CINCLDI

Centre for intelligent electricity distribution - to empower the future Smart Grid

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Pilot projects in CINELDI

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Pilot projects in CINELDI

• Main objective

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- Test and verify technologies and solutions for the future intelligent electric distribution system
- Integrated in the research
- Arena for involvement from user partners
- Contribute to new research and innovations actions



System innovation

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- The future power grid will be a complex system of systems
- New intelligent devices for sensing, controlling, and decision-making are incorporated in the grid
 - The major new benefits for the future electric distribution system arise from the interaction between these technologies



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Digital inspection (Pilot)



- Utilization of new and existing sensors to make inspections of secondary substations more efficient
- Started to develop different concepts
- Ongoing test by Nordlandsnett and Powel
 - Several other tests are under planning
- Will reduces system cost and improve safety







Use of batteries in the distribution grid (Pilot)

- Use of batteries, as an alternative to grid investments, to mitigate voltage problems
- Tests are planned in a rural LV-grid at Lyse Elnett
- Will contribute to reduce cost when handling voltage problems





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New protection concept (Pilot)

- Fault localization in meshed distribution grids using existing equipment
- Tested in simulations and in the Smart grid laboratory with positive results
- Planned tested in real environment
- Will contribute to enable meshed operations of MV-distribution grids



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Ongoing and planned pilot projects

- Fault handling and selfhealing
 - New protection concept
 - Smart cable guard
 - FASaD

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- Earth fault detection and localisation with AMR data
- Flexibility used on system services
 - Use of batteries in the distribution grid
 - Skagerak EnergyLAB
 - Flexibility marked
 - El-consumption in households

- Future digital substation
 - Digital inspection
 - Skagerak EnergyLAB
- Application of AMR/grid data
 - Demo Stavanger
 - Smart cable guard
 - Electricity consumption of households

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- Microgrids
 - Skagerak EnergyLAB
 - Vatnøy
 - Utsira



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