

## Range of studies to define best asset management for aged foundations

### OVERHEAD LINES SC B2 – PS2

Question n°2.12 : What is the expected life of the towers after the corrosion mitigation system is implemented?

Benoît GIUDICELLI - France

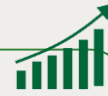
# Context

*An asset management strategy for transmission tower must include the foundations*

Average age of black steel towers : 72 years old



Increasing rate of tower replacement to face the aging of the network



Legal & environmental difficulties to rebuild a new tower near the existing



Replacing a tower on the existing stub is fast and easy during an overhead line refurbishment operation



The lifespan of the foundations and the risks and opportunities to reuse it with or without refurbishment must be studied

Group Discussion Meeting

→ To address this need, RTE propose a range of studies called “**plan foundation**”

# Plan foundation

## n°1 : Failure defining

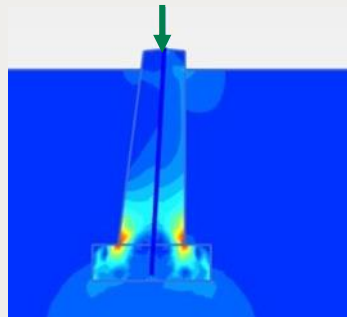
### Historical analysis of pylon failures due to foundations

- Quantify the risk
- Detect a possible increase
- Identify a failure pattern



### Finite element analysis with deteriorated concrete

- Lower costs compared to a pull out test
- Help define failure criterias



Group Discussion Meeting

## n°2 : Failure prediction and aging signs

### Benchmark with TSO

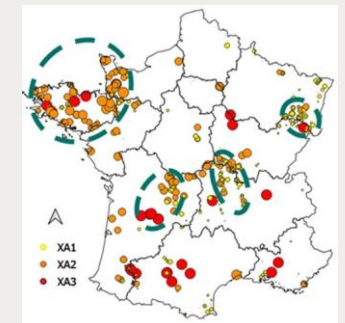
### National diagnosis of the foundations

- Overview of the condition of the foundations
- Correlations between parameters
- Target populations of foundations that need refurbishment



### Aggressive soils cartography

- Display aggressive soil areas
- identify risky and safe areas



# Plan foundation

n°3 : lower the costs of refurbishment and reinforcement methods

---

Find an alternative to micro pile reinforcement

**Exploring concrete enlargement of foundations :**

- **Difficulties** : Managing the instability during the construction phase
- **Advantages** : reduced costs



**Conclusion**

---

- Presentation of the studies launched recently by RTE to optimise the assets management of the foundations
- We seek good practices among other TSO to optimise our asset management practices and are open to discuss

**Group Discussion Meeting**