DDP BIICS

Lessons for deep decarbonization in South Africa

Short term strategic policy action and critical international enablers towards informed by long term deep decarbonisation pathways

COP26 event - Country analysis on Long-Term Strategies in emerging economies

7th November 2021

DDP DEEP DECARBONIZATION PATHWAYS

IDDRI

Techno-economic analysis and policy questions

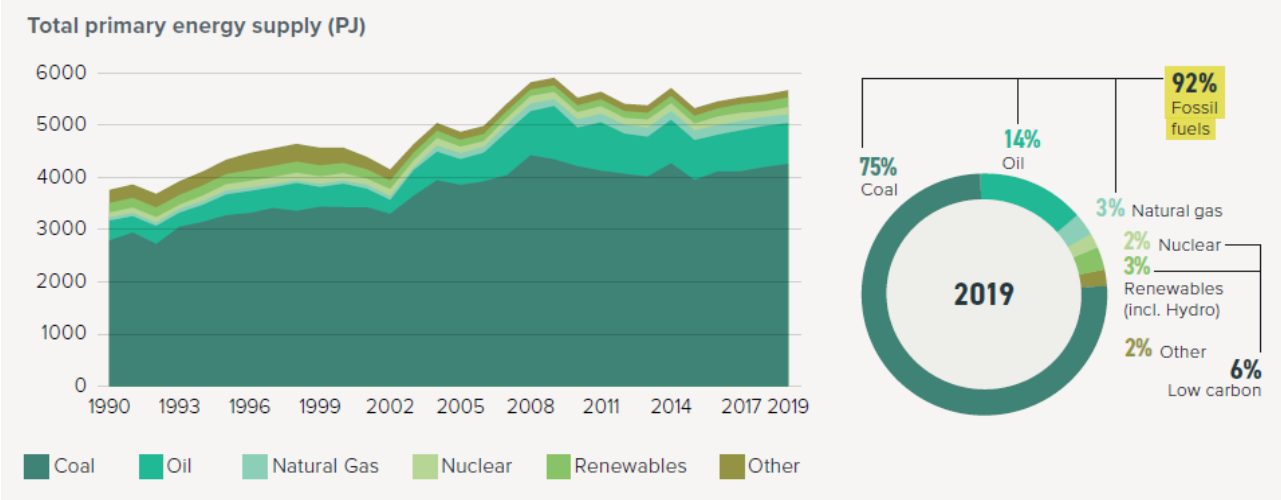
Question 1
What are **priority techno-economic measures** in a deep decarbonisation scenario?
- What measures need to implemented **in the short term** to get onto the DDS

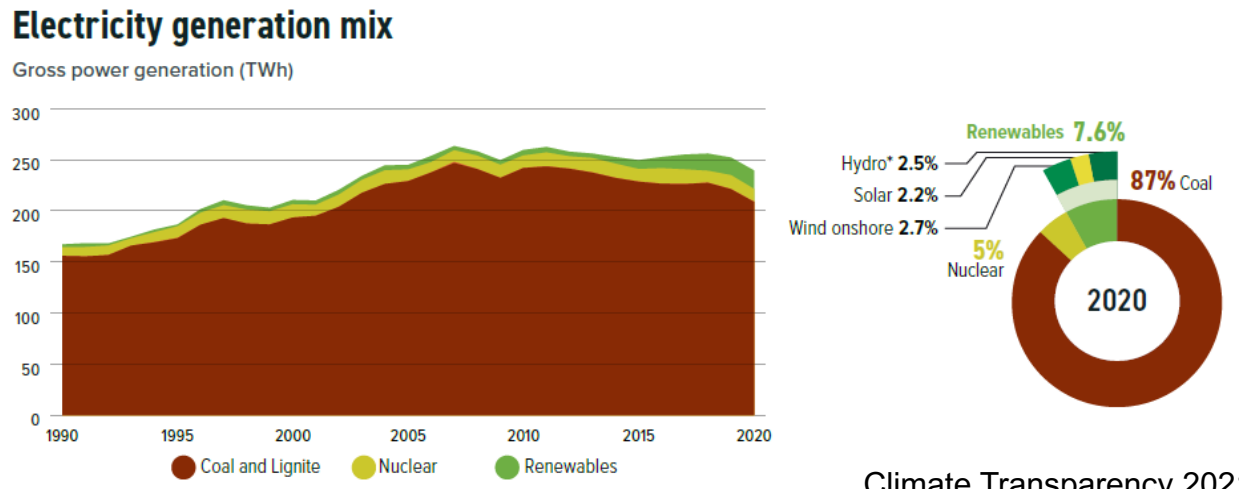
The DDS by (DDP) definition addresses emissions **and socio-economic transitions**

Question 2
What are the **corresponding actual short-term strategic strategic policy actions**, by actual existing government and others, that will lead to implementation of these techno-economic measures

Context to South Africa

- South Africa is highly coal dependent
- Large scale unemployment (**~41%** for youth)
- Economic growth has been stagnant for years
- Emissions intensive; mostly in the **power sector**
- RE costs have declined, coal costs have increased
- South Africa has abundant solar and wind resources

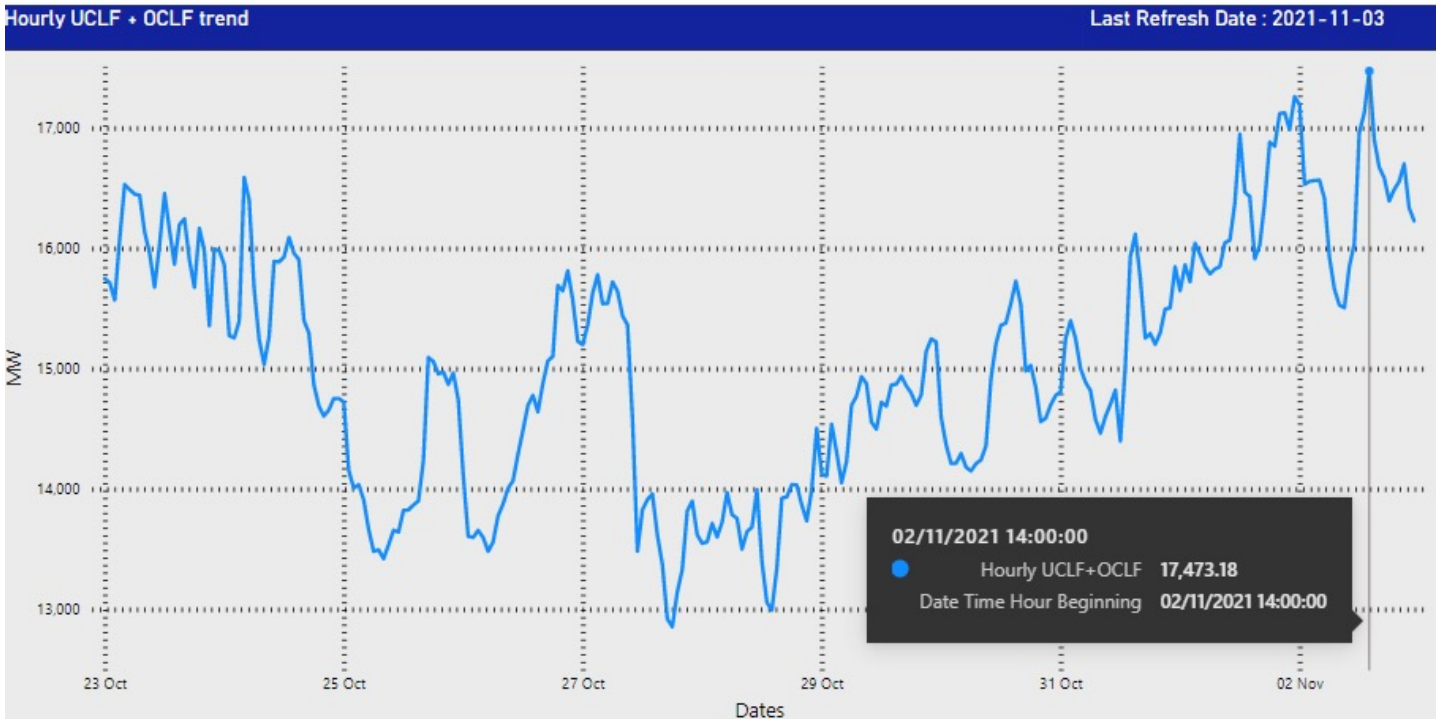




Climate Transparency 2021

Context: Power sector

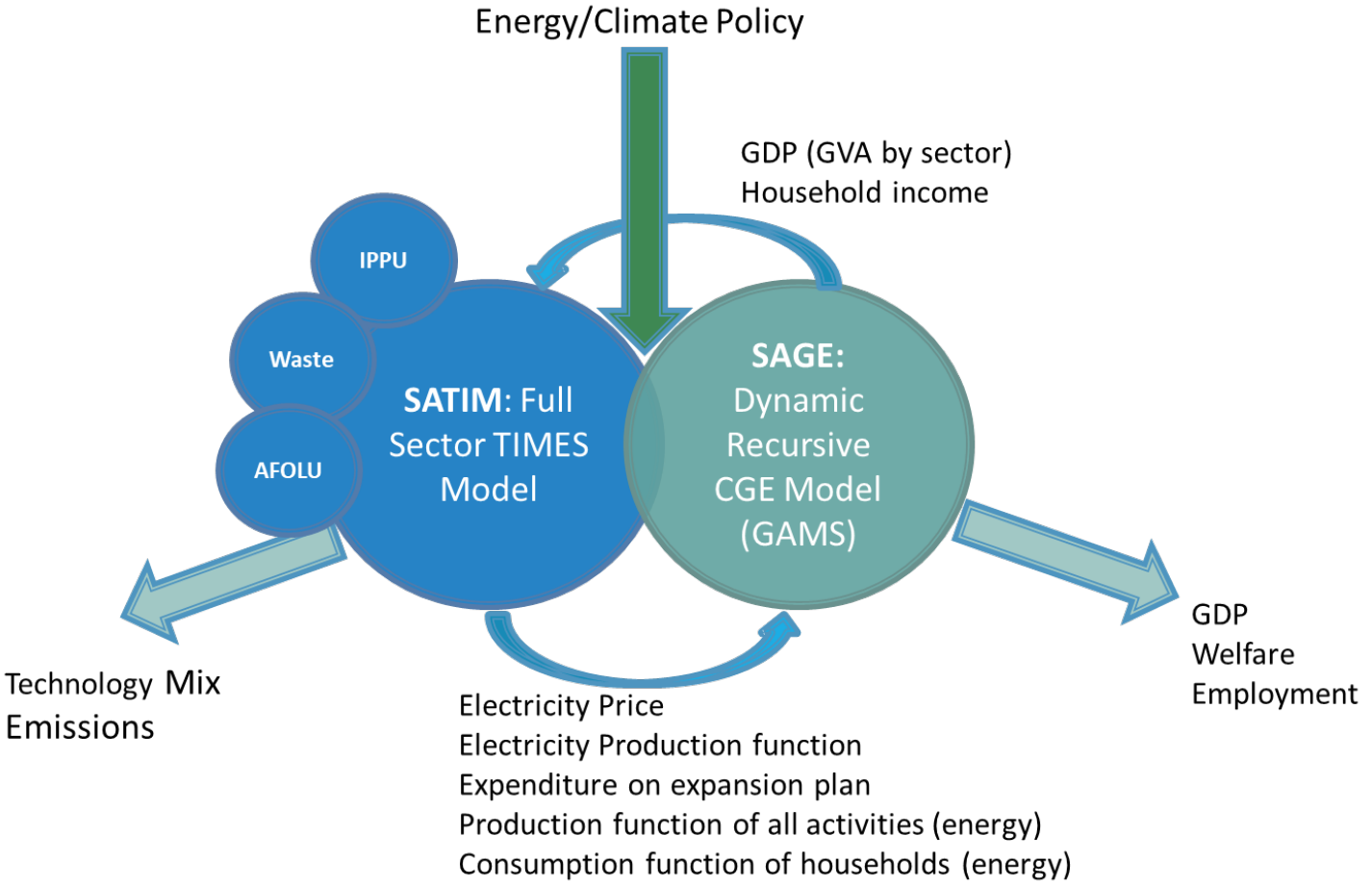
- Aging coal fleet
- Plant breakdowns leading to **rolling blackouts**



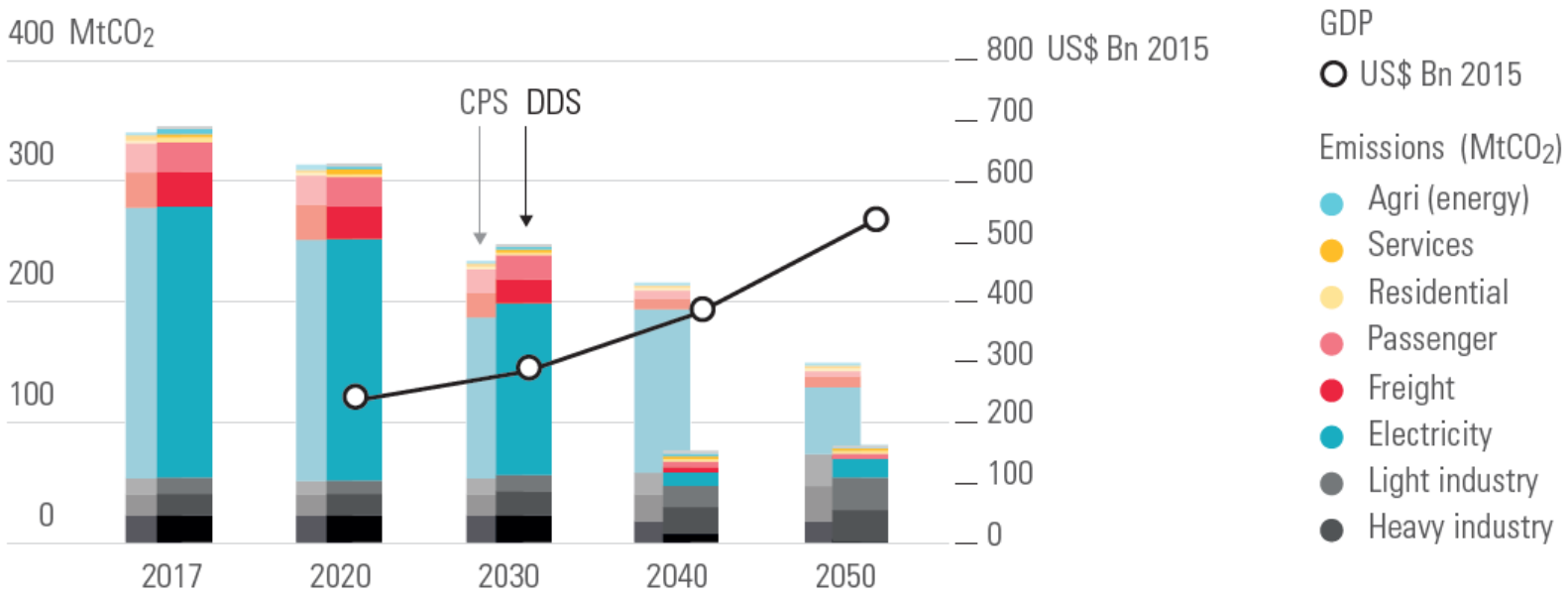
https://www.eskom.co.za/dataportal/outage-performance/hourly-uclfoclf-trend/

Modelling and methodology: BIICS

SATIMGE:
energy and
economy model



Key results



- Emissions in CPS and DDS scenarios are similar (large rollout of RE in power in current policies).
- Long term: no significant impact on GDP
- Short term: requires effective implementation of Gov planned RE buildout, and to be *accelerated* if to avoid further harm to economy (jobs) from loadshedding

Policy question

Question 2 - What are the **corresponding actual short-term strategic strategic policy actions**, by actual existing government and others, that will lead to implementation of these techno-economic measures

Techno-socio/economic challenge

- **20GW over 2020-2030 accounts for 90% of emissions reductions on DDS**
- There is a chronic 4000-8000MW power shortage linked to economic stagnation
- Nationa monopoly utility finacial and performance crises
- Serious and worsening inequaility and unemployment and poverty

Policy challenge

WHAT concrete policy action to urgently initiate and accelerate getting 20GW (at least) of renewable energy onto the grid

- To solve power shortage
- To alleviate economic stagnation
- To get onto a the deep decarbonisarion pathway

Electricity institutional context and policy implementation history

*South Africa has the legal, regulatory, institutional, technical and financial** capacity to implement renewable energy at the scale required until 2030*

Government maintains a tight top-down Command & Control institutional grip on electricity supply

- *The DMRE promotes coal and is developing and implementing the renewable policy*
- *DMRE controls all additions of generation capacity to the grid*

This system was made to work once in the past to add substantial renewable energy to the grid

Renewable Energy Independent Power Producer Programme (REI4P) 2011-2015

➔ *6,000MW of utility scale, privately owned, independent power producers awarded sovereign backed power purchase agreements*

***Although Eskom can't currently finance this it can be financed through a private sector independent power producer programme*

Renewable electricity policy implementation history

Renewable Energy Independent Power Producer Programme – REI4P
REI4P stopped by a combination of coal interests and state-capture in 2015

Implementation paralysis since then

No substantial new generation contracted since 2015 despite increasingly serious power shortages

> *No new contracting processes since 2014 have actually resulted in new contracts:*
> *… not in renewable energy, coal or gas despite a number of attempts*

Electricity policy challenges

Overarching socio-political challenges to the transition

Fossil vs. renewable energy political economy struggle and alleged corruption

Important anti-privatisation political constituencies

- *View the RE14P via privately-owned IPPs as "privatisation through the back door"*

Distribution of costs and benefits of the transition

- *Huge costs to coal-related workes, communities and industries*
- *Benefits to renewable energy industries*
  - *Much of this to private sector and foreign developers, financiers and manufacturers of renewable energy equipment*

Severe social costs especially of coal phase out

Electricity policy and institutional context
What HAS worked so far?

While it is important to list the key policy challenges we won't delve into them here
Detailed policy analysis at - https://ddpinitiative.org/category/publication/#gallery-1

Instead we refer to two examples of where policy has overcome these problems and then make policy recommendations based on these and latest successful policy initiatives

Electricity policy and institutional context
What HAS worked institionally to overcome socio political challenges so far?

The only two examples of making the system work for substantial renewable energy successes have involved renewable energy implementation (effectively) being taken out of the Department of Mineral Resources and Energy - DMRE

Example 1- ***REI4P ➔ IPP Office set up outside 'normal DME lines of command'***

Example 2 - A ***dedicated new function inside presidency called Operation Vulindlela recently forced the DMRE into major reform****.*

- Now allowed for IPPS of up to 100MW of renewable energy to be connected to grid by independent for wheeling to third parties

Operation Vulindlela (OV) has demonstrated a successful institutional solution to the challenges that the DMRE faces while it continues to carry out both minerals promotion and electricity planning and implementation. *This double function exposes it to politically and economically powerful incumbent coal and fossil interests, which have been embroliled in state capture, while at the same time the DMRE has to manage the imperatives of a transition that will involve substantial economic losses for these same interests.*

Priority short term strategic policy actions
To initiate and accelerate getting 20GW of wind and PV onto the grid

In the very short term

Operation Vulindlela (OV) to urgently take charge of accelerating renewable energy deployment

- Interim solution of the intractable issue of DMRE having to promote coal and implement the renewable energy programme

Direct DMRE to implement the IRP2019** and accelerate it

At the same time

Separate out the energy portfolio from minerals in the Department of Mineral Resources and Energy (DMRE) back into a Department of Energy as previously structured when the REI4P was launched.

- Permanent solution…

The new DOE to remove planned new coal from IRP2019 and expand the IRP2019 and accelerate it

***The IRP is the official generation expansion plan – a new version was primulgated in 2019 and has 20GW of renewable energy in it, but none of this has been contracted despite the crippling 4-8GW electricity shortage*

The IRP and the DDS are very similar from a renewable energy perspective

Short term strategic policy actions
To put into effect the implementation of the IRP renewable energy generation

Extend renewable energy electricity programme to public and community ownership

Programmes that involve state and community ownership need to be added to the existing private sector REI4P

- *Eskom has announced a large scale renewable energy plan*
- *Municipalities have announced schemes*
- *Community and household schemes*

➔ *OV and the new DOE to drive these: DMRE has been a hindrance/ resisted*

Extend active renewable energy programme to all scales generation

Utility-scale, medium-scale distributed and embedded small-scale, public and privately-owned are all elements in an optimally functional system: all need implementation as rapidly as possible

Short term strategic policy actions
To put into effect the implementation of the IRP renewable energy generation

Localisation

State-backed, stable policy and for renewable energy generation plant investments create a 'pipeline of utiity scale projects' over the medium term and hence stable domestic demand for renewable energy equipment as a basis to establish a large renewable energy equipment manufacturing industry

➔ *This is where most of the jobs are*

Matching/supporting integrated industrial policy for renewable energy equipment manufacturing

This is where most employment potential is

Can re-invigorate declining manufacturing sector

Locate new renewable energy equipment manufacturing in coal industrial areas

Short term strategic policy actions

To put into effect the implementation of the IRP renewable energy generation

Just transition

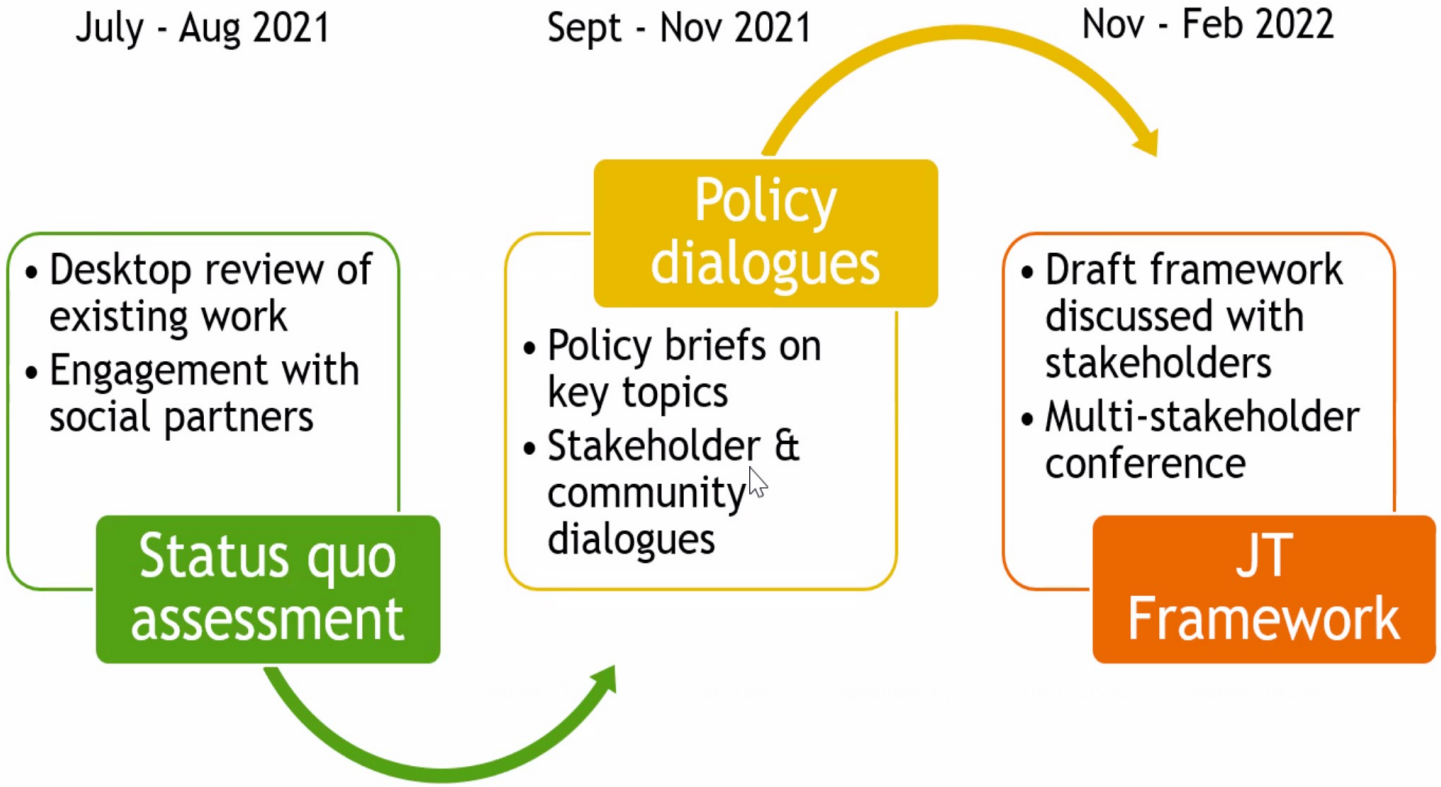
- *Social costs of coal phase out in 2020-2030*
- *Transition costs / additional costs from 2030-3040 of R400Bn additional renewable energy investments of DDS above CPS*
- Additional investments to accelerate faster than the 20GW from 2020-2030
- Assistance to Eskom, that is in a finacial crisis to maintain a stable system and rapidly build out the grid for renewable energy connections

Short term strategic policy actions
To put into effect the implementation of the IRP renewable energy generation

A Just Transition (JT) is being formulated by the Presidential Climate Commission: encompasses:

Prodedural justice
Distributional justice
Restorative justice

PCC process for developing framework



DEEP DECARBONIZAT PATHWAYS

Aim is to **solicit stakeholder inputs** about just transition, **build trust** and **understanding between parties**, and broker a **social consensus** regarding principal elements of a just transition

Short term strategic policy actions
To put into effect the implementation of the IRP renewable energy generation

A Just Energy Transition Transaction promoted by the President last year at Climate Leaders Summit

The South African cabinet recently endorsed a **JUST TRANSITION FINACING FACILITY**

South Africa, France, Germany, the UnitedKingdom and the United States, as well as the European Union

Political Declaration issued 2 November 2021 to establish a partnership international partnership to support a just transition

Partner countries will mobilise an initial$8.5 billion (R131 billion) over the next three to five years through a range of instruments, including grants andconcessional finance, to support the implementation of our revised NDC through a just transition to a low carbon andclimate resilient economy.

Thank-you!

Hard to abate sectors - Heavy industry

Industry
A 'Deep Dive was done for Green Iron production

It is likely to become techno-economically viable by 2030 for export to Europe

Policy recommendation
Engage European Commission to pave the way for fair and open access to EU low carbon commodity, intermediate and retail product markets

Other main heavy industry sectors don't have clear pathways as yet but iron/steel work indicates that where there is a will there might well be a way.

Thank-you!