SPEECH

His Excellency Mr Dharambeer Gokhool G.C.S.K.,

President of the Republic of Mauritius

EVENT: WORLD ENGINEERING DAY 2025- WORKSHOP

VENUE: R. BURRENCHOBAY LECTURE THEATRE (RBLT), UNIVERSITY OF MAURITIUS

TIME: 09:30 HOURS

Professor Sanjeev Kumar Sobhee, Vice Chancellor of the University of Mauritius

Mr Rooben Maran, President, Institution of Engineers Mauritius

Mr Raj Prayag G.O.S.K., P.D.S.M., Vice-President, Institution of Engineers Mauritius

Esteemed Engineers and Researchers

Respected members of Faculty,

Dear students,

Members of the media,

All Protocol Observed

Good morning and thank you for inviting me to today's event, being held at the University of Mauritius.

It is a pleasure for me to be with you on this special occasion —the celebration of **UNESCO's World Engineering Day for Sustainable Development 2025,**being held in Paris and is organised under the umbrella of the International Decade of Sciences for Sustainable Development (IDSSD).

As you may be aware:

The overall thrust of the event is captured in the statement: "Unleashing the Power of Engineers to advance the SDGs."

The emphasis of this event will be centered on the pivotal role that engineers will be called upon to play in crafting a sustainable future for humanity.

The event will also showcase the results of the World Engineering Day Hackathon, celebrating youth-driven innovations.

It is very laudable that the Institution of Engineers, Mauritius, of which I am the Patron, has organized a workshop to celebrate the World Engineering Day.

Ladies and Gentlemen,

This is a day to honour engineers, and engineering, and their achievements.

Engineers and engineering, as we know, have always played a crucial role in the history and progress of human civilization, by providing solutions to the problems we face in our daily lives

Early engineers relied on levers, wheels, ramps, and pulleys to build large-scale public works projects, often using manual labor and simple tools.

Today, engineering has evolved into a diverse and dynamic field, incorporating advanced technology, complex computational modeling, and diverse fields like robotics, nanotechnology, and biotechnology to create innovative solutions across various industries, from medicine to space exploration

Engineers use their knowledge, skills, and creativity to design, build, and maintain systems, structures, and technologies that improve our quality of life.

Engineers, Engineering and SDGs

This year's theme, "***Unleashing the Power of Engineers to Advance the Sustainable Development Goals,"*** resonates with the global concern of humanity to protect and preserve the blue planet, which is seriously endangered because of detrimental human activities.

Climate change urgency, access to clean water and energy, poverty and development divide, sustainable infrastructural development and urban planning, cybersecurity and safety, disaster resilience, quality healthcare, ocean pollution and degradation, deforestation, and pollution, and overexploitation of the earth limited resources are unprecedented challenges that continue to threaten our present and future.

This year's event, while highlighting engineering achievements must also take on board human weaknesses and shortcomings, including those of engineers and engineering, which have contributed to the degradation of our planet and endangered its future.

The Sustainable Development Goals (SDGs), adopted by the United Nations in **2015**, represent a universal call to action to end poverty, protect the planet, and ensure prosperity for all by 2030. The **17 SDG goals are interconnected**, addressing global challenges such as climate change, inequality, and resource scarcity.

Mauritius: Challenges and Opportunities

Mauritius is not immune from the challenges the world is facing.

Mauritius is known to the world as the embodiment of paradise – a place of bliss, tranquility, safety, hospitality and unity in diversity.

Yet, like other Small Island Developing States (SIDS) and many continental coastal areas, we are bearing the brunt of the impacts of past development that did not meet SDGs.

Some examples;

- **Water Scarcity:** Our reservoirs currently stand at only 38.9% capacity, compared to 91.6% in February last year, due to different rainfall patterns.
- **Infrastructure and Development Divide:** The Metro Express in Mauritius has also led to a development divide between the capital and central regions on one hand, and regions like Central Flacq on the others. Environmental Impact Assessment exemptions have also contributed to flash floods in areas like Saint Jean.
- **Digital Transformation & Cybersecurity:** We are lagging behind in the application of Artificial Intelligence-driven technologies to enhance public service delivery in key sectors like healthcare, social security and education. Cyber security remains a major concern.

- **Climate Change and Disasters:** January 2025 recorded the warmest January on record globally, with temperatures reaching 1.75°C above pre-industrial level and Mauritius registered temperatures above 35°C.
- **Energy Security & Green Transition:** Electricity consumption attained a record high of 545,7 Megawatt this summer season, posing considerable challenges for the Central Electricity Board to ensure adequate supply. Green energy targets are still very low.

- **Food Insecurity:** We import over 75% of our food and produce less than 25%, leading to considerable rise in prices post adverse weather.

Ladies and Gentlemen,

Government is fully aware of these formidable challenges and is committed to bring major structural reforms and is coming up with important measures in line with our commitment to ensure a safe future for all.

- We are reviewing the National Water Policy to improve equitable distribution and management of resources. We are also investing in modern wastewater treatment infrastructure to reduce marine pollution.
- An ambitious food security and an agricultural land suitability mapping program will be put in place and ecofriendly farming will be promoted.
- A 20-year Masterplan for transport is being implemented, integrating public and private transport, cycling infrastructure, and smart mobility solutions to ease congestion.
- Government is accelerating the transition to renewable energy, particularly solar and wind power, with plans to issue Green Bonds to finance sustainable projects. A landmark Constitutional amendment to include the Rights of Nature is envisaged, with the Environmentally Sensitive Areas Act to serve as foundation for future development.

- We are reinforcing coastal resilience through shoreline rehabilitation and a strengthened National Oil Spill Contingency Plan. A Just Transition Commission will guide socio-ecological transformation.
- A 360 degrees digital transformation program of Government services together with a novel national Artificial Intelligence (AI) strategy will be deployed

- The setting up a Digital Twin Mauritius Project to enhance smart infrastructure planning and reinforcing cybersecurity legislation to ensure protection of data privacy is also envisaged

As we gather here today, it is important for us to ask ourselves why we are still struggling in such vital sectors like agroindustry, renewable energy, public transport, digital transformation and environmental protection.

We must, as a nation, aim to a secure future for all and for that we must ensure that engineering solutions are people-centric and aligned with long-term national and global sustainability goals.

More importantly, we must ensure that young engineers are receiving knowledge and skills required to tackle modern-day challenges and ensure climate-sensitive development.

We must also ensure that there is an intergenerational transfer knowledge and experience the new generation?

The challenges we are facing are formidable indeed. But Engineers and engineering can play a fundamental role in driving sustainability and resilience. Some key areas where engineering can make a lasting impact:

- **Renewable Energy and Climate Adaptation**
- **Smart Infrastructure and Sustainable Urban Development**
- **Water Security and Sustainable Agriculture**
- **Digital Innovation and Industry 4.0**

Engineering has always been at the **heart of human progress**.

Engineers are the **architects of innovation**. You design the systems that provide clean water, the infrastructure that connects communities, and the technologies that harness renewable energy. From smart cities to

sustainable agriculture, engineers are at the forefront of creating solutions that drive progress toward the SDGs.

Ladies and Gentlemen,

I would like to take this opportunity to flag a few additional issues that need to be addressed.

- **Underrepresentation of Women in Engineering**

Despite the **critical role engineering plays in shaping our world**, **women** have historically been **underrepresented in engineering fields**, often making up only 10–20% of the workforce globally. Even in countries where more women are pursuing STEM education, this trend has not translated into more women entering the engineering profession.

It is generally agreed that a more diverse engineering team can bring a broader range of perspectives and experiences to the table, which can lead to more creative and effective solutions to complex problems

However, even if across the world and in Mauritius, women and girls are breaking barriers and thriving in various fields, in particular the field of science, technology, engineering, and mathematics (STEM),yet, they remain underrepresented. For example:

•Pay for women in Computer Science and Engineering is lower by 27%
•In the aviation industry, men are primarily chosen for piloting roles, while women continue to be mostly assigned to flight attendants.
•In fields such as Artificial Intelligence, women make up only 22 percent of the workforce.

In Mauritius, women are also underrepresented in the engineering field. Only 22.3% of students enrolled in engineering in higher education were female (Higher Education Commission 2021:22), revealing how the profession remains symbolically masculine.

UNESCO has placed a high priority on raising awareness about engineering careers and encouraging youth- especially young women- to study STEM subjects.

A more inclusive and supportive environment for women in engineering, from the classroom to the workplace must be a priority.

- **Bridging the Engineering Skills Gap**

While we have a number of engineering graduates each year, there is a significant **mismatch between the skills** they possess and the demands of the industry. This gap poses a major challenge for the development and progress of various sectors, including infrastructure, manufacturing, and technology.

To overcome these challenges, it is important that professional engineering bodies such as the IEM and the CRPE, along with academic institutions and the industry, review curricula and pedagogy (*I would not like to go into the details of how the STEM acronym has evolved into STEAM and STREAM and its academic and professional implications*), invest in appropriate education and training, provide opportunities for professional development, structured mentorship, and create an enabling environment for innovation and collaboration.

In addition to technical skills, there is a need for engineers to possess strong managerial and soft skills like leadership, communication, and problem-solving skills.

- **Establishing a Structured Continuous Professional Development (CPD) Program for Engineers – A proposal**

Should not the profession implement a **Structured Continuous Professional Development (CPD)** program for engineers?

Similar to the medical profession, where practitioners must ***earn CPD credit points to maintain their registration***, should not engineers also be required to participate in ongoing training and professional development to retain their registration with the Council of Registered Professional Engineers of Mauritius **(CRPE)?**

And remain updated on the latest developments, best practices, and technological advancements in their respective fields?

I understand that Continuing Professional Development (CPD) is practiced in many countries, including the USA, UK, Ireland, Australia, Canada, Germany, Spain and elsewhere.

- **Upholding Engineering Standards in National Infrastructure Projects**

We must recognize the responsibility engineers hold in ensuring high standards in national infrastructure projects. Recent challenges, such as the issues surrounding the Cluny Reservoir, as well as the substandard construction of drains and roads, putting at risk safety, health, and welfare of the public and involving a wastage of resources, highlight the *critical need for adherence to good and ethical engineering practices*.

It is imperative that engineers uphold the highest standards of professionalism and integrity to ensure that national projects meet both present and future needs and the reputation of the engineering profession is preserved.

It is a moral and professional responsibility for engineers not only to innovate but also ensure that your innovations are inclusive, equitable, and sustainable.

Conclusion

Ladies and gentlemen,

The challenges humanity is facing are daunting, but they are not insurmountable. As engineers, you have the knowledge, the skills, and the creativity to build a future that is sustainable, equitable, and resilient.

This workshop should be an occasion to engage in a serious introspection about our roles and responsibilities towards the planet and the future generations.

Beyond a recognition of the indispensable role that engineers and engineering play in societies, this year's event must also be a call to action in shaping a sustainable future for humanity

I urge all of you to continue pushing the boundaries of innovation, fostering collaboration, and inspiring the next generation of engineers. Together, we can unleash the full power of engineering to achieve the Sustainable Development Goals and ensure a brighter tomorrow for all.

"The engineer has been, and is, a maker of history." – James Kip But remember engineers also *the architects of a better world.*

Thank you for your dedication, your passion, and your unwavering commitment to engineering for sustainable development.

Happy World Engineering Day!

Thank you for your kind attention.