



Outcome Document

IEEE Thematic Workshop

at the World Summit on the Information Society (WSIS) 2021:

ICTs and Smart Energy: Accelerating the use of ICTs for sustainability

Tuesday, 20 April 2021, 14:00 – 15:00 CET

Please find more information regarding the workshop at:

<https://www.itu.int/net4/wsis/forum/2021/Agenda/Session/262>

1. **Title:** ICTs and Smart Energy: Accelerating the use of ICTs for sustainability
2. **Name of Organization(s) organizing the session:** IEEE
3. **Relevance with the WSIS Action Lines – please specify the Action Lines C1 to C11**

This workshop touches on three of the WSIS Action Lines:

- 2) Information and communication infrastructure
- 3) Access to information and knowledge
- 7) ICT applications: benefits in all aspects of life

4. **Did your workshop highlight any issues related to COVID-19? If yes, please explain.**
N/A

5. **Key achievements, announcements, launches, agreements, and commitments**

Announcement:

- IEEE project P2030.10.1 will be ratified soon; it will enable cost-efficient electricity access via the production of standardized tools for the community.



Panelists agreed that:

- Quick and reliable access to electricity in remote areas is only possible through the development of a DC ecosystem that can support access this in a sustainable manner. DC distributed power is the only way forward.
- We need electricity generation, financial models that enable the infrastructure and deployment, and we need the political will and social innovation to be able to provide electricity to underserved areas.
- Policymakers need to take the reality of national jurisdictions into account when supporting the transition from a grid system that relies on synchronous machines and large power stations to a system that integrates renewable energy.

6. Main outcomes highlighting the following:

I. Debated Issues

- *Please capture highlights of the main issues discussed and interactions with the audience:*
 - How to reach the ambitious sustainability goals while reducing carbon emissions
 - How to increase the share of renewable energy in the global energy mix
 - How renewable energy can be cost-competitive depending on a certain geography or infrastructure
 - What role standards can play in levelling the playing field in terms of reaching the more vulnerable communities in terms of ICTs, SDGs
 - How a fundamental paradigm shift could help to accelerate the use of ICTs for sustainability
 - What role can policies/standards play in shaping a more responsive model to the energy demands globally especially in energy deficient parts of the world, and especially considering cybersecurity



- *Please highlight key achievements and challenges shared by the audience and/or panelists:*
 - *Achievements:*
 - Learning from past achievements, such as recycling, and trying to build smart energy systems and waste reduction systems using ICT
 - Cost-competitiveness of renewable energy, such as solar and wind energy, compared to e.g., coal or nuclear energy
 - Standards can help in procuring/building of infrastructure and thus ensure interoperability of systems
 - *Challenges:*
 - How to incorporate reliable renewable energy solutions in an affordable way
 - How to approach mushrooming data storage needs and the resultant energy demands
 - How to address electronic waste recycling difficulties while new devices proliferate

II. Quotes

- *Please provide two important quotes from the session and the names & organization of the person you are quoting:*
 - 1. Maïke Luiken:
 - *“Standards make building infrastructures easier.”*
 - 2. Julio Romero Agüero:
 - *“We need to invest more in technology in order to harvest 100% clean energy.”*
 - *“IEEE’s Power and Energy Society has a tremendous role to play in developing new technology that we can use to build a system that relies on renewable energy.”*
 - *“IEEE is leading the work in making sure that the Grid of Things is secure.”*



III. Overall outcomes of the session highlighting

- *Main conclusions reached during the discussion:*
 - Smart energy systems are essential for helping to reduce energy wastage.
 - Renewable energy systems are largely cost-competitive compared with traditional energy sources.
 - Standards help level the playing field when providing energy access.

- *The vision for implementation of WSIS Action lines beyond 2015:*
 - Pertinent Action Lines include 2) Information and communication infrastructure, and 3) Access to information and knowledge. The population has to be willing to make a change, and governments have to be willing to invest in building infrastructure aiming when aiming to provide energy access to underserved communities.

7. Main linkages with the Sustainable Development Goals (please specify the SDGs)

Several SDGs come into play in this conversation about ICTs and energy:

- a) *SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all* of course stands out. Renewable energy and distributed energy resources integration (distributed generation, distributed energy storage, micro grids) are two parts of the discussion on the energy supply side. Renewables directly relate to *Target 7.2* of the SDG, “*By 2030, increase substantially the share of renewable energy in the global energy mix.*”
- b) Distributed energy resources integration supports *Target 7.1* “*By 2030, ensure universal access to affordable, reliable and modern energy services.*” They can facilitate cleaner energy and better access, respectively. Meanwhile, devices can be made to use less energy and be part of a circular economy on the consumer side. These aspects relate to both access and sustainability of energy.
- c) Also pertinent is *SDG 13: Take urgent action to combat climate change and its impacts*. Exploring the energy conservation potential of clean, renewable energy



sources and how to connect them to the grid will help to combat climate change. As well, attention to the circular economy and how we produce and recycle hardware can have a positive impact.

8. Emerging Trends related to WSIS Action Lines identified during the meeting

WSIS Action Line 2) Information and communication infrastructure is an essential foundation for an inclusive information society, and sustainable energy systems enable inclusive access to ICTs. Distributed power sources and the use of Direct Current can help make the use of ICTs a possibility for more people. For example, mesh power supplies can bring energy into remote and marginalized areas, enabling Internet connectivity. Increased Internet connectivity meshes with WSIS Action Line 3) Access to information and knowledge.

Overall, the technologies discussed by the panel enable more communities to access information and knowledge via the Internet. This information has the potential to benefit many aspects of life (WSIS Action Line 7) -- Disaster recovery, E-applications, E-agriculture, E-business, E-commerce, E-employment, E-environment, E-government, E-health, E-publishing, E-science, ICT waste disposal, Sustainable production and consumption, Teleworking, Transparency, presenting many opportunities for people around the world.

9. Suggestions for Thematic Aspects that might be included in the WSIS Forum 2022

Given that the global response to the UN Secretary General's short survey leading up to the UN75 celebration was that the environment is the number one priority issue to be addressed, *Action Line 20: Addressing e-environment issues and challenges, developing Green IT and using ICTs to mitigate climate change*, would be a strong candidate for a discussion. Specifically, how can we design for a smaller footprint? With our data storage and processing needs, the topic of greener ways to code could be addressed, for instance.

A discussion of digital building blocks for eGovernance could be another topic. This would cover *Action Line 21: Recognizing the importance of maintaining open ICT standards development processes for innovation in the ICT sector as key enablers for an inclusive information society*.