

# Paris Session 2022



## Cost Evaluation of Painted Transmission Tower and Cathodic protection Application

B2\_PS2\_Q 2.12

What is the cost savings using such as decision support system?

Has TEPCO or other utility considered cathodic protection of towers instead of coatings?

What is the expected life of the towers after the corrosion mitigation system is implemented?

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Q 2.12 (1): What is the cost savings using such as decision support system?

A) Risk maps make us decide the **first painting timing postponement** for old hot-dip galvanizing steel towers.

➔ Around **8 million euros** cost reduction

B) **Life-cycle cost comparison** between 3 type galvanizing

➔ Around **50 k euros** cost saving per each tower

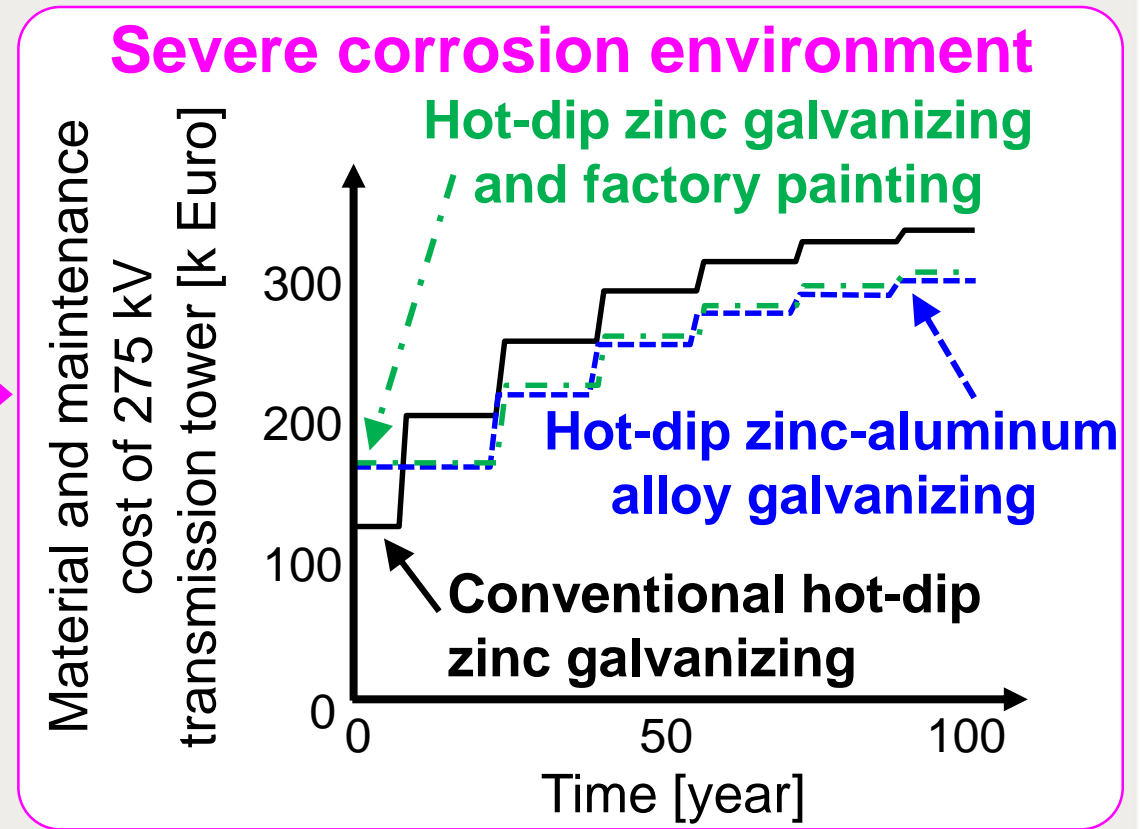
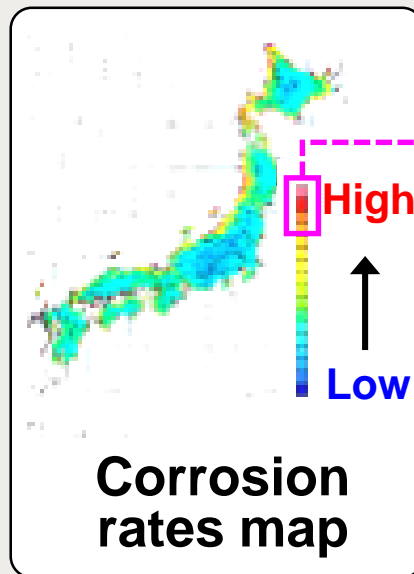
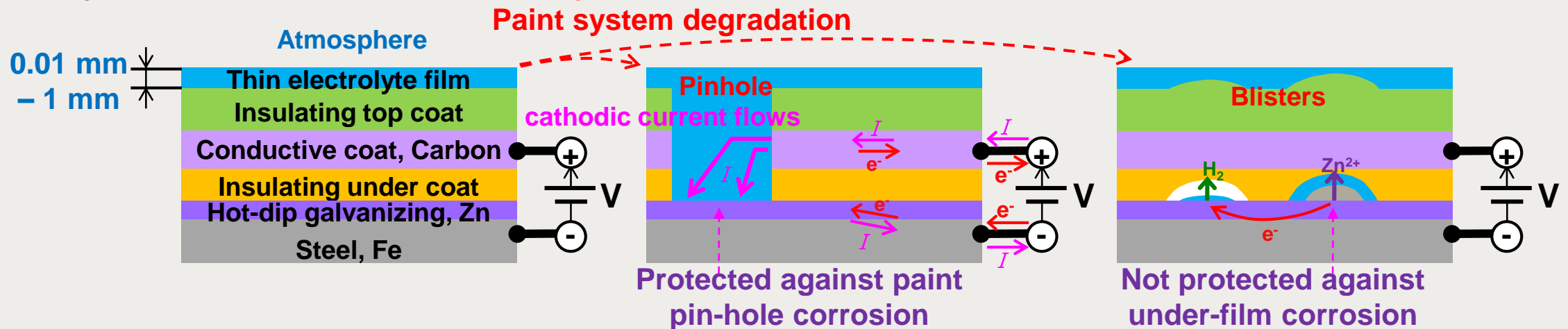


Fig. 1 Specification design by life-cycle cost comparison

## Q 2.12 (2): Has TEPCO or other utility considered cathodic protection of towers instead of coatings?

- A) **No**. TEPCO doesn't use cathodic protection system.
- B) Because the **cathodic current flows** through thin water film on the surface in atmosphere is quite low, cathodic current cannot reach to the wide area.
- C) Cathodic protection systems have been applied to coated steel of **bridge** and **reinforced concrete** and are quite costly.
- D) The system life is around **15 years**.

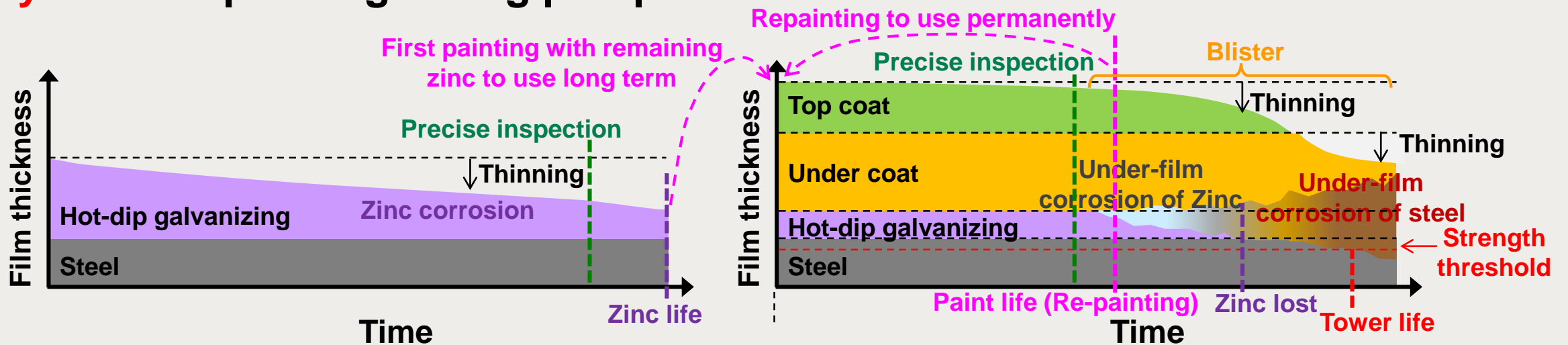


Group Discussion Meeting

Fig. 2 Cathodic protection for paint system.

## Q 2.12 (3): What is the expected life of the towers after the corrosion mitigation system is implemented?

- A) After corrosion rate map, constant tower inspection was changes into **only one time precise inspection** just before galvanizing life. Appropriate timing of inspection and first painting can **reduce cost, labor and time**.
- B) **Top coat thinning life** was around **20 years** before. However, the paint degradation mitigation revealed that **under-film corrosion** life is over **40 years**. Re-painting timing postponement could reduce **maintenance cost**.



Group Discussion Meeting

Fig 3. Tower life and appropriate maintenance timing.