What’s the issue?
Integration of large quantities of DG (especially RES) in areas with limited connection capacity

The solution tested is the following combination:
Dynamic Line Rating + Active Network Management

[DLR + ANM]

increases line rating + allocates DG dynamically (priorities, curtailment) on flexible generation

Is it a profitable investment w.r.t. RES?
Yes, our field measurements have given very promising results. Ampacity (=line capacity) of nearby lines increased with wind power output. Therefore, curtailment of additional flexible generation should be kept to a minimum.

Reduced investment cost for the grid & rapid connection for the RES project promoter ➔ win-win approach.

RESULTS
Connection of additional DG would not be possible without the proposed solution.
Tests were performed on a 70kV and a 150kV line in Belgium.

Dynamic rating of the line does increase with wind farm power output

CONCLUSION
The proposed solution to large integration of RES in DG involves:

i) TSO-DSO cooperation ensuring safe and reliable operation of the energy system.
This has been confirmed by field tests.

ii) [DLR + ANM] as a low-cost and fast-deployment solution on flexible production.