

Innovation type:  
Roadmap

TRL: 6

Date: November 2024

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Target group:

Actor/ purpose	x
DSO, TSO	x
Technology provider	x
Member organisation	x
Market operator	x
Research/ Consultancy	x
Teaching	x

## Strategy and roadmap for the flexible and intelligent electricity grid

*A strategy and roadmap is described for the transition to a flexible and intelligent power grid up to 2040. To meet the challenges posed by the green transition, the power grid must facilitate growth in consumption and production, the electrification of new types of consumption, and better utilisation of resources. This strategy highlights three principal conclusions that are crucial to achieving this. The measures described in the roadmap must be seen in context to ensure that technological advances, industry practices and regulatory frameworks go hand in hand to meet the necessary requirements and realise the targets set for 2040. This requires co-operation and interaction between the various stakeholders for continuous development, testing and piloting of solutions.*

### Challenge

There is a strong need for increased grid hosting capacity for the required electrification of society. This can be achieved by building new grids and by increasing the utilisation of the existing grid. It is shown by the research, development and piloting in CINELDI how this can be achieved by digitalisation and automation, and by utilisation of flexibility.

### Solution

A strategy and roadmap are worked out based on a strategy process in CINELDI and the CINELDI-results which can be found in CINELDI's knowledge base. Three principal conclusions and a roadmap are given regarding the necessary digitalisation and automation of the electricity distribution system, the utilisation of flexibility from power production, consumption and storage, and knowledge needs related to the security of electricity supply in the future.

### Potential

The results and recommendations provide a basis for navigating the complex issues related to the adaptation of the power system for the green transition, where close co-operation between the various stakeholders is key to the power grid of the future. Without such co-operation, the transition needed to achieve the climate targets for 2030 og 2050 will undoubtedly fail.

### Reference in CINELDI

G. Kjølle, S. Sandell, O. Gjerde, M. Istad and M. Korpås:  
"[CINELDI strategy and roadmap for transitioning to a flexible, intelligent power grid](#)", CINELDI-report 04:2024

### Illustrations



CINELDI Strategy and road map brochure above. The levels of the strategy below

