



EU Trace: From Design-to-Cost to Design-to-Sustainability – Rethinking Distribution Transformer Renovation in Europe

Prepared for CWIEME, Berlin (DE)

20th May 2026



This project has been co-funded by the European Climate Infrastructure and Environment Executive Agency under the LIFE call, LIFE-2024-CET-POLICY, with grant agreement N° 101215320. Views and opinions expressed here are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

Today's speakers:



Tomas Jezdinsky
International Copper
Association –Europe



Pablo Cirujano Ballesteros
Ormazabal



Wim De Maesschalck
Fluvius



Miguel Martínez Velázquez
IIT - Institute for Research in Technology
Comillas Pontifical University

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20 May 2026, 14:00-14:45

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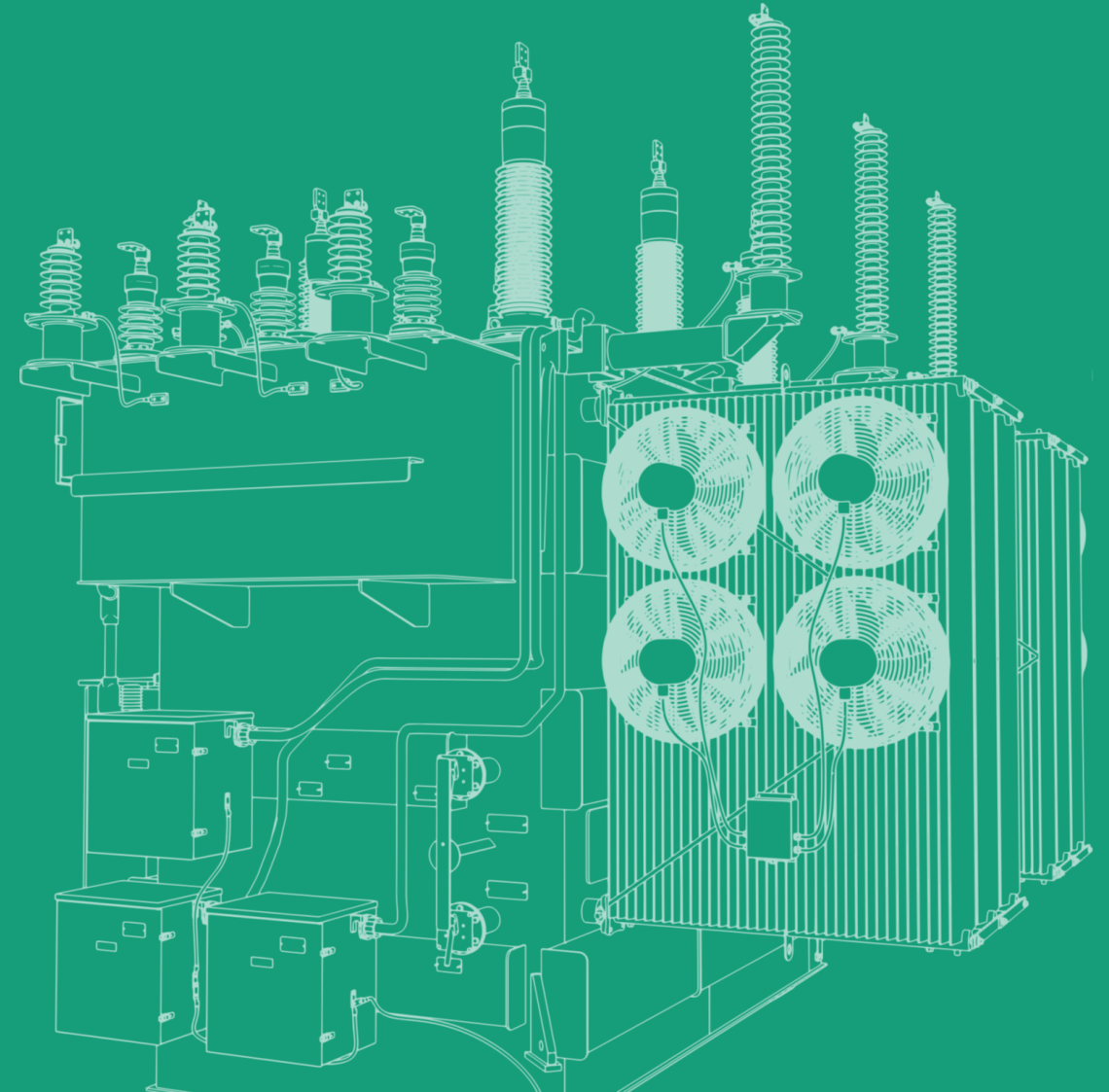
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The DSO's Perspective on Transformer Renovation

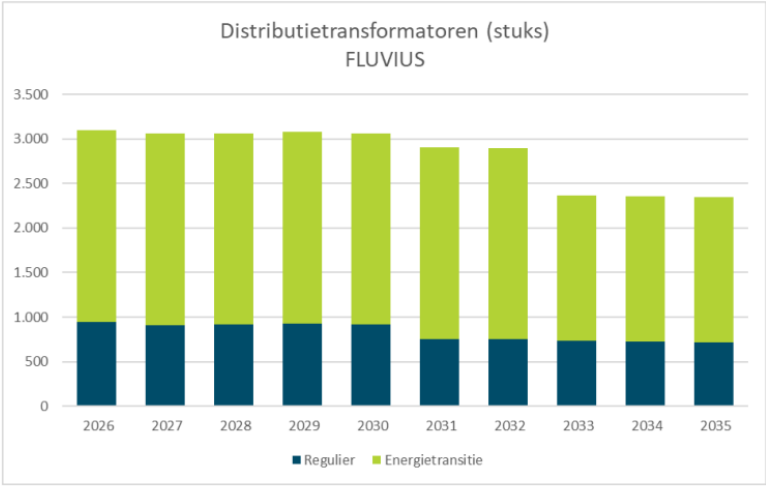
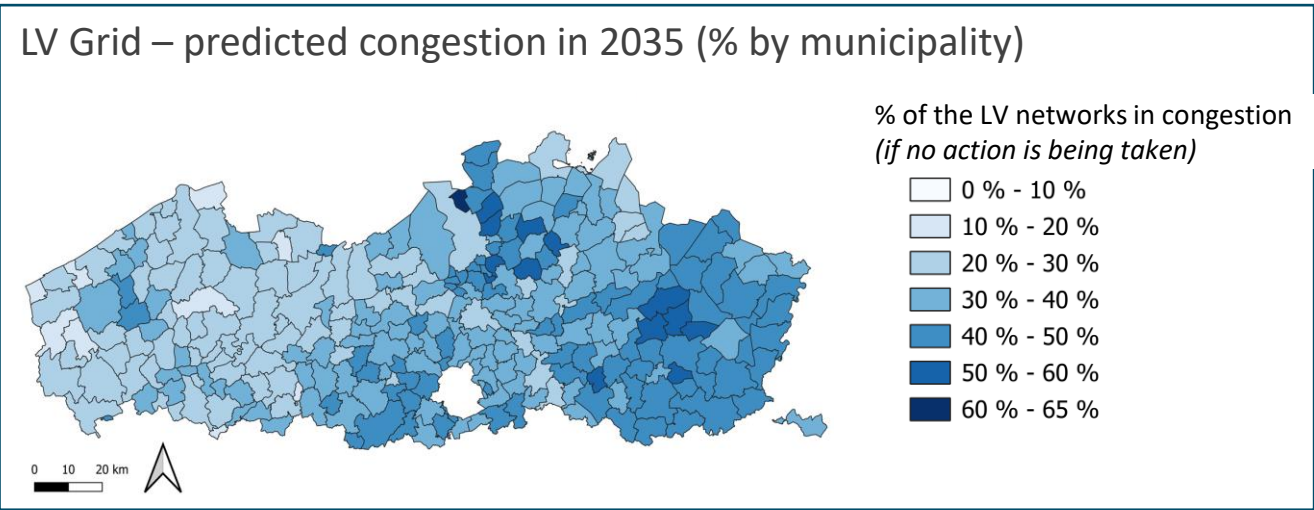


Wim De Maesschalck

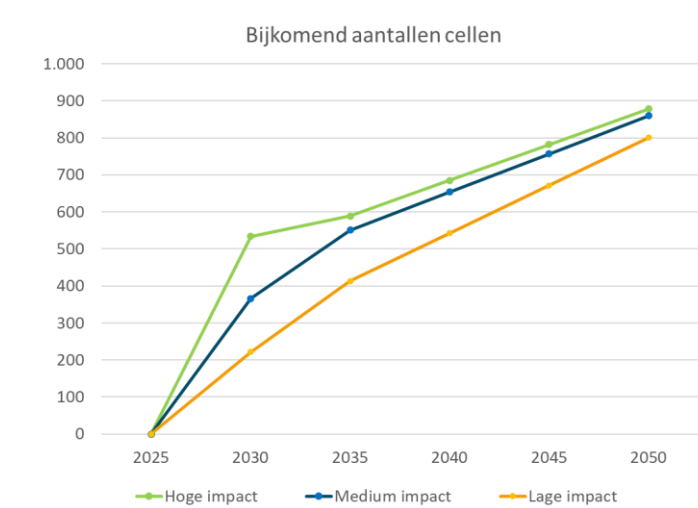
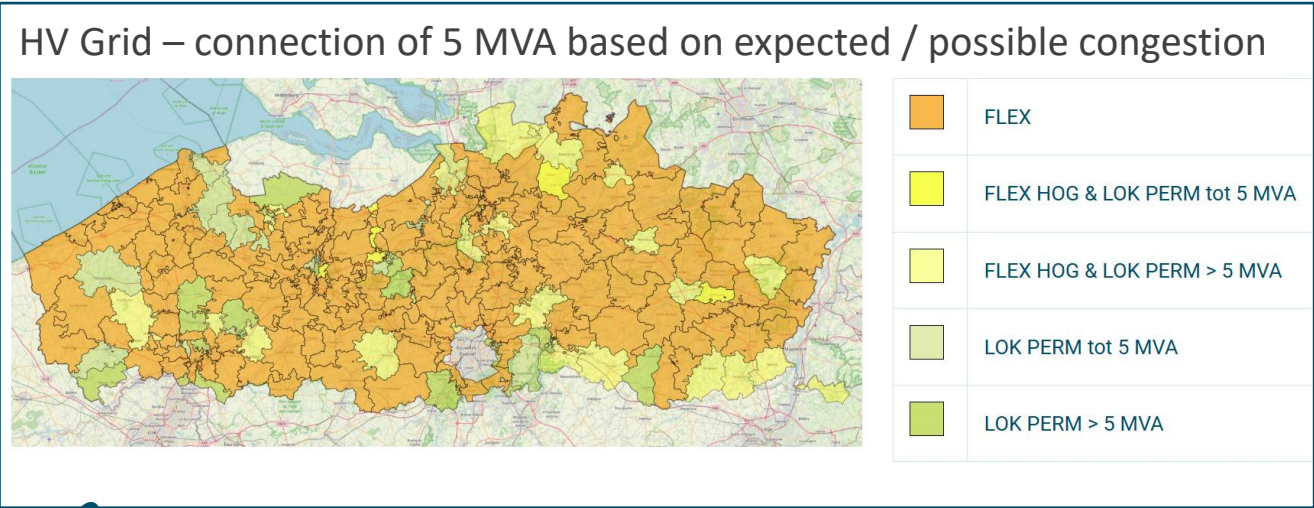
Expert Assets & MV Substations, **Fluvius**



Energy transition is driving investments



Figuur 63: Investerings in de distributiecabinen.



Distribution Transformers

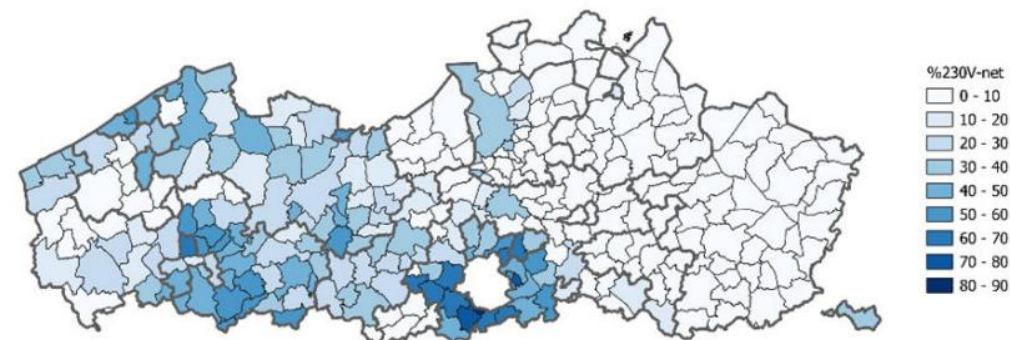


Distribution Transformers Year of Construction



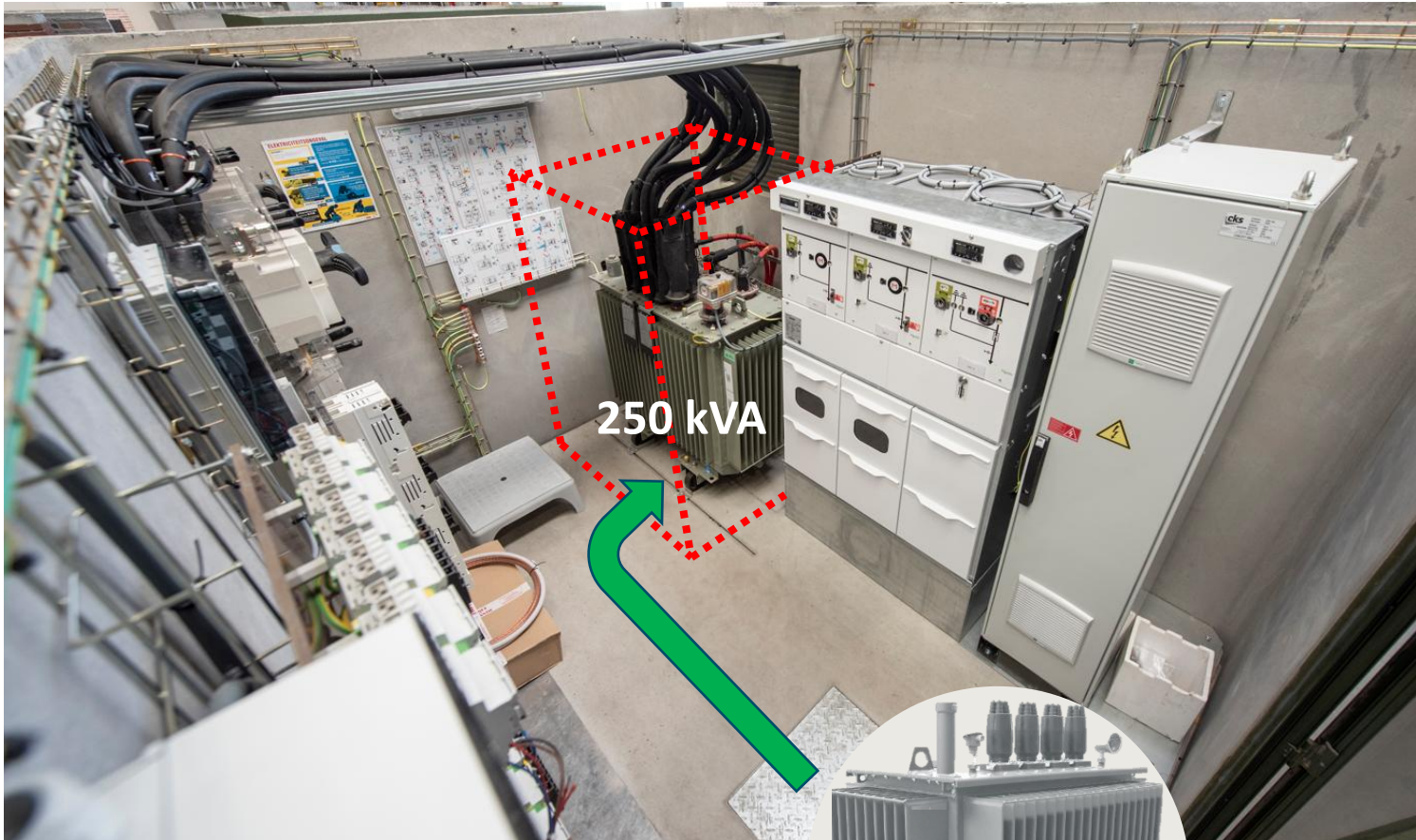
Location:

In substation	98%
Pole mounted	1%
Underground	0,2%
Seperate housing	0,1%
Outdoor	0,0%



Dual secondary voltage 400 V / 230 V: 69% of transformers

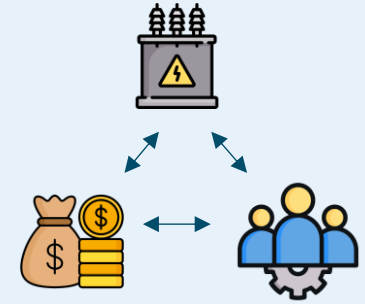
Transformer swap to cope with more power needed in the grid



- Constraints for swap:
 - Trafo dimensions
 - Trafo weight
- In case swap not possible:
 - Replace the substation
 - Add a substation at a different location
- Specific power will be key for upgrading existing substations!
 - Power / weight!
 - Power / volume!
 - Peak or continuous?

Challenges

- Execution of the ambitious 10 year investment plan
 - Material: Availability of transformers (power / distribution)
 - Manpower: Projectmanagement & staffing
 - Money: Financing incl. impact of CSRD
- Energy transition is leading for the investments – let's keep the focus!



- Technical evolutions
 - Shift to higher rated power and voltages to reduce losses, voltage drop & speed up electrification
 - MV/LV: 250 / 400 kVA → 630 / 800 kVA; 230 V → 400 V
 - HV/MV: 50 MVA → 110-120 MVA; 10-15 kV → 20-30 kV;
 - But... maintaining current dimensions due to restrictions of existing substation
 - Digitalisation to improve investments and voltage management