



# National GHG Inventory System

Experiences, challenges and lessons learned in setting up the national GHG inventory system

Webinar 21 June 2018



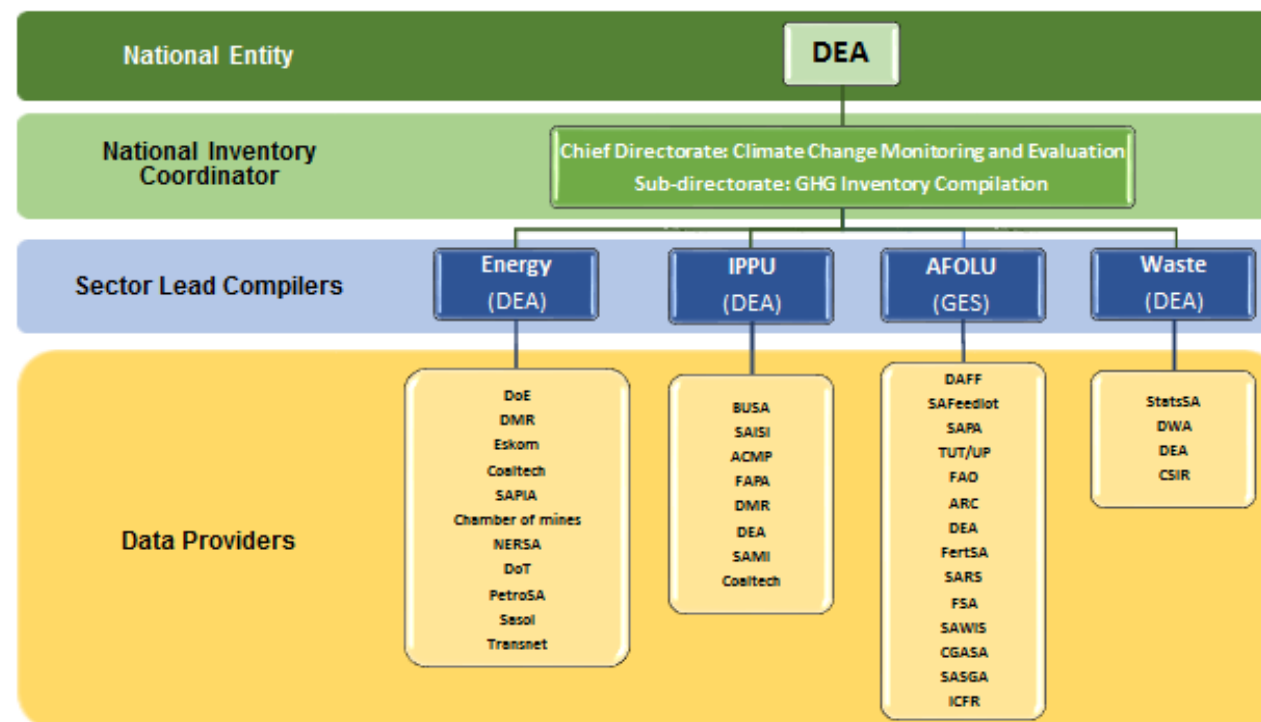
**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA



# Background

- DEA is responsible for coordination and management of climate change related information (mitigation, adaptation and M&E programs) including compilation and update of GHG inventories
- There are other relevant agencies and Govt. ministries that contribute towards compilation of the GHG inventory
- Data provision and exchange mostly driven through use of tools like MoUs and data sharing agreements (currently in discussion), etc.
  - With Industry
  - Other Govt. ministries/departments
  - GHG Emissions Reporting Regulations (Launched in 2017)



## Evolution of the SA GHG Inventory

- Four inventories produced thus far – two for NC reporting
- The 5<sup>th</sup> National Greenhouse Gas Inventory summary was published and submitted in 2017: 2000-2012. the full NIR was submitted to the UNFCCC in Feb 2018
- The latest inventory formed part of the 2<sup>nd</sup> National BUR to the UNFCCC
- DEA is currently drafting the 6<sup>th</sup> inventory, 2000-2015 National GHG inventory (This will form part of the TNC)
- The plan is to compile GHG inventories annually starting from 2019 (as the policy says)

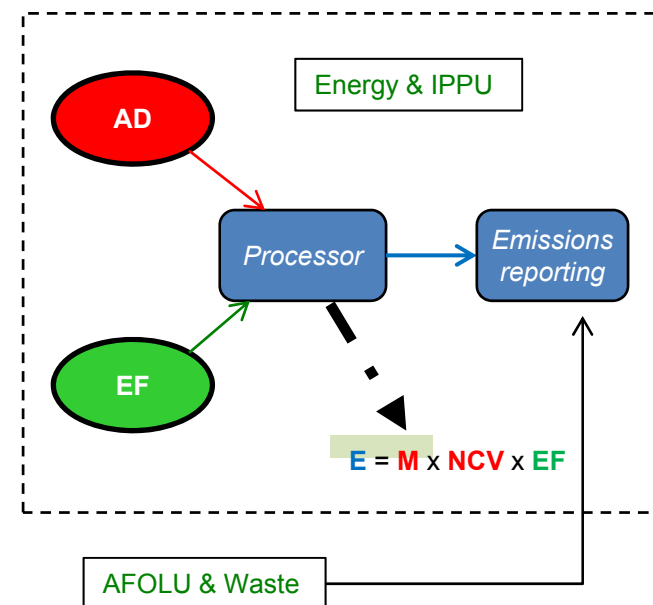
Published National Inventory	Years Covered	Status	IPCC Guidelines Used
1 <sup>st</sup> National Communication	1990;1994	Finalised	Revised 1996 IPCC Guidelines + GPG
2 <sup>nd</sup> National Communication	2000	Finalised	2006 IPCC Guidelines
1 <sup>st</sup> Biennial Update Report	2000-2010	Finalised	2006 IPCC Guidelines
2 <sup>nd</sup> Biennial Update Report	2000-2012	Finalised	2006 IPCC guidelines
National Inventory Report	2000-2015	Draft for public comment and Ind. Review process	2006 IPCC guidelines

## Key Challenges

- Collection of data still presents a significant challenge:
  - Lack of formality in the data collection process
  - Data often collected at national aggregated levels rather than point or direct sources
    - Making it challenging to use higher tier methods
- Also difficult to perform data uncertainty analysis on already published data
- Availability of accurate activity data – particularly from individual plants and industry associations
- Challenges around country-specific methodologies and Emission Factors
- Institutional memory and data losses with loss of personnel
- Availability of human resources to:
  - manage the inventory compilation process
  - Administer the mandatory GHG reporting programme
  - Management of the web-based National System Tool (System Administration)
- System linkages and integration (i.e. M&E system, Emissions reporting system, National System)

## Lessons Learned and/or Best Practices

- Mandatory GHG reporting based on the 2006 IPCC guidelines
- **Integrated QA/QC procedures** – built into calculation files with tracking of activities performed.
- **Mandate and Policy Mapping** for the AFOLU sector to understand how best information can be shared.
- DEA in the process of implementing a data management system to improve access to activity data (see diagramme right).
- Mandatory GHG reporting regulations for Industry developed in terms of the Air Quality Act (Act. 39 of 2004), as well as Technical Guidelines (to assist data providers)
- **GHGIP** – GHG Inventory Improvement Program
- SA National Land-cover change 1990 & 2013 (Landsat) for the AFOLU sector – reducing uncertainty associated with tracking land-use changes.



**Diagram:** National Atmospheric Emissions Inventory System (NAEIS) conceptual design for mandatory emissions reporting

# National System development process

- Initiated in 2016
- The key **components**:
  - Institutional arrangements and data flows;
  - Inventory preparation work plan;
  - Stakeholders;
  - Datasets;
  - Methods;
  - QA/QC;
  - Calculations;
  - Outputs; and
  - Improvements.

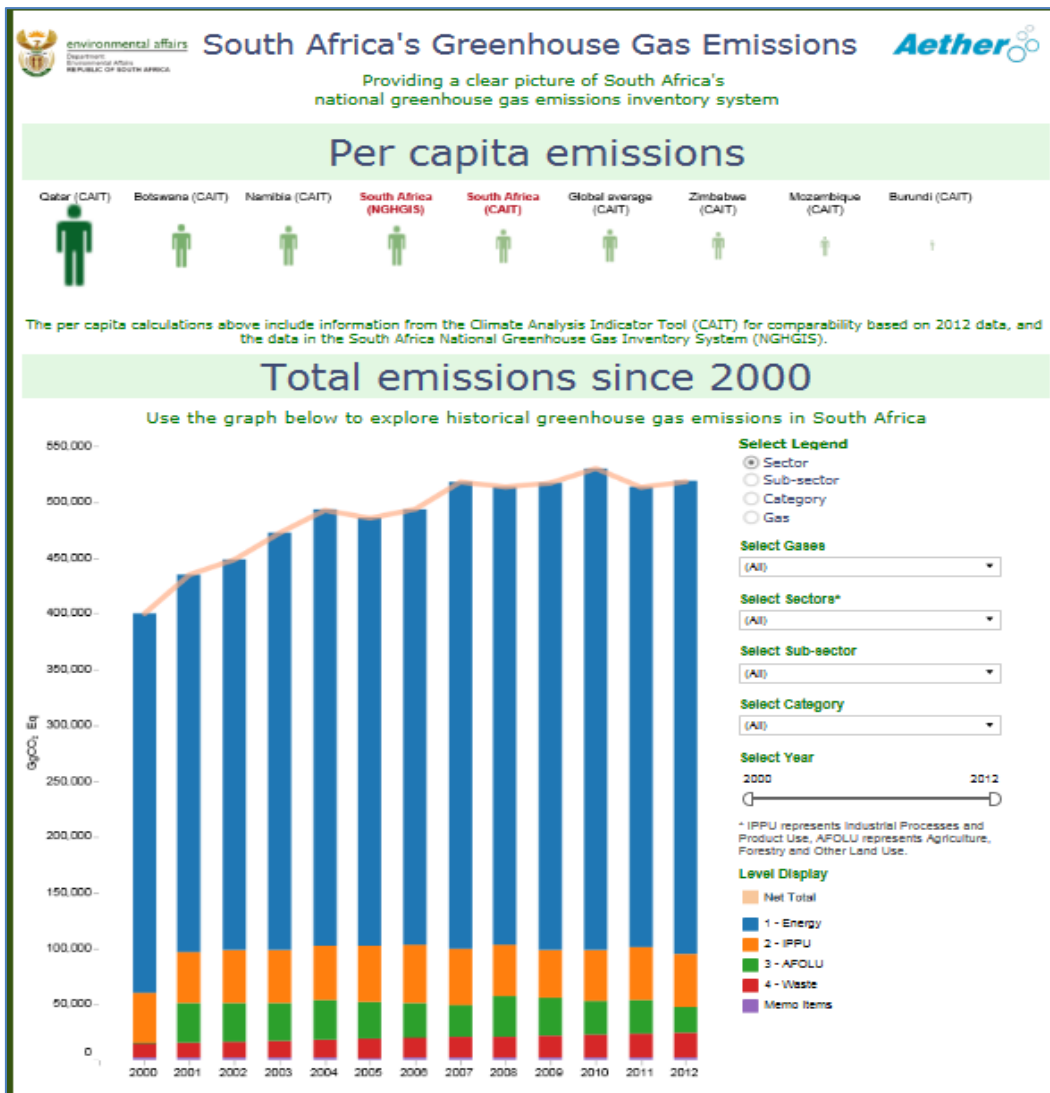
## Key Partners:

Funding from Norwegian MFA

DEA – Implementer

Technical Support - Norwegian  
Environmental Agency (NEA)

Implementing Service  
Provider(s) – Gondwana  
Environmental Solutions,  
Aether (UK), North-West  
University



Data visualisations:

Example of the GHG trends viewer in the South African NGHGIS

Also developing a public web-based platform to enable effective communication of inventory data.



2014 NS

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# SouthAfrica-NationalSystem

## System Snapshot: Landing Page

Home

National System

Workplan

Requirements

Stakeholders

Input Datasets

Improvements List

QA/QC Plan

QA/QC Objectives

QA/QC Checks

QA/QC Log

QA/QC Tools

QA Analyst tags

Methods & Data Sources

Summary of methods and completeness

Method Statements

GHG estimation files

Key References

Calorific values

Unit conversions

Glossary

Trends & Data

GHG Trends viewer

Key Categories

Reports

SA GHG Public Site

GHG Inventory 2000-2010

Documents

Welcome

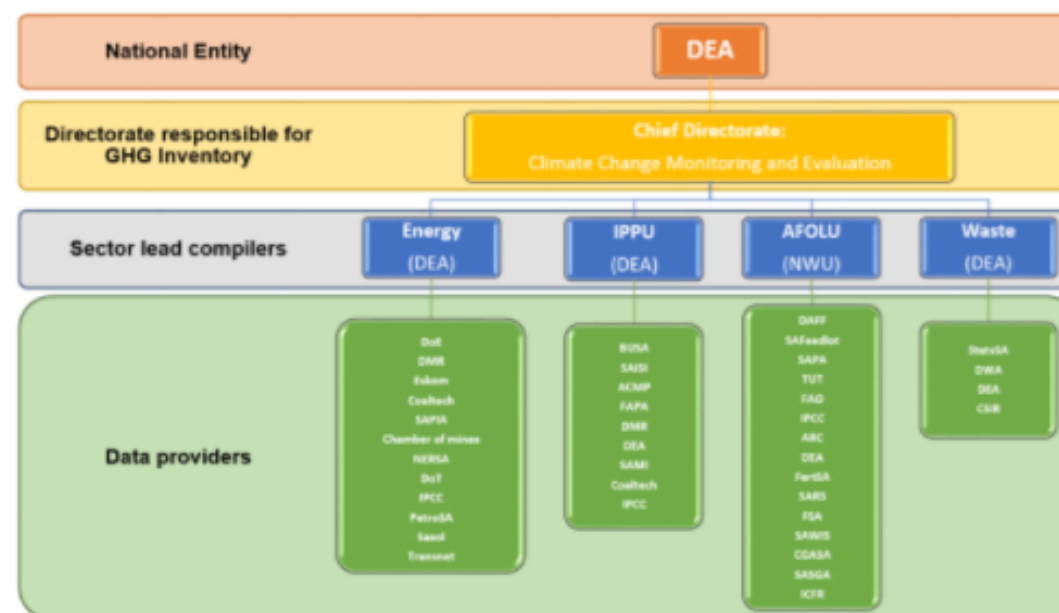
## South Africa National System for GHG estimation and reporting



This is the collaboration site for the GHG National System of South Africa is provided by [www.aether-uk.com](http://www.aether-uk.com). It content needed for the GHG national System and national system reports. This includes [stakeholder lists](#), [orgar](#) emisisions data and emission factor tables. The site is secure online collaboration hub for use by the team invol [justin.goodwin@aether-uk.com](mailto:justin.goodwin@aether-uk.com).

Importantly, the National System consists of a number of Stakeholders with specific roles and datasets which are required for the below up-to-date to help keep track of the vital elements of the National System.

### Simplified National System and Institutional Arrangements for South Africa's GHG inventory



### Simplified data flow for South Africa



See full details of the institutional arrangements [here](#) and in the list of stakeholders below.





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**Thank You**



**Our Partners in the Development of the  
South Africa's NGHGIS**