



**THE GREEN ENGINE**  
driving life after coal

**THE MINE CLOSURE PARADIGM SHIFT**

Towards Resilient Futures Community of Practice Workshop

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# PURPOSE

- Our purpose is simple...  
to improve people's lives, enable opportunities and reduce the impact on our environment





# Our current way of doing things

Current practices.....

...often defer investments in mine closure

...water management into perpetuity

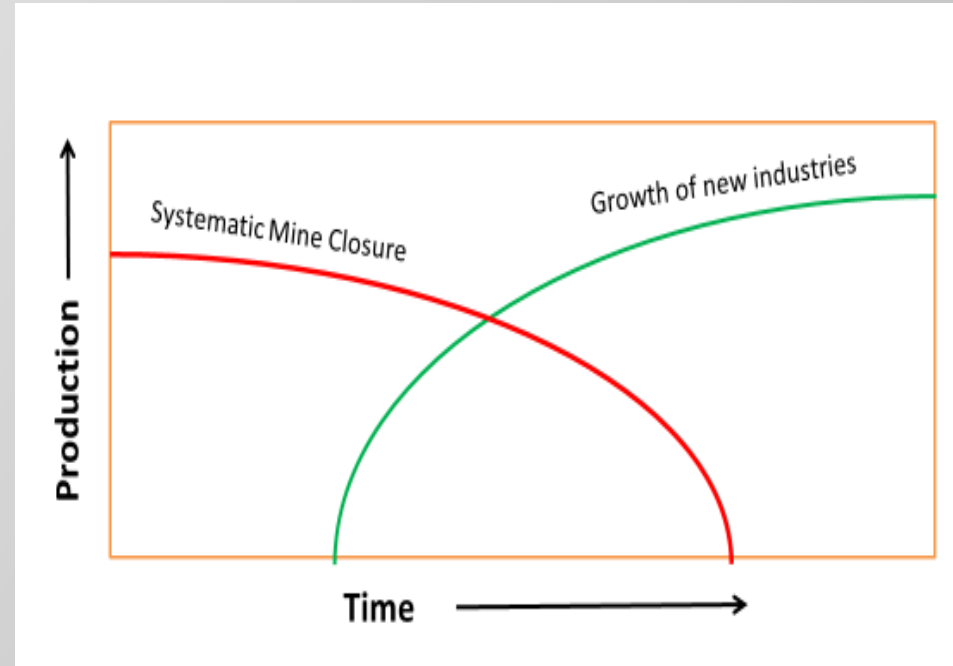
...limited social benefits

Rehabilitation is generally tailored to pastures or wilderness with very little benefits to the community



# WHAT WE NEED TO ACHIEVE POST CLOSURE

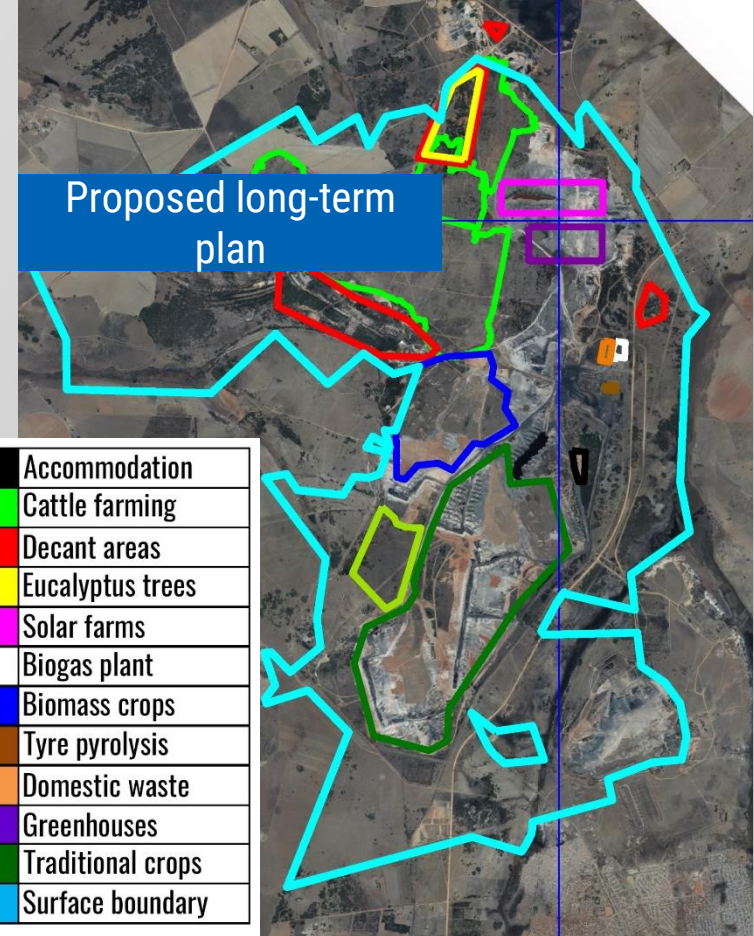
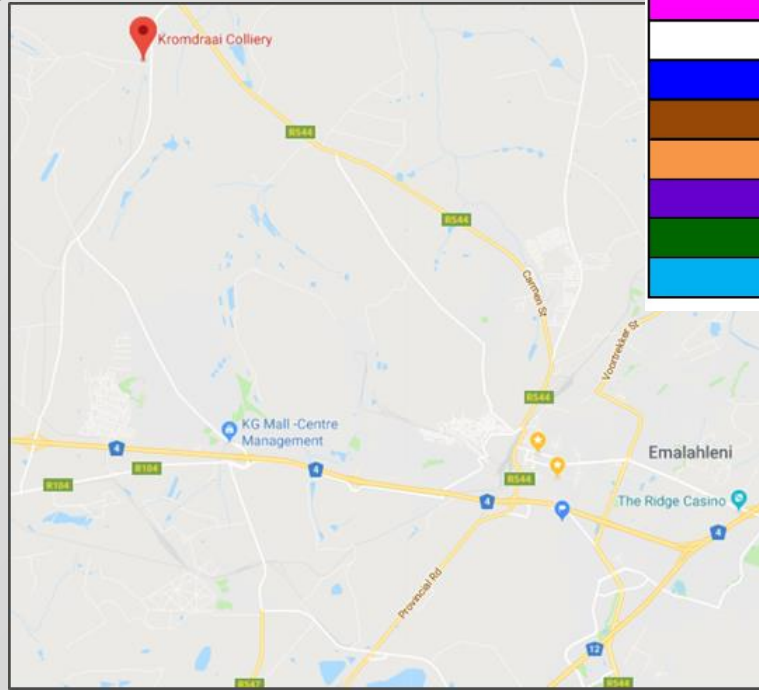
- Create local jobs and provide upskilling for the local community
- Create self-sustaining and self-reliant businesses
- Create transitional industries to support eMalahleni in the future
- Maximise benefits by aligning initiatives with partnership approach - Collaborate
- Reduction in environmental liabilities



Benefits can not only be for Anglo American only but has to address community needs <sup>4</sup>

# GROUND ZERO: KROMDRAAI

- Kromdraai has been producing energy for more than a 100 years
- Enable Kromdraai to remain productive and release “new” energy”
- Centrally located near N12, N4 and R544
- Existing rail link that may be utilised
- Enabled by water, energy and land
- Areas with top-soil deficit
- Infrastructure workshops, offices and other

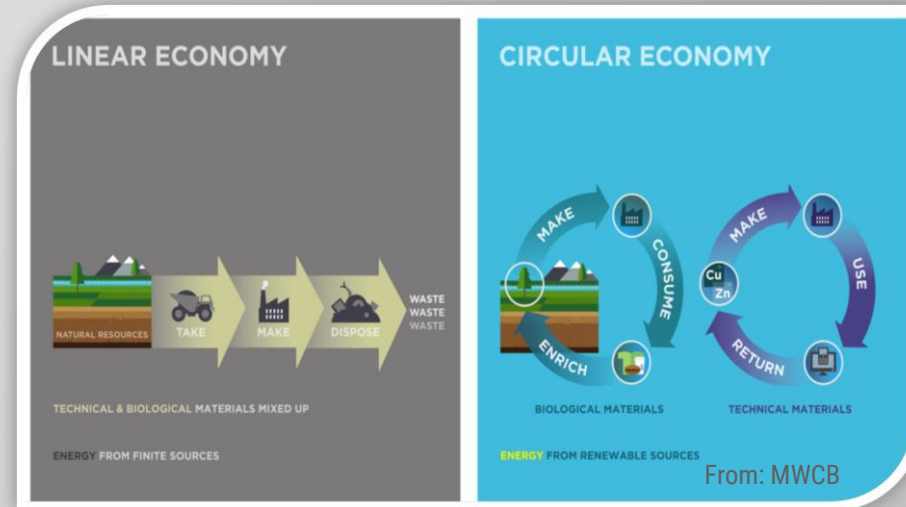




# THE PARADIGM SHIFT

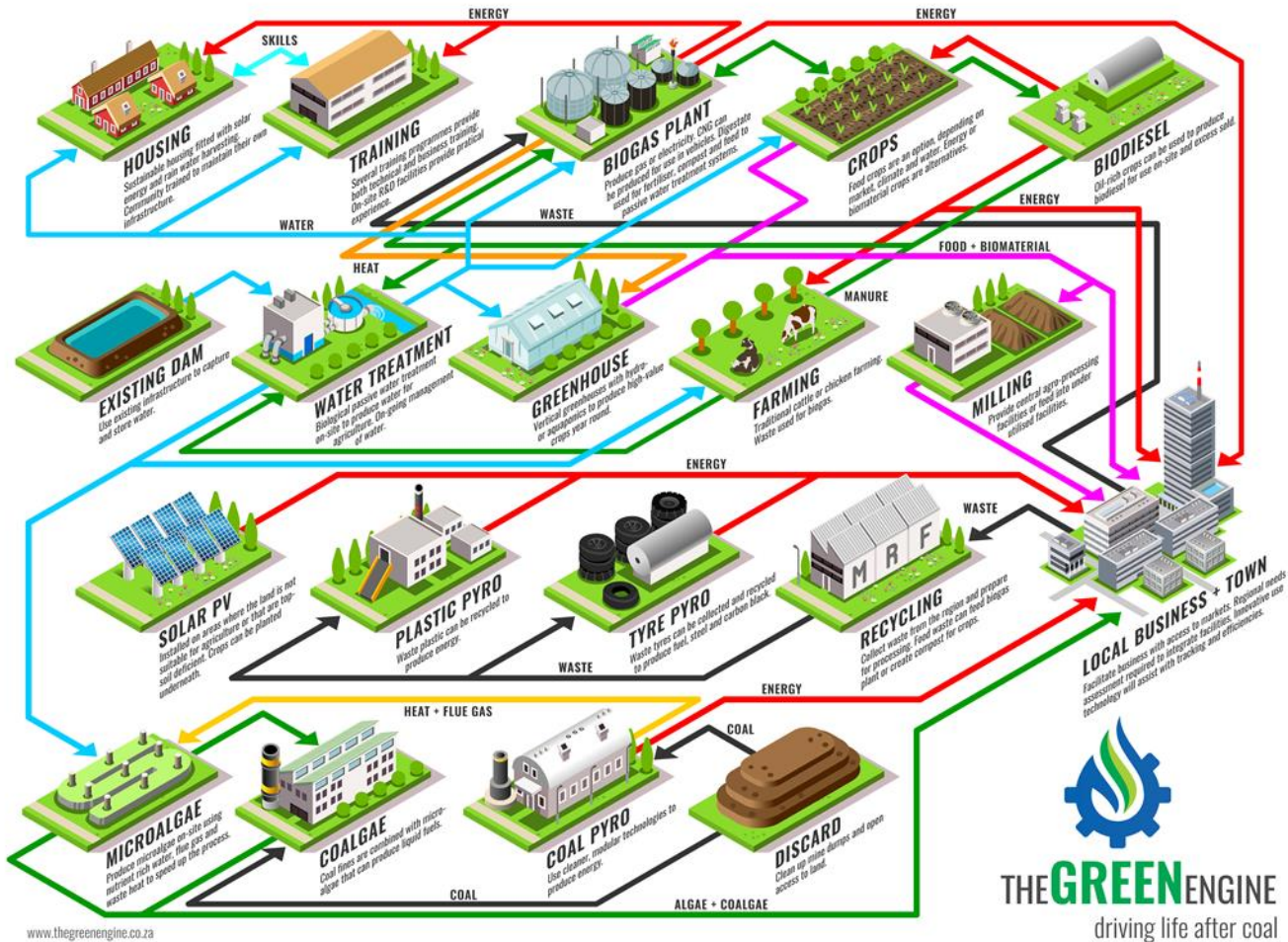
**A FUNDAMENTAL SHIFT FROM “BUSINESS AS USUAL” TO “SUSTAINABLE MINING” IS REQUIRED IN THE GLOBAL MINING INDUSTRY TODAY.**

- *TheGreenEngine* aims to drive life after coal and change the approach to mine closure.



*“A central, self-sustaining, agri-industrial hub that creates sustainable employment opportunities enabling local economic development, reduction of mine closure liabilities and improves our social licence to operate unlike current mine closure practices.”*

# THE GREENENGINE CONCEPT – THE MINE CLOSURE PARADIGM SHIFT



The concept aims to create a circular economy by integrating sustainable initiatives that form symbiotic linkages, where potentially one's waste becomes another's resource.

In this manner, the liabilities and the needs of the community are addressed, ensuring holistic mine closure.

Note: Final project selected will be based on the outcome of a regional needs and skills assessment.

# INTEGRATING WATER AND ENERGY.....

Use biological passive treatment on site

Use the topsoil deficient areas for solar PV, greenhouses and facilities

Capture water run-off to prevent contamination and reduce treatment

The benefits are

- Water becomes an asset to the community for alternate use
- Less topsoil to import
- Manage water ingress through solar energy
- Energy becomes available on site

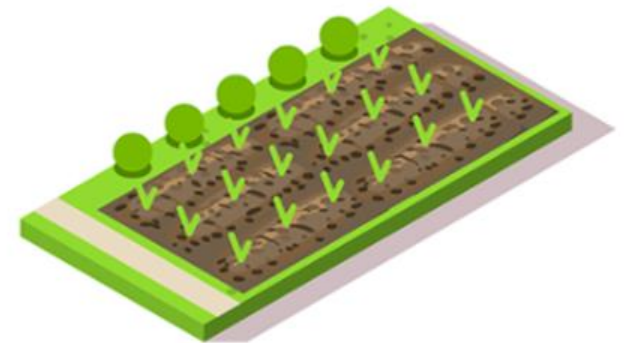




# OPPORTUNITIES : TRADITIONAL FARMING

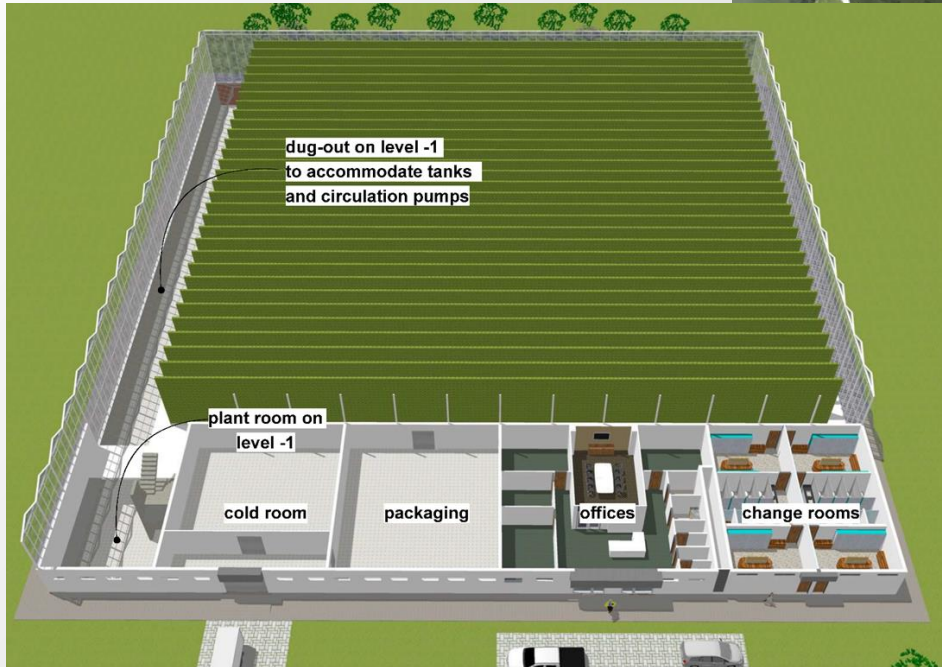


- Traditional crops
- Bio-Energy Crops
- Animal fodder
- Water availability for irrigation





# OPPORTUNITIES: “URBAN” FARMING WITH VERTICAL GREENHOUSES



- Assessing feasibility for implementation
- High value crop production
- 48 jobs
- Available off take markets



# OPPORTUNITIES: REPURPOSING WASTE TYRES



*Surety of Supply*

*Tyre Pyrolysis – 20 jobs*

- Oil production
- Carbon Black
- Steel wire

*Non-pyrolysis- tyre derived aggregate  
(Granulated & powdered Rubber):*

- **Roof Tiles**
- **Moulded rubber products**
- **Flooring & artificial turf (Sports)**
- **Civil engineering (erosion, stabilisation, embankments)**





# OPPORTUNITIES – WORK WEAR FOR MINING INDUSTRY

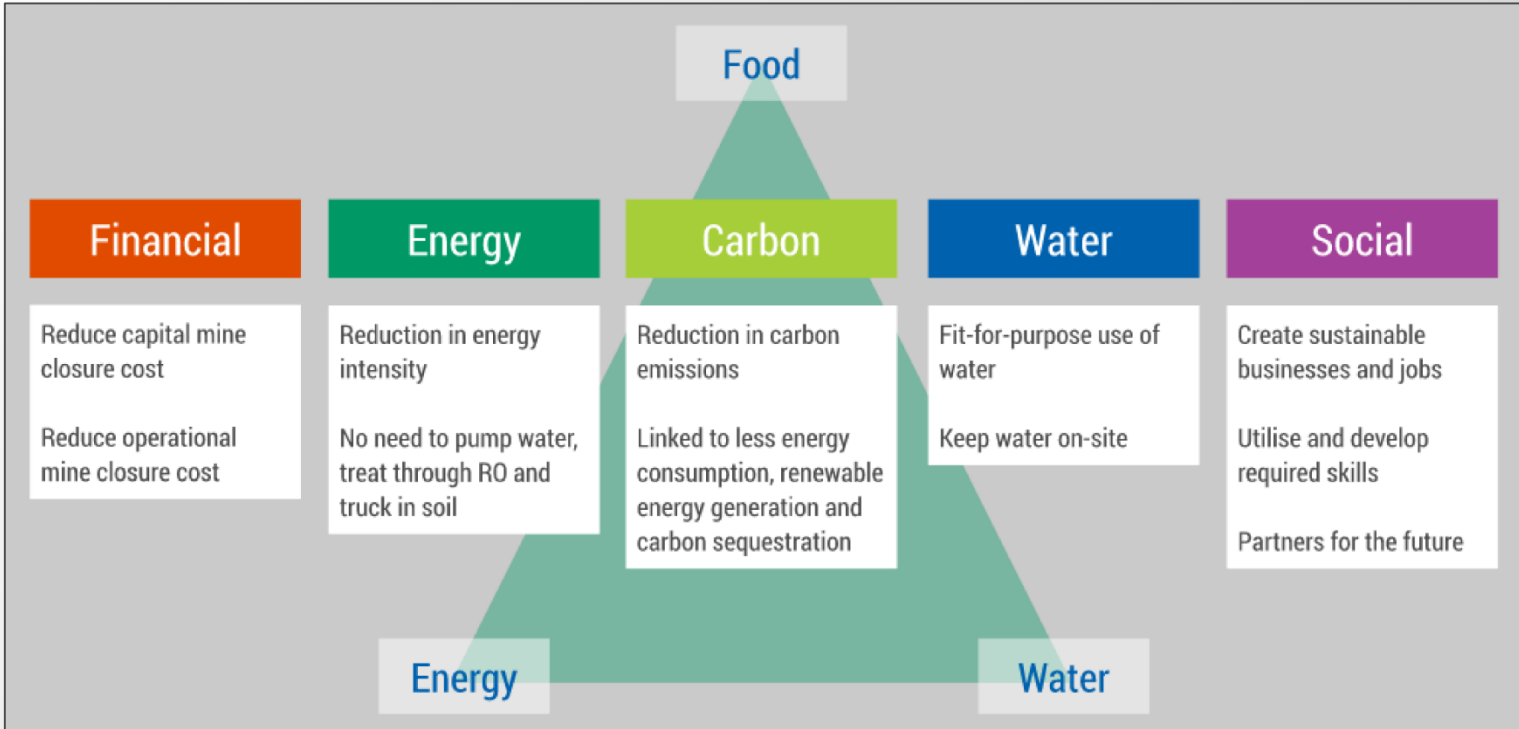


- Feed into Anglo Procurement/Supply Chain
- Can be expanded into Regional context to include other mining companies and industries
- Infrastructure can be tailored to suit requirements (electrical workshops)





# SUSTAINABILITY STRATEGY LINKS...



SUSTAINABLE DEVELOPMENT GOALS





# CONCLUSIONS

- Significant potential to create opportunities to link into Anglo supply chain/procurement
- A single mining company cannot achieve sustainable mine closure in isolation
- Collaboration within the mining industry and other partners is essential
- Mine closure does not mark the end, but rather the beginning of new opportunities



# THANK YOU

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