

2ND REPORT ON GENERATION ADEQUACY ASSESSMENT WITHIN PLEF REGION

With this report, the Transmission System Operators (TSOs) of the PLEF region (AT, BE, CH, DE, FR, LU, NL) are cooperating in order to develop new methodologies and investigate the security of the electricity supply (SoS) – the serving of the electricity demand of all customers – on European regional level. This study is an important outcome of the TSO collaboration at the regional level.



IMPROVEMENTS OF METHODOLOGY

The implementation of the flow-based method (first time horizon 2018/19) is the main improvement of the 2nd edition of the GAA (Generation Adequacy Assessment). TSOs of the PLEF region implemented a more realistic model of the physical flows of electricity through the transmission grids. A Demand Side Flexibility model was included in the assessment, which simulates the reaction of demand to certain price signals and the possible contribution to SoS in the different PLEF countries. The weather conditions are further detailed to study additional possible outcomes concerning the occurring generation and demand.



MAIN FINDINGS

The results are in line with the ENTSO-E MAF (European wide medium term adequacy forecast). Historical cold spell situations are considered in the simulations and its effect on the results is important. Although the occurrence of these situations is expected to be low, they introduce relevant situations to test the resilience of the region. In the 1st (2018/19) and 2nd (2023/24) time horizon, France and Belgium are most prone to generation adequacy problems. The 2nd horizon shows also tightened situation for Germany, Luxembourg and the Netherlands. A significant contribution of the interconnectors to the SoS of the whole PLEF region is shown. The economic model of Demand Side Flexibility (DSF) provides an estimate of possible additional benefits of available DSF on security of supply in some of the PLEF countries. The results show that DSF has a clearly positive impact.

LOLE ¹ (EENS ²) in Base Case	AT	BE	CH	DE	FR	LU	NL
2018/19 flow-based	0 (0)	3,5 (2,6)	0 (0)	0 (0)	5 (23,5)	0 (0)	0,2 (0,1)
2023/24 NTC	0 (0)	2,7 (4,1)	0 (0)	0,5 (1,0)	4,9 (27,5)	2,6 (1,6)	1,1 (0,9)



WAY FORWARD

Current developments related to the European legislative framework emphasise the great importance of regional assessments in the field of SoS and might propose requirements regarding the GAA methodology. The PLEF is a role model in this context. Some of the steps are pioneering and experimental. The results should be considered as indicative and evaluated together with those from the ENTSO-E MAF and the respective national studies.



PLEF SECRETARY

Frederik Deloof (F.Deloof@Benelux.int)

PLEF TSO CHAIR - TENNET TSO

Eppie Pelgrum (Eppie.Pelgrum@tennet.eu)

¹ Loss of load expectation in hrs/year

² Expected energy not served (GWh/year)