

Newsletter MI IC#1: The First IC#1 Deep Dive Workshop

4th-6th June 2017, Beijing

MI IC#1: A new engine to foster Smart Grids development

The Eight Clean Energy Ministerial (CEM8) and the Second Mission Innovation Ministerial (MI-2) events were held from 6th to 8th June at the China National Convention Center (CNCC) in Beijing. These high-level international meetings aimed to show innovations and debate ideas around sustainable energy, focusing on one side on the deployment of clean energy technologies and solutions available today and on the other side on scaling R&D for new technologies. The main objective is to accelerate the global transition to clean energies and innovation and facilitate its uptake by the global market.

As a side event of CEM8 & MI-2, the first deep-dive Workshop of Mission Innovation Challenge Smart Grids (MI IC#1) was co-organized by the Institute of Electrical Engineering, Chinese Academy of Science IEE CAS (CN), Ricerca sul Sistema Energetico RSE (IT) and the Indian Institute of Technology Roorkee IIT (IN). The event, aiming at bringing together a group of international experts, policy makers and innovators in the field of Smart Grids, consisted in a two-day closed door meeting - held at IEE CAS in Beijing from 4th to 5th June - and a public side event of CEM8 & MI-2 that was held at the China National Convention Center (CNCC) on 6th June, where IC#1 was officially launched.

The Smart Grids Innovation Challenge (IC#1) aims at enabling future grids that are powered by affordable, reliable, decentralized renewable electricity systems. The IC#1 on smart grids is co-led by China, India and Italy and the countries currently involved are Australia, Brazil, Canada, China, Denmark, Finland, France, Germany, India, Indonesia, Italy, Mexico, Norway, Saudi Arabia, South Korea, Sweden, The Netherlands, United Kingdom, United States of America and the European Union.



With the presence of representatives from 12 member countries, the European Commission, the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA) and

Austria as an observer, the first MI IC#1 Workshop proved to be a great success, enabling experts from around the world who are active contributors in the Smart Grids area to meet up, discuss and exchange in-depth experiences and insights on Smart Grids development in future energy systems, sharing best practices, addressing common issues and focusing on future work, exploring a new frontier in collaboration.

The workshop highlighted important issues, showing how Smart Grids Research, Development, Demonstration and Deployment can give an important contribution to achieve the overall MI goals.

Clear Challenge objectives, shared research priorities and a set of actions were identified for the near future in view of the accomplishment of IC#1 goals, showing the power of working together in defining new paths for Smart Grids development.

Closed door meeting on June 4th - 5th : Building IC#1 together



“Welcome to the 1st IC#1 Smart Grids deep-dive Workshop!” said Dr. Wang Yibo, one of the three co-leaders of MI IC#1: this is the first physical event bringing together IC#1 international experts for a very focused technical discussion designed to yield deep insights into Smart Grids main R&D challenges.

Representatives from 12 countries and organizations from all over the world gathered in Beijing, bringing together experts with different backgrounds with the aim of finding bridges and creating synergies and convergences on Smart Grids R&D activity.

The closed door meeting allowed to have a first picture of the research priorities, gaps and needs in the participating countries, to highlighting synergies and common issues and to exchange opinions for further collaborations.

The participants were involved in discussions and brainstorming, focusing on research priorities, significant problems and opportunities in the Smart Grids field in the view of possible contributions of the different IC#1 countries.

A set of Smart Grids activities to focus on in the near future activities was defined together with a preliminary set of Key Performance Indicators (KPIs) to monitor the success of

IC#1.

A first draft report was released and a “Beijing Consensus” was completed and signed by the participants.

On June 4th representatives from 12 member countries (Australia, Canada, China, Denmark, Finland, India, Italy, Norway, Republic of Korea, UK and US), from the European Commission (EU), the International Energy Agency (IEA), and the International Renewable Energy Agency (IRENA) introduced the Smart Grids and renewable energy activities and innovations of their own countries or organizations, including information related to the state of the art, development trends, policy and government support, RD&D programs, case studies and market potential uptake. Austria was introduced and accepted as observer to the meeting.

Among the outlined key messages, it was remarked the importance of Smart Grids to connect renewable energy to the power system and the role of IC#1 in discovering the road to a system with 100% of renewable energy.

An overview of MI IC#1 initial results, as well as Challenge organization and management issues were presented by RSE and discussed.

Among these, the outcomes from Questionnaire Q1 “*Smart Grids Challenges Priorities*” implemented within IC#1 with the aim to identify the national Smart Grids priorities of the IC#1 members were presented, providing information on the top 10 R&D priorities in the Smart Grids field identified through the elaboration of the replies received from the IC#1 countries.

On 5th June, Q1 was reviewed and discussed with a special focus on the identified priorities in the Smart Grids field and on the related specific activities to be performed, also in view of the agreed task assignments.

The experts gathered at the workshop gave their preliminary commitment in the different tasks and recognized the importance of the following aspects: the research and development on



regional electricity highways with both AC and DC technologies, the implementation of new planning tools able to account for the full complexity of electricity networks, the improvement of storage integration at all time scales as a source of flexibility, the improvement of suitable flexibility options and the use of demand response.

The preliminary elaboration of the first replies received to Questionnaire Q2 implemented within IC#1 with the aim to have a deep survey among the IC#1 members on R&D activities carried on in each country, funding agencies, enabling frameworks and measurable Key Performance Indicators of success of MI IC#1, was also shared. Past, present and future R&D activities were clustered in four groups: I) Operation & Control, II) ICT & Cyber security, III) Devices and Technology and IV) Distributed Energy Resources, Storage and Other Issues.

An open discussion led to the definition of the main categories and to the first draft of Key Performance Indicators to be adopted for the evaluation of IC#1 activities future progress.

The status of the IC#1 General report to be annually delivered was shared, highlighting how

the report will provide an overview of IC#1 countries in the Smart Grids field, taking into account also the input available from the Country Report, the Activity Report and the contributions from international associations, such as IEA, IRENA and WEF.

In addition, sub-challenges volunteers presented the already defined IC#1 Sub-Challenges (i.e. Regional grid, Distribution grid, Micro grid, Cross Innovation) and the related possible activities were also presented.

The preliminary idea of the service platform to support IC#1 was introduced to the participants and discussed: the service platform is considered as a bridge to connect the sub-challenges and MI sub-groups to assist the connection among international experts, industrial sector and investors, to disseminate IC#1 outcomes and to provide the workgroup platform for IC1 sub-challenges as an “online office”.

Business Investor Engagement approach for MI IC#1 was also shared presenting possible cooperation models to be implemented, such as IC#1 Prize, joint demonstration projects, joint personnel training and dedicated international technology inspections. Smart Grids MI prize definition and competition were also discussed.

Starting from the contribution provided by six IC#1 countries (Canada, China, India, Italy, Mexico, and Republic of Korea) a Draft Country report was released, collecting information on strategies, visions, ongoing activities and case studies. The progress and status of the draft report were introduced by IEE CAS and, as foreseen in the IC#1 work program, the final version of the country report with the information gathered from IC#1 members, will be finalized and released by the end of 2017.

Finally, with the active participation and discussion of all representatives, the definitive version of the “Beijing Consensus” was completed. This Consensus document which states the objectives of MI IC#1, identifies the selected four sub-challenges on Smart Grids, confirms the near term deliverables and promises to strengthen collaborative network among all member countries was shared with the participants to the workshop. The Beijing Consensus was signed from the IC#1 participants and during the public event by the Deputy Ministers of the co-leading countries (China, India and Italy) on June 6th, witnessing the strong commitment on this initiative by all the participating countries.

Now the flag to start Mission Innovation IC#1 activities is up! And new countries and organizations are welcome to join and support IC#1 towards the future ambitious goals and the ultimate objective of 100% renewable energy power systems.



June 6th – The official launching of IC#1

More than 150 delegates from about 20 countries and international organizations, universities, research institutes and enterprises attended the IC#1 side event of CEM8 & MI-2 held at the CNCC on June 6th.

The two main overarching goals of this event were publicly announced: accelerating clean energy revolution towards the road on 100% renewable energy and enabling future grids that are powered by affordable, reliable, decentralized renewable electricity systems.

An official launching ceremony of the IC#1 activities was a highlight part of this workshop. During the ceremony, Li Meng (Vice Minister of Science and Technology of China), Zhang Jie (Vice Dean of the Chinese Academy of Sciences), Harsh Vardhan (Union Minister for Science, Technology and Earth Sciences in India) and Ivan Scalfarotto (Vice Deputy Minister of Italian Ministry of Economic Development) witnessed the unveiling of IC#1 and signed by hand the "Beijing Consensus" in front of the audience.



The representatives presented their ideas and expectations for Smart Grids innovation and the three panel discussions focusing on strategies and plans, R&D challenges and business opportunities for Smart Grids gave the opportunity to ministers, business leaders and experts to bring their knowledge and perspective on the importance of public investment for innovation and the ways that the public and private sectors can engage more productively.

The meeting allowed the participants from all over the world to share their innovative Smart



Grids and clean energy technologies, products, and business models. Industrial companies showed their strong interest and willingness to support possible research and other activities. Through this successful event, the progress of IC#1 is dramatically accelerated and future activities will be developed and shared to contribute to the achievement of the IC#1 and Mission Innovation goals.

This is the end of the workshop, but just the start of Mission Innovation IC#1 activities. To achieve the objectives of technological clean solutions that can accommodate up to 100% renewable based power plants in large scale across the globe, we must continue to do more together: the contributions from new countries and organizations will be welcome and working together will be the added value to reach the MI objectives. Join and support us towards the future of 100% renewable energy!

