What can be expected from ICEF2015?

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The series of annual ICEF conferences was established in 2014 in order to stimulate the awareness concerning the role of innovations towards solving the global warming issue. We all know that present technologies and practices to produce and consume is not sustainable, particularly in the field of energy. Thus new approaches are needed. The task is particularly challenging as the greenhouse gas challenge represents not the only urgent global problem in these days. Pressures from demography, poverty, drinking water supply, and local pollution require global activities and efforts. Still worse, the world goes through new military and civil conflicts, religious and cultural tensions, and a record number of refugees are observed, not to forget the still pending solution of the economic and financial crisis in the aftermath of the Lehmann bankruptcy 2008. This underlines the need to find solutions to the global warming problem that are both effective and acceptable from a social, economic and political point of view. Obviously, only environmental innovations promise such solutions.

The annual international ICEF conferences are organized in order to discuss such innovations in the context of global climate change. The next ICEF conference will be held between 6 and 9 October 2015 in Tokyo. The outcome should contribute to the debates at the next Conferences Of Parties (COP) under the United Nation Framework Convention on Climate Change (UNFCCC) in Paris. Therefore the ICEF conference is scheduled one and a half months prior to the COP meeting. I really hope that the ICEF message will be that the world needs to boost innovation, in particular in the field of clean and affordable energy, as the key strategy for controlling climate change and abating global poverty.

There are many similar conferences and activities in all parts of the world with similar intentions and targets so that one may ask what should be the particular role of ICEF. To my view the unique selling proposition of ICEF activities consists of three aspects.

The first aspect is the presence of international high level experts from business, politics, and academia at the meeting in Tokyo. Among the experts are not only persons from OECD countries but also from Africa, Latin America and other developing countries. This offers the opportunity to discuss the particular chances, conditions and bottlenecks of environmental innovations in developing countries. Their populations are still suffering from economic poverty, pollution, and all sorts of political crises and conflicts. The meeting in Tokyo will be another excellent opportunity to debate innovations favoring a cleaner world, to exchange the diversity approaches and experiences, to discuss political incentives in different countries and regions of the world and that what may be called “innovation culture” in developing countries. There is chance and hope that self-motivated clean innovations will be more successful than the mere transfer of advanced and complex innovations from developed regions. Countries with lesser education levels, poorer professional training and weak economic commercial strength should develop their proper approach to clean technologies that fits with their cultural traditions and political capacities. I hope that ICEF will be able to present examples that could become lighthouses for the developing world.
The second aspect is that ICEF applies a quite broad approach concerning the fields and levels of innovations. ICEF is looking at innovations in renewable electricity generation, low carbon mobility, and electricity storage that are broadly discussed everywhere. Many of these innovations have reached the phase of dissemination on a global level and contribute to a reduction of greenhouse gases. In this context ICEF will organize sessions on topics such as solar energy, wind energy, and nuclear. But there will also be sessions on more advanced topics such as electricity storage, smart grids, hydrogen, Carbon Capture and Storage (CCS), and energy efficient buildings where concepts and products are (almost) market ready but have not yet led to a significant dissemination and greenhouse gas impact. But this is not all. ICEF goes beyond this by organizing sessions on advanced liquid biofuels, iron & steel, cement, and artificial photosynthesis. There is still not much discussion about climate favoring innovations in these fields, but this seems necessary and helpful to move forward and to broaden the innovative “search space”. A topic for discussion is the engineering challenge when substituting carbon by hydrogen in industrial processes. I hope that delegate will see appropriate research and development routes, including international cooperation. Further, chances for cross fertilization options shall be explored.

A likewise important topic will be energy efficiency. The efficient use of energy has been accelerated in the decades following the first oil price shock in 1973, but obviously the progress is by far insufficient. Therefore ICEF has, among others, scheduled a focused session on energy efficiency in buildings. We have to distinguish different applications such as new construction of residential and commercial buildings, energy-focused building refurbishment, luxury villas and dwellings for regular families which all call for different innovation strategies. In particular since the recent drop in fossil energy prices, economics represents a major challenge that has to be solved.

The third unique selling proposition and a true highlight of the ICEF annual meetings is the nomination of “top ten innovations”. The ICEF delegates are invited to vote on a list of innovations prepared by the ICEF secretariat and the international ICEF steering committee. The list is based on several dozen of international journals and other information. Thereof the ICEF secretariat prepared a list of 150 candidate innovations which is categorized in the five groups “R&D”, “Pilot& Start-up”, “Commercialization”, “Challenging”, and “Policy& Standardization”. The five groups correspond to the broad understanding of what ICEF means by environmental innovation. This list is reduced by the international steering committee but still contains several candidates in each category on which the delegates will vote the top ten innovations. By selecting the top ten innovations, the delegates get an overview about what is actually going around in the innovation world and what kind of innovations are important in the eyes of the ICEF secretariat and the steering committee. The whole exercise shows that the ICEF is not only an abstract discussion forum alone but also a showcase for promising innovative solutions.