



World Federation
of Engineering
Organisations

The Committee on Engineering and the Environment

Newsletter #13 November 2015

Within the UN Agreements on Sustainability and Climate Change lie words and objectives that clearly require engineering input and action to become a reality.

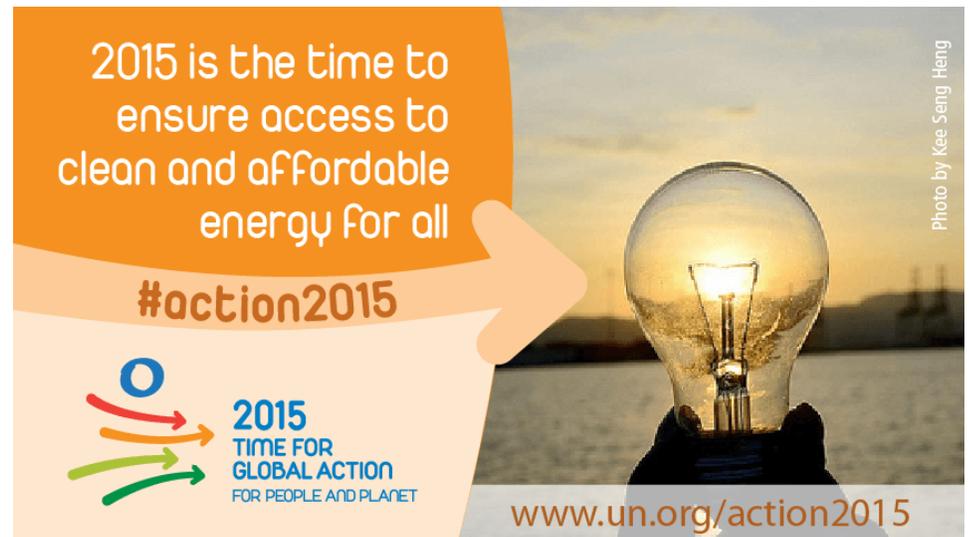
**By Darrel Danyluk, P.Eng.
FEC, FCAE, FEIC, FCSCE**

Darrel Danyluk chairs the WFEO Standing Committee on Engineering and the Environment (CEE).

Even as the United Nations works towards a Climate Change Agreement and during the implementation phase of the UN Sustainable Development Goals* the list of key words and significant challenges grows longer. Climate change – be it mention of adaptation, mitigation, extreme events, or disaster-risk mitigation; Security – of food, water, energy or from conflict; Sustainability – of planetary boundaries, population growth, urbanization, new and aging infrastructures, agriculture, mining, forestry – scroll by us constantly like the electronic tickertape at the bottom of a television newscast.

The terms are repeatedly voiced and discussed by political leaders but the time has come to turn the words into action. The Committee on Engineering and the Environment (CEE) and the other WFEO Standing Technical Committees have set out a solid foundation from which engineers can play a vital role in addressing these challenges in practical and innovative ways. It is intrinsic to professional engineers to wish to turn concepts and designs into reality.

Turn to World's Engineers to Transform Climate Change Words Into Action



Source UN

Global Response Required

That, in fact, is what engineers and engineering teams do in addressing the day-to-day needs of society around the world. Nationally, regionally and locally, the critical infrastructures are developed, constructed and maintained. Innovative solutions conceived in the minds of engineers provide reliable services for society. While specific, local and one-off engineering responses are important and do add up, they are not in themselves enough. The challenges are global and feasible solutions can only be effectively achieved if implemented at the global level. A unique opportunity has developed for the engineering community. Within the text of the new UN Agreements on Sustainability and Climate Change lie words and objectives that clearly require engineering input and action to become a reality.

In the text of each of the Sustainable Development Goals, engineering plays a role and the UN states that: "Parties

to the Convention must submit national reports on implementation of the Convention to the Conference of the Parties (COP). The required contents of national reports and the timetable for their submission are different for Annex I and non-Annex I Parties".

Annex 1 of the Climate Change Documents requires: "parties provide information on emissions and removals of greenhouse gases (GHGs); national circumstances; policies and measures; vulnerability assessment; financial resources and transfer of technology; education, training, and public awareness; and any other details of the activities a Party has undertaken to implement the Convention."

At the 2009 Climate Change Summit, IDA (the Danish Society of Engineers), working with a dozen other countries, led the way in demonstrating that taking a feasible approach with existing and alternative energy sources on a sector-by-sector basis would make significant reductions in GHG emissions. Through demonstrated case

* <https://sustainabledevelopment.un.org/?menu=1300>

Continued page 10, see - Words Into Action

The Art of Working with Nature for the Benefit of Society

At the WFEO Annual Summit this November, the Institution of Civil Engineers (ICE) hopes to officially take on the responsibility of chairing the Committee for Engineering and the Environment (CEE).

Professor Jean Venables CBE FREng (see also below) has agreed to chair the WFEO-Committee on Engineering and the Environment on behalf of ICE.

ICE is a U.K.-based international organisation with over 85,000 members ranging from professional civil engineers to students. It is an educational and qualifying body and has charitable status under U.K. law. Founded in 1818, ICE has become recognised worldwide for its excellence as a centre of learning, as a qualifying body and as a public voice for the profession.



By Robert Curd

Robert Curd is Innovation Manager, Engineering Policy and Innovation, with the Institution of Civil Engineers, U.K.

Perhaps when you think of civil engineering you see the traditional roles of our Victorian forbearers who described the profession as: “the art of directing the great sources of power in nature for the use and convenience of man.” (Thomas Tredgold 1828)

These are the words used in ICE's charter and still very much describe how the public perceive civil engineering today. However, the role of civil engineers and engineers of all types no longer reflects this somewhat “entitled” view of how we



Source UN

interact with the environment. More recently our colleague (and Co-chair of the Climate Change Mitigation Standing Technical Committee), Professor Paul Jowitt has rephrased the above as: “the art of working with the great sources of power in

Jean Venables CBE FREng was appointed a Director of the Nuclear Liabilities Fund in July 2014. She is a consultant in flood risk management and water level management; Chairman of Crane Environmental; a Non-Executive Director of HR Wallingford; and Chair of the Customer Scrutiny Panel for Sutton and East Surrey Water Company. Jean was President of the Institution of Civil Engineers in 2008-9. Her volunteer professional activities include being Chairman of the ICE Professional Conduct Panel, a Foundation Governor of Tiffin School, and a member of both the RNLI Council and Technical Committee. She is also a member of university advisory boards.

nature for the use and benefit of society.”

We realise we cannot control the environment, we realise that there are limited resources, we realise that if the whole world industrialises itself in the manner that Tredgold and his contemporaries did then we will be locked into a catastrophic high-carbon economy.

Realising these issues are not enough, however. We need to work out how to address them. So how do we work with nature? How do we benefit society?

The vision set out by the CEE is a step in the right direction. Through the following actions:

- Increasing the global understanding of sustainable engineering;
- Providing recommendations on the adaptation of civil infrastructures to the impacts and risks of climate change;



Source UN

- Engaging with the appropriate United Nations agencies to provide engineering advice and strategies related to the international agriculture and food security;
- Achieving recognition of the role and contributions of WFEO and the

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9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Source UN

worldwide engineering profession towards the environment and sustainability elements of the UN Sustainable Development Goals;

- Engaging with other international bodies such as the World Meteorological Organisation, FIDIC (the International Federation of Consulting Engineers) and the International Water Association on projects that support the practice of engineering.

We can begin to coordinate a body of knowledge that influences the practice of sustainable engineering on a global scale.

By structuring our programme of activity around the UN's Sustainable Development Goals we can also ensure that we are taking action against the most critical needs. Although all aspects of the goals will interlink with engineering, the engineering community can make a particular impact in the following areas:

Goal 6. Ensure availability and sustainable management of water and sanitation for all;

Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all;

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation;

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable;

Goal 13. Take urgent action to combat climate change and its impacts.

11 SUSTAINABLE CITIES AND COMMUNITIES



Source UN

We will be liaising with the WFEO/UN Relations Committee to ensure that our efforts in this area are coordinated to the best effect.

This is an exciting time to be taking on the committee. With COP21

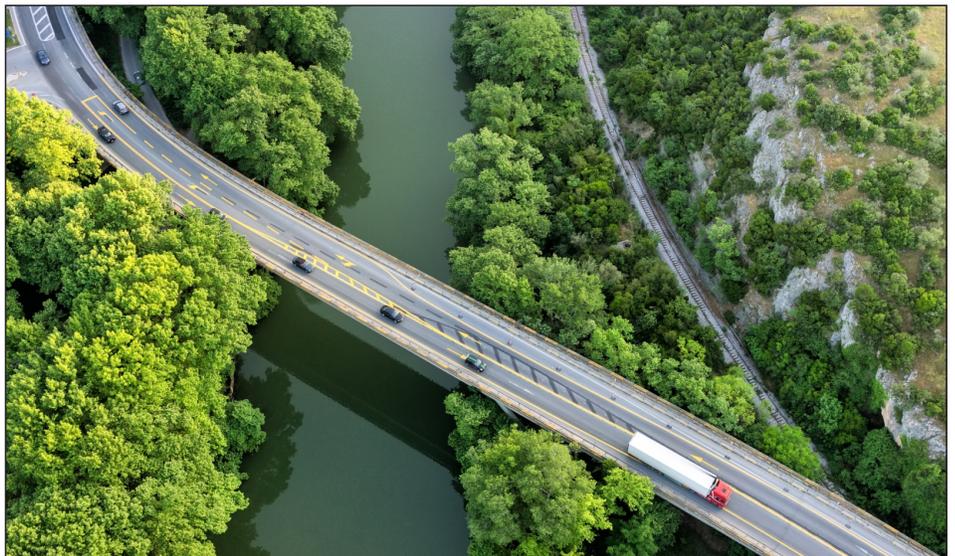
13 CLIMATE ACTION



Source UN

taking place later this year the world's attention will be focused on the issues of climate change. Engineers across the world will have a crucial role to play in providing solutions that will enable us all to live in a sustainable low-carbon world and WFEO and the CEE will have a crucial role in working with those engineers.

Thanks to the great work put in by Engineers Canada, the committee is already in a strong place, what we will achieve is therefore an "evolution" of their plans. We hope to continue the work that they have started, focusing on the key engineering challenges that we face today. 🌍



Embracing Sustainable Infrastructure Development And Environmental Stewardship

By David Lapp, FEC, P.Eng.

David Lapp is Secretary of the WFEO Committee on Engineering and the Environment.

The 2013 WFEO General Assembly adopted the WFEO Model Code of Practice for Sustainable Development and Environmental Stewardship.

Science has sounded the alarm that the future wellbeing of humankind is at risk, and that we are facing serious changes in Earth's life-support system, including profound impacts from extreme weather and our changing climate. Our continued existence on Earth depends on natural resources, but science and economic analysis show that these are being depleted at unprecedented rates and that we are degrading vital ecosystems and the services they provide to our environment.

Sustainability and Stewardship

Sustainability and environmental stewardship are two important principles that must be ingrained into engineering practice for our profession to contribute solutions that harmonize projects to reduce consumption and preserve our resources. Our Code of Ethics demands that engineers assume this responsibility in their work for the public good.

The world suffered a very significant financial downturn in 2008 and our slow recovery has threatened the sustainability component of projects in some areas. There is a perception that including sustainability considerations, particularly in infrastructure projects, costs more and increases risk environment, and in the short term this can often be true. More detailed design is required, and the process of carrying out a project in a new way can increase the risk that there will be surprises.

Can Lower Operating Costs

Risks and uncertainties can be assessed initially and managed over the long term where operating expenses are normally lower for sustainable facilities. Incorporating sustainability principles and environmental stewardship improves social acceptance of such projects, and that helps expedite licensing and approvals processes. Improved resilience and environmental stewardship pays off for the owner. Infrastructure facilities have lengthy lifetimes, and engineers have an important role and responsibility to society to encourage thought and action aimed at the longer term.

The concept of sustainable development – the idea that humanity must greatly improve the resource efficiency and



environmental protection of its development processes to provide for its growing population – has been around for more than 20 years. For infrastructure, significant improvements have been made in the way projects are executed to improve sustainability and environmental impact. But explicitly embedding these principles and practices in practice guidance is rare among the national and international members of WFEO.

CEE Developed Model Code

This prompted the Committee on Engineering and the Environment to develop the WFEO Model Code of Practice for Sustainable Development and Environmental Stewardship. Led by Engineers Canada, the Model Code was developed over several years and adopted at the 2013 WFEO General Assembly. It is now published on the WFEO website (www.wfeo.net). A presentation on the 10 principles of the Model Code is available on the website and presented several times in 2015 through international webinars. Engineers Canada encourages WFEO and the Institute of Civil Engineers to continue these webinars in 2016 and beyond. National members are also encouraged to raise awareness and uptake of the Model Code so that all engineers embrace and practice these principles in their work.

What is a Model Code of Practice? It is an expression of principles and guidance in their application developed by consensus to support the practice of individual engineers. It is not legally binding unless a jurisdiction elects to do so, and it may modify it to suit local needs. It may also be

Continued next page - Sustainable

Engineering Can Contribute to Solutions That Help Address Global Food Waste

By Fethi Thabet and David Lapp, FEC. P.Eng.

Fethi Thabet is a founding member of the Tunisian Order of Engineers and WFEO Task Group Leader for Engineering and Agriculture. David Lapp is WFEO-CEE Secretary.

In September 2013, the UN Food and Agriculture Organization published the report "Food wastage footprint - Impacts on natural resources."*

The waste of a staggering 1.3 billion tonnes of food per year is not only causing major economic losses and decreasing food security, but also wreaking significant harm on the natural resources that humanity relies upon to feed itself. The report provides a global account of the environmental footprint of food wastage (i.e., both food loss and food waste) along the food supply chain, focusing on impacts on climate, water, land and biodiversity. It provided some startling statistics:

- The global volume of food wastage is estimated at 1.6 billion tonnes of "primary product equivalents." Total food wastage for the edible part of this amounts to 1.3 billion tonnes.
- Food wastage's carbon footprint is estimated at 3.3 billion tonnes of CO₂ equivalent of GHG released into the atmosphere per year.
- The total volume of water used each

year to produce food that is lost or wasted (250km³) is equivalent to the annual flow of Russia's Volga River, or three times the volume of Lake Geneva.

- Similarly, 1.4 billion hectares of land – 28 percent of the world's agricultural area – is used annually to produce food that is lost or wasted.
- Agriculture is responsible for a majority of threats to at-risk plant and animal species tracked by the International Union for Conservation of Nature.



Source FAO

- A low percentage of all food wastage is composted: much of it ends up in landfills, and represents a large part of municipal solid waste. Methane emissions from landfills represent one of the largest sources of GHG emissions from the waste sector.
- Home composting can potentially divert up to 150 kg of food waste per household per year from local collection authorities.
- Developing countries suffer more

food losses during agricultural production, while in middle- and high-income regions, food waste at the retail and consumer level tends to be higher (In the case of Tunisia, which imports more than half of its cereal, it loses 13 per cent of its own harvest due to out-of-date equipment.)

- The direct economic consequences of food wastage (excluding fish and seafood) run to the tune of \$750 billion annually.
- Between 1/3 and 1/2 of the world's annual food production goes to waste or is lost.

Infrastructure Lacking

There are many elements of the agricultural supply chain that impact food wastage, especially in developing countries where the needed infrastructure, particularly storage and transport, is often lacking.

The WFEO Committee on Engineering formed a Task Group on Engineering and Agriculture in 2011 to improve the understanding, knowledge and capacity of engineers and engineering practice to address key issues within the agricultural supply chain at a regional or country level. It undertook to do this in collaboration with other international agricultural NGOs, particularly Farming First (www.farmingfirst.org), that are

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* www.fao.org/docrep/018/i3347e/i3347e.pdf

Sustainable *continued from page 4*

adopted as written/as modified to provide voluntary guidance. Engaging engineers through continuing professional development to adopt the principles and apply them in their practice is a proactive step to increasing awareness and fostering knowledge.

In 2014, Engineers Canada adopted a Canadian version of the Model Code of Practice, publishing it as a National Guideline for the use of its 12 associations and the more than 280,000 professional engineering members. We encourage all WFEO members to do the same.

WFEO should aim to have 75 per cent of members officially adopt the Model Code by 2020. Such a level of uptake sends a powerful message to national governments and the United Nations that engineers take their responsibilities seriously. Adopting these principles will contribute towards the post-2015 Sustainable Development Goals recently adopted by the UN General Assembly. Our world needs this level of engagement from our profession. ❄️

actively engaged in supply chain elements and who directly or indirectly interface with the stakeholders that include farmers, industry and government. The Task Group formulated a work program that included the following objectives:

- To evaluate the vulnerability of the agricultural supply chain from an engineering perspective and advise stakeholders on best engineering practices and technologies to address key vulnerabilities.
- To develop the capacity of engineers and other professionals in developing countries to identify vulnerabilities and promote engineering and other related solutions.
- To develop understanding of the issues of concern for engineering. Some elements of the supply chain include food production, transport, storage (where old handling equipment and inadequate technical skills are factors), security and safety.
- To foster cooperation between the engineering and agricultural communities through formal liaison with the Farming First organization.
- To advocate the engineering perspective on agricultural supply issues to the United Nations.



Source UN

The Task Group planned a 2-3 day workshop on “The Role and Contributions of Engineering Towards African Food Security”. Themes included:

1. The role of engineers in identifying and evaluating potentialities and preserving natural resources.
2. Agricultural production systems and natural resource sustainability.
3. Reducing post-harvest losses and pricing systems for agricultural products.
4. Strengthening basic storage and transportation infrastructure.
5. The agri-food sector's role as a driver of agricultural product development.
6. The impact of climate change on food security.
7. Human resource development and international cooperation.

The workshop was to be held in Africa with technical support and potential sponsorship from FAO, the African

Development Bank and UNESCO. Unfortunately, it was not realized during the 2011-2015 term because of insufficient sponsorship. However, it remains an important “first” action for the 2016-19 term if the agriculture theme is continued. The workshop would engage local engineers with stakeholders in a region that critically needs engineering to develop a more sustainable agriculture supply chain to improve long-term food security. A major shortcoming exists in transfer to farmers of R&D insight regarding water management and soil degradation.

Further steps should include capacity-building in developing countries where engineers in the Task Group could facilitate training of local engineers to develop human capital, facilitate the implementation of projects to solve local or regional issues around storage and transportation as well as promote the principles and practices for food security and sustainable development.

Post 2015 UN Sustainable Development Goal #2 (SDG #2) states to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture” by 2030. Let's start the engagement of WFEO's national members and their engineers to build local capacity to resolve agricultural supply chain issues in Africa. This can become a significant step towards meeting SDG #2. 🌱



Environmental Impacts of Olympic Games: A WFEO/CEE Report

By Eng. Spyros Papagrighoriou

For eight years, our Committee on Engineering and Environment worked under the inspired and productive chairmanship of Darrel Danyluk and his dedicated team from Engineers Canada.

I worked in close cooperation with the team of our Chair as Vice-Chairman of the Committee, as representative of the Technical Chamber of Greece and as Leader of Theme 1: "Environmental Impacts of Major Engineering Projects for Sporting Events (Olympic Games)."

The objective of this CEE initiative through Theme 1 was to document the environmental impacts and sustainability issues around recent large-scale sporting events.

The intent of the resulting Committee report, with the same title, was to develop an engineering strategy in planning and designing infrastructure for the Games to enable the early assessment of the environmental impact. The aim also was to provide the key elements on how the Games can serve as a good opportunity to improve the environment, engineering performance of infrastructure and related matters.

IOC Received Report

The objective of this CEE initiative, through Theme 1, was to document the environmental impacts and sustainability issues around recent large-scale sporting events, such as the Olympic Games, and to communicate these findings to future organizing committees or responsible bodies. The latter included the

International Olympic Committee (IOC), the National Olympic Committees (NOCs), world sport federations and organising committees of major sport events.

For the production of the report, a number of CEE members contributed with their views, and comments coming from many countries, such as Greece, Pakistan, Canada, China, U.K., U.S.A. and India.

Public and private investment in infrastructure and sporting facilities projects can influence improvement of social and economic living standards.

The success and failure stories for recent Olympic Games in Barcelona, Sydney, Athens and Beijing have been examined. Basic conclusions of the report state that:

- Engineers, among all professionals involved with Games, should aim at sustainability and environmental protection in urban and natural environments. The significant resources made available for large-scale sporting events should be used for the best interest of local populations and take into account existing infrastructure needs.
- In a global economic environment hit by the recent recession, the role of major public and private investment in infrastructure and sporting facilities projects can influence improvement of social and economic living standards. The principles of sustainable development should be strictly followed and convincingly show the whole world that a major project, rather happening through quick expansion of a human-created



system, can and must occur while respecting the environment.

- The organization of the Olympic Games or any other major sport event can function as a role model for a similar effort on a global scale to work hard to achieve growth that can eradicate poverty and make peace prevail. At the same time, through the advance of technology, it can minimize the waste of resources, reduce the effects of pollution and protect the environment.

It will be an interesting task for the next term of CEE to produce a new report on this subject, including looking at the London 2012 and Rio 2016 Olympic Games, with an emphasis on climatic change. ❄️

Report of WFEO-CEE Task Force On Sustainable Development and Mining

By Jessica Elzea Kogel, PhD

The Task Force on Sustainable Development and Mining (TF) was established in 2011 to raise global understanding and application of engineering approaches and technologies to increase the contributions of the mining and minerals industries to economic, social and environmental wellbeing, and sustainable development. Currently the TF is comprised of 32 representatives, who have experience and expertise in mining and sustainability, from 19 developed and developing countries. The group assists the Committee on Engineering and the Environment (CEE) of the WFEO in supporting achievement of the UN Millennium Development Goals through the promotion and dissemination of information on the application of:

1. Environmentally sound engineering practices and technologies in the minerals sector;
2. Best practices in social sustainability and the minerals sector including worker health, safety, reliability and training;
3. Best practices in eco-efficient usage of land, water, energy, and mineral resources;
4. Engineering solutions to reusing, repurposing, and recycling of mineral materials;
5. Information on risk analysis, mitigation, and management techniques in the minerals sector, with the over-arching goal of capacity building for mineral producers, and stakeholders, including authorities, non-governmental organizations, and the general public.

Small-Scale Mining a Focus

The TF engages in a range of activities that generally fall into one of two broad categories: (1) Technology and Best Practices Transfer and (2) Capacity Building. These activities take many forms including articles, symposia, short courses, workshops, expert panels, and/or conferences on minerals



Artisanal and small-scale mining, as pictured in Burkina Faso, Africa, employs ten times more people than large-scale mining, and provides jobs and income for 20-30 million of the world's poorest people.

and mining in sustainable development. In 2014, TF members began the process of identifying a focus area that fits the overall TF mission and purpose while providing a more targeted goal around which TF work activities and products could be developed. The TF selected Artisanal and Small-Scale Mining (ASM) as their focus area. ASM employs 10 times more people than large-scale mining, provides jobs and income for 20-30 million of the world's poorest people and supports the livelihoods of five times that number (International Institute of Environment and Development, www.iied.org) This sector is associated with severe social, environmental, safety and security risks and lacks access to the technical information, training and best practices needed to address these challenges.

Supporting Capacity Building

The TF is working to fill this gap through various approaches, including Capacity Building Workshops. The first workshop "Creating Sustainable Partnerships for the Mining Industry: Southeast Asia's Workshop on Practical Technical, Environmental, Economic and Social Solutions" was held October 2014 in Vietnam. Additional workshops are scheduled for 2016. The TF has also started down the path of building alliances

with international partners, such as the World Bank, to explore additional opportunities for serving the global ASM community. The World Bank's Sustainable Management of Mineral Resources Project in Tanzania is an example of such as opportunity. Through this project, the TF plans to develop a proposal for an environmental assessment tool targeting the ASM sector in Tanzania. ASM will continue to be a significant global challenge for the foreseeable future, especially in developing economies, and will therefore continue to be a key focus area for the TF. 🌐

Jessica Elzea Kogel, PhD, is based in Atlanta, Georgia, U.S.A. She is a mining industry leader with more than 25 years of industrial experience encompassing a wide range of business activities, including R&D management and mine operations management. Over the past decade, she has become increasingly involved in sustainable development and mining's contribution to sustainability.

Dr. Kogel is past president of the Clay Minerals Society and served as the 2013 president of the Society for Mining, Metallurgy and Exploration.

Thanking Our Sponsors!

Engineers Canada wishes to express its gratitude to TD Meloche Monnex for its financial sponsorship of the Committee on Engineering and the Environment over the past eight years. Their generous contribution allowed Engineers Canada and our volunteers to engage in the work of the Committee on Engineering and the Environment as well as the WFEO Executive Council and the United Nations, particularly the UN Framework Convention on Climate Change and the World Meteorological Organization.



Insurance

Meloche Monnex



TD Meloche Monnex also joined APEGA (the Association of Professional Engineers and Geoscientists of Alberta) in lending support to facilitate production of the WFEO-CEE newsletters. Again, a big thank you to both organizations. 🇨🇦

WFEO-CEE and Related Upcoming Events

WFEO Meetings

- Nov. 28, 2015, Kyoto, Japan –WFEO-CEE Face-to-Face Meeting #8
- Nov. 28 - Dec. 4, 2015 – WFEO General Assembly, Executive Council and Committee Meetings Kyoto, Japan www.wfeo.org

WFEO Events

- Nov. 29 - Dec. 2, 2015 – WECC 2015 – World Engineering Conference and Convention – Kyoto, Japan www.wecc2015.info/index.html

Meetings Related to WFEO-CEE

- Nov 30 - Dec. 11, 2015 – United Nations Framework Convention on Climate Change/ UNFCCC Conference of the Parties (COP) Meeting No. 21 – Paris, France
- www.unfccc.int

Themes 1 and 2 – Climate Change Adaptation and Mitigation

- May 10-16, 2016 – Adaptation Futures 2016: Practices and Solutions – Rotterdam, Zuid-Holland, Netherlands www.adaptationfutures2016.org/
- May 16-26, 2016 – 42nd Sessions of the UNFCCC Subsidiary Bodies – Bonn, Nordrhein-Westfalen, Germany www.unfccc.int
- Nov. 7-18, 2016 – UNFCCC Conference of the Parties (COP) Meeting No. 22 – Marrakesh, Marrakech, Morocco www.unfccc.int

Theme 3 – Engineering and Agriculture

- June 26-29, 2016 – 4th CIGR International - AgEng Conference 2016 - Automation, Environment and Food Safety – Aarhus, Denmark <http://conferences.au.dk/cigr-2016/>
- Aug. 23-24, 2016 – 3rd International Conference in Agricultural and Food Engineering – Kuala Lumpur, Malaysia www.cafei.upm.edu.my

Theme 4 – Engineering and Sustainable Mining

- Feb. 24-26, 2016 – Society of Mining Engineers (SME) Conference and Expo - “The Future for Mining in a Data-Driven World” – Phoenix Convention Center, Phoenix, AZ, USA www.smeannualconference.com/
- May 26-28 – Society of Mining Professors' Regional Conference – Medellin, Colombia <https://www.facebook.com/events/1597074427231349/>
- June 23-24, 2016 – 4th International Symposium on Sustainable Minerals '16 – Falmouth, Cornwall, United Kingdom www.min-eng.com/sustainableminerals16/
- Sept. 21-24, 2016 – Society of Mining Professors' Annual Conference – Washington, D.C., U.S.A. www.miningprofs.org

Theme 5 – Environmental and Sustainable Engineering Practices for Engineers

- Feb. 9-16 – 2016 Sustainable Communities Conference – Federation of Canadian Municipalities – Ottawa, Ontario, Canada <http://www.fcm.ca/home/events/sustainable-communities-conference.htm>
- Dec. 2-4, 2016 – Improving Sustainability Concept in Developing Countries (ISDC) – Cairo, Egypt www.ierek.com/events/improving-sustainability-concept-developing-countries/

Post 2015 Sustainable Development Goals

- May 16-20, 2016 – WASH 2016 Conference – Pathways to universal and sustained water, sanitation and hygiene – Brisbane, Australia <http://www.watercentre.org/services/events/wash2016>
- Oct. 17-21, 2016 – Third UN Conference on Housing and Sustainable Urban Development (Habitat III) – Quito, Pichincha, Ecuador <http://unhabitat.org/habitat-iii-conference/> 🇨🇦

After Eight Years as CEE Chair Darrel Danyluk Delivers Parting Reflections and Thanks

This is my last column as Chair of CEE. Over the last eight years, we have taken a thematic approach to our work and engaged national members to be (Thematic) Task Group Leaders of the various themes.

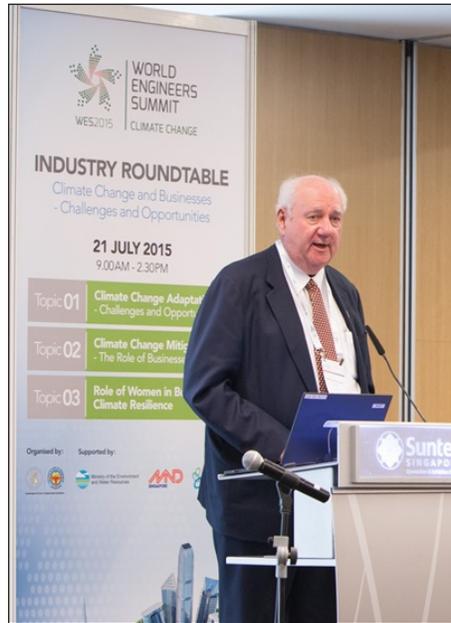
In our first four-year term, we identified five themes, namely:

- Climate Change – Adaptation
- Legacy Opportunities from Infrastructures at Large Sporting Events
- Model Code of Practice – Sustainability
- Disaster Risk Mitigation
- Infrastructure Needs of Developing Countries

In our second term, we addressed following six themes:

- Climate Change – Adaptation
- Climate Change – Mitigation
- Sustainability in the Mining Sector
- Sustainability in the Agricultural Sector
- Implementation of the Model Codes of Practice – Sustainability
- Development of a Model Code of Practice – Climate Change

Through the efforts of the Task Group Leaders, and many volunteers within the task groups and others on the CEE, we have developed tools, built



Darrel Danyluk, P.Eng., speaks during the 2015 World Engineers Summit. The latter, held in Singapore, was one of numerous international conferences that he attended during the last eight years in his capacity of Chair of the WFEO Standing Committee on Engineering and the Environment.

relationships and formal arrangements within the UN agencies. My special thanks to all whose dedicated efforts have made our term both enjoyable and successful.

In term one, we recommended and were successful in having our Task Group on Disaster Risk Mitigation

become an independent Standing Committee. The report on the legacy of major sporting events was published. WFEO became an Official Observer at the United Nations Framework Convention on Climate Change (UNFCCC) with CEE the focal point. We engaged national members to attend and participate at the major Conference of the Parties (COP) meetings, as well as the negotiating meetings in June. Over 60 engineers participated on behalf of WFEO, including five students, in June of 2015. WFEO signed a Memorandum of Agreement (MOU) with the World Meteorological Organization (WMO) to work on areas of mutual interest and jointly held side events at the UNFCCC meetings.

A key responsibility of the CEE is to identify a host country to assume the responsibility of chairing the committee and, in this regard, we are pleased to recommend the United Kingdom and the Institution of Civil Engineers as Engineers Canada's successor to host the CEE.

Finally, but by no means least, a special thank-you goes to David Lapp, P.Eng., who provided the secretariat support to CEE. His dedication and commitment to all the Task Group Leaders and communications with WFEO headquarters provided the foundations for our success. 🇨🇦

Words Into Action

Continued from page 1

studies, CEE showed that climate-change adaptation of existing and new infrastructures should begin by defining the climate-specific vulnerabilities of infrastructures. The CEE work proved that vulnerabilities could be prioritized based on the severity of impact, with most adaptive actions planned into future infrastructures annual capital and maintenance budgets.

The Model Code of Practice for Sustainable Development and Environmental Stewardship, and the



SUSTAINABLE DEVELOPMENT GOALS

Model Code of Practice on Climate Change, the draft of which is out for comment, outline to individual engineers the profession's expectations on acceptable practice. Developed by CEE and endorsed by the WFEO general assembly, these tools are fundamental to a unified global response.

The challenge the global engineering community faces lies within the scope of the national members of WFEO.

Having a roadmap for implementation at national levels, endorsed by and acted upon by engineers within each national member, demonstrates at the global level the way forward.

We have the tools, the skill sets, the local and national teams, the political will and above all the urgent need to solve and implement solutions. Engineers do possess the knowledge and ability to turn words into action. 🇨🇦