

Strategic Plan to host World Federation of Engineering Organizations Standing Technical Committee – ENERGY

1. Mission of the Standing Technical Committee

The Committee on Energy's objective is to be the engineering reference for assessing the current and future energy technologies for sustainable development based on engineering criteria and actively participate in sustainable energy programs around the world by providing subject matter experts. (WFEO website)

2. Strategic orientations

The global energy challenges of the next 15 years are immense, perhaps the greatest we have ever faced.

And engineers are at the heart of these challenges to ensure a just energy transition.

1. Firstly, to **design the best technological solutions**, on both the supply and demand sides for all the energy and uses, solutions that must integrate and balance the dimensions of the energy trilemma: reliable, affordable and sustainable energy.
2. Secondly, to **speed up the implementation** of these solutions while managing the dimension of **acceptability**. This is essential because the energy transition concerns the whole of society and everyone needs to be involved.
3. Finally, to **guarantee the resilience of global energy systems** in face of crises, particularly climate crises with the challenge of adapting infrastructures to the consequences of global warming (water scarcity, floods, temperatures, etc.).

One of the anticipated difficulties in implementing the energy transition is the potential **shortage of human resources**, particularly energy engineers. If we add to this the insufficient number of women in the energy sector, this highlights the importance of actions to **attract young and women to the energy engineering** professions.

The World Federation of Engineering Organizations (WFEO) community and its Energy Committee could contribute to meet these challenges, by sharing best practices, technology knowledge, innovations, or effective policy measures.

The proposal to host, for the next 4 years, the Committee on Energy (CE) of the World Federation of Engineering Organizations (WFEO) is in line with the continuity of the committee's activity, capitalizing on its past action and proposing ways to progress in the achievement of its mission.

3. UN Sustainable Development Goals

The Energy Committee work will clearly be linked to the 2 following UN Sustainable Development Goals:

- **SDG 7: Affordable and clean energy:** This SDG directly linked to energy issues and its

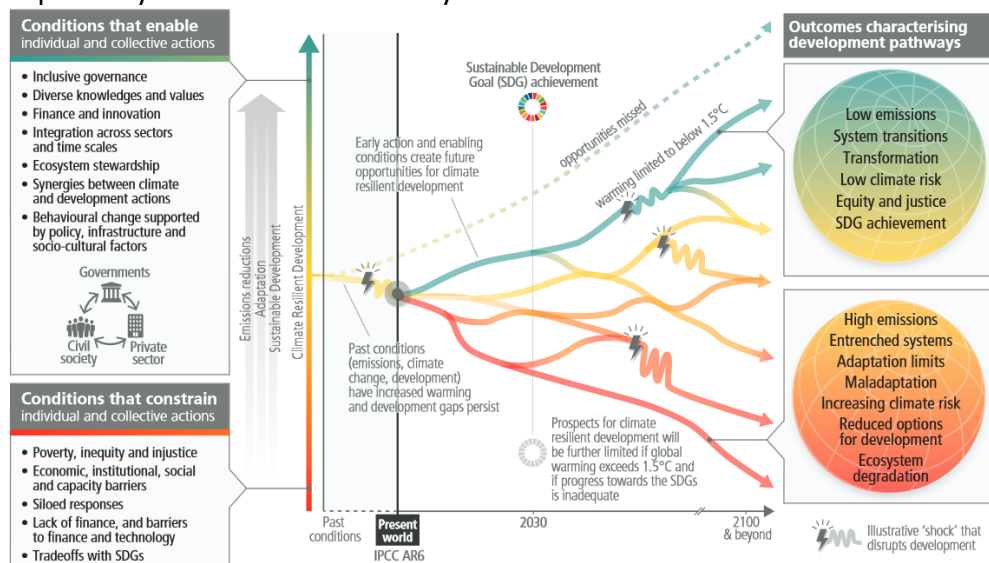
goals, an access to affordable, reliable, sustainable, and modern energy for all, which is the same objective as the World Energy Council since 1923.

- **SDG 13: Climate Action** : One of the causes of global warming is the use of fossil fuels, which highlights the major relationship between energy and SDG 13. It is essential to promote energy efficiency, decarbonization of industrial process and uses and development of low carbon energies (renewable and nuclear) or technologies that make the use of fossil fuels acceptable like CCS. Adaptation of energy systems to the consequences of climate change, including energy-water nexus is also a major challenge.

According to the last SGG 7 Energy Report, despite some progress, **the current pace is not adequate to achieve any of the 2030 target**, due to uncertain macroeconomic outlook, inflation, currency fluctuations, debt distress in a growing number of countries, lack of financing, supply chain bottlenecks, tighter fiscal circumstances, and soaring prices for materials.

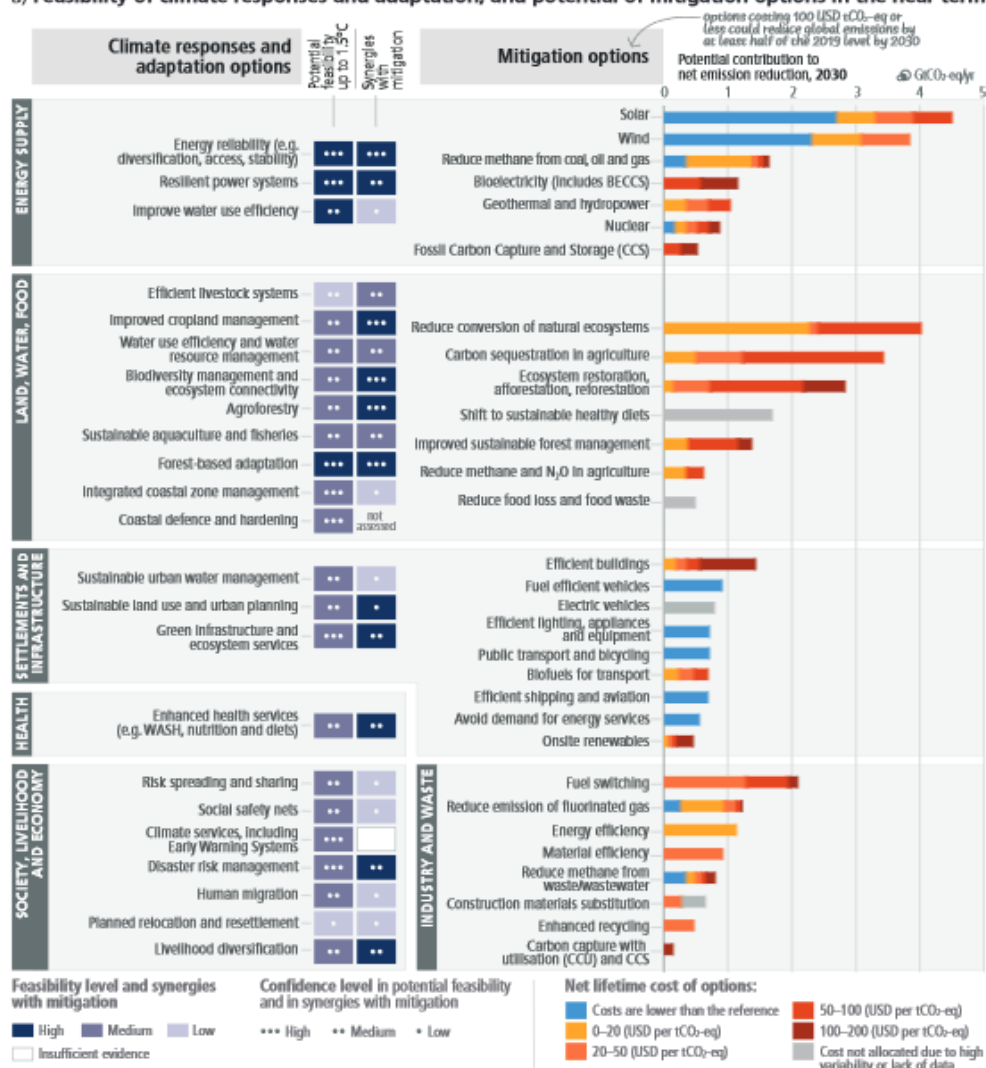
INDICATOR	2010	LATEST YEAR
 7.1.1 Proportion of population with access to electricity	1.1 billion people without access to electricity	675 million people without access to electricity (2021)
 7.1.2 Proportion of population with primary reliance on clean fuels and technology for cooking	2.9 billion people without access to clean cooking	2.3 billion people without access to clean cooking (2021)
 7.2.1 Renewable energy share in total final energy consumption	16% share of total final energy consumption from renewables	19.1% share of total final energy consumption from renewables (2020)
 7.3.1 Energy intensity measured as a ratio of primary energy and GDP	5.53 MJ/USD primary energy intensity	4.63 MJ/USD primary energy intensity (2020)
 7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems	11.9 USD billion international financial flows to developing countries in support of clean energy	10.8 USD billion international financial flows to developing countries in support of clean energy (2021)

Regarding the SDG 13, as stated in 6th assessment report, pace and scale of climate action are insufficient to tackle climate change but multiple interacting choices and actions can shift development pathways towards sustainability.

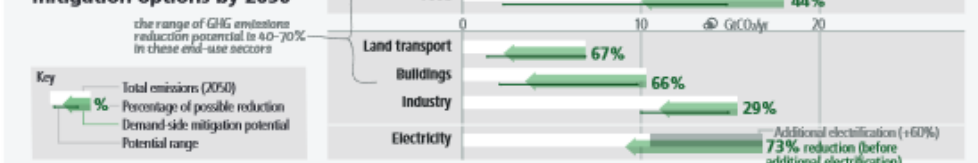


And most of the climate actions rely on energy on supply or demand side :

a) Feasibility of climate responses and adaptation, and potential of mitigation options in the near-term



b) Potential of demand-side mitigation options by 2050



Even if these two goals constitute two strong axes of the EC's action, it will be possible to show, in the various works, the contributions made to the achievement of the other SDG.

4. Work Program

It is not possible, at this stage, to propose a detailed work program because we wish to organize the Energy Committee as a forum for sharing information and decisions and the definition of the work program will be on the top of the agenda of the first meetings.

In addition to the working group currently in progress, we would like to focus the energy committee on the key following challenges posed by adaptation to climate change, mitigation measures and access to clean energy by :

- Sharing knowledge and dialog about the best technological solutions and innovations for energy transition. In particular topics like solutions for energy efficiency, energy access, low carbon energy, industry and buildings decarbonization, energy flexibility management...could be explored.
- Sharing best practices and effective policies on how to speed up the implementation of these solutions while managing the dimension of acceptability
- Sharing knowledge and best practices on how to guarantee the resilience of global energy systems regarding consequences of global warming

To organize such dialogs, an interesting format could be the World Energy Café webinars launched in 2023 by World Energy Council in order to learn, share and connect.

The Energy Committee will, of course, have to continue its commitment to participate to WFEO major events.

We also would like to launch, or actively participate in link with other WFEO committees to, actions to support diversity in energy engineering with a focus on women and young engineers. An interesting format could be the series of portrait launched of young Energy professionals launched by the Conseil Français de l'Énergie in 2023 on social networks which can be extended in the FMOI young and woman energy engineers.

5. First steps

Some working groups are active with work in progress. It is essential that they be completed and that the results be valued. An update will be made on all the working groups to specify the expected results and publications; the same will apply to the events in which the committee must be involved.

As already mentioned, the work program will be discussed and decided collectively during the first meetings and all along the mandate, to maintain committed contributors.

6. Committee organization

It is important to continue to get the support of the Regional Vice-Presidents to ensure continuity and quality of the Energy Committee.

The President-elect's will contact each of the Vice-Presidents to ask them for their views and advice on the draft outlined in this note.

The committee is fortunate to have a significant number of members. But it is a primary objective to define a work program in which all members are actors. It is also important to ensure that members are well represented, in terms of initial training, countries of origin and sectors of activity. It will also be a major challenge to make progress in terms of gender balance.

It is proposed to entrust the chairmanship of the committee to Marie-Line Vaiani, Secretary General of the "Conseil Français de l'Énergie".

Marie-Line Vaiani is since January 2023 Secretary General of the Conseil Français de l'Énergie, the French committee of the World Energy Council (WEC). She is also the chief editor of the

bimonthly publication La Revue de l'Énergie.

She's an ENSTA Paris engineer, specializing in mathematical engineering. She holds a degree in corporate finance and capital markets from Sciences Po Paris and an executive MBA from HEC Paris.

She has spent most of her career in the energy sector, covering a wide range of assignments in France and abroad : from multi-use water management of EDF's hydroelectric dams to the development of new dispatching systems for the electricity transmission network operator, from local economic development and management of an investment fund with "Une rivière, un territoire" program to international development and diversification strategies, from the regulation and market design of energy markets to the development of a national industry for renewable energies, hydrogen, batteries.

The "Conseil Français de l'Énergie" will provide funding for the chairmanship of the committee: travel and accommodation to allow participation of the chair to conferences and meetings; the administrative secretariat of the committee will be provided by the personal assistant to the CE chair. The chair and the secretariat will be responsible for the dissemination of the preparatory files for the committee's meetings, the circulation of information, relations with the WFEO bodies and, especially, general secretariat and the provision of the necessary elements for communication.