

EUROPEAN METROLOGY NETWORK FOR CLEAN ENERGY



Background

United Nation Sustainable Developments goals:

- Affordable and Clean Energy
- Industry, Innovation and Infrastructure
- Sustainable Cities and Communities
- Climate Action

Vision: Aim at climate neutrality by 2050 and contribute to a clean and competitive industry

Excellence

- Providing metrology support for generation, storage and utilization of renewable energy
- Complementing the other two energy EMNs (Energy Gases and Smart Grids) for covering energy conversion and storage i.e. photovoltaic, wind, batteries, power-to-X
- Promote the most efficient conversion and utilization processes involving renewable energy, fostering circularity and cleaner and more competitive industry
- Establishing a Strategic Agenda for the adoption of renewable energy
- Establishing a Strategic Research Agenda to prioritize metrology activities
- Creation of a unique central point of contact for stakeholders, standardization bodies and European institutions, to respond to their metrological needs.

Stakeholders

Industry

- Provide reliable information for exploiting the network of metrological institutes operating in the field of the clean energy
- Establish a priority of the activities to speed up the process of energy transition and early uptake of research outputs

Standardization bodies

- Identify obstacles limiting the adoption of renewable energy at small and large scale
- Support the establishment of pre-normative documents.
- Make sure Legal Metrology adapts to technology advances

Policy regulators

- To be a valuable interlocutor when measurements become value (custody transfer, taxes, etc)
- To promote the adoption of renewable energy from regional to European level
- Contribute to better regulation in the field of clean energy

Academia

- To support the development of new technologies and processes
- To propose a path for obtaining the certifications required to adopt new technologies at large scale

Generation



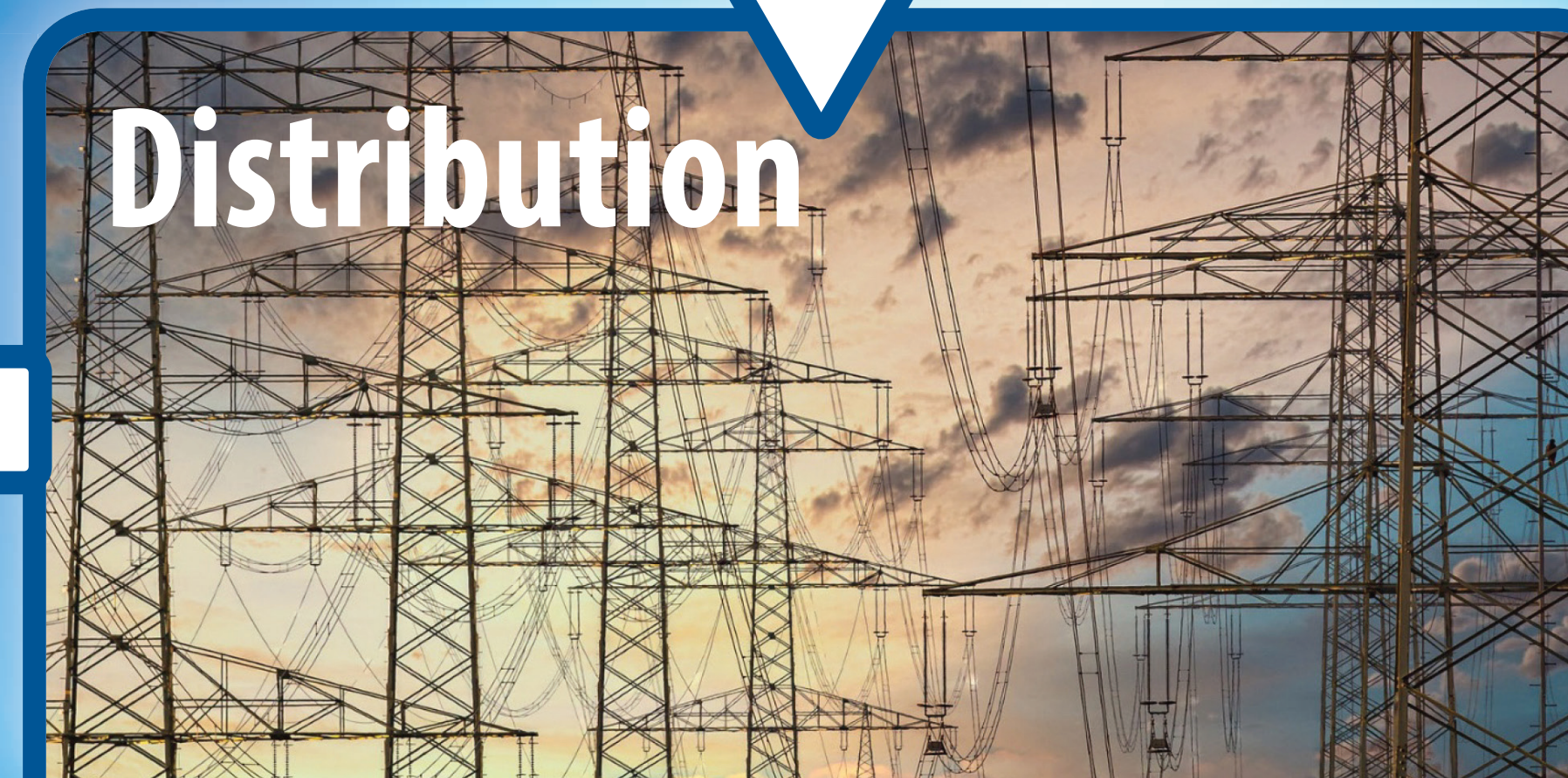
Storage



Utilization



Distribution



Torque measuring facility for wind energy at PTB



PV metrology competence center at PTB



Example: New energy classifications for solar cells

The EMRP project *Towards an energy-based parameter for photovoltaic classification* (PhotoClass) measured the energy output of Photovoltaic cells (PVs) under a range of environmental parameters such as different module temperatures, solar intensities and performance at different climate zones across Europe. This allowed the development of a new model of PV rating based on energy output rather than peak power under fixed conditions. From this, new calibration devices and facilities were developed to provide improved measurement services for PV modules along with three new practice guides. Members of the project led the development of three new international standards in the IEC 61853 series. These new PV ratings, which more closely match a cells performance to the conditions under which it will be deployed, will decrease financial risk for investors, increase confidence and aid in the competitiveness of this technology.

<https://www.euramet.org/casestudies/casestudiesdetails/news/new-standards-for-solar-power>



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