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Earthjustice[1] submits this analysis to the Centre for Environmental Rights in support of the Centre's comments to the South African Department of Environmental Affairs concerning the Draft National Greenhouse Gas Emission Reporting Regulations published on 7 June 2016 in the Government Gazette. Part I compares the draft South African regulations with the United States Greenhouse Gas Reporting Program (GHGRP), and provides recommendations for revising the draft South African regulations. Part II provides a brief overview of the GHGRP.

I. Considerations for revising the Draft National Greenhouse Gas Emission Reporting Regulations based on the GHGRP

1. Accuracy calibration

a. South Africa: The draft regulations do not include any specifications about accuracy calibration for emissions monitoring instruments, and neither do the Technical Guidelines for Monitoring to which the regulations refer for methods.
b. United States: The GHGRP includes accuracy specifications for different kinds of monitoring tools. The default accuracy requirement is specified at +/-5% for flow meters.[2]
c. Recommendation: Include accuracy calibration requirements for monitoring mechanisms at applicable facilities.

2. Facility-level data

a. South Africa: While the Department of Environmental Affairs may intend to provide for facility-level reporting in the latest draft, the language in section 7(1) (Reporting Requirements) leaves space for misinterpretation. That section specifies that data providers must "submit the greenhouse gas emissions for the relevant greenhouse gases… for all its facilities." This could be interpreted as still requiring only company-level data that includes aggregated data from all of a company's facilities.

[1] Founded in 1971, Earthjustice fights for the right of all people to a healthy environment. As the largest nonprofit environmental law organization in the United States, Earthjustice uses the power of the law and the strength of partnership to protect people's health, preserve magnificent places and wildlife, advance clean energy, and combat climate change. We partner with thousands of groups and individuals to take on the critical environmental issues of our time. (www.earthjustice.org.)

[2] Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56260, 56269 (October 30, 2009) (to be codified at 40 C.F.R. parts 86, 87, 89, 90, 94, 98, 1033, 1039, 1042, 1045, 1048, 1051, 1054, 1065).

b. United States: The GHGRP provides that "facility-level reporting is required, with the exception of some supplier source categories." [3] It also specifies–in many of the regulations' sector-specific requirements–that a facility is defined as "any physical property, plant, building, structure, source, or stationary equipment, located on one or more contiguous or adjacent properties, in actual physical contact or separated solely by a public roadway or other public right-of-way, and under common ownership or common control, that emits or may emit any [greenhouse gas]."[4]
    i. In oil and natural gas, facility includes all emissions associated with wells owned and operated by a single company in one basin.[5]
    ii. In electricity, facility refers to all electric transmission and distribution equipment functioning as an integrated unit.[6]
c. Recommendation: To avoid a potential loophole, the language in South Africa's regulations should be revised to make it clear that companies must provide greenhouse gas (GHG) emissions data for each physical facility under their control. As noted in the Centre for Environmental Rights' comments on the first draft of the proposed regulation (August 4, 2015), facility-level reporting is essential to understanding how to reduce greenhouse gas emissions in South Africa. Emissions are easier to track over time if they are tied to physical sources, rather than corporate entities that can change over time.[7] In addition, facility-level data would be necessary to implement cap-and-trade program and other similar regulatory initiatives.[8]

3. Specific Greenhouse Gases Covered

a. **Language**
    i. South Africa: The draft regulations do not specify within the text itself what constitutes a greenhouse gas subject to reporting. They reference the National Environmental Management: Air Quality Act of 2004 for the definition of greenhouse gas. This information is central to the greenhouse gas reporting program's regulations, and should not require additional research to find. In addition, the language in section 7(1) (Reporting Requirements) could be read to say that reporting is required for the greenhouse gases specified in Annexure 1. ("A Category A data provider who is applying tier 1 or tier 2 methods must submit the greenhouse gas emissions and activity data for the relevant greenhouse gases and IPCC emission sources specified in Annexure 1…".) However, Annexure 1 lists only the emission sources, whereas the greenhouse gases included must be found in the Air Quality Act.
    ii. United States: The preamble of EPA's GHGRP final rule specifies that "The rule requires reporting of annual emissions of carbon dioxide (Co2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and other fluorinated gases."[9]

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[3] *Id.* at 56273.
[4] 40 C.F.R. 98, Subpart W, available at http://www.envcap.org/energy/caa/40CFRPart98SubpartWNov10.cfm (accessed July 1, 2016).
[5] 40 C.F.R. 98, Subpart W.
[6] 40 C.F.R. 98, Subpart DD.
[7] Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. at 56273.
[8] *Id.* at 56272.
[9] *Id.* at 56264.

iii. Recommendation: South Africa's regulations should reference the specific greenhouse gases covered within the text of the regulations to support transparency and accountability. In addition, the language of 7(1) should be clarified to reference both the list of covered greenhouse gases and the list of emission sources independently.

b. **Fluorinated Gases**

i. South Africa: The Technical Guidelines for Monitoring, Reporting and Verification of Greenhouse Gas Emissions by Industry, to which the draft regulations cite for monitoring and reporting methods, indicate that the regulations require reporting of carbon dioxide, methane, and nitrous oxide, as well as fluorinated gases.[10] The definition of greenhouse gases to which the draft regulations cite (in the Air Quality Act), however, includes only carbon dioxide, methane, and nitrous oxide.[11]

ii. United States: In addition to carbon dioxide, methane, and nitrous oxide, the American program requires reporting of fluorinated gases, including Sulfur hexafluoride, Hydrofluorocarbons, and Perfluorocarbons emissions. ("The rule requires reporting of annual emissions of carbon dioxide (Co2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and other fluorinated gases.")[12]

iii. Recommendation: While fluorinated gases do constitute a far greater percentage of U.S. greenhouse gas emissions nationally (~3%, as opposed to ~0.3% in South Africa)[13], reporting of a broader range of greenhouse gases would be useful to facilitate verification and to support future analyses of GHG emissions, especially if F-gases become increasingly widely used as substitutes for ozone-depleting substances in South Africa.[14] If the Department of Environmental Affairs does intend to include the reporting of these gases under the draft regulations, they should make this clearer in the text.

4. Process of Categorization

a. South Africa: While the draft regulations cite to the National Inventory Report (perhaps in response to the Centre for Environmental Rights' August 4, 2015 comments), they still

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[10] Technical Guidelines for Monitoring, Reporting and Verification of Greenhouse Gas Emissions by Industry, *Department of Environmental Affairs* (2016), p. 7. "The greenhouse gases covered by these guidelines are defined in the Regulations

[11] National Environmental Management: Air Quality Act, 2004, No. 39, Vol. 476, Cape Town 24 (February 2005), Chapter 1. This chapter specifies that "greenhouse gas" means "gaseous constituents of the atmosphere, both natural and anthropogenic, that emit and re-emit infrared radiation, and includes carbon dioxide, methane, and nitrous oxide."

[12] *Id.* at 56264.

[13] U.S. Greenhouse Gas Emissions 2014, *EPA* (2014), available at https://www3.epa.gov/climatechange/ghgemissions/gases.html (accessed July 1, 2016); Greenhouse Gas Inventory for South Africa 2000-2010, *Department of Environmental Affairs* (), available at https://www.environment.gov.za/sites/default/files/docs/greenhousegas_invetorysouthafrica.pdf (accessed July 1, 2016).

[14] *See* Greenhouse Gas Inventory for South Africa 2000-2010, *Department of Environmental Affairs* (), Figure 2.6.

do not sufficiently explain the process through which the categories were identified in accordance with the key category analysis of the National Inventory Report.

b. United States: In the United States, the Environmental Protection Agency (EPA) articulates the process by which the applicable categories were selected:[15]
    i. Considered all anthropogenic sources of GHG emissions included in the United States GHG Inventory and the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and existing voluntary and regulatory reporting programs.
    ii. Used a list compiled from these sources to identify the categories that emit the greatest amount of GHGs with the fewest numbers of reporters.
    iii. Excluded some sources that are currently difficult to monitor/verify.

c. Recommendation: South Africa should amend its language to more specifically articulate how the applicable sectors and sources were chosen to foster accountability and to facilitate revisions.

5. Flexibility for regulated entities

a. South Africa: The draft regulations continue to leave far too much flexibility for regulated bodies. The four year transitional period (discussed in the Centre for Environmental Rights' August 4, 2015, comments) has been increased to five years in the newest draft. In addition, allowing companies the choice of calculation method will cause most entities to rely on the lower level of reporting.

b. United States: Unlike the option for a multi-year transitional period in the current South African program, the GHGRP allows for a flexible transition for regulated entities by permitting a more flexible monitoring approach just for the first quarter of the reporting period. [16] Facilities that seek an extension need to demonstrate that they could not obtain monitoring instrumentation in time "despite good faith efforts," and may be denied if they fail to demonstrate legitimate need.[17]

c. Recommendation: South Africa should create less flexibility for regulated entities to reduce their reporting obligations. As suggested by the Centre for Environmental Rights, the transitional period should be reduced to one year at most ad should require a showing of good cause. Moreover, South Africa should limit the freedom of regulated entities to choose the calculation methods to apply to their reporting requirements.

6. Thresholds for source applicability

a. South Africa: It is unclear whether the different thresholds for different sectors correspond to approximately the same level of emissions as they are expressed in a diversity of units of measurement.

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[15] Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. at 56270.

[16] *Id.* at 56274. ("Under the schedule in the Appropriations Act, the final rule would have been signed at the end of June 2009, which would have allowed approximately six months to prepare for data collection in January 2010. Given the delay in promulgating the rule, there is less time between signature of the rule and a January 1, 2010 start date. In light of this fact, and the industry comments indicating that facilities do not currently have all of the required monitoring systems, EPA has decided to provide flexibility by establishing a best available monitoring methods option for the first quarter of calendar year 2010.")

[17] *Id.* at 56275. ("Extensions will apply primarily to situations when needed monitoring instrumentation could not be obtained within the timeframe despite good faith efforts by the facility, or when installation of monitoring instrumentation would require a process unit shutdown that could not feasibly be scheduled prior to April 1, 2010.")

b. United States: Conversely, the GHGRP program retained a threshold of 25,000 CO2 equivalent in emissions for all industries.
c. Recommendation: While a uniform threshold would make the data set more manageable, simplify applicability determination, and ensures that no industry is subjected to a higher or lower standard, it may be a major administrative hurdle to transition to different measurement units for already regulated industries. We advise the Department of Environmental Affairs to ensure that the different measurement units applied to different sectors does not allow major gaps in the entities and sectors regulated.

II. Summary of the United States Greenhouse Gas Reporting Program

Greenhouse Gas Reporting Program: 40 CFR Part 98, pursuant to the Clean Air Act (CAA), section 114 (42 U.S.C. 7414), promulgated by the EPA on October 30, 2009.[18] "EPA anticipates that facility-level GHG emissions data will lead to improvements in the quality of the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Inventory), which EPA prepares annually, with input from several other agencies, and submits to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC)."[19]

1. **History**:
    - Dec. 27, 2007: Consolidated Appropriations Act for Fiscal Year 2008 authorized funding for EPA to "develop and publish a draft rule not later than nine months after the date of enactment… and a final rule not later than 18 months after the date of enactment… to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy of the United States."[20]
    - April 10, 2009 EPA proposed GHG reporting rule, notice and comment for two months.[21]
2. **Judicial Review:** Subject to provisions of CAA section 307(d) re: judicial review.[22]
3. **Legal authority**: Under authority authorized in CAA sections 114 and 208.
4. **Applicability**: Applies to "fossil fuel suppliers and industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and off-road vehicles and engines," as well as "fuel and chemicals suppliers…"[23]
    - Covers an estimated 85-90% of U.S. GHG emissions from over 8,000 facilities
    - Generally, mandatory reporting of GHGs from sources that emit 25,000 metric tons or more of CO_2 equivalent/year in the U.S. In specified sectors, reporting is mandatory for all facilities.
    - Most small businesses emit less than 25,000 metric tons and are excluded from the regulations.
    - Any facility that contains any of the following source categories must report (regardless of total annual emissions):
        - Electricity generating facilities subject to the Acid Rain Program or otherwise report CO_2 emissions year-round through 40 CFR part 75

[18] *Id.* at 56275.
[19] *Id.* at 56265.
[20] *Id.* at 56264.
[21] *Id.*
[22] *Id.* at 56262.
[23] *Id.* at 56264.

        - Adipic acid production
        - Aluminum production
        - Ammonia manufacturing
        - Cement production
        - HCFC-22 production
        - HFC-23 destruction processes that are not co-located with a HCFC-22 production facility that destroy more than 2.14 metric tons of HFC-23/year
        - Lime manufacturing
        - Nitric acid production
        - Petrochemical production
        - Petroleum refineries
        - Phosphoric acid production
        - Silicon carbide production
        - Soda ash production
        - Titanium dioxide production
        - Municipal solid waste
        - Landfills that generate CH4 in amounts equivalent to 25,000 metric tons of CO2 equivalent.
        - Manure management sites that generate equivalent to 25,000 metric tons of CO_2 equivalent.
    - Any facility that contains any source category listed below and that emits 25,000 metric tons of CO_2 equivalent in combined emissions from stationary combustion units, miscellaneous carbonates, and all source categories listed must report:
        - Ferroalloy production
        - Glass production
        - Hydrogen production
        - Iron and steel production
        - Lead production
        - Pulp and paper manufacturing
        - Zinc production
    - Any facility that meets all three requirements must submit emissions just from stationary combustion sources:
        - Does not meet requirements in above two sections
        - Aggregate maximum rated heat input capacity of stationary fuel combustion units is 30 million British thermal units/hour
        - Emission of 25,000 metric tons of CO_2/year from all stationary sources.
5. **Reporting Requirements:**
    - **98.3(c)(4): reporting requirements for direct emitting facilities**. Reporting is at the facility level.[24]
    - **98.3(c)(5): reporting requirements for suppliers**. Reporting is on GHG emissions that would result from combustion/release/oxidization of the products supplied, imported, or exported during the year.[25]
    - Some facilities are subject to rules for direct emitters and for suppliers (e.g. petroleum refineries).[26]

[24] 40 C.F.R. 98.3(c)(4).
[25] 40 C.F.R. 98.3(c)(5).

- Reporting for some suppliers and vehicle & engine manufacturers is at the corporate level.[27]
- Requires reporting of annual emissions of:[28]
  - Carbon dioxide (CO_2)
  - Methane (CH4)
  - Nitrous oxide (N2O)
  - Sulfur hexafluoride (SF6)
  - Hydrofluorocarbons (HFCs)
  - Perfluorocarbons (PFCs)
  - Other fluorinated gases (e.g. nitrogone trifluoride)
- Reports are submitted annually online for data from the previous calendar year
- EPA verifies data electronically through statistical, algorithmic, range, and other verification checks, will conduct direct follow-up with facilities for any potential data quality issues

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Sincerely,

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[26] *Id.* at 56268.
[27] 74 Fed. Reg. at 56264.
[28] *Id.*