



Singapore Declaration

“Engineering for a Sustainable Future”

September 14, 2013

Background

The World Federation of Engineering Organizations (WFEO) and its national member, The Institution of Engineers, Singapore (IES) believe that emerging global challenges over the last decade, including the financial crisis, population migration, food and energy crises, and natural disasters, have reinforced the need to secure and fulfill internationally agreed commitments to sustainable development.

WFEO and IES also believe that progress toward achieving the UN Millennium Development Goals is necessary to address water and food scarcity. For such commitments to be realized, critical infrastructure must be adapted to the impacts of climate change and resilient to natural and man-made disasters.

The role of engineers

We commit to lead internationally on the delivery of sustainable infrastructure. Engineers of the 21st century are called on to play a critical role in contributing to peace and security in an increasingly challenged world. Engineers have an obligation to protect cultural and natural diversity, and they are central to the planning, design, construction, operation, maintenance and commissioning of systems and infrastructure networks that underpin civil society, economic activity, protect human health and welfare. Emerging challenges have reinforced the key role of these networks in enabling global societal resilience. Innovations by engineers are required in the design and operation of advanced devices and systems that can ensure efficient energy conversion and conservation; provide solutions to the production, storage and distribution of energy, food and water; facilitate human mobility; support trade and economic development; and sustain livable cities of the future.

WFEO and IES are committed to an engineering profession able to address the global challenge of sustainable development arising from the impact of climate change. Action by engineers is essential. Society needs the skills of engineers to attain sustainable development, yet engineers must proactively engage with the global political process to apply their knowledge and expertise. We recognize that engineers cannot deliver this vision on their own. Engineers must develop new skills for a changing world, foster greater collaboration with other professionals, and promote multidisciplinary approaches. Engineers are committed to provide the tools and advice to governments and policymakers at national, regional, and international levels on the skills and infrastructure required for a sustainable future.

Recognizing the central role of their profession in addressing global challenges, regularly reviewing action plans and undertaking a range of activities to advance sustainability in infrastructure WFEO

Executive Council have adopted and approved the Model Code of Practice for Sustainable Development and Environmental Stewardship. Details of this priority and action plan are listed in Annex A.

Commitments

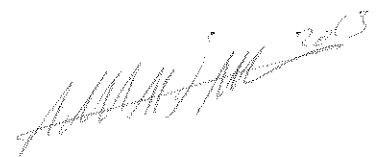
Within the following areas of leadership, the WFEO members commit to:

- Developing and collaborating on national sustainable systems and infrastructure and resilient development strategies and action plans in their economic regions;
- Encouraging engineers to engage in building engineering capacity among members through active collaboration with development organizations such as the World Bank and other related assistance organizations in their economic regions;
- Working through representatives of their economic regions to coordinate through WFEO engineering views that the World Federation of Engineering Organizations effectively influences programs on sustainable infrastructure and communities in UNESCO, the United Nations, the World Bank, international financial institutions and other environmental bodies.

Signed on September 14, 2013 in Singapore:



*Professor Chou Siaw Kiang
President
The Institution of Engineers, Singapore*



*Eng. Adel Al-Kharafi
President
World Federation of Engineering Organizations*

ANNEX A:
Engineering priorities and action

Recognizing the central role of their profession in addressing global challenges, members have adopted and regularly reviewed action plans and undertaken a range of activities to advance sustainability of cities and the global economy. Progress in line with commitments is exemplified in adapting critical infrastructure, utilizing environmental accounting tools, addressing the crisis in the energy-food-water nexus and delivering on the proposed UN Sustainable Development Goals, as well as protecting our societies from natural disasters.

Environmental, social and economic impacts and costs—the triple bottom line

WFEO and IES are committed to improving methods for identifying and considering all of a project's environmental, social and economic costs and impacts throughout its life cycle. Practical approaches should be developed that would alter conventional accounting practices to factor in the direct and indirect environmental costs of any system, plant or facility through its life-cycle of operations.

Mitigation and adaptation to climate change

To address climate change the engineering profession is applying the principles of sustainability, energy efficiency and innovation to the design and operation of mitigation technologies. In addition, engineers must develop infrastructure capable of adaptation to the impacts of climate change. Recognizing this responsibility, WFEO and IES members are committed to collecting data on design and infrastructure both nationally and, through collaboration, internationally to providing informed opinion on their experience.

To make our societies resilient to natural disasters

Since antiquity, the world has faced a great number of natural disasters: earthquakes, tsunamis, floods, typhoons, hurricanes, tornados and volcanic eruptions. Recently, we have become aware of rapid climate change that might lead to much larger-scale natural disasters. Engineers are required to play important roles in creating smart technological solutions to enhance personal mobility, communications, and security, and developing safe and secure infrastructure, resilient to natural and man-made disasters by sharing and growing knowledge and experience through collaboration.

Sustainable Development Goals

WFEO and IES members support the internationally agreed upon development goals contained in the Millennium Declaration as they apply to improving the quality of people's lives around the

world through science and engineering. The engineering societies/institutions will work with each other and with domestic and international organizations to engage engineers in addressing the needs of the poor through capacity building and the development of sustainable and appropriate solutions to poverty.

By helping meet the goals of the sustainable development, the engineering profession contributes to a world where all people have access to the knowledge and resources to meet their basic human needs and promote sustainable development. Included are such areas as water supply and sanitation, food production and processing, housing and construction, energy, transportation and communication, income generation, and employment creation.