

Completion of Community Scale Greenhouse Gas Inventory

Prepared for:

Msunduzi Local Municipality, South Africa

A Clean Energy Solutions Center Ask an Expert Policy Solution

Prepared by:

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Background

In response to the **Clean Energy Solutions Center**¹ (CESC) call for Technical Assistance, three South African Municipalities were successfully paired with **ICLEI – Local Governments for Sustainability - Africa Secretariat**² (ICLEI Africa) based in Cape Town, South Africa.

Msunduzi Local Municipality³, a medium sized municipality with an estimated population of 646,715 (Stats SA, 2011) is located in the KwaZulu Natal Province of South Africa. The municipality received 40hrs of technical assistance from an ICLEI Africa Urban Greenhouse Gas Inventory Specialist through funding provided under the CESC 'Ask an Expert' Service.

As opposed to the other two municipalities' request for assistance that included both the completion of a Greenhouse Gas Inventory (GHGI) as well as training and capacity building assistance; Msunduzi required assistance in measuring its Greenhouse Gas emissions and with **compiling a GHG inventory for the Municipal area *only***, training of municipal staff was not included in the assistance provided as the municipality felt they currently lack the human resources to complete a Baseline- or future GHGIs.

Assistance provided

The 40hrs of expert assistance was broken into two phases over the course of three months:

1. Data Collection

As ICLEI Africa was appointed as an external consultant to complete the GHGI, we had to oversee the data collection activities from the various internal municipal departments in conjunction with our municipal contact person.

An in-person kick-off meeting was held with the various departments to introduce the project to them and explain:

- Why data is needed;
- What data is needed;

the travel budget for this was once again provided for by the Compact of Mayors Programme⁴.

Follow up e-mails and telephonic communications were done to track the status of data collection. Unfortunately, most of the internal departments were very unresponsive and we were unable to obtain feedback and accurate municipal data in the timeframe required.

¹ <https://cleanenergysolutions.org/>

² <http://africa.iclei.org/>

³ <http://www.msunduzi.gov.za/site/home>

⁴ <https://www.compactofmayors.org/>

2. Completion of the GHGI

As we were unable to obtain accurate inventory data (apart from solid waste data that was received from the Waste Department) from the municipality, other data sources had to be found. Whilst solid waste data accuracy can be considered 'high' and liquid fuel data that was obtained from the National Department of Energy can be considered 'medium to high'; electricity data had to be assumed based on a study report completed for the National Energy Regulator of South Africa⁵ (NERSA). Data accuracy for electricity data for the Msunduzi Municipality is considered 'low to medium'. Additionally, coal use data could not be obtained from manufacturing industries within the municipal boundaries which would increase the municipal emissions marginally.

Key learnings from the completion of the Msunduzi GHGI include:

- **Municipal buy-in across the various departments is vital.** Although the Environmental Management Department was fully committed to the completion of the inventory, other departments, in particular Energy or Electricity and Transport was not resulting in vital data not being forthcoming.
- **A Political Champion is needed.** Although the municipality is currently considering joining the Compact of Mayors Programme, they have yet to sign the Mayoral Commitment. Having a political leader and champion for the project provide additional motivation to the various departments to work together.

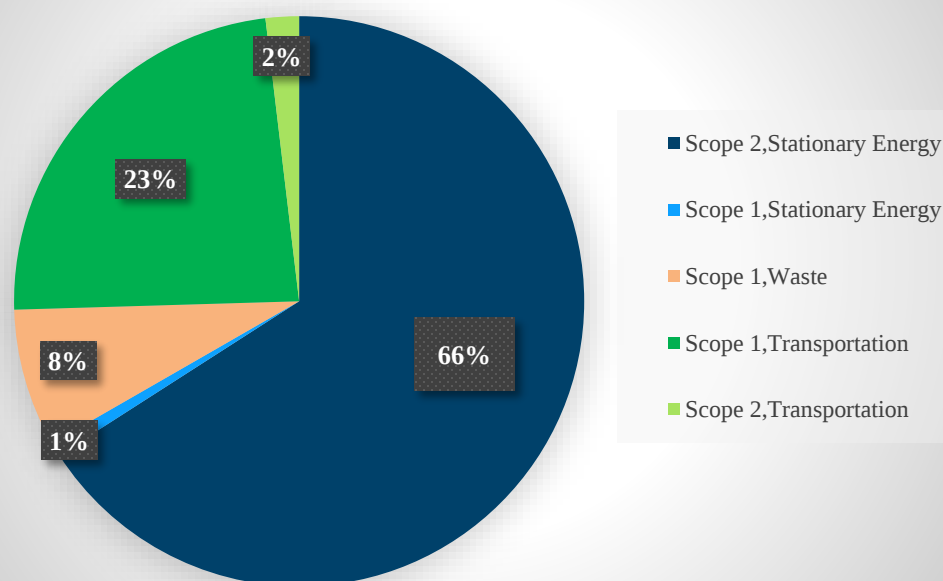
Assistance Results

Through the 40hr technical assistance provided a **Greenhouse Gas Inventory was completed for the Msunduzi Local Municipality**. The ICLEI USA developed tool **Clearpath**⁶ was used to calculate the municipality's GHG emissions. Data accuracy of the Inventory is considered 'low to medium' due to assumptions and extrapolation of data used, findings of the GHGI is summarised below:

⁵ <http://www.nersa.org.za/>

⁶ <http://www.clearpath.global/>

Msunduzi 2015 GHGI



Even though the data accuracy of the Inventory is not considered high, the results seem to be in line with similar sized municipalities within South Africa.

The estimated 6,19 MTCO₂e emissions per capita is still lower than the country wide estimate of 9,02 MTCO₂e per capita, and range closer to the world average of 5 MTCO₂ per capita⁷.

<i>Sector</i>	<i>Metric Tons CO₂e generated (2015)</i>	<i>As %</i>
Stationary Energy (Scope 1 & 2)	2 671 262	67
Transportation (Scope 1 & 2)	1 020 054	25
Waste	313 784	8
Total	4 005 100	100
MTCO₂/person	6,19	

Conclusion

As a result of funding provided by the Clean Energy Solutions Center, the **Mzunduzi Local Municipality** in South Africa was able to **complete a Baseline GreenHouse Gas Inventory**. It is hoped the GHGI can be used to motivate for methods to be implemented to reduce the municipality's carbon footprint (municipal operations as well as industrial activities). Strategies already being implemented to reduce energy consumption and carbon footprint are solar street lighting and traffic lights within the CBD, Integrated Rapid Public Transport Network (IRPTN) and Non-Motorised Transport Routes (NMTS).

⁷ <http://data.worldbank.org/indicator/EN.ATM.CO2E.PC>