



**WORLD FEDERATION OF ENGINEERING ORGANIZATIONS
FÉDÉRATION MONDIALE DES ORGANISATIONS D'INGÉNIEURS**

**Proposal for
the Proclamation of 4th March of each year as
World Engineering Day
for Climate Change Action and Sustainability**

I. INTRODUCTION AND MOTIVATION

1. In September 2015, the United Nations General Assembly adopted its Resolution 70/1 announcing the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), which take an integrated approach to future development, combining progress in economic prosperity, social inclusion and environmental sustainability
 2. Concerns about the impact of climate change have been expressed internationally, most importantly at the Paris Agreement at the 21st Conference of the Parties of the UNFCCC (COP21) in Paris in December 2015. The Agreement aims to respond to the global climate change threat by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Paragraphs 6.4-6.7 of the Agreement refer to the nexus between the need to contribute to the mitigation of greenhouse gases and support sustainable development.
 3. Various UN agencies have expressed the need for urgent action on climate change including the Sendai Framework for Disaster Risk Reduction, the Convention on Biodiversity (CBD), the New Urban Agenda, the United Nations Convention to Combat Desertification, the Small Island Developing States Accelerated Modalities of Action (S.A.M.O.A.).
 4. The UNESCO Science Commission and Social and Human Science Commission have both recommended urgent action on climate change (General Conference 2017: Resolution 4.9 and 6.2 and 39C/46 and 39C/73)
 5. Engineers and engineering are crucial to address the risks of climate change and to ensure sustainable development.
 - a. Engineers are essential for *resilience to climate* change and to design and develop resilient infrastructure that will withstand the increasing weather related events – floods, cyclones and bush fires especially in developing countries, Asia, Africa and Small Island Developing States (SIDS), that are most exposed to these risks;
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CELEBRATING 50 YEARS OF INTERNATIONAL ENGINEERING LEADERSHIP

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- b. Engineers are needed to design and implement technologies that will achieve the targets set at COP21 for the reduction of greenhouse gas emissions
 - c. Engineers and engineering are essential to progress the UN Sustainable Development Goals as they relate to water, energy, environment, sustainable cities, natural disaster resilience and other areas;
 - d. Enhanced global awareness of, and increased education in the role of engineering in implementing advances in science into technologies to address the risks of climate change and the challenges of implementing technologies that reduce or eliminate greenhouse gas emissions and which enable sustainable development;
 - e. A focus on engineering will enable capacity building in developing countries, especially Africa and will also provide opportunities for inclusive access to engineering careers for women and girls.
6. The role of engineers and engineering will be widely recognised through the World Engineering Day for Climate Change Action and Sustainability. **It is proposed that this day be celebrated on 4th March, the anniversary of the founding day of the World Federation of Engineering Organisations (WFEO).**

II. THE IMPORTANCE OF ENGINEERING AND CLIMATE CHANGE ACTION FOR SUSTAINABILITY

7. The purpose of a World Engineering Day for Climate Change Action and Sustainability will be to provide an annual focal point for the continued appreciation of the importance of engineering to modern life and the central role of engineering in developing the technologies needed for climate change action as well as for sustainable development that will impact the lives of every citizen on earth – enabling social, cultural and economic activities in every field of human endeavour, including culture and art, education, sustainable development, and in diverse fields such as scientific research, medicine, information technology and communications and energy.
8. A World Engineering Day for Climate Change Action and Sustainability will be an opportunity *to demonstrate the role of engineers and engineering, to develop solutions to climate change,*
9. A World Engineering Day for Climate Change Action and Sustainability will raise the profile of engineering and technology, and its role *in improving the quality of life worldwide, and achieving the UN Sustainable Development Goals.*
10. A World Engineering Day for Climate Change Action and Sustainability will be an opportunity for dialogue between engineers and decision makers, industry leaders, scientists, non-governmental organizations and the public at large on issues relating to climate change and sustainable development. It will enable policies and solutions to address



the world's most pressing problems using engineering and will respond to the critical need for improved dialogue between citizens, engineers and policy-makers for climate change action.

11. A World Engineering Day for Climate Change Action and Sustainability will be an opportunity to demonstrate the importance of engineering in our modern world and to encourage, more young people, especially girls, to consider engineering as a career.

III POTENTIAL OUTCOMES OF WORLD ENGINEERING DAY

12. A World Engineering Day for Climate Change Action and Sustainability will see coordinated activities taking place worldwide, which will contribute to achieving numerous outcomes such as:
 - a. Highlight the achievements of engineers and engineering to our modern world and • improve public understanding of how engineering and technology is central to modern life, affecting the daily lives of every person on the planet and central to action on climate change and sustainable development;
 - b. Build awareness of the role of engineers in action for climate change including to reduce greenhouse gas emissions and build resilience against natural disasters caused by climate change;
 - c. Build worldwide educational capacity through activities targeted on engineering and technology, to encourage more young people to consider engineering as a career as it is vital that the brightest young minds be attracted to engineering to address the pressing problems of climate change and sustainable development;
 - d. Address the issues of gender balance in engineering which continues to be a gender segregated occupation while encouraging women and girls to consider the opportunities that engineering provides to create a better world;
 - e. Build capacity in engineering education and strong institutions for ensuring the standards of engineering education, with a focus in particular on developing countries and emerging economies;
 - f. Engage with government and industry to address the need for engineering capacity and the quality of engineers around the world and develop strategic frameworks and engineering institutions to deliver professional development and training;
 - g. Promote the importance of engineering innovation in developing new, advanced technologies in broad and inter-disciplinary areas to address action for climate change and sustainable development including renewable energy, integrated water management, artificial intelligence, big data and analytics, information and communication technologies and environmental technologies. Breakthroughs in these areas will have a significant



- impact on addressing climate change, reduce greenhouse gas emissions and advance the goals of sustainable development;
- h. Enhance international cooperation in research & development and education, by coordinating activities between learned societies, educational establishments and industry for better solutions for climate change and sustainable development;
 - i. Highlight the important role of engineering in millennia and the heritage engineering structures of ancient civilisations, many of which are recognised as UNESCO World Heritage Sites, that demonstrate the intimate link between engineering and the economic social and cultural development of societies and ensure the ongoing preservation of these important sites;
 - j. Celebrate the contributions of engineers across all continents and raise awareness of their contributions including important women engineers, especially those that have made significant contributions to developing technologies to address climate change and sustainable development.

IV. IMPORTANCE OF A WORLD ENGINEERING DAY FOR UNESCO

- 13. A World Engineering Day for Climate Change Action and Sustainability will provide UNESCO with an important opportunity to fulfil its mission of promoting international cooperation for addressing the key area of modern science as it relates to engineering for action against climate change and for sustainable development in both developed and developing countries.
- 14. A World Engineering Day for Climate Change Action and Sustainability will address the ***UNESCO 39 C/46 UNESCO Strategy for Action on Climate Change (2018-2021) and 39 C/73 Declaration of Ethical Principles in relation to Climate Change*** adopted at the UNESCO General Conference in November 2017, enabling Member States to take urgent action to combat climate change and its impacts through the promotion of the role of engineering in developing solutions to this important issue.
- 15. Additionally, it will enable Member States to meet their obligations under the COP 21 Paris Agreement, and in the overall context of the 2030 Agenda for Sustainable Development and its SDG 13 through technological interventions for national and local climate mitigation, adaptation and risk management, supported by climate change research, assessments and monitoring and collaboration and building institutional capacities in technology and engineering in these fields.
- 16. A World Engineering Day for Climate Change Action and Sustainability will enable especially strong focus on: (i) the advancement of science and technology for sustainable development; (ii) the promotion of UNESCO's Priorities for Africa (ii) the promotion of Education for All and Gender Equality; (iii) the focus on Youth and Education (iv) the mitigation and adaptation of climate change impacts on the Small Island Developing States.



17. A World Engineering Day for Climate Change Action and Sustainability will provide strong support for the UNESCO Strategy, *Changing Minds, Not the Climate* and support the objectives of education on climate change and communication on technological solutions for sustainable development.
18. A World Engineering Day for Climate Change Action and Sustainability will support important UNESCO programmes which address climate change and the World Engineering Day for Climate Change Action and Sustainability will enhance the effectiveness, visibility and implementation of the outcomes of its International Hydrological Programme (IHP), International Geoscience Programme (IGCP), Man and the Biosphere (MAB) Programme, Management of Social Transformations Programme (MOST), Local and Indigenous Knowledge Systems Programme (LINKS), the Communication and Information Sector and the Intergovernmental Oceanographic Commission (IOC)
19. UNESCO has played a crucial role in many areas of science and technology including the designation and planning of, among others, the International Year of Physics, the International Year of Astronomy, the International Year of Chemistry, the International Year of Crystallography, and International Year of Light and Light-based technologies and the forthcoming International Year of the Periodic Table in 2019. A World Engineering Day for Climate Change Action and Sustainability cuts across all these international celebrations and will demonstrate the application of science to implementable technologies and solutions for pressing contemporary problems thus ensuring that existing gains from these previous observances are effectively followed-up and strengthened.

V DELIVERING THE WORLD ENGINEERING DAY

20. The World Federation of Engineering Organizations (WFEO) is the peak body for engineering globally, representing nearly 100 nations and more than 30 million engineers. The members of WFEO are the main national and regional professional engineering institutions of the world. WFEO is a member of the United Nations Scientific and Technological Major Groups and has an official Associate status with UNESCO
21. WFEO is committed to playing a key role in leading and co-ordinating the celebration of the World Engineering Day for Climate Change Action and Sustainability.

Under the leadership of WFEO in partnership with UNESCO, the World Engineering Day for Climate Change Action and Sustainability will bring together its members, partners, educational institutions and other NGOs, in more than 100 nations and directly involving their members, estimated at 30 million. However, with the multiplier effect of this level of advocacy, we estimate that awareness about engineering would be significantly higher.



22. WFEO will work with its partners with its global peers in engineering education, industry and women engineers, including the International Federation of Consulting Engineers (FIDIC), the International Federation of Engineering Educators (IFEES) and the Global Engineering Deans Council (GEDC), the International Network of Women Engineers and Scientists (INWES) and the UNESCO centres in Asia and Africa to develop appropriate events to celebrations the World Engineering Day. This will enable a wide range of activities around the world, including: awareness-raising of the role and contribution of engineering for climate change action and sustainability, capacity-building, outreach to young people on engineering as a career and a wide range of humanitarian projects.
23. The national, regional and international members of WFEO, that are leading professional engineering institutions and learned societies in engineering, will develop country specific and region specific responses.
24. We anticipate that a World Engineering Day for Climate Change Action and Sustainability has the potential for highly significant impact and quantifiable outcomes, with an international audience reach that is estimated to be over 100 million.