

Grids as the backbone for secure energy transitions

**High-level workshop and preliminary findings of
the IEA Special report on grids
May 16th 2023**

International
Energy Agency

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The power system is set to become the backbone of the global economy, both due to fuel switching and due to increasing energy access. The IEA expects electricity's share in total final consumption (TFC) to increase from 20% in 2021 to 39% by 2050, if the set of currently announced net zero pledges are to be achieved (STEPS). More importantly, if we are to meet our international climate and energy access goals, electricity would represent 52% of TFC by 2050 according to the IEA's NZE scenario.

In a world where electricity stands at the heart of decarbonised economies, grids – both transmission and distributions – will become increasingly synonymous with security of supply and the integration of new technologies. However, investment in grids has slowed down in recent years, which not only fails to maintain the power system on pace with its current demands but fails to account for the significant ramp-up needed in the coming decades. The IEA estimates that investment in grids needs to jump from an annual average of USD 300 million in 2021 and 2022, to an average of USD 630 million per year by 2030 and to an average of USD 830 million per year by the decade of 2050 to accommodate the implementation of existing net zero pledges (APS).

The transition to increasingly decentralised power systems, will also require reimagining how we operate our grids and should guide the investment. In emerging and developing economies, the bulk of investments will be required to expand and strengthen the grid, while in advanced economies much of this investment will target replacing ageing networks. In both, investments in smarter and more resilient distribution grids will be necessary to accommodate greater deployment of new cooling, heating and electrified transport technologies. This sets the scene for action for policy makers, developing innovative and regulatory instruments, in time, to ensure that utilities and developers can invest in the right technologies, while ensuring cost-effective and secure power systems.

High-level workshop – Special Grids Report

9h00	High-level Welcome and Opening <ul style="list-style-type: none"> • Keynote: closing the gap between current trends and climate objectives Keisuke Sadamori, Director for Energy Markets and Security, IEA • Transmission investment and priorities for renewable integration Thiago Barral, Secretary for Planning and Energy Transition, Ministry of Energy and Mines, Brazil (TBC) • Drawing up multistakeholder programmes to develop transmission and distribution Ben Voorhorst, Special Coordinator, National Action Programme for Grid Congestion, Netherlands (TBC)
9h30	Addressing the bottlenecks – Unlocking investment for stronger grids <ul style="list-style-type: none"> • Fast-tracking grids: red-tape vs green transition

	<p>Sonya Twohig, Secretary General, ENTSO-E</p> <ul style="list-style-type: none"> • The role of the private sector to accelerate grid development Ganesh Das, Director - Tata Power (TBC) • Recognising new sources of value in modern grids Jan Kostevc, Head of Infrastructure, ACER
10h45	Coffee break
11h00	<p>Reimagining the grid – power system transformation at the heart of electricity security</p> <ul style="list-style-type: none"> • Mainstreaming advanced transmission technologies Gerhard Salge, CTO – Hitachi Energy • Changing architecture of the system: opportunities and challenges Antonio Cammisecra – Head of Enel Grids • Emerging technologies for evolving power system needs Vera Silva, CTO – GE Grid Solutions • Innovative planning today for the power system of tomorrow Thomas Veyrenc – Director of Strategy, RTE (TBC)
12h30	End of session