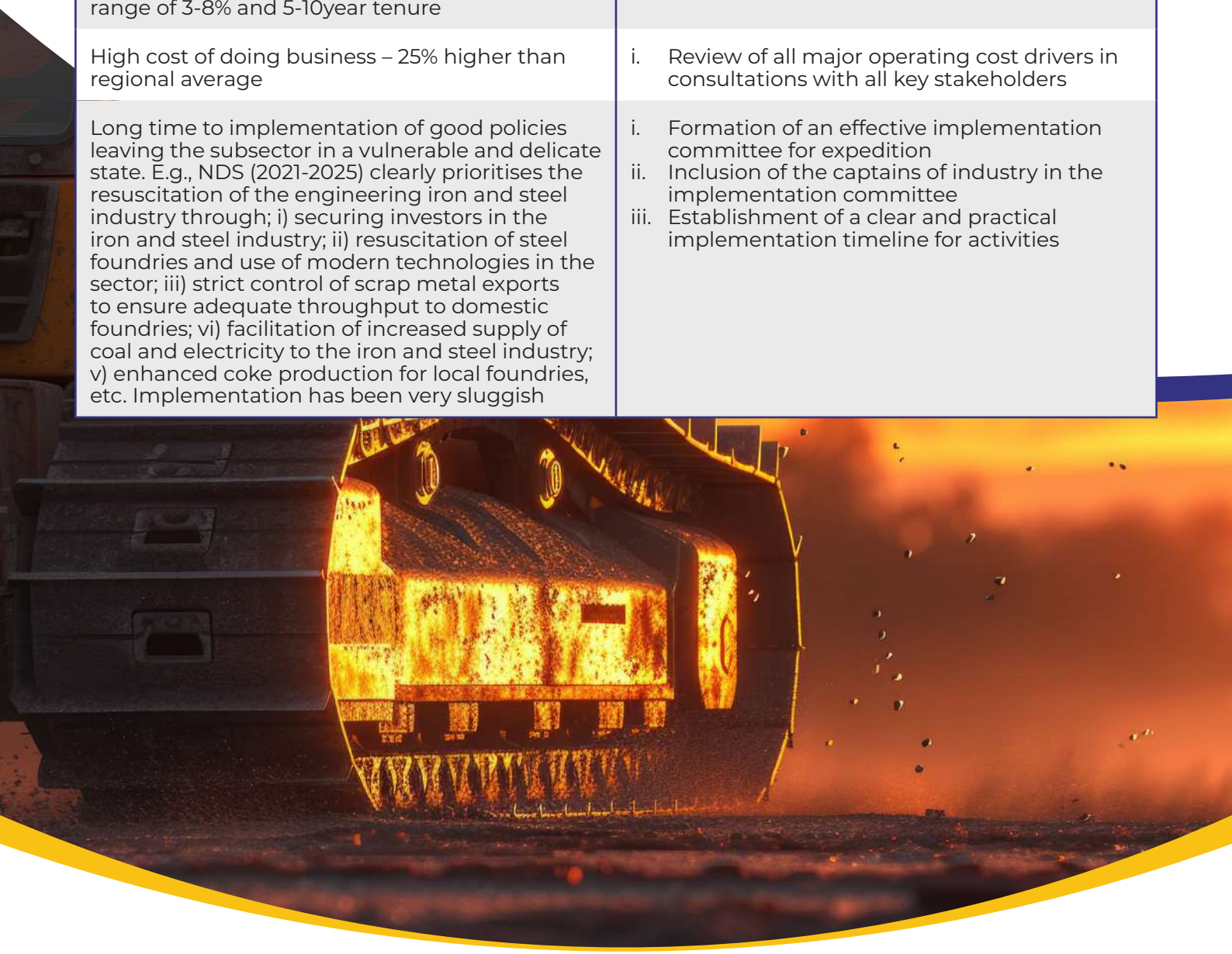
Major strengths and opportunities	Leveraging on the strengths and opportunities
Mining industry growth – Over 11 Lithium Mines Opened, Booming Gold prices	i. Identify major equipment, parts and products that become the centre of value chain based clusters to attract investment in the sector, beginning with low hanging fruits ii. Building of capacity around these clusters to leap frog the sector iii. Building strong business cases around these value chains and seeking of funding iv. Ring fence the strategic value chains with the full support of S16 of 2016 and SI132 of 2017
Agriculture Subsector growth, Good agricultural season, Growing tobacco market	
Export potential, market in the SADC region (Bostwana, Zambia, Malawi, Mozambique) but competition is stiff from India, South Africa and China	
SI 6 of 2016 which supports retooling where companies can import equipment duty free	
SI 132 of 2017 which protects engineering companies as it regulates the importation of engineering products that are produced locally	
Backing at Policy Level through NDS [2021 – 2025] which supports; i. resuscitation of steel foundries and use of modern technologies in the sector; ii. processing of scrap metals into new steel products; iii. strict control of scrap metal exports to ensure adequate throughput to domestic foundries; iv. enhanced coke production for local foundries;	
Spatially distributed and well distributed engineering iron and steel subsectors across the country	i. Selection of champion firms, identification of supporting firms and creation of a spatial cluster networks of value chain linkages centred around strategic value chains and thus establishing both physical and virtual special economic zones for the engineering iron and steel sector of Zimbabwe ii. Creation of Synergies with existing capacity building institutions in the spatial matrix
Idle production capacity in the subsector (though some of it is due to obsolete equipment)	
Spatially distributed and well established academic and training institutions across the country	
Though in bad shape, availability of rail and road transport network across Zimbabwe	i. Seek funding for rehabilitation of roads and rail infrastructure around strategic value chain clusters
Availability of trained but unemployed graduates with capacity for special training	i. Identify special skills required to support the most attractive value chains and select graduates for special training through special collaboration with technology suppliers, local, regional and global training institutions and the industry ii. Take inventory of Strategic Diaspora Contacts and establish synergies iii. Seek funding for this special capacity building from local, regional and international developmental institutions e.g. African Development Fund (ADF), Zimdef, etc.
Take advantage of Influential Experts and Captains of Industry in the Diaspora for Capacity Building, Synergies and Global and Regional Value Chain Linkages	

The major challenges, weaknesses, threats and remedial actions are discussed below

2.2.2 Major challenges, weaknesses and threats

Major strengths and opportunities	Leveraging on the strengths and opportunities
Shortage of raw materials, especially scrap steel limiting capacity 	i. Establishing the scrap needs of the subsector as a collective with the help of representative institutions like ZIF and EISAZ to help regulate the exports of strategic scrap ii. Advocacy for government support in regulating the exportation of scrap ahead of the needs of the subsector iii. Explore innovations and restructuring around the scrap collection, value addition and recycling, transportation and distribution and auctioning to ensure improved availability, reliability and reduced cost. Foundry clusters may jointly procure directly from scrap sources and bypass scrap dealers if well organized.
Low-capacity utilization due to the use of ageing and obsolete equipment Stiff competition from imports Lack of research and development resulting in threats of product substitution; and failure to meet new needs on the market	i. Improving access to funding to replace ageing and obsolete equipment centred on bankable value chains and business cases in the subsector. This will enhance competitiveness to compete with imports. E.g., replacement of Cupola furnaces with Induction Furnaces ii. Training of special skills in the subsector to ensure high quality cost competitive foundry products for the market iii. New innovations and product development to meet the changing needs on the market and compete with new and innovative products
Non-availability of energy and power (frequent and long power outages) and cost is too high (Demand ranges from 400Kva to 20MVA) 	i. Engaging ZETDC as a collective for dedicated power and sustainable tariffs to protect sensitive but attractive value chains in the subsector. N.B Implementation has already started with positive results. Power availability for the few companies now on dedicated lines has improved to 70%. ii. Lure investment into New Power Production (e.g., Utility Solar) by engaging IPPs and ZETDC to invest given the guaranteed offtake offered by the energy intensive processes and establish sustainable and Win Win Merchant Power Purchase Agreements iii. Establish strategic subsector clusters around strategic value chains to establish the collective needs for critical energy sources like coking coal/coal and gases; and develop a cost-effective distribution system in close collaboration with the suppliers.

Major strengths and opportunities	Leveraging on the strengths and opportunities
Lack of research and development resulting in threats of product substitution; and failure to meet new needs on the market	i. Establishing and strengthening collaborations and synergies of industry with training, academic and research and development institutions, especially on the strategic value chains to enhance competitiveness ii. Capacitating the local research and development and training institutions to support the subsector
Export Retention terms of 70% making exporting unattractive versus competitors and exportation of products now almost stopped	i. Engagement with the Ministry of Industry and Commerce and Ministry of Finance on a viable Retention Scheme
High interest rates – shorter term loans up to 3years at 15-25% interest rates versus global range of 3-8% and 5-10year tenure	i. Innovative funding packages and productive sector loans for viable value chains
High cost of doing business – 25% higher than regional average	i. Review of all major operating cost drivers in consultations with all key stakeholders
Long time to implementation of good policies leaving the subsector in a vulnerable and delicate state. E.g., NDS (2021-2025) clearly prioritises the resuscitation of the engineering iron and steel industry through; i) securing investors in the iron and steel industry; ii) resuscitation of steel foundries and use of modern technologies in the sector; iii) strict control of scrap metal exports to ensure adequate throughput to domestic foundries; vi) facilitation of increased supply of coal and electricity to the iron and steel industry; v) enhanced coke production for local foundries, etc. Implementation has been very sluggish	i. Formation of an effective implementation committee for expedition ii. Inclusion of the captains of industry in the implementation committee iii. Establishment of a clear and practical implementation timeline for activities



2.3 Fabricated metal and steel products

This subsector includes the manufacturers of pipes, pressure vessels, tubes, tanks and value-added structural steel products amongst others. It is worth noting that currently no flat products like sheet metal and heavy sections are being made locally and hence the majority of raw materials for this work is either imported directly or via steel merchants. This automatically means that value addition in this subsector is more costly than imported finished product unless protection measures or competitive local production of raw materials were put in place. Whilst the tube, pipe, pressure vessels and related products subsector is heavily suppressed, the structural steel subsector is generally thriving, with small, medium, and large-scale players actively participating. This is attributable to significant activity in the construction and agricultural sectors of the country, supported by the government as well as a strong base of local steel merchants like BSI, Steel Warehouse and Steel Centre amongst others to supply critical feedstock. Some notable players in this subsector include Brown Engineering, Agristructures, and Patt Dun, amongst others. Several other small companies are scattered across the major cities as well as traditionally heavy mining and agricultural areas like Hwange, Zvishavane, Kwekwe, Chiredzi, etc. The majority of the historical heavy weights in pressure vessels, tanks, tubes and pipes like Morewear, Cochraine, Tube and Pipes, etc., have folded, whilst a few remaining ones like Warrap are struggling and under rescue.

The commissioning of the new DISCO Steel Plant as well as expansion of production capacity of smaller steel plants like Steel Makers is expected to boost local competitiveness of this subsectors as prices of raw materials are predicted to decrease from USD800-1000/ton levels to USD600 – 700/ton levels. Strong business cases have to be established for local production of heavy sections and flat products.
The major strengths and opportunities are presented below.

2.3.1 Major strengths and opportunities

Major strengths and opportunities	Turning the opportunities into business
Availability of raw materials locally due to the commissioning of the DISCO Steel Plant late last year; expansion work by smaller steel plants; and presence of stable local steel merchants to supply feedstock to Structural Steel Subsector	i. Formation of clusters around bankable steel product value chains and presentation of cluster-based proposal to funding institutions and government for project funding and support ii. Government support through implementation of policies that promote local content
Increased construction activities – dams, roads, housing, renewable energy (solar and hydropower, etc.) supported by government programs and policies	
Increased mining activities – over 11 new lithium mines at different stages of activity, attractive gold prices stimulating increased investment into mining	
Increased agricultural activities buoyed by good seasons and government programmes	
Increased transport activities	
Strong linkages between the local steel merchants and the Structural Steel Subsector, lessening the impact of working capital constraints, shorter lead times and enhanced competitiveness	i. Incentivise well organized and productive steel clusters at policy level based on their contribution to the economy, e.g., building special Steel Zones with tax incentives, etc.
Strong linkages of players in the Structural Steel Subsector with the regional export market outside South Africa (e.g., Zambia Copper Belt, Malawi and Mozambique)	i. Introduce export incentives to tap into the regional and continental market taking advantage of the African Continental Free Trade Area, SADC Protocol on Trade and the COMESA Free Trade Area, amongst others.
Strong internal skills capacity building and retention strategy with good inhouse training programs in-order to create a strong skills base	i. Institutional support via collaboration with training and R&D institutions like universities, polytechnics and SIRDC
Investment in new capital machines/technology enhancing competitiveness of the structural steel sector against imports	i. Increased support required from funding institutions, as well as government supported productive sector loans at concessionary rates
Experienced and competent companies (>30yrs) in the structural steel subsector	i. Recognition of resilient and productive firms as champions in the subsector with special incentives based on their positive impact to the steel value chain

The major challenges, threats and weakness are tabled below.

2.3.2 Major challenges, threats and weaknesses

Major challenges, weaknesses and threats	Remedial Action
No local production of heavy steel sections and flat products resulting in high cost of imports of critical feedstock (e.g., heavy sections have an import duty of 15%) rendering them uncompetitive versus finished imported products which often come with no import duty. No country can compete with their value-added steel products based on imported raw materials vs country of origin of their imports (e.g. Zim vs SA)	i. Review import tariffs for raw materials that are not produced locally ii. Improve access to forex of active and high impact players in the subsector iii. Consider strong business cases of local production of heavy sections and flat products and provide access to competitive funding to support local production
Load shedding and power outages (0800 – 16hrs without power) and high cost of diesel power (>USD100/day); high tariffs – average of USD0.15/kWh	i. Discussion with ZETDC on dedicated power lines for the sector. Tripartite Merchant Power Purchase Agreements involving industrial clusters, independent power producers (IPP) and ZETDC to establish Utility Scale Solar Power Plants to ensure reliable and high-quality power to the industry; ii. Investment in new energy efficient technologies in production
Stiff competition from imports, e.g., importation of finished fabricated steel products comes at very low duty, whilst imported raw material/feedstock comes at 15% import duty and hence it is impossible for locally manufactured product to compete with imports	i. Remove duty on imported raw materials which are not produced locally ii. Consider import duty for products that are produced locally and meet the quality and volume thresholds of the local market iii. Capacitation and incentivization of local producers of high impact steel products to minimize imports
Lack of Export Incentives resulting in low export earnings and loss of historical market share to new and emerging competitors in the region. E.g., the 70% Export Earning Retention Policy has rendered the sector uncompetitive. Industry says, “It is much easier to export to Zambia from SA than from Zimbabwe”	i. Review the Export Earnings Retention Policy ii. Introduce new export incentives to boost local and export competitiveness and reclaim lost market share iii. Financial support to exporters to enhance their capacity and competitiveness
High interest rates (15-25%) versus global range of 3-8% making the cost of finance uncompetitive. The required retooling capacity is constrained	i. Identify the financial risks resulting in the increased interest rates and establish ways of minimizing the risks at country level ii. Build strong business cases for value chains in the subsector and establish innovative funding products for implementation
High cost of doing business (Labour, Transport, Taxes, Levies, Licenses, etc.). E.g., one Medium Enterprise incurs up to USD150K/year on IMTT transaction tax. For imported chromadek sheeting, the cost of hot dip galvanizing is also very high	i. Implementation of holistic measures to lower the high regulatory and statutory cost of doing business

2.4 Electrical Engineered Goods

In this subsector, players such as cable manufacturers, electric motors and transformers, switchgears, solar and batteries, power producers, power transmission and distribution services, electrical services, repairs and maintenance, etc., are represented. For some of the products in this value chain like electric motors, panels and switchgears, local manufacturing has almost stopped. Regional electric motor brand names which were manufactured locally like RELMO and Alstom have disappeared completely as they could not compete with imports. These went together with the once lucrative motor rewinding and repair services. Powerspeed and many other companies in this subsector have stopped manufacturing, and have become a trading centre for imported electrical engineered goods citing viability challenges for local manufacturing. Only two out of a historical ten manufacturers of panels, switchgears and related products remain due to constraints in the local environment. As for cable manufacturing, one player – CAFCA is dominant, whilst the majority of the other players are traders and local merchants who are distributors of imported products.

The strengths and opportunities are presented below.

2.4.1 Major strengths and opportunities

Major strengths and opportunities	Leveraging on opportunities and strengths
Export opportunities for products in the region by producing high quality products at competitive prices. CAFCA used to import throughout the whole region, but the majority of that market share is now lost due to capacity limitations and ageing equipment	i. Establishing strong business cases for the targeted products/value chain to attract funding at competitive rates ii. Access to funding for retooling and new technology to enhance competitiveness for export market as well as import substitution iii. Carrying out extensive marketing for brand awareness in the region with support from institutions like Zimtrade, EISAZ and other Sector Representative Institutions iv. Enforcement of legislation that protect local manufacturer's and discourage importation of products that are manufactured locally v. Formation of value chain cluster based on products with strong business cases for both export market and import substitution
Import substitution through capitalization and retooling to increase the capacity of the existing strong brands	
Maximising the use of the existing distribution network along the value chain to supply the local market. Seasoned merchants for electrical engineered goods are well spread spatially around the country with big names like Electrosales and Halsteds present in almost every corner of Zimbabwe	
Backing at Policy Level through the Energy Policy and Renewable Energy Policy which seeks to promote energy production to ensure self-sufficiency by increasing power production, transmission and distribution capacity; promote renewable energy to reach the 1800MW target by 2030 and development of local value chains to support policy	i. Identify the strategic lines supported by policy, establish the value chain linkages and develop strong business cases for purposes of mobilization of funding
Existing capacity of transformer manufacturing. Big companies like ZENT have existing capacity for manufacturing of Transformers and related components. Haggie Rand has infrastructure for cable manufacturing (albeit requires upgrading)	i. Strategic organization and development of this value chain to support local manufacturing and the export market ii. Policy support to manufacturers in this subsector to enhance competitiveness
Flexible manufacturing plants synchronized to the local and regional market segments. Major regional and global producers of products like cables large minimum economic order quantities which do not match the smaller volume requirements of the local and regional market. Smaller plants can be much more flexible to fully tap into this market	i. Capacitate the local manufacturer to compete in this market ii. Policy support to players in this segment to enhance export competitiveness

Major strengths and opportunities	Leveraging on opportunities and strengths
High demand for alternative power supply/ generation sources like Solar, Batteries and Generators in the wake of power outages, climate change, surge in electrical power demand, etc.	i. Establish a clear solar value chain and a strategy for local manufacturing, also taking advantage of the abundance of lithium resource in the country (Zimbabwe in the top ten countries in the world by resource, over 11 x lithium mines currently) ii. Establish a clear heating gas value chain from an equipment/technology perspective down to the consumer end in the market to tap into the opportunities presented for the local market
The global emergence and growing market for electrical vehicles. The market is growing exponentially and Zimbabwe can leverage on abundancy of raw materials like lithium to produce batteries for the e-mobility value chain. Local assembly of low-end electric vehicles can be done as a complementary product also taking advantage of the growing local steel manufacturing capacity (DISCO-600ktpa) as well as the idle vehicle assembly and coach building infrastructure in Harare, Bulawayo and Mutare	i. Establish a strong e-mobility value chain and business case in collaboration with the Ministry of Energy and Power Development and Ministry of Transport (An e-mobility framework has already been prepared by the MoEPD)
Market potential offered by the mining sector growth and agriculture as well as the implementation of infrastructural development plan. This growth creates demand for cables, panels and switchgears amongst others.	i. Foster strong linkages between the sector and the mining, agriculture and the construction industry and provide incentives for projects that consume from local industry ii. Policies that encourage or promote offtake of locally manufactured goods as opposed to imports iii. Capacitation of local manufacturers to supply strategic commodities and goods to the local industry and projects
Inclusive participation of SMEs. With the closure of many big companies and the emergence of the solar industry, many small scale players have emerged and serving the market	i. Policies that promote the SMEs and incentivize formalization and strong linkages with the bigger players in the value chain ii. Capacitation of SMEs to enhance local competitiveness
Ageing electrical equipment from the existing local industry as well as transmission and distribution equipment. The Zimbabwe Transmission and Distribution Network is ageing, and requires overhaul. This presents a good opportunity of local manufacturers of cables, transformers and accessories to tap into this market	i. Promotion and capacitation of local industry to supply products for this market ii. Policies that give preferential treatment to local manufacturers than imports
Existence of capable training institutions. Zimbabwe has good training institutions for electrical engineering and related work spread across the provinces. These institutions are also linked and recognised regionally and internationally. This has created a huge skills base that is grossly under-utilised	i. Formation of strong synergies between the training institutions and the industry ii. Making use of the idle skilled labour in training and capacity building for the industry in collaboration with training institutions, industry with support from institutions like Zimdef

The major weaknesses, threats and challenges are presented below as follows;

2.4.2 Major challenges, threats and weaknesses

Major challenges, weaknesses and threats	Remedial Action
Funding costs are too high which makes cost of borrowing to be high	i. Presentation of strong business cases for strategic value chains in the sector to attract funding ii. Building of clusters around the attractive value chains iii. Seeking of funding for capitalization in collaboration with strategic large domestic and regional markets iv. Ring fencing of investments ear marked for the clusters to minimize risk. v. Establishment of strong subsector representing institution to proactively address advocacy and policy issues with policy makers and implementers
Lack of funding for working capital and retooling	
Non-availability of foreign currency to import critical raw materials	
Lack of long-term planning and poor marketing strategies	
Heavy reliance on cheap imports by the local market resulting in huge loss of business for the sector	i. Investment in new and competitive technologies with technical support from relevant institutions for technology and skills transfer ii. Offer repairs and service back-up to cheap imports as well as establishing value chain linkages with regional and global players (mainly OEMs and Technology Suppliers) iii. Training of personnel in collaboration with technology suppliers, Original Equipment Manufacturers (OEM) and Training Institutions iv. Establishing strategic clusters to for joint transportation of materials to minimize transport costs.
Obsolete equipment resulting in high production costs, huge losses and low production capacity	
High production costs bringing the product price up	
High transportation costs bringing the cost of products up	
Brain drain and Loss of skills 'for greener pastures' to regional and international companies	i. Specialised training programmes for personnel and unemployed graduates to form a pool of competent expertise for the industry. These trainings to be done in collaboration with training institutes and technology suppliers with financial assistance from institutions like ZIMDEF amongst others.
Inexperienced and demotivated workforce	
Influx of substandard electrical products entering the local market, e.g., cables, solar panels, batteries, etc.,	i. Strict enforcement of laws that handle smuggling of goods
Lack of export incentives and low export competitiveness	i. Current 70% Export Earnings Retention Policy requires review as it makes exports less competitive against regional and global competitors
Limited local raw materials/feedstock for the industry. E.g., No local manufacturing of sheet metal for the electrical panels, and there is not adequate copper/aluminum for local manufacturing of cables	i. Review import duty on raw materials that are not produced locally to enhance competitiveness of local manufacturers ii. Establish strong business cases for local production of the required raw materials iii. Capacitation of local producers of the required raw materials

2.5 Equipment and machined parts manufacturers

This subsector us responsible for the production and assembly of a diversified range of engineered goods and services. The products include agricultural, water and irrigation equipment, mining equipment, industrial equipment, earth moving equipment, engineering workshops and jobbing products; engineering services and repairs and maintenance. In this category, the original equipment manufacturing segment (OEM) has disappeared, with most equipment being imported mainly from China, Asia, Europe and South Africa. This has put a huge strain on long term sustainability in the absence of a clear technology transfer strategy. Despite the huge opportunities presented by growth in the mining and agricultural sectors, the market remains low. This is mainly attributable to the fact that the majority of these new investments are Chinese, who have their "own local procurement policy" that favours bringing almost everything from China. The local value chain will therefore remain decoupled from the growth experienced in the other sectors. After the economic crisis of 2000 – 2008, many of companies in this subsector have struggled to revive further worsening the plight of the sector. The major strengths and opportunities are presented below.

2.5.1 Major strengths and opportunities

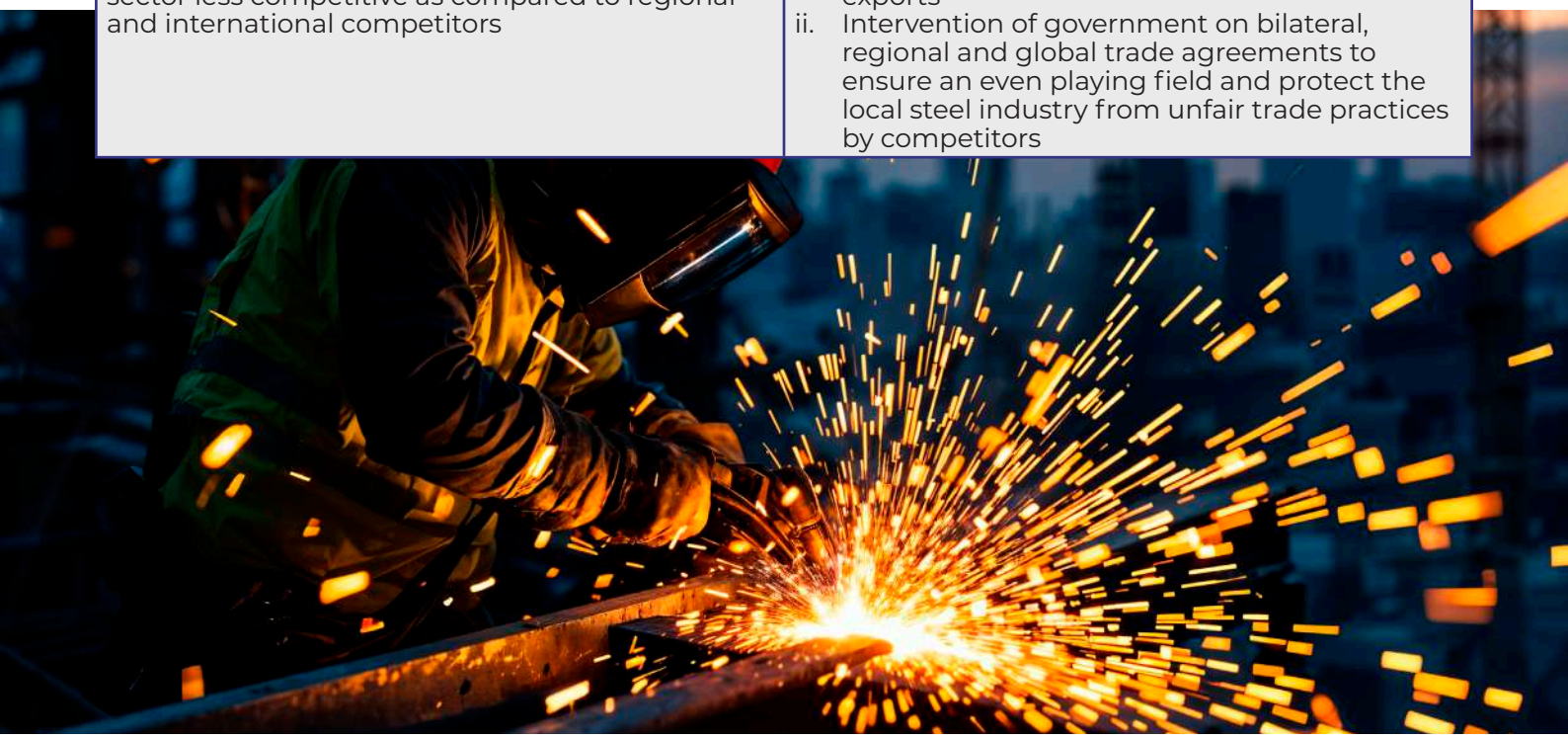
Major strengths and opportunities	Leveraging on opportunities and strengths
Mining industry, and agriculture sector growth	i. Identify major equipment, parts and products that become the centre of value chain based clusters to attract investment in the sector, beginning with low hanging fruits ii. Building of capacity around these clusters to leap frog the sector iii. Building strong business cases around these value chains and seeking of funding iv. Ring fence the strategic value chains with the full support of S16 of 2016 and SI132 of 2017
SI 6 of 2016 which supports retooling where companies can import equipment duty free	
SI 132 of 2017 which protects engineering companies as it regulates the importation of engineering products that are produced locally	
Backing at Policy Level through NDS [2021 – 2025] which supports; - i) Resuscitation of the machine tools and accessories manufacturing subsector; ii) inclusive participation of the engineering iron and steel sector in the provision of intermediate goods and services to support the USD12Billion Mining Sector Growth Strategy/Road Map; and iii) rehabilitation and expansion of water treatment plants and range boosters, sewerage network and pump stations amongst others	
Backing at Policy Level through APF [2012 – 2032] and DAP [2018 – 2023] which supports; i) decentralization of service and repair of farm mechanization equipment; farm structures and post-harvest facilities and technologies; ii) provision of spares, technical back-up and capacity building; iii) rehabilitation, modernization and development of irrigation schemes (over 2.5 million of developed irrigation; 200Ha irrigated per administrative district by 2030). Engineering iron and steel products envisaged include agricultural tractors (including pedestrian controlled - two-axle tractors, single axle tractors), balers (straw and fodder balers including pick-up balers), combine harvesters (threshers), harvester and threshers, manure spreaders and fertiliser distributors, milking machines, ploughs (e.g. reversible and non-reversible ploughs), root or tuber harvesting machines, seeders, planters and transplanters, soil working equipment, threshing machines and track-laying tractors (crawlers), irrigation pumps, and centre pivots amongst others	
Spatially distributed and well distributed engineering iron and steel subsectors across the country	i. Selection of champion firms, identification of supporting firms and creation of a spatial cluster networks of value chain linkages centred around strategic value chains and thus establishing both physical and virtual special economic zones for the engineering iron and steel sector of Zimbabwe ii. Creation of Synergies with existing capacity building institutions in the spatial matrix
Idle production capacity in the subsector (though some of it is due to obsolete equipment)	
Spatially distributed and well established academic and training institutions across the country	
Though in bad shape, availability of rail and road transport network across Zimbabwe	i. Seek funding for rehabilitation of roads and rail infrastructure around strategic value chain clusters
Availability of trained but unemployed graduates with capacity for special training	i. Identify special skills required to support the most attractive value chains and select graduates for special training through special collaboration with technology suppliers, local, regional and global training institutions and the industry ii. Take inventory of Strategic Diaspora Contacts and establish synergies iii. Seek funding for this special capacity building from local, regional and international developmental institutions (e.g. African Development Fund (ADF), Zimdef, etc.
Take advantage of Influential Experts and Captains of Industry in the Diaspora for Capacity Building, Synergies and Global and Regional Value Chain Linkages	

The major challenges, threats and weaknesses are presented below

2.5.2 Major challenges, threats and weaknesses

Major challenges, weaknesses and threats	Remedial Action
Difficulty in accessing funds, lack of financial relief; internal cash flows and liquidity challenges 	i. Formation of Strong Business/Value Chain Oriented Clusters to access cheap funding (local and regional) ii. Make use of the Strong Value Chain Oriented Clusters to access funding from banking institutions and relief/grant funding from regional (AfDB, Afrexim Bank, etc.) and international developmental institutions (IFC, IMF, WB, UN, etc.); iii. Strategic linkages with global value chains
High cost of finance – 15-25% interest rates as compared to regional and global of 5 – 10%	i. Investment derisking with the help of government support and improvement of the business operating environment
Power outages (typically from 0800 – 1600hrs)	i. ZETDC Dedicated lines to the subsector ii. Investment in alternative energies in collaboration with IPPs and government support
Unavailability of raw materials	i. Policy intervention to minimize obstacles to the importation of critical raw materials that are not manufactured locally ii. Promotion and Incentivisation of Investment in new plants and technologies that are aimed at produced critical and strategic raw materials for feed stocking the assembled goods sector
Multi - currency payment systems	i. Establishment of policies that ensure stability of currency for operators in the sector ii. Ring fencing investments in the sector to ensure sector stability, growth and expansion as more investors are attracted
Competition from imports and influx of low priced inferior products from China and India	i. Regulation of imported products enforced and assisted by supporting institutions like Bureau Veritas and Standards Association of Zimbabwe and SIRDC ii. Investment in advanced technologies to compete with high quality and cost competitive imported products. This would require the building of strong value chain networks with strong business cases to attract funding for retooling
Obsolete machinery – retooling is expensive	

Major challenges, weaknesses and threats	Remedial Action
Lack of Competent skills 	i. Fostering strong synergies and collaboration with capacity building institutions to develop competent skills (Universities, Research and Development Institutions; Polytechnics and Technical Training Institutions; Technology Suppliers, Professional Bodies – ZIE, ECZ, etc.) ii. Seeking funding from funding institutions like Zimdef to train skills iii. Promotion and incentivisation of private firms and institutions offering on the job; apprenticeship, graduate learnership and technical training programmes like Delta Training Institute (DTI), AAMines Training Institute (AAMTI); ZESA Training Institute, ZISCO Steel, Morewear, etc. iv. Seeking financial support to train the large number of unemployed graduates on special skills that can enhance the technical capacity of the sector
Poor and disjointed supply chain. A majority of players at different levels of the value chain have llow capacity to deliver required volumes to both local and export market, and offtake economic order quantities from suppliers. Most forms are also not aware of the opportunities presented by the New DISCO Steel Plant 	i. Strengthening the capacities of business support and industry representing institutions to facilitate linkages and synergies ii. Updating the roles, services, packages and mandates of business support and industry representing institutions to match the important needs of the sector. iii. Implementing the Local Enterprise/Industry Development Concept to build a strong and competitive local steel value chain to compete against imports iv. Conduct a comprehensive steel needs analysis for Zimbabwe and build a strong business case
Low exports and lack of export incentives. The 70% Export Earning Retention Policy making the sector less competitive as compared to regional and international competitors	i. Review Export Earnings Retention Policy and develop an incentivized scheme to promote exports ii. Intervention of government on bilateral, regional and global trade agreements to ensure an even playing field and protect the local steel industry from unfair trade practices by competitors



2.6 Automotive Industry

The industry has remained in the economic doldrums for more than a decade despite the huge demand for vehicles in the country and region. Over USD500Million of forex has consistently been used to import vehicles and components into the country over the past two decades against the backdrop of very low capacity utilisation in the local automotive industry. Historical giants like WMMI, AVM, Deven, Quest and several coach builders remain constrained, incapacitated and facing stiff competition from imports, especially of second-hand vehicle imports as well as cheap vehicles, components and kits from China and Asia. For example, in the 1980s, the demand presented by about 4500 commercial farmers for farm trailers was about 750 per year, which were produced locally supported by the local steel value chain starting from ZISCO, the foundries, fabricators, and assemblers. To locally build the same is constrained by the high cost of imports (20-30% duty on raw materials) versus the duty free importation of finished farm implement.

Despite the fact that NDS1 (2021-2025) explicitly paid due attention to the automotive sector resuscitation as shown by the following actions,

1. industrial support to increase the supply of domestically manufactured buses and delivery trucks, thereby potentially benefiting the upstream industries that manufacture bolts, batteries, steel sheets, tyres, upholstery, paint, carpet manufacturers; and reducing the import bill;
2. development of strategy to enhance the local assembly of private vehicles to increase job creation and reduce import bill on new and recycled vehicles and accessories;
3. effecting of measures that promote consumption of locally manufactured goods like the termination of customs duty deduction on imported buses, compelling of line ministries to purchase vehicles from local assemblers amongst others; the implementation was not effective and the industry remains in dire state.

The recently commissioned DISCO Steel Plant offers new hope to the automotive sector which has virtually collapsed. E-mobility and electric vehicles offer a new market to the value chain, as well as potential for growth. A radical and innovative approach to resuscitation of the automotive value chain is required.

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- Mild/Stainless Steel Fabrication

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The major strengths and opportunities are presented below.

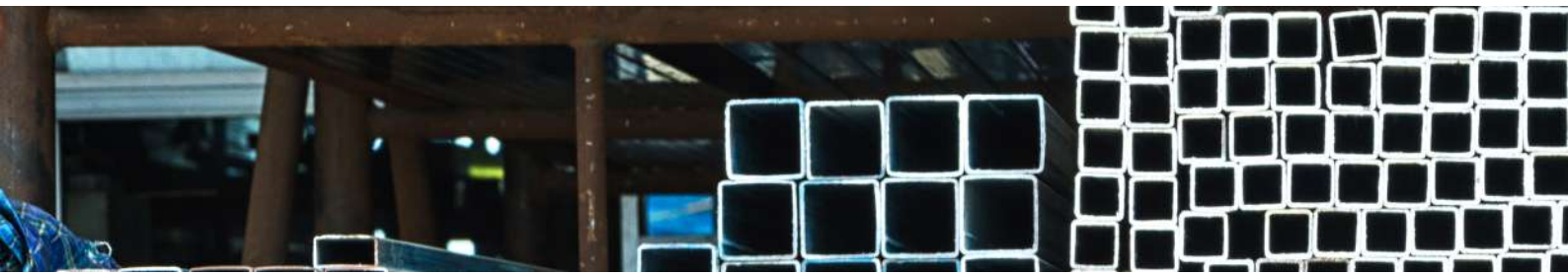
2.6.1 Major strengths and opportunities

Major strengths and opportunities	Leveraging on opportunities and strengths
Existing basic infrastructure and land at Assembly Plants like AVM Africa, Deven and Quest amongst others. The supporting services are spatially distributed in a manner that makes it easy to re-establish clusters and value chain linkages	i. Re-establishment of the broken-down value chain cluster around strong business cases, e.g. the strong demand for urban transport ii. Strengthening of the Sector Representation Institute like MIAZ
High number of second-hand vehicles in Zimbabwe	i. Consider innovations around reverse engineering, recycling, upgrading and conversion, and low cost automobiles
Existing market offered by government institutions; parastatals; large corporates; the mining industry; individual consumers and the public transport sector	i. Comprehensive market analysis, development of strong business cases and policies that support local consumption ii. Synergies with regional and internationally competitive vehicle assembly companies for local production iii. Mobilisation and structuring of funding for the strong business cases for retooling, working capital and CAPEX to support domestic production
Backing at Policy Level through ZMID Policy [2016 – 2026] which seeks to resuscitate the automotive industry through import substitution and increasing local content to 40% and increasing exports by 50%	i. Active and proactive participation of the subsector and its representative body in the review, formulation and implementation of policies that enhance sector competitiveness ii. Formation of competitive, efficient and effective policy implementation bodies
Backing at Policy Level through NDS [2021 – 2025] which supports the sector through i) industrial support to increase the supply of domestically manufactured buses and delivery trucks, thereby potentially benefiting the upstream industries that manufacture bolts, batteries, steel sheets, tyres, upholstery, paint, carpet manufacturers; and reducing the import bill; ii) development of strategy to enhance the local assembly of private vehicles to increase job creation and reduce import bill on new and recycled vehicles and accessories; iii) effecting of measures that promote consumption of locally manufactured goods like the termination of customs duty deduction on imported buses, compelling of line ministries to purchase vehicles from local assemblers amongst others	
Backing at Policy Level through SI 89 of 2021 which bans importation of second hand vehicles that are ten years and older.	
Electric Vehicles and the new E-Mobility Policy Frame Work for Zimbabwe 	1. Establish strong business cases to support local production of Electric Vehicles in Zimbabwe 2. Establishing strong value chain linkages with local, regional and international players to support electric vehicle production 3. Mobilisation of funding to implement electric vehicle production 4. Development of strong synergies and collaborations with academic institutions, technology suppliers, and training institutions to ensure a viable e-mobility value chain for Zimbabwe and the region

The major challenges, threats and weaknesses are presented below.

2.6.2 Major challenges, threats and weaknesses

Major challenges, weaknesses and threats	Remedial Action
Poor quality of locally available inputs	i. Establishment of strong business cases for particular products like buses, trucks, cars, etc., to attract and justify funding and financial support ii. Establish sustainable value chain linkages and partnerships with regional and global partners for SKDs and CBUs iii. Mobilising and structuring funding packages for retooling based on the strong business cases. iv. Stimulate local demand by promoting the consumption of locally made vehicles for large consumers like Government Institutions, parastatals, public institutions and large corporates. Appropriate policies can enhance local offtake. v. Inclusive participation of subsector players in the review and formulation of policies that promote the local automotive value chain.
Obsolete/outdated technology not able to meet capacity and product requirements on the market	
Difficult to access funding due to high interest rates; complex collateral requirements; long processing time and short tenure limiting technology upgrading and working capital injection	
Absence of working capital leading to slow progress on local production of components and assembled goods	
High cost of production limiting product competitiveness, making it cheaper to import than buy locally. This is attributable to obsolete technologies, high cost of utilities and low efficiencies	
Low uptake of locally assembled trucks, buses and other types of vehicles due to policy shift resulting in influx of low cost second hand vehicles from Japan, etc., and cheaper imports from foreign assembly plants	
Power outages and erratic supply of Gases (Oxygen and Acetylene)	i. Establishment of Sustainable/Viable and Reliable Dedicated Power Lines around major Value Chain Clusters with the full involvement of IPPs, ZETDC, firms and investors to ensure bankable power purchase agreements with viable tariffs for both power producers and consumers
Broken Value Chain making it difficult to smoothly assembled goods	i. Establish clusters and strong value chain linkages around bankable product lines in the subsector
High staff turnover and failure to retain skills	i. Will be addressed as capacity utilization improves ii. Training of special skills through collaboration with technology suppliers and local, regional and global training institutions. iii. Capacitation of training institutions to handle new technologies as well as train students on technology transfer, innovation, continuous improvement and new product development
Lack of innovation and creativity	



2.7 Cross cutting issues

The cross-cutting issues observed were as follows;

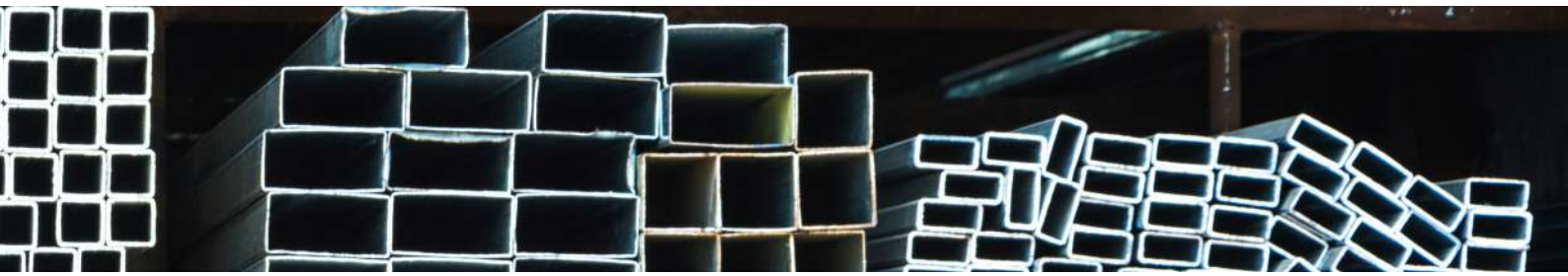
Major Constraints

i. Erratic power supply remains an issue with players at different levels of the steel value chain being load shed between 0800 – 1600hrs. A few are on dedicated ZETDC lines which has improved power availability up to 70%, with 30% unavailability due to transmission and distribution faults.
ii. High cost of electricity. The price of electricity averaging from USD0.14 – USD0.17/kWh is high for the energy intensive steel sector reducing its competitiveness against regional and global suppliers
iii. High cost of finance/funding. Interest rates range from 15 – 25% with short tenures are far higher than regional and global rates of between 3-10% making the industry less competitive.
iv. Unfair trade practices by regional competitors who breach bilateral, regional and global trade protocols. For example, neighbouring countries are putting a tariff on imports of steel from Zimbabwe into their countries, yet Zimbabwe imports steel products from these countries duty free
v. The 70% Export Earnings Retention Policy making price of exported steel products 10% - 20% more expensives than competitors. As a result there is very little exported into the region.
vi. Stiff competition from imports. Many companies have shut down due to low volumes on the market. The influx of cheap imports (both good and low quality) has threatened the closure of the local manufacturing industry. Often, these products come at very low cost, and duty free. The local manufacturing sector, relying on imports of raw materials, often coming with import tariff, manufactured using inferior technology in a high cost of doing business environment can never compete with imports.
vii. Failure to tap into opportunities presented by the growth in the mining and infrastructure development industry. Majority of the investments, coming from China, where their domestic policy favours bringing wholly manufactured components from their host country at the expense of local supplies.
viii. Zero to low import tariffs on products that are produced locally. Many products that are produced locally enter the country at zero to low tariffs, threatening the existence of the local manufacturing industry.

A strategic rescue plan has to be put in place as a matter of urgency for local manufacturing in the engineering, iron and steel value chain, otherwise deindustrialization and closure of companies will continue, with many subsectors closing completely and the country becoming merely an end market for finished steel products.

Major opportunities

i. Growth in the mining sector towards a 12Billion dollar economy, agriculture and infrastructural development. The mines offer opportunities for many subsectors and levels of the engineering, iron and steel value chain from structural steel, fabricated metal products, mill balls, automotive, machined components and repairs and maintenance. For the sector to tap into these opportunities, capacitation is fundamental, as well as implementation of the Local Manufacturing Enterprise Development Concept, supported by policy.
ii. Mobility and the Emergency of Electric Vehicles. The whole engineering , iron and steel value chain is triggered by this emerging subsector as many components come from the steel industry
iii. The commissioning of the Dinson Iron and Steel Company (DISCO) and commencement of production of steel. This has potential to offer low cost, but quality feedstock for the whole engineering, iron and steel value chain, which is critical for the revival fof the downstream subsectors of the steel value chain. Synchronisation of the supply source and downstream needs is vital for the revival of the local industry.
iv. Large pool of trained skilled personnel. The sector can benefit from the large pool of trained but unemployed graduates, who have great potential to add value to the sector if offered on the job training and exposure to competitive technologies and technology transfer initiatives.



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CAPACITY UTILISATION AND EMPLOYMENT LEVELS

Capacity utilisation varies from subsector to subsector with the highest capacity utilisation being in primary steel production at about 70%. The high utilisation in primary steel production is attributable to the high demand of primary steel products by the local market to support construction products. The heavy primary steel products by nature will be less costly if produced locally and hence the competitiveness against imports. The players in this subsector are also small scale implying that their scale of production is synchronized to the local low volume market.

The downstream subsectors have lower capacity utilisations, averaging below 50% due to stiff competition from imports of finished goods, often coming at ridiculously lower prices, and at times better quality. The situation is aggravated by power outages, liquidity challenges, obsolete technologies and a high cost of doing business environment. It is worth noting though that within a subsector, the capacity utilisation varies significantly, e.g., in the foundry subsector, some players have capacity utilisation as low as 10%, whilst some have over 70% utilisation. The firms with high utilisation are often strongly linked to their end markets through offtake agreements and brand loyalty. Dedicated power lines from ZETDC have also enhanced production in such firms.

Volumes in the primary steel production are poised to increase significantly in 2025 from about 60ktpa levels to 700ktpa levels, buoyed by the new DISCO Plant, increasing revenue levels in the sector to about USD640Million from under USD100Million per annum. The capacity utilisation and employment levels are presented in the Table below.

Table 2: Capacity utilisation, employment levels and projected revenues

Capacity Utilisation

Subsector	Baseline (2021)%	Estimated Volumes	Current Range%	Estimated Volumes	Estimated Average%	Current Estimated Employment Levels	Estimated Revenues (USDM/y)
Primary Steel Production	50-90%	~60ktpa	35-70%	~700ktpa	44%	5700	500
Foundry and Associated Engineering	35-75%	~5ktpa	15-60%	~4ktpa	42%	950	20
Fabricated Metal and Steel Products	50-75%	~10ktpa	45-50%	~8ktpa	48%	1900	40
Electrical Engineered Goods	50 - 80%	~1ktpa	40 - 55%	~0.7ktpa	46%	1500	20
Equipment Manufacturers and Machined Components	40 - 60%		25 - 70%		48%	4200	40
Automotive Industry	10 - 80%	<300Units/yr	10 - 35%	<300Units/yr	20%	763	20
Totals						15013	640

The materials flow and capacity in the local engineering iron and steel value chain is depicted in the Figure below.

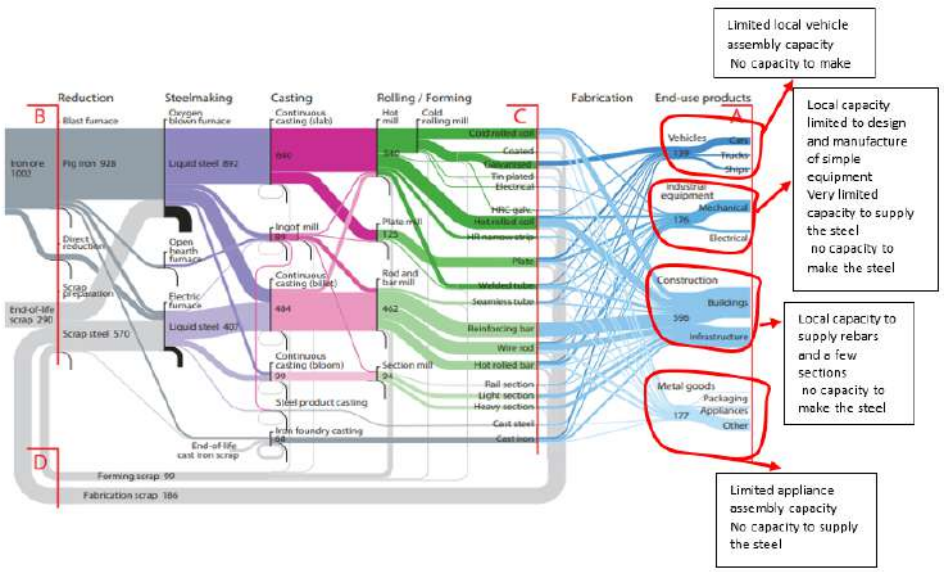

Figure 1: Materials flow and capacity in the Zimbabwean engineering iron and steel value chain

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Chapter 4

CURRENT VALUE CHAIN MAP OF THE ZIMBABWE ENGINEERING IRON AND STEEL SECTOR

The current spatial layout of the value chain map of the sector is summarized and presented in the Figure below.

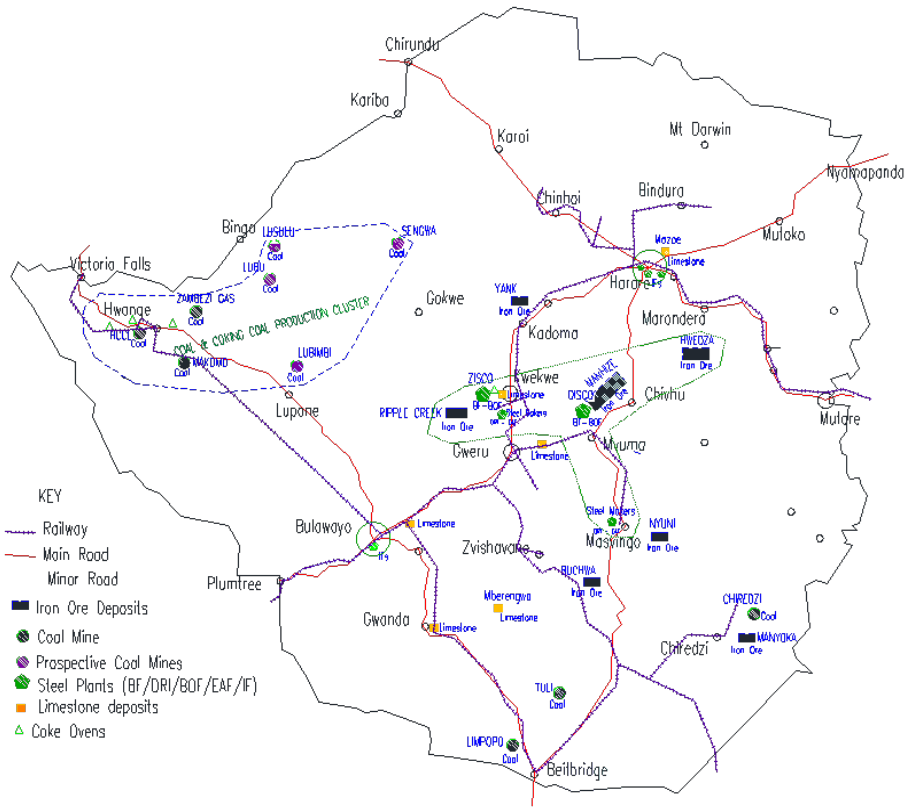

Figure 2: Spatial layout of the current engineering iron and steel value chain

The current value chain map with estimated volumes is presented in the Figure below.

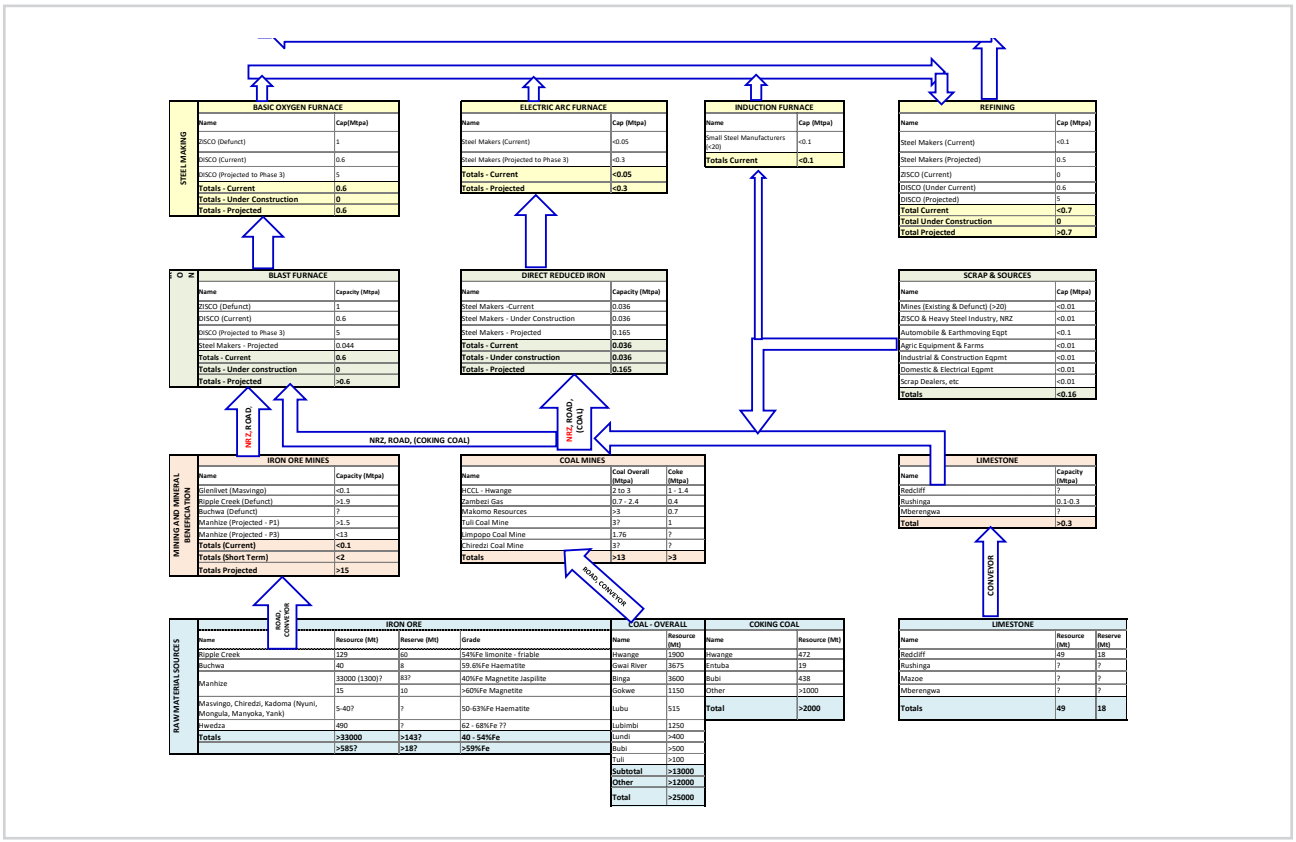

Figure 3: Value chain map for primary steel production

The value chain map for the downstream levels of the value chain is presented below.

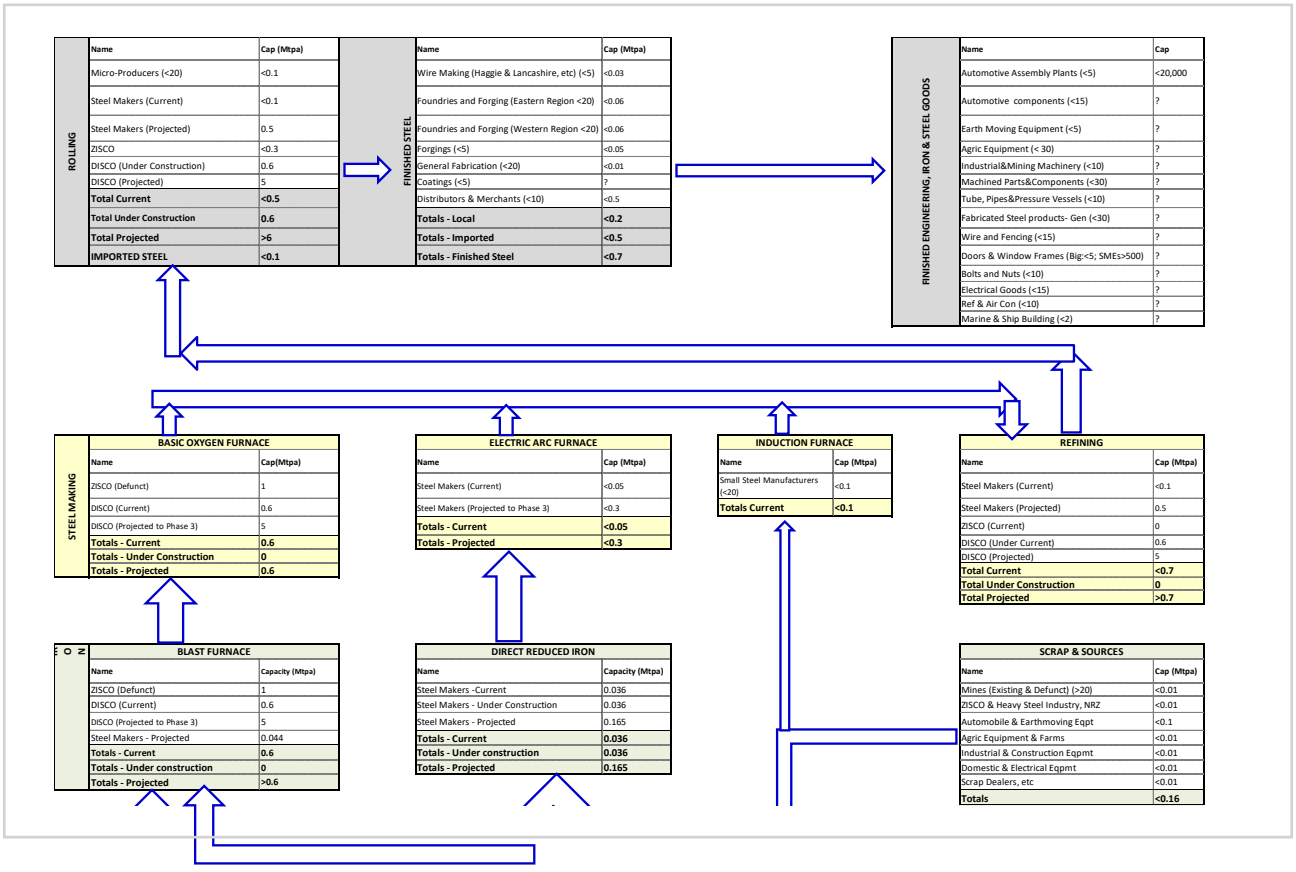

Figure 4: Value chain map showing downstream players of the value chain

Chapter 5

PRODUCTION AND COST BENCHMARKING

In the wake of the global overcapacity of production of steel, cost competitiveness is inevitable. Competitiveness against imports is mainly driven by various inputs costs. The global benchmarks for primary steel production via the BOF and EAF route are presented in the tables below.

5.1 Primary steel production cost benchmarks

Table 3: Global cost benchmark via the BOF Route

Basic Oxygen Furnace Route Steelmaking Costs 2022 (Source: www.steelonthenet.com)							
Integrated steelmaking - crude steel cost model							
					Cost per tonne		
Item $/unit	**unit**	**Factor**	**Unit cost**	**% fixed**	**Fixed**	**Variable**	**Total**
Iron ore	tonne	1.509	93.67	0%	-	141.35	141.35
Iron ore transport	tonne	1.509	11.29	0%	-	17.04	17.04
Coking coal	tonne	0.855	350.33	0%	-	299.53	299.53
Coking coal transport	tonne	0.855	10.58	0%	-	9.05	9.05
Steel scrap	tonne	0.146	453.64	0%	-	66.23	66.23
Scrap delivery	tonne	0.146	5	0%	-	0.73	0.73
Industry Gases/Oxygen	cum	170	0.16	0%	-	27.20	27.20
Ferroalloys	tonne	0.015	2184.95	0%	-	32.77	32.77
Fluxes	tonne	0.525	63.8	0%	-	33.50	33.50
Refractories	tonne	0.004	1561.3	0%	-	6.25	6.25
Other costs	unit	1	21.56	25%	5.39	15.17	20.56
By-product credits	unit	1	-13.08	0%	-	(13.08)	(13.08)
Thermal energy, net	GJ	-6.384	12.1	0%	-	(77.25)	(77.25)
Electricity	MWh	0.137	103.34	15%	2.12	12.06	14.18
Carbon dioxide emissions	tonne	2.203	18.41	0%	-	40.56	40.56
Labour	hrs	0.594	45.57	25%	6.77	20.29	27.06
Capital charges	unit	1	32.73	100%	32.73	-	32.73
Total					**47.01**	**631.39**	**678.40**

As shown in the table, local production of steel below USD678/tonne can make local production more competitive than imports. This may further imply export competitiveness in the region and globally if supported by policy.

Table 4: Global cost benchmark for EAF Steel Production Route

Steelmaking through EAF Route- cost model							
					Cost per tonne		
Item $/unit	**unit**	**Factor**	**Unit cost**	**% fixed**	**Fixed**	**Variable**	**Total**
Steel scrap	tonne	1.108	453.64	0%	-	502.63	502.63
Steel scrap transport	tonne	1.108	5	0%	-	5.54	5.54
Pig Iron/DRI	tonne	0	355	0%	-	-	-
Pig Iron/DRI transport	tonne	0	14	0%	-	-	-
Industry Gases/Oxygen	cum	56	0.15	0%	-	8.40	8.40
Ferroalloys	tonne	0.016	0.16	0%	-	0.00	0.00
Fluxes	tonne	0.066	181.57	0%	-	11.98	11.98
Electrodes	tonne	0.001	5500	0%	-	8.21	8.21
Refractories	tonne	0.005	1561.3	0%	-	7.81	7.81
Other costs	unit	1	16.65	25%	4.16	12.49	16.65
Thermal energy, net	GJ	-0.069	12.1	0%	-	(0.83)	(0.83)
Electricity	MWh	0.444	103.34	100%	45.88	-	45.88
Carbon dioxide emissions	tonne	0.026	18.41	0%	-	0.48	0.48
Labour	hrs	0.29	45.57	25%	3.30	9.90	13.20
Capital charges	unit	1	18.54	100%	18.54	-	18.54
Total					**71.89**	**566.61**	**638.50**

Local production of steel via the EAF route can also make the local industry competitive if the costs fall below USD640/t. This competitiveness can be enhanced by policies that ensure availability of scrap at viable prices, promotion of local production of steel via DRI route, competitive electricity tariffs and improving power availability, reviving an efficient and low-cost rail transport, and removing duties on imports of raw materials for the sector.

5.1.1 Global benchmark of scrap costs

Scrap is a contentious issue in the local steel value chain and the global cost benchmarks are worth exploring. The cost benchmarks are presented in the Figure below.

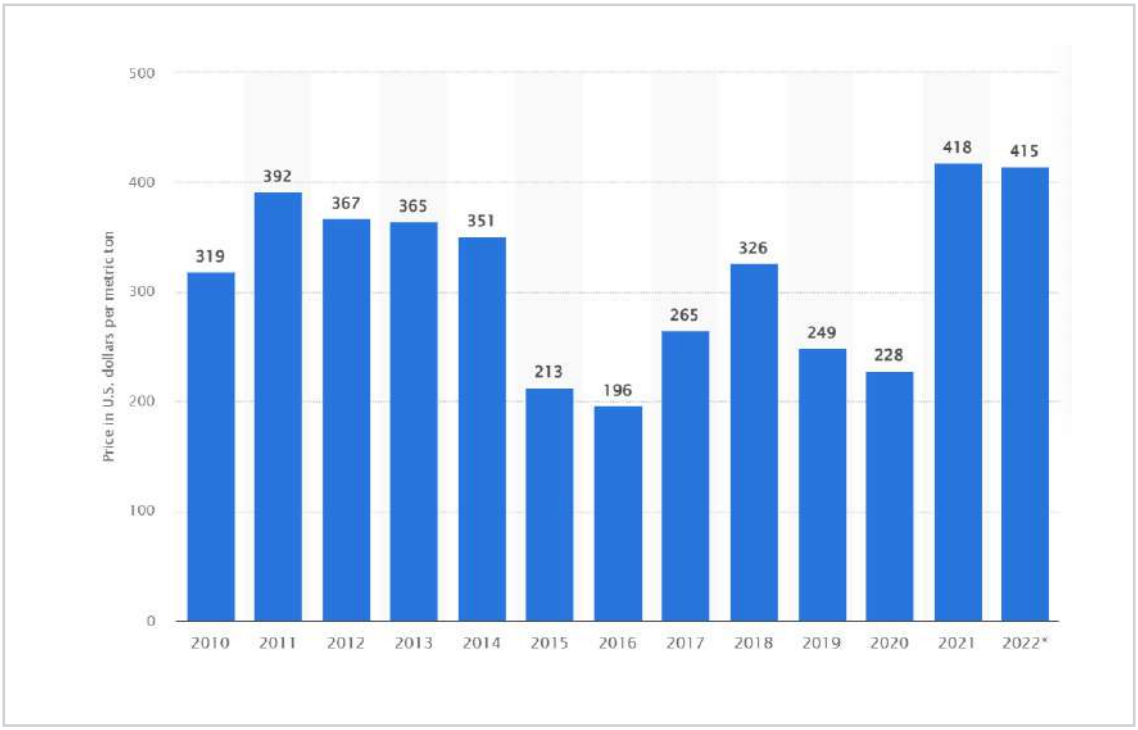

Figure 5: Global cost benchmarks for scrap

The price of scrap has increased sharply over the past two decades from less than US100 per ton to the current levels shown in the figure above due to current scrap shortages. However, scrap availability is forecasted to treble in thirty years' time as scrap availability in emerging economies, particularly China, increases when steel intensive capital goods (machinery, infrastructure etc.) built during the rapid growth phase reach their end of life. Developed countries are net exporters of scrap generated from end-of-life capital goods-built decades ago. Nevertheless, the current demand of scrap is high, fetching prices for exporters (over USD400/ton).

Regional (SADC) and local iron steel manufacturing companies, seriously affected by international market induced high scrap metal prices have resorted to lobbying governments to ban the export of steel scrap. Thus scrap is now a contentious strategic resource in the steel value chain requiring policy intervention. South Africa and Zambia have banned the export of scrap. In Zimbabwe, there is a huge fight between scrap dealers and scrap users such as primary and secondary steel producers and the foundry and as far as scrap exportation is concerned.

At legislation level, a scrap dealer or supplier can export scrap after getting an exporting license. Exporting is lucrative for the dealers since it fetches good prices that cannot be matched by the local producers. Therefore, a lot of scrap is being exported whilst the local firms are starved and hence causing low capacity utilization, in turn threatening viability of the local steel producer. Each individual foundry consumes between 150 to 250t/month of scrap (key informants) (1800 to 3000tons/year) and up to 0.15Mtpa considering 50 foundries in the country (estimate potential given by Zimbabwe Institution of Foundrymen [ZIF]). Besides the price issues, big scrap suppliers like NRZ, ZISCO, ZDF and mines release scrap in large batches (up to 5000t) (key informant) that individual firms find it difficult to purchase all at once. The scrap supplier can therefore easily justify export of this precious and strategic national resource without addressing the policy issues associated with scrap at policy level, growth of the steel industry will be derailed.

Transparency, fairness and a balance between needs of scrap suppliers/dealers and local scrap consumers are important to ensure a coherent and vibrant steel value chain. Proposed recommendations are as follows;

- Capacitation of the local producers to create own scrap distribution, processing and handling bank to ensure availability of adequate and high quality scrap
- Incentivisation local scrap dealers to prefer supplying the local industries rather than export
- Capacitation of the local steel producers and foundries to consume more scrap and hence creating a bigger market of the local scrap dealers and suppliers
- Regulating the exporting of scrap to make it harder as compared to selling it on the local market
- Provision of funding at competitive rates to strategic steel producers for them to be able to purchase quantities of scrap that can take their production for longer periods of time

The conflicts between suppliers and consumers of scrap induced by external scrap demand reveal similar looming more fierce conflicts associated with the other critical raw materials suppliers and consumers in the near future.

5.2 Production volume benchmark

The production volume benchmark is summarized below.

Table 5: Global production capacity: Top 20 Global steel production companies by rank – World Steel Association, 2021)

Rank	Company	Production (Mtpa)		Rank	Company	Production (Mtpa)
1	China Baowu Group	119.95		11	Shandong Steel Group	28.25
2	ArcelorMittal (Inc. 60% of AM/NS India - formerly ESSAR	79.26		12	Delong Steel Group	27.82
3	Ansteel Group	55.65		13	JFE Steel Corporation	26.85
4	Nippon Steel Corporation	49.46		14	Valin Group	26.21
5	Shagang Group	44.23		15	Nucor Corporation	25.65
6	POSCO	42.96		16	Fangda Steel	19.98
7	HBIS Group	41.64		17	Hyundai Steel	19.64
8	Jianlong Group	36.71		18	Liuzhou Steel	18.83
9	Shougang Group - Responsible for ZISCO BF No. 4 upgrade in the late 90s	35.43		19	JSW Steel Limited	18.59
10	Tata Steel Group	30.59		20	Steel Dynamics, Inc.	17.33
				37	Tsingshan Holding - Owners of DISCO running the Manhize Project	12.37

The companies highlighted in yellow are of great interest to Zimbabwe. ArcelorMittal which now owns 60% of AM/NS India (formerly ESSAR) is ranked second. Essar and ZISCO formed the famous NewZim Steel which could not take off despite almost 6 years of negotiations. The question remains, "Was it a good opportunity lost, considering the global ranking of ArcelorMittal?". Shougang Group, ranked number 9 was responsible for upgrading ZISCO BF No. 4 in the late 90s. Questions also remain, "Was it ever interested in investing in ZISCO when it was put on offer?". Tsingshan Holdings, ranked no. 37 is the owner of the 0.6Mtpa steel plant under construction in Manhize, Chivhu, through its subsidiary, Dinson Iron and Steel Company (DISCO).

An elusive but important question to Zimbabwe remains to date, "After attracting the world's best, what repels them afterwards". An answer to this question can help Zimbabwe become a globally competitive player in the steel industry. It is very strange for one to play with world class and remain mediocre. One of Singapore's innovative strategies was custom designed financial incentives to world class companies to access technology, entrepreneurship skills and capital.

The study also revealed that besides China (majority of globally ranked steel firms), India is the emerging giant in steel production, ranked second (note that at firm level, India is also ranked in steel production). India was also the least cost producer of steel as earlier revealed. Further more, India uses a DRI technology that uses non-coking coal to produce high quality steel. Therefore, it is strategic to look at attracting investment and technologies from India and China to ensure that Zimbabwe becomes a global player in steel production.

The country must therefore look at ways of leveraging on its vast iron ore resource inorder to attract investment in the steel value chain and compete at the global scale. It is possible for Zimbabwe to create a multibillion steel value chain, capable of providing globally competitive.

- Attract world class players in the steel value chain to access appropriate technologies, global markets, entrepreneural skills, and capital amonst others, leveraging on the huge iron ore resource
- Active learning of new technology after acquiring foreign technology
- Development of indigenous technologies by innovation
- Create/ stimulate and influence regional and African market to consume value added Zimbabwean steel products for their economic development

The global giants in steel production at country level are presented in the Table below.

Table 6: Globally ranked iron ore and steel production countries

Global ranking - Iron Ore Production				Global ranking - Steel Production		
Rank	Country	Production (Mtpa)		Rank	Country	Production (Mtpa)
1	Australia	880		1	China	1,033
2	Brazil	410		2	India	118
3	China	380		3	Japan	96
4	India	290		4	United States	86
5	Russia	90		5	Russia	76
6	South Africa	76		6	South Korea	71
7	Ukraine	76		7	Turkey	40
8	Iran	75		8	Germany	40
9	Kazakhstan	66		9	Brazil	36
10	Canada	58		10	Iran	29

It is worth noting that only 4 out of 8 countries (50%) with huge iron ore resources are in the top 8 iron ore producing countries. An important lesson for Zimbabwe is that the abundancy of iron ore in a country does not necessarily translate to competitiveness in the steel value chain. There are many other critical factors that determine the extent to which iron ore resource is exploited in any African country. Some of the limitations cited in Africa included;

- Low grade ore too costly to exploit
- Little investment in exploration, geological surveys and techno-economic feasibility studies in-order to lure investors
- Poor infrastructure to support the mining ventures
- Civil wars and political unrest
- National policies
- Economic environment and global markets
- Policies and capacities of potential investors, amongst others

It is therefore vital for Zimbabwe to invest in activities that are aimed at making their iron ore resources more attractive to investors considering the high competition on the African continent. Actions that can attract such investments include, amongst others;

- Incentivisation and promotion of exploration work and feasibility studies in iron ore
- Investment in infrastructure to support iron ore mining like roads, rail, electricity, water and port facilities
- Stimulating downstream off-take of iron ore at local, regional and international level through strategic and win-win engagements with key players in the value chain.
- Promoting and incentivizing research and development, innovation and technology transfer in iron ore beneficiation in-order to come up with upgraded iron ores at globally competitive costs

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Chapter 6

POLICY AND REGULATORY ENVIRONMENT

6.1 Policies regulating the sector

The Government of Zimbabwe has responded through several policy initiatives as a spring board for the development of effective sector revival strategies to enhance the performance of the Zimbabwean economy and having direct implications on the revival of the engineering iron and steel sector. Notable policies include; i) The Zimbabwe National Trade Policy [NTP 2019 – 2023]: (which spells out the vision, objectives and initiatives for enhancement of Zimbabwe's local and international trade); ii) National Export Strategy [NES 2019-2023]: (which spells out the strategies for trade facilitation and export development and promotion); iii) Unfinished work of the Transitional Stabilisation Programme [TSP 2018 – 2020]: (carried forward to the National Development Strategy:2021-2025); iv) National Development Strategy [NDS 2021 – 2025] (which provides a policy framework for the support of local manufacturing companies to enhance their production capacities); v) Comprehensive Agriculture Policy Framework [APF 2012 – 2032] and the Draft Agriculture Policy [DAP 2018 – 2023] (which seek to promote appropriate irrigation and mechanisation as key drivers of productivity growth in the agriculture sector); vi) Mining sector policies envisaging a USD12Billion Mining Sector Road Map; and vii) Energy Policies (which seek to increase renewable energy generation to 1800MW by 2030). Currently there is the Zimbabwe Reconstruction and Growth Plan which is aimed at taking over from NDS1 to identify the challenges affecting the manufacturing sector and finding solutions for sustainable growth. Plans are also underway to enact a national steel policy/act to leverage on the increased primary steel production base.

NTP and NES [2019 – 2023]: Major emphasis is on import-substitution and transformation of local industry to export-orientation, with government support to enhance export development and promotion; diversification of export products and export markets; and market access through negotiations at bilateral, regional and multilateral levels. The policy also sought to transform Zimbabwe from an exporter of raw and semi-processed products to an exporter of internationally competitive high value products. A general shift from inward-looking policy interventions of protecting domestic industry to approaches which balance the need for protection with regional, international and bilateral trade commitments is envisaged in the policy document. The iron and steel sector was prioritized for export development and promotion. Strategies outlined for the sector include technical intervention strategies, export marketing training, export packaging training, SME cluster development, standards and certification, building and adoption of export culture, export incentives and trade fairs and exhibitions.

NDS [2021 – 2025] and Unfinished Work of the TSP [2018 – 2020]: It prioritises the resuscitation of the engineering iron and steel industry through the implementation of the following; i) securing investors in the iron and steel industry; ii) resuscitation of steel foundries and use of modern technologies in the sector; iii) processing of scrap metals into new steel products; iv) strict control of scrap metal exports to ensure adequate throughput to domestic foundries; v) promotion of manufacturing of steel billets from scrap metal; vi) facilitation of increased supply of coal and electricity to the iron and steel industry; v) enhanced coke production for local foundries; vi) resuscitation of the machine tools and accessories manufacturing subsector; vii) industrial support to increase the supply of domestically manufactured buses and delivery trucks, thereby potentially benefiting the upstream industries that manufacture bolts, batteries, steel sheets, tyres, upholstery, paint, carpet manufacturers; and reducing the import bill; viii) development of strategy to enhance the local assembly of private vehicles to increase job creation and reduce import bill on new and recycled vehicles and accessories; ix) effecting of measures that promote consumption of locally manufactured goods like the termination of customs duty deduction on imported buses, compelling of line ministries to purchase vehicles from local assemblers amongst others; x) inclusive participation of the engineering iron and steel sector in the provision of intermediate goods and services to support the USD12Billion Mining Sector Growth Strategy/Road Map; and xi) rehabilitation and expansion of water treatment plants and range boosters, sewerage network and pump stations amongst others (Examples are water sources such as Kunzvi and Musami Dams, Caledonia, Hatcliffe and Warren Control amongst others).

APF [2012 – 2032] and DAP [2018 – 2023]: These policies were aimed at decentralization of service and repair of farm mechanization equipment; farm structures and post-harvest facilities and technologies; provision of spares, technical back-up and capacity building; as well as rehabilitation, modernization and development of irrigation schemes (over 2.5 million of developed irrigation; 200Ha irrigated per administrative district by 2030).

Engineering iron and steel products envisaged include agricultural tractors (including pedestrian controlled - two-axle tractors, single axle tractors), balers (straw and fodder balers including pick-up balers), combine harvesters (threshers), harvester and threshers, manure spreaders and fertiliser distributors, milking machines, ploughs (e.g. reversible and non-reversible ploughs), root or tuber harvesting machines, seeders, planters and transplanters, soil working equipment, threshing machines and track-laying tractors (crawlers), irrigation pumps, and centre pivots amongst others.

Zimbabwe Motor Industry Development Policy [2016 – 2026]: Policy is aimed at enhancing the resuscitation of the automotive industry against the background of very low capacity utilization of the local industry (<10% across the value chain from assemblers to component manufacturers). It is aimed at increasing the local uptake of local vehicles from local assemblers (increasing capacity utilization to 100%). Currently, up to 70,000 second hand vehicles are imported per annum against annual consumption of about 4600 for new vehicles. Thus the policy aims at ways of promoting local production (up to 40% local content), import substitution and increasing exports from the current 0% to about 50% by 2026.

Energy policies: The Renewable Energy Policy of Zimbabwe seeks to increase grid-solar energy generation capacity to 1800MW by 2030, giving massive opportunities for the engineering, iron and steel sector in terms of manufacturing and assembling of local solar panels, batteries for solar energy storage, transmission lines, other accessories for solar energy projects and research and development.

The implementation of these policies is expected to revive the engineering iron and steel sector, culminating in the production of one million tonnes of long products, bars and wire rods per annum in the first phase and three million tonnes of flat products, section steel and belts per annum in the second phase (Government of Zimbabwe, 2018). In addition, it is expected that imports of steel products would be reduced by at least US$350 million per annum, while US$1 million worth of exports will be generated together with 3,000 direct jobs and 20,000 indirect jobs in the value chain.

6.2 Policy thematic areas for review and effective implementation

Despite the good policies and acts, the sector remains challenged due to failure to effectively implement the policies. A critical look at national policy, taking a leaf from other countries is vital inorder to come up with effective policies and implementation. A number of thematic areas are discussed below.

» Capacitation and Strengthening of Policy Making Institutions and well-defined Institutional Arrangements to strengthen them in policy research, formulation, implementation, monitoring and review and ensure synchronised operation of all key stakeholders and institutions (e.g. Ministry of Industry and Commerce; Ministry of Mines; Ministry of Finance; Ministry of Energy and Power Development and Ministry of Transport). Clear formulation, implementation, monitoring and review framework for policies in the steel sector. Case examples being the Korean Economic Planning Board (EPB) of South Korea, and in Singapore, the Economic Development Board (EDB). In Zimbabwe institutions like ZEPARU can be strengthened and strongly linked to the Economic Planning Department of the Ministry of Industry and Commerce, as well as the Engineering, Iron and Steel Association of Zimbabwe (EISAZ), which represents the private sector. A special sub-department responsible for the Steel Value Chain can be established. In this way, the knowledge problem or gap; the communication gap are addressed; as well as the policy implementation and review gaps. India, which is now the second largest steel producer behind China, is also an exciting case example. It has a Ministry of Steel and a Steel Policy which is reviewed annually. Challenges as the ones faced in the ESSAR Deal will not be repeated.

» Protection vs Open Market in the Global economic environment governed by Trade treaties, e.g. African Free Trade Area, COMESA, SADC Trade Protocols, European Treaties, World Trade Organisation, Bilateral Agreements, etc. Protection from imported manufactured goods versus promotion of locally produced globally competitive products. Case examples – Production of long and flat steel products, plus other Value-added steel products, e.g. roof sheets, tubes, pipes, pressure vessels. Should DISCO, ZISCO, Steel Makers, etc. be protected from imported steel products from South Africa, China, etc. or market forces allowed to play on the assumption that they will outcompete the competition. Opportunities and gaps in the regional, global and bilateral trade agreements for protection have to be identified where benefits of protection are obvious. At the same time obvious benefits for the open market have to be identified and maximized (especially those that incentivize competitiveness of the local market and promote efficiency and innovation). E.g. ZISCO operated inefficiently, draining the resources from fiscus. Therefore, protection was not beneficial. On the other hand Pohang Steel Company (POSCO) (fourth largest steel producer in the world) developed as a State Owned Enterprise till its privatization in the year 2000, benefitted from heavy protection of infant industries from imports (average manufacturing tariff rates were 30-40% until the 1970s and quantitative restrictions (e.g., import quotas) abounded well into the late 1980s organic combination of market forces and government forces). China uses an organic combination of market and government forces.

- Prioritisation of strategic sectors: Considering the large number of sectors involved in economic activity from agriculture, mining and many other value chains and subsectors, it is difficult to implement policy without streamlining. Successful policies therefore prioritized particular subsectors in different periods of implementation, guided by the national agenda. Prioritised sectors or value chains were based on agreed criteria, based on inputs such as feasibility studies and thematic working papers amongst others. This approach enabled the countries to implement policies in an effective and efficient manner. The steel industry in Zimbabwe has generally not been prioritized as compared to other sectors of the economy. NDS1 now prioritises the Steel Value Chain, e.g. the Buses and Trucks, the Foundries, iron and steel production and the Scrap Value Chain. Detailed value chain analyses and implementation strategies have to be developed and validated, with a clear implementation road map; monitoring and review to ensure continuous improvement. The Engineering Iron and Steel Sector Strategy (2022 – 2026) has been developed by EISAZ under the supervision of the Ministry of Industry and Commerce. The monitoring of these programs is very important to yield the desired results. The Singapore government, through Economic Development Board (EDB), identifies strategic manufacturing clusters, formulates and implements policies that targets industries based on criteria such as employment, growth potential, technical contents, and value-added.

- Nationalisation, State Owned Enterprises vs Privatisation. Examples – ZISCO Privatisation vs State Ownership, pros and cons. DISCO and Steel Makers being private steel production' pros and cons. Majority of SoEs in Zimbabwe have failed, e.g. ZISCO, ZUPCO, GMB, etc. RISCO nationalized in the 1940S and failed, privatized in the 1950s and succeeded; nationalized again in the mid70s and succeeded; and failed as a SoE post-independence till its collapse in 2008. Similarly, IDC prevailed as a private entity with the government owning 1% equity during the colonial era. However, post-independence, with the government owning majority stake in IDC, most of the companies struggled. The big question is can the reasons for failure of SoEs in Zimbabwe be eliminated or privatization is the solution. On the other hand, can national interest still be protected with privatization. Interesting case examples like China with the majority of Chinese Steel Manufactures being SoEs is the top global steel producer by a wide margin. POSCO in South Korea which was a SoE, which privatized in 2000 and is the fourth largest steel producers in the world. India has 4 world scale steel producers, one of which is a SoE (SAIL). The pros and cons of SoEs and privatization have to be taken into consideration, taking key lessons from the success stories of the different policy directions of various countries.

» Inclusiveness of SMEs and local players in the Steel Value chain. E.g. Policies that effectively support SMEs participation and protects the sector against monopolistic tendencies. When ZISCO collapsed, the entire local steel value chain collapsed with it. Inclusive participation of various players including MSMEs is vital. Steel makers and small producers have played a key role in supplying steel for the residential construction market. Smaller deposits of iron ore which is not attractive to the big companies can be relevant to the small scale players. India has recognized small scale steel producers which are spatially distributed around India (These produce up to about 20% of steel in India). On the other hand, China is closing the small scale players in favour of consolidation. Lessons from both approaches are vital in shaping the Zimbabwean Steel industry.

» Investment attraction policies, such as National Project Status (NPS), Special Economic Zones (SEZ), Export Processing Zones (EPZ), Tax Holidays, etc., vs none. Many successful countries have formulated and implemented policies that attract investment. Singapore has custom-designed financial incentives to world class companies to access technology, entrepreneurship skills and capital. Another interesting example is China in 1986, through the State Council promulgated the Provisions of the State Council of the People's Republic of China for the Encouragement of Foreign Investment, which granted a number of privileges including preferential taxation, simpler licensing procedures, freedom to import inputs of materials and equipment, more autonomy from bureaucratic interference, interest free loans, and the right to retain and swap foreign exchange with each other to foreign joint ventures. In this way both advanced technology and investment was attracted to China, with more than 140,000 foreign-invested enterprises in China and 250,000 foreign-funded projects for the period 1985-1997; and a total USD242Billion total fixed investment con tributing 15% of investment to the economy. Total FDI between 1985 and 1997 totalled US$242bn, accounting for almost 15% of the total fixed investment in the economy. China experienced similar loopholes and minimized them through actions such as clamping down on phoney foreign investments simply intended to take advantage of preferential loans and tax incentives. The steel sector must be prioritized in the new policies for attracting investment. New guidelines published in 1995 clearly detailed those foreign investments the government wished to encourage, alongside those that were to be restricted, prohibited or simply permitted. The new procedures included enhanced penalties if agreements were not fulfilled; policies to reduce the gap between pledged and utilised investment; and the sharing of investment risks between Chinese and foreign investors, aimed at removing the need for investment guarantees. The government's declared policy reduced the blanket tax incentives for foreign enterprises and prioritized sectors or value chains that would continue to benefit from tax preferences, soft loans and foreign investors, etc. Zimbabwe has offered SEZ, EPZ and NPS to certain projects in the past and present. The policies must form the basis of Terms of References (ToRs) for tenders for projects of national significance. The economic benefits of the policies must be quantified and followed up during implementation. Some loop holes have existed however in the past where limited benefits have accrued to the nation. The identified loop holes must therefore be closed, taking a leaf from China's experience.

» Technology, transfer thereof, innovation, research and development; capacity building, etc. Viability of institutions such as ZISCO where significantly affected by technology as well as skills. For example, RISCOM had to hire expatriates in their early stages of development after part of its failure was attributed to lack of competent skills and expertise. The premature decommissioning of the purchased plate mill due to its inferior competitiveness is another example of the critical role of technology competitiveness to economic development. Singapore, China and South Korea realized the importance of new and competitive technology in enhancing competitiveness of targeted sectors and made sacrifices to acquire the new technologies, as well as tailor-made economic incentives to attract investment to acquire such. Thus the iron and steel industry in these countries began to grow. The policies of these companies, realizing the heavy capital cost of state of art technologies, focused on quickly learning and improvement on the acquired foreign technologies with the aim of locally producing their own technologies with world-class productive capabilities. In this way, Japan (e.g. Nippon Steel), South Korea (e.g. POSCO-Direct Reduction technologies for steel), China (e.g. Bao Steel) and India (e.g. Direct Reduction Iron processes using non-coking coal) now can make their own Blast Furnaces and other steel making technologies. These countries also have strict regulations on technology licensing (both in terms of the quality and the price of the imported technology). China is currently phasing out any primitive technologies that are not competitive and consolidating on the more competitive technologies. India has proven to be a low cost steel producer using both the Blast Furnace – Basic Oxygen Furnace Route and the Direct Reduction Iron - EAF Route. There are also many small scale DRI based steel production units in India and Zimbabwe can take a leaf from there. Zimbabwe can also tap into the competitive Indian market and technology through strategic win-win partnerships. Despite a long history of steel making in Zimbabwe/ Rhodesia (from 1938 to date); Zimbabwe cannot make its own Blast Furnace or any significant steel making technology. This is a huge weakness that must be addressed considering the history, the huge iron ore deposits and the number of engineering graduates churned every year. Also worth noting is the fact that despite huge investments in technology during the last production campaign of ZISCO (Coke Ovens, Blast Furnace No. 4, 6 Strand Continuous Caster and 17km Overland Conveyor), production was ironically the lowest during this era, within which ZISCO collapsed. To make matters worse, ZISCO still has an overhang of debt from those big investments and there is nothing to show for it. Therefore, other important factors must be considered alongside investment decisions on technology to ensure return on investment. These include security of supply of critical raw materials and inputs; the market for end products; ring fencing against macro-economic, political and other environmental risks; and micro-economic and operational risks amongst others. Risk sharing mechanisms must also be considered to reduce the consequences of failure. Synergies and strong value chain linkages in the steel sector are critical. These linkages must go beyond the local domain and extent to the region and globe.

» Market Driven Policies vs Resource Driven Policy. Zimbabwe is endowed with vast iron ore resources (estimated at around 34Billion tonnes). The policy conceptually has often been motivated from the resource beneficiation point of view rather than from the market perspective. Contrastingly, Australia, endowed with vast high grade iron ore resources do not seem to bother much about beneficiation, and hence they export abundant crude iron ore to large consumers such as China. Similarly, China, with abundant low grade iron ore resources were generally not enthusiastic on beneficiating their own iron ore resource, but rather they import a lot of high grade crude iron ore for their own steel production. It is also ironic that some of the globally ranked steel producers do not have iron ore resources in their countries (e.g. South Korea) and they entirely depend on imported raw materials. Therefore the technology and the market also play an important role in determining competitiveness of the steel sector. It was observed in the study that generally, steel consumption in any nation was driven by domestic demand (e.g. China consumes over 70% of the steel it produces). Without this local demand, it may be difficult to have a competitive steel industry considering that there is also a global production over capacity. Zimbabwe's local steel demand is predicted between 6 million to 9 million tons per year for the next 40 years to achieve rapid economic growth. Africa requires between 325million to 1 billion tons per annum of crude steel over the next 40 years to achieve the objectives of Agenda 2063 vision. Therefore, Zimbabwe can become a globally ranked steel producer if it radically and strategically looks at ways of tapping into this market, taking advantage of the projected local market, the abundance of its local resource and the market presented by the African Free Trade Area (AFTA). On the other hand, Zimbabwe must fully appreciate that having the resource alone is not enough, it must be bankable, being able to make steel that is globally competitive as compared to scrap based production and overcoming the threats posed by advances in material engineering (e.g. nanotechnology and materials substitution).

» Scrap and Critical raw materials security of supply for the Steel Industry. Scrap has been a contentious issue in the region. South Africa and Zambia have banned scrap exports to ensure security of supply for the local market. In Zimbabwe, one has to acquire an export license to export scrap. A serious war has emerged between scrap suppliers and consumers like foundries. On one hand, scrap consumers such as foundries, requiring over 0.1Mtpa scrap steel complain that they could not get adequate feedstock to fully utilize their foundries as the majority of scrap was being exported. On the other hand, Scrap Suppliers say the local scrap consumers do not have adequate capacity to consume their supply (e.g. ZISCO, ZDF, NRZ, etc., can produce a batch of about 5000t scrap and a foundry requiring 150t per month could not offtake their supply). Furthermore, the foreign market for scrap steel was more lucrative, offering up to USD400.00/ton. This challenge is also likely to emerge between the producers of the other critical raw materials for steel production (e.g. iron ore and coal). Both iron ore and coal (coking coal) are on high demand on the international market, fetching very good prices. Whilst the assumption is that local availability of raw materials equates to low cost, the opposite may actually happen due to market forces raising the price of the raw materials and hence threatening the viability of local steel production. This has happened in South Africa where steel producers have often cried foul on the price of iron ore from Kumba Iron, threatening their viability. Proactive policies to maintain a delicate balance are important, including the promotion of backward integration; ring fenced long term agreements; financial support to ringfence security of supply to strategic sectors; and export tariffs to promote the local supply of critical raw materials.

» Environment and decarbonisation efforts towards netzero emissions and other environmental considerations. The enormous energy consumption and GHG emissions of the steel sector attract much attention in the global efforts for clean energy transition and climate mitigation. The global average energy and emission intensity of the steel production is about 0.48tonne of oil equivalent of energy/ tonnes and 1.83tCO_2/ton steel respectively. High Energy Intensity in Steel Production is due to the Basic Oxygen Furnace Route and Coal as Fuel, e.g. in China. Europe is less energy intensive due to the use of electric arc furnace and less carbon intensive fuels such as natural gas, biogas and hydrogen. During the Climate Action Summit convened by the UN Secretary-General in September 2019, 77 Countries, 100+ Cities committed to Net Zero Carbon Emissions by 2050. However, countries are concerned that decarbonisation may lead to cost increases for industries, forcing affected companies to move their production bases to countries with less strict energy efficiency and greenhouse gas (GHG) emission regulations. The USA and the EU have proposed to use the carbon leakage and border tax to shield their products and enterprises from market share loss from cheaper imports from countries with less strict climate policies and force their main trade partners to adopt equally stringent emission and energy efficiency standards (EU Green Deal, 2019). The European Steel Technology Platform (ESTEP) was set up in 2003 as an industry-led stakeholder forum and was recognized in 2004 as platform of steel having as one of the main objective the Ultra – Low CO_2 Steelmaking – ULCOS. EU's main climate policy for big emitters, like the iron and steel industry, is the EU Emission Trading Scheme (EU ETS). The EU ETS started in 2005 and aimed at helping the energy and industry sectors to cut their CO_2 emissions in a cost-effective way. EU's main energy efficiency policy covering the iron and steel sector is the Energy Efficiency Directive, which was first issued in 2012 and then amended in 2018 establishing a set of binding measures to help the EU achieve its 20 % energy efficiency improvement target by 2020 and 32.5 % energy efficiency improvement by 2030. China's energy efficiency and climate change mitigation policies for the steel sector include three main components: i) energy intensity targets for the iron and steel sector; ii) mandatory closure of small and inefficient production capacity (100Mtpa outdated steel capacity had to be closed by 2010; iii) The Top 10,000 Enterprises Programme with mandatory energy audits and annual energy performance assessment for energy intensive enterprises with annual energy consumption above 1800,000 tons of coal equivalent (tCe) during 2006–2010; and expanded to cover enterprises with annual energy consumption exceeding 5,000 tCe; and iv) the National Emission Trading Scheme. In India, the iron and steel industry is covered by the PAT (Perform, Achieve, and Trade) scheme for the power sector and energy-intensive industries. Under PAT, each participating enterprise is allocated a target for energy efficiency improvement, getting tradeable Energy Saving Certificates (ESCerts), each equal to 1 metric tonne of oil (Mtoe) for overachieving and buying ESCerts for underachieving. PAT Circle 1 for 2011–2014 covered 101 iron and steel enterprises, each with an annual energy consumption above 30,000 ton oil equivalent (tOe). Zimbabwe is a signatory to the Paris Agreement that sets the global long-term temperature goal of limiting the global average temperature rise to well below 2 °C above pre-industrial levels; to pursue efforts to limit the increase to 1.5 °C.

» Global competitiveness vs import substitution policies. Import substitution has been talked about from one policy era to the other in Zimbabwe. The success of this policy has been affected by many factors, chief of which has been the competitiveness of the locally produced product (capacity, quality and price). Currently, Zimbabwe's capacity to produce high quality products in required volumes and at the right price is very low. DISCO is under construction with a capacity of 0.6Mtpa crude steel; Steel Makers has under 0.1Mtpa; ZISCO still at 0Mtpa. It goes without saying that if one is globally competitive; then by default, they are competitive at the local, regional and international front and will most likely not require protection. Without global competitiveness, import substitution will often require government support and intervention through protection measures. This may not necessarily yield intended results as locally produced products may still cost more than imports causing potential conflicts with local consumers. It is also vital to note that there is global production overcapacity for steel (over 400Mtpa). This implies that any new investment for steel production is not necessarily driven by shortage of the resource, but most likely by competitiveness of the steel product, government policies or bilateral agreements amongst others. Likewise, India, the second largest producer of steel in the world (around 120Mtpa) is increasing its investments in steel production, targeting a maximum production capacity of up to 300Mtpa. This is driven by its local steel consumption and enhanced by the competitiveness of her steel sector (India is globally the least cost producer of steel, edging out Russia, Brazil, Vietnam and China). Zimbabwe can learn from India to become globally competitive in steel production, edging out South Africa which has over 1.5Mtpa overcapacity. This can be achieved taking advantage of the locally available raw materials in close proximity; exploring ways of low cost mining and mineral beneficiation and low energy intensity in steel production, amongst others. Production processes can also be diversified to ensure reliability and security of supply using both the BF-BOF route and the DRI - EAF Route. Therefore policy thrust may be changed from import substitution to global competitiveness or a hybrid.

» Policies for funding the manufacturing sector. Funding has been a major issue for the manufacturing sector of Zimbabwe. Despite the sector receiving notable funding in the past, e.g. the Distressed Companies Funding during the hyperinflation era; and other types of funding during the ESAP Era; subsidized funding for ZISCO pre-ESAP and during ESAP, these have not yielded intended results. Several gaps and loop holes existed. Currently, Zimbabwe was allocated SDR677.4 Million (USD958million equivalent) revolving fund by the International Monetary Fund (IMF), as part of the SDR's Grant Allocation of USD650Billion that was released globally to all IMF member countries. About USD80Million (8.4% of total SDR) disbursements were channeled as follows; Horticulture Revolving Fund – USD30Million; Industry Retooling for Equipment Replacement for the Value Chain Revolving Fund – USD22.5Million (Cotton – USD5Million; Leather – USD5Million; Pharmaceutical – USD5Million; Fertilizer – USD5Million; Agro-processing – USD5Million); Tourism Facilities Services Development and Upgrading – US7.5Million; and Smallholder Farmers Irrigation Infrastructure Development Fund – USD20Million. It is clear from the disbursements that the engineering, iron and steel sector was not prioritized in the SDR despite it being prioritized in NDS1. The disbursement criteria from a policy perspective must be very clear, and on the other hand the steel sector must be fully aware of funding opportunities at their disposal and proactively tap into such. Funding alone without requisite policies to ensure viability may be a waste of resources. Prioritisation of subsectors and value chains is vital to ensure easy administration, monitoring, evaluation and review of the funding program (e.g. directed credit for inputs and capital formation and subsidized policy loans with long payback periods). Home Grown Funding Packages. Domestic funding was vital in funding the manufacturing sector of Singapore. The Central Provident Fund, which demanded mandatory contributions by employees and workers amounting to 30% of domestic savings providing significant investment funding for economic growth. Zimbabwe can take a leaf from Singapore and implement similar initiatives for raising investment funding. However, similar institutions do exist, e.g. NSSA, with the main challenge being abuse of funds that can spur economic growth through corruption. The country can also leverage on attracting the Diaspora, which is already remitting over a USD1Billion dollars annually for investment funding. Custom designed financial incentives to world class companies and investors to access technology, entrepreneurship skills and capital. World class companies bring competitiveness and open global markets. Considering the vast primary raw materials that Zimbabwe has (e.g. iron ore for steel making), the opening up markets for value added globally competitive products can spur rapid economic growth.

» Forex allocation. Shortage of forex to purchase critical raw materials and inputs has often been cited as one of the major constraints to manufacturing sector growth. Once strategic sectors are prioritized, allocation becomes easier. This can also be applied within the context of Special Economic Zones and National Project Status. The mutual benefits for preferential forex allocation must be clearly articulated at policy level.

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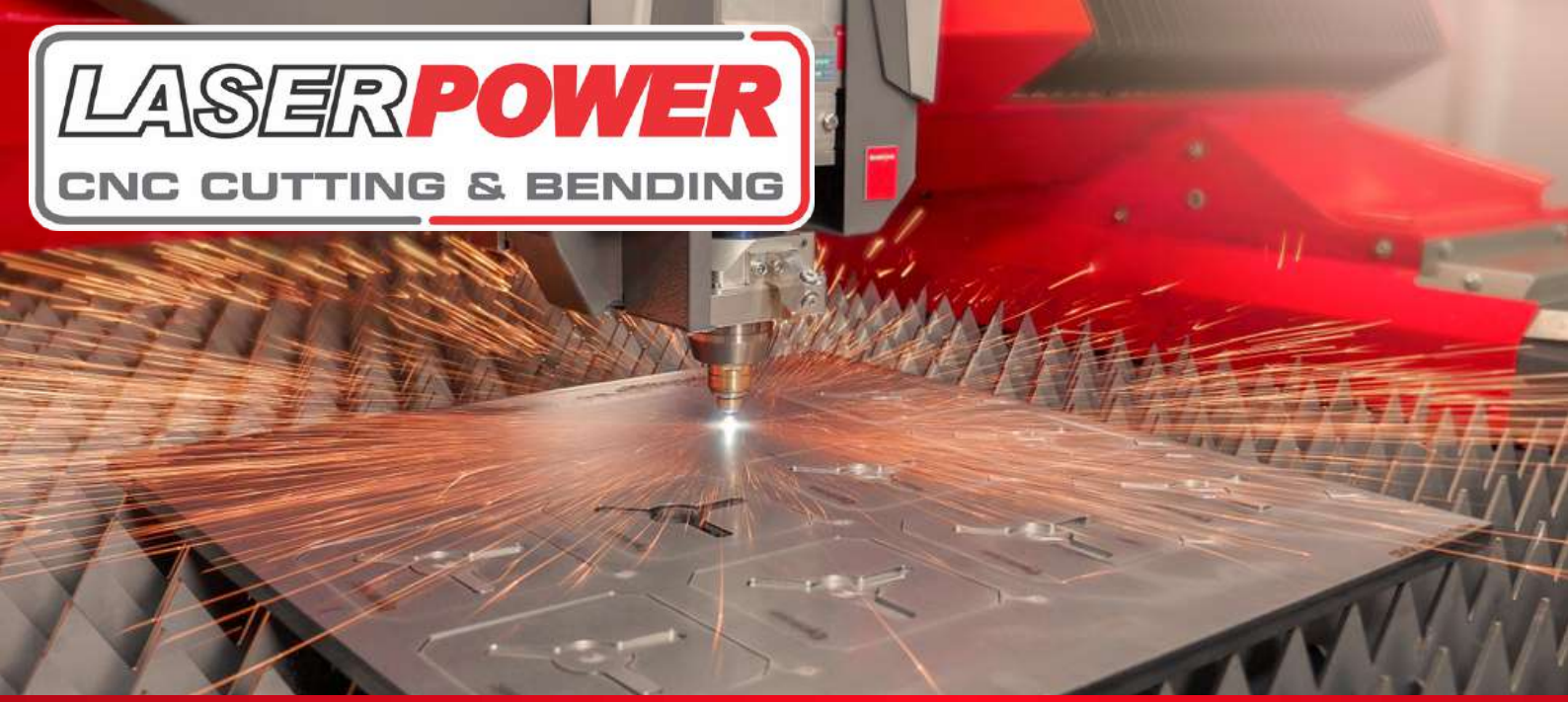

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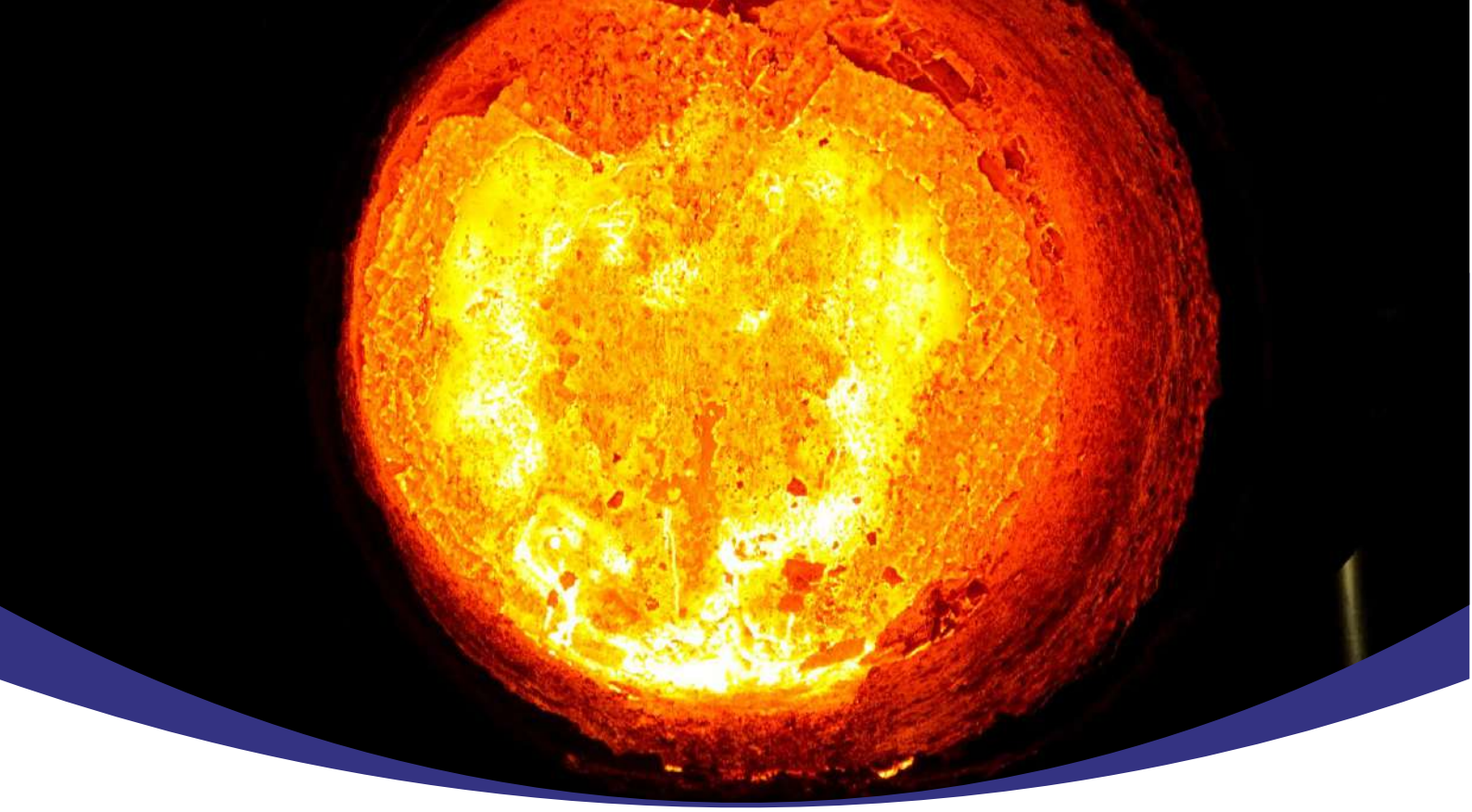

Chapter 7

RECOMMENDATIONS

Recommendations are derived from a combination of the SWOT Analysis, document reviews, desktop studies and the informant interviews and are as follows;

7.1 Consolidation of primary steel production and competitiveness enhancement

Consolidation of primary steel production and enhancement of competitiveness leveraging on the abundant and high-quality raw materials which include coking coal, iron ore and limestone amongst others. Infrastructure, although needing rehabilitation is also existent, as well as distribution channels within the region and to the ports. The different mix of primary steel producers consisting of the big giants like ZISCO and DISCO, and the small-scale players like Steel Makers, Steel Brand, Haumin, Panelink, etc., is a healthy mix which must be supported at policy level to ensure operational flexibility, resiliency in turbulent times as well as building a locally competitive engineering, iron and steel sector.

Competitiveness enhancement is very crucial considering that there exists globally and overproduction of steel, with excess capacity of over 600Mtpa. Therefore, cost and quality competitiveness is a must for the sector to compete at local, regional and global level. Regionally, the sector requires to outcompete South Africa, and emerging countries like Zambia, Namibia and Mozambique. There is also a general trend on the continent on strategies for self-sustenance leveraging on a country's resources. This trend has led to serious tariff wars within the region against AfcTA, bilateral and regional trade agreements as countries seek to protect their own industries. Eventually, open market shall prevail. Therefore, the sector must eliminate inefficiencies in operations, invest in modern and efficient appropriate technologies to ensure cost and quality competitiveness. Target production costs of steel must be set and strategies to achieve them must be put in place and implemented (e.g., for steel, target USD500 – 600/ton steel)

The business operating environment must also be conducive and globally competitive. The tax regime must be competitive as well as all regulatory fees and related costs, rail and road infrastructure linking markets and sources of inputs must be upgraded and power must be readily available at competitive rates. IPPs must be incentivized as well as energy intensive companies seeking to build their own power plants for self-consumption and feeding excess power to the grid. For small, medium and big steel plants, promotion of waste heat recovery power plants is recommended at policy level to enhance power availability, to reduce the cost of energy as well as environmental sustainability.

Sustainable synergies amongst the players in this sector are recommended. For example, ZISCO and DISCO can form synergies based on their strengths and weaknesses. Similarly small-scale players can leverage from feedstock from the giant integrated steel plants for enhancing their capacity utilisation. Small scale miners can also take advantage of the smaller and synchronized scale of operation of small plants to enhance their operations.

Whilst development of technologies into maturity takes time, China, South Korea and India after initially importing technologies started reverse engineering and investment into research and development to build their own technologies. Eventually China now make their own BF-BOF technology, and India and South Korea developed their own Direct Reduced Iron technology for steel making. The sector supported by policy can also form synergies and collaboration with academia and research and development institutions to develop own DRI, BF-BOF technologies, and find innovative ways of beneficiation of low-grade ores (e.g. Manhize); and limonite ores (e.g. Ripple Creek); as well as utilisation of the abundant but various grades of coal for steel production. A dedicated National Steel Innovation Centre is recommended with a clear mandate and targets of making the engineering, iron and steel value chain globally competitive.

As the construction sector is one of the major consumers of steel products, investment in equipment for the production of flat products and heavy sections is proposed. There is a huge misalignment between growth in infrastructural development and growth of the local steel industry due to lack of capacity to produce the heavy sections for big projects like dam and road construction, power transmission infrastructure, buildings and residential homes. Local competitiveness may not be established without building this capacity.

Export market development is key considering that the local market is small relative to potential steel production capacity (ZISCO at peak would saturate the local market with only 30% of its production capacity). It implies that the current 0.7Mtpa capacity may be more than what the local market can take and therefore export market is inevitable. The current export barriers are a hindrance to exportation. Tangible export incentives and support mist therefore be granted to the steel producers to enhance competitiveness. This can be achieved through strategic partners with global giants in the steel industry to enhance offtake of value-added steel products and improve capacity utilisation and economies of scale.

7.2 Capacitation of downstream players in the steel value chain to build a locally sustainable but globally competitive steel value chain

A massive scale of deindustrialization was observed and is still continuing with many companies either scaling down, closing down or transforming themselves into traders of imported goods rather than manufacturers. The competition from imports is just too stiff and the costs and risks associated with local production continue to increase. Cost and quality competitiveness has to be enhanced inevitably. Therefore, the strategic industry must be capacitated to invest in new, efficient and modern technology
The formation of strategic market driven value chain clusters driven by common goals is recommended. Attractive clusters could be agricultural equipment and machines (primary steel producers, foundries, equipment manufacturers and machined components); infrastructural development (primary steel producers; secondary steel producers, fabricators); automotive (primary steel, foundries, fabricators, etc.); electrical engineered goods (primary steel producers, secondary steel, fabricators, etc.) There are also emerging markets that are growing rapidly like the Electric Vehicle Value Chan and the Solar Value Chain. These new value chains must be incorporated formally into the envisaged value chain clusters.

Prioritisation of players for funding for capitalization based on the strategic value chain clusters is proposed. Innovative and sustainable funding mechanisms must be put in place and ring fenced with the involvement of players in the financial and banking sector as well as government support. A focused rescue plan must be put in place for ailing players in the sector with significant impact to the competitiveness of the formed strategic value chain clusters. Thus, a new approach to classification of subsectors is proposed, which is market driven rather than product or process driven. Upgrading of technologies and the funding thereof must be done through the clusters to minimize leakages and wastage of vital financial resources into unviable projects.

Ensurance of reliable and sustainable power to the strategic value chains. Although dedication of power has significantly improved the availability of power to strategic players, faults and the quality of power as well as the cost of power have remained a challenge to competitiveness. Incentivisation of Independent Power Producers to invest in power for the industry at competitive rates is proposed (e.g., competitive bids for powering the clusters at tariffs less than USD0.10/kWh). Possible alternative or complementary power sources to ZETDC include Solar and Waste Heat Recovery Power Plants amongst others.

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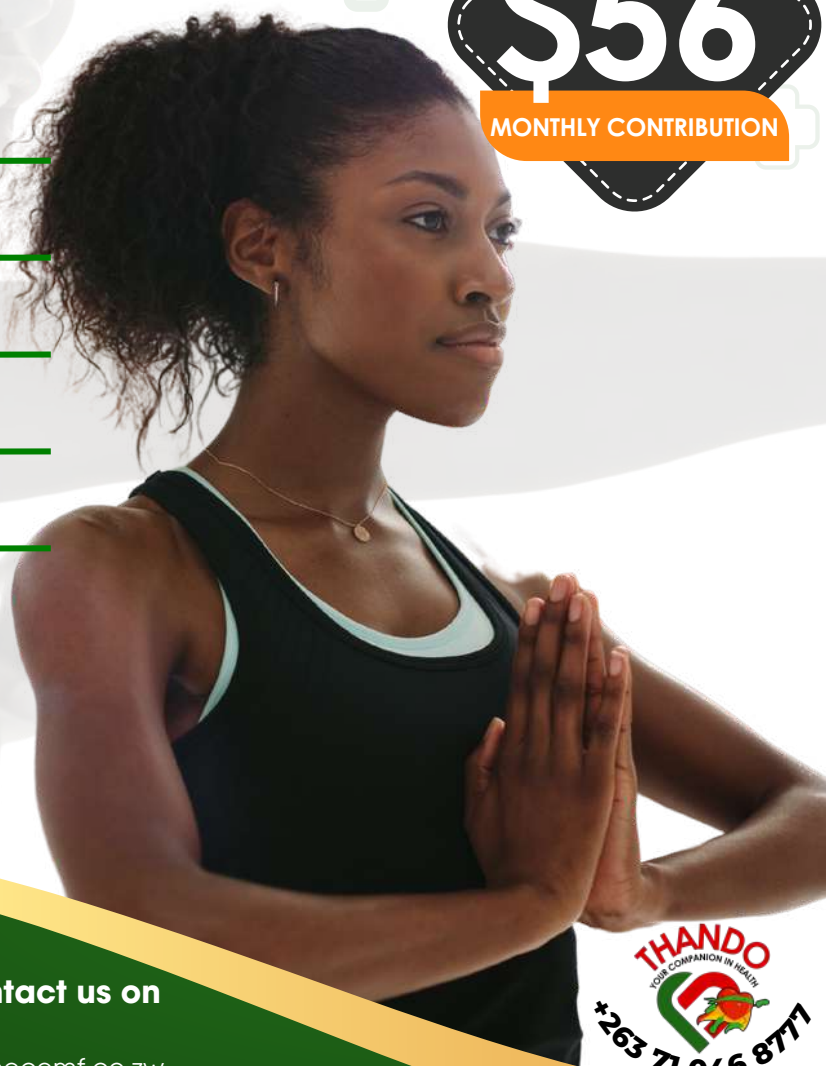

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7.3 Policy support to the engineering, iron and steel sector

Policy support is vital to enhance competitiveness of the sector. In the wake of silent but vicious tariff wars and breaches to bilateral, regional and global trade agreements, the local manufacturer is exposed to all kinds of imported products which have threatened the existence of local manufacturing. If this issue is not addressed urgently, deindustrialization will continue unabated till total collapse. An organic combination of open market and protection measures must be carefully crafted, and in a shrewd manner to avoid breaching of trade agreements. These measures must be crafted in sync with the capacitation of strategic clusters to avoid stock outs and suffocation of the local market demand. Therefore, all products that can be manufactured locally must be protected to a certain level, whilst continually addressing competitiveness issues to the anticipated level in a deliberate timeline.

In order to ensure security of supply of critical raw materials for the steel value chain such as coking coal, coke, scrap, iron ore and steel billets amongst others, a proper inventory of the supply demand dynamics including cost structure is proposed in-order to establish the viable price thresholds for both supplier and consumer, as well as the viability gap. Incentives must then be structured to close the viability gap and enhance competitiveness of the local manufacturing sector. Bankable offtake agreements must then be put in place between consumers and suppliers to enhance sustainability and competitiveness.

Export incentives and elimination of export barriers is proposed to enhance competitiveness. Considering that the local market is relatively small, the export market will improve economies of scale and enhance competitiveness. It was acknowledged that the sector has lost most of its traditional regional export market and a lot has to be done to reclaim it. Therefore, exporters must be incentivized and supported through policy to be the least cost producer of regionally and globally competitive export market products. Strategic Value chain clusters involved in exports must be fully supported.

Leveraging on the abundance of resources for iron and steel production, the accelerated development of a Steel Policy to support the rapid resuscitation of the steel industry is proposed. This is important due to the fact that advancement in materials technology (e.g., nanotechnology) is fast rendering conventionally important natural resources obsolete and irrelevant. Iron ore may not be spared this risk and therefore rapid beneficiation and value addition is inevitable.
Classification of steel as a mineral remains a thorny issue and must be addressed as soon as possible to enhance operational flexibility, export competitiveness and associated operational barriers.

7.4 Technology transfer, innovation and research and development

The building of local capacity to develop appropriate technologies for local value addition is proposed, emulating the path taken by China (BF – BOF technology); and India and South Korea (DRI Technology). To achieve this goal, strong synergies and collaborations amongst academia, technical colleges and research and development institutions is recommended. The revitalization of apprenticeship programs with the necessary support from government is also recommended, taking a leaf from the industrial training institutions that once existed vibrantly like ZISCO Training Centre, Mashava Training Centre, Morewear Apprentice Program and Delta Training Program.

ENGINEERING IRON AND STEEL ASSOCIATION OF ZIMBABWE PROFILE

1. Who We Are

The Engineering Iron and Steel Association of Zimbabwe (EISAZ) is a legally constituted body that represents and serves interests of employers in the engineering, iron and steel industry in Zimbabwe. Established to foster growth, innovation, and sustainable industrial development.

2. Our Mandate

EISAZ exists to:

- Promote and safeguard the interests of players in the engineering, iron, and steel sector.
- Positioning the engineering, iron, and steel sector as a pillar of economic recovery and growth.

3. Vision

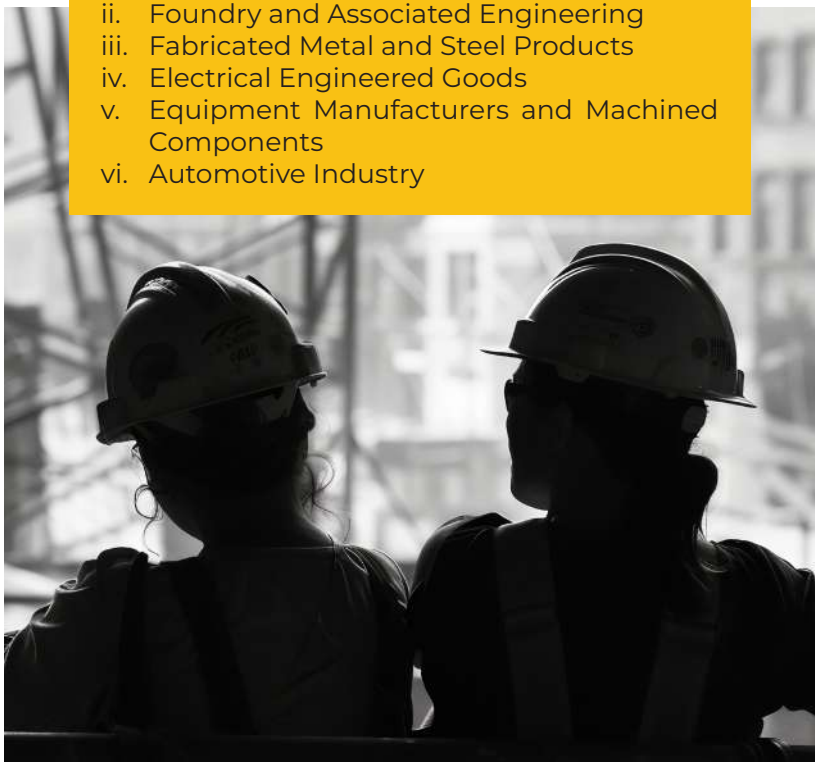
To be a recognised leader in the sustainable production and supply of value-added iron and steel products and Engineering services.

4. Membership

Who can Join

EISAZ welcomes a diverse range of stakeholders across the value chain including:

i. Primary Steel Production
ii. Foundry and Associated Engineering
iii. Fabricated Metal and Steel Products
iv. Electrical Engineered Goods
v. Equipment Manufacturers and Machined Components
vi. Automotive Industry



Membership benefits

Our members enjoy a wide array of benefits from various services of the association which includes the following:

- Redress of technical and business challenges faced by members.
- Up to date industry news and research – By pooling resources, EISAZ investigates industry news and conducts research that members can access. EISAZ stays on top of the changes in Engineering, Iron and Steel Industry as well as the general macro-economic environment and breaks down how these changes apply specifically to your business.
- EISAZ provides access to Engineering Iron and Steel Industry events / conferences where members have an opportunity to market and present their products, network, and learn from colleagues in the industry.
- Access to market statistics on the sector's exports, imports, capacity utilisation, employment levels, salaries and wages, contribution to GDP and other relevant economic data.
- EISAZ promotes your brand's visibility by including you in its newsletters and website where you can connect with customers and other stakeholders.
- Customer referrals – EISAZ connects you with customers looking to find referrals. This increases your chances of generating more sales to boost the growth of your business.
- EISAZ represents you in the industry's collective bargaining with trade union representatives.
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- EISAZ is the voice of the Engineering, Iron and Steel Industry recognised by various stakeholders including the Government.

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ENGINEERING, IRON AND STEEL STATE OF THE INDUSTRY REPORT

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