UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

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MEDIA RELEASE

COP26: UP supports significant donation towards cleaner energy generation

PRETORIA – The University of Pretoria (UP) welcomes the announcement at the COP26 Climate Change Conference that $8.5bn (R127bn) will be donated to South Africa to help end its reliance on coal.

As one of the major emitters of greenhouse gases due to its dependence on coal, which South Africa uses to generate electricity, this grant will assist the country to ease the environmental and health impacts of the power sector.

“Through its multi-disciplinary platforms such as Future Africa, Innovation Africa@UP, the Forestry and Agriculture Biochemistry Institute, and Engineering 4.0, which brings together different parts of society, industry and government, we are working to find solutions to climate challenges and their impact on the environment, health and prosperity,” UP Vice-Chancellor and Principal Professor Tawana Kupe said.

Prof Kupe explained that UP’s work focuses on transitioning to cleaner energy, and on using agriculture and forestry systems to offset the carbon excess from over a century of industrial growth and production. “Africa can lead the charge in developing the green economy and jobs, and investment from wealthier nations is critical. UP stands ready to work with the South African government to move these efforts forward.”

UP has several research projects focusing on cleaner energy. According to Professor Raj Naidoo, Head of the Department of Electrical, Electronic and Computer Engineering in the Faculty of Engineering, Built Environment and Information Technology, “UP has established itself as a leader in clean energy research. It has a close relationship with the South African National Energy Development Institute (SANDEDI), Rand Water, and the Department of Minerals and Energy (DMRE). Being within the City of Tshwane, we have also established strong ties with our local municipality. Together, we are paving the way for new approaches to solving Africa’s energy crisis.”

Prof Naidoo pointed out that the Smart Grid Labs at UP offers a fresh approach to clean energy. “A key project for us is on data and knowledge management within the clean energy space. We are helping SANEDI and DMRE to develop new systems for energy management. The accuracy, completeness, timeliness, regularity and relevance, as well as credibility, of data is important and therefore assessing the quality of energy data requires thinking in terms of energy data management systems with components that need to be well managed to be effective.”

Some of the research being undertaken by his team includes:

- Gap analysis and assessment of necessary capacity assistance to strengthen data collection, quality processing and interpretation/ analysis by DMRE and SANEDI;
- Technical capacity enhancement programme to strengthen data collection mechanisms and data processing practices within the DMRE and SANEDI;
- Assistance to inter-governmental initiatives to align data requirements, surveying methods and industrial enterprise outreach methods, as well as supporting tools to assist in the setting of targets and performance indicator establishment, in line with ISO 50006;

- Baseline assessment in selected industrial sectors of energy use, energy consumption and savings potential (and associated greenhouse gas emissions reductions);
- Energy Management Systems and Energy System Optimisation against potential penetration rate scenarios and implementation challenges for implementation in non-mapped industrial sub-sectors; and
- Training on clean energy, energy management, and energy performance certificates.

Professor Mmantsae Moche Diale, Professor of Physics in the Faculty of Natural and Agricultural Sciences and holder of the South African Research Chair Initiative (SARChI) Chair on Clean and Green Energy said she and her colleagues are involved in research that focuses on:

- Splitting water to produce hydrogen and oxygen, collecting hydrogen as replacement for fossil fuel and collecting oxygen for other purposes or simply releasing it to the atmosphere – in turn reducing CO2;
- Reducing of CO2 to CO to reduce global warming and consequently impact climate change; and
- Splitting nitrogen triple bond to produce NH3, ammonia.

“These three processes allow for decentralised conversion of solar energy to renewable fuels and fertilisers in photoelectrochemical reactors.”

Dr Neeraj Mistry, Deputy Director of the Future Africa Institute at UP, said, “The commitment of the donation to South Africa should be seen as a forerunner investment and model for other African countries.”

Prof Kupe added that it is “time to take action now against climate change as time is moving on, while Africa has suffered the brunt of the effects of carbon emissions emanating from the developed world.”

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ABOUT THE UNIVERSITY OF PRETORIA

The University of Pretoria (UP) is one of the largest contact and residential universities in South Africa, with its administration offices located on the Hatfield Campus, Pretoria. This 113-year-old institution is also the largest producer of research in South Africa.

Spread over seven campuses, it has nine faculties and a business school, the Gordon Institute of Business Science (GIBS). It is the only university in the country that has a Faculty of Veterinary Science which is ranked top in Africa, and overall has 120 academic departments, as well as 92 centres and institutes, accommodating more than 55 000 students and offering about 1 100 study programmes.

UP is one of the top five universities in South Africa, according to the 2019-2020 rankings by the Center for World University Rankings. It is also ranked among the top 100 universities worldwide in three fields of study (veterinary science, theology and law), and among the top 1% in eight fields of study (agricultural sciences, clinical medicine, engineering, environment/ecology, immunology, microbiology, plant and animal sciences and social sciences).

In May 2020, the annual UK Financial Times Executive Education Rankings once again ranked GIBS as the top South African and African business school. The University also has an extensive community engagement programme with approximately 33 000 students involved in community upliftment. Furthermore, UP is building considerable capacities and strengths for the Fourth Industrial Revolution by preparing students for the world beyond university and offering work-readiness and entrepreneurship training to its students.

As one of South Africa's research-intensive universities, UP launched the Future Africa Campus in March 2019 as a hub for inter- and transdisciplinary research networks within UP and the global research community to maximise 4IR innovation and address the challenges and stresses our continent and world is facing. In addition UP also launched the Javett Art Centre in September 2019 as a driver of transdisciplinary research development between the Humanities and other faculties. In November 2020 UP launched Engineering 4.0. as a hub not only for Smart Cities and Transport, but also to link the vast resources in technology and data sciences to other faculties via Future Africa. These initiatives are stimulating new thinking at the frontier of 'science for transformation'.

For more information, go to www.up.ac.za