

SHU POWDERS



CORPORATE SUSTAINABILITY REPORT

2020



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Introduction

Shu Powders produces various fine Cobalt powders for the global hard metals, diamond tools and battery industries. Shu Powders manufacturing site is located at Cato Ridge, near Durban, South Africa, since 2008.

This is Shu Powders' sixth Corporate Sustainability Report in South Africa. This report highlights our corporate sustainability performance in consecutive years since 2015. Our reporting focuses on the health and safety, environmental, and social responsibilities critical to our key stakeholders including shareholders, customers, employees, local communities, governments and suppliers.

We are a reputable manufacturer - committed to continual improvement in safety, health and environmental performance. This is non-negotiable in our drive towards Zero Harm:

- We believe that all injuries and environmental incidents are preventable;
- The safety of our employees, visitors and contractors is a non-negotiable value;
- We are committed to the protection of the environment, including the prevention of pollution, and
- Leaders at all levels in the organization are role models in the management of safety and environmental matters.

Shu Powders affirms the central importance of sustainability for communities, in the present and the future, for the integrity of human beings, culture, society, economic wellbeing, environmental responsibility and the way of life of the people.

In October 2016, Jingmen GEM Co Ltd. from Hubei China became shareholder in Shu Powders Ltd. GEM was founded in 2001 and is the first stock listed recycling company in China employing over 5000 people in 16 circular economy industrial parks. The Jingmen plant is a certified national education centre for circular economy and open to the public. GEM's philosophy is "Limited Resources, Unlimited Recycling". GEM actively advocates "Urban Mining".

Facing the reality of limited resources and environmental degradation, GEM is eager to build more recycling factories to reduce more waste and recycle more resources. Shu Powders is GEM's first overseas investment. GEM has plans for China-Africa Circular Economy Industrial Park in South Africa in a second step. GEM signed a Memorandum of Understanding with the local authorities, Trade and Investment Kwa Zulu Natal (TIKZN) in Dec 2016.

The Coronavirus pandemic reached South Africa in Feb 2020, resulting in a country wide lockdown end of March. Shu Powders resumed operations under a special permit and with skeleton staff mid April. The company established a special risk assessment and emergency plan. Nine Cardinal Rules have been set out to prevent the company from infections, among them are social distancing, wearing of masks, ventilation and sanitizing. Shu Powders is well prepared for two reasons. Since Cobalt powder production also means dealing with dust, the company's hygiene and PPE (full face masks) standards are very high. Secondly, Shu's shareholding company GEM is from Wuhan, Hubei, China, where COVID-19 was first discovered. As a result, Shu Powders learned from GEM first-hand on how to best protect the company and its employees. Until Dec 2020, GEM had no infections among the 3000 employees from the affected province of Hubei. In 2020, Shu Powders Africa had also no confirmed cases of COVID-19.

Executive Summary

Shu Powders maintains an integrated SHEQ management system based on ISO 9001:2015 for Quality, ISO 14001:2015 for Environment, and ISO 45001:2018 for Occupational Health and Safety. Apart from the international standards, Shu Powders is a five-star company according to the NOSA star grading system in South Africa.

Shu Powders have got a vision for a dust- free work environment - to attain this goal, substantial investments in automated machinery have been made, this includes the automated feeding machinery, the automated packaging process, and the state-of-the-art pneumatic powder transfer technology, which is awaiting installation early 2020. The combination of these technologies is aimed at reducing dust levels to below the legal Occupational Exposure limit of 0.1 mg/m³. A move towards cleaner manufacturing will significantly reduce exposure of employees to dust; this would allow for the use of more comfortable paper dust masks rather than the current full face masks – thus improving the operators' quality of work life.

Shu Powders Ltd has been sourcing Cobalt raw materials through its related companies GEM Co. and SMR Ltd. SMR is sourcing from Ambatovy, Madagascar (owner: Sherritt, Sumitomo, Kores) and Goro, New Caledonia (owner: Vale Inco). GEM Co is sourcing from Glencore's Mutanda and Katanga operation in the DRC and from Cobalt scraps. GEM is a world leader in Cobalt recycling. The Glencore - GEM supply has been reported in a press release Dec 3, 2020. The parties extend their long-term strategic cobalt partnership by another 5 yrs and have formally embedded responsible sourcing and sustainability into the contractual relationship. Glencore will provide around 150,000 tonnes of cobalt contained in hydroxide for GEM between 2020 and 2029.

Glencore and GEM are committing each other to annual audits under OECD-aligned standards, specifically, the Cobalt Refiner Supply Chain Due Diligence Standard developed by the Responsible Minerals Initiative (RMI), Responsible Cobalt Initiative (RCI) and Chinese Chamber of Commerce of Metals, Minerals & Chemicals Importers & Exporters (CCCMC). This shared commitment will help to demonstrate strong responsible sourcing practices and transparency across multiple points along the supply chain.

Highlights	Previous priorities for 2020
<ul style="list-style-type: none"> ▪ Success in the three HSE Corporate objectives, which are: <ul style="list-style-type: none"> ○ Zero exceedances in Cobalt in Blood and in Urine, ○ Zero Lost Time Injuries, and ○ Zero environmental incidents. ▪ Attainment NOSA 5 Star status with record effort score. ▪ Maintained ISO 9001, 14001 and 45001 certification. ▪ Establishing effective response to the COVID-19 pandemic: No on site transmissions. ▪ Draft plans for solar panels. 	<ul style="list-style-type: none"> • Maintaining Zero exceedances in Cobalt in Blood and in Urine • Zero Lost Time Injuries. Zero environmental incidents. • Commissioning of pneumatic powder transfer. • Treatment of Co containing wash water. • Establishing Carbon footprint. • Usage of thermal energy in furnace off-gas. • Developing plans for renewable energy sources.
Lowlights	Priorities for 2021
<ul style="list-style-type: none"> • The recycling of Cobalt-containing waste-water and usage of thermal energy in furnace off-gas on hold due to COVID-19 constraints. • Carbon footprint established for tax assessment. Green house gas reduction strategy to be developed. 	<ul style="list-style-type: none"> • Maintaining Zero exceedances in Cobalt in Blood/Urine • Zero Lost Time Injuries. Zero environmental incidents. • Commissioning of pneumatic powder transfer • Further automation and digitalization to reduce operator dust exposure. • Draft strategy to reach sustainability targets of 50% CO2 reduction and 90% circularity by 2030. • Implementation of RMI sustainable sourcing structure into Integrated Management System.

Key Performance Indicators (KPI)

Health & Safety

Environmental

Social

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Description	Targets / Limits		2020 Actual	2019 Actual	2018 Actual	2017 Actual	2016 Actual	5 Year Trend
Bio monitoring (No. of Co in blood non-conformances)	0		0	0	1	2	1	
Dust monitoring between work stations (mg/m ³)	<0.1*		0.001	0.001	0.001	0.006	0.01	
Dust monitoring at work stations (mg/m ³)	<10*		0.01	0.01	0.01	0.01	0.4	
Dust fall out – general (mg/m ² /day)	<1200*		N/A**	7	13	15	22	
Dust fall out - Cobalt (mg/m ² /mth)	<2		N/A**	0.07	0.13	0.08	0.2	
Lost time incidents (No.)	0		0	0	1	0	1	
Noise (dB)	<85*		78	N/A	78	N/A	78	
Water consumption (l/kg Co)	≤15		22.4	14.7	16.4	12.2	6.9	
Electricity consumption (kWh/kg Co)	≤7.5		7.4	8.3	8.7	7.7	6.8	
Fuel consumption (ml/kg Co)	≤5		17.5	7.3	1.1	4.4	0.0	
Hazardous waste (g/kg Co)	≤30		35	34	27	22	38	
Environmental incidents & complaints (No.)	0		0	0	0	0	0	
Employment permanent (%)	≥90		93	92	100	92	100	
Employment temporary (%)	≤10		7	8	0	8	0	
Training (hrs per employee)	≥20		20	16	20	29	84	
Contribution to community (% of EBITDA)	≥0.4		0.24	0.7	0.5	0.45	0.4	

(*) - referring to legal limits

(**) – temporary on hold due to COVID-19 pandemic

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The National Institute for Communicable Diseases of South Africa reported the first COVID-19 suspected case on 5 March 2020. From then onwards, the lives of people has never been the same. Shu Powders established a COVID-19 Policy statement with the aim of effectively managing the risk posed by the COVID-19 pandemic. The Policy set the framework for a comprehensive COVID-19 approach which included the following:

- COVID-19 Risk Assessment
- COVID-19 Information monitoring and communication
- Communication, Consultation, and Participation of relevant stakeholders
- COVID-19 Emergency Response
- COVID-19 Training and Awareness
- COVID-19 Responsibilities and Appointments for the implementation of the COVID-19 Policy
- Legal Compliance.

[illegible]

Fig 1: In consultation with all relevant affected parties, and with the participation of employees and their representatives, a COVID-19 Risk Assessment was completed, and control measures were put in place.

A snapshot of the COVID-19 Risk Register

COVID-19

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Cardinal Rules

Shu Powders adopted the nine Cardinal Rules developed by the parent company GEM in China. GEM successfully implemented these rules and had no COVID case in their factory in Hubei, even though this was the origin and epicentre of the virus. Shu Powders had no COVID cases in 2020.



Fig 2:

The Nine Cardinal Rules are as follows:

1. What to do when entering the workplace
2. Disinfection & ventilation
3. Wearing of masks
4. Not attending crowded events
5. Avoiding eating in groups
6. Washing hands every time
7. Reasonably arranging meetings
8. Cooperation, and
9. Cohesion.

COVID-19

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Training and Awareness

A dedicated responsibility was appointed for the purpose of training and raising awareness on employees, visitors and contractors. The training covered aspects such as the preventive measures to infections (COVID-19 Cardinal rules), and what to do when one suspects he/she is COVID-19 infected. There was no recorded on site infection.



Fig 3a: Employees trained on an open space wearing mask and practicing social distancing.



Fig 3b: Employees watching a Cardinal Rules Presentation and keeping social distance.

In August of 2020, Shu Powders was audited by the Department of Labor and Employment on the COVID-19 arrangements in place. The audit was a great success as the Department was impressed.

Health and Safety

Risk Assessments & Employee Participation

Shu Powders has obligations under the Occupational Health and Safety Act 85 of 1993 (OHS Act) as well as the General Administrative Regulations 2003 (GAR) to manage risks to health and safety so far as is reasonably practicable.

Our risk management approach involves identification and assessment of risks followed by elimination of risks in the first instance or where this is not practicable, minimizing those risks so far as reasonably practicable.

Our risk management approach is important for three main reasons:

- So that the Shu Powders' duty of care to its workers, customers, contractors, visitors and others that work can be met, as part of the legislative health and safety requirements.
- Out of concern for the health and safety of workers, contractors, visitors and others at Shu Powders.
- It makes good business sense and is cost effective.

*Workers are an integral part of risk assessments, they are involved in the hazard identification, risk assessment and risk control processes. This is supported by an established process of communication, consultation, and participation. Health and Safety Representatives exist in their respective work areas and they form a HSE committee which meets at least once every quarter, and wherever is necessary.

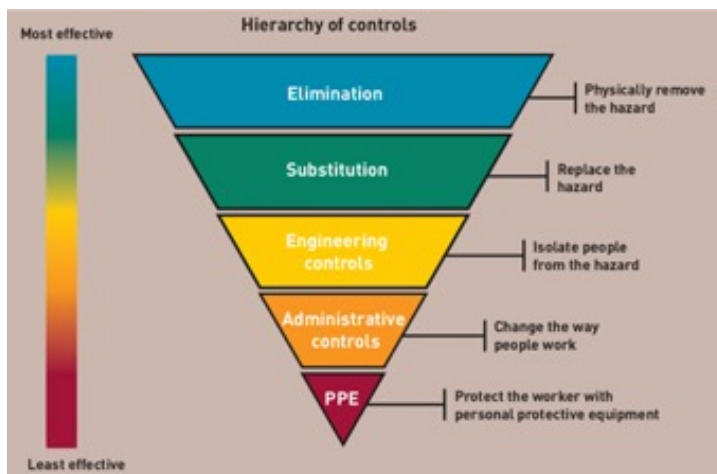


Fig 4: When considering Risk Control measures, the Hierarchy of Controls methodology is always adopted in order to ensure an effective process.

Workplace hazard identification, assessment and control is an on-going process. And is undertaken at various times, including:

- If it has not been done before.
- When a hazard has been identified
- When a change to the workplace may introduce or change a hazard. Such as when changes occur to the work equipment, practices, procedures or environment.
- As part of responding to a workplace incident, even where an injury has not occurred.
- Where new information about a risk becomes available or concerns about a risk are raised by workers
- At regularly scheduled times appropriate to the workplace.

Health and Safety

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Bio-Monitoring

Bio-Monitoring of chemical exposure in the workplace is of critical importance in the assessment of health risks and forms an integral part of the company overall occupational health strategy. We consider biological monitoring as an important tool in the prevention of occupational diseases related to those exposed to chemicals on a regular basis. A complete medical programme is in place consisting of Pre-employment, Annual, and Exit medicals for all employees – whether contract or permanent. All the medicals consist of the following examinations:

- Physical examination
- Eye Test
- Audiometric Testing
- Chest X-ray
- Lung Function
- Cobalt in Urine and Blood samples

No employee had his Cobalt in Blood exceeding the recommended levels of 25mg/L since year 2019. This is a great achievement since Cobalt dust is one of the company's top three hazards thus reducing dust emissions is a priority.

In the event that an employee got an exceedance of Cobalt in Urine or Blood, the employee is removed from exposure for minimum of two weeks and a thorough Root Cause Analysis comprising of the Occupational medical practitioner, the area's Health and Safety Representative and the area's Manager. The Root Cause Analysis is followed by a review of current control measures, safe work procedures, and a refresher training on proper PPE use and hygiene.

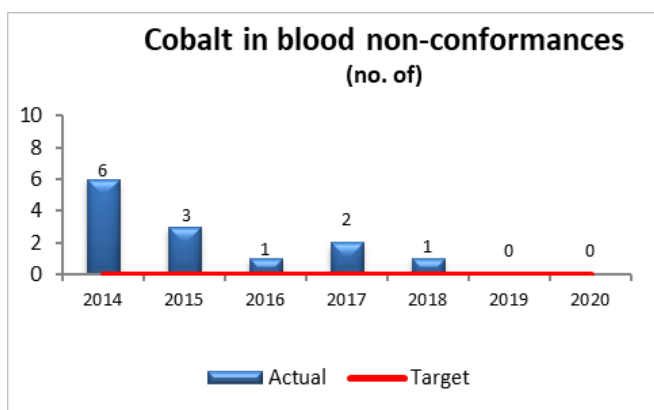


Fig 5. Cobalt in blood non-conformances: The year 2020 is the second year with no exceedances in Cobalt in Blood.

Health and Safety

Dust Monitoring

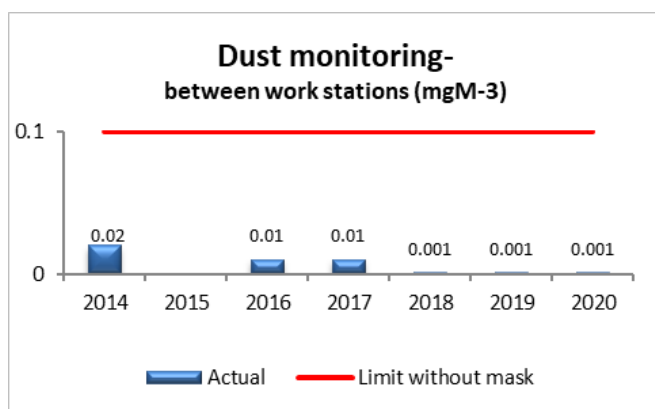


Fig 6a: Dust Monitoring between Work Stations: The 2020 figure is from internal monitoring and shows dust levels at as low as less than 1.0 % of the OEL between work stations. The daily dust monitoring made it easy to establish Cause and Effect relationships between the different factors and the levels of dust. This facilitates easy identification of control measures.

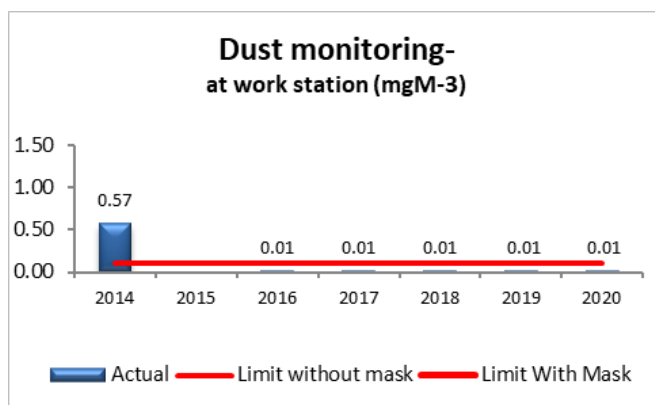


Fig 6b: Dust Monitoring at Work Stations: The dust level at work stations is reducing year on year. The 2020 figure is from internal monitoring – the levels are 10% of the OEL. The Action threshold is 50% of the OEL.

There are instances whereby the dust levels exceed the recommended levels resulting in outliers in the data. These are investigated and corrective actions are put in place.

Health and Safety

Lost Time Incidents

Shu Powders is committed to the health and safety of its employees, visitors and contractors, this includes the protection of the environment and the prevention of pollution, and the protection of property against damage. The target for SHEQ incidences is Zero. This commitment is demonstrated by various ways among them, leading by example, formal training given to employees; awareness through tool box talks, posters, the safety day. For every incident which occurs, a Root Cause Analysis is carried out to find a lasting solution to the incident.

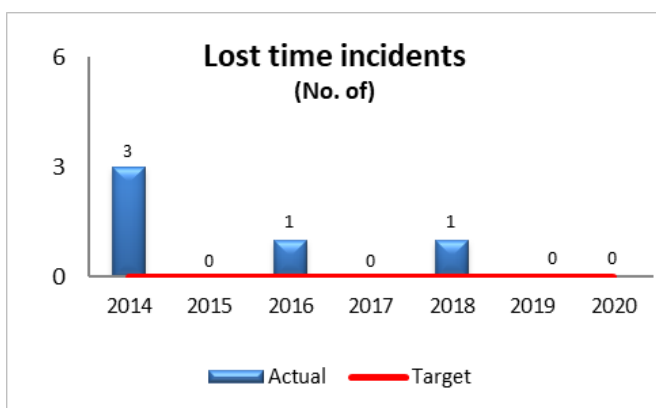


Fig 7, LTI: The year 2020 is the second consecutive year without an LTI. This is a great accomplishment since it is evidence that the Integrated Management System in place is delivering what it is supposed to.

NOSA

In addition to the ISO 45001 system that forms part of the Integrated Management System, Shu Powders also implements the NOSA CMB 253N Standard of Health and Safety. South Africa is the origin of this standard and it is spreading across the globe as one of the flagships in H&S.

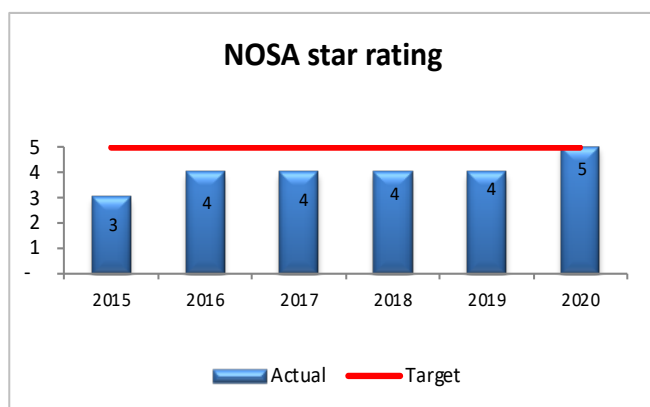


Fig 8, NOSA: The star rating ranges from 1 to 5. In 2020, Shu Powders achieved full 5 stars for the first time after continuous efforts in the previous years. See Effort scoring on the following page.

Health and Safety – NOSA Performance

NOSA

NOSA performance is a function of the Effort Score and the Disabling Incident Frequency Rate (DIFR) and is given a rating on a Five –Star scale. The 5-Star is the highest ranking, and an organization that achieves consistently the 5-Star is elevated to the NOSCAR – which is the highest grade an organization can achieve.

We pride ourselves with our current 5 Star grading – having had Zero lost time Injuries in 2019 and 2020. The DIFR is one year behind since the audits are for the previous year.

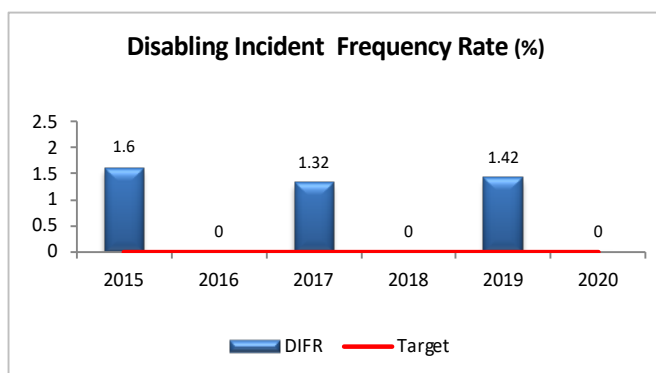


Fig 9. DIFR: The DIFR is related to LTI in the year. For a year with no LTI, the DIFR is zero the next year.

This is the Effort Score and is a function of the following HSE pillars:

- Commitment & HSE Management Policy
- Planning of the NOSA HSE Management System
- Implementation & Operation of the HSE Management System
- NOSA HSE Management System Evaluation & Corrective Action
- HSE System Review.

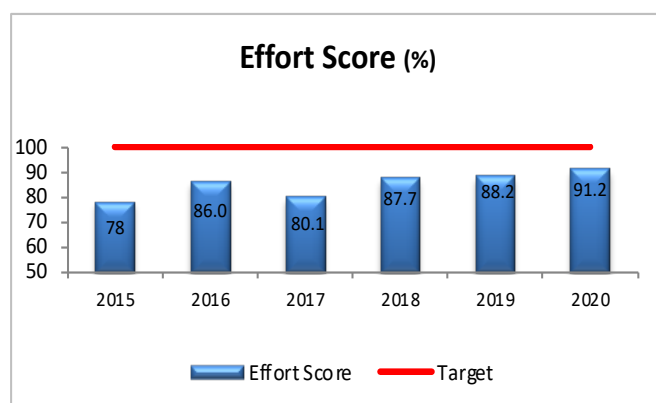


Fig 10. Effort Score: The graph above shows consistently improving Effort Score over the years. An Effort Score of ≥ 95 with a Zero DIFR will achieve a Platinum Star, which is the highest NOSA grade.

Environmental

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Water consumption

The importance of saving water cannot be over emphasised, South Africa faces significant water challenges due to the combination of its rapidly growing population and increasingly unreliable rainfall patterns due to climate change. The water problem is further exacerbated by the fact that South Africa is a relatively dry country, with an average annual rainfall of about 464mm (compared to a world average of about 860mm).

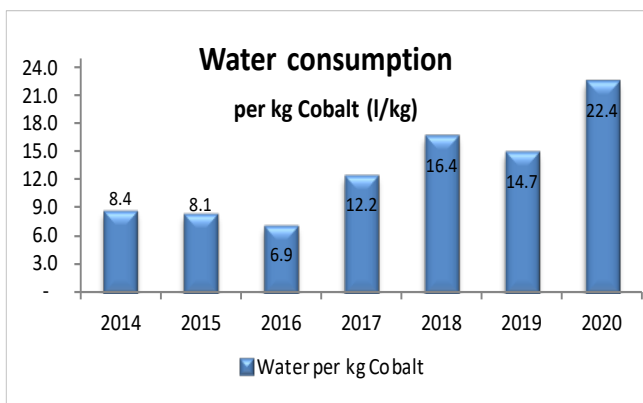


Fig 11, Water consumption:

- Water is used for cleaning of employees and equipment.
- Cooling water is recovered from rain-water and circulated in a closed loop.
- In 2017, we observe an increase as a municipal water meter has been allocated to Shu Powders.
- The 2020 increase is related low production while hygiene and cleaning increased as a result of the COVID pandemic.
- In addition, an underground leak on the piping system was detected and fixed.

Electricity consumption

The year 2016 recorded the lowest electricity consumption per kg cobalt produced since 2013. This is attributed to mainly to SHU9 - a Lean project aimed at exploiting the 'opportunity to reduce conversion costs by reducing energy cost & consumption through improved process control, better demand management, power factor correction'. In addition, annual production out reached a record high.

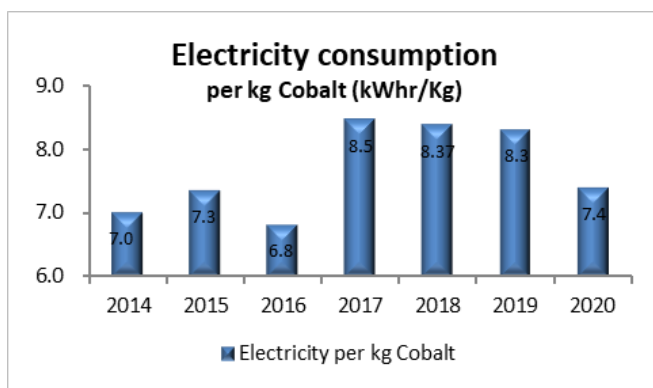


Fig 12, Electricity consumption: The Electricity consumption has decreased significantly. This is due to proper planning interventions in the production and also the reduced use of the top power consuming equipment, which are the compressors.

Environmental

Fuel consumption

Diesel fuel is used as an alternative energy source to power a stand-by generator due to persistent load shedding on the national electricity grid.

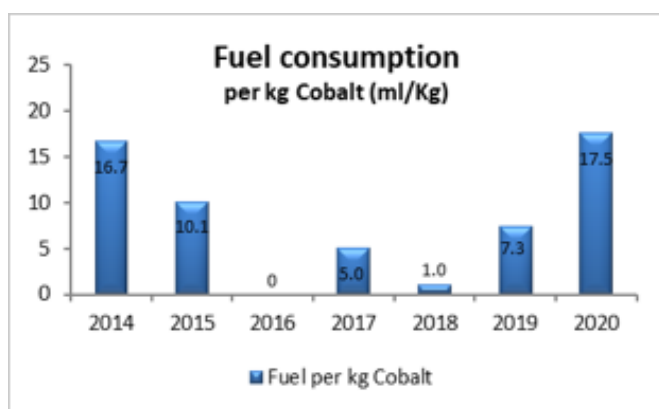
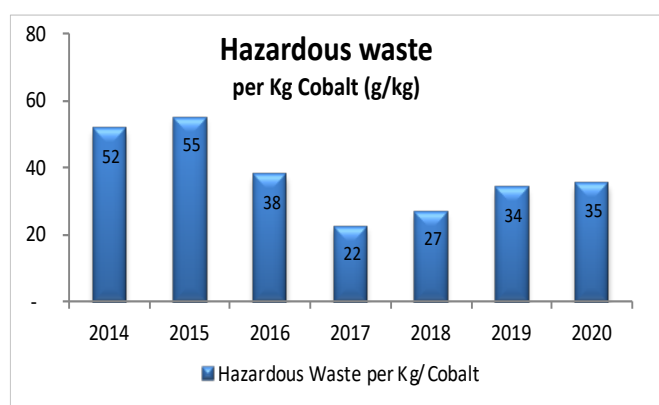


Fig 13, Fuel consumption: The year 2020 was the worst year in recent years in terms of load shedding. The country's sole power utility, Eskom, was battling to provide the national grid. Shu had to rely on the standby Diesel generator.

Waste Management

Separation-at-source is the heart of recycling. Shu Powders has done just that in an effort to improve recycling and avoid waste to the landfill. Big improvements were made in 2016 and 2017 with pallet washing and big bag cleaning for reuse.



Pict 14. Hazardous waste: Hazardous waste quantities have increased somewhat in since. In 2020, during the pandemic, Shu operated with skeleton staff to keep infection rates low. The skeleton staff focussed on maintaining operations. Pallet washing and big bag cleaning was not always possible with skeleton staff. This activity is resuming in middle of 2021.

Environmental

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Incidents and Complains

Shu Powders has an obligation to ensure that we comply to all legal requirements and satisfy expectations – from both the authorities and other interested parties. Our environmental friendly operations have seen us being in peaceful co-existence with communities around us, neighbours, the authorities and employees, registering zero complaints since 2016.

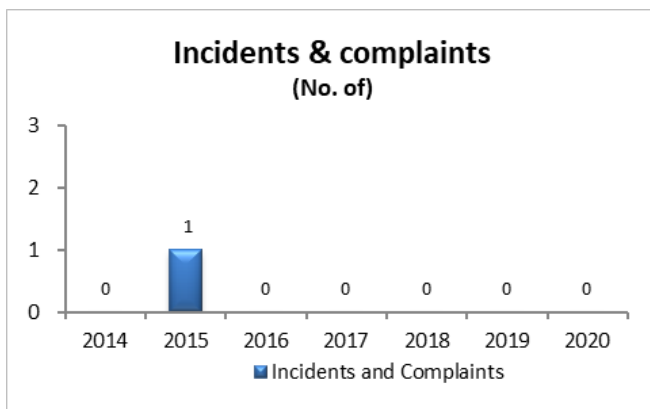


Fig 15, Incidents and complaints: The overall trend is positive as there was no complaint since 2016.

Incidents:

- 2020 – there was no environmental incident or complaint.
- 2019 – there was no environmental incident or complaint.
- 2018 – there was no environmental incident or complaint.
- 2017 – there was no environmental incident or complaint.
- 2016 – there was no environmental incident or complaint.
- 2015 - Jun, a valve on the ammonia surge tank was mistakenly open leading to the release of some ammonia vapour.
- 2014 - no environmental incidents.
- 2013 – Dec, the lab conservancy tank was full and as a result the drains were filling up. 5000 Litres of the contents were pumped into a bulk plastic tank. The liquid effluent was eventually collected by an accredited waste removal company.

Corrective and Preventative Action Reports were raised for each incident.

Social

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Employment

The work force remained stable in 2020. In October, the company embarked on a retrenchment process following Labor Relations Act 189A. Fifteen employees are affected. The Corona induced economic slow down has negatively affected Shu Powders customers in the global tool industry. The sectors automotive, aerospace and oil&gas drilling where particularly hard hit.

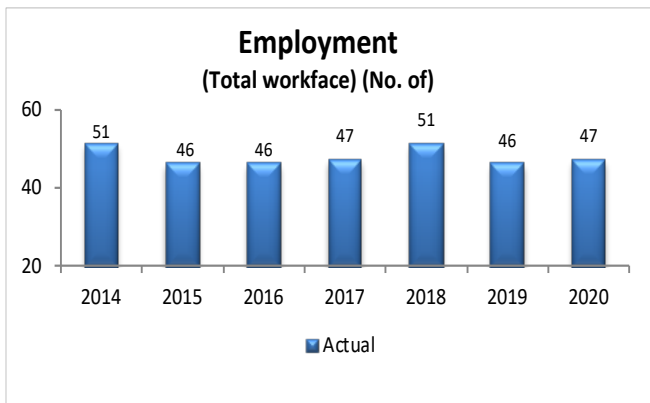


Fig 16, Total workforce: total work has decreased due to restructuring of the admin department.

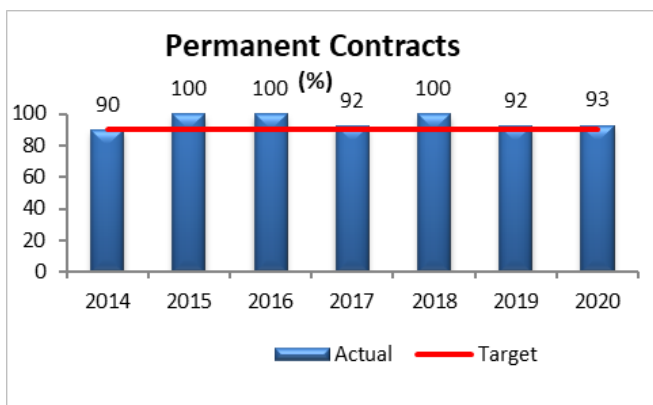


Fig 17, Employment full time: All Shu Powders employees are on permanent basis. There is no casual labor or labor brokers.

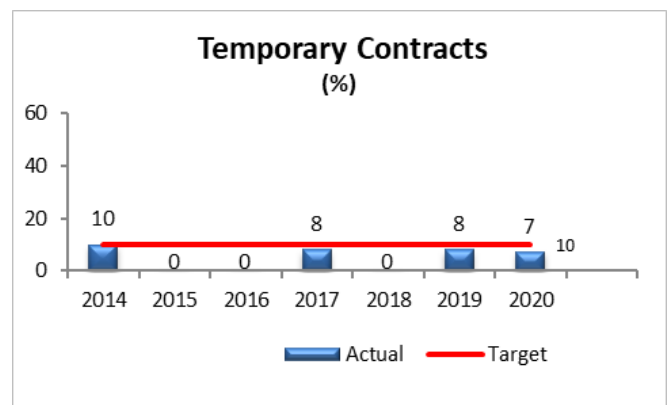


Fig 18, Employment contract: The temporary contracts represent students from the Universities on internship.

Social

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Training

Shu Powders maintains a robust training and development program that ensures that employees have a consistent experience and background knowledge. Shu Powders is enjoying these benefits out of training;

- Improved employee performance
- Improved employee satisfaction and morale
- Addressing of weaknesses
- Increased productivity and adherence to quality standards
- Increased innovation in new strategies and products
- Reduced employee turnover
- Enhanced company reputation and profile

Apart from HSE compliance training, Shu Powders has changed its approach to more strategic, long term courses, which empowers employees with higher skills. This empowers employees, giving them more control over their jobs, especially machine operators. This addresses such issues as breakdowns, and call outs.



Fig 19, Training: There is a gradual decrease in training hours due to focus on strategic training - this involves enrolling selected employees to tertiary institutions of learning in order to acquire higher skills.

Social

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Contribution to the local community

Despite the COVID-19 pandemic negatively affecting Shu Powders due to disruption in international and local supply chains, Shu has managed to contribute to the community. The annual social event on Mandela Day where all staff comes together for a good deed to the community had to be canceled as large gatherings were prohibited.

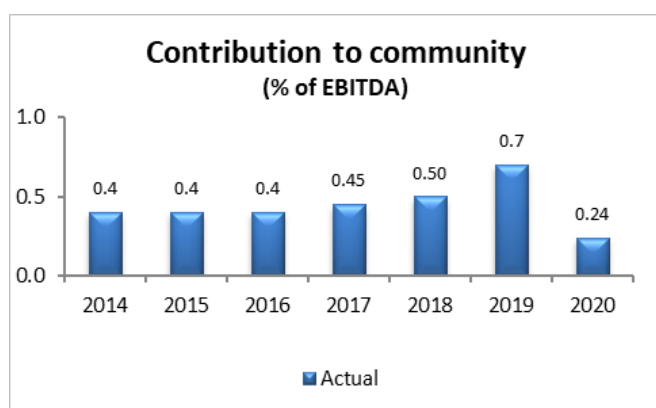


Fig 20, Contribution to the community : Shu's contribution to the community as a share of earnings decreased due to difficult economic circumstances in the Corona pandemic. Also, on a two-year average, the contribution is on target.

Raw Material Sourcing

DR Congo issues

On January 19, 2016, Amnesty International published a report titled “This is What We Die For”, outlining allegations against companies directly involved in the trade of cobalt sourced from artisanal mining as well as against some of the world’s largest technology firms down the supply chain. [Ref 4] In the report Amnesty documents human rights abuses in DRC’s artisanal cobalt mining sector such as child labour and hazardous and unhealthy working conditions (Fig 23).

In November 2018, Amnesty International published a follow-up report: “Time to Recharge” – Corporate action and inaction to tackle abuses in the cobalt supply chain. Many downstream companies have been slow or resistant to adopt clear policies for due diligence in their cobalt supply chains.



Fig 20a, Amnesty International Report: A video clip is available under <http://youtu.be/7x4ASxHlrE>

Note:

- On March 29, 2016, the London Metal Bulletin published articles stating that China’s refineries imported almost a quarter of million tonnes of cobalt concentrate from the DRC in 2015, according to China import statistics. [Ref 5]
- These concentrates have been produced in dangerous conditions or by children in artisanal mines in the DRC.
- Six companies from China have been identified to import at total of over 224 750 MT of cobalt concentrate in 2016.
- Among these six companies is the cobalt powder producer **Nanjing Hanrui**. [Ref 5]
- Note that the company GEM was the only larger Chinese Cobalt refinery not listed in above article [Ref 5].

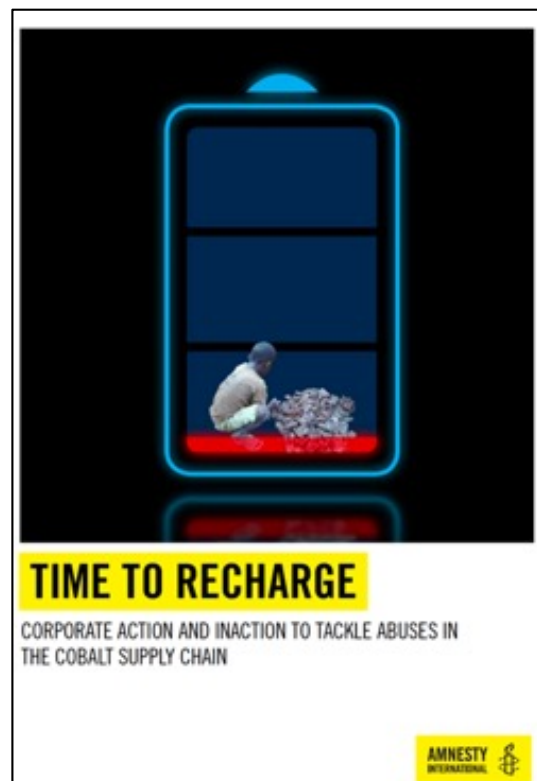


Fig 20b, Amnesty International Follow Up Report: Some corporations have taken action since 2016 but many others have not.

Raw Material Sourcing

DR Congo issues

Throughout the cobalt supply chain an increasing number of companies have started to focus on responsible sourcing and supply chain due diligence. The battery supply chain in particular has been faced with growing pressure directed at its responsible sourcing practices, not just from NGOs like Amnesty International but also from the media, regulatory and legislative bodies and consumer organizations. Efforts by the cobalt industry to create a more responsible supply chain have resulted in progress on several fronts during.

Fig 21, Initiatives ensure materials are mined and sourced in accordance with the due diligence guidance on human rights as set forth by the OECD (Organization for Economic Co-Operation and Development)

Name	Year	Scope	Participants
RMI - Responsible Materials Initiative	2008	Founded by members of the Responsible Business Alliance and the Global e-Sustainability Initiative, the RMI has become one of the most utilized and respected resource for companies addressing responsible mineral sourcing issues in their supply chains. The RMI offers companies an independent minerals assurance process to identify verified smelters and refiners that have systems in place to responsibly source minerals according to approved global standards.	Over 300 members, including numerous technology, auto and mining companies such as Amazon, Boeing, BASF, Dell, Ford, HP, Huawei, IBM, Samsung, Toshiba. RCI - Responsible Cobalt
RCI - Responsible Cobalt Initiative	2016	Initiated by the China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters (CCCME), with support from the OECD. Members undertake collective action in addressing social and environmental risks in the cobalt supply chain while developing due diligence tools for risk assessment and supplier management for cobalt smelters and refiners.	Over 30 members, including Apple, HP, Huawei, Samsung, Volvo, Daimler, BMW, Huayou and GEM. CIRAF - Cobalt Industry
CIRAF - Responsible Assessment Framework	2017	Introduced by the Cobalt Institute (CI), CIRAF seeks to identify material issues and risks within the cobalt sector for CI members and their customers. It is a good practice based framework that provides guidance to its members on the assessment and reporting of core issues pertaining to environmental stewardship, health and safety and human rights.	Numerous members of the Cobalt Institute, including Glencore, Umicore, Freeport Cobalt, Shu Powders
RSBN - Responsible Sourcing Blockchain Network	2019	Formed by Huayou Cobalt, Ford Motors, LG Chem, IBM and RCS Global. The consortium ran a successful pilot project which, using the IBM Blockchain Platform, traced and validated ethically sourced cobalt to demonstrate the responsible production and processing of cobalt in the mine to battery supply chain. Members are now actively applying the RSBN solution to its supply chains.	Huayou Cobalt, Ford Motors, LG Chem, IBM, Fiat Chrysler, Glencore, Volvo Cars.
CFDI - Cobalt for Development Initiative	2019	The CFDI is a cross-industry scheme that promotes sustainable cobalt mining in the DRC. The initiative is to establish a framework through which it can work with the ASM sector to procure metal while contributing to regional development by initiating training schemes and by engaging with local authorities.	VW, BMW, BASF, Samsung, Google and others.

Raw Material Sourcing

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DR Congo issues

RMI has become the standard for Cobalt powder producers. GEM (Shu Powders) and its competitors Umicore and Freeport are listed as “conformant cobalt refiners”. <http://www.responsiblemineralsinitiative.org/responsible-minerals-assurance-process/smelter-refiner-lists/cobalt-refiners-list/conformant-cobalt-refiners/>

Efforts by the cobalt industry to create a more responsible supply chain have resulted in progress on several fronts during 2020.

Name	Year	Scope	Participants
FCA - Fair Cobalt Alliance	2020	The alliance was launched as action platform for organizations along the supply chain who can engage and play a role in the transition to a fair production system. It seeks to transform small-scale mining in the DRC by supporting communities and improving overall mining conditions. It will seek to connect cobalt from ASM operations to the supply chains of global manufacturers.	Glencore, Huayou, Tesla, Fairphone, Sono Motors, Signify and others.
IRMA Initiative for Responsible Mining Assurance	2020	Together with Alliance for Responsible Mining (ARM), IRMA developed the "Standard for Responsible Mining" as a framework for raw material supply chains. The framework uses four key elements to assess a project: business integrity, planning for positive legacies, social responsibility and environmental responsibility.	BMW, Daimler, Microsoft, Anglo American, Arcelor Mittal and numerous miners and technology companies.
Fund for Prevention of Child Labor in DRC Mining Communities	2020	In collaboration with the Global Battery Alliance, Unicef is raising US \$21 million from industry stakeholders to fund a series of initiatives aimed at addressing the root cause of child labor in the DRC's copper belt region.	Organized by Unicef in collaboration with the Global Battery Alliance.

Raw Material Sourcing

Shu Powders' Raw Material Sources - Mines

Shu is sourcing Cobalt raw materials through its related companies GEM Co. and SMR Ltd. In turn, SMR is sourcing from Ambatovy and Goro. GEM Co is sourcing virgin Cobalt from Glencore's Mutanda and Katanga operations in the DRC and recycling Cobalt from battery scraps and other. GEM is a world leader in Cobalt recycling. The Glencore - GEM supply has been reported in a Metal Bulletin article on March 15, 2018 and its contract expansion on Oct 7, 2019. GEM has signed a five-year strategic procurement contract with Glencore, securing more than 61,200 MT of cobalt in form of intermediates.

On December 3, 2020, GEM and Glencore extend their long-term strategic cobalt partnership for the supply of cobalt by another five years and have formally embedded responsible sourcing and sustainability into the contractual relationship. Under the terms of the agreement, Glencore will provide around 150,000 tonnes of cobalt contained in crude hydroxide through to 2029.

1. Goro in New Caledonia is owned and operated by Vale Inco www.vale.nc.
2. Ambatovy in Madagascar is owned and operated by a Sherritt, Sumitomo, Kores www.ambatovy.com
3. Mutanda, Katanga in the DRC is owned and operated by Glencore www.glencore.com

Sources 1 and 2 are Nickel mines and source 3 is a Copper mine, where Cobalt is produced as a by-product in the range of several tens of thousand tonnes per annum. All companies are stock listed and compliant with OECD guidelines. There are detailed sustainability reports issued by all three companies.



Fig 22a, Goro: The facilities in New Caledonia are owned and operated by Vale Inco. In 2020, Vale was forced to shut down its facility due to the COVID-19 pandemic. Early 2021, Vale sold Goro to the Prony Resources New Caledonia Consortium which includes Trafigura.



Fig 22b, Ambatovy: The facilities in Madagascar are owned by Sherritt, Sumitomo, Kores. In 2020, Amabovy was forced to shut down all operations due to the Corona pandemic. Operations resumed in 2021.

Raw Material Sourcing

Shu Powders' Raw Material Sources - Mines

Glencore became upstream member of the RMI (Responsible Mineral Initiative) in 2019. The Katanga mine is undergoing an RMI pilot audit program. Glencore repeatedly stated not to use artisanal mined Cobalt due to the link between child labor and artisanal small-scale mining (ASM) and has developed a due diligence process to ensure ASM material does not enter the supply chain. See: [Glencore-statement-on-child-labour-allegations](#)

P7: "In 2020, we became a member of the Fair Cobalt Alliance (FCA). The FCA's mission is to transform ASM in the Democratic Republic of Congo in a positive manner through eliminating child and forced labour, supporting the professionalisation of ASM through the adoption of responsible mining practices, and identifying and supporting alternative livelihoods to help increase incomes and reduce poverty."



Fig 23a, Mutanda, Katanga: The facilities in the DRC are owned and operated by Glencore.



Fig 23b, Mutanda, Katanga are the largest Cobalt mines in the DRC and worldwide.



Fig 24, CSR: Glencore issues a sustainability report every year, which is available on-line. For compliance see pages 7, 55 and 68.

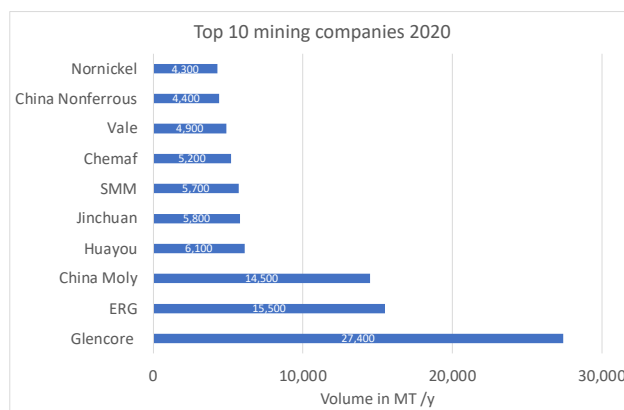


Fig 25, Glencore produced an estimated 27400 MT of cobalt at its DRC (Katanga), Australia and Canada mines. Meanwhile, the company temporarily shut down Mutanda end 2019 which is expected to come back on stream in 2022.

Raw Material Sourcing

Shu Powders' Raw Material Sources - Recycling

GEM stands for "Green" "Eco" "Manufacturing" and originated from a green dream:

- On December 28, 2001, Professor Xu Kaihua founded GEM in Shenzhen.
- In 2003, the industrial concept of "limited resources and unlimited circulation" was put forward for the first time.
- On January 22, 2010, A shares were listed in Shenzhen Stock Exchange (stock code: 002340). the first stock of "urban mines," renewable resources industry and electronic waste recycling industry.
- GEM owns total share capital of 3.816 billion shares, net assets of 4.8 billion yuan, vast reproduction value of more than 12 billion yuan, employees of more than 5,000 people in 17 industrial parks.



Fig 26, GEM Sustainability report

A corporate sustainability report is issued every year, which is available on-line at www.gemchina.cn

GEM is listed as "conformant Cobalt refiner" by the Responsible Minerals Initiative.

<http://www.responsiblemineralsinitiative.org/responsible-minerals-assurance-process/smelter-refiner-lists/cobalt-refiners-list/conformant-cobalt-refiners/>

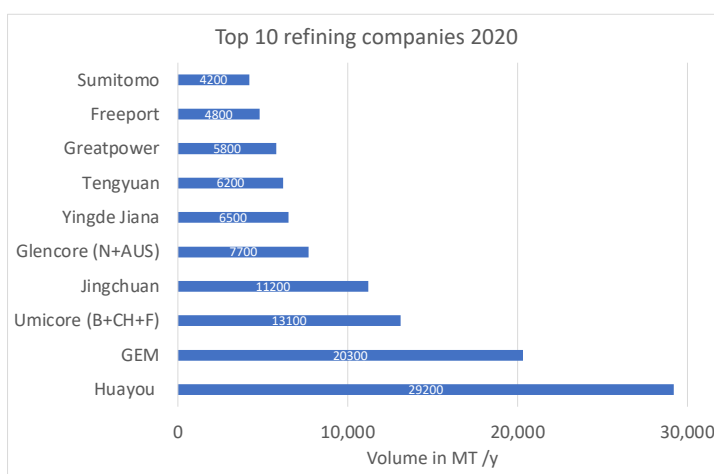


Fig 27, GEM refined Cobalt volume was reduced to 20300 MT due to lockdowns in Hubei province. GEM kept its second position in the ranking of global Co refiners.

Certifications

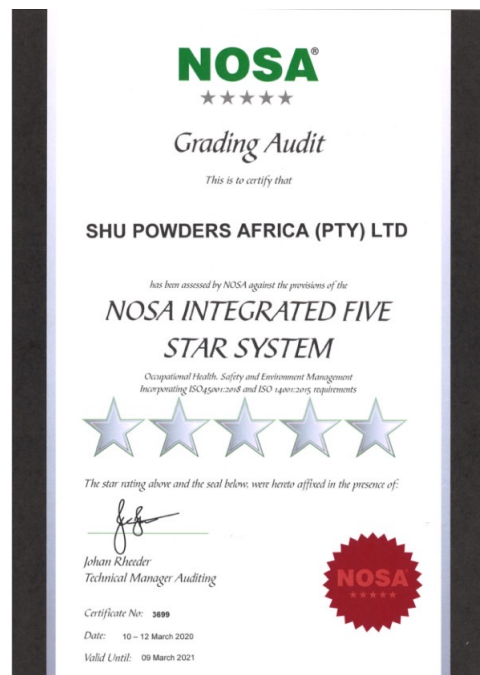
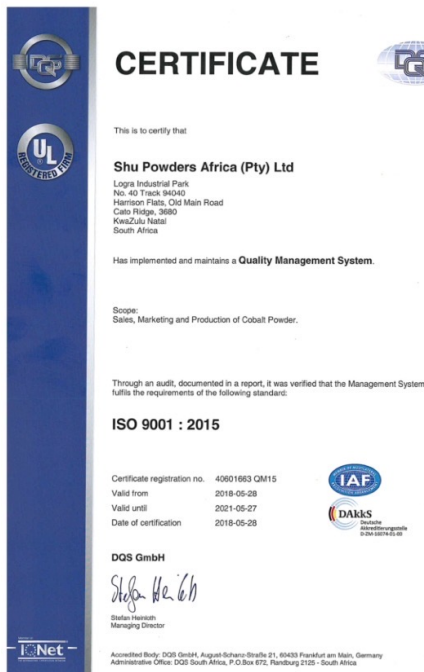
26

Shu Powders holds ISO 9001:2015, ISO 14001:2015, and ISO 45001:2007 international standards. On top of these we also hold Five Stars on the NOSA Integrated Five Star System, CMB253N Standard.

These Integrated Management Systems give guarantee and confidence to our customers, employees, suppliers, the community and all other stakeholders on the quality of the product, the preservation of their health and safety, care for the environment and sustainable business.

Certifications

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Certifications

ETHEKWINI MUNICIPALITY Community and Emergency Services Cluster –Health Unit

9 Archie Gumede Place
Durban 4001
P O Box 2443
Durban 4001

Tel: (031) 311 3614
Fax: (031) 311 3530

Website: <http://www.durban.org.za>



DATE: 26 October 2016
REF: AEL092/W2

This Atmospheric Emission Licence is issued to **SHU POWDERS LIMITED**, in terms of section 47(1) of the National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004) ("the Act"), in respect of Listed Activity **Category 7, Sub-category 7.1 and 7.4**. The Atmospheric Emission Licence is issued on the basis of information provided in the company's application dated **22 September 2016** and information that became available during processing of the application.

Licence Holder	SHU POWDERS LIMITED
Industry Sector	Preparation of cobalt
Physical Address	Logra Industrial Park, 40 Track 94040, Harrison Flats, Old Main Road, Cato Ridge
Validity Period	1 November 2016 to 31 October 2021

 Air Quality Officer: eThekweni Municipality Mr. B.G Dale	
 Date	
For Enquiries Contact Details: (031) 311 3575 Email: bruce.dale@durban.gov.za	

Certifications

Health, Safety and Environmental Policy

SHU POWDERS T: +27 31 782 1061 F: +27 31 782 1160 W: www.shupowders.com

Shu Powders Africa PTY. LTD
Logira Industrial Park, No 40 Track 94040, Harrison Flats
Old Mair Road, Cato Ridge, KwaZulu Natal 3550 South Africa
Postnet Suite 10015, Private Bag X7005, Hillcrest, 3550

Web No: 41506355E1 CK No: 2007/000665/07

SAFETY, HEALTH AND ENVIRONMENTAL POLICY

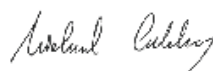
Shu Powders Africa is a reputable manufacturer of cobalt, and is committed to continual improvement in safety, health and environmental performance. This is non-negotiable in our drive towards a ZERO Tolerance/ ZERO Harm culture.

- We believe that all injuries, all adverse health effects resulting from work activities, and environmental incidents are preventable;
- The safety of our employees, visitors and contractors is a non-negotiable value;
- We are committed to the protection of the environment, including the prevention of pollution.
- Leaders at all levels in the organization are role models in the management of safety, health and environmental matters and shall lead by example in all situations.
- At-risk behaviors are not acceptable and are addressed when observed; and
- Excellent safety, health and environmental performance are recognized as good business practices.

To achieve our goal we are committed to:

- Meeting all applicable compliance obligations;
- Operate in accordance with industry and customer codes of practice and voluntary requirements to which we subscribe, including group policies, agreements with regulators and communities, REACH, CI (the Cobalt Institute); SANS 1929:2011; the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, and NOSA CMB253N.
- Educate and train, motivate and support our staff and suppliers in the application of this policy and associated procedures;
- Reducing consumption and wastage of materials through recovery, rework and recycling where possible;
- Eliminating hazards and reducing OH&S risks;
- Continuously consult, seek and promote the participation of workers, and worker representatives.
- Continually improve our safety, health and environmental system and performance through monitoring, preventive action, education and training;
- Develop new business opportunities that provide a sustainable future;
- Create a framework for setting and reviewing objectives and targets as stated in this policy.

We therefore commit to being a socially responsible employer in the interests of the community, future generations, and all our other interested parties.



Signature:

Date: 21-06-2021

Managing Director

Policy-002

Managing Director: Dr Michael Oehlers

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Quality Policy

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Shu Powders Africa PTY. LTD.
Lignit Industrial Park, No.40 Tank 94040, Harrison Park
Off Main Road, Cato Ridge, KwaZulu Natal 3680 South Africa
Postnet Suite 10015, Private Bag X7005, Hillcrest, 3650

Vat No: 4100088621 CR No: 2007/000865/07

QUALITY POLICY

Shu Powders Africa is committed to establishing and maintaining ourselves as a quality manufacturer of cobalt. To achieve this goal, we are committed to:

1. satisfying our customers and other interested parties' requirements and expectations, including relevant customer codes of practice, in the quality of product and service,
2. seeking to understand and address the relevant external and internal issues.

We are committed to establish, maintain and continually improve on a Quality Management System (QMS) that conforms to the ISO 9001:2015 requirements.

As Managing Director, I undertake to ensure that our Quality Management System is thus directed towards achieving the following objectives:

- Only accepting orders and contracts within our managing capacity
- Planning all business activities and improving on the planned time allocations
- Employing and developing people who have the necessary skills and experience to improve our product and service
- Supporting and developing external providers of products and services who are committed to Quality Improvement
- Reacting to problems quickly and systematically and fostering a team approach to problem solving
- Aiming to deliver on time; recognising that deadlines are a crucial part of our business
- Ensuring that we address compliance obligations that pertain to our product.

The SHEQ Officer has been appointed as the Management Representative regarding all aspects of the ISO 9001:2015 Quality Management System.

A handwritten signature in black ink, which appears to read 'Michael Oehlers', is written over a horizontal line.

Signature: _____
Managing Director

Date: 13-07-2021

Policy-003

Managing Director: Dr Michael Oehlers

Rev. 10

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GEM – responsible sourcing

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RESPONSIBLE MINERALS ASSURANCE PROCESS ASSESSMENT REPORT

负责任矿物 审验流程 评估报告

The flagship program of the RMI, the Responsible Minerals Assurance Process (RMAP), formerly the Conflict-Free Smelter Program (CFSP), takes a unique approach to helping companies make informed choices about responsibly sourced minerals in their supply chains. Focusing on a “pinch point” (a point with relatively few actors) in the global metals supply chain, the RMAP uses an independent third-party audit of smelter/refiner management systems and sourcing practices to validate conformance with RMAP protocols and current global standards. The audit employs a risk-based approach to validate smelters’ company level management processes for responsible mineral procurement. Companies can then use this information to inform their sourcing choices. For more information, please visit: www.responsiblemineralsinitiative.org.

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I. ASSESSMENT SCOPE/评估范围

Assessment Period 评估期间	2018/12/01-2019/11/30 2018 年 12 月 1 日至 2019 年 11 月 30 日
Assessment Company 评估方	UL 优力胜邦

II. ASSESSMENT OBJECTIVES/评估目标

The objective of the assessment is to assess the auditee’s level of conformance with the Cobalt Refiner Supply Chain Due Diligence Standard of 2019.

这项评估的目的是评估受审计方在多大程度上符合《2019 年钴精炼厂供应链尽责管理标准》。

III. ASSESSMENT METHODOLOGY/评估方法

The assessment was consisted of collecting and reviewing objective evidence including documentation, management and employee interviews, facility walk-through, and other observations demonstrating that the smelter/refiner’s due diligence management system conform to the requirements of the relevant Standard.

这项评估需要收集并审查客观证据，包括文件、管理层面谈、员工面谈、工厂走查以及其他可证明冶炼厂/精炼厂的尽职调查管理体系符合相关标准要求的要求。

IV. CONCLUSION/结论

Assessment Results: 评估结果:	
<input checked="" type="checkbox"/>	The assessment was conducted in accordance with ISO19001:2011 Standard, taking into account the guidance provided by the Responsible Minerals Assurance Process. The auditor verified the scope, selected samples, and gathered objective evidence through documentation review, interviews, and visual observations. 这项评估根据 ISO19001:2011 标准执行，并考虑到负责任矿物审验流程提供的指南。审计员通过文件审查、面谈和目测来核查审计范围、选定的样本以及收集的客观证据。
<input checked="" type="checkbox"/>	The auditor found that the auditee’s due diligence systems are in conformance, in all material aspects, with the requirements of the

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负责任矿物审验流程 (RMAP) 是 RMI 的旗舰项目，之前称为无冲突冶炼厂计划 (CFSP)，采用独特的方法帮助企业对其供应链中负责任采购的矿物做出明智选择。RMAP 关注全球金属供应链中的“夹点”（一个参与者较少的点），使用独立的冶炼厂/精炼厂管理系统和采购实务第三方审计，来验证是否符合 RMAP 协议和现行全球标准。审计采用基于风险的方法来验证冶炼厂关于负责任矿物采购的公司层面管理流程。该等公司随后可利用此信息来了解其采购选项。如需了解更多信息，请访问 www.responsiblemineralsinitiative.org。

Auditee Name 受审计方名称	Jingmen GEM Co., Ltd 荆门格林美新材料有限公司
CID Number CID 号码	CID003378
Facility Address 工厂地址	Ying Chun Rd, Jingmen, Hubei, China 中国湖北省荆门市迎春大道
Assessment Date(s) 评估日期	2019/12/26-2019/12/27 2019 年 12 月 26 日至 2019 年 12 月 27 日
Assessment Type 评估类型	Initial 初始评估
Assessed Material 评估的原料	Cobalt 钴
Sourcing from High-Risk Supply Chains 从高风险供应链采购	Yes 是
Conformance Validity 合规有效期	This audit is valid for 1 year 这项审计的有效期为 1 年

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Responsible Minerals Assurance Process Tin and Tantalum / Tungsten / Gold Standard of 2017 and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

审计员发现，在所有实质性方面，受审计方的尽职调查体系符合《针对锡和钽/钨/金的 2017 年负责任矿物审验流程标准》以及《经合组织关于来自受冲突影响和高风险区域的矿石的负责任供应链尽职调查指南》的要求。

The auditor identified material non-conformance(s) between the auditee’s systems, processes and practices and the requirements of the Responsible Minerals Assurance Process Tin and Tantalum / Tungsten / Gold Standard of 2017 and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

审计员发现受审计方的体系、流程和实践实质性违反《针对锡和钽/钨/金的 2017 年负责任矿物审验流程标准》以及《经合组织关于来自受冲突影响和高风险区域的矿石的负责任供应链尽职调查指南》的要求。

Material non-conformance(s) relate to:

实质性不符合项涉及：

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- ☐ Step 1: Establish strong company management systems
步骤 1: 建立稳健的公司管理体系
- ☐ Step 2: Identify and assess risks in the supply chain
步骤 2: 确定并评估供应链中的风险
- ☐ Step 3: Design and implement a strategy to respond to identified risks
步骤 3: 针对确定的风险制定并实施应对策略
- ☐ Step 5: Report annually on supply chain due diligence
步骤 5: 每年报告一次供应链尽职调查情况
- ☐ Zero tolerance findings:
零容忍结果:
Please specify
请说明

Auditor Statements: 审计员陈述:

- ☒ The information provided by the auditee is true and accurate to the best knowledge of the Auditor(s) preparing the report.
据编写报告的审计员所知, 受审计方提供的信息是真实准确的。
- ☒ The findings are based on verified objective evidence relevant to the time period for the assessment.
评估结果基于与评估期间相关且经过核查的客观证据。
- ☒ The Auditor(s) have acted in a manner deemed ethical, truthful, accurate, professional, independent and objective.
审计员以符合道德、如实准确、专业、独立、客观的方式执行评估。
- ☒ The Auditor(s) are properly qualified to carry out the assessment.
审计员具备执行评估的资格。
- ☒ There were no limitations to this audit.
这项评估没有限制。
Please specify in case of any limitations
如果有任何限制, 请说明

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RMI STATEMENT ON COBALT REFINER CONFORMANCE STATUS, LIMITATIONS AND EXPLANATION OF FINDING TYPES

Formalized due diligence in the cobalt supply chain is a recent development, and implementation of certain due diligence processes requires cooperation among many supply chain partners. The Responsible Minerals Initiative (RMI) recognizes that while an increasing number of cobalt refiners are working toward implementing OECD-aligned due diligence and material origin transparency globally, there is an inherent complexity that affects their efforts to address systemic challenges in specific geographies and contexts that may not be entirely in their control, which will take time and collaboration from various government and private sector actors to address.

The RMI is supporting Responsible Minerals Assurance Process (RMAP)-participating cobalt refiners, and other key partners and stakeholders, in working to address these systemic challenges. The RMI's program is based on a continuous improvement model, whereby we acknowledge due diligence is a dynamic process and companies are expected to progressively improve their due diligence practices and risk management performance over time, including through constructive engagement with suppliers.

Conformance to the Cobalt Refiner Due Diligence Standard indicates that critical findings have been sufficiently addressed for an initial RMAP assessment, and there were no zero-tolerance findings identified during the course of the assessment. This means that fundamental due diligence management system processes have been established, and the refiner has a plan (with responsible parties and timelines) to close all remaining gaps in origin documentation and enhanced due diligence activities. This does not necessarily mean that there were no findings. All findings are required to be addressed in the succeeding assessments.

For more information about the current standard requirements, including finding types, please see the Cobalt Refiner Due Diligence Standard and RMAP Procedure [here on the RMI website](#).



Glossary

□ **Biological monitoring:**

Is the measurement and assessment of workplace agents or their metabolites either in tissues, secreta, excreta, expired air or any combination of these to evaluate exposure and health risk compared to an appropriate reference. All the medicals consist of the following examinations:

- Audiometric Testing
- Eye Test
- Chest X-ray
- Lung Function
- Physical exam
- Cobalt vs Creatinine (urine testing)
- Cobalt in Blood

□ **ASTM D1739-94:**

The standard test method for collection and measurement of dustfall (settleable particulate matter).

□ **Lost time incident:**

Lost time injury is when an employee gets injured in the course of his employment and is unable to perform the regular duties for a complete shift. This is not just limited to one regular shift only, but it can extend up to all the shifts in which the employee is unable to perform the regular duties. So from the time of the initial injury until the time the employee is able to return to regular work duties. None of the LTI's caused interruption of production or business.

□ **Risk Assessment:**

The evaluation of the risks of existing substances or conditions to man, including workers, and to the environment, in order to ensure better management of those risks.

Reference List

- [Ref 1] Concise International Chemical Assessment Document 69. Communication with Dr. Do Vale of CATOMED Clinique, in Cato Ridge, KZN, South Africa.
- [Ref 2] APEX study 2010, 2012, 2014, 2016
- [Ref 3] Dust detection device: SKC- Airchek sampler
- [Ref 4] Amnesty International Report, January 19, 2016
www.amnesty.org/en/documents/afr62/3183/2016/en/
- [Ref 5] London Metal Bulletin Articles, March 29, 2016.