

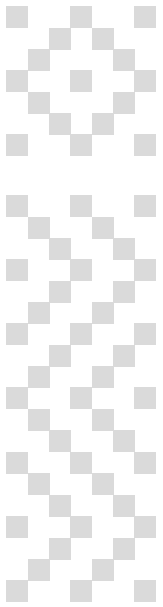


UNIVERSITY
OF
JOHANNESBURG

20
/
23

ANNUAL
REPORT

Our Future
Reimagined



Statement on Environmental Sustainability

OVERVIEW

UJ has committed itself to improving on its sustainable practices in all University activities. The development of the UJ Strategic Plan 2025, anchored in the overarching goal of global excellence and stature (GES), has placed a requirement on the institution to improve on its sustainability footprint.

Strategic Objective Six

Strategic Objective Six, fitness for global excellence and stature, states that “We will also minimise harmful impact on our environment through managing our carbon footprint, reducing energy and water wastage, encouraging paperless communication, and overall fostering of a culture of responsible stewardship”.

UJ has seen a growing commitment towards the goal of being a sustainable institution that strives to implement improvements and actions across all spheres of its campus activities. UJ firmly believes that sustainable development is a long-term commitment and aims to contribute to sustainability by reducing its environmental footprint, while enhancing its contributions to the social and economic development of South Africa.

This report highlights some of the specific focus areas, as well as improvements achieved during 2023.

ENERGY MANAGEMENT

Carbon footprint

UJ’s carbon footprint analysis is based on its actual 2023 energy consumption. The total carbon footprint for 2023, based on energy consumption from various sources, is approximately 49 546 tons of CO₂ compared to the 44 986 tons reported during 2022 (refer to Tables 18 and 19, respectively). This indicates an increase of approximately 10,14%. This can be attributed largely to the increased full year use of the SWC fourth residence, the increased number of students and staff on campus as work from home reduces, and especially the substantially increased number of national and international flights undertaken by staff and students. In a sense, this is a return to the more normal carbon footprint figures of 2019 (54 642 tons), and from that perspective UJ is still showing a substantial reduction in carbon generation (a reduction from 2019 to 2023 of 9,32%).

In considering this figure, the following should be noted:

- UJ has increased its built area footprint by 13,43% since 2013 and by a further 3,23% in 2023.
- The Auckland Park Kingsway Campus continued to contribute significantly to the overall carbon footprint with a nett 27 444 tons of CO₂ compared to the overall University footprint of 49 546 tons.
- The methodology of measuring the carbon footprint is based on absolute consumption on main campus areas, but now also includes UJ-owned properties such as off-campus residences as well as JBS Park and UJ on Empire, with these facilities now properly accounted for.



water, which is distributed and circulated through the air conditioning system on APK. At present, the catbot fuelled boilers are being repaired, and no catbot fuel was used in 2023 at all.

WATER MANAGEMENT

Using water sparingly has become a necessity at UJ. During 2023, a significant number of days were experienced on all major campuses where due to either load shedding or infrastructure failure no water was supplied to campuses at all. This resulted in significant direct water purchases from commercial suppliers – more than 7 million litres at a cost of more than R7.5 million. In addition to this, UJ also moved 14.2 million litres of water between campuses using its own water tankers to save on water purchases (this savings amounted to an estimated R15 million). Water consumption increased by 35,9% in 2023 – partly due to the first full year of new buildings but also in part due to increased numbers on campuses. Notwithstanding the 2023 increase, UJ still shows a reduction of more than 37,65% in water use compared to 2015. The SWC water consumption in 2023 showed an 82,21% decrease from the 2022 values and this is being investigated. As far as possible, borehole water is now used on all campuses, and the four new boreholes for supply subvention from 2022 are now in operation and are primarily used for gardening purposes.

A number of initiatives implemented in 2023 contributed to some water savings – but the major reduction was due to non-supply by the CoJ. The key focus areas in the reduction of water consumption for 2023 were as follows:

- Achieving 100% installation of water restricting showerheads in residences.
- Reducing gardening water usage and moving some of this to boreholes.
- Reducing water usage due to reduced supply by the CoJ as a direct result of the Eskom load shedding processes.

The key focus areas in the reduction of water consumption for 2024 are as follows:

- Facilities Management had meant to start replacing existing taps with push-taps at all points – but this will only now gather momentum in 2024.
- Additional drilling for water on other UJ properties – this is an ongoing process.
- Conducting further awareness campaigns on campuses and in residences to achieve water savings.
- In 2024, the first trial waterless urinals will be installed to reduce water consumption in areas where use and performance and user response can be managed – possibly in one of the off-campus buildings, such as UJ on Empire or the Atrium.
- Facilities Management will investigate a waste concentration system on the APK Campus to reduce sewage costs and allow for substantial water recovery for irrigation purposes.
- The first grey water trial system is already installed on the APB Campus for two large residences – this is expected to save more than five million litres of water per annum on that campus. As soon as this is shown to work, Facilities Management intends to roll out similar solutions to six other high-rise residences where the technology is best suited.

WASTE MANAGEMENT

Table 22 provides an overview of total waste generation compared to recycled waste. An analysis of the different types of waste generated in the reporting year is depicted below. Interestingly, Table xx makes it clear that, in 2023, UJ recycled approximately the same level of waste as in 2022. It must be noted that although the absolute amount of waste generated increased after the very reduced values in 2020 and 2021, it still has not yet reached the pre-pandemic levels of 2019. As the total waste generated returns to pre-pandemic levels, the percentage recycled is reducing and becoming in line with the pre-pandemic levels as well. In terms of a comparison with the 2019 recycling, we are now back to a level of 39,3% compared to the 2022 level of 40,25%.

CONCLUSION AND WAY FORWARD

As mentioned at the outset of this report, the development of the UJ Strategic Plan 2025, anchored in the single strategic goal of global excellence and stature (GES), has placed a requirement on the institution to improve on its sustainability footprint.



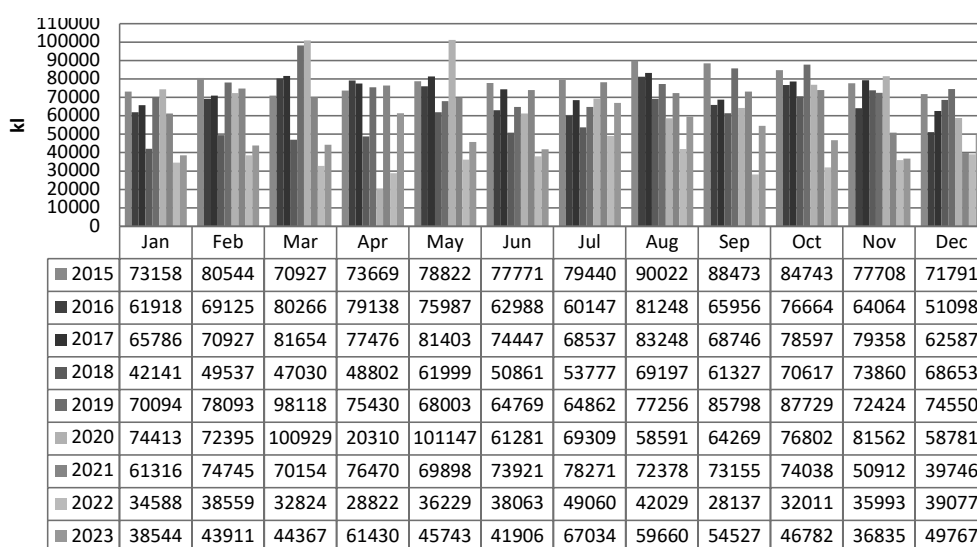


Figure 4: UJ total water consumption comparison from 2015 to 2023

Table 22: Waste generated versus waste recycled – 2011 to 2023

YEAR	GENERATED	RECYCLED	PERCENTAGE RECYCLED
2011	4 838.48	188.71	3,90%
2012	3 559.19	288.27	8,10%
2013	2 361.88	416.64	17,64%
2014	1 551.27	539.71	34,79%
2015	1 773.81	506.52	28,56%
2016	1 818.89	513.60	28,24%
2017	2 333.52	456.66	19,57%
2018	2 312.87	521.48	22,55%
2019	1 858.48	625.33	33,65%
2020	1 409.30	673.86	47,82%
2021	1 749.37	895.02	51,16%
2022	2 097.93	844.33	40,25%
2023	2 082.45	818.28	39,30%

The expanding nature of the campuses, increasing student numbers as well as cost containment pressures will create a challenging environment for the institution to meet its sustainability goals. However, a good foundation has been established to measure and manage our sustainability goals into the future.

During 2024, the first UJ Sustainability Report using the methodology for environmental reporting (specifically the G4 Sustainability Reporting Guidelines of the global reporting initiative) will be published, and this will showcase the environmental impact of areas presently not measured and reported on in this statement (such as waste carbon generation but not yet all Scope 3 carbon generation areas). The initiative to report via an effective tenant model for energy and resource usage will be introduced, and unit-based reporting will become the norm for per capita reporting of all utility and carbon generation figures. This will normalise results and allow for more sensible comparison of figures across years when demographics and numbers change. The analysis of figures, given actual campus attendance, is also on the horizon – allowing for an accurate understanding of work from home as a driver for change.

The focus areas for 2024 will be to extend sustainability projects, such as the fifth wave of new solar photovoltaic installations on the APK and APB Campuses and the finalisation of specifications and designs for a substantial



Table 23: Different types of waste recycled from January 2011 to December 2023

YEAR	COM PAPER	WHITE PAPER	PLASTIC	CANS	E-WASTE F TUBES	CARDBOARD BOXES	GLASS	SCRAP METAL	WET WASTE	GARDEN REFUSE	TOTAL	%
2011	22.452T	26.934T	26.689T	13.742T	0.14T	37.427T	28.74T	29.803T	0	0	188.71T	3,9
2012	42.385T	41.505T	18.797T	9.45T	1.7T	56.417T	30.38T	11.108T	7.671T	0	288.27T	8,1
2013	39.46T	40.142T	18.028T	10.005T	1.21T	37.805T	18.793T	7.364T	14.2T	136.5T	416.63T	17,64
2014	40.088T	36.855T	19.615T	9.964T	1.44T	48.274T	13.93T	6.768T	36.22T	325.5T	538.7T	34,75
2015	31.579T	51.725T	20.335T	7.117T	0.17T	63.932T	31.521T	4.071T	15.16T	329.14T	506.51T	28,55
2016	53.681T	21.877T	34.056T	6.347T	0.11T	52.574T	16.218T	17.048T	18.68T	293T	513.6T	28,89
2017	40.667T	17.526T	42.149T	8.189T	6.08T	59.824T	27.062T	0.552T	4.61T	250.98T	456.66T	19,56
2018	37.016T	45.997T	44.592T	5.5515T	1.91T	40.346T	5.102T	1.34T	8.82T	263.14T	521.48T	22,54
2019	32.614T	43.121T	25.062T	5.908T	3.385T	41.16T	47.057T	4.051T	15.23T	407T	625.33T	33,65
2020	21.63T	17.98T	12.68T	2.58T	2.72T	31.58T	19.77T	10.26T	30.66T	524T	673.86T	47,81
2021	13.952T	17.34T	6.31T	1.408T	3.112T	23.877T	22.317T	14.194T	12.506T	780T	895.016T	51,16
2022	32.158T	16.746T	13.811T	2.728T	2.862T	29.423T	19.771T	5.03T	2.629T	719.2T	844.33T	40,25
2023	24.31T	25.14T	24.99T	5.53T	2.60T	35.13T	19.06T	5.86T	12.64T	663.1T	818.3T	39,30

solar photovoltaic installation on the UJ Island. The replacement of geysers with more efficient reverse heat pump solutions in the larger residences will continue. The previous electric bus initiative, begun in 2022 with two buses and with a third bus introduced in 2023, will be expanded to as many as seven buses, and this will reduce diesel transport-based generation figures favourably. Specific additional areas of focus will also include stakeholder engagement, especially with students, the diversification of energy sources with a greater emphasis on renewables, including micro-wind and solar thermal for storage and natural gas, and further technology advancements within sustainability in terms of the building renovation and improvement programmes.



Mpoti Ralephata (Dr)
Chief Operating Officer



Letlhokwa Mpedi (Prof)
Vice-Chancellor and Principal

