In partnership with

G20 SOUTH AFRICA 2025

Eskom Rotek Industries

Update on Eskom's Ash Beneficiation Programme

29 May 2025

Presenter: Khomotso Kekana



In partnership with

STRATEGIC OBJECTIVE OF THE PROGRAMME

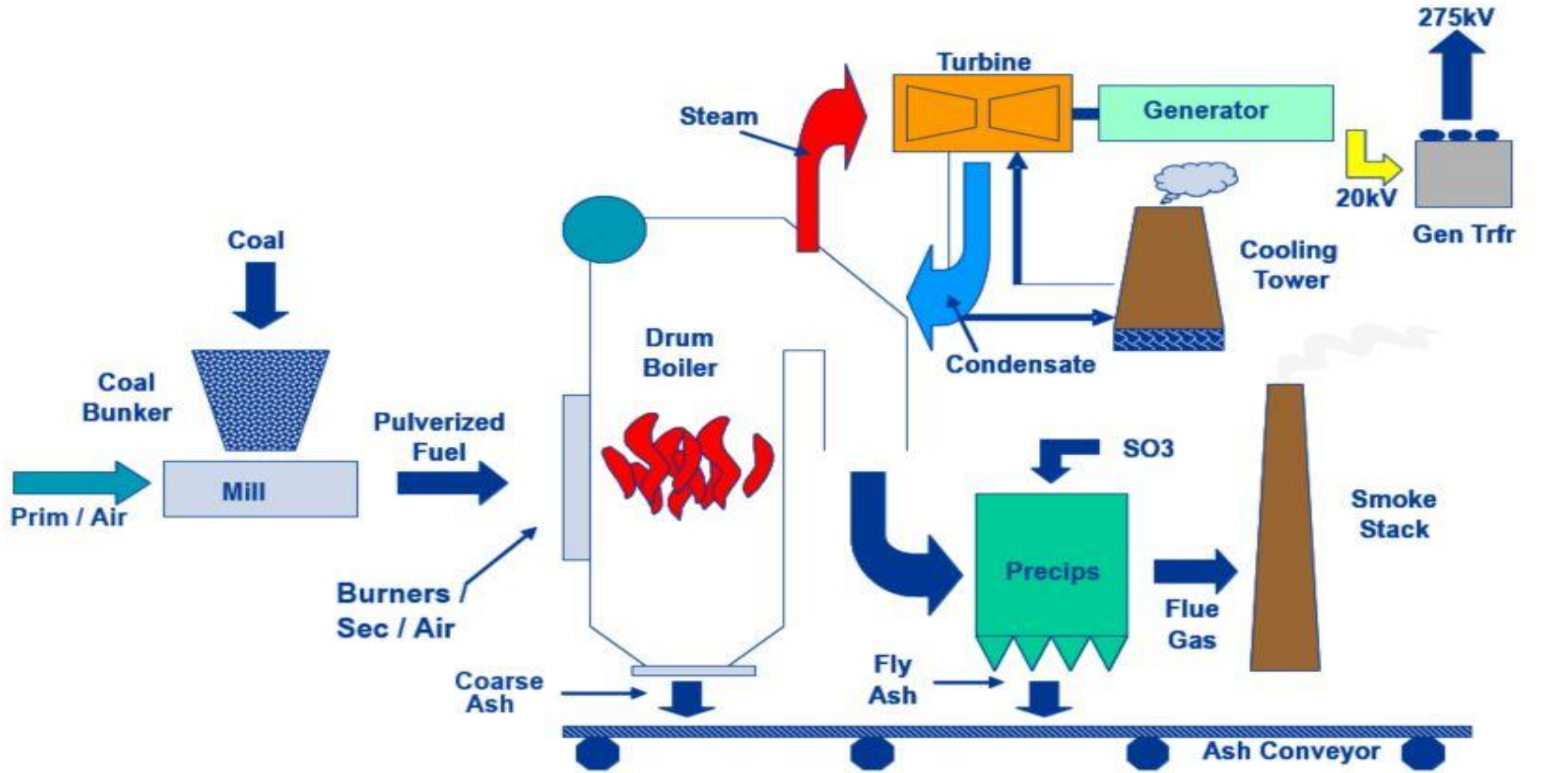
FINANCIAL	Reduce the CAPEX on Ash Disposal Facilities Enhance revenues Streams
OPERATIONAL	Reduce OPEX and operational challenges associated with running of ADFs Minimize challenges with Ashing Capacity and Optimize life spans for ADFs
ENVIRONMENTAL	Reduce Environmental Footprint Responsibly Dealing With Waste
SOCIETAL	Job and Business Opportunities Creation

In partnership with

G20 SOUTH AFRICA 2025

ASH PRODUCTION PROCESS

Eskom Rotek Industries



In partnership with

G20 SOUTH AFRICA 2025

ACCESSING ASH

Eskom Rotek Industries

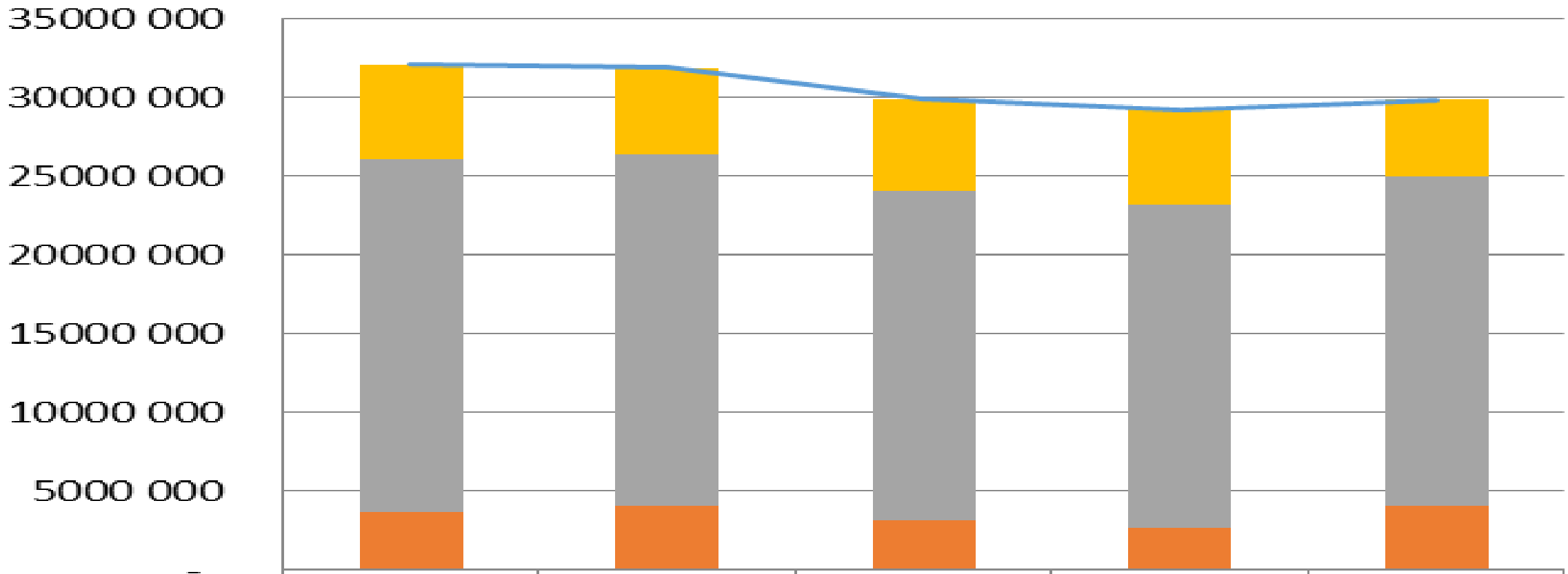
Accessing Coarse Ash

Accessing Fly Ash

ALL CONTRACTORS ARE APPROINTED THROUGH A RIGOROUS COMPETITIVE TENDERING PROCESS TO ENSURE FAIRNESS, TRANSPARANCY AND EQUITABILITY

In partnership with

BIRD'S EYE VIEW OF THE PROGRAMME



	FY21	FY22	FY23	FY24	FY25
Available Ash	5962 110	5527 347	5825 926	6064 153	4891 193
Effluent Sink	22430 268	22291 854	20918 501	20462 166	20878 569
Sold	3650 862	4026 305	3139 146	2705 347	4056 766
Produced	32043 240	31845 506	29883 573	29231 666	29826 528

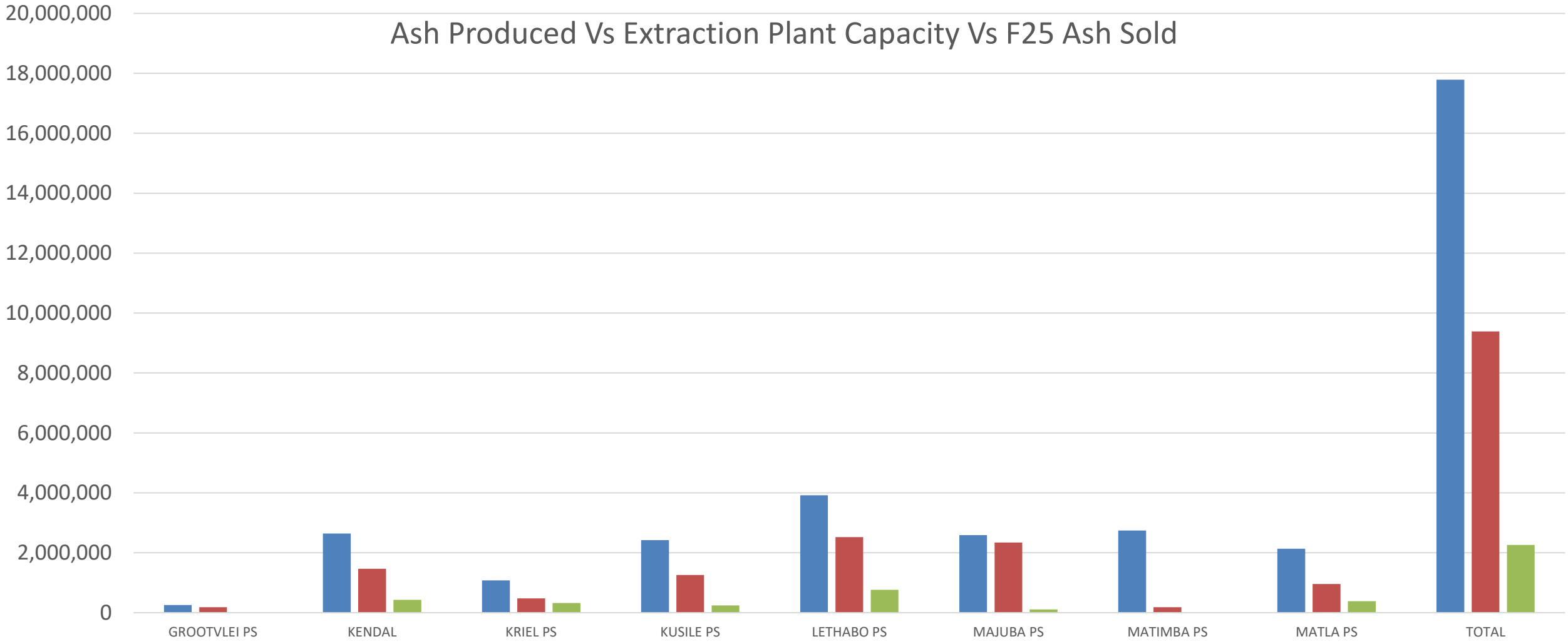
In partnership with

ASH PROGRAMME CHALLENGES

- The impact of COVID-19 on the economy has been significant and has impacted the industry in the short term and has been exacerbated by the introduction of loadshedding in the medium term.
- The demand for ash products has diminished, primarily due to a scarcity of infrastructure projects within the construction sector (there hasn't been a major construction project in the past 4 years or so), resulting in declining ash sales. To address this, proactive efforts to identify new markets and potential applications for ash products are essential.
- The advent of load shedding has further compounded these challenges by hindering operational capacity due to intermittent beneficiation operations, some even closing temporarily for days.
- Specific maintenance issues at ash plants, particularly at Matla and Kendal, have posed additional hurdles. Notably, Kusile resumed ash off-take activities in November 2023 after closing for almost a year following the resolution of the chimney collapse incident.
- The lack of adequate infrastructure for the transportation of ash internally and for the export market has also impeded our ability to meet sales objectives. Collaborative initiatives with relevant authorities, improvement of port facilities to accommodate ash exports, and the investigation of alternative logistical approaches are critical to surmount these obstacles.
- The use of ash is limited to cementitious industries. There is a need for market expansion, we need to explore opportunities to diversify the utilization of ash in areas such as soil improvement, road construction, and mine backfilling.

AVAILABILITY OF FLY ASH

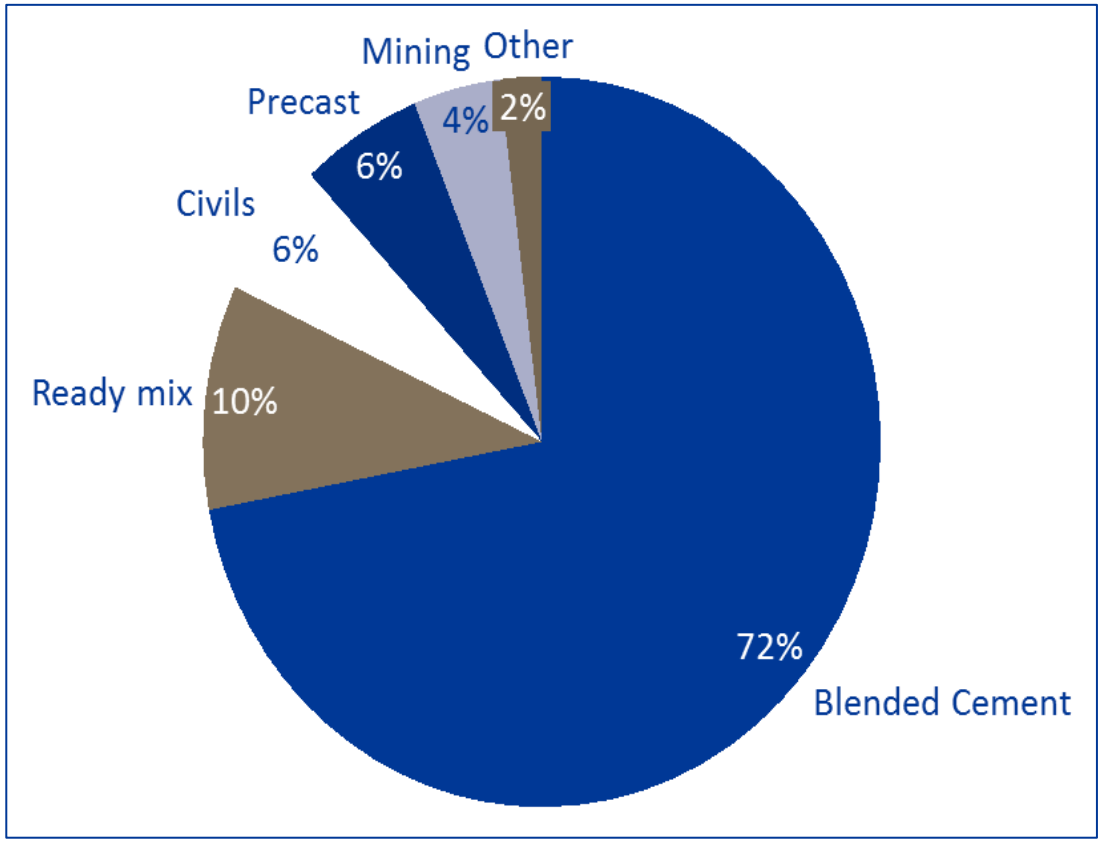
Eskom Rotek Industries

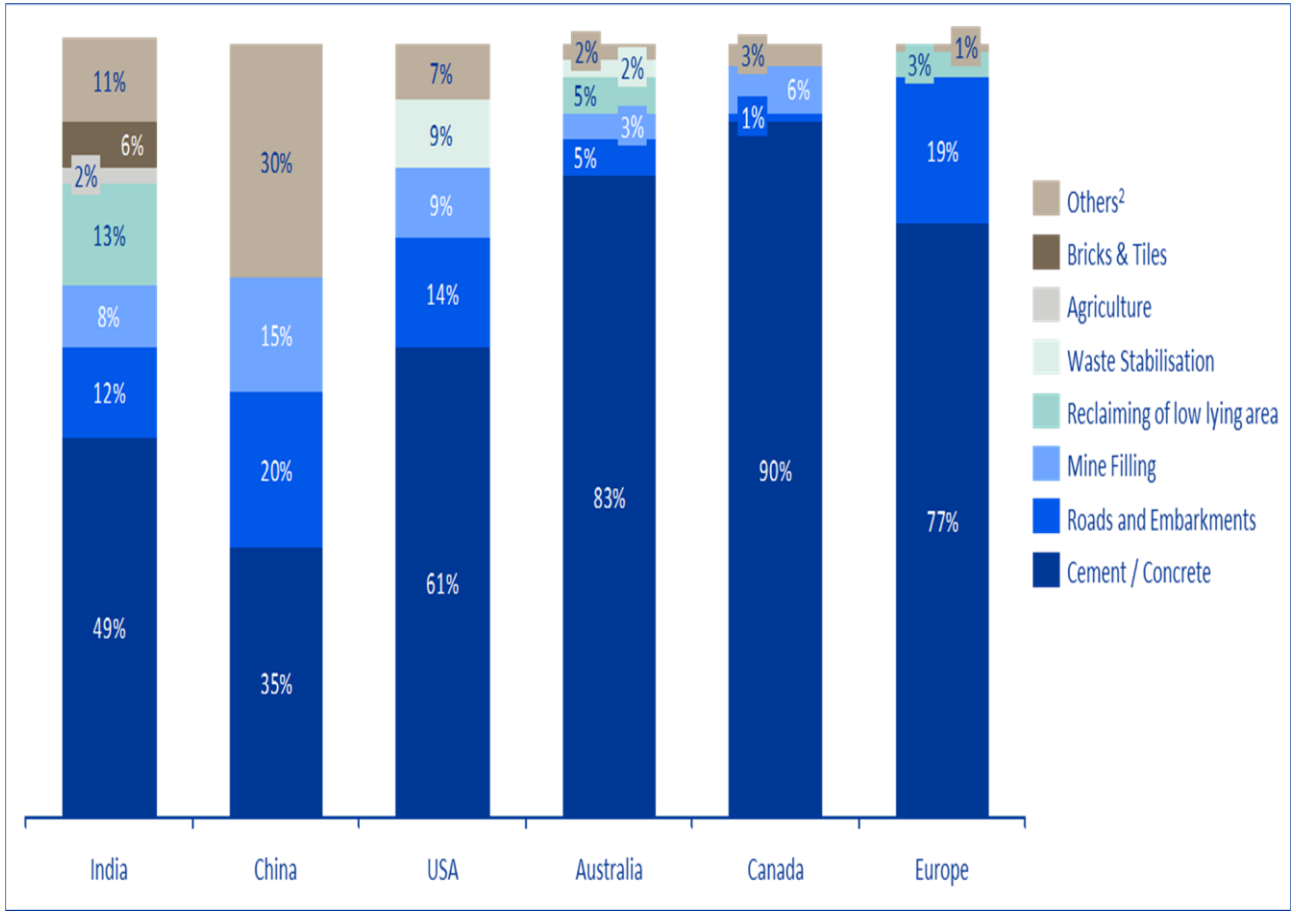


In partnership with G20 SOUTH AFRICA 2025

ASH APPLICATIONS

- ✓ Eskom has been selling fly ash for the 3 decades to local cement manufacturers and clinker to brick manufacturers.
- ✓ Our sales volumes has been stagnant at 4 million tonnage due a number of issues





In partnership with

THE ASH MARKET ANALYSIS – SWOT ANALYSIS

	POSITIVE	NEGATIVE
INTERNAL	**STRENGTH** › The biggest ash producer on the continent › A well-established stable cementitious market › Access to offtake agreement through a tendering process › Ready and available research on ash beneficiation.	**WEAKNESS** › Alignment within various Eskom companies on the strategy to drive. › A systems to measure the performance of the CCP; reliance on offtakers to report volumes.
EXTERNAL	**OPPORTUNITY** › The Exclusion Regulations classify coal ash and gypsum as non- hazardous waste allowing the by-products to be used in other new applications such as geopolymer products, ash exports, road construction, soil amelioration, mine backfill and AMD, etc. › The closure of coal ash plant in EU sparking demand of SA coal ash on US, EU and Australia › Collaboration with Universities on ash research	**THREAT** › The saturated cementitious SA market. › The economic climate – lack of investments by the SA Government on infrastructure. › Risk raised by DFIs on funding infrastructure (rail sidings, bulk ash containers, ash storage at the ports) › rail infrastructure - Transnet (port facilities (modified rail sidings at the ports, land and services for the loading and storage facilities) › Support from SA Government on establishing ash trade between SA and EU, UK, USA, Middle East and AU..

WAY FORWARD

Industry partnering required for investing in all areas of possible ash utilisation

- Maximise ash into cement, brick-making, road construction, mine backfilling, agriculture and other new proven technologies

National Infrastructure Development

- Expand national roads development to concrete surfacing
- Maximise utilisation of cement, concrete and ash bricks at state construction initiatives

Bulk Material Utilisation

- Recover bulk ash from existing dumps for bulk fill in mining rehabilitation
- Recover bulk ash from existing dumps for brick and building block making by SMMEs and industry at large

ASH IN NEW MARKETS

Eskom Rotek Industries

- **Ash in roads construction** – Investigate the use of ash in the sub base and base construction of roads and as an extender for the bitumen. This technology is used internationally but it must be determined whether Eskom ashes are suitable.

- **Mine back-filling** – The use of ash as a filler for mine voids. Firstly to offer support to old abandoned mines and secondly to limit oxygen ingress so to minimize the formation of acid mine drainage.
- **Acid mine drainage** – The use of fresh ash, with a high pH, to neutralize acid mine drainage. The resulting sludge can be used for cementitious applications although curing is significantly slower.

In partnership with

G20 SOUTH AFRICA 2025

Eskom Rotek Industries

Thank you!