

# Report on WFEO World Energy Forum, Beijing 28-30 June 2016

Dr. Marlene Kanga, President Elect WFEO



The World Federation of Engineering Organisations (WFEO) Committee on Energy (CE) organised the World Future Energy Forum in Beijing on 29<sup>th</sup> June 2016. The Forum was part of the China International Smart Grid Exhibition and Expo CIGEE 2016.

The World Federation of Engineering Organisations (WFEO) is the peak body for engineering, representing nearly 100 nations and 20 million engineers. It is the voice of engineering at an international level and promotes the important role of engineers in key issues that the world is now facing, sustainable development, the growth of our cities, climate change and strategies for sustainable energy production to meet the needs to the growing population around the world.

The World Federation of Engineering Organisations works closely with other agencies of the United Nations and is recognised as a valued non-government organisations and partner by the UN Educational, Scientific and Cultural Organisation (UNESCO), other UN agencies, intergovernmental and international organisations like the World Bank and OECD. WFEO also co-operates with other engineering and science organisations on issues of mutual interest including the International Council for Science (ICSU), the International Council of Academies of Engineering and Technology Sciences (CAETS).

In this work, the World Federation of Engineering Organisations is recognised by government, intergovernmental organisations, international NGOs and the public in general as a respected and reliable source of advice and guidance on strategies and policies that use engineering and technology for the benefit of human development and well being and sustainable outcomes.

In September 2015, the world came together to declare the new UN Sustainable Development Goals. These goals take an integrated approach for future development, combining progress in economic prosperity, social inclusion and environmental sustainability. The

implementation of these goals is a key objective of the World Federation of Engineering Organisations and will be progressed through the Standing technical Committees.

Engineers will play a vital role in meeting the challenges of the Sustainable Development Goals (SDGs). For example engineers have a role in increasing the availability of sustainable energy sources, which is the focus of Goal 7 which has a vision to “Ensure access to affordable, reliable, sustainable and modern energy for all”. Discussions at this Forum are critical to developing the pathways to achieve this goal.

Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential.

Sustainable energy is opportunity – it transforms lives, economies and the planet.

- One in five people still lacks access to modern electricity
- 3 billion people rely on wood, coal, charcoal or animal waste for cooking and heating
- Energy is the dominant contributor to climate change, accounting for around 60 per cent of total global greenhouse gas emissions
- Reducing the carbon intensity of energy is a key objective in long-term climate goals.

There are pressing issues to address, not only to produce enough energy for the increasing needs of the world, but to do so without increasing greenhouse gas emissions and impacts on the climate or increasing pollution. There is no doubt that the development of sustainable energy sources will have major impact on economic development, health and education.

The targets for the SDG on Energy include, by 2030:

- ensure universal access to affordable, reliable and modern energy services
- increase substantially the share of renewable energy in the global energy mix
- double the global rate of improvement in energy efficiency
- enhance international cooperation to facilitate access to clean energy research and promote investment in energy infrastructure and clean energy technology
- expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all but especially in developing countries

The national and international members of the World Federation of Engineering Organisations, represent engineers from around the world will provide the crucial expertise that is needed to address problems such as sustainable energy development, which was the topic for the World Future Energy Forum. The WFEO Standing Technical Committees are the engine room of the organisation, drawing upon experts from the world to develop world class strategies.

The WFEO Standing Technical Committee on Energy and in particular, Dr. Ruo-Mei Li who is the Vice Chair on this Committee, representing the China Association of Science and Technology (CAST) are congratulated for their leadership in organising the World Future Energy Forum on sustainable energy.

The World Future Energy Forum 2016 (WFEF2016) aimed to promote effective ways to achieve a sustainable energy future. The UN announced the 17 Sustainable Development Goals (SDG 17) in 2015. The world should “Ensure access to affordable, reliable, sustainable and modern energy for all” (Goal No. 7). The Forum was a platform for the leaders and experts from different regions around the world to share their views and solutions on energy issues.

The Forum drew together experts from around the world including members of the Standing Technical Committee on Energy. The Forum had representatives from Switzerland and Germany, the United States, Australia, India, Nigeria, Zimbabwe and China. The speakers demonstrated the international reach of the World Federation of Engineering Organisations and the high standard of engineering and technological expertise of the Standing technical Committees in a wide range of sustainable energy issues including energy policy, nuclear energy, the energy internet, solar energy, smart grids and energy efficiency.

It was very appropriate that the World Future Energy Forum 2016 (WFEF2016) was held in Beijing to bring together the leaders of sustainable development from around the world to discuss the latest, most innovative and effective ways to ensure a sustainable energy future and to share their views and solutions on energy issues.

China is the largest developing country, with the highest share of global energy consumption. It is a great challenge to meet the target of emission reduction by 2030. China is also at the forefront of technology and innovation in sustainable Energy Development. The China International Smart Grid and Energy Exhibition, CIGEE 2016, was held at the same time, showcased the innovations for the production and distribution of sustainable energy.

#### WFEO Speakers at the World Future Energy Forum

WFEO representatives from around the world presented expert views on various aspects of sustainable energy solutions, thereby contributing to the understanding of the implementation of the Sustainable Goal No. 7 which is focused on Energy.

Speakers at the Forum included:

Dr. Ruomei Li, Vice Chair of the Committee on Energy and organiser of the Forum, introduced the Forum. The co-organizers of the Forum welcomed delegates including Mr. Feng Gao, China, deputy director of Energy Internet Research Institute (EIRI), Tsinghua University and Mr. Bo-Ting Zhang, China, deputy Secretary General of China Society for Hydropower Energy (CSHE).



Dr. Ruo-mei Li speaking at the opening of the World Energy Forum, Beijing.

Dr. Marlene Kanga, WFE0 President Elect, provided the opening address with an introduction on the role of WFE0 in achieving the Sustainable Development Goals.



WFE0 President Elect Dr. Marlene Kanga AM speaks at the World Energy Forum

Dr. Reg Vachon, WFEO Executive Board Member introduced the various speakers. The speakers from WFEO Included:

- Prof. Carsten Ahrens from Germany and Member WFEO Committee on Energy who spoke about the growth of solar energy
- Dr. Peter Greenwood, WFEO Executive Vice President, who spoke about the role of nuclear energy
- Mr. Martin Manuwha, Chair WFEO Committee for Anti-Corruption (CAC) spoke about energy needs in Africa
- Mr. Mustafa Shehu, President of the Federation of African Engineering Organisations (FAEO) spoke about the challenges for energy production needs in Africa
- Mr. S. Rathore, Chair WFEO Committee on Information and Communications technologies (CIC) spoke about the successful installation of solar panels on canals in Gujarat, India
- Mr. Daniel Favrat from Switzerland, Member of the Committee on Energy, spoke about advanced integrated energy systems, and opportunities for improved energy efficiency

Eminent speakers from China included:

- Prof. Yi Jiang, China Academy of Engineering, Professor of Tsinghua University who spoke on The construction of ecological urban and rural energy system
- Mr. Yu-Shi Mao, Director of Tianze Economic Institute, on the social, economic, and technological condition for exploring renewable energy in developing countries
- Prof. Hong-Bin Sun, Professor of Tsinghua University, on the energy internet
- Prof Lu Qi, Professor of College of Chemical and molecular engineering, Peking University, on Energy storage with lithium batteries

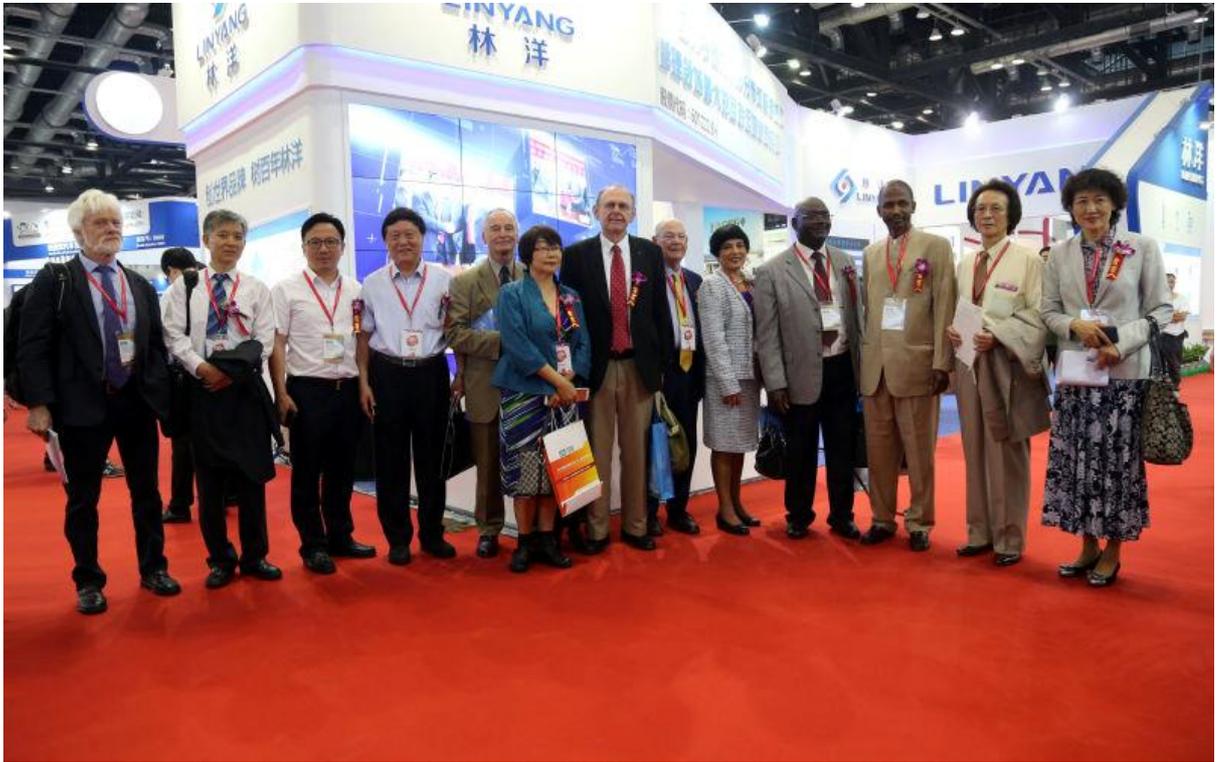


Speakers at the World Energy Forum, Beijing

The World Future Energy Forum was an important opportunity to share knowledge and ideas on sustainable energy. The topics were greatly appreciated by the enthusiastic delegates.

## **2016 CIGEE Exhibition**

The Forum was held at the same time as the 6<sup>th</sup> China International Smart Grid and Energy Exhibition (CIGEE 2016) which featured the latest technologies in sustainable energy and smart grids.



World Energy Forum Delegates at the 2016 CIGEE Exhibition, Beijing

## 2. Meeting with WFEO-CEIT office (28 June 2016)

On 28<sup>th</sup> June 2016, Dr. Kanga and the delegation of Executive Council and Executive Board members of WFEO visit the headquarters of the Chinese Institution of Electronics (CIE).

CIE is also the secretariat of the WFEO Standing Technical Committee on Engineering Innovation and Technology ([WFEO-CEIT](#)) Beijing office. Prof. Gong Ke, Chair of the WFEO CEIT and Mr. Forrest Lin, Deputy Secretary General of CIE, welcomed the delegation and presented information on the work of CIE. Mr. Lin also present the strategic plan for the WFEO CEIT. This will cover a broad range of innovative technologies including big data, cloud computing, sensors, internet of things and artificial intelligence. There is also a plan to involve young engineers interested in engineering innovation.

The delegation congratulated the Committee for its work to date and was encouraged by the support being provided by other institutions in China, including the Chinese Association of Science and Technology (CAST).



Group photo at CIE Headquarters and Secretariat for WFEO-CEIT, Beijing: From left to right: Mr. Ben Rafaemayo, Executive Director FAEO, Prof. and Mrs. Carsten Ahrens, Member WFEO Committee on Energy, Dr. Peter Greenwood, WFEO Executive Vice President, Dr. Marlene Kanga, WFEO President Elect, Dr. Reg Vachon, WFEO Executive Board Member, Prof. Gong Ke, Chair WFEO CEIT, Mr. Martin Manuwaha, Chair WFEO CAC, Mr. Forrest Lin, Deputy Secretary General, CIE.