



Strategic Orientations

October 20, 2020

1. Strategic orientations: the new context

The strategic orientations of the Committee on Energy (CE) of the World Federation of Engineering Organizations (WFEO) are in line with the continuity of the committee's activity, capitalizing on its past action and proposing ways of improvement in order to progress in the achievement of its mission. This mission has been defined as follows

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.

and remains highly relevant. It is important to remember that the notion of sustainable development is usually based on three pillars – economic, social and environmental – which must be considered in a balanced way.

Three remarks may be useful to clarify and complete this mission.

- The first remark is the observation that the transition we are experiencing does not only concern the energy sector: it is, for example, strongly linked to the development of digitalization and to developments in several sectors with strong links with the energy sector, such as, for example, the transport or agriculture sectors. Recent events have confirmed these facts.
- The second remark is that decision-making is now more shared between the various economic actors and is often part of a broader debate. We can only welcome the interest shown by citizens in energy issues. But a new feature is emerging: our world today is characterized by an abundance of information which, as Aesop of language said, is the best and worst of all things. While easy access to information and diversity of opinion are indeed desirable, they should not run counter to the scientific rigor that makes it possible to distinguish what is true from what is false or uncertain.
- The third remark is a new one, in comparison with the first draft of Strategic orientations presented one year ago, at a time when we had no idea what a major crisis the world would face because of a virus. At the heart of the environmental and digital transitions, the energy sector has to face for four major uncertainties which threaten the world:
 - a. The first uncertainty is health: the first objective is therefore to rebuild and increase short-term and long-term resilience. The role of energy sector in the fight against the pandemic has been decisive: on the "first line" were the carers but the "second line" consisted in



particular of those who ensure the continuity of energy supply and other services which all need energy.

- b. The second uncertainty is economic. The world is facing a historic economic recession of which we are certainly only just beginning to feel the first effects: the recession is spreading to almost all sectors of the economy with the immediate consequence of a fall in employment and an impressive increase in unemployment and therefore insecurity, in a particularly difficult financial context ; it will be difficult to avoid a major social crisis. Important supporting policies have already been put in place and strong recovery policies are being put in place. The sums involved are colossal, commensurate with the stakes. In a new context, marked by the indebtedness of all players, energy choices must be even more demanding in view of budgetary constraints. The public choices must be informed by simple and effective indicators that reveal the effectiveness of policies and guide public choices, far from ideology.
- c. The third uncertainty is political. The scale of the crisis seems to have overshadowed major environmental issues such as climate change, access to energy, water stress or loss of biodiversity. However, all the major challenges did not disappear during the pandemic. There is a fine path between, on the one hand, a return to the world of the past through a generalised relaunch with the sole objective of restoring growth and employment and, on the other hand, a relaunch targeted solely at the sectors that are driving the ecological and digital transitions, some of which even see an opportunity to increase speed. Yet the pandemic has not changed the inertia of our economies: everyone knows that accelerating transitions has a cost, whether in terms of stranded assets or destroyed jobs. And the dramatic rise in unemployment, the inevitable increase of inequalities and the unsustainable development of poverty that has only just begun are the terrible realization of the price to be paid for accelerating transitions.
- d. The fourth uncertainty is societal: to fight the virus, most citizens have fundamentally changed their behaviour; many have discovered teleworking, different lifestyles with regard to distribution channels or transport. A certain awareness seems to have formed around the idea that the development of the past was unsustainable. In a lot of parts of the world, the crisis has provoked the return of citizens to values such as solidarity or social cohesion. What will remain, once the crisis is over, of these new behaviours which have contrasting consequences on the energy sector? We should not underestimate the strength of the systems to return to their starting point.

Therefore, the CE's mission can certainly be extended. It is necessary to continue the essential monitoring of energy supply technologies, taking care not to limit ourselves too often to electricity. But, in response to the first point, it will be necessary to include in the scope technologies on the demand side as well as transversal technologies that will certainly be decisive on energy demand and its structure. Beyond the intrinsic value of this work, it could also be a way to generate new interest for the WFE. About the second point, it will be a matter of building, obviously without a priori, the sets of scientific and technical data, facts and reasoning based on which contributions to the debate can be drawn up. This will certainly involve improving the CE's communication methods and deliverables by considering more appropriate media without sacrificing rigor.



The answer to the third point must be commensurate with the issues at stake. It could be broken down into two parts: on the one hand a holistic reflection on the resilience of energy systems, and on the other hand a concrete and objective reflection on the sustainability of our energy choices. But, in fact, as developed above, these two issues are intimately linked and can only be dealt with together, in a cross-cutting approach, so strong and numerous are the interactions between these two challenges.

2. UN Sustainable Development Goals

One of the key points of the strategic plan is to broaden relations with all United Nations organizations and, of course, especially with the UNESCO. To be in line with UN Sustainable Development Goals (SDG) is fundamental.

In the first draft of the Strategic Orientations, we have proposed to highlight two goals which constitute two strong axes of the Committee's action:

The first SDG to consider is easy because the Goal 7 – Affordable and clean energy refers to the mission of the Committee. The second SDG was the Goal 13 – Climate action because climate change is a major issue, closely linked to energy use, which has become more and more important by its consequences on energy systems, by the risks it represents for humanity and by the emergency of action.

One year ago, we wrote that “energy is at the heart of human activity and its importance, direct or indirect, with all the Sustainable Development Goals is obvious.” Even if these two goals always constitute two strong axes of the Committee's action that should be systematically addressed, it is impossible to forget most of the others SDG. This has been taken into account in the work program presented below, mainly with the launch of a large study, “Sustainability and Resilience”.

3. One year after Melbourne

The beginning of the work was strongly impacted by the Covid-19 pandemic.

The first weeks were devoted:

- on the one hand, to the updating of the list of members of the Committee; it appeared that a large number of members on the list did not respond; and
- on the other hand to the contribution to the WED which was to be held on March 4 in Paris. In particular, a high-level round table was organized on the following topic "Which technologies for a sustainable energy transition? " with participants from China, France, Germany, Nigeria and Russia, moderated by the Chairman of the Energy Committee. The day before, on December 3, a first working dinner of the Energy Committee had been organized. As we know, these events have been cancelled.

The first meeting of the Energy Committee was finally held on June 24, 2020 by videoconference; it was an opportunity to propose an organization of work and to conduct a first discussion on the work program. The first goals were a) increasing the number of active participants ; b) relaunching several Task Groups ; c) specifying the target and format of publications ; d) organizing if possible an International Event. The second meeting was held on October 14 and allowed to set up a more



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operational organization. The next meeting will be held, again by videoconference, on January 21, 2021.

4. Work Program

The work program is structured around specific topics, each of which is dealt with by a Task Group; the topics are divided into three categories:

- topics that have been worked on and for which a report has been delivered; the main part of the work is then to update the report and publish the results. The works carried out on solar power and nuclear power fall into this category.
- ongoing topics for which it is important to continue the work undertaken and then to promote the results obtained: carbon capture, utilization and storage, energy internet, sustainable energy.
- new subjects such as hydrogen, bio-sourced energies, energy efficiency, wind, urban waste, electrification (focus on large cities), cold and heat pump, resources and circular economy, smart grids, mobility.

The principle is to set up Task Groups that will have to work between 6 and 18 months; it is neither possible nor desirable to launch all these topics at once. Seven of them have been selected and will be launched by the end of 2020: solar, nuclear, energy internet, CCUS, energy storage, hydrogen, electrification. Three of the seven Task Group Chairs have already been identified.

In addition, a broader study will be launched on the topic "Sustainability and resilience of energy systems". This study, which will extend over the next three years, will attempt to answer the questions raised above and inspired by recent events. It would consist of a cross-cutting reflection on the risks threatening our energy systems (some risks have often been poorly understood in the past) and on the best policies and measures to limit these risks. This approach will be resolutely placed in a sustainable development perspective and should articulate its reflections around the 17 Sustainable Development Goals. It will focus on defining the resilience or vulnerability of energy systems using a cindynic approach that aims to draw a picture of the advantages and disadvantages of different technologies and the means to be implemented to increase their resilience.

5. Organization

A steering committee has been set up around the chairman of the committee. It permanently includes the Special Advisor to the President and the Regional Vice-Presidents; it will also temporarily include the Chairs of active Task Groups. The mission of this steering committee is to share the animation of the committee and more specifically:

- Implementation of the Action Plan discussed together
- Follow up of the TG progress
- Communication and outreach orientations
- Validation of Committee reports before circulation and publication



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The form and frequency of Committee meetings has been discussed: quarterly online plenary meetings and on line *ad hoc* meetings if necessary.

Whenever possible, and especially when the end of the health crisis allows it, one meeting per year will be held face-to-face (a priori the meeting back-to-back with the WFEO governance meetings).

6. Communication

A reflection on the committee's internal communication concluded with a study of setting up a platform for exchanging ideas and contributions on the various subjects.

As far as external communication is concerned, it is important to better specify the target audience of the Committee's communication: politicians, business leaders, the engineering community? The UN bodies remain, in all cases, privileged partners.

If it is certainly indispensable to base the indispensable rigour of the Committee's opinions on the writing of "reports", it is just as indispensable to make a major effort of communication by writing shorter and easier to understand executive summaries. Specific work will be carried out in order to define a constant structure for these summaries which will constitute the "signature" of the Committee. This structure could be articulated around the problematic, the presentation of the basic principles and the different technological options, the state of the art which will include if possible concrete references, a SWOT analysis, the technical-economic aspects; the temporal dimension will be present at all levels.

This organization scheme will be implemented from the first works and it is reminded that the communications are validated by the steering committee before any circulation. An effort will be made to provide texts in the different languages: this effort will be lightened by the conciseness of the summaries.

In addition, more "modern" modes of communication have been envisaged as short videos (less than 3 minutes) in the style of the United Nations.

Even if the year 2020 has not been favorable for the organization of events, this remains an objective of the Committee. Conferences, certainly online at first, could be specific events for the Energy Committee, participation in events organized by the WFEO (such as the one planned for March 4, 2020) or collaborations with other organizations.