AMPACITY

Advanced Superconducting Medium Voltage System for Urban Area Power Supply

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Motivation

- Conventional HV cable system
- Superconducting MV cable system
AmpaCity Project Objective

Technical specification
- 1 km distance between substations
- 10 kV system voltage
- 2.3 kA operating current (40 MVA)
AmpaCity Milestones

• Feasibility study finished in March 2011
• Project start in September 2011
• Cable system type test in February 2013
• Manufacturing and installation of system
• System commissioning test in December 2013
• Official system commissioning in April 2014
• Field test period until February 2016
Superconducting Cable Design

- **Inner LN$_2$ Cooling**
- **Former**
- **Dielectric**
- **Phase 1**
- **Phase 2**
- **Phase 3**
- **Outer LN$_2$ Cooling**
- **Screen**
- **Cable Cryostat**
Type Test in Hannover
System Installation in Essen
Cable Commissioning Test
Conclusions

• Medium voltage superconducting systems
  – Replace conventional HV systems in cities
  – Offer technical and economical advantages

• Installation of AmpaCity system is finished

• System commissioning test was successful

• Further system evaluation through field test
Thank you very much for your attention

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