



DECARBONISING THE MINING SECTOR THROUGH RENEWABLE ENERGY AGGREGATORS AND THE SOUTHERN AFRICAN POWER POOL



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CONTEXT: MINING, ENERGY, AND CLIMATE CHANGE



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Country*	Demand (GW)	Commercial, Industrial, & Mining (CIM) % of demand **	Estimated CIM demand (GW)
Zambia	2.6	65.0%	1.4
South Africa	35.2	53.0%	18.7
Zimbabwe	1.8	58.9%	1.0
Botswana	0.6	77.0%	0.5
Namibia	0.7	99.9%	0.7
Angola	2.7	41.0%	1.1
Tanzania	1.5	54.8%	0.8
Mozambique	2.1	87.7%	1.9
Lesotho	0.2	51.0%	0.1
Eswatini	0.3	55.0%	0.1
Malawi	0.4	10.0%	0.04
DRC	2.0	65.0%	1.3
TOTAL	49.97		27.7

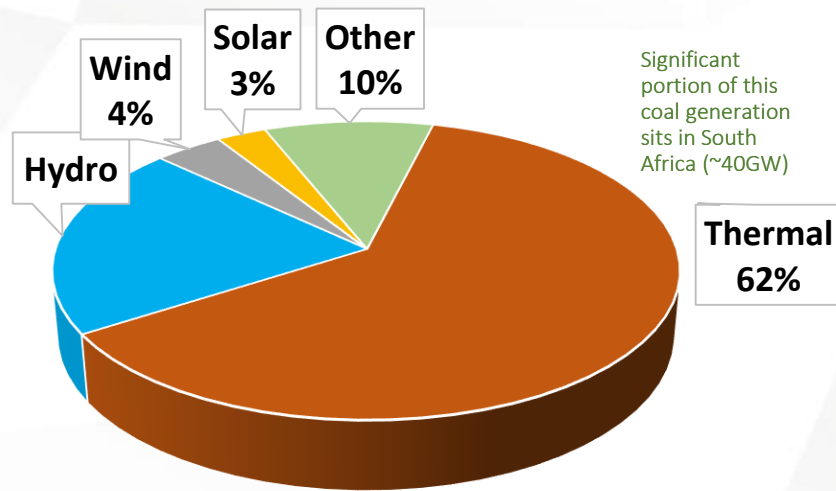
Over **55%** of
Southern Africa's
demand is attributed to
commercial, industrial,
and mining customers;
with mining being the
largest consumer

* Source: SAPP (September 2022)

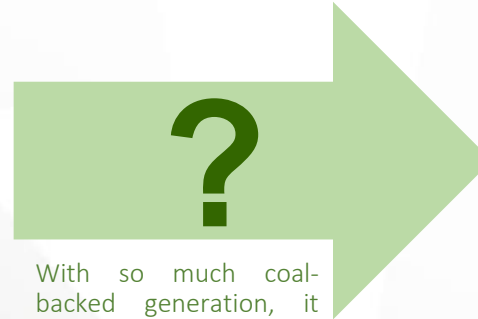
** Source: estimates from multiple regulator, utility, & statistical office reports and independent publications on countries

CONTEXT: MINING, ENERGY, AND CLIMATE CHANGE

REGIONAL GENERATION MIX



Thermal = 48,380 MW	Hydro = 3,485 MW
Wind = 2,323 MW	Solar = 2,323 MW
Other = 580 MW	

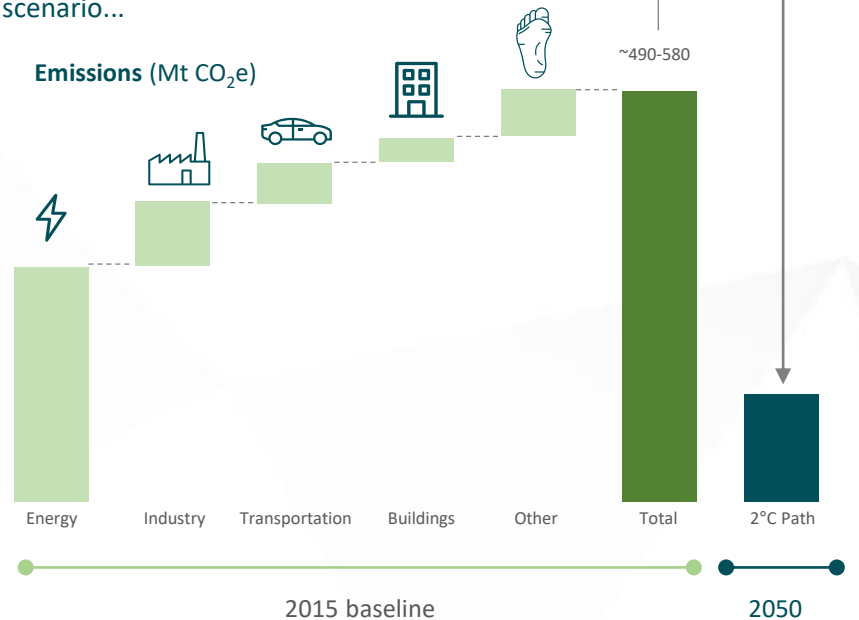


With so much coal-backed generation, it goes without saying that the energy sector has a key role in preserving the climate

2°C PATH

\$700B investment required to achieve outlined 2°C scenario...

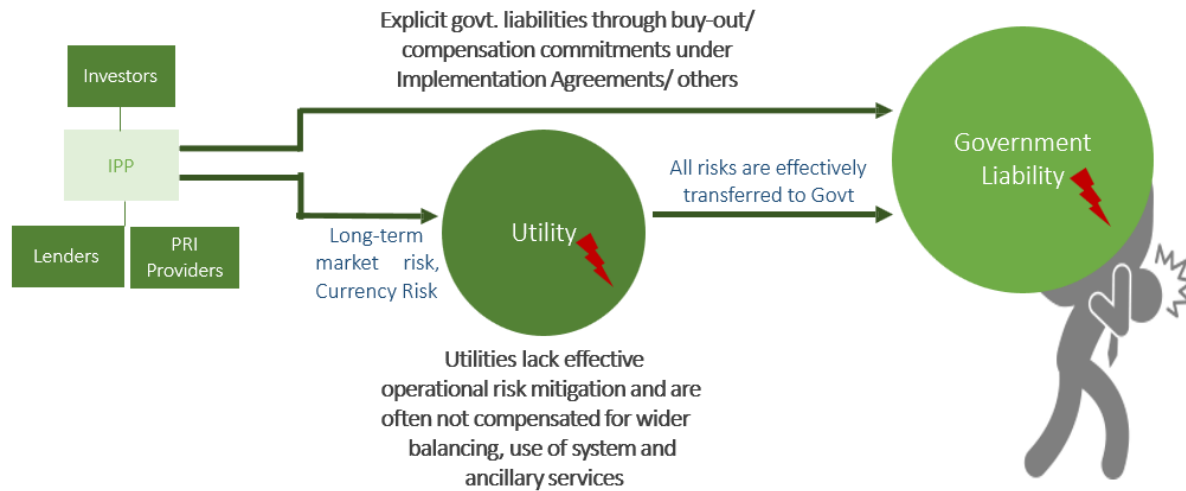
Emissions (Mt CO₂e)



To contribute to the 2°C path, South Africa, which is responsible for the majority of the region's demand, needs to cut its emissions by ~60-75% by 2050

THE NEED FOR CLEANER ENERGY

- In order to contribute to the 2°C path and meet rising demand, there is need for more renewable generation capacity.



- With the current project financing model, this is resulting in *escalation of contingent liabilities on governments due to sovereign guarantees on PPAs tied to state utilities.*
- In addition, the quick onboarding of renewable energy projects, which are **variable** in nature, will **put pressure on national grids and utilities – system agreements and burden of**

NEED FOR INITIATIVES THAT PROMOTE INVESTMENT IN RENEWABLE ENERGY GENERATION CAPACITY WITHOUT COMPROMISING HOST GOVERNMENTS

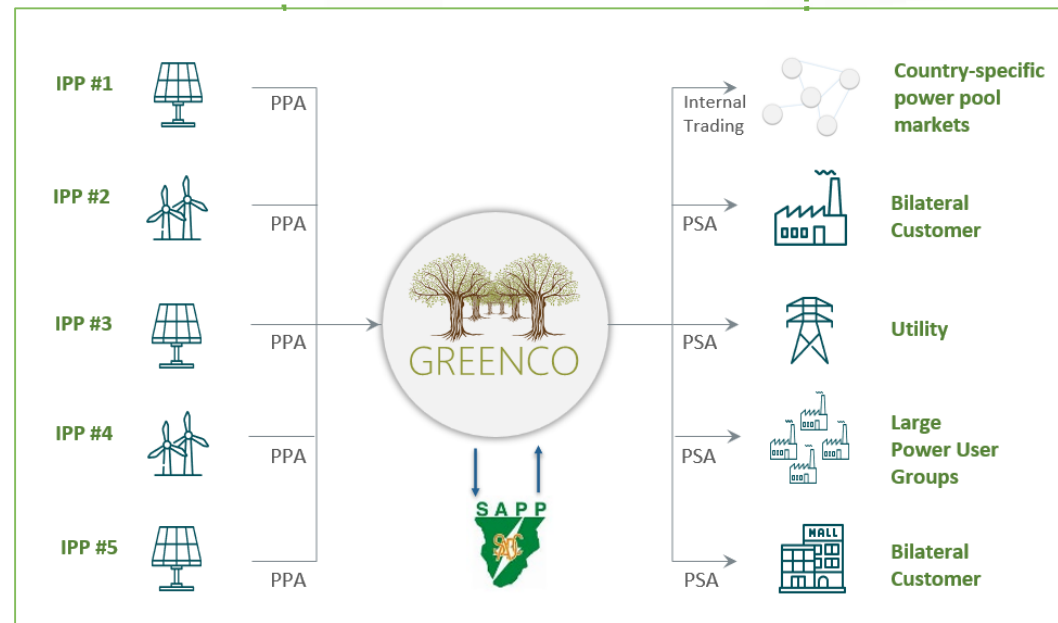
TRANSFORMATIONAL CHANGE – RE AGGREGATORS

Boosted Creditworthiness that does not ride on governments

Aggregators stimulate investment into RE generation through their offer of reduction of transaction risks. In addition, their bankability does not hinge on government support

Aggregators create value

By virtue of being market players, Aggregators can source competitive power, thereby helping reduce the cost of electricity and attracting more mining companies.



Aggregation of offtake and supply

Aggregators build significant sourcing and supply portfolios and can supply baseload RE to several mines without geographical restrictions, quashing the notion that mines cannot rely on RE

Flexibility in offering

Aggregators harmonise PPA-PSA tenor mismatch, thereby providing mines with short/medium/long term options without compromising long-term IPP PPAs

AGGREGATORS AND THE SOUTHERN AFRICAN POWER POOL



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- Aggregators work closely with power pools like SAPP by bringing liquidity and excess power supply onto the market.
- More activity by RE Aggregators will result in “greening” SAPP and making it more attractive for banking of projects funded by sustainable financing initiatives.
- SAPP enables optimal location of generators and consumers like mines and Aggregators help bridge the supply gap.
- SAPP enables traders who supply intermittent generation to smoothen their profile into baseload (sell excess in PV hours, buy supplement in night hours) – attractive for mines.
- SAPP enables flexible mine power consumption (sell excess pre-committed mine power or buy extra power for mine ramp-up)

POWER SUPPLY OFFERING



Term

5-25 years

GreenCo offers multiple terms ranging from 5 to 25 years, thereby relieving customers of the burden of term matching with suppliers and IPPs, who often want long terms.



Load profile

Demand

GreenCo is able to supply on a baseload or customized basis (solar PV hours, nighttime, etc.).



Tariff

Predictable

GreenCo competitive, predictable, and transparent energy tariffs that may either be fixed to market (floating) or fixed (annual indexation or flat).



Market Access

Route

GreenCo provides access to local and regional power pools and markets, allowing customers to purchase additional supply or sell committed power they plan not to use.

OTHER SERVICES



GreenCo sells on behalf of
customers with
embedded/captive generation



GreenCo can support
customer portfolios for
customers who have
**numerous sites across South
Africa and the region**



- **Carbon credits/Renewable Energy Certificates** – administration and trading (where available)
- **Cross-border trading** – using GreenCo's regional entities

RESULTS

Decarbonisation

Mines and other customers have access to clean, stable, flexible supply options

Utilities compensated and able to perform their roles
Even when power flows through energy traders, utilities are adequately compensated, resulting in enhancement of their systems and improvement in performance

Promotion of open access
Promotion of energy trade encourages all players to perform their roles (generators, transmission operators, consumers, etc.) thereby promoting open access

More generation capacity
Stimulation of investment in generation capacity through reduction of associated transaction risks

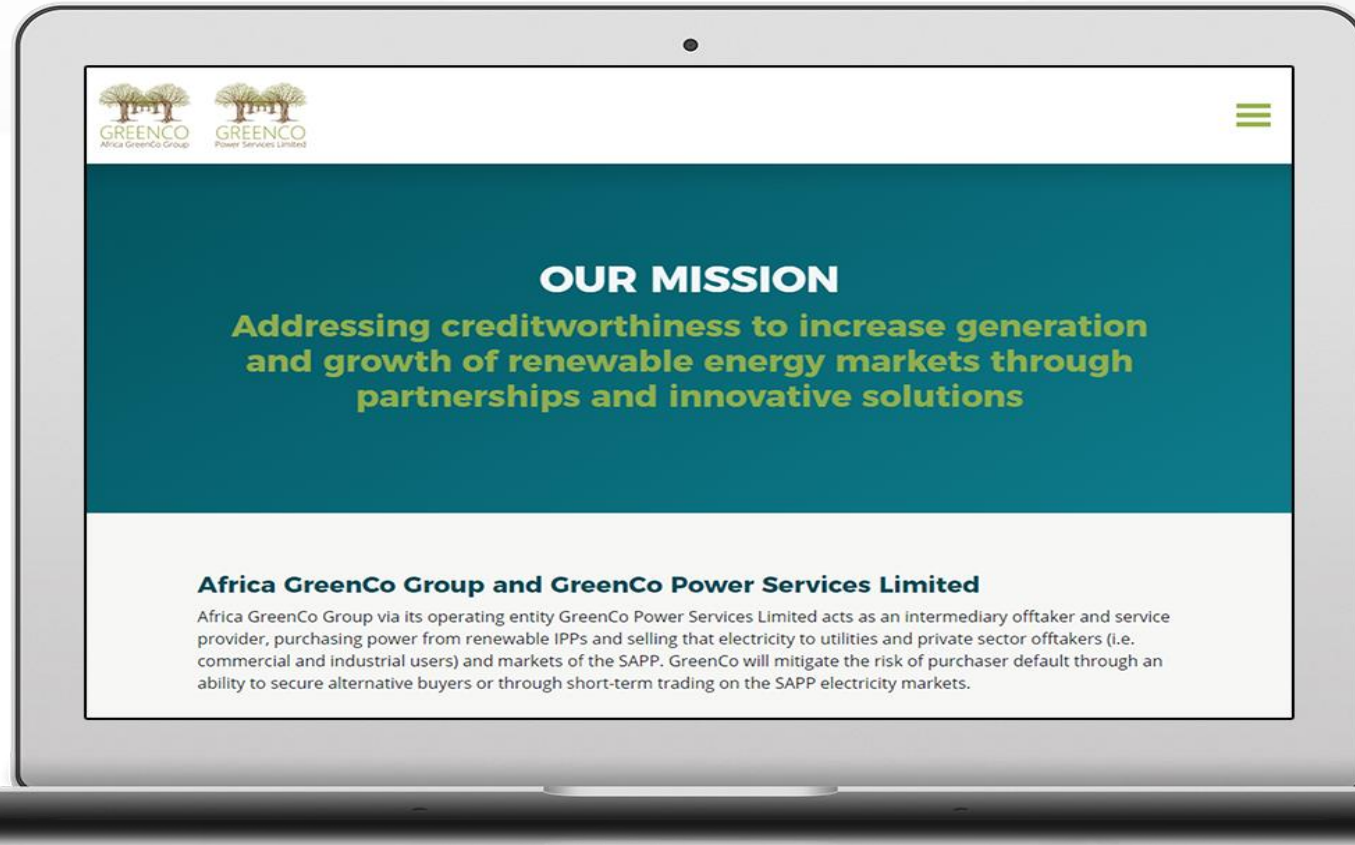
Less financial burden on governments
Through offer of creditworthy PPAs, less reliance is put on governments for sovereign guarantees



THANK YOU



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