Harmonising Cross-Border Transmission Capacity Calculations in Electricity

- RECOMMENDATION -

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Contents

Introduction

1. About ECRB

The Energy Community Regulatory Board (ECRB) operates based on the Energy Community Treaty. As an institution of the Energy Community[1] the ECRB advises the Energy Community Ministerial Council and Permanent High Level Group on details of statutory, technical and regulatory rules and makes recommendations in the case of cross-border disputes between regulators.

ECRB is the independent regional voice of energy regulators in the Energy Community. ECRB's mission builds on three pillars: providing coordinated regulatory positions to energy policy debates, harmonizing regulatory rules across borders as well as sharing regulatory knowledge and experience.

2. Scope

The present document recommends two measures concerning the capacity assessment used by transmission system operators (TSOs) to calculate the transmission capacity that is available for cross-border trade in South East Europe.

Namely, the capacity assessment uses certain assumptions about future conditions that are critical in establishing the limits on reliable transfers between control areas. Monitoring data available to regulators[2] indicate TSOs should harmonize practices in at least two areas in order to make the estimates of cross-border capacity more accurate.

2.1. Starting point

Based on monitoring results, National Regulatory Authorities (NRAs) issued a number of inquiries to TSOs regarding variances in the market monitoring indicators that made it apparent that there exist certain inconsistencies in the TSO responses concerning the

[1] www.energy-community.org. The Energy Community comprises the EU and Albania, Bosnia and Herzegovina, Macedonia, Kosovo*, Moldova, Montenegro, Serbia and Ukraine. Georgia signed the Energy Community Treaty in October 2016. Armenia, Turkey and Norway are Observer Countries. [Throughout this document the symbol * refers to the following statement: *This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence*].

[2] More specifically: monitoring performed by regulators in context with the ECRB Electricity Working Group activity on monitoring of TSOs activities as part of the South East Europe Market Monitoring Project which has involved technical support by the United States Agency for International Development (USAID) to develop market monitoring in accordance with various EU electricity directives, including Regulation (EC) 714/2009, and Directive 2009/72/EC. The technical support included developing precise indicators and data collection and reporting requirements to monitoring the TSOs estimates of cross-border capacity. In April 2014, the ECRB approved Market Monitoring Guidelines that included the automated web-based application called the South East Europe Automated Market Monitoring System (SEEAMMS).

understanding and harmonization of the Base Case Exchange (BCE)[3] and the Transmission Reliability Margin (TRM)[4] indicators. Based on discussions between regulators and TSOs and, also reflecting, the experience of the regulators of Austria, Greece, Italy, Croatia and Romania regarding the interpretation of the BCE and the TRM indicators the recommendations of this paper have been. The following summarizes main findings of the indicator interpretation and establishes a basis for the recommendations.

[3] Compares base case exchange assumptions in the Network Model to cross-border schedules; cf Market Monitoring Guidelines, indicator 1 and chapter 'recommendations'.
[4] Compares actual TRM values to proxy TRM values calculated using control area balance data and net exchanges, cf Market Monitoring Guidelines, indicator 6 and chapter 'recommendations'.

Recommendations

1. BCE indicator

Currently in SEE region, the main metric for cross-border trading capacity is the Net Transfer Capacity (NTC), which is established by TSOs using the network model. The BCE indicator monitors BCE assumptions in the Network Model. BCE assumptions are forecasts of commercial schedules in the Network Model. The purpose of the BCE indicator is to monitor the accuracy of the BCE assumptions in order to help ensure an accurate network model and, consequently, accurate NTC values. It is important that the BCE value represent the best estimate of expected cross-border exchanges. If not, the NTC value will be inaccurate and may underestimate or overestimate the cross-border transmission capacity, and thereby distort the opportunities for market activity.

The BCE indicator calculates a percentage forecast error between BCE values (the forecast) and the actual cross-border commercial schedules (realized ones). There is a lack of consistency throughout the region for the interpretation of the BCE value. TSOs disagree whether the BCE assumption represents a forecast of cross-border schedules or not. The following conclusion is based on review of EC Capacity Allocation and Congestion Management (CACM) Regulation 1222/2015, Common Grid Model Alignment methodology (CGMA)[5] related ENTSO-E documents[6] and processes, as well as discussion with regulators and their TSOs (including EU member states). The BCE value, especially those for time horizons >D-2, should reflect the best forecast of net commercial exchanges between two TSOs. For 2016, there continues to be failures of the BCE screen in South East Europe.

1.1. Recommendation

Given national regulators' responsibilities to monitor the activities for TSOs and related Regional Security Coordinators (RSCs), relating to cross-border NTC values, regulators should require BCE values based on a forecast of net commercial schedules, following the latest developments of ENTSO-E (CGMA), and defining

[5] 1) https://consultations.entsoe.eu/system-operations/common-grid-model/supporting_documents/160204%20CGMMforpublicconsultation.pdf
2) https://www.entsoe.eu/Documents/Network%20codes%20documents/Implementation/cacm/cgmm/Common_Grid_Model_Alignment_Methodology.pdf#search=CGMA

[6] 1) https://www.entsoe.eu/publications/market-reports/Documents/entsoe_proceduresCapacityAssessments.pdf
2) http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R1222&from=en

common CGMA algorithm based on forecasts and analyses of electricity market behavior and recent historical data.

2. TRM Indicator

According to the EC CACM Regulation 1222/2015 and related ENTSO-E documents[7], Reliability Margin[8] is an amount cross-border capacity set aside for TSOs to respond to:

a) unintended deviations of physical electricity flows within a market time unit caused by the adjustment of electricity flows within and between control areas, to maintain a constant frequency;
b) uncertainties which could affect capacity calculation and which could occur between the capacity calculation time-frame and real time, for the market time unit being considered.

Because it uses up cross-border capacity, the higher the TRM value, the lower the NTC value, which reduces opportunities for cross-border trade. The purpose of the indicator is to monitor the accuracy of TRM.

This TRM Indicator calculates a metric that is intended to track the ENTSO-E TRM formula, which is also approved in the ECRB Market Monitoring Guidelines:

According to CACM guidelines and ENTSO-E documents, TRM assessment should be based on influence of unintended deviations of flows due to load-frequency control, and calculation uncertainties.

The TRM indicator is often found to be in variance in the region. In many instances the TRM values is not calculated in accordance with the recommended ENTSO-E approach. In some instances the TRM is agreed upon between TSOs as a fixed value that does not depend on the key operating statics.

2.1. Recommendation

Contracting Party regulators should start working with their TSOs to develop and adopt the common TRM assessment algorithm based on the present recommendation. In many instances, this would improve access to the interconnectors.

[7] https://www.entsoe.eu/Documents/Publications/SOC/Continental_Europe/oh/160302_TOP_6_Policy%204-Draft_V4_2.pdf

[8] Within NTC-based capacity calculation, cross-zonal Transmission Reliability Margin (TRM) is defined. Within Flow-based capacity calculation, Flow Reliability Margin (FRM) is defined.