Presidential Climate Commission Just Transition Framework

Dialogue on Coal Value Chain

23 September 2021

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View on Climate Change and the Just Energy Transition

We agree that climate change is an existential threat	The Minerals Council understands the science of climate change that indicates that the concentrations of GHGs in the earth's atmosphere have been rising steadily since industrial revolution due to anthropogenic activities. This poses an existential threat to the planet and humankind.
Energy remains critical to development	Energy is critical for almost every aspect of human development. In South Africa coal was used as the dominant energy source to create the most industrialised country in Africa. Coal is currently critical to our current and future energy security, which in turn is critical for economic and human development.
Coal is currently critical to our economy	Coal related energy accounts for 45% of employment, 60% of GDP, 70% of export earnings. Coal is hugely important to specific communities (particularly Mpumalanga, affecting some 450k households).
We support a Just Energy Transition	Supportive of the implementation of measures to transition to a low carbon emissions economy through implementation of international and national policies, including e.g. the UNFCCC and its Paris Agreement on Climate Change as well as the National response policy
Green energy will create opportunities	We believe green energy will create significant opportunities for not only the evolution of a significant new green hydrogen economy in South Africa (using our comparative advantages), but also the development of new mining opportunities in green minerals.
Pragmatism is cricial	Any transition must therefore be grounded in systemic analysis of the risks, and must address those risks for all stakeholders, including the mining sector, in reducing carbon intensity
Addressing the needs of all stakeholders	This requires extensive financial and technical support, R&D and innovation into clean coal technologies, and the political will to accelerate the adoption of renewables into the energy mix, through the IRP… to ensure that both human, economic, and commercial risks are properly managed through the transition

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Energy remains critical to development

There is little doubt that energy is a critical input to human development and progress.

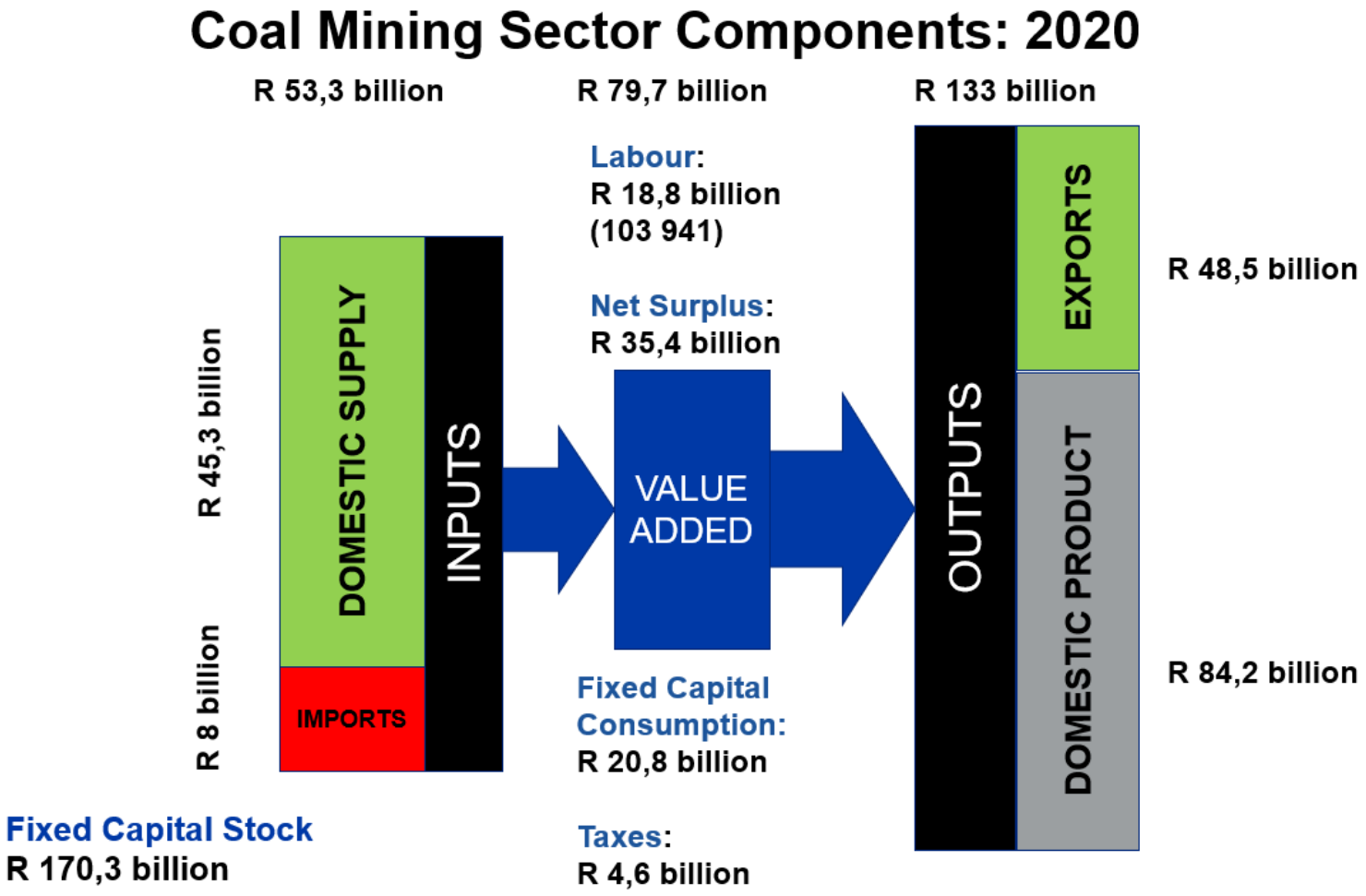
Using World Bank Development Indicators, it is shown that the use of energy is strongly related to almost every conceivable aspect of development. Wealth, health, nutrition, water, infrastructure, education, even life expectancy itself, are strongly and significantly related to the consumption of energy per capita. …..In the case of life expectancy, the change in expectancy was tracked against energy consumption over 40 or more years, in India, China, Indonesia and Brazil. It is concluded that energy is such a necessary element in development that it should be seen as a basic right.

Philip J. Lloyd, Cape Peninsula University of Technology, Energy Institute "The role of Energy in development".

South Africa's energy complex was founded on a significant coal sector.

- The Minerals and Energy complex was founded on the development of a significant coal mining sector over the past 100 years.
- This energy and associated energy intensive complex helped to develop the most industrialized country in Africa.

The coal value chain is deeply embedded across in SA society, generating over R80b directly in GDP



Key items

- The coal sector contributes some **R65b** to Mpumalanga's economy directly (20%)
- This represents some 85% of the total contribution of coal directly to the economy, with other major centres being around Lephalele
- Indirectly, coal contributes a further **R45b** to the national economy through upstream linkages, i.e. for the industries that supply the coal sector
- It further provides some R19b in income for employees across the sector

Sources: SA Reserve Bank, Statistics South Africa, Minerals Council South Africa

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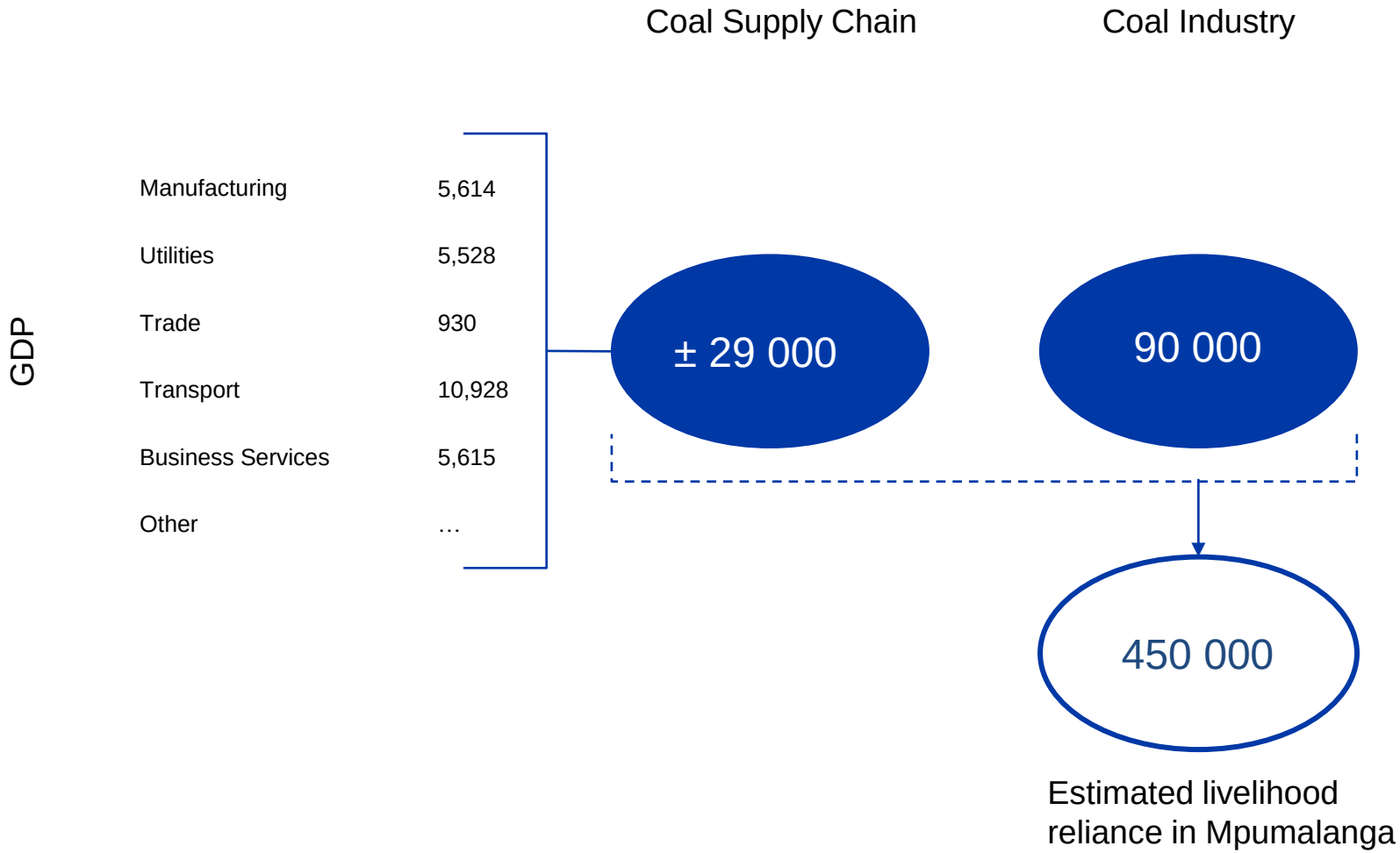
It creates employment for 120 000 people and supports >500 000 households nationally



Key items

- It employees approximately **90 000 people** in Mpumalanga (11% of total workforce)
- Provides for livelihoods for an estimated **450 000 households** in Mpumalanga (36% of the total)
- It also creates job opportunities for some **29 000 people** in the various upstream supply industries for coal
- Lephalele (Limpopo) is also a major coal area that has a similar (though smaller) reliance on coal

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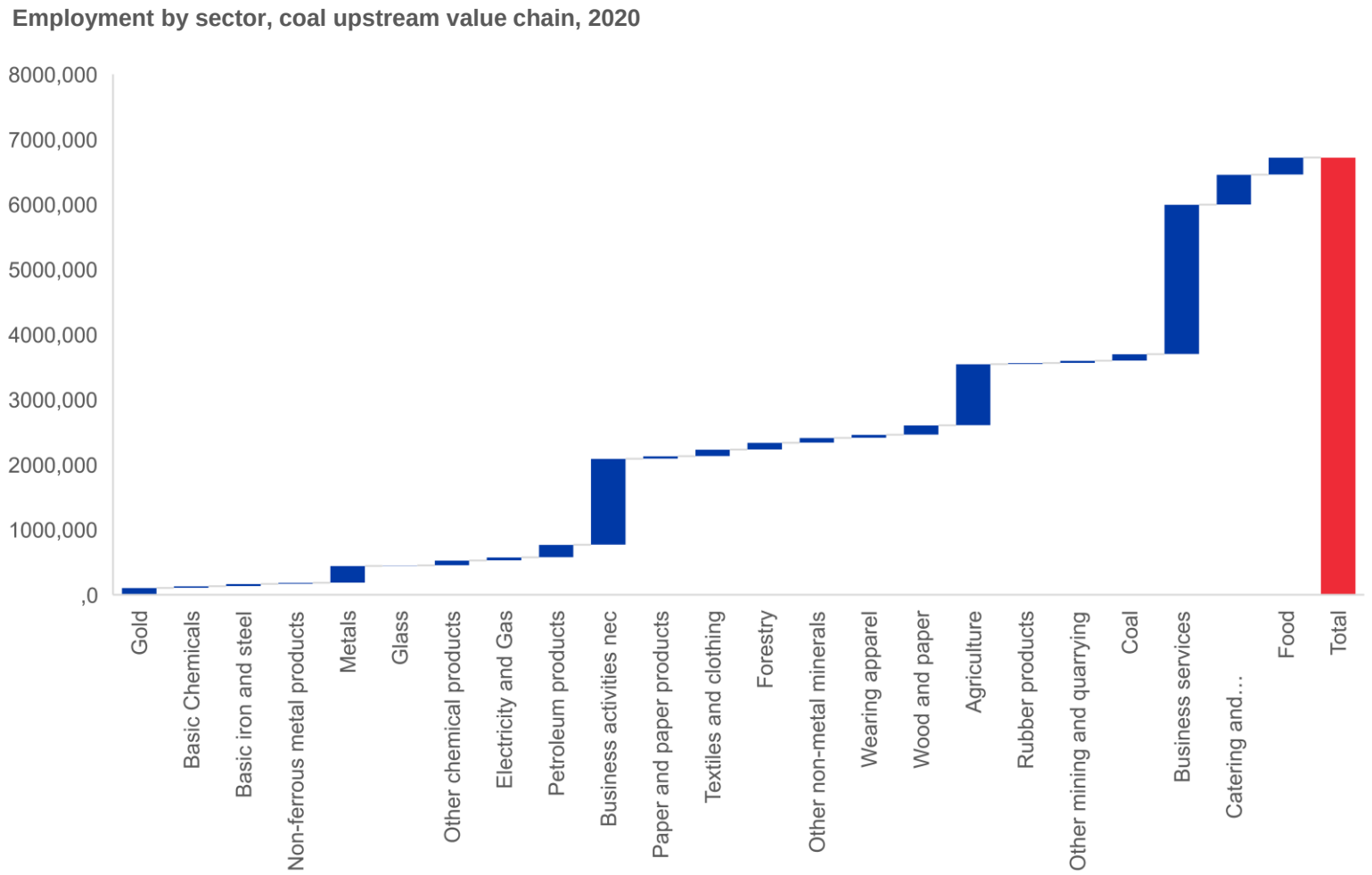
Nearly 45% of employed people in South Africa work in energy intensive sectors



Key items

- Energy intensive sectors employ 6.7m people across the country, approximately 45% of all employed people
- Major energy dependent sectors include
  - Metals
  - Business activities and services
  - Agriculture, food processing
  - Catering and accommodation

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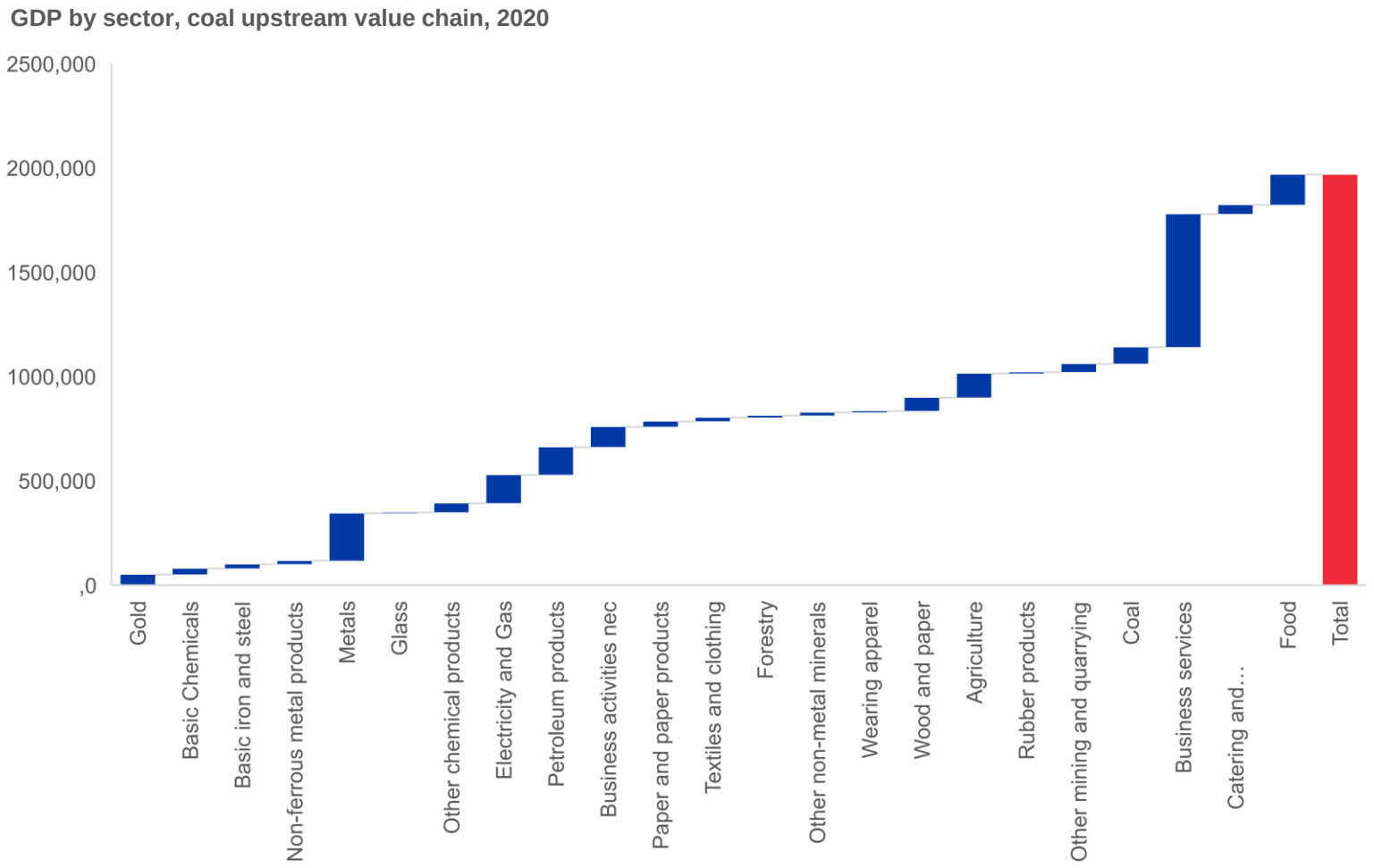
Over 61% of total GDP in the country is generated by the same energy intensive sectors



Key items

- In addition to primary and secondary industries, the business service sector increasingly relies on energy availability
- The 4th Industrial Revolution is, literally, built on constant and reliable access to electricity – thus an effective digital transformation of society cannot be achieved without energy security

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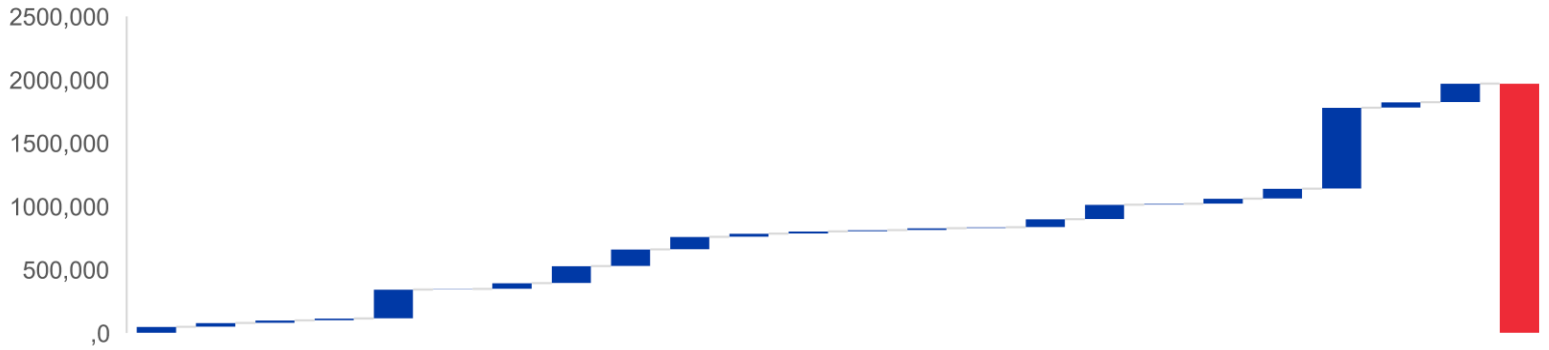
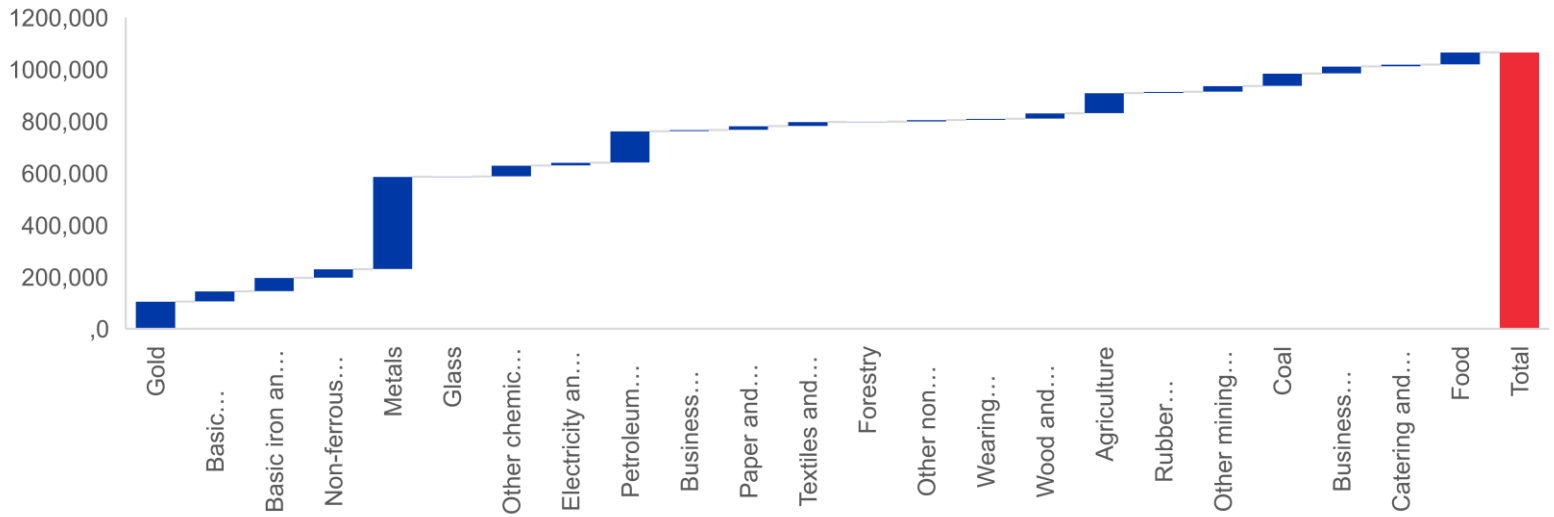
While the same sectors are responsible for 70% of exports, and 60% of all intermediate supply to the economy

Intermediate supply to the economy by sector, coal upstream value chain, 2020



Export contribution by sector, coal upstream value chain, 2020



Key items

- With SA remaining an exporter of minerals and metals, availability of foreign exchange can be affected by the ability of primary sectors to effectively extract and export commodities
- Given limited other export opportunities, lower competitive positioning of export oriented firms will affect national balance of payments considerations over the medium term

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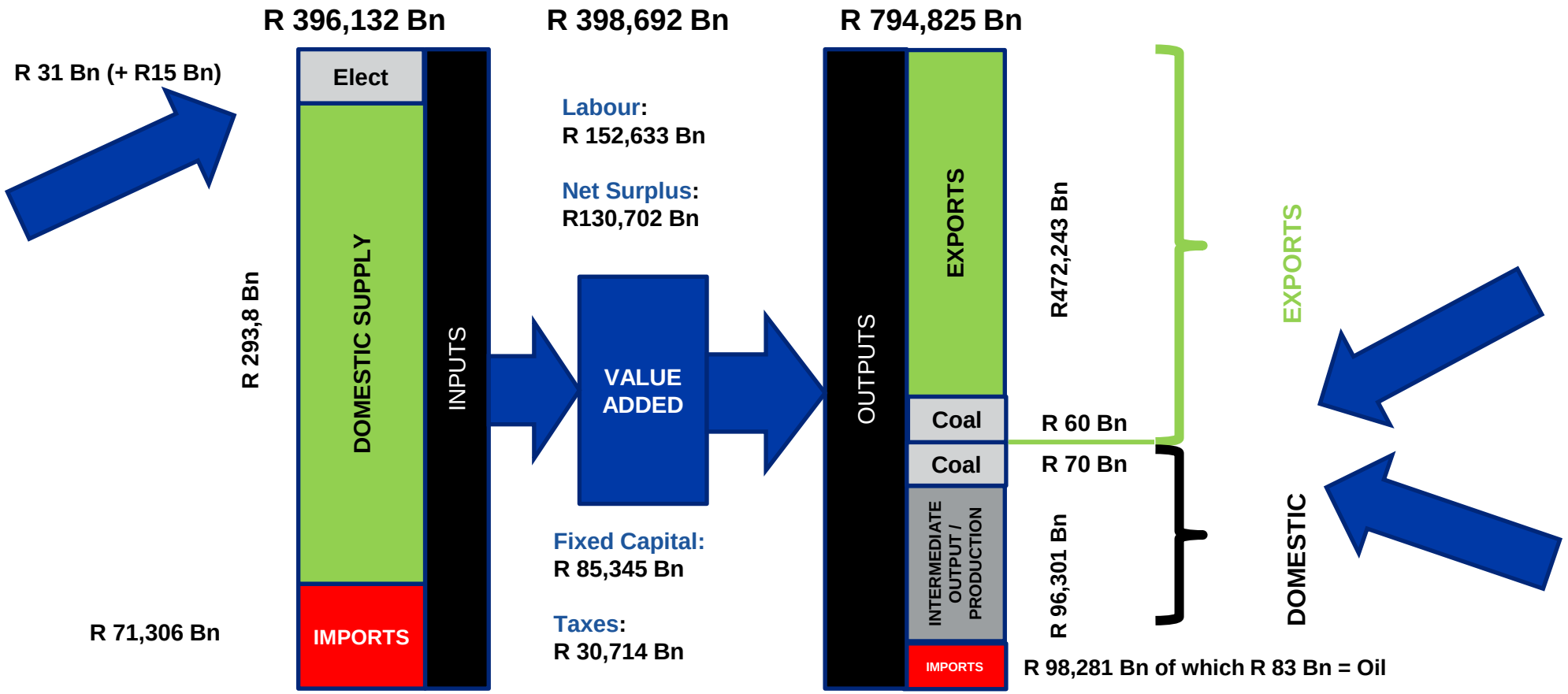
Looking beyond the coal sector, mining is connected to R800b worth of value to the local and international market



Sources: Statistics South Africa, Minerals Council SA, Quantec

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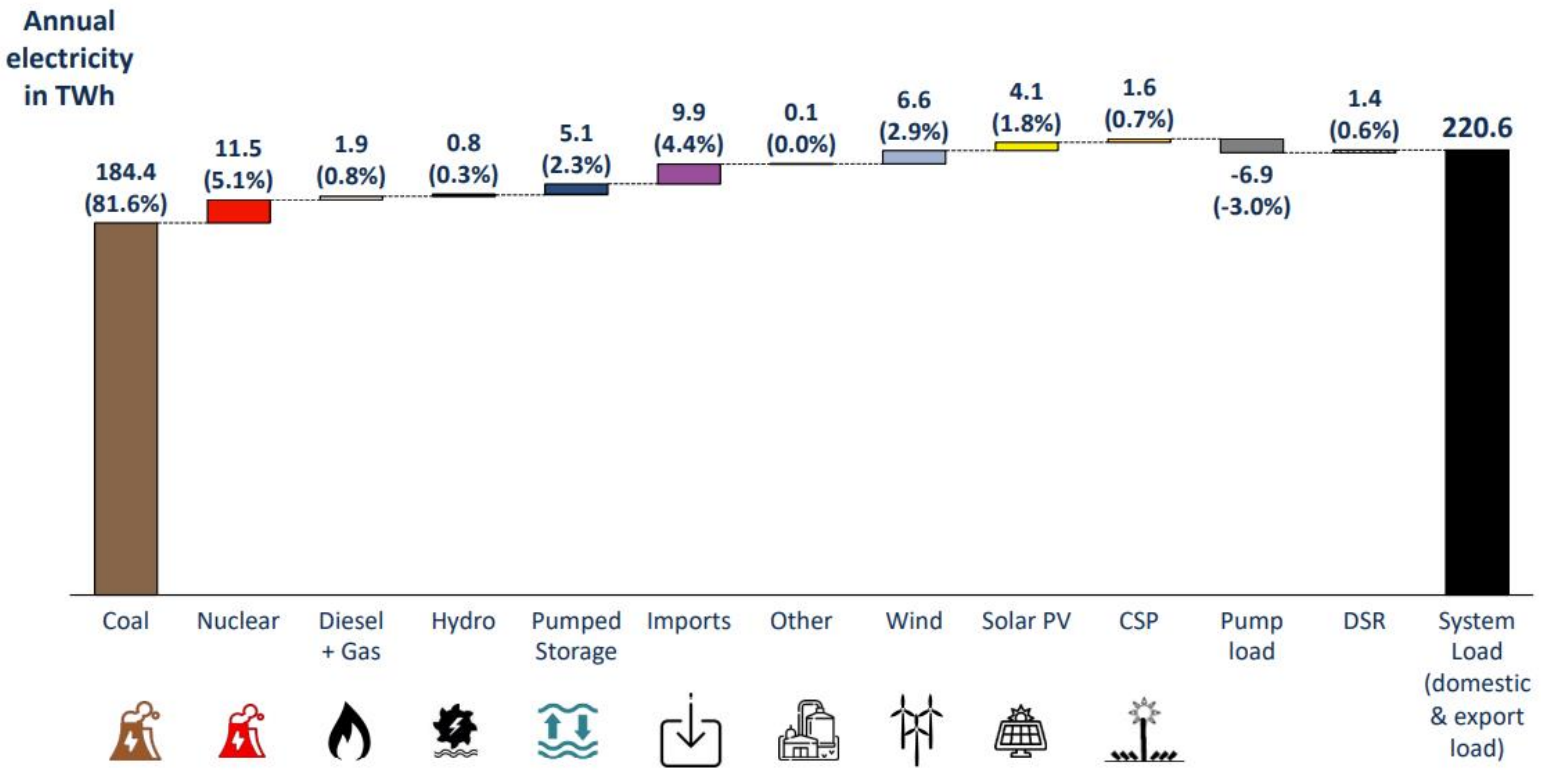
Coal remains a critical component of electricity supply

In 2020, coal dominated the energy mix at 184 TWh of the 221 TWh of total system load whilst PV, wind and CSP contributed 12.4 TWh (5.6%)

Actuals captured in wholesale market for Jan-Dec 2020 (i.e. without self-consumption of embedded plants)



Calitz/Wright, CSIR, Statistics of utility-scale power generation in South Africa in 2020

Key items

- Coal and nuclear tend to provide the consistent baseload supply, and have capacity factors of 50-90%.
- Renewables share has grown, but remains intermittent depending on wind, rain, cloud cover. Renewable capacity factors range from 15%-40%
- The lower the capacity factor, the more likely the system is susceptible to drops in performance and potential disruptions.

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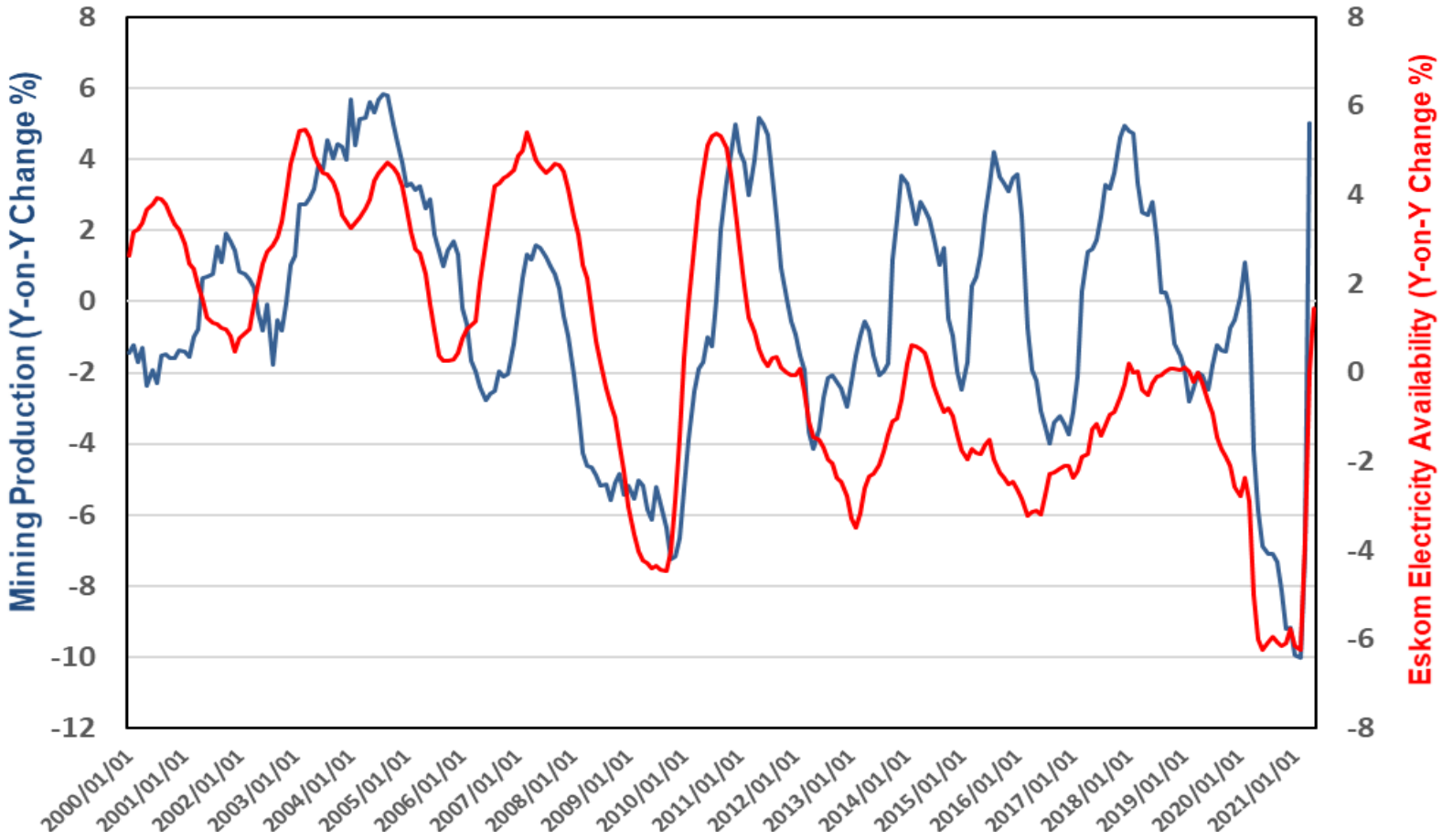
The mining sector (with its own critical contribution to the economy) is directly linked to the availability of electricity



Key items

- Mining requires 24 hour, stable, baseload power
- For health and safety, access, and production reasons, mines cannot function effectively without guaranteed access to power
- While other industries (particularly tertiary industries such as business services or trade) can operate adequately on back-up power, this is not a feasible option for energy-critical operations such as in mining (and in some manufacturing environments)

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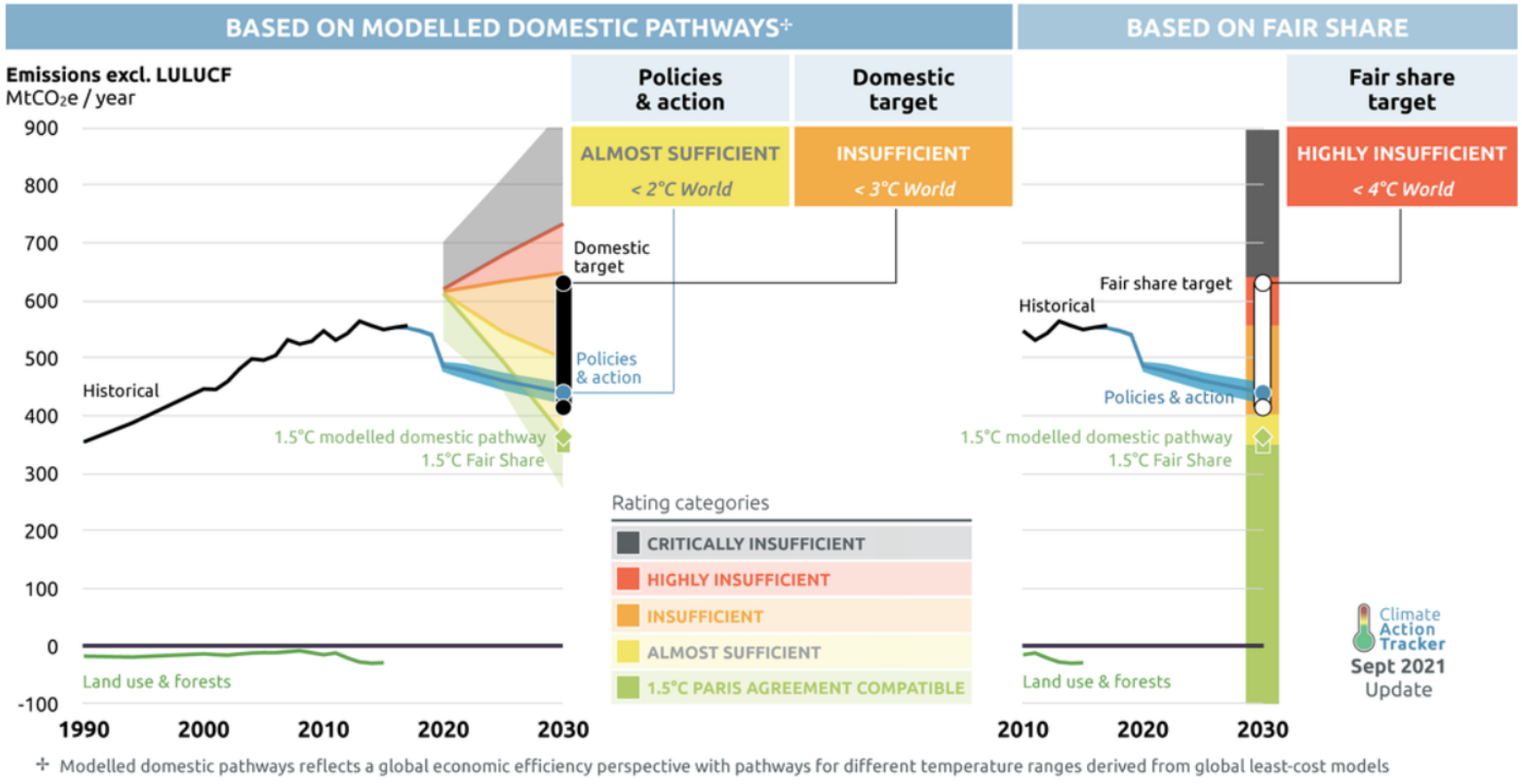
Green energy will create material opportunities

1. South Africa does have a unique opportunity to develop a significant green hydrogen economy, given the country's material green energy comparative advantages. The development of a pragmatic incentive based green hydrogen roadmap, strategy and implementation done in partnership with the private sector could be a game changer.
   A. The Minerals Council installed Africa's first base-load hydrogen platinum fuel cell, in partnership with DTI and IDC in 2014.
   B. A number of mining companies are driving hydrogen strategies for cleaner safer vehicles and primary energy. (E.G. Impala's hydrogen fork lift program, Anglo's 300 ton hydrogen fuel cell dump truck program, etc.).

2. Green energy will create material opportunities for the development of mines to supply future green energy minerals (platinum, manganese, lithium, etc.).

3. The Minerals Council members have already implemented energy efficiency technology measures and are processing 2 GW of new renewable supplementary embedded generation plants

Our position is that systemic policy interventions, and other support is required to drive a risk-managed decarbonisation journey for South Africa



Key items

- The mining industry is committed to the systematic, planned decarbonisation process, much done by member companies to reduce GHG emissions.
- The recently cabinet approved Nationally Determined Contributions (NDC) provides for a more ambitious target for GHG emissions reductions
- However, Minerals Council does not see that the increased immediate term risks related to this ambitious target are being adequately addressed (especially risks to electricity supply)
- Technical, Financial and Capacity Building together with enabling policy framework is required for SA to meet the NDC

Sources: Climate Action Tracker, DFFE

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We support the transition to a low-carbon economy and society – contingent on doing it judiciously and systemically

1. The Minerals Council supports the transition to a lower carbon economy, but also the implementation of a properly planned Just Energy Transition
   a. Several mining companies have committed to specific targets.
2. The Energy Intensive component of the economy (currently driven by coal) is a fundamental enabler for society as a whole, and the broader mining industry
3. Coal remains a critical component of energy provision and economic development. There is acceptance that this will decline over time (as is already happening), but coal will remain critical to baseload going forward
4. We support a Just Energy Transition based on a compelling plan that understands the socio-economic implications of the transitions, and leaves no-one behind (Partnerships are key).
5. Pragmatism must prevail during the transition, to minimise disruptions to reliable electricity supply
6. We support incentives and funding towards the development of new technologies that enable a low-carbon transition pathway, including clean coal technologies
7. We support the implementation of effective policy measures to accelerate the adoption of the green hydrogen economy and renewable energies into the SA energy mix, while providing mechanisms to manage the Just Energy Transition and the declining role of coal over time

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