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OF
JOHANNESBURG

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ANNUAL
REPORT:
SDG REPORT

11 SUSTAINABLE CITIES
AND COMMUNITIES



SDG 11: SUSTAINABLE CITIES
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UJ SDG REPORT 2023

SDG 11: SUSTAINABLE CITIES AND COMMUNITIES

11 SUSTAINABLE CITIES AND COMMUNITIES



Report on the University of Johannesburg's Contribution to Sustainable Development Goal 11

SDG 11: Sustainable Cities and Communities

OVERVIEW: EXECUTIVE SUMMARY

This report outlines the University of Johannesburg's (UJ) contributions to the United Nations' Sustainable Development Goal 11 (SDG 11) on Sustainable Cities and Communities during the 2023 academic year. UJ has been a pioneer in contributing to SDG 11. In 2023, UJ's efforts focused on building and enhancing sustainable infrastructure, promoting green mobility, and fostering environmental sustainability, all of which are critical to creating resilient urban spaces. The university's contribution to SDG 11 includes initiatives aimed at reducing the carbon footprint, improving the livability of cities, enhancing access to clean water and energy, and promoting sustainable urban development.

Through a variety of programmes, including its work in green infrastructure, sustainable transportation, community engagement, and research on urban resilience, UJ has made significant strides in advancing SDG 11. One of the university's flagship initiatives has been the electric vehicle (EV) bus fleet, which serves as a model for sustainable public transportation in

Johannesburg. Furthermore, UJ's work in sustainable housing, water management, and eco-friendly technologies has had a positive impact on both the local community and the broader urban ecosystem.

This report outlines UJ's contribution to SDG 11, providing an in-depth overview of the key activities and projects implemented in 2023. The report highlights the university's role in supporting sustainable urban growth through research, education, infrastructure development, and community partnerships that directly address the challenges of urbanisation.

INTRODUCTION

Sustainable cities and communities are essential to achieving the broader goals of sustainable development. As urban areas continue to expand globally, it becomes increasingly important to create cities that are resilient, inclusive, and capable of meeting the demands of growing populations while preserving environmental health. SDG 11 calls for the creation of inclusive, safe, resilient, and sustainable cities and human settlements, ensuring that everyone, regardless of their background, has access to affordable and sustainable housing, efficient public transport, clean water, and clean energy.

As a major educational institution, UJ has embraced the opportunity to contribute to the realisation of SDG 11. The university has recognised that achieving urban sustainability requires collaborative efforts across various sectors, from education and research to infrastructure and community development. In 2023, UJ remained at the forefront of these efforts, integrating sustainability into its academic programmes, research agendas, and community outreach.

This report provides a detailed exploration of UJ's key initiatives in support of SDG 11. It examines the university's commitment to sustainable urban development through a combination of academic and practical solutions, infrastructure projects, and community-based actions aimed at fostering inclusive and resilient urban environments. The activities discussed here are part of UJ's broader strategy to integrate sustainability into its operations and its contributions to local and national development goals.

KEY ACTIVITIES AND INITIATIVES

UJ's role in contributing to SDG 11 spans multiple activities across several domains, from research and education to infrastructure development and community engagement. This section outlines the specific initiatives that UJ has undertaken in 2023 to advance the goal of sustainable cities and communities.

1. Green Mobility and Sustainable Transportation

A key area of focus for UJ in 2023 was the development of green mobility solutions aimed at reducing the university's carbon footprint and promoting sustainable urban transportation. One of the most visible and impactful initiatives was the continued expansion of the electric vehicle (EV) bus fleet, which provides transportation for students, staff, and visitors across UJ's campuses.

In 2023, UJ successfully added new electric buses to its fleet, expanding the number of vehicles providing low-emission transportation across its campuses. This initiative is part of UJ's long-term vision to implement sustainable transport solutions that align

with the growing need for eco-friendly urban mobility. The electric buses not only reduce the university's reliance on fossil fuels but also help cut down on carbon emissions and air pollution, contributing to a healthier, more sustainable city environment.

The move toward electric buses also serves as a model for other institutions and cities looking to transition toward sustainable public transport systems. UJ's investment in EV infrastructure, including charging stations and maintenance facilities, is vital in supporting this transition and ensuring that sustainable transportation becomes a feasible option for everyday urban travel. Furthermore, UJ's green transport programme plays a role in educating students and staff about the importance of reducing their environmental impact, fostering a broader culture of sustainability within the university community.

2. Smart Infrastructure and Campus Sustainability

In addition to promoting sustainable transportation, UJ has made significant strides in sustainable infrastructure development. The university has focused on making its campuses more energy-efficient, reducing environmental impact, and ensuring that its facilities meet the needs of a growing, dynamic student body.

In 2023, UJ expanded its commitment to solar energy by increasing the installed capacity of its solar photovoltaic (PV) systems across multiple campuses. UJ's PV systems generate renewable energy that powers campus buildings, helping to reduce reliance on grid electricity and lowering carbon emissions. By the end of 2023, UJ's renewable energy capacity had increased by 2 MWp, making a meaningful contribution to the university's efforts to achieve carbon neutrality by 2050. The installation of solar energy systems has not only improved energy sustainability but has also allowed the university to lower operational costs and increase energy security.

In parallel, UJ continued to improve its water management infrastructure by incorporating water-saving technologies and greywater recycling systems in campus buildings. UJ's use of borehole water for irrigation, alongside its water-efficient landscaping, ensures that the university is reducing water consumption and minimising its environmental footprint. These initiatives are aligned with UJ's broader environmental sustainability goals, ensuring that the campus contributes to the creation of more sustainable and resilient cities.

Additionally, UJ's commitment to smart infrastructure was reflected in the expansion of its smart classroom technologies, which enhance the learning experience through integrated digital tools. These classrooms not only provide advanced teaching capabilities but also promote energy efficiency, using automation to reduce energy consumption during off-peak hours.

3. Community Engagement and Urban Resilience

Beyond its own infrastructure, UJ has been actively engaged in initiatives that aim to build urban resilience and create more inclusive, sustainable communities. The university has continued to foster partnerships with local municipalities and community organisations, supporting sustainable development projects that address both environmental and social challenges.

In 2023, UJ expanded its involvement in urban resilience research, particularly in the area of sustainable housing. Through partnerships with industry leaders and government agencies, UJ researchers have worked to develop low-cost, sustainable housing solutions for urban communities facing rapid growth and resource constraints. One of the flagship projects in this area is the UJ Green Housing Initiative, which explores the integration of eco-friendly construction materials, solar-powered energy systems, and affordable building practices to make housing more sustainable and accessible for all.

Moreover, UJ has been involved in several community-driven projects aimed at enhancing climate resilience. Through the Community Engagement Unit, UJ has supported initiatives that address the impacts of climate change on vulnerable urban populations, such as promoting green spaces and improving access to sustainable water resources in informal settlements. In collaboration with local communities, UJ has helped develop climate-adaptive infrastructure that supports urban agriculture, water conservation, and waste management.

4. Research in Urban Sustainability

Research at UJ has consistently focused on addressing urban sustainability challenges, and in 2023, the university continued to make strides in sustainable urban development. The Centre for Urban Sustainability, housed within UJ's Faculty of Engineering and the Built Environment, played a pivotal role in advancing research on the future of sustainable cities.

One of the center's major projects in 2023 was a comprehensive study on sustainable urban transport systems and their role in reducing congestion, pollution, and carbon emissions in Johannesburg. The findings of this research are being used to inform policy recommendations and urban planning strategies at the municipal level. Additionally, UJ's Environmental Management Research Group focused on developing sustainable waste management solutions, such as waste-to-energy technologies and the optimisation of recycling programmes for urban centers.

Another key area of focus for UJ researchers was urban food systems, which are critical to achieving SDG 11. UJ has conducted studies on the integration of urban agriculture and green roofs into city planning to increase local food production and reduce the carbon footprint of food supply chains. These innovations contribute to

the creation of more self-sufficient and sustainable cities, where local food production is prioritised, and waste is minimised.

CONCLUSION

The University of Johannesburg has made considerable progress in contributing to SDG 11 in 2023. Through its initiatives in sustainable transportation, green infrastructure, urban resilience, and community engagement, UJ has played a vital role in advancing the vision of sustainable cities and communities. The university's continued investment in renewable energy, sustainable housing, research on urban sustainability, and community development projects highlights its commitment to addressing the pressing challenges of urbanisation and climate change.

Looking forward, UJ will continue to expand its efforts to create sustainable, resilient, and inclusive urban environments. By building on its achievements in 2023, UJ is positioned to contribute further to the creation of cities that are not only environmentally sustainable but also socially inclusive and economically resilient. The university remains committed to advancing SDG 11 by fostering innovation, collaboration, and sustainable development that benefits all members of society.

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