

A Note on Additional Analyses for TenneT TSO in TCB18-ELEC

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1 Background

TenneT argues in a communication that :

- (i) The asset base of TenneT, including a relatively high share of HV lines (63% of line length) and low share of transformers (4.2%) is source of a disadvantage for TenneT with respect to the output parameter “transformer power”,
- (ii) The TSOs in TCB18 that have almost exclusively assets at the EHV level (overhead lines and transformers) represent a category which is incomparable to TenneT, being favoured in this regard,
- (iii) TenneT should be allowed to include the transformer power of their underlying substations, owned and operated by DSOs, as output in the benchmarking.

The inclusion of assets not owned and operated by operators introduces non-validated data and implies a contradiction to the consistency principle (all outputs relate to the operator evaluated).

This note shows the results for an alternative formulation where HV assets are excluded rather than adding EHV assets from external sources.

2 Setup

2.1 TSO categories

Following Oxera (2020, Box 2.1, p. 14) we define:

- A. Operators with almost no HV assets (<5%), 4 TSO.
- B. Operators (8 TSO) with both lines and transformers at EHV and HV.
- C. Operators with EHV and HV lines, but < 5% of transformers at EHV (5 TSO).

2.2 Excluded TSOs

We exclude from the reference set all operators in category A (EHV-only operators).

2.3 Excluded assets

We remove from `yTransformer_power` the contribution from HV transformers (defined as primary voltage $\leq 175\text{kV}$) for all operators in the reference set.

3 Results

Below we report the results from a simulation with the reduced reference set and adjusted outputs for the year 2017. All other technical parameters are unchanged (NDRS, outliers).

The reference set contains 13 TSOs with only their EHV assets.

Table 3-1 Results special run 37807-4.

Parameter	<i>n</i>	mean	St.dev
DEA-score, 2017	13	0.9303	0.1153
Score TenneT, 2017		0.790	
#peers	5		
#outliers	4		

The two peers for TenneT in this run are of type B and C. One of the peers also figures among the peers for TenneT in the base run in TCB18.

4 Conclusions

TenneT has suggested that the share of EHV/HV transformers influences their score negatively.

The simulation in this note uses the following assumptions:

1. No EHV-only networks are included
2. The output from HV transformer power is removed from all operators.
3. No input or other output parameter is changed from the base run
4. All other conditions prevail as in the base run.

Thus, we can conclude the following:

Benchmarking against a set that excludes the operators TenneT considers as privileged, as well as all deducting HV transformer output for those with mixed assetbase, without compensating their cost base, yields a score for TenneT of 79%. This score, biased in the favour of TenneT, may be considered an upper bound for the alleged problems of equity with respect to the transformer output.

5 References

Oxera (2020) *Analysis of TenneT's estimated efficiency under TCB18*, report 2020-08-14.

Sumicsid and CEER (2019b) *Project TCB18 Individual Benchmarking Report, V1.0*, 2019-07-25.