

# ENARD Annex III Infrastructure Asset Management

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## Aim of Annex III Phase 1

To address the challenges associated with the management of increasingly ageing T&D asset bases within the participating countries and beyond, via the exchange of information and data in relation to the ageing, degradation, failure and end-of-life characteristics of the T&D asset base and the complementary development of new asset management techniques and methodologies

# Project Summary



- 21 month project delivered in 20 months: April 2008 – November 2009
- Six Participating Countries: FI, FR, IT, SE, NO & UK (France joined Mar 09)
- Four meetings: UK, IT, SE and FI
- Five Asset Groups:
  - Transformers
  - Cables
  - Overhead Lines
  - Switchgear
  - Protection and Control
- Deliverables: Two reports + Knowledge sharing
  - Final report (confidential to participants)
  - ExCo Report (publicly available)



# Recommendations from Phase 1



## Recommendation 1

*Network operators should promote the use of a risk based approach to asset management on the basis that it allows network operators to optimise their investment programme; addressing risk by managing those assets where the probability and consequences of failure are considered to be unacceptable. This will entail network operators having an up to date data-base of asset condition and historic failure rates.*

## Recommendation 2



*Conduct a project to look at the asset management implications for SmartGrids, in order to confirm that the conclusions of the Phase 1 report remain valid for a SmartGrid, where the consequences of failure might be more pronounced than for existing distribution networks.*

## Recommendation 3



*Conduct a detailed review of current practices for managing MV OHLs in order to identify the conditions / situations where each of the following approaches might be considered to be optimal in terms of improving network performance:*

- *Minimal intervention – fix on failure*
- *Refurbishment – major replacement of ageing components*
- *Renewal – rebuild on existing route*
- *Replace with underground cable*

## Recommendation 4



*Conduct a project to address the following questions:*

- *What is the future for SF6?*
- *Should DNOs continue to install SF6 at MV?*
- *What are the options / prospects for an alternative medium at HV?*
- *How should DNOs manage ageing assets that contain SF6?*

## Recommendation 5



*Conduct a project to assess what will be the effects of climate change on asset management? In particular:*

- *what will this mean for the ratings of transformers and OHLs as ambient temperatures are predicted to increase;*
- *what will be the effect of changing environmental conditions on electrical Infrastructure (eg increased rain fall and increased tree growth); and*
- *what will be the effect of increasing environmental pressure on electricity network operators?*

# Next Steps



- Await responses from ENARD member countries to the proposals for Phase 2
- Initiate Phase 2 project(s):
  - Confirm participating countries
  - Arrange first meeting
  - Agree: scope, timescale and project plan



# Key Points



- Many countries worldwide are seeing massive investment in asset replacement / refurbishment as network assets near their end of life. Asset management can help to optimise investment and so save £M's (\$M's, €M's)
- Knowledge sharing can improve on existing “best practice”
- Phase 2 projects offer the opportunity to focus on those areas that are seen as “knowledge gaps”