

# Engineers will help turn COP21 Agreement into action

**O**n Saturday December 12th, 2015 the global community came together in Paris and agreed to limit global warming to 2°C. Called historic by political leaders, the COP21 Agreement has taken negotiators from developed and developing countries many years of discussion to resolve the complex issues of finance, accountability, targets and timeframes.

This agreement does not come into effect until 2020 and aims to achieve meaningful greenhouse gas (GHG) reductions by 2050. Country commitments have been made.

So it is done, or is it?

After six years of negotiations since the restart in Copenhagen, it was in everyone's interest to sign something; anything. Failure to agree was not an option.

The achievement of Paris is that it demonstrates a commitment, a collective will to address a serious challenge and despite its many shortcomings it offers hope. There are still challenges ahead for the United Nations Framework Convention on Climate Change (UNFCCC) process.

Remaining issues include ratification by each signatory country; settling the details of international, national and regional processes for financing; the competing demands between adaptive and mitigative priorities and determining feasible implementation programs within the construct of the short timeline. These all require clarification.

Throughout the numerous negotiation meetings and the COP sessions, and amid the extreme views of many, a wealth of information on the

means, processes and mechanisms required and available to achieve a 2-degree target have been shared.

Amongst this material is the input of the engineering community.

Engineers presented their views on how the decisions to implement changes to technology to achieve the goals of COP21 at two major events in Paris.

The Future Climate-Engineering Solutions initiative looked at the potential to use existing technologies and to engage engineers to meaningfully reduce emissions through an event, "Technology Solutions for a 2 Degree World" where a number of engineering approaches were presented.

The World Federation of Engineering Organisations hosted the COP21 Engineering Summit on Climate Change "Turning Words into Action – A Sectoral Approach" where opportunities to implement meaningful engineering-related actions were discussed.

Both events identified the need for engineers to put the words into action, for without implementation of meaningful adaptation of new and existing infrastructures, society will remain at risk to the impacts of the changing climate; and without meaningful mitigation efforts to curb GHG emissions, a catastrophic risk looms on a horizon.

To turn the text of the Paris agreement into the



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actions required, engineers need to mobilise and implement feasible solutions to existing and future built infrastructures systems.

The COP21 Agreement recognises the role of engineers and scientists to develop and communicate the contributions of each nation to reduce greenhouse gas emissions, including quantified measures that can track progress being made.

Subsidiary committees have been established to provide scientific and technological advice and to track implementation by enhancing cooperation, understanding the impacts of mitigation actions under the COP21 Agreement and exchanging information and best practices. The COP21 Agreement also recognises the need for capacity building and will develop and undertake a work programme to enhance linkages and create synergy

between mitigation, adaptation, finance, technology transfer and capacity building.

Non-governmental organisations like the World Federation of Engineering Organisations (WFEO) have a role to play in facilitating co-operation among nations, collaborating in the development of assessment measures and best practices and in capacity building. Its statement following the COP21 Engineering Summit on Climate Change stated that:

"We will engage through the implementation of innovative technologies and cost-effective, feasible solutions based on sound engineering criteria and scientifically defensible climate projections. These actions will aim to reduce the rate and magnitude of climate change as well as address its inevitable impacts on society and its quality of life."

In order to adapt built infrastructures to withstand the impacts of the changing climate requires engineering assessments to identify vulnerabilities and to implement necessary upgrades to reduce risk to levels such that they can be deemed "climate proof".

Vulnerability assessments must consider the infrastructure system as a whole, where all elements, physical and human, are scanned for vulnerability. WFEO is committed to working with its partners in the UN Major Group on Scientific and Technological Communities to achieve the outcomes agreed at COP21 by using measures and tools such as systems thinking, international standards and codes of practice, undertaking climate change risk assessment and inclusion of environmental, social and economic impacts in engineering practice.

Only when the engineering and implementation of necessary and appropriate technologies replace or mitigate major GHG sources will GHG emissions at source decline. Only the combined effect of these actions on the global scale will reduce the worlds GHG emissions to the levels necessary to satisfy the target set in Paris.

It is time for engineers to put words in action.

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