Controllable Power Components for Renewable Energy Integration - CPC1

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Background

• Reduced inertia due to decrease in synchronous generators
• Increase in distributed generation
• Intermittent energy sources
Objectives

- Reactive Power compensation
- Virtual inertia
- Set grid voltage and frequency in islanded mode
• Simulation studies of inverter control for power smoothing\textsuperscript{1,2}

• Literature review\textsuperscript{3}


\textsuperscript{3} S. Anttila, J. Döhler, J. G. Oliveira, C. Boström "Grid Forming inverters: A review of the state of the art of key elements for microgrid operation" Manuscript submitted to IET Renewable Power Generation.
Inverter control will have an important role for power system stability

Inverter control needs:
- Autonomous operation
- Robustness to changes in grid topology
- Ride-through ability
Thank you for your attention!