

Twenty-fifth IRENA Council and related meetings
Side event

23 May 2023, 13.00 – 14.30 GST
Oasis Room
Sheraton Corniche Hotel, Abu Dhabi

**Innovation landscape for smart electrification:
decarbonising end-use sectors with renewable power
and**

Innovation Week 2023: Renewable solutions to decarbonise end-use sectors

Background

IRENA has published in 2019 the first innovation flagship report “Innovation Landscape for a renewable-powered future”. The analysis based on a systemic innovation approach resulted in a toolbox of key innovations for countries to use in designing their strategies to increase the flexibility in the power system and integrate high shares of renewables. The innovations identified in this report are spread across four dimensions: (1) technology and infrastructure, (2) market design and regulation, (3) system planning and operation, and (4) business models.

In May 2023, IRENA will release the second innovation flagship report “Innovation Landscape for smart electrification”. This state of the art analysis now provides a complementary toolbox of 100 key innovations in the four dimensions that countries can use to build smart electrification strategies for mobility sector, heating and cooling sectors and production of green hydrogen. It is only by matching and leveraging synergies in innovations in all parts of the power system and end-use sectors and including all relevant actors and stakeholders that successful solutions can be implemented on the ground.

This innovation toolbox includes 100 key innovations and can play a role in transforming and decarbonising the energy use sector following smart electrification strategies. It draws from a review of hundreds of innovative solutions that are emerging worldwide, from start-ups, large companies, regulators and system operators, and that contribute to the smart electrification of mobility, heating and cooling, and hydrogen production. A network of more than 200 external experts contributed to the report via interviews, four closed consultative workshops and draft reviews.

This work goes beyond an overview of promising innovations. It also provides guidance on how to use these innovation toolboxes in optimising smart electrification strategies based on their country context. To do so, innovations are grouped in kits that can complement one another. The kits are defined for the three end-use sectors based on the strategy’s ambition.

In addition, IRENA is organising in September 2023, in Bonn, Germany, the fourth Innovation Week. The flagship event aims to bring together leaders, experts, industry representatives, academics and policy makers to discuss cutting-edge innovations that can support and accelerate the global energy transition. Supported by insights from IRENA’s Innovation landscape report and other in-depth analyses, informed by first-hand project experiences, and drawing on the

expertise of a diverse range of speakers and attendees, the event will explore the latest innovations to decarbonise a range of end-use sectors.

The insights shared during IRENA Innovation Week will serve to identify priority actions to fully unlock the potential of renewable energy applications in end-use sectors, and to inform the Agency's recommendations and advice to its Members and the wider community.

The IRENA Innovation landscape report and the innovation Week also aim to support the preparations for COP28.

Objective of the side event

- Present the innovation toolbox on smart electrification and elaborate on how countries can use it;
- Obtain guidance from Members on priority areas to address within the ongoing and future work of the Agency in this field of smart electrification of end-use sectors;
- Inform about the upcoming Innovation Week 2023 and invite Members to participate.

Associated Publications

- [Innovation Landscape for a renewable-powered future](#) (2019)
- Innovation Landscape for smart electrification (upcoming)

For more information, please contact

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- Innovation Week website ([link](#))