

CINELDI result: Cable monitoring testing (WP Pilot)

Challenge and objective:

- Test Smart Cable Guard (SCG) which can detect partial discharges in MV cables (paper insulated and XLPE) through two main use cases:
- 1. Operation:
 - Detection and localization of faults to reduce the outage time.
- 2. Grid planning /maintenance:
 - Condition monitoring of the cables. This will potentially enable better reinvestment strategies for managing the existing cables.

Work performed:

- Installed SCG at 6 test locations
- Data collection and analysis

Significant results:

- Use case 1: More effective fault handling process. The fault location can be known within minutes after the fault. No test switching necessary in order to isolate the fault.
- Use case 2: More advanced asset management based on condition monitoring and not purely operate-to-fail.
- Based on the economic analysis Elvia decided not to scale up. The costs were greater than the observed savings, given the current CENS-scheme and fault frequency (based on historic fault statistics).

Impact for distribution system innovation:

- The system worked and can be relevant in the future in areas with high CENS and/or many faults



Reference in CINELDI:

- [Pilot "Smart Cable Guard" report, 2021](#)