

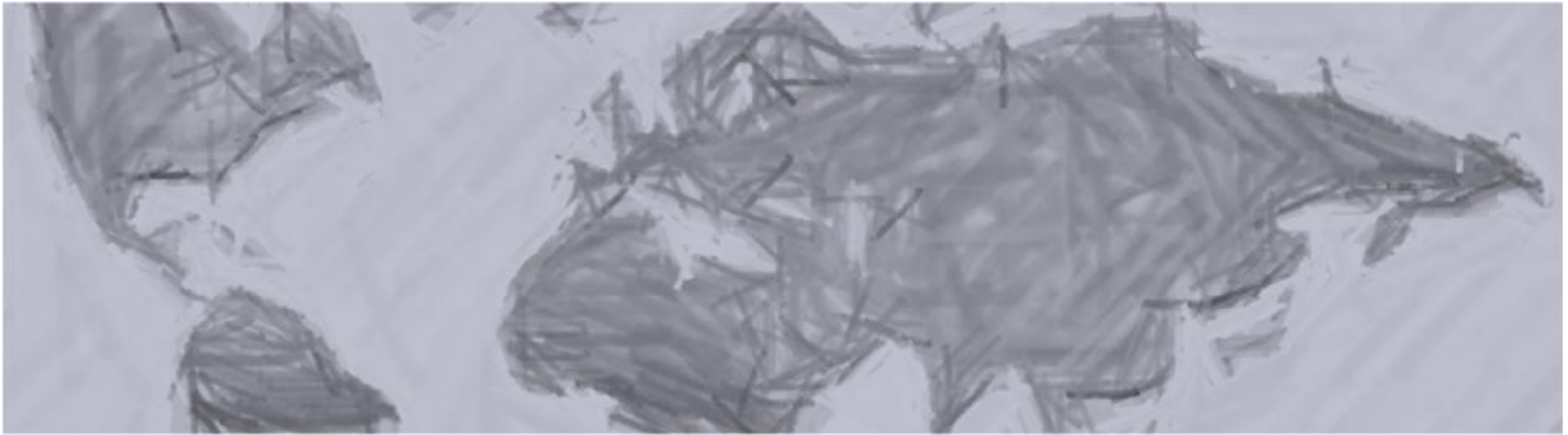


## The World Federation of Engineering Organizations

Dr. Marlene Kanga AM  
Hon.FIEAust Hon.FIChemE FTSE  
President – Elect  
1 Dec. 2017



[www.wfeo.org](http://www.wfeo.org)



- **The international organization for the engineering profession**
- **Founded in 1968**
- **Under the auspices of UNESCO**
- **90+ national engineering institutions**
- **Representing 70+ million engineers**

*Engineering* for Sustainable Development



# *Engineering* for Sustainable Development



Algeria  
Argentina  
Australia  
Bahrain  
Bangladesh  
Belize  
Bolivia  
Brazil  
Bulgaria  
Cameroon  
Canada  
Chile  
China  
Colombia  
Costa Rica  
Cote d'Ivoire  
Croatia  
Cyprus  
Czech Republic  
Dominican Republic  
DR Congo  
Ecuador

Egypt  
El Salvador  
Fiji  
France  
Germany  
Ghana  
Greece  
Honduras  
Hong Kong  
Hungary  
India  
Iraq  
Italy  
Japan  
Jordan  
Kenya  
Korea  
Kuwait  
Lebanon  
Libya  
Madagascar  
Malawi

Malaysia  
Malta  
Mauritius  
Mexico  
Moldova  
Montenegro  
Morocco  
Nepal  
New Zealand  
Nigeria  
Pakistan  
Palestine  
Peru  
Poland  
Portugal  
Puerto Rico  
Romania  
Russia  
Saudi Arabia  
Senegal  
Serbia  
Sierra Leone

Singapore  
Slovakia  
Slovenia  
South Africa  
Spain  
Sri Lanka  
Sudan  
Switzerland  
Syria  
Taiwan  
Tanzania  
Tunisia  
Turkey  
Uganda  
United Arab Emirates  
United Kingdom  
United States  
Uruguay  
Yemen  
Zambia  
Zimbabwe





**Recognised NGO at UNESCO**

**Member major Science and Technology Group at UN**

**10 x Standing Technical Committees**

**Executive Council**

**Executive Board**

**Supported by a small secretariat based in Paris**

*Engineering* for Sustainable Development





# WFEO Standing Technical Committees

- Engineering and the Environment (Hosted by UK)
- Energy (Hosted by USA)
- Engineering Education (Hosted by Lebanon)
- Information and Communication (Hosted by India)
- Engineering and Innovative Technologies (Hosted by China)
- Engineering Capacity Building (South Africa)
- Disaster Risk Management (Japan)
- Anti-Corruption (Hosted by Zimbabwe)
- Women in Engineering (Hosted by Nigeria)
- Young Engineers/Future Leaders (Hosted by Kuwait)

Also

- UN Relations Committee (Hosted by USA)



**Influencing...**

a respected source of advice & guidance on engineering and technology

**Supporting...**

UN sustainable development goals

**Partnering...**

with our international peers in engineering and science

**Growing...**

engineering capacity and mobility

**Improving...**

the ethical engineering practice and a diverse and inclusive profession

**Convening...**

world engineers' events

**Recognising...**

excellence in engineering



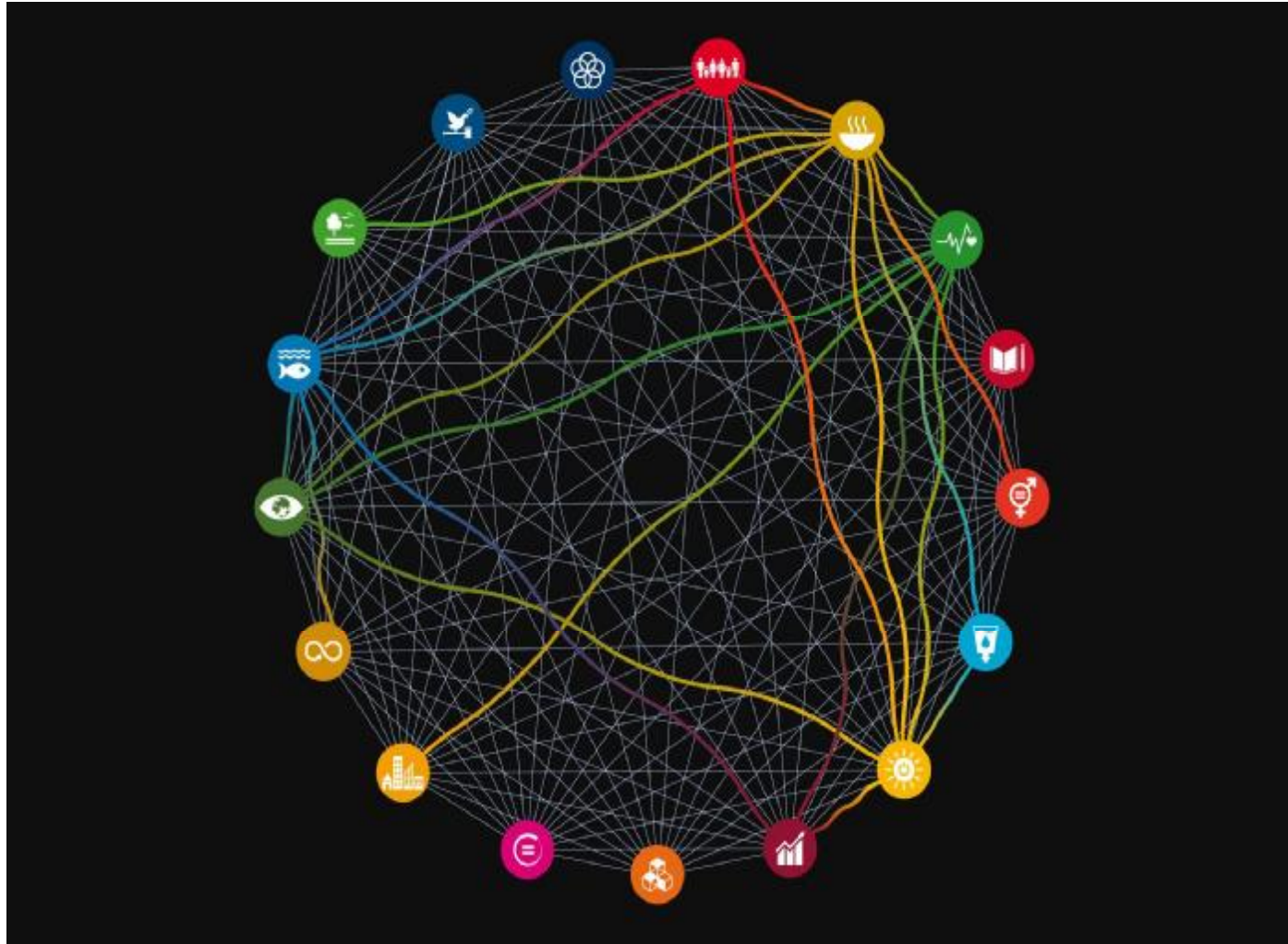
 **SUSTAINABLE DEVELOPMENT GOALS**  
17 GOALS TO TRANSFORM OUR WORLD



*Engineering* for Sustainable Development



# Engineering is essential to achieve the UN SDGs



Source: Image from International Science Council

*Engineering* for Sustainable Development





## VISION VOICE VISIBILITY VIABILITY

- **VISION:** WFEO internationally recognised as leader of the engineering profession
- **VOICE:** Advocate for engineering issues at the highest international level
- **VISIBILITY:** Ensure WFEO is heard at the UN and known throughout the world
- **VIABILITY:** Financially sustainable and strong governance



# VOICE: United Nations New York



- UN SDG 5 : Gender Equality
- Engaging with the UN - CSW61 New York, March 2017
- Development of international strategic approaches for an inclusive profession in science and technology

*Engineering* for Sustainable Development



# VOICE: Young Engineers

- Invitation for applications for 2 year internship as advisor to the WFEO President
- Review and support for STCs
- Discussions with international peers
- Engineering and the Environment (Hosted by UK)
- Energy (Hosted by USA)
- Engineering Education (Hosted by Lebanon)
- Information and Communication (Hosted by India)
- Engineering and Innovative Technologies (Hosted by China)
- Engineering Capacity Building (South Africa)
- Disaster Risk Management (Japan)
- Anti-Corruption (Hosted by Zimbabwe)
- Women in Engineering (Hosted by Nigeria)
- Young Engineers/Future Leaders (Hosted by Kuwait)

Also

*Engineering for Sustainable Development*  
UN Relations Committee (Hosted by USA)



# VOICE: Partnering with our international peers

- **UN SDG 17 : Partnerships**
- **Together we have a bigger voice on the world stage**
- **We can pool our scarce resources to achieve common goals**
- **We have a better chance of being heard by the world**
- **Growing our partnerships with:**
  - **International Science Union (ICSU)**
  - **International Engineering Alliance (IEA)**
  - **Council of Academies of Engineering Technology and Sciences (CAETS)**
  - **Federation of International Consulting Engineers (FIDIC)**
  - **And others**
- **Working with:**
  - **UNESCO category II institutions: ISTIC (Malaysia), ICEE (China)**



# VISIBILITY: Celebrating WFEO's 50 years

- Major event at UNESCO 7<sup>th</sup> March 2018
- WFEO Conference and special General Assembly, London October 2018
- First meeting of **World Engineering Forum**
- Declaration of 4<sup>th</sup> March 2018 as World Engineering Day(effective from 2019 onwards)
- STCs encouraged to deliver tangible outcomes during 2018 – events, position statements
- Special projects and events with WFEO's international partners and UNESCO
- Special awards on innovation and for young engineers and women engineers
- Focus on young engineers: special projects and leadership internships with WFEO





# VISIBILITY: Leading capacity building in engineering to achieve the UN SDGs

- **WFEO Engineering 2030** - A Plan to develop engineering capacity to achieve the UN SDGs through our members and through partnerships with educators, government, industry
- a strategic initiative to address the gap in engineering capacity to achieve the UN SDGs
- recognises that engineers are essential for sustainable development good engineering is essential achieving the UN SDGs - consistent with the mission and objectives of WFEO
- WFEO will play a key role in leading and co-ordinating the Plan
- Result of wide consultation between national and international members of WFEO and other international partners



# Engineering 2030 – Principles for Action

1. **WFEO Standing Technical Committees** - Establish policy frameworks and strategic approaches to achieving specific UN SDGS
2. **Graduate Outcomes** - Agree with educators, government, industry with rapidly changing technologies
3. **Inform global standards** - for engineering education and professional development
4. **Support** – development of range of engineering education systems to comply with agreed standards
5. **Support Capacity Building** – for accreditation of engineering education and accreditation bodies
6. **Develop professional development pathways** – so graduates meet employer needs
7. **Support Capacity Building** – for professional engineering institutions
8. **Support national and international registration** – for recognition of qualifications and experienced of practising engineers
9. **Liase with governments** – to establish consistent regulation policies for engineers
10. **Establish an international platform for engineering standards** – Education and professional development, under auspices of WFEO and UNESCO



# Engineering 2030 – Partnerships

1. **UNESCO and other UN bodies** – Member major UN Science & Technology Group
2. **WFEO Standing Technical Committees** – support aspects of the plan, e.g. ethical engineering practices, diversity, youth leadership
3. **National and International Members of WFEO** – These are the professional engineering institutions that will both deliver and benefit from the Plan
4. **International partners of WFEO** – Key bodies for international standards in engineering education
5. **Engineering educators** – universities, other institutions these will be part of providing support and mentoring and others will benefit from the Plan
6. **Industry and Employers and associations** – they will inform the requirements for effective engineering graduates and for professional development
7. **National and international efforts** - recognise current capacity building efforts by other organisations and collaborate to increase impact



# Engineering 2030 – Sample Projects

1. **Encouraging young people to study engineering** – Development of awareness of opportunities in careers in engineering for boys and girls
2. **Engaging with Industry** – To inform industry needs for graduate outcomes and continuing professional development
3. **Professional Engineering Institutions** – Establish and develop professional engineering institutions including governance, leaderships training and systems
4. **National and international registration of engineers** – registers to recognise qualifications and ongoing professional development of engineers, will also support mobility
5. **Regulation of engineers** – Review best practice models and liaise with government
6. **Sustainability in engineering** - including sustainable engineering in engineering education and professional development
7. **Ethical Practice of Engineering** – develop training programs based on the ISO standard. Training will be distributed by various means, including international partners.
8. **Diversity in engineering** - ensuring a diverse engineering profession.



# Engineering 2030 – World Engineering Index™

1. Enable **comparison of engineering capacity** between countries and regions
2. **Inform policy makers** – national, regional and international
3. Encourage development of **appropriate data for engineering** –essential to achieve the UN Sustainable Development Goals
4. **Composition of the World Engineering Index:**
  - a. **Engineering Inputs:**
    - Engineering Capacity:
    - Engineering Standards
  - b. **Engineering Outputs**
    - Engineering Activity
    - Engineering Needs





# Data for Policy and international engagement



**WFEO World Engineering Index will:**

- Drive genuine engagement with the UN for international policies on capacity building for engineering
- Engage the world's media on the needs of engineering – creating visibility for WFEO
- Enable engagement with the other international organisations such as the World Economic Forum – to discuss the role of engineering in driving economic growth

*Engineering* for Sustainable Development



# VIABILITY: A Sustainable Organisation

1. **WFEO Foundation** – The WFEO Engineering 2030 plan will be a foundation for support from industry, engineering foundations and the UN to develop the standards and capacity of the engineering profession internationally.
2. **Engaging with Industry** – Engagement has commenced for corporate support for WFEO and its activities
3. **Improved governance** – Improve processes and record keeping of our committees and projects to ensure sound governance, financial management and decision making.
4. **Support from UNESCO** – work more closely with UNESCO and other international bodies such as the World Bank to support key projects



# Value Centred Leadership

- My leadership is informed by my ethical values
- I believe in the vision and objectives of WFEO
- I am committed to serving the organisation and its members with energy and integrity
- I respect the contribution and commitment of **ALL** our members and their representatives
- I will promote and support our initiatives and our leaders in every way





Together we can make  
a difference

**I seek endorsement from the  
General Assembly for my  
proposed plan of work and to  
carry it forward during my term  
as President in 2017-2019.**

**WFEO: The world's engineers  
united in rising to  
the world's challenges.  
For a better, sustainable world.**



**The World Federation of Engineering Organizations**

Fédération Mondiale des Organisations d'Ingénieurs

[www.wfeo.org](http://www.wfeo.org)

[info@wfeo.org](mailto:info@wfeo.org)

@wfeo

@wfeo