



A GUIDE TO NAVIGATING SOUTH AFRICA'S NATIONAL GREENHOUSE GAS EMISSION REPORTING REGULATIONS (NGER)

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SETTING THE STAGE | WHY NGER MATTERS

In South Africa's commitment to reducing greenhouse gas (GHG) emissions under the Paris Agreement, the National Greenhouse Gas Emission Reporting Regulations (NGERs) play a pivotal role.

These regulations not only ensure compliance with international obligations but also support the development of critical policies for a sustainable, low-carbon future. Beyond meeting legal requirements, NGER compliance offers tangible business benefits. It can reveal opportunities for cost-saving efficiencies, reduce your carbon tax burden, and position your company as a sustainability pioneer.

As the March 31st submission deadline looms, businesses must prepare to meet the stringent requirements set by the Department of Forestry, Fisheries, and the Environment (DFFE). Non-compliance isn't an option—penalties including heavy fines or imprisonment underscore the importance of accurate and timely submissions.

This guide walks you through what you need to know about NGERs, from understanding the scope to mastering the submission and verification process.



NGER SUBMISSION AND VERIFICATION PROCESS



Preparing and submitting your NGER report involves the following steps.

1. REGISTRATION

Entities must register with the DFFE through the National Atmospheric Emissions Inventory System (NAEIS).

2. DATA COLLECTION

Collect accurate activity data from all operations, ensuring it meets the thresholds for reporting. This includes energy use and emissions from industrial processes. It is important to note that data for the 2024 calendar year is required for the 2025 submission.

3. EMISSIONS CALCULATION

Calculate emissions using the prescribed methodologies:

- Tier 2: Country-specific factors provided by the DFFE.
- Tier 3: Site-specific fuel analysis data, including calorific values and carbon content.

4. REPORTING

- Upload your calculated emissions data to the NAEIS.
- For the 2024 calendar year, manual submissions are required when NAEIS is unavailable.
- Note manual submission may change, but at this stage we have no further confirmation.

5. VERIFICATION

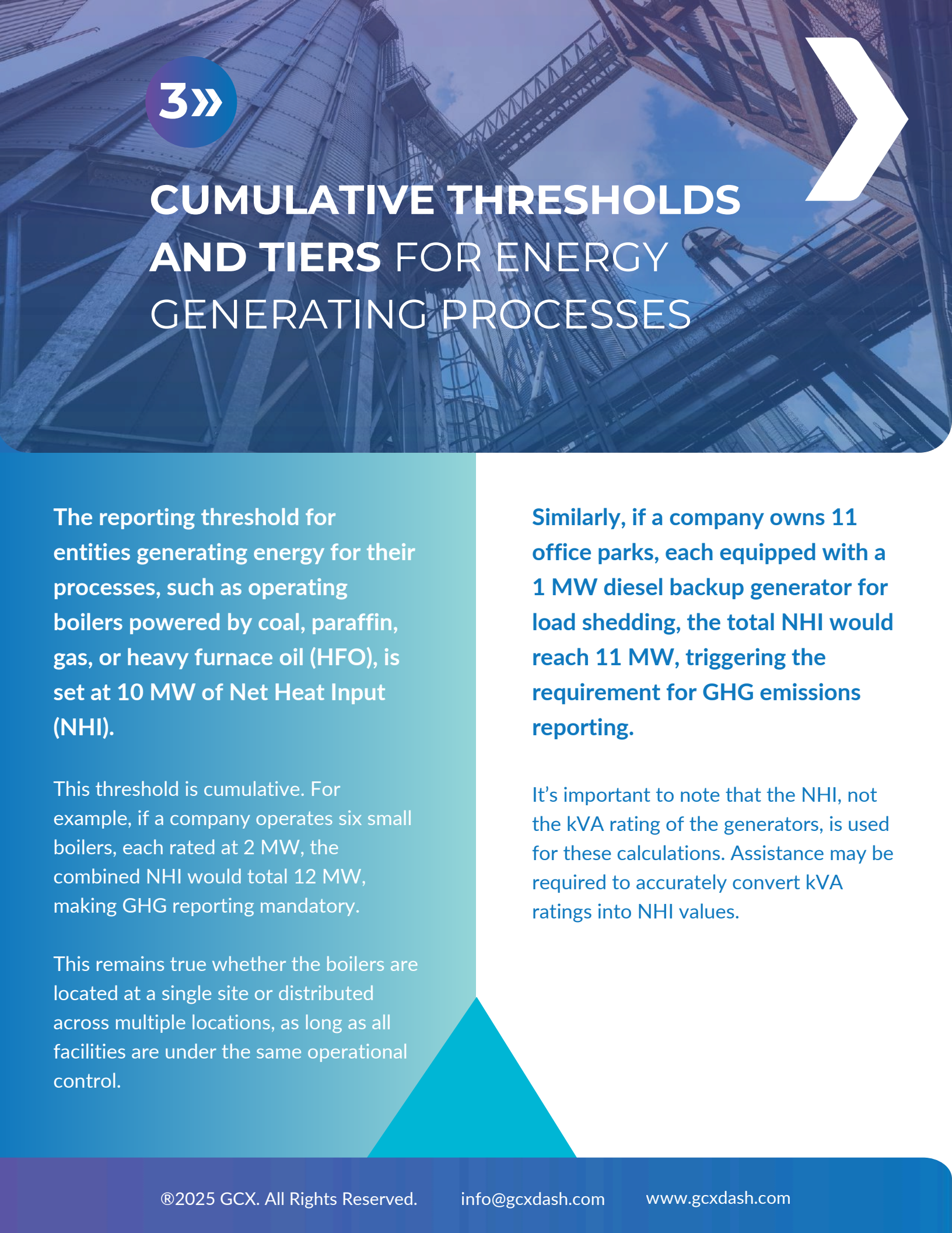
Conduct internal quality assurance checks or engage external auditors to verify the accuracy of your report.

Verification includes reviewing:

- Activity data sources
- Methodologies used
- Completeness and consistency of reporting

6. SUBMISSION

Ensure submission is finalised by March 31st 2025 to avoid penalties.



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CUMULATIVE THRESHOLDS AND TIERS FOR ENERGY GENERATING PROCESSES

The reporting threshold for entities generating energy for their processes, such as operating boilers powered by coal, paraffin, gas, or heavy furnace oil (HFO), is set at 10 MW of Net Heat Input (NHI).

This threshold is cumulative. For example, if a company operates six small boilers, each rated at 2 MW, the combined NHI would total 12 MW, making GHG reporting mandatory.

This remains true whether the boilers are located at a single site or distributed across multiple locations, as long as all facilities are under the same operational control.

Similarly, if a company owns 11 office parks, each equipped with a 1 MW diesel backup generator for load shedding, the total NHI would reach 11 MW, triggering the requirement for GHG emissions reporting.

It's important to note that the NHI, not the kVA rating of the generators, is used for these calculations. Assistance may be required to accurately convert kVA ratings into NHI values.

Historically, entities could calculate emissions using the default Tier 1 methodology. However, starting with the 2022 reporting period,

Tier 2 and Tier 3 methods became mandatory for calculating CO₂ emissions for specific activities identified under certain IPCC (Intergovernmental Panel on Climate Change) codes. These advanced methodologies add complexity but enhance the accuracy of GHG calculations compared to Tier 1.

Greenhouse gas (GHG) emissions reporting typically includes carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O).

While CO₂ emissions must now be calculated using Tier 2 or Tier 3 methodologies, CH₄ and N₂O can still be assessed using Tier 1.

The tiered approach provides varying levels of precision and complexity, as outlined in the following table.



Tier	Accuracy	Region	Description	Applicability	Advantages and Limitations
1	Low	Global	Tier 1 is a default level of emissions estimation that relies on generic values obtained from broad global datasets.	Tier 1 emissions factors are used when more detailed country- or site-specific data is unavailable. Tier 1 emission factors were permitted to be used by all South African activities until the 2022 reporting period. Since 2022, many activities have had to use Tier 2 and 3 to calculate CO ₂ emissions. (Tier 1 emission factors may still be used to calculate CH ₄ and N ₂ O emissions from all activities.)	The use of Tier 1 emission factors is a simple method that is suitable for preliminary estimation of emissions. However, Tier 1 emission factors rely on global data and are thus imprecise.
2	Medium	Country	Tier 2 involves a more detailed approach to estimating emissions as it makes use of country- specific emission factors.	Tier 2 emission factors are used when country-specific emission factors are published for use by the DFFE. Tier 2 emission factors have been published for many fuels, but importantly, are not yet available for bituminous coal. Therefore Tier 3 emissions factors must be used for coal combustion.	The use of Tier 2 country- specific emission factors provides a higher level of accuracy than Tier 1, while still being as simple to use as Tier 1.
3	High	Site	Tier 3 emission factors boast the highest level of accuracy in estimating emissions as they are calculated from site-specific fuel analysis data including gross calorific values (GCV), carbon fractions, proximate and ultimate analysis etc.	Tier 3 emissions factors should be applied when site-specific fuel analyses are available from the supplier of the coal, heavy furnace oil (HFO), diesel, LO10, paraffin, liquified petroleum gas (LPG), biomass etc.	Tier 3 emission factors provide the most accurate estimation because the emissions are calculated using site-specific emission factors from fuel analyses. However, Tier 3 calculations are complex.

Several activities are still permitted to calculate their CO₂ emissions using Tier 1 (although they may choose to use Tier 2 or 3).

A list of these activities is presented in the table below, and is referenced from the [Methodological Guidelines for Quantification of Greenhouse Gas Emissions](#):

SECTORS, CATEGORIES AND THRESHOLDS.

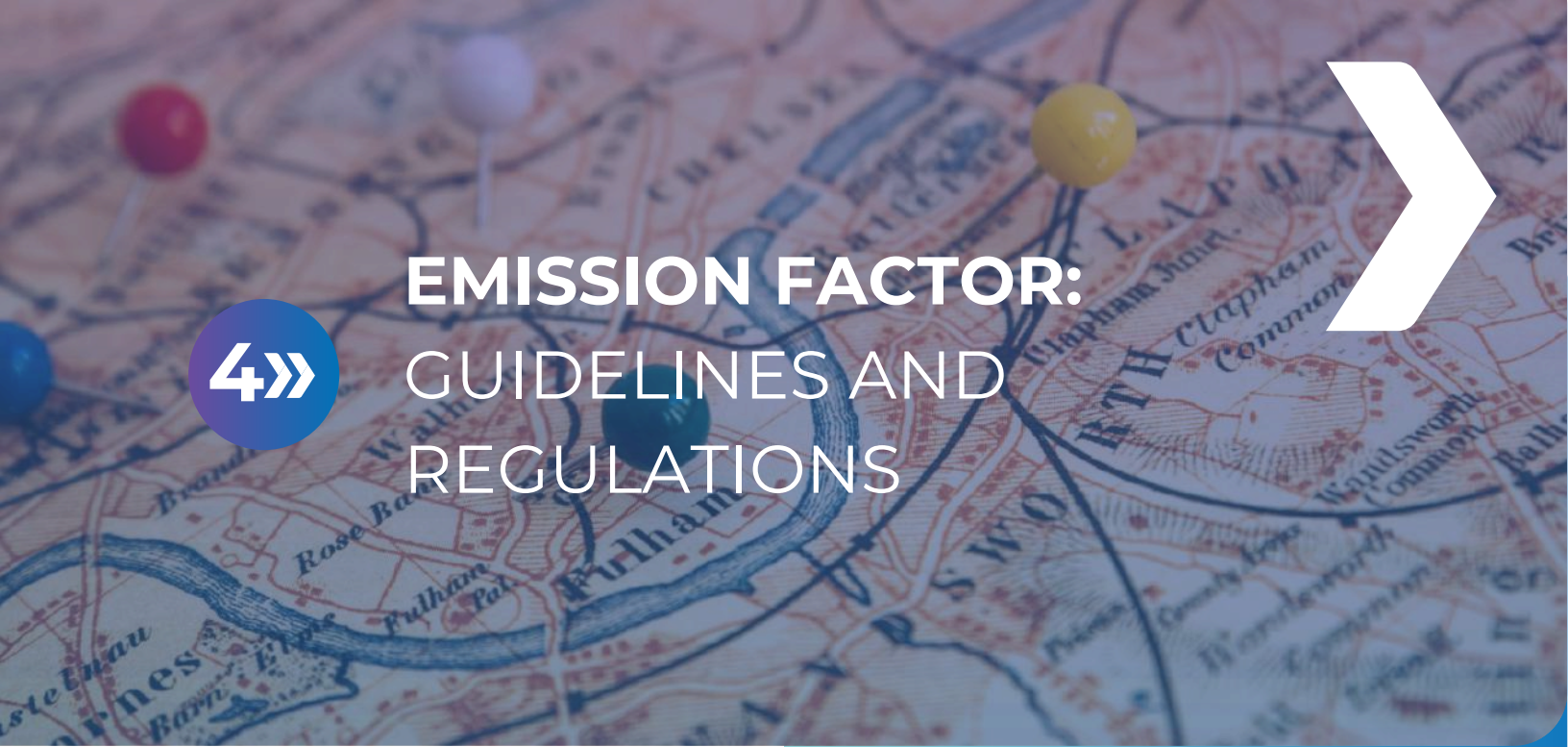
IPCC Code	Activity Name	Category A Reporting Condition	Threshold	Transitional Arrangement Applicability (Regulation 15)
1 ENERGY				
1A	Fuel Combustion Activities			
1A1	Energy Industries			
1A1a	Main Activity Electricity and Heat Production	Tier 2 or 3	10 MW(th)	YES
1A1b	Petroleum Refining	Tier 2 or 3	10 MW(th)	YES
1A1c	Manufacture of Solid Fuels and Other Energy Industries	Tier 2 or 3	10 MW(th)	YES
1A2	Manufacturing Industries and Construction			
1A2a	Iron and Steel	Tier 2 or 3	10 MW(th)	YES
1A2b	Non-Ferrous Metals	Tier 2 or 3	10 MW(th)	YES
1A2c	Chemicals	Tier 2 or 3	10 MW(th)	YES
1A2d	Pulp, Paper and Print	Tier 2 or 3	10 MW(th)	YES
1A2e	Food Processing, Beverages and Tobacco	Tier 2 or 3	10 MW(th)	NO
1A2f	Non-Metallic Minerals	Tier 1, 2 or 3	10 MW(th)	YES
1A2g	Transport Equipment	Tier 1, 2 or 3	10 MW(th)	NO
1A2h	Machinery	Tier 1, 2 or 3	10 MW(th)	NO
1A2i	Mining and Quarrying	Tier 2 or 3	10 MW(th)	YES
1A2j	Wood and Wood Products	Tier 1, 2 or 3	10 MW(th)	NO
1A2k	Construction	Tier 1, 2 or 3	10 MW(th)	NO
1A2l	Textile and Leather	Tier 1, 2 or 3	10 MW(th)	NO
1A2m	Brick manufacturing	Tier 1, 2 or 3	1 million bricks a month	NO
1A2n	Manufacture of ceramic products by firing	Tier 1, 2 or 3	Production ≥ 5 tonnes/day	NO
1A3	Transport			
1A3a	Civil Aviation	Tier 2 or 3	100,000 litres/year	YES
1A3b	Road Transportation	NA	NA	NO
1A3c	Railways	Tier 2 or 3	100,000 litres/year	YES
1A3d	Water-borne Navigation	Tier 2 or 3	100,000 litres/year	YES
1A3e	Other Transportation	NA	NA	NA
1A4	Other Sectors			
1A4a	Commercial/Institutional	Tier 2 or 3	10 MW(th)	YES
1A4b	Residential	Tier 2 or 3	10 MW(th)	YES
1A4c	Agriculture/Forestry/Fishing/Fish Farms	Tier 2 or 3	10 MW(th)	YES
1A5	Non-Specified			
1A5a	Stationary	Tier 2 or 3	10 MW(th)	YES
1A5b	Mobile	NA	NA	NA
1A5c	Multilateral Operations	NA	NA	NA

IPCC Code	Activity Name	Category A Reporting Condition	Threshold	Transitional Arrangement Applicability (Regulation 15)
1B	Fugitive Emissions from Fuels			
1B1	Solid Fuels			
1B1a	Coal Mining and Handling	Tier 2 or 3	None	YES
1B1b	Uncontrolled Combustion, and Burning Coal Dumps	NA	NA	NA
1B1c	Solid Fuel Transformation	Tier 2 or 3	None	YES
1B2	Oil and Natural Gas			
1B2a	Oil	Tier 1, 2 or 3	None	NO
1B2b	Natural Gas	Tier 1, 2 or 3	None	NO
1B3	Other Emissions from Energy Production	Tier 2 or 3	None	YES
1C	Carbon Dioxide Transport and Storage			
1C1	Transport of CO2			
1C1a	Pipelines	NA	10,000 tons CO2/year	NO
1C1b	Ships	Tier 1, 2 or 3	10,000 tons CO2/year	NO
1C1c	Other (please specify)	Tier 1, 2 or 3	10,000 tons CO2/year	NO
1C2	Injection and Storage			
1C2a	Injection	Tier 1, 2 or 3	10,000 tons CO2/year	NO
1C2b	Storage	Tier 1, 2 or 3	10,000 tons CO2/year	NO
1C3	Other	NA	NA	NA
2 INDUSTRIAL PROCESSES AND PRODUCT USE				
2A	Mineral Industry			
2A1	Cement Production	Tier 2 or 3	None	YES
2A2	Lime Production	Tier 2 or 3	None	YES
2A3	Glass Production	Tier 2 or 3	None	YES
2A4	Other Process Uses of Carbonates	Tier 1, 2 or 3	NA	NO
2A4a	Ceramics	Tier 1, 2 or 3	50 tonnes of production/month	NA
2A4b	Other Uses of Soda Ash	Tier 1, 2 or 3	50 tonnes of production/month	NA
2A4c	Non-Metallurgical Magnesite Production	Tier 1, 2 or 3	None	YES
2A4d	Other (please specify)	Tier 1, 2 or 3	20 tonnes of production/month	NO
2A5	Other (please specify)	NA	NA	NO
2B	Chemical Industry			
2B1	Ammonia Production	Tier 2 or 3	None	YES
2B2	Nitric Acid Production	Tier 2 or 3	None	YES
2B3	Adipic Acid Production	Tier 2 or 3	None	YES
2B4	Caprolactam, Glyoxal and Glyoxylic Acid Production	Tier 2 or 3	None	YES
2B5	Carbide Production	Tier 2 or 3	None	YES
2B6	Titanium Dioxide Production	Tier 2 or 3	None	YES
2B7	Soda Ash Production	Tier 2 or 3	None	YES
2B8	Petrochemical and Carbon Black Production	Tier 2 or 3	None	YES
2B8a	Methanol	Tier 2 or 3	None	YES
2B8b	Ethylene	Tier 2 or 3	None	YES
2B8c	Ethylene Dichloride and Vinyl Chloride Monomer	Tier 2 or 3	None	YES
2B8d	Ethylene Oxide	Tier 2 or 3	None	YES
2B8e	Acrylonitrile	Tier 2 or 3	None	YES
2B8f	Carbon Black	Tier 2 or 3	None	YES
2B8g	Hydrogen Production	Tier 2 or 3	None	YES
2B9	Fluorochemical Production			
2B9a	By-product Emissions	Tier 1, 2 or 3	None	NO
2B9b	Fugitive Emissions	Tier 1, 2 or 3	None	NO
2B10	Other (please specify)	Tier 1, 2 or 3	20 tonnes of production/month	NO

IPCC Code	Activity Name	Category A Reporting Condition	Threshold	Transitional Arrangement Applicability (Regulation 15)
2C	Metal Industry			
2C1	Iron and Steel Production	Tier 2 or 3	None	YES
2C2	Ferroalloys Production	Tier 2 or 3	None	YES
2C3	Aluminium Production	Tier 2 or 3	None	YES
2C4	Magnesium Production	Tier 2 or 3	None	YES
2C5	Lead Production	Tier 2 or 3	None	YES
2C6	Zinc Production	Tier 2 or 3	None	YES
2C7	Other (please specify)	Tier 2 or 3	50 tonnes of production/month	NO
2D	Non-Energy Products from Fuels and Solvent Use			
2D1	Lubricant Use	NA	NA	NO
2D2	Paraffin Wax Use	NA	NA	NO
2D3	Solvent Use	NA	NA	NO
2D4	Other (please specify)	NA	NA	NO
2E	Electronics Industry			
2E1	Integrated Circuit or Semiconductor	NA	NA	NA
2E2	TFT Flat Panel Display	NA	NA	NA
2E3	Photovoltaics	NA	NA	NA
2E4	Heat Transfer Fluid	NA	NA	NA
2E5	Other (please specify)	NA	NA	NA
2F	Product Uses as Substitutes for Ozone Depleting Substances			
2F1	Refrigeration and Air Conditioning	NA	NA	NA
2F1a	Refrigeration and Stationary Air Conditioning	NA	NA	NA
2F1b	Mobile Air Conditioning	NA	NA	NA
2F2	Foam Blowing Agents	NA	NA	NA
2F3	Fire Protection	NA	NA	NA
2F4	Aerosols	NA	NA	NA
2F5	Solvents	NA	NA	NA
2F6	Other Applications (please specify)	NA	NA	NA
2G	Other Product Manufacture and Use			
2G1	Electrical Equipment	NA	NA	NA
2G1a	Manufacture of Electrical Equipment	NA	NA	NA
2G1b	Use of Electrical Equipment (SF6 use)	Tier 1, 2 or 3	50 kg per year	NO
2G1c	Disposal of Electrical Equipment	NA	NA	NA
2G2	SF6 and PFCs from Other Product Uses	NA	NA	NA
2G2a	Military Applications	NA	NA	NA
2G2b	Accelerators	NA	NA	NA
2G2c	Other (please specify)	NA	NA	NA
2G3	N2O from Product Uses	NA	NA	NA
2G3a	Medical Applications	NA	NA	NA
2G3b	Propellant for Pressure and Aerosol Products	NA	NA	NA
2G3c	Other (Please specify)	NA	NA	NA
2G4	Other (please specify)	NA	NA	NA
2H	Other			
2H1	Pulp and Paper Industry	NA	NA	NA
2H2	Food and Beverages Industry	NA	NA	NA
2H3	Other (please specify)	NA	NA	NA

IPCC Code	Activity Name	Category A Reporting Condition	Threshold	Transitional Arrangement Applicability (Regulation 15)
3 AGRICULTURE, FORESTRY, AND OTHER LAND USE				
3A	Livestock			
3A1	Enteric Fermentation			
3A1a	Cattle	NA	NA	NA
3A1b	Buffalo	NA	NA	NA
3A1c	Sheep	NA	NA	NA
3A1d	Goats	NA	NA	NA
3A1e	Camels	NA	NA	NA
3A1f	Horses	NA	NA	NA
3A1g	Mules and Asses	NA	NA	NA
3A1h	Swine	NA	NA	NA
3A1j	Other (please specify)	NA	NA	NA
3A2	Manure Management			
3A2a	Cattle	NA	NA	NA
3A2b	Buffalo	NA	NA	NA
3A2c	Sheep	NA	NA	NA
3A2d	Goats	NA	NA	NA
3A2e	Camels	NA	NA	NA
3A2f	Horses	NA	NA	NA
3A2g	Mules and Asses	NA	NA	NA
3A2h	Swine	NA	NA	NA
3A2i	Poultry	Tier 1, 2 or 3	With 40,000 places for poultry	NO
3A2j	Other (please specify)	NA	NA	NA
3B	Land			
3B1	Forest Land			
3B1a	Forest Land Remaining Forest Land	Tier 1, 2 or 3	Equal or greater than 100 hectares	YES
3B1b	Land Converted to Forest Land	Tier 1, 2 or 3	Equal or greater than 100 hectares	YES
3B2	Cropland			
3B2a	Cropland Remaining Cropland	NA	NA	NA
3B2b	Land Converted to Cropland	NA	NA	NA
3B3	Grassland			
3B3a	Grassland Remaining Grassland	NA	NA	NA
3B3b	Land Converted to Grassland	NA	NA	NA
3B4	Wetlands			
3B4a	Wetlands Remaining Wetlands	NA	NA	NA
3B4b	Land Converted to Wetlands	NA	NA	NA
3B5	Settlements			
3B5a	Settlements Remaining Settlements	NA	NA	NA
3B5b	Land Converted to Settlements	NA	NA	NA
3B6	Other Land			
3B6a	Other Land Remaining Other Land	NA	NA	NA
3B6b	Land Converted to Other Land	NA	NA	NA

IPCC Code	Activity Name	Category A Reporting Condition	Threshold	Transitional Arrangement Applicability (Regulation 15)
3C	Aggregate Sources and Non-CO2 Emissions Sources on Land			
3C1	Emissions from Biomass Burning			
3C1a	Biomass Burning in Forest Lands	Tier 1, 2 or 3	Data provider owning ≥100 hectares	NO
3C1b	Biomass Burning in Croplands	NA	NA	NA
3C1c	Biomass Burning in Grasslands	NA	NA	NA
3C1d	Biomass Burning in All Other Land	NA	NA	NA
3C2	Liming	NA	NA	NA
3C3	Urea Application	NA	NA	NA
3C4	Direct N2O Emissions from Managed Soils	Tier 1, 2 or 3	Data provider owning ≥100 hectares	NO
3C5	Indirect N2O Emissions from Managed Soils	Tier 1, 2 or 3	Data provider owning ≥100 hectares	NO
3C6	Indirect N2O Emissions from Manure Management	NA	NA	NA
3C7	Rice Cultivations	NA	NA	NA
3C8	Other (please specify)	NA	NA	NA
3D	Other			
3D1	Harvested Wood Products	Tier 1, 2 or 3	HWP from timber harvested per threshold	NO
3D2	Other (please specify)	Tier 1, 2 or 3	NA	NO
4 WASTE				
4A	Solid Waste Disposal			
4A1	Managed Waste Disposal Sites	Tier 1 or 2	Receiving 5 tonnes/day or 25,000 tonnes	NO
4A2	Unmanaged Waste Disposal Sites	Tier 1 or 2	Receiving 5 tonnes/day or 25,000 tonnes	NO
4A3	Uncategorised Waste Disposal Sites	Tier 1 or 2	Receiving 5 tonnes/day or 25,000 tonnes	NO
4B	Biological Treatment of Solid Waste	NA	NA	NA
4C	Incineration and Open Burning of Waste			
4C0	Waste - Pyrolysis	Tier 2 or 3	100 kg/hour	YES
4C1	Waste Incineration	Tier 1 or 2	1 tonne/hour	NO
4C2	Open Burning of Waste	NA	NA	NO
4D	Wastewater Treatment and Discharge			
4D1	Domestic Wastewater Treatment and Discharge	Tier 1 or 2	2 million litres/day	NO
4D2	Industrial Wastewater Treatment and Discharge	Tier 1 or 2	1,000 cubic metres/day	NO
4E	Other (please specify)	NA	NA	NA
5 OTHER				
5A	Indirect N2O Emissions from the Atmospheric Deposition of Nitrogen in NOx and NH3	NA	NA	NA
5B	Other (please specify)	NA	None	NA



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EMISSION FACTOR: GUIDELINES AND REGULATIONS

Data providers must carefully select emission factors to ensure accurate GHG emissions estimations. The highest available Tier methodology should always be applied:

- Tier 1: Uses default emission factors as outlined in the 2006 IPCC Guidelines.
- Tier 2: Requires country-specific emission factors, such as those developed by sectors or through initiatives like the Greenhouse Gas Improvement Programme.
- Tier 3: Relies on facility- or technology-specific parameters, incorporating details about carbon inputs and process conditions.

When calculating emissions, South African-specific emission factors must be prioritised. If no such factors exist, the default emission factors from the IPCC should be used. However, the use of country-specific factors is contingent on meeting these criteria:

1. The factors must undergo an independent review process.
2. They must receive approval from the competent authority.

It is strongly recommended that emitting sectors and companies engage the competent authority early in the process of developing country-specific emission factors.

REVISION AND PROPOSAL OF NEW EMISSION FACTORS

Emission factors may be revised, or new ones proposed, as required. Any new emission factors must be submitted to the competent authority for review and approval, per section 10(2) of the regulations.

The competent authority evaluates proposed emission factors to ensure that estimates are neither over- nor underestimated and that uncertainties are minimized.

To meet these objectives, proposed factors or parameters must:

- Align with the principles and methodologies of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
- Include documentation detailing their derivation, level of uncertainty (preferably quantified), and qualitative indicators.
- Be unbiased and as accurate as possible.
- Introduce a new factor for an uncovered source or provide an independent or alternative value for an existing factor or parameter type.



NGER VERIFICATION PROCESS FLOW.

The path to compliance under the National Greenhouse Gas Emission Reporting Regulations (NGERs) is built on transparency, accuracy, and collaboration.

The NGER Verification Process Flow ensures that submitted data is meticulously reviewed, verified, and approved by competent authorities to maintain the integrity of South Africa's greenhouse gas inventory.

**Note companies do not need to verify their data in order to submit to NGER, however it is best practice to ensure data is verified for accuracy.*

From data collection to compliance enforcement, each stage is critical in upholding regulatory standards and ensuring accurate GHG emissions reporting.

This process incorporates independent verification, quality control measures, and a robust feedback loop to resolve queries and refine submissions. The following flowchart illustrates the sequential steps, roles, and decision points that define this essential process.



Complying with the National Greenhouse Gas Emission Reporting Regulations (NGERs) is far more than a box-ticking exercise—it's a pivotal step toward aligning your business with South Africa's climate commitments and global sustainability goals.

By accurately measuring and reporting your greenhouse gas emissions, your organisation contributes to a transparent national inventory, supports policy development, and demonstrates leadership in the transition to a low-carbon economy.

