

North-West University

# CARBON FOOTPRINT

Financial Year 2024

April 2025

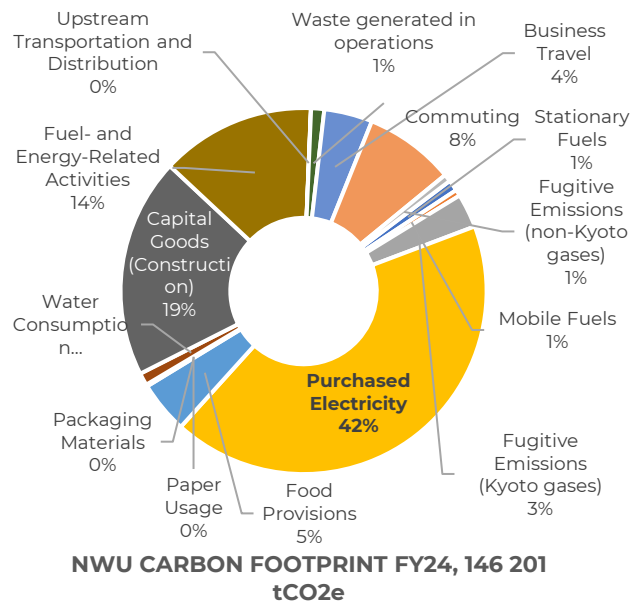
## RESULTS SUMMARY

This report presents the findings of North-West University's (NWU) Greenhouse Gas (GHG) emissions inventory for the financial year 1 January – 31 December 2024.

This marks NWU's third carbon footprint assessment. The organisational boundary includes the university's three South African campuses—Potchefstroom, Mahikeng, and Vanderbijlpark—as well as associated off-campus facilities: Nooitgedacht, Eco-Rehab, Molewane, and Faranani.

Emissions were calculated in accordance with the GHG Protocol Corporate Standard (WRI & WBCSD, 2004), applying the Operational Control approach. All Scope 1 and Scope 2 emissions were measured, alongside selected Scope 3 categories. Emissions are summarised below per campus.

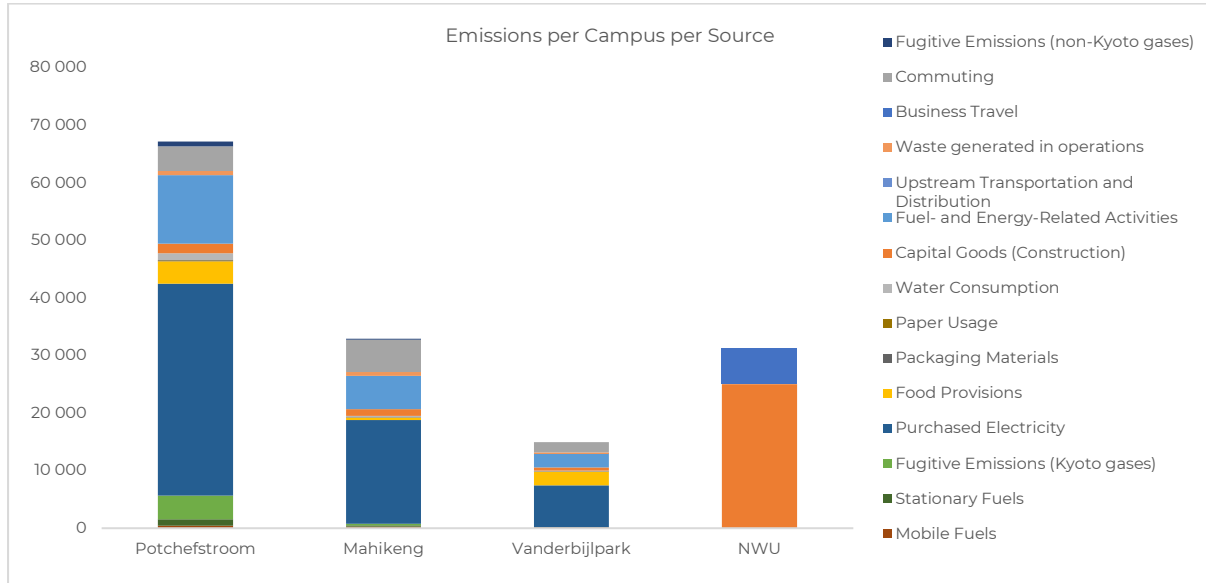
Potchefstroom Campus, NWU's largest, contributed the most significantly to the university's total carbon footprint. A substantial share of these emissions stemmed from purchased electricity, highlighting an important area for future reduction efforts.



SCOPE	SOURCE	Potchefstroom	Mahikeng	Vanderbijlpark	NWU	Total tCO <sub>2</sub> e	% of Total
SCOPE 1	Stationary Fuels	1154	234	40		1428	1%
	Mobile Fuels	417	262	136		814	1%
	Fugitive Emissions (Kyoto gases)	4106	281			4387	3%
SCOPE 2	Purchased Electricity	36759	18005	7287		62052	42%
<b>SUB-TOTAL SCOPE 1 &amp; 2</b>		<b>42436</b>	<b>18782</b>	<b>7463</b>	<b>0</b>	<b>68681</b>	<b>47%</b>
SCOPE 3	Food Provisions	3926	433	2358		6717	5%
	Packaging Materials	174	4	4		182	0%
	Paper Usage	40	10	9		59	0%
	Water Consumption	1149	267	176		1591	1%
	Capital Goods (Construction)	1682	1190	531	24996	28399	19%
	Fuel- and Energy-Related Activities	11896	5762	2327		19984	14%
	Upstream Transportation and Distribution			32		32	0%
	Waste generated in operations	735	680	276		1691	1%
	Business Travel				6248	6248	4%
	Commuting	4289	5627	1750		11666	8%
<b>SUB-TOTAL SCOPE 3</b>		<b>23891</b>	<b>13971</b>	<b>7463</b>	<b>31243</b>	<b>76568</b>	<b>52%</b>
OTHER DIRECT	Fugitive Emissions (non-Kyoto gases)	814	138			952	1%
<b>TOTAL EMISSIONS</b>		<b>67140</b>	<b>32891</b>	<b>14926</b>	<b>31243</b>	<b>146201</b>	<b>100%</b>

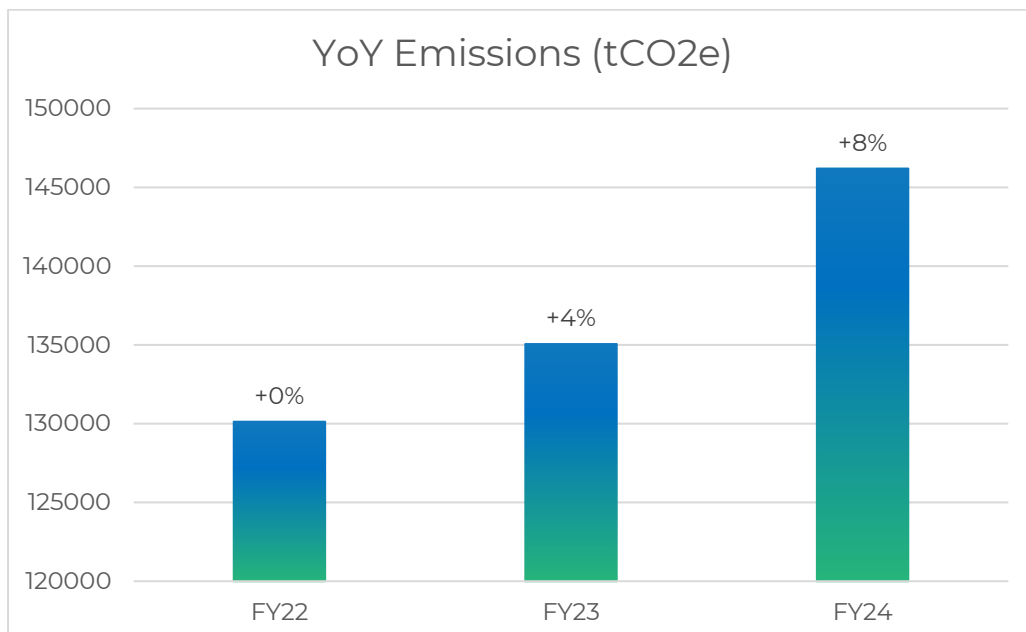
## EMISSIONS PER CAMPUS

Potchefstroom Campus accounted for 46% of NWU's total GHG emissions in FY24. Of particular significance, **electricity consumption at this campus represented 25% of NWU's overall emissions**. This points to a key opportunity for emissions reductions through targeted energy efficiency and behavioural interventions.



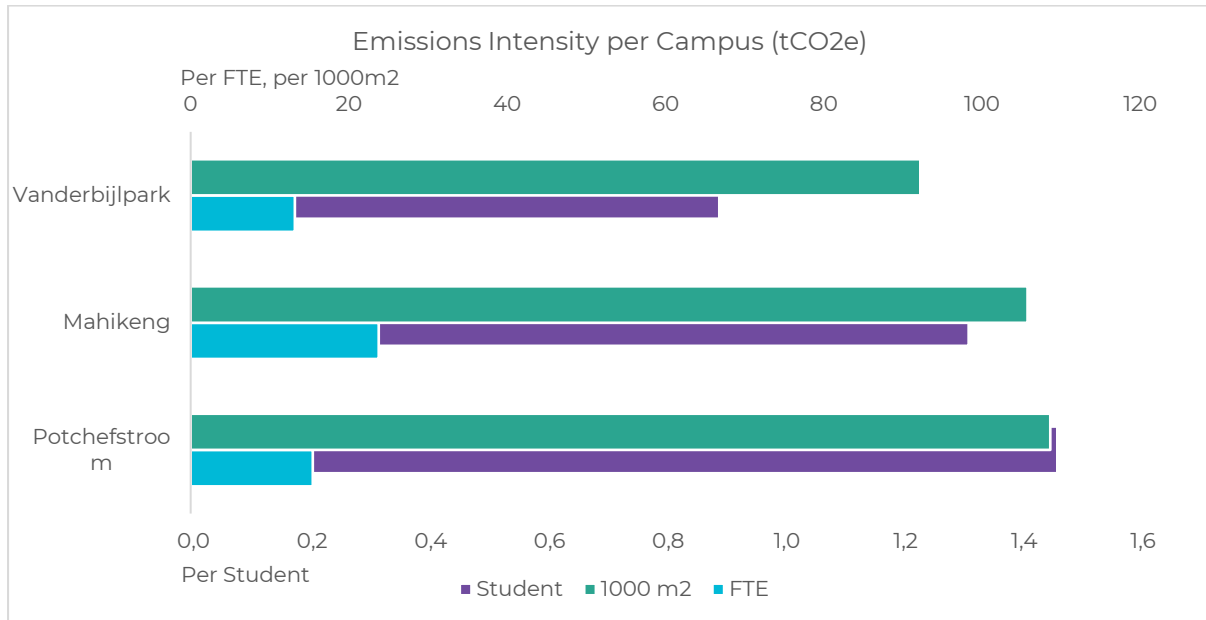
## EMISSIONS HISTORY

The visual below illustrates NWU's emissions trend over the past three carbon assessments, highlighting both absolute and relative contributions from Scopes 1, 2, and 3. A notable increase in emissions can be observed in FY24, primarily due to improved data availability—particularly in Scope 3, which accounted for 52% of total emissions. Capital goods alone contributed 28,399 tCO<sub>2</sub>e, underscoring the impact of infrastructure development. This expanded coverage offers a more comprehensive reflection of the university's operational impact and provides valuable insights to inform targeted mitigation strategies going forward.



## REPORTING METRICS

Intensity metrics, as opposed to absolute emissions, reflect changes in institutional activity that can affect emissions levels. These metrics allow for meaningful year-on-year performance comparisons. Due to the variability of Scope 3 emissions, intensity metrics include only Scope 1 and 2 emissions. A detailed breakdown of emission intensities is available on DASH.

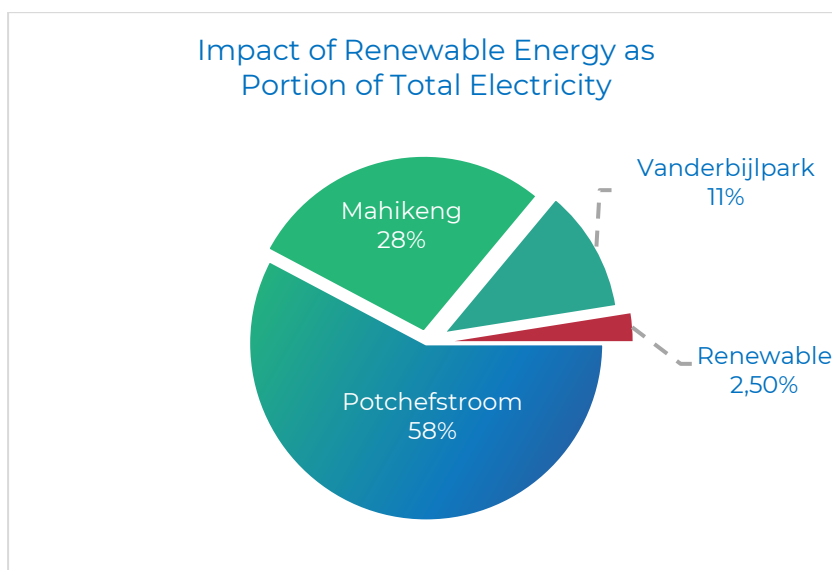


## RECOMMENDATIONS



### CARBON MANAGEMENT

With 42% of NWU's emissions arising from purchased electricity, there is significant potential for reductions through energy efficiency improvements. Opportunities exist across campuses to reduce consumption in lighting, heating, and cooling through both infrastructure upgrades and behavioural change. NWU could also explore expanding its solar energy capacity to further mitigate Scope 2 emissions.





## DATA INTEGRITY

The overall quality of data used in NWU's FY24 carbon footprint was strong, particularly in high-impact areas such as electricity use. Waste data was partially estimated by NWU; however, from October 2024, data accuracy improved with the appointment of a new waste service provider, Eco-Eye.

