Ferro Alloy Producers Association

of South Africa

March 2022

Who is FAPA:

The Ferro Alloy Producers Association (FAPA) is an industrial association of ferroalloy smelting operations involved in the beneficiation of South Africa's ores and minerals into ferroalloys for local consumption and export markets. This beneficiation step is the key factor of the whole valuation chain and should be a key focus point of governments across the world. FAPA members are typically involved in the production of ferromanganese (FeMn) and silicon-manganese (SiMn) from manganese ores mined in the Northern Cape, ferrochrome (FeCr) from chromite ores mined on the eastern and western limbs of the Bushveld Igneous Complex, silicon alloys (Silicon-metal and Ferrosilicon) from local silica quartz, and the production of calcium carbide (CaC2) from limestone. These industries have been the backbone of the metallurgical industry within the country and at a stage, had been the leaders in global production of specifically manganese and chrome alloys. Although the industry has suffered severely from increased power prices and strong Asian competition, the Association remains firm in its strategic intend.

Our Purpose:

The Organisation exists due to the common interest we share as South African producers with regard to enhancing our Beneficiation Technology in South Africa and by virtue of subscribing to common Government Legislative requirements like Environmental Legislation, Safety Regulations as well as critical beneficiation inputs such as Electricity Supply. We campaign strongly to ensure the survival of this key industry and ready to expand back to full capacity in order to ensure maximum local beneficiation, associated with local job creation as prescribed in the National Development Plan. We also strongly support the newly promulgated Integrated Resource Plan of the government that recognizes local beneficiation as a key industrial step for economic revival.

The Importance of our Industry:

As is well-known, South Africa is endowed with mineral resources, which amongst many others include Manganese, Chrome ores, and Quartzite, the mining and exporting of which contributes considerably to the economy of South Africa. The further beneficiation of these minerals into basic metals and ferroalloys, the process in which the metallurgical or smelting industry is involved, is an important value-adding component to the minerals value chain with a considerably larger multiplier effect than the mining of the associated mineral. As much as 80 – 90 % of all ferro-alloys being produced locally at smelters are being exported, making the smelting industry an important earner of foreign revenue to the South African economy.

This sector of the South African business accounts for approximately 30% of the world's Ferro-Chrome production and a significant amount of the world's Ferro-Manganese capacity as well as other alloys such as Silicon Metal capacity. Other industries that consume products produced by FAPA are directly dependent on this Sector and local raw material suppliers (Coal, Anthracites, Coke, Ore Minerals, Steel) are also reliant on our Sector. The smelter industry is a provider of well-skilled and well-paid jobs, an essential earner of foreign revenue, and a potential driver for building and developing wealth in South Africa in line with the National Development Plan. At the same time, the smelter industry is also an important baseload consumer of electricity from Eskom. The smelting industry is also a valuable 'reserve' source of power during times of high demand, as load reductions at the smelters immediately make power available that is utilised somewhere else on the network and reducing the need for Load Shedding.

The smelting of the metallurgical industry almost exclusively operates outside the larger metropolitan areas with many smelters concentrated in North-West, Mpumalanga, and Limpopo. Often the whole economy of an area is almost exclusively dependent on the operation of these smelters within the area, with Rustenburg, Witbank, and the Steelpoort Valley being good examples.

Our History:

The Ferro Alloy Producers Association was founded in 1965 as a non-profit employer association. Over the years the focus of the Association changed to include various annual pyrometallurgy research projects, a sharp focus, and involvement, in policy formulation in terms of environmental legislation and ongoing lobbying initiatives with Government, power utilities and other stakeholders to ensure the survival and sustainability the ferro alloy industry.

FAPA was also one of the founding members of the International Ferro Alloys Congress (INFACON), which contributes to the exchange of research and development information. Participants include universities, research and development organisations, suppliers of services, engineering, and equipment, and in particular the ferro-alloy industry.

Today, the association work in close collaboration with other similar mining and industrial associations that strive for the same common cause. These includes the Energy Intensive Users Group (EIUG), the Minerals Council of SA (MCSA) and Business Unity SA (BUSA).

FAPA does not have permanent Board members and work is performed by its members voluntarily, without compensation and as part of normal appointed smelting activities.

Members

FAPA
FERRO ALLOY PRODUCERS ASSOCIATION

samancor Cr

GLENCORE

Ferroglobe
Silicon Smelters

Transalloys

ASSMANG

RICHARDS BAY ALLOYS
INNOVATIVE EXCELLENCE

SOUTH32

BMSA
THE BRIGHT GROUP

GEMIR

DMS POWDERS

FAPA's activities

FAPA's members is actively beneficiating South African ores for local consumption and export

- Manganese ore into Ferromanganese and Silicon Manganese
- Chrome ore into Ferrochrome
- Silica quartz into Ferrosilicon and Silicon Metal.

Final products are mostly exported with some local sales

South Africa has an opportunity to play a leading role globally on several mineral value chains, but the importance of local beneficiation, as promulgated in the IRP2019, cannot be underestimated for the economy of the country

Contributions to the economy

Activity		Value 2017	Value 2020
Annual contribution to Eskom revenue		R 14,1 Billion	R 12,8 Billion
Annually spend on training		R 0,15 Billion	R 0,11 Billion
Expenditure on local Raw Materials		R 14,0 Billion	R 17,2 Billion
Expenditure on labour, maintenance, contractors and local governments		R 10,3 Billion	R 12,8 Billion
Total contribution to the South African Economy		R 40 Billion	R 43 Billion
Employment statistics Labour	Direct	13,841	13,259
Labour	Indirect	93,800	92,813

State of ores in South Africa

Ore	Reserves	Ranking	Use
 Chromite	**72%**	**1**	Essential component in Stainless steel (FeCr), making up about 8 -10% of the final cost.
 Manganese	**80%**	**1**	Alloying element which increase strength, toughness, stiffness, wear resistance and hardness of steels. Other uses include battery manufacturing, glass and ceramics, vitamins, fertilizers.
 **Silica quartz**	**The most abundant ore in the world**		High purity quartz used in Silicon metal which is used in aluminium, Silicones, solar panels etc.., Ferrosilicon used in Steel & Stainless steel, it is also an essential component for glass manufacturing.
 Iron ore	**1%**	**13**	Key raw material for producing Pig Iron and Steel. Not a member of FAPA, but part of EIUG.
 Platinum	**95%**		Primarily used for auto catalysts, jewellery, electronics, etc Not a member of FAPA, but part of EIUG.

FAPA
FERRO ALLOY PRODUCERS ASSOCIATION

Although SA has over 70% of the world's Chrome and Manganese ore reserves,

the SA Ferroalloy Industry (Smelting) is facing extinction and can only be saved by regulatory Government support, not a handout nor a bailout.

An opportunity for job creation, sustaining existing jobs and growing the economy that is more important than ever before.

Challenges and risks for alloys

The sustainability of the alloy industry heavily depends on a few factors which includes.

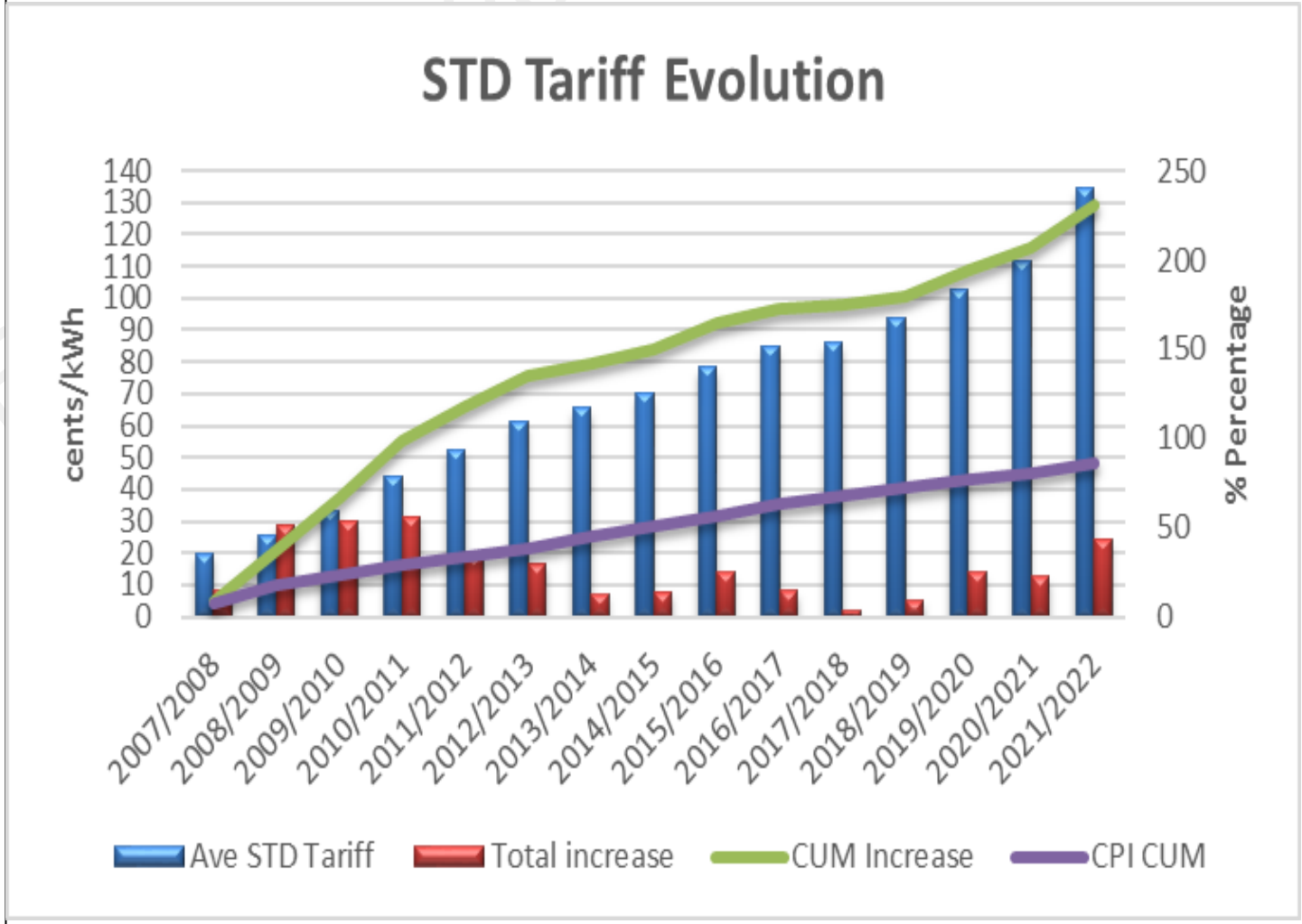
- The electricity price ($/MWh) compared to its competitors.
- The medium to long-term vision on electricity prices.
- Continued taxation of the industry based on Cross-subsidies and new taxes like Carbon-taxes.
- Ore purchases charged at export parity prices.
- Logistic and infrastructure challenges, notably Transnet and Portnet.

Position of RSA Smelters

Why are the South African Smelters closing down – electricity accounts for 30 to 50% of their costs.

The results are devastating:

- Thousands of direct and indirect job losses
- Loss of foreign income
- 10% Loss in Eskom revenue
- Loss of taxes to government
- Loss of 24/7/365 base-load consumers
- Snowball adverse effect on electricity prices
- **Loss of local beneficiation capacity, which is in contract to the IRP2019.**

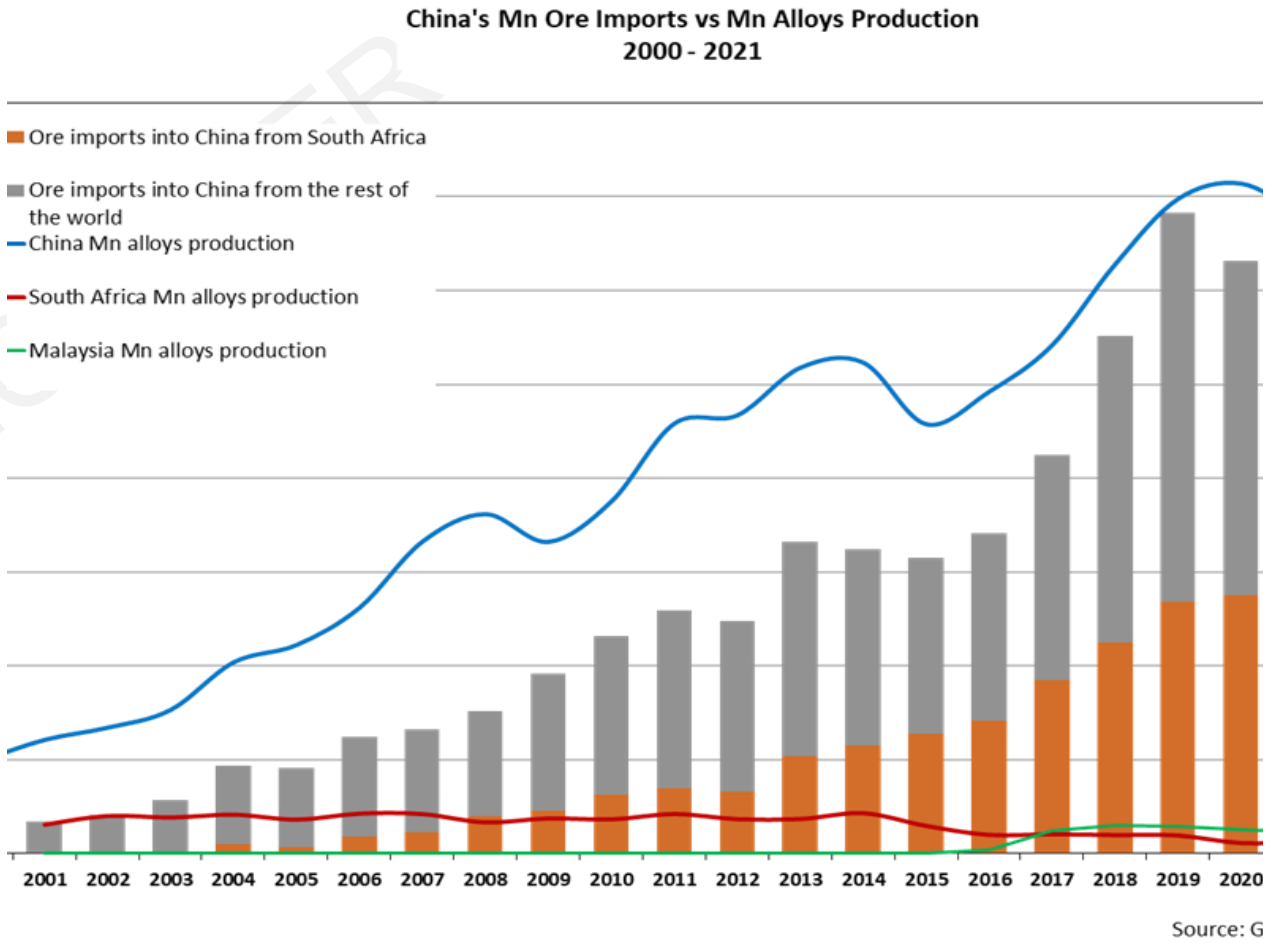


Ferro Manganese

China has built a massive Mn-alloys industry based on imported ore (+40 % of imports come from SA), while SA's production of Mn alloys has declined further since 2019.

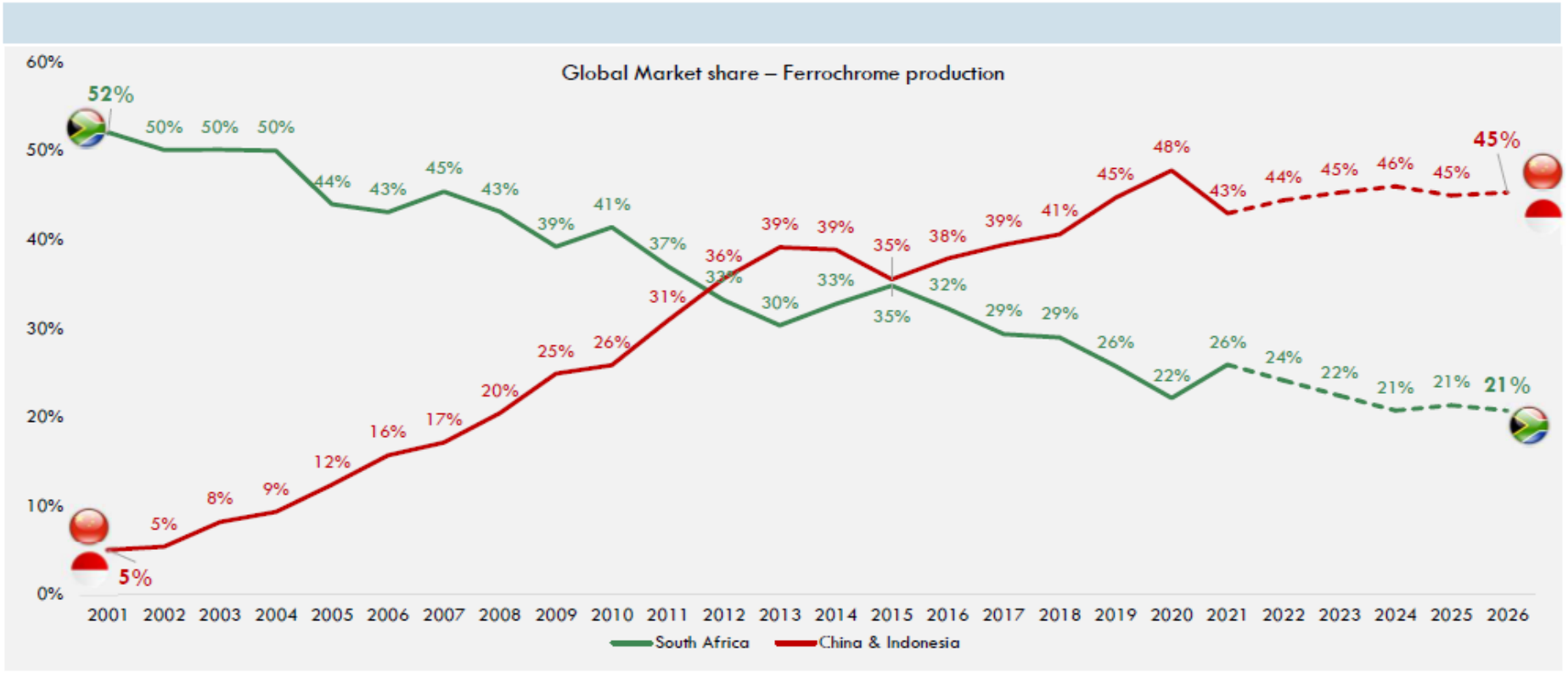
Although imports into China declined since 2019, the proportional off-take from SA has actually increased in %.

South Africa is the largest global producer of Mn Ore, with +-70% of world reserves, yet has one of the lowest production rates of manganese alloys.



Ferro Chrome

SA SMELTING AT RISK – 2001-2030 (SA VS CHINA & INDONESIA)



CRU Estimates

China surpassed SA as the largest ferrochrome producing country in the world using SA Ores and this gap is predicted to increase more. Loss of 30% beneficiation capacity in 25 years.

2021 Electricity cost of competitors

DATA: CRU Jan'22

The way forward ... electricity

We need to actively explore ways to reduce electricity tariffs.

- FAPA understand that Eskom is facing challenges, although the detail is not always well understood.
- Green Power (IPP's), will not solve the problem of power.
- However, FAPA members consume electricity 24/7/365. They therefore provide Eskom with an important base-load during low consumption hours, 22:00 – 06:00.
- Every FAPA member closing down, increase the cost effect on Eskom and impacts on unemployment and the SA economy.
- **Affordability, sustainability, pricing vision, CPI increases, competitiveness**

Potential of idled capacity

Item	Units
Annual power consumption of furnaces currently in operation (MWh)	18,080,640
Current operating capacity (MW) (Based on summer operation)	2 064
Current idled capacity (MW)	1 129
So what can the SA economy gain if idled capacity restarts	
Potential new jobs if idling capacity is starting up	± 1,900 Direct / 11,800 Indirect
Potential additional taxes	+-R 0,360 Billion
Potential additional sales for Eskom	+- R 6,4 Billion