IEA Experts Group on R&D Priority-setting and Evaluation Workshop

Developments in demonstrations, tests and standardization

Technical University of Denmark
DTU Risø Campus
Frederiksborgvej 399, DK-4000 Denmark
21-22 November 2024

The energy transition relies on widely accepted international standardisation systems that adequately reflect countries policy priorities and values regarding an affordable, secure and safe energy system. International standards play a crucial role in an interconnected world and help make the development, manufacturing and supply of goods and services safer, reliable, more efficient and cost-competitive and sustainable.

Standards are ideally based on sound knowledge creation processes and quality assurance throughout the entire innovation system, from research to commercialisation. Standards help researchers and innovators bring their research closer to the market and spread technological advances by establishing uniform criteria and by developing methods, practises and procedures. Standards offer a basis for the integration of diverse technologies (or components) into complex, innovative systems and solutions and enable interoperability between components, products and services. Standards ensure that products and services meet safety, reliability and quality standards, setting minimum safety requirements to the development, transport and use of technologies and services and protecting the public and workers. By harmonizing technical specifications, standards make industries more efficient and make trade between countries easier and more competitive because the same specifications are adopted for use in different countries as national or regional standards. Standards contribute by promoting good regulatory practices and reducing technical barriers to open international trade.

In the IEA technology cooperation programmes, experts work to advance the research, development and commercialisation of energy technologies by sharing knowledge, identify best practises and develop recommended practises in new technology areas, in which international standards have not yet been developed. In the many international standardisation committees such as ISO or IEC, experts from industry and academia work collectively to develop standards in rapidly developing technology areas that rely on state-of-the-art knowledge on demonstrations, tests and measurements.

The workshop will focus on developments in demonstrations, tests and measurements and the coupling to international standards and procedures for clean energy technologies and systems. Demonstrations, test, measurements and international standards and procedures are important to demonstrate and deploy new technologies in a safe and reliable way and there is a need to accelerate the process without comprising the quality and impartiality of demonstration, tests and measurements. Selected use-cases

will be presented and discussed, including wind energy, storage technologies as well as sustainability and circularity.

The workshop is organized by the IEA Experts Group on R&D Priority Setting and Evaluation (EGRD) and it is hosted by The Technical University of Denmark. EGRD is an informal advisory group under the IEA Committee on Research and Technology (CERT) with the role of supporting CERT delegates with advice on R&D priority-setting and the linkage to governmental policy objectives, methods and approaches for evaluation of R&D activities, and understanding of emerging and systematic R&D topics. Recent topics include: Improving the Resilience of the Complete Clean Energy Supply Chain (2023), Social Impacts of Clean energy Policies (2023) and Climate Neutral Heating and Cooling: RD&D Needs and Perspectives for International Cooperation (2023). Workshop summaries are available here: https://userstcp.org/iea-egrd

Key questions to be addressed are:

1. How can standards support and accelerate the technology development and vice versa, in particular in the demonstration and deployment stages? Can better feedback loops between R&D and standardisation activities be accelerated? Are there any issues related to intellectual property or research results valorisation? What are the recent developments in tests – the role of AI, machine learning, digital twins etc. – and challenges when converting results and protocols into standards?
2. What are the lessons learned in different technology cases and can such lessons be transferred to other technology areas?
3. What can the IEA Technology cooperation Programmes do to strengthen the necessary knowledge creation from reference cases / recommended practices to the international standardization committees and vice versa?

Day 1 – 21 November 2024	
8.30-9.00	Registration and coffee/tee
9.00-9.10	Welcome to DTU by Morten Jeppesen, Head of DTU Wind and Energy Systems
9.10-9.15	About EGRD and the workshop by Birte Holst Jørgensen, Chair EGRD
9.15-9.30	The role of technologies in the Danish energy transition by Christian Bay-Andersen, Deputy Director, Danish Ministry of Climate, Energy and Utilities
9.30-10.30	**Session 1. Setting the scene** Moderator: Birte Holst Jørgensen, Chair EGRD • Why standards matter for the energy transition by Maria Skou, Director, Dansk Standard • International standardisation policy and new energy technologies by Prof. Ryuji Matsuhashi, University of Tokyo • Valorisation policies and IPR – the role of standards by Kirsi Haavisto, DG Research and Innovation
10.30-11.00	Break
11.00-12.30	**Session 2. Accelerating the technology development: from demonstration, test to industrial standards for reliable, safe, sustainable and affordable energy technologies** Moderator: Herbert Greisberger, CEO • International collaboration in the pre-standardisation phase: the scientific foundation of normative documents by Michele de Nigris, Director Sustainable Development and Energy Sources at RSE • Examples from R&D on inter-operation demands beyond connectivity by Dipl.-Ing. Dr. Gerald Franzl, Center for Distributed Systems and Sensor Networks at the University for Continuing Education Krems (Donau-Universität Krems) • Developments in blade tests and the work in IEC 61400-23 by Kim Branner, Head of Section, DTU Wind and Energy Systems Discussion

12.30-13.30	Lunch
13.30-15.00	**Session 3. Navigating and managing the vectors in technology development - practises and lessons learned from different use cases** Moderator: Atsushi Kurosawa, Vice-chair EGRD • Standardisation for the integration of electrolysis plants into the hydrogen and electricity grid by Geert Tjarks, EWE- Energy Provider • Standards for CCS and energy conservation management by Dr. Masahiro Nishio, AIST Department of Energy and Environment • Hybrid Power Plant, best practise and international standards by Poul Sørensen, Professor, DTU Wind and Energy Systems • Standardisation of grid-forming (battery storage) inverters by Roland Singer, Fraunhofer IEE (tbc) Discussion
15.00-15.30	Break
15.30-16.30	**Technical tour** • Large scale facility • Hybrid power plant
18.30	Hosted dinner in Roskilde
Day 2 – 22 November	
9.00-10.30	**Session 4. International cooperation, TCPs and technology standards and certification** Moderator: Johannes Tambornino, Vice-chair EGRD • IEA TCP Wind Recommended practise in forecasting by Gregor Giebel, DTU Wind and Energy Systems (TCP Wind) • IEA TCP Energy Storage Task 43 Status Report: Standardized Use of Building Mass as Storage for Renewables and Grid Flexibility by Dipl.-Ing. Michael Moltinger, Department Green Engineering & Circular Design, Fachhochschule Salzburg GmbH, Salzburg University of Applied Sciences • Key messages from IEA TCP Wind Task 45 Recycling of wind turbine blades by Anthony Fraisse, Head of Section, DTU Wind

	• Developments in model validation and tests by David Robert Verelst, Senior scientist, DTU Wind • Relying on third-party certification | IEC e-tech, by Simon Pansart, RWE Discussion
10.30-11.00	Break
11.00-12.00	**Concluding session. Discussion and key messages** Moderator: Birte Holst Jørgensen, Chair EGRD
12.00-13.30	Lunch
13.30-15.30	EGRD ExCo meeting
18.30-	Non-hosted dinner at Kanalhuset, Christianshavn, Copenhagen

Practical information

The Workshop will take place at The Technical University of Denmark, DTU Wind and Energy Systems at DTU Risø Campus, Denmark. The event will be hybrid, while physical presence of the participants is strongly encouraged. After the end of the Workshop, the members of the Executive Committee of IEA EGRD will hold the annual Executive Committee meeting.

Deadline for in-person registration will be no later than 14th November.
Please register here: IEA Experts Group on R&D Priority-setting and Evaluation Workshop | The Event (conferencemanager.dk)

DTU Wind and Energy Systems is located a little outside Roskilde, about 45 km west of Copenhagen Airport. Participants will arrive on the evening before the start. Here you can find more information about how to get to DTU Risø Campus by car or public transportation: How to get to DTU Risø campus

Registration requested at the Gate after which there is a short walk to **DemoLab, Building 330**

Accommodation options in Roskilde:

Zleep Hotel Prindsen Roskilde | Hotel in Roskilde | H Rewards

Scandic Roskilde Park - Guest Reservations

Accommodation options in Copenhagen (just a few out of many more):

Hotel Copenhagen | Best Online Rate | Radisson Collection Royal (radissonhotels.com)

Hotel Copenhagen Strand | Official website | Stay by the harbor

Bryggen Guldsmeden - 4 star superior Urban Eco Resort with pool (guldsmedenhotels.com)