



Proposed SETs allocation in support of South Africa's updated Nationally Determined Contribution

Chief Directorate: Climate Change Mitigation and Specialist Monitoring Services

September 2024

Presentation Outline

1. Background to the Mitigation system as per the proposed climate bill
2. SETs implementation process
3. SETs allocation (Quantified and Qualitative targets)
4. Key messages from the SETs allocation process



ELEMENTS OF THE CLIMATE MITIGATION SYSTEM?

Mitigation Goal

National GHG Emissions Trajectory Range, against which outcome of all mitigation actions will be measured

Monitoring of GHG emissions

Data collection, GHG inventory and M&E system

Sectoral Targets

Defining Desired Emission Reduction Outcomes (DEROs), now **Sectoral Emissions Targets (SETs)**, for each significant sector or sub-sector of the economy

Industry emissions limits

Adopting a **carbon budget** approach to provide for flexibility and least cost mitigation in sectors and/or sub-sectors

Industry

implementation

Mitigation plans to demonstrate how mitigation by companies is to be achieved

Sector policies to drive mitigation

Policies and Measures (PAMS), economic measures to drive mitigation (e.g. IRP 2019 – REIPPP)



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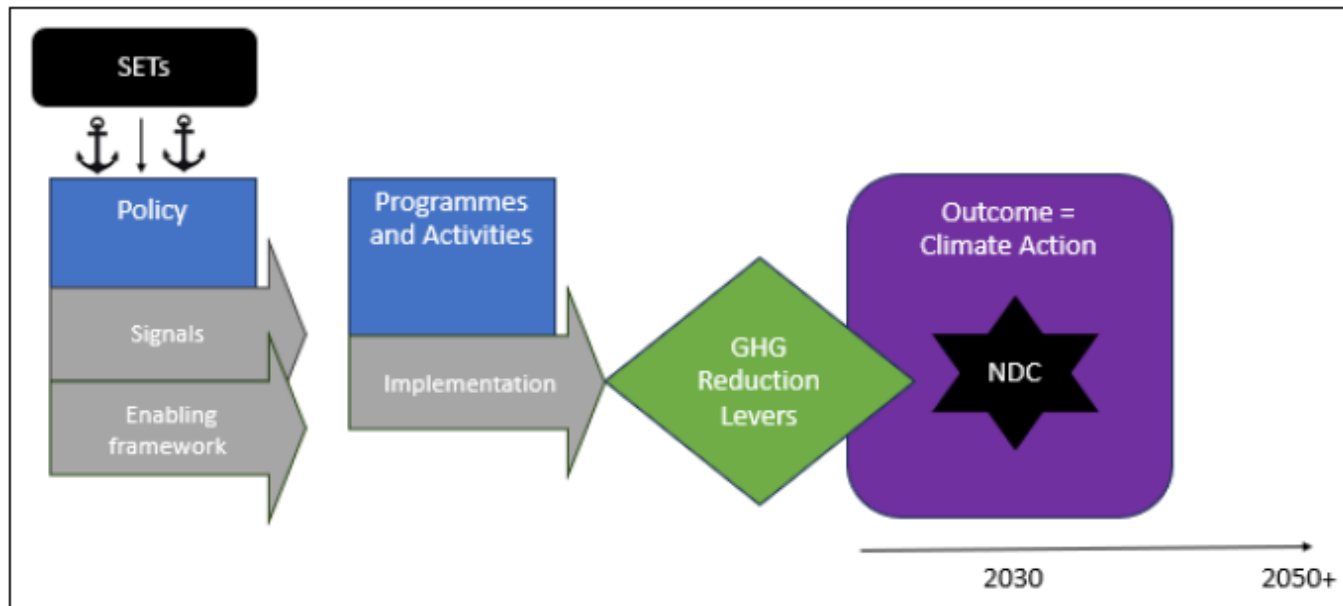
BACKGROUND: SECTORAL EMISSION TARGETS

- The National Climate Change Bill defines SETs as the greenhouse gas emissions reduction goals, either qualitative or quantitative, applicable to sectors or sub-sectors over a period of time (determined for three rolling 5-year periods and will be reviewed every 5 years in line with **NDC**).
- PAMs may include **regulatory instruments** (specifically legislation, regulations and standards), **economic instruments** (for example, incentives and taxes), **government procurement programmes** or **direct investment by government**
- Sectoral policies and measures (**PAMs**) are critical for the implementation of the SETs.
- **Integrated Resource Plan, National Energy Efficiency Strategy, Green Transport Strategy and National Waste Management Strategy** are some of the examples of PAMs that would help sector implement and meet their allocated SETs for their respective sectors
- Most of these PAMs already form part of the **South African Low Emission Development Strategy (LEDS)** which will also serve as a vehicle to drive the implementation of our NDC.



Defining SETs

- SETs are aligned to the NDC - revised every 5 years with NDC update
- Each national government department tasked with developing and implementing PAMS to ensure emission reductions in their respective sectors/sub-sectors
- In future, sector departments will need to align, adjust, upscale and/or develop PAMS to transition their respective sector to being low carbon



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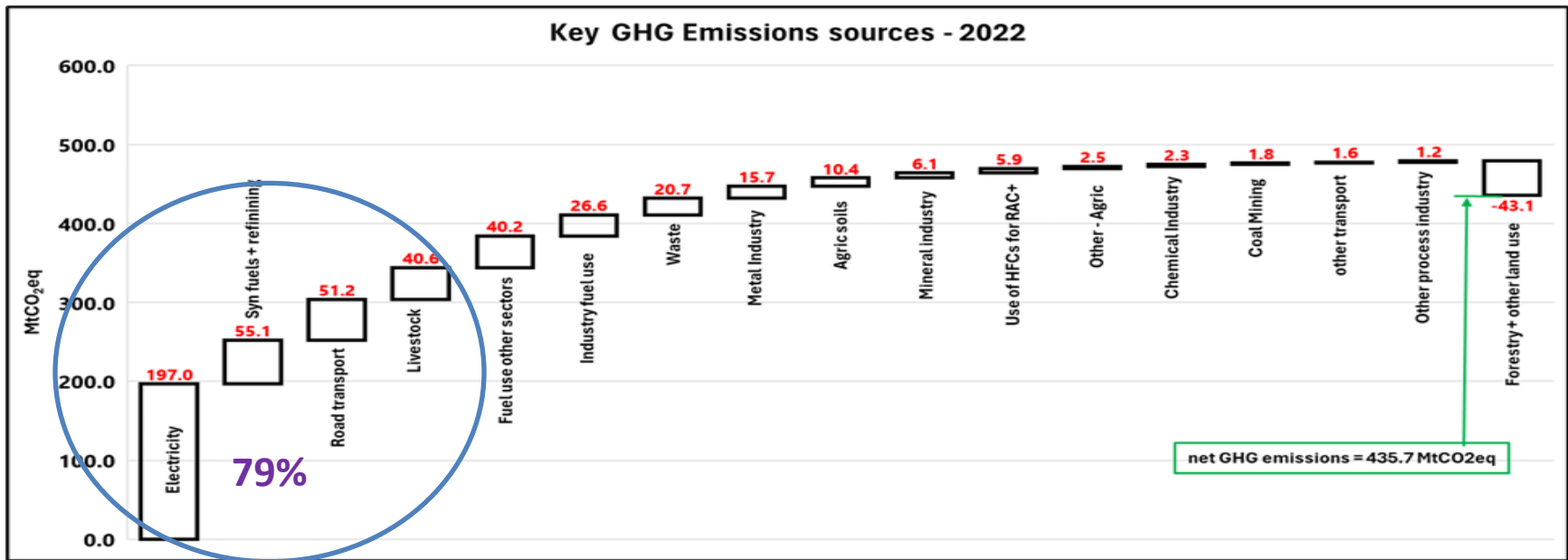
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SET ALLOCATION PROCESS

- STEP 1:** Identification of PAMs for SETs (using an agreed criteria)
- STEP 2:** Emission reduction is extrapolated from identified PAMs
- STEP 3:** Understanding the socio-economic impacts of SETs – done
- STEP 4:** Development of SETs reporting templates (customized for sectors)
- STEP 5:** Approval of SETs by Cabinet

Where are we with GHG emissions (2022)



- Key messages from the GHG Inventory:
 - In 2022, total GHG emissions including land use and land use change were estimated at 435.7 MtCO₂eq. About 252 MtCO₂eq (58%) of these emissions are emitted from electricity generation and synfuels production. If you add road transportation and livestock management, emissions rise to 343,9 MtCO₂eq which is about 79% of the total net GHG emissions in 2022.

SECTORAL EMISSIONS TARGETS (SETS)

Where are we now?

- DFFE has been working on the development of SETs over the past five years:
 - SETs framework has been finalized in the 2021/22 financial year
 - A two-stage engagement process with sector departments has unfolded.
 - Stage one focused on discussing and agreeing on the portfolio of Policies and Measures (PAMs) to inform the allocation of SETs
 - Stage two focused on quantifying (through modelling) and discussing the quantifiable emissions reduction implications of selected PAMs, thus informing the proposed SETs
- Draft SETs → Towards finalization
 - Draft SETs were issued for public comment
 - Review of Comments and further discussions with Line Departments are underway...



Monitoring of GHG emissions

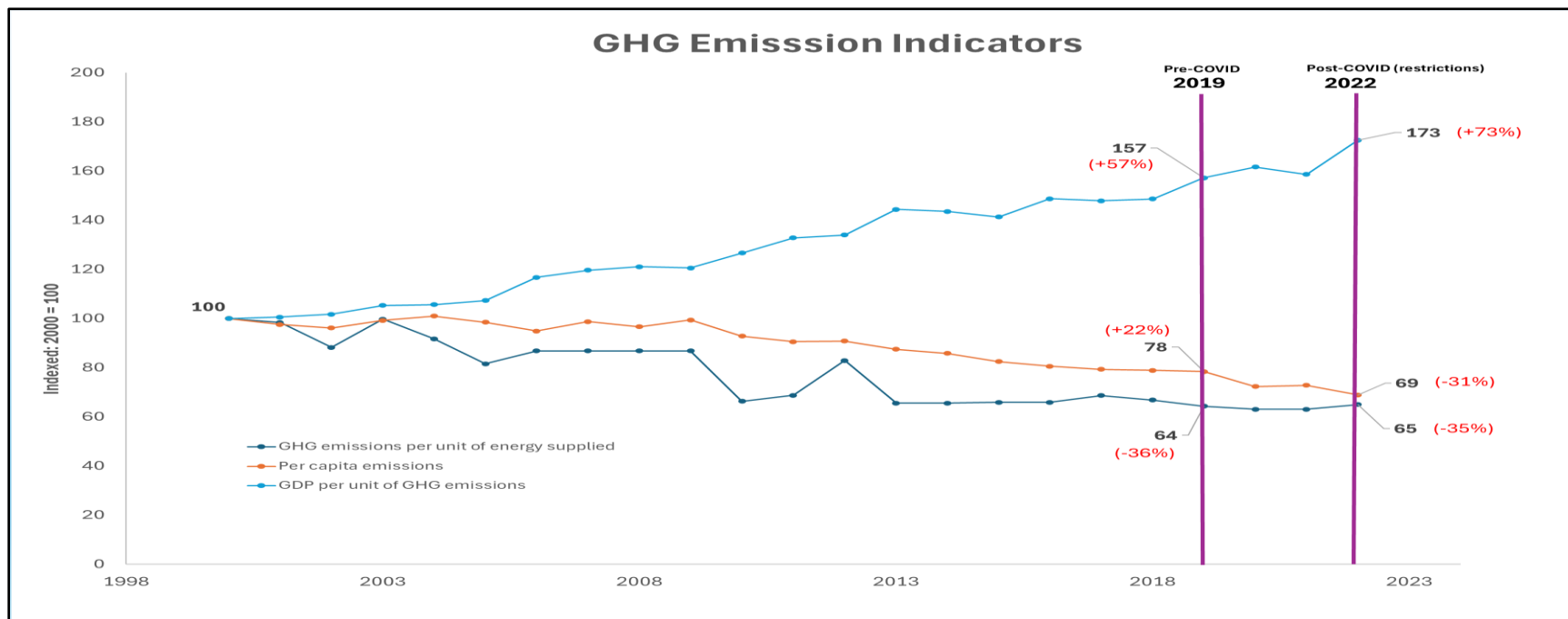


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GHG related Indicators – What do they show about the fate of the GHG emission profile



- Key messages from the GHG Inventory indicators:
 - There is a decoupling of economic activity from GHG emissions. The graph above shows that there is an increase of 73% in economic output per unit of GHG emission released.
 - Per capita emissions shows a decreasing trend achieving a reduction of 31% in 2022 when indexed relative to 2000 levels..
 - GHG emissions per unit of energy supplied to the economy is also declining (35% relative to 2000 indexed levels).
 - From the graphic, it is very clear that this decoupling trend was already taking place before the beginning of the COVID pandemic.
 - This is informed by several factors such as shift to Electric furnaces for the Iron and Steel sector, decline by primary Aluminium production, decrease in livestock population and increased share of the services sector in the country's GDP.

SETs proposed allocations by sector



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Quantifiable SETs

Agriculture, Land Reform and Rural Development								
Sectoral Policies and Measures (PAMs)	Unit	2025	2026	2027	2028	2029	2030	Cumulative (2025-2030)
Agriculture PAMs (ERs)	MtCO ₂ eq	0,74	0,61	0,53	0,38	0,55	0,57	3,37
Water and Sanitation								
Methane capture (ERs)	MtCO ₂ eq	0,00	0,00	0,00	0,00	0,00	0,06	0,06
Mineral Resources and Energy								
Electricity Sector (ELs)	MtCO ₂ eq	177,35	165,85	157,72	157,95	148,95	124,73	
NEES (ERs)	MtCO ₂ eq	3,28	3,95	5,09	6,58	6,80	7,07	32,78
Electrification Strategy (ERs)	MtCO ₂ eq	0,22	1,10	1,73	1,28	1,51	2,98	8,83
SWH (ERs)	MtCO ₂ eq	0,22	0,37	1,54	1,42	1,35	1,41	6,31
Forestry, and Environment								
CT+CB (ERs)	MtCO ₂ eq	5,54	8,03	10,37	11,95	12,09	10,45	58,41
NWMS (ERs)	MtCO ₂ eq	0,15	0,29	1,69	1,79	2,17	2,39	8,49
Forestry (ERs)	MtCO ₂ eq	1,05	0,78	0,48	0,47	0,76	0,91	4,45
Kigali Amendment (ERs)	MtCO ₂ eq	0,30	0,20	0,92	0,77	1,50	1,46	5,15
Other environment (ERs)	MtCO ₂ eq	0,00	0,00	0,02	0,00	0,00	0,00	0,02
Transport								
Transport PAMs (ERs)	MtCO ₂ eq	0.21	0.87	2.57	4.62	5.24	4.51	18.03

[1] ERs are emissions reductions achieved relative to the WEM scenario

[2] ELs are emission levels that must be achieved in a given year within the SETs commitment period. The SETs commitment period in this case is (2025-2030).



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GHG Analysis of SETs

- Conducted using the DFFE Integrated Emissions Model
- Scenarios assessed:

With Existing Measures:

- No changes made across the economy to what exists in 2022
- Business as Usual scenario

“Realistic PAMs”:

- All SETs PAMs where implementation is assumed to be 75%

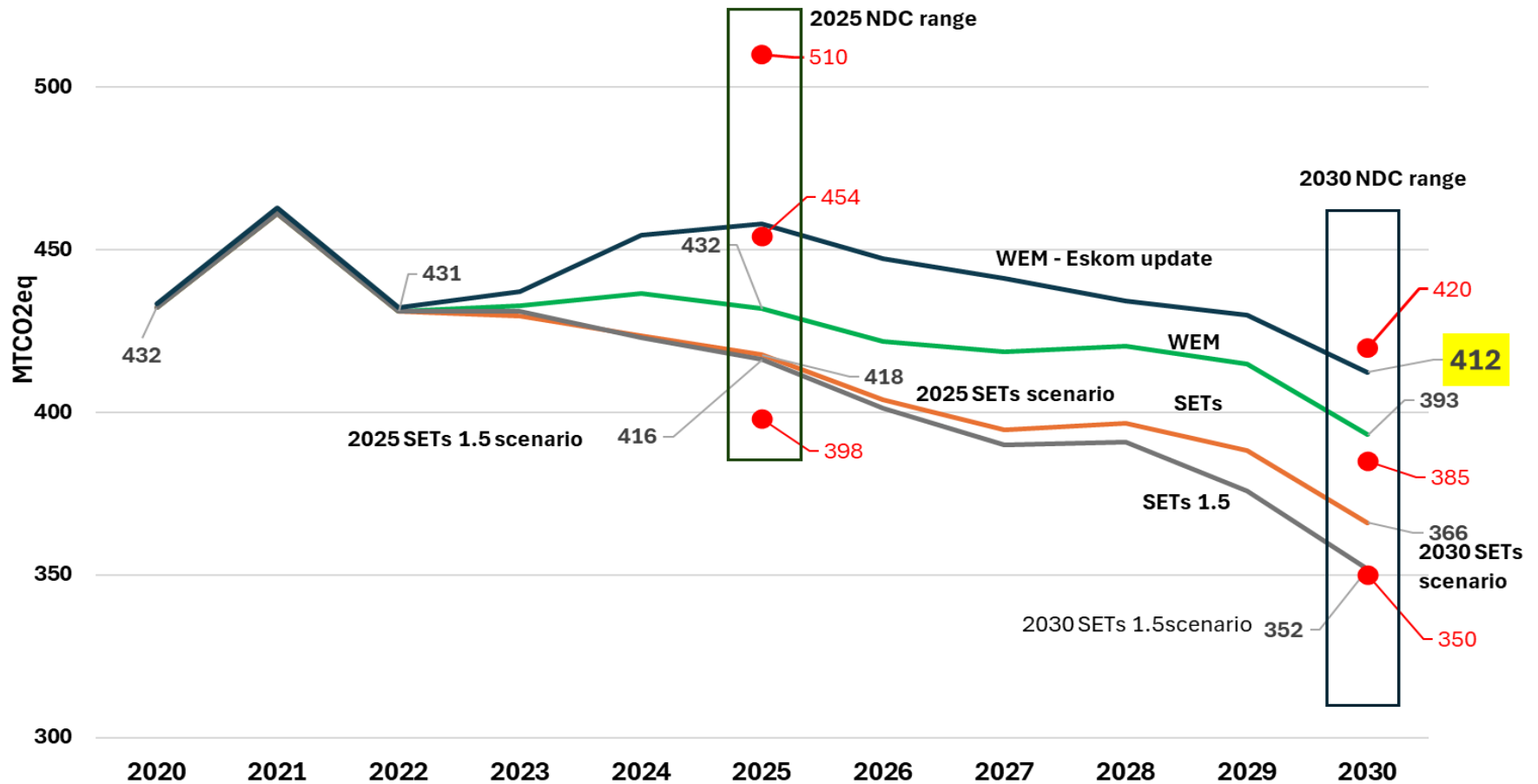
SETs Policy Package:

- PAMs as identified with Line Department
- Policies that do not exist: targets projected based on stakeholder engagement

SETs 1.5 degree scenario

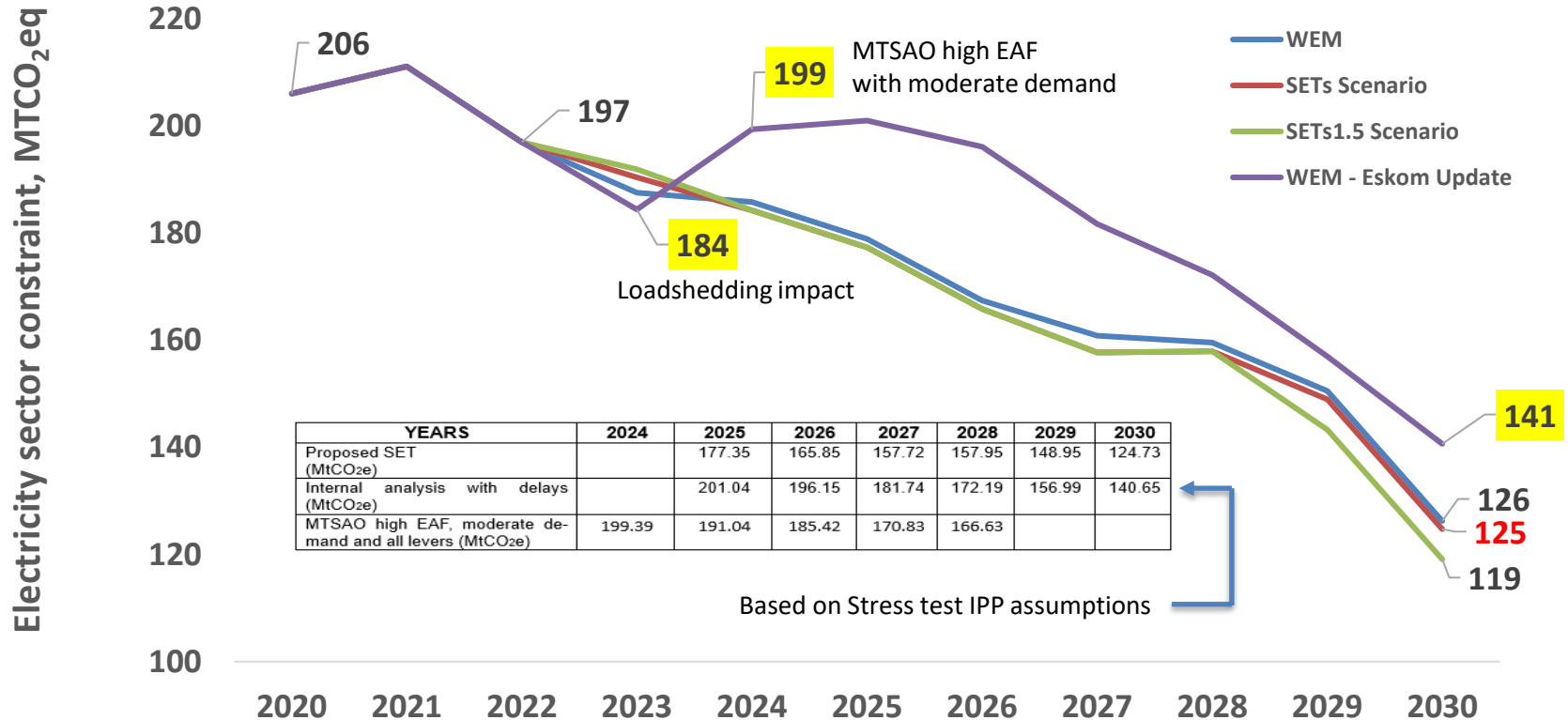
- All SETs PAMs plus increased ambition in Energy, Transport and Environment

SETs scenario impact analysis on the NDC target range



Electricity Sector

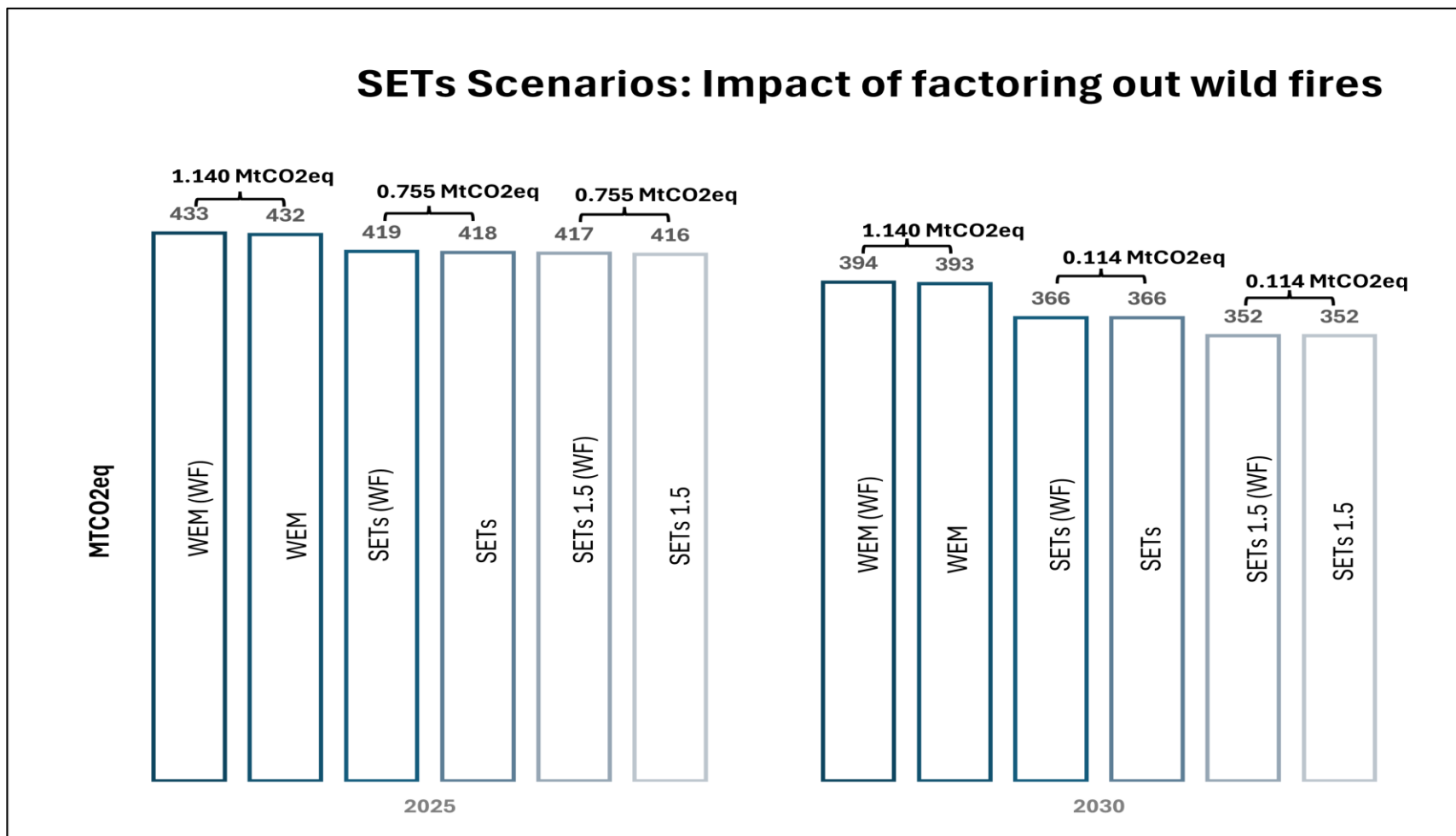
NDC aligned - Electricity sector GHG emissions constraint (MTCO₂eq)



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NDC IMPLICATIONS – FACTORING OUT WILDFIRES



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SETs allocation: Key messages

- Analysis done jointly with Sector departments shows that the current portfolio of PAMs assessed will help South Africa meet its NDC targets by 2030.
- This process has also proposed qualitative SETs that will help the sectors transition towards a low carbon economy (e.g., Demand Side Management Strategy)
- Increasing ambition to the lower end of the NDC target range will require additional investments particularly in the electricity (additional renewable energy development) and transport sector (mainly through road-to-rail infrastructure development).
- In 2022, total GHG emissions including land use and land use change were estimated at 435.7 MtCO₂eq. About 252 MtCO₂eq (58%) of these emissions are emitted from electricity generation and synfuels production. If you add road transportation and livestock management, emissions rise to 343,9 MtCO₂eq which is about 79% of the total net GHG emissions in 2022



Agriculture

PAM	Target	Leading department
Conservation of Agriculture Resources Act, Climate Smart Strategic Framework, Climate Change Sector Plan	- Update the key policies to incorporate climate mitigation and carbon sequestration, including supporting measures (including the Conservation of Agriculture Resources Act, Climate Smart Strategic Framework and Climate Change Sector Plan) - Update policies with the following activities, where relevant: - Nitrogen inhibitors in crops - Updating fertilizer schedules - Increase availability of soil sampling, standardise nitrogen testing. - Feed changes in livestock subsector - Conservation agriculture - Sharing best practices across Provinces for climate mitigation	DRDALR
Conservation Agriculture Policy	Provide training and capacity to extension officers to support smallholder farmers on zero cost climate change mitigation options	DRDALR
Livestock emissions research programme	Identify emissions reduction technologies and opportunities in the livestock subsector	DRDALR
Agriculture Sector Implementation Plan	Develop a sector implementation plan to for applying climate mitigation activities	DRDALR



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Mining

PAM	Target	Leading department
Draft Mine Closure Strategy Derelict and Ownerless Mines Programme	Include revegetation/carbon sequestration in the mine closure process.	DMRE
The Exploration Strategy for the Mining Sector of South Africa and Critical Minerals Strategy (Draft in Progress)	Include the future low carbon economy in The Exploration Strategy for the Mining Sector of South Africa and Critical Minerals Strategy.	DMRE
Sustainable Development Reporting Guidelines (note developed)	Include climate change mitigation in the Sustainable Development Reporting Guidelines	DMRE



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Trade and Industry

PAM	Target	Leading department
The Green Hydrogen Commercialisation Strategy for South Africa	Complete / Update / Develop Implementation Plan	DTIC
Master Plans: Furniture, Sugar, R-CTFL, Poultry, Steel , Automotive, Forestry (including: South African Road to Production of Electric Vehicles (The Roadmap)		DTIC
Industrial Finance (incentives) - Automotive Incentive Scheme - Manufacturing Competitiveness Enhancement Programme - others		DTIC
Strategy for Green Trade Barriers (forthcoming)		DTIC
Green (low carbon) Industrial Strategy		DTIC
National Building Regulations and Building Standards Act		DTIC
National Cleaner Production Centre and Industrial Energy Efficiency Project		DTIC



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Energy

PAM	Target	Leading department
Demand side management	Develop an updated demand side management programme	DMRE



Transport

PAM	Target	Leading department
National Land Transport Strategic Framework 2023 to 2028	- Implement the Urban Objectives of the land transport strategy. Develop an implementation plan and pilot in two cities. - Develop a pilot project to implement the stated goal of 5% of rural population with access to public transport within 1km. - Implement a pilot project to increase transport by non-motorised/bicycle in 3 cities. - Develop a strategy to roll out charging Stations.	DoT
White Paper of National Transport Policy	Develop implementation plan for increasing fuel efficiency, cleaner fuels and the adoption of fuel-efficient modes of transport, including the promotion of low carbon modes of transport in existing and newly designed transport systems.	DoT
White Paper on National Rail Policy	- Develop the National Rail Implementation Plan for priority corridors. - Implement an enhanced PRASA Service Recovery Plan to have all 10 existing corridors operating and include additional corridors included in the plan. - Develop an M+E System for tracking the modal shift for passenger and freight from road to rail.	DoT
Roadmap for the Freight Logistics System in South Africa 2023	Develop a monitoring as evaluation framework to track the modal shift of freight from road to rail.	DoT
Draft Comprehensive Maritime Transport Policy, 2017	Develop an implementation strategy to deploy energy efficient technologies and other climate mitigation opportunities to reduce fuel related GHG emissions in port facilities and in ship operations.	DoT
White Paper on National Civil Aviation Policy	Develop an implementation strategy to: - Research, develop, demonstrate, diffuse and commercialise alternative fuels for use in aviation. - Uptake measures to limit or reduce aviation's emissions considering the roles of airport authorities, air traffic service providers and aircraft operators. - Participate in market-based measures, such as carbon pricing.	DoT
Draft Roads Policy	Develop the National Roads Master Plan, a National Road Investment Strategy and associated implementation plan ensuring GHG emissions mitigation measures are Included	DoT



Human Settlements

PAM	Target	Leading department
Sector Climate Response Strategy, National Housing Code	Develop a climate response strategy for the sector that outlines in an implementation the low carbon development pathway for the sector, including other departments, local and provincial governments.	DHS
	Develop a Red Book Implementation Strategy to mainstream the Red Book into implementation programmes.	DHS
	Include an assessment of climate smart settlements in the evaluations of housing programmes and policy.	DHS
	Provide coordination and support to Provinces/Local governments, including bylaws, to ensure climate smart settlements are developed.	DHS
Green Drop Report	Include auto generation of energy from onsite biodigesters as a criterion in the Green Drop Report.	DWS



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Environment

PAM	Target	Leading department
Carbon budgets	Mandatory carbon budgets	DFFE
National Waste Management Strategy	30% waste diverted from landfill sites	DFFE
MTSF (DFFE) (Kigali Amendment)	Decrease consumption by HFC by 45%	DFFE
MTSF (DFFE)	5400 ha of temporary unplanted areas (TUPs) planted. 15 000 ha approved for afforestation. 200 000 trees planted outside forests Footprint	DFFE
REDD+ Strategy	Development of a REDD+ Strategy for the country	DFFE
Medium-Term Strategic Framework	90% of wildfires suppressed	DFFE
	Rehabilitation of 100 wetlands (9 603 ha)	DFFE
	Thicket restoration (30 637 ha)	DFFE
	2 500 ha of land for indigenous species cultivated. Wetlands of International significance designated. 17.7% in total land area under conservation (21 652 699 of 121 991 200 ha)	DFFE

Climate Change Response (Provinces and Municipalities)



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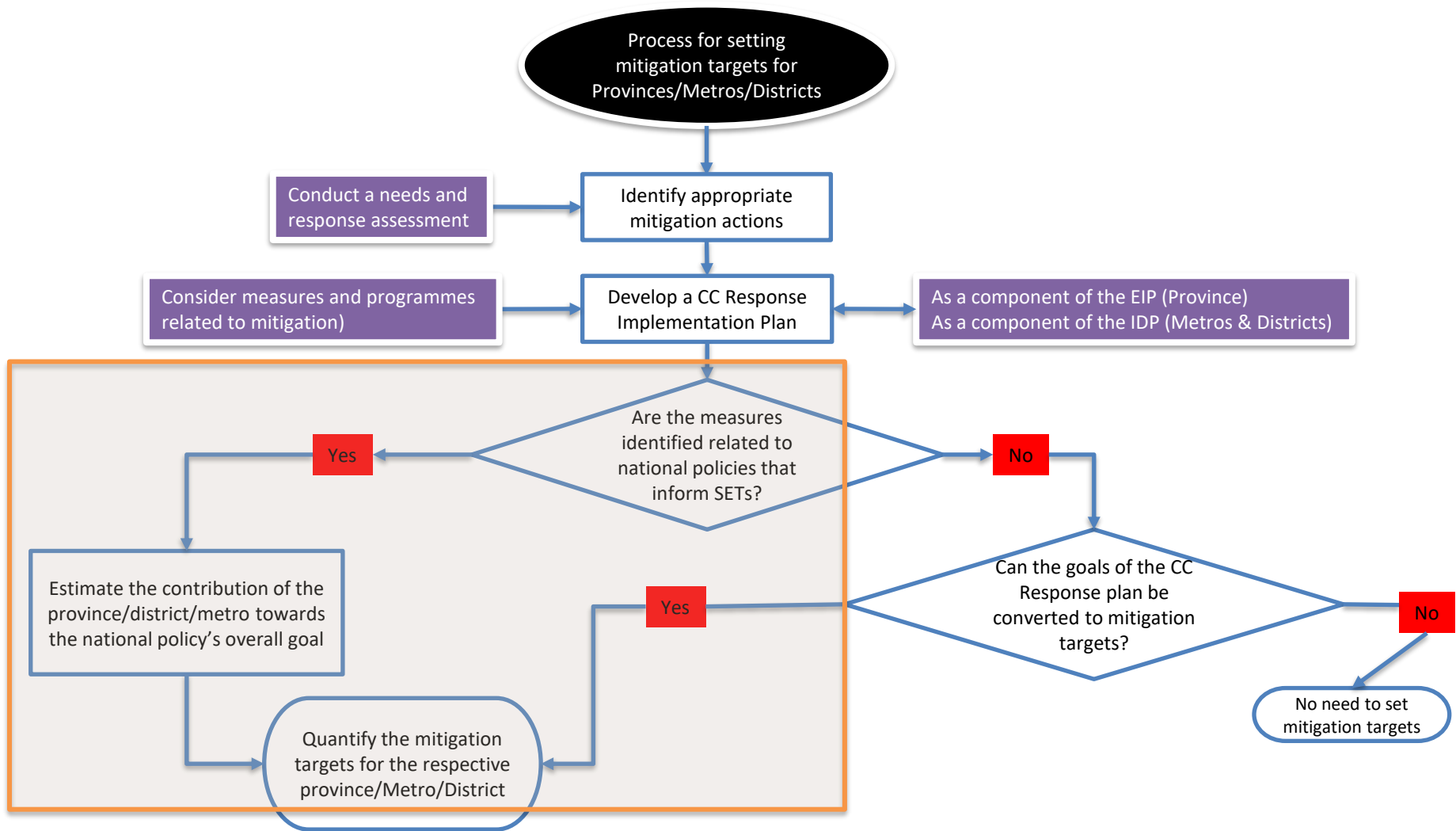
CLIMATE CHANGE BILL: CHAPTER 3

CLIMATE CHANGE RESPONSE: PROVINCES AND MUNICIPALITIES

CC Bill Clause	What needs to be done	Considerations
15(1)(a)	Undertake a climate change needs and response assessment for the province, metropolitan or district municipality, as the case may be	• Within one year of the publication of the National Adaptation Plan • Advise to also address mitigation aspects
15(1)(d)	Develop, implement and publish in the Gazette a climate change response implementation plan	• Within two years of undertaking a CC needs and response assessment
15 (3) (a)	Climate changes response implementation plan must include measures or programmes relating to both adaptation and mitigation.	• In line with constitutional mandate of the province, or the metropolitan or district municipality
15(4)	A provincial climate change response implementation plan , contemplated in subsection (1)(d), must form a component of the province's environmental implementation plan developed in terms of section 11(1) of the National Environmental Management Act	• Some of the measures or programmes that are relevant for the mitigation aspect of the climate change response implementation plan might be related to national policies (e.g. National Waste Management Strategy) that used to determine SETs. This should be easy to identify in the Provinces' EIP or the Metro/District's IDP.
15(5)	A metropolitan or district municipal climate change response implementation plan , contemplated in subsection (1)(d), must form a component of the relevant municipality's integrated development plan adopted in terms of section 25 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)	• Some measures will only be linked to the EIP/IDPs • This is an important consideration for setting targets for Provinces, Metros and Districts (See next slide).



PROVINCES, METROS & DISTRICTS (SETTING MITIGATION TARGETS)



THANK YOU!

Department of Forestry, Fisheries and the Environment

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Thank You



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DFFE support programme

Item	Type of support
Emission target setting	A guideline to support Provinces/Metros/Districts to establish provincial and local emission targets
GHG Inventory Compilation	Training on how to compile GHG emission inventories
Initiative for Climate Action and Transparency (ICAT) Climate Action Aggregation Tool (CAAT)	Use the CAAT to identify, quantify and aggregate the impact of non-state and subnational actions. As a result, they can be integrated into mitigation targets, projections and scenarios in support of policy development, policy evaluation and target-setting
CC needs and response assessment Climate Change response implementation plan guidelines	Discussions underway with GIZ to develop a voluntary guideline for preparation and review of these two policy instruments.



PAMs for Qualitative SETs

Sector	Policies and Measures Affected/proposed
DEE – Electricity and Energy	Energy Efficiency Demand Side Management
DMPR – Mineral and Petroleum Resources	Draft Mine Closure Strategy Derelict and Ownership Mines Programme The Exploration Strategy for the Mining Sector of South Africa and Critical Minerals Strategy Sustainable Development Reporting Guidelines
DA – Agriculture	Conservation of Agriculture Resources Act Climate Smart Strategic Framework Conservation Agriculture Strategy Climate Change Sector Plan Agriculture Sector Implementation Plan
DTIC – Trade, Industry and Competition	Green Hydrogen Commercialisation Strategy Master Plans (various) Industrial finance incentives Strategy for Green Trade Barriers Green (low carbon) Industrial Strategy National Building Standards and Regulations/ SANAS 10400 National Cleaner Production Centre
DHS – Human Settlements	Sector Climate Response Strategy, National Housing Code
DWS = Water and Sanitation	Green Drop Report Water and Sanitation Sector Policy on Climate Change
DoT – Transport	National Land Transport Strategic Framework 2023 to 2028 White Paper of National Transport Policy White Paper on National Rail Policy Roadmap for the Freight Logistics System in South Africa 2023 Draft Comprehensive Maritime Transport Policy, 2017 White Paper on National Civil Aviation Policy Draft Roads Policy
DFFE – Forestry, Fisheries and Environment	REDD+ Strategy

