

South Africa's GHG Inventory System – Overview

21 August 2015



Climate Change and Air Quality



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Presentation Overview

- ❑ Background (linkages with the National Climate Change Response Policy)
- ❑ Importance of the GHG inventory in the overall Mitigation System
- ❑ The National Atmospheric Emission Inventory System (NAEIS)
- ❑ GHG Protocol vs. IPCC guidelines
- ❑ The Draft Greenhouse gas emission reporting regulations
- ❑ The National System of data collection for the compilation of the GHG Inventory
- ❑ Snapshots of the proposed GHG Inventory Management System



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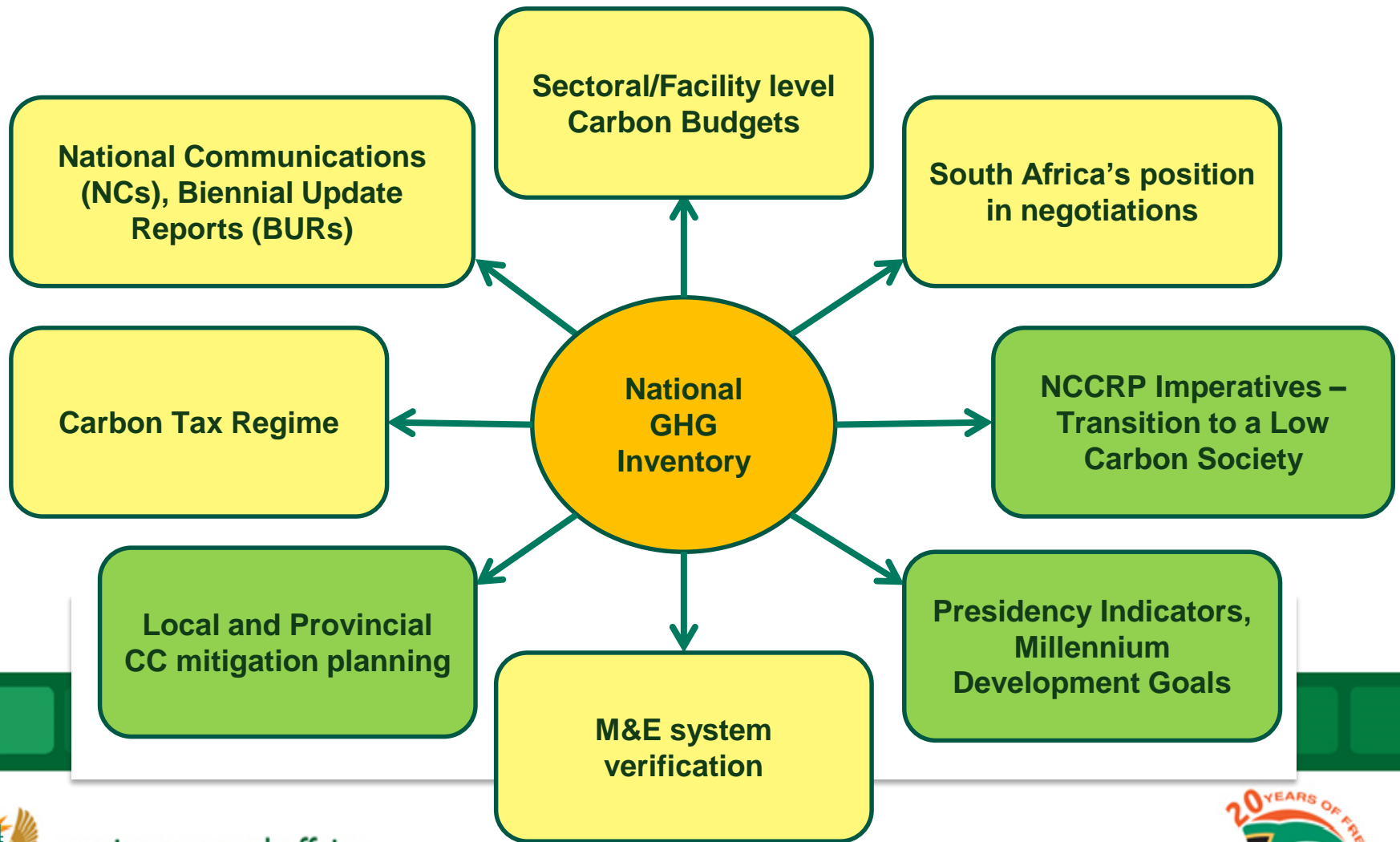
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Background

- ❑ What does the National Climate Change Response Policy (NCCRP) say about the GHG Inventory:
 - ❑ **Executive Summary** (key elements in the overall approach to mitigation) and section 6.1.7 – “**Establish a national system of data collection** to provide detailed, complete, accurate and up-to-date emissions data in the form of a Greenhouse Gas Inventory and a Monitoring and Evaluation System to support the analysis of the impact of mitigation measures.
 - ❑ **Introduction and in relation to international obligations (UNFCCC)** – “**Monitor and periodically report to the international community the country’s GHG inventory**; steps taken and envisaged to implement the UNFCCC; and any other information relevant to the achievement of the objective of the UNFCCC, including information relevant for the calculation of global emission trends”
 - ❑ **Section 6.7** – “The DEA in partnership with the South African Weather Service, the host of the SAAQIS, will **prepare a GHG Emissions Inventory annually**. The inventory will **conform to the IPCC’s 2006** or later guidelines, and will be **periodically reviewed by an international team of experts**. The inventory will also undertake and report analyses of emissions trends, including detailed reporting on changes in emissions intensity in the economy and a comparison of actual GHG emissions against the benchmark national GHG emission trajectory range described in section 6.4”
 - ❑ Section 6.7 – “The **emissions inventory will be a web-based GHG Emission Reporting System** and will form part of the **National Atmospheric Emission Inventory component of the SAAQIS**. It will be developed, tested and commissioned within two years of the publication of this policy”

Importance of the National GHG Inventory



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The National Atmospheric Emission Inventory System



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What pollutants are included in NAEIS?

Pollutant	South Africa NAAQS	NAEIS Capability
1. Criteria Pollutants		
▪ PM, SO ₂ , NO _x , CO, Benzene, Dust, Lead	Yes	Yes
• Other metals (Arsenic, Cadmium, Nickel, etc.)		Yes
2. Hazardous Air Pollutants (HAPs)		Yes
3. Volatile Organic Chemicals (VOCs)		Yes
4. Green House Gasses (GHGs)		Yes

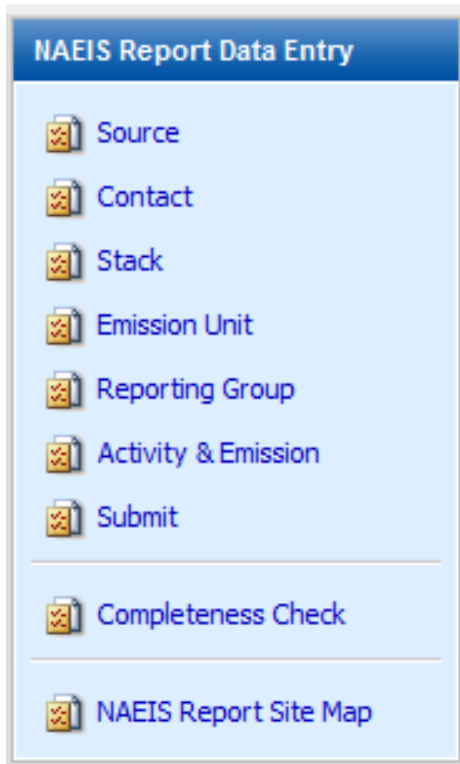


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Emission Inventory Contents



- ◆ **Source** – Reporting Entity basic information (name, location, etc.)
- ◆ **Contact** – Reporting Entity contact person (primary and secondary).
- ◆ **Stack** – stacks connected to Emission Units
- ◆ **Emission Unit** – units that emit pollutants
- ◆ **Reporting Group** – if applicable, it is used to combine “similar” emission units into one reporting group to simplify reporting.
- ◆ **Activity & Emission** – describes operating schedules, material used, and resulting emissions for each emission unit (or reporting group). Each emission unit or reporting group must include at least one Activity (multiple activities are supported).
- ◆ **Submit** – certify and submit
- ◆ **Completeness Check** – to help the reporting entity to verify data quality to ensure meeting minimum submission criteria. If fields are incomplete or incorrect, the System will generate warning or error messages.
- ◆ **NAEIS Report Site Map** – Contains the report in “Window Explorer” like tree structure



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NAEIS emissions factor library

SCC/Pollutant List

1 - 10 of 16 item(s)

	Pollutant Code	Unit Code	Factor	Exp	Material Code	Unit Code	Control Device 1	Control Device 2	Emission Factor Type
<input type="radio"/>	CO		6	-1	25903				Generic
<input type="radio"/>	LEAD		8.9	-3	25903				Generic
<input type="radio"/>	NOX		1.8	1	25903				Generic
	PM10,FLTRBLE		1.3	-2	25903		Baghouse		Generic
	PM10,FLTRBLE		1.1	0	25903		Multicyclone		Generic
	SELENIUM		7.625	-4	25903		Electrostatic Precipitator		Generic
<input type="radio"/>	VOC		7	-2	25903				Generic
<input type="radio"/>	PM10,FLTRBLE		2.3	0	25903				Generic
<input type="radio"/>	SO2		3.9	1	25903				Generic
<input type="radio"/>	AMMONIA		5.65	-4	25903				Generic

1 | 2



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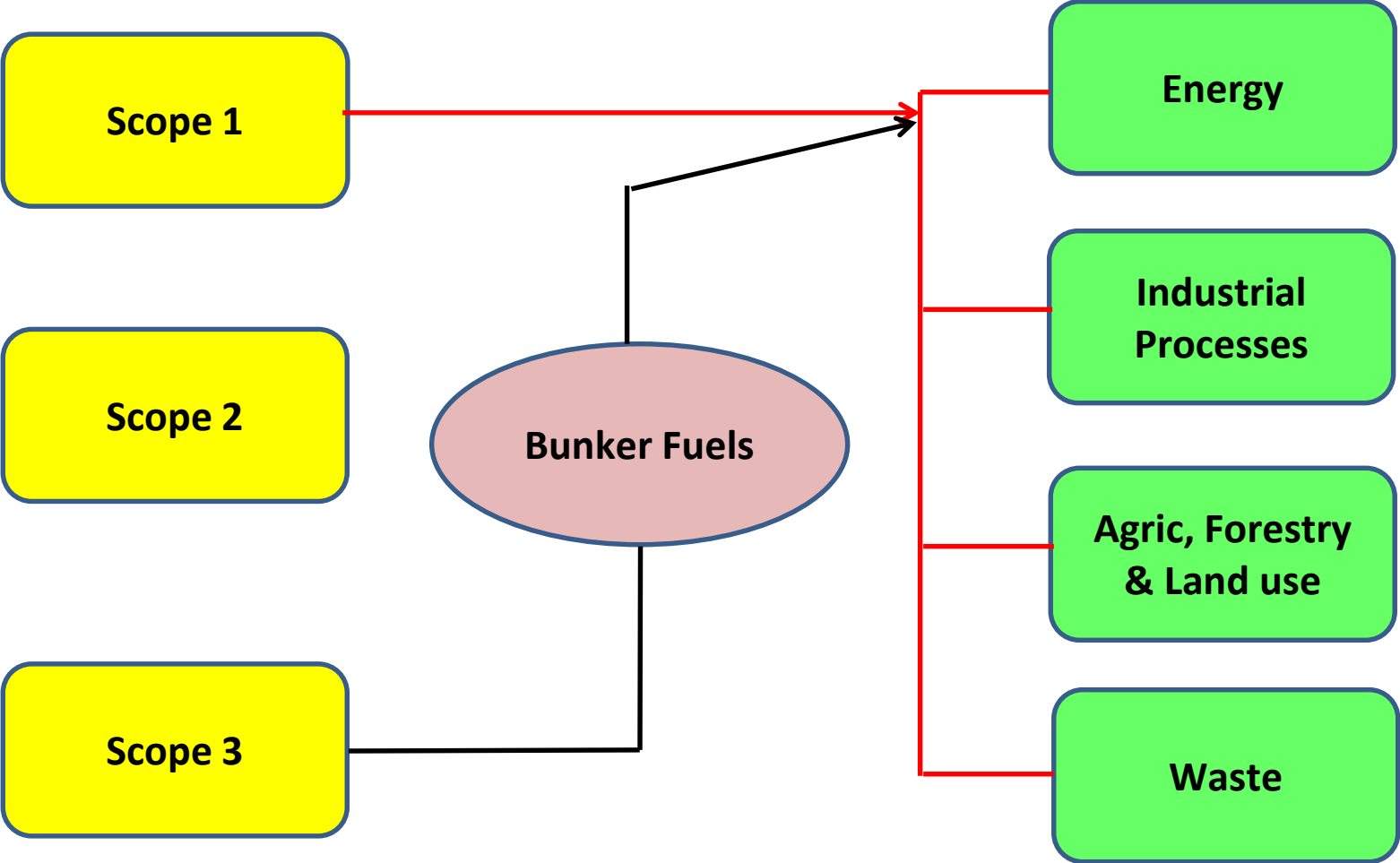
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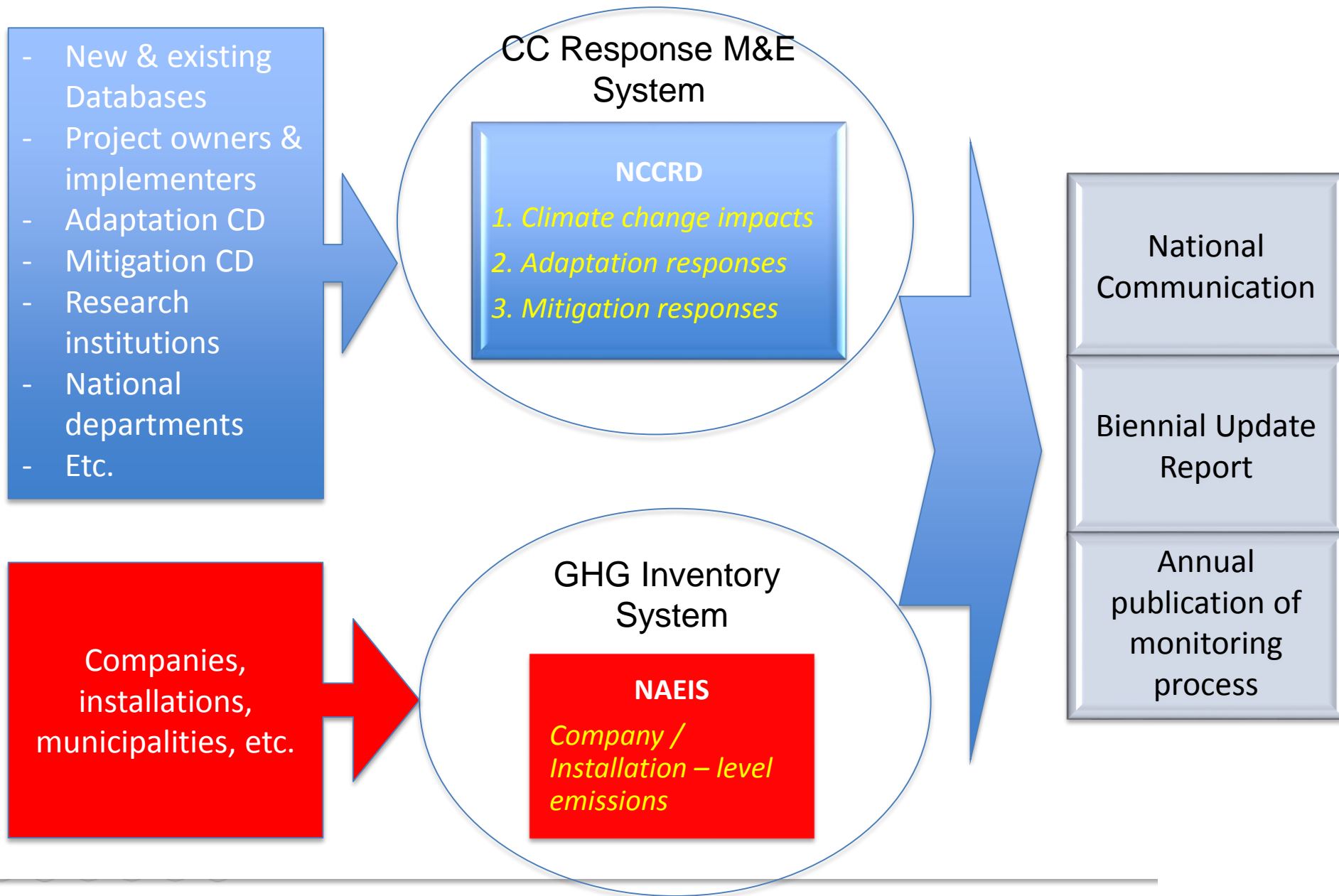
GHG Protocol vs. IPCC guidelines

GHG Protocol (Company-level footprint)

IPCC Guidelines (National Emissions profile)



Climate Change Monitoring & Evaluation System



Key features of the draft GHG emission reporting regulations



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Draft GHG Reporting regulations: Key features (1 of 4)

❑ Separation of data providers into two categories:

- Emitters – mainly industry who owns facilities that operate IPCC related sources;
- Data custodians – government departments and agencies who holds data and information relevant to the inventory compilation process.

❑ Explicit reference to the 2006 IPCC Guidelines:

- 2006 IPCC guidelines are the foundation of MRV of emissions in South Africa;

❑ Provision for development of sector-specific guidelines:

- Sector specific guidelines as outlined in the next slide.

❑ Grace period for graduation towards higher tier-methods for key category emitters (4-year period):

- Key sectors (mainly large industries that are carbon-tax and carbon budget liable);
- Use of tier-1 methodologies are acceptable only in the first four years after promulgation of the reporting regulations



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Draft GHG Reporting regulations: Key features (2 of 4)

Guidance on the verification process [who verifies, when to verify]:

- Who does the verification process;
- What are the modalities for undertaking the verification process.

Guidance on the approach for developing country/sector/plant-specific emission factors and process for approval by the regulator:

- What sector-specific methodologies are applied when EFs are developed;
- What method and modalities for verification;
- What are the requirements for submission of EFs to the regulator



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Draft GHG Reporting regulations: Key features (3 of 4)

Guidance on registration:

- 30 day period for registration and declaration of relevant activities;
- 14 day period for notification concerning change in registration details, changes in ownership.

Guidance on reporting:

- 60 –day period to report, reporting previous calendar’s GHG emissions;
- Reporting all facility level data at company level by activity described in Annexure 1;
- Use of bottom-up methodologies for data providers listed in Annexure 3;



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Draft GHG Reporting regulations: Key features (4 of 4)

IPCC Sector	Broad IPCC activity	Threshold
Energy	Stationary Combustion	Individual thermal Installation with capacity equal or greater than 10 MW
	Mobile Combustion (on-site and off-road transportation only)	No thresholds defined yet (currently under review)
	Fugitive emissions from processing of primary fuels	Operation specific (oil and natural gas, coal mining)
Industrial Processes and Product use	Process emissions	Product specific
Waste	Solid waste disposal	On-site disposal site
	Wastewater treatment	On-site wastewater treatment



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Technical Guidelines for Monitoring, Reporting and Verification of GHG emissions

Issue	Aspect for consideration	By who
Methodologies	What IPCC tier methodology to use	Industry, Regulator
Reporting requirements	Frequency, period, scope, data format and reporting format	Industry
Auditing	Basic QC procedures, statistical analysis (point estimate and trend), reporting requirements	Regulator
Verification	Information requirements, scope of verification,	Regulator
Emission Factors	Existing country-specific emission factors as well as default IPCC emission factors	Regulator, Industry



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Conclusions

- Broadening the use of thresholds to define reporting of IPCC categories stipulated in Annexure 1 “List of activities for which GHG emissions must be reported to the competent authority”
- Use of cooperative governance to manage data provision by data custodians (category B reports)
- Threshold for thermal capacity should be based on total installed thermal capacity as opposed to each individual installation.
- The registration process entails the declaration of activities undertaken by the reporter within its operational control



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