 

|  |
| --- |
|  |

**Methodology for FRR dimensioning rules in LFC AK Block in accordance with Article 157 (1) of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation**

August 2020

1. The TSOs of the LFC AK Block should determine the reserve capacity required for the FRR of the AK Block based on the historical data of previous years which contain at least the historical values ​​for the imbalances of the LFC AK Block. The average 15-minute data for the period between 1 July of the previous year and 30 June of the current year is used for this purpose, but if all parties agree, another time period may be used. The LFC Block Monitor is obliged to collect this data.
2. All LFC AK Block TSOs define reserve capacity for FRR which is sufficient to comply with current FRCE target parameters in accordance with the Agreement "All CE TSOs’ Agreement on frequency restoration control error target parameters in accordance with Article 128 and Article 131 of the Commission Regulation (EU) 2017/1485 of 2 August establishing a Guideline on electricity transmission system operation“ for the time period referred to in the first paragraph based on at least in a probabilistic methodology. In addition to the probabilistic methodology, the required FRR reserve capacity cannot be less than the reference incident for the respective direction.
3. The positive incident for FRR dimensioning of the LFC AK Block is equal to the decline of the largest generating module in the LFC AK Block, in accordance with Article 157 (2.d) of SO GL.
4. The negative incident for FRR dimensioning of the LFC AK Block is equal to the decline of the largest consumption plant in the LFC AK Block, in accordance with Article 157 (2.d) of SO GL.
5. The positive incident for FRR dimensioning for each TSO is equal to the decline of the largest generating module of the respective TSO, in accordance with Article 157 (2.d) of SO GL.
6. The negative incident for FRR dimensioning for each TSO is equal to the decline of the largest customer plant of the respective TSO, in accordance with Article 157 (2.d) of SO GL.
7. All LFC AK Block TSOs must ensure that the positive reserve capacity for FRR is sufficient to cover the positive imbalances of the LFC AK Block at least 99% of the time, based on the historical data referred to in first paragraph.
8. All LFC AK Block TSOs must ensure that the negative reserve capacity for FRR is sufficient to cover the negative imbalances of the LFC AK Block at least 99% of the time, based on the historical data referred to in first paragraph.
9. The proportion of FRR reserve capacity in the positive direction required by each TSO 𝑃𝑖 as an obligation for FRR for the calendar year 𝑡 under consideration will be based on the following expression for all TSOs of LFC AK Block:

$$P\_{i,t+}=FRR\_{+dimensioning}\*\left[\frac{max\left(+FRR\_{i,det⁡\\_need},+FRR\_{i,prob⁡\\_need}\right)}{\sum\_{}^{}max\left(+FRR\_{i,det⁡\\_need},+FRR\_{i,prob⁡\\_need}\right)}\right]$$

Where:

* $P\_{i,t}$, + is the initial FRR obligation for TSO *i* for the calendar year 𝑡;
* $FRR\_{+dimensioning} $is the FRR dimensioning value calculated for the LFC AK Block;
* $+FRR\_{i,det \\_need} $is the reserve capacity in the regulatory area *i* during the period referred to in the first paragraph, calculated according to the probabilistic methodology, i.e. equal to the incident taken during the positive dimensioning of the reserve for that TSO;
* $+FRRi\_{i, prob\\_need}$ is the reserve capacity in the regulatory area during the period referred to in the first paragraph, calculated according to the probabilistic methodology, i.e. the positive reserve capacity of FRR is sufficient to cover positive TSO imbalances at least 99% of the time *t*;
1. Proportion of FRR reserve capacity in the negative direction for each TSO 𝑃𝑖 for the FRR obligation for the calendar year 𝑡 under consideration will be based on the following expression for all TSOs of LFC AK Block:

$$P\_{i,t-}=FRR\_{-dimensioning}\*\left[\frac{max\left(-FRR\_{i,det⁡\\_need},-FRR\_{i,prob\\_need}\right)}{\sum\_{}^{}max\left(-FRR\_{i,det⁡\\_need},-FRR\_{i,prob\\_need}\right)}\right]$$

Where:

* $P\_{i,t}$- is the initial FRR obligation for TSO *i* for the calendar year 𝑡;
* $FRR\_{-dimensioning}$ is the FRR dimensioning value calculated for the LFC AK Block;
* $-FRR\_{i,det \\_need}$is the reserve capacity in the regulatory area *i* during the period referred to in the first paragraph, calculated according to the probabilistic methodology, i.e. equal to the incident taken during the negative dimensioning of the reserve for that TSO;
* $-FRRi\_{i, prob\\_need}$is the reserve capacity for the regulatory area during the period referred to in the first paragraph, calculated according to the probabilistic methodology, i.e. the negative FRR reserve capacity is sufficient to cover negative TSO imbalances at least 99% of the time *t*;
1. Every year, but not later than 15 July, LFC AK Block TSOs must provide each other with the data necessary to conduct the calculations mentioned above.

|  |
| --- |
| 1. Each TSO in LFC AK Block independently determines the ratio of automatic FRR, manual FRR, time for full activation of automatic FRR and time for full activation of manual FRR in order to be in accordance with the intended parameters of FRCE.
 |
|  |