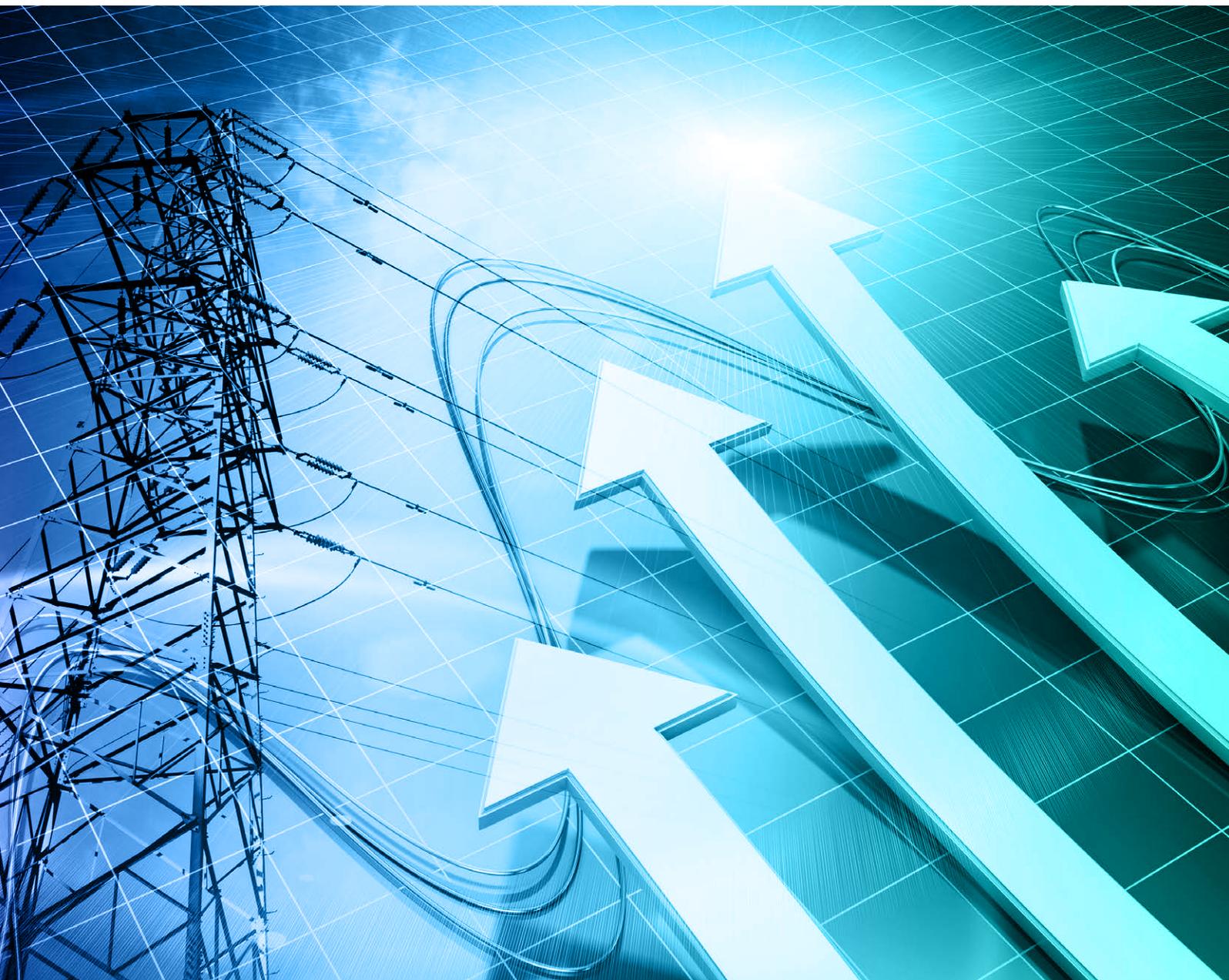


# ENTSO-E

## Report Assessing the Level of Harmonisation of the Rules for Suspension and Restoration of Market Activities

18 December 2020



# About ENTSO-E

ENTSO-E, the European Network of Transmission System Operators for Electricity, represents 42 electricity transmission system operators (TSOs) from 35 countries across Europe. ENTSO-E was registered in European law in 2009 and given legal mandates since then.

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# 1 About ENTSO-E

ENTSO-E, the European Network of Transmission System Operators for Electricity, represents 42 electricity transmission system operators (TSOs) from 35 countries across Europe. At ENTSO-E, we work to establish the internal energy market and ensure its functioning. Our work supports the ambitious European energy and climate agenda. ENTSO-E was registered under European law in 2009 and has been given legal mandates since then.

The role of TSOs has considerably evolved with the Third Energy Package. Due to unbundling and the liberalisation of the energy market, TSOs have become a meeting place for the various players to interact in the marketplace.

A critical issue on the European energy and climate agenda ENTSO-E follows is the integration of a high degree of renewables in Europe's energy system, the development of consecutive flexibility and a much more customer-centric approach than in the past.

ENTSO-E is committed to developing the most suitable responses to the challenge of a changing power system while maintaining the security of the supply. Innovation, a market-based approach, customer focus, stakeholder focus, security of supply, flexibility and regional cooperation are key to ENTSO-E's agenda.

ENTSO-E is contributing to building the world's largest electricity market, whose benefits will not only be felt by all those in the energy sector but also by Europe's overall economy, today and into the future.



## 2 Executive Summary

The European Commission, the European Union Agency for the Cooperation of Energy Regulators (ACER), ENTSO-E, organisations and other stakeholders from the area of the wholesale electricity market have devoted considerable effort to developing network codes and guidelines for electricity over recent years. One such instrument is the network code on electricity emergency and restoration, which corresponds to Commission Regulation (EU) 2017/2196, established 24 November 2017 (hereinafter ‘NCER Regulation’).

This report concerns a specific topic: the suspension and restoration of market activities during a major unforeseen event that has resulted in an emergency or a blackout state. In accordance with the NCER Regulation, each TSO has developed and submitted for NRA approval a proposal regarding rules concerning the suspension and restoration of market activities. ENTSO-E is required to render a report assessing the level of harmonisation of the rules for suspension and restoration of market activities established by the TSOs and identifying – where applicable – areas that could benefit from harmonisation (hereafter referred to as the ‘report’) and to submit it to ACER in line with Articles 36(7) and 52(1)(d) of the NCER Regulation by 18 December 2020.

To support this requirement, ENTSO-E created a survey comprising 59 detailed questions related to the process of suspending and restoring market activities.

ENTSO-E has been working closely with the Market European Stakeholder Committee (MESOC) from 2019 through 2020. Furthermore, ENTSO-E organised a dedicated public webinar on 25 March 2020 that allowed all interested stakeholders to participate and discuss their views on this topic.

The key findings in the report include the following:

- › TSO proposals from 15 Member States are approved by the relevant national regulatory authorities (up-to-date 30.09.2020).
- › The survey responses highlighted a difference in the TSOs’ design of the process for suspension and restoration of market activities. Although the TSOs’ understanding of the process for suspension and restoration of market activities differs, the results indicate the need for further clarification in conjunction with the national regulatory authorities.
- › The vast majority of TSOs have established procedures for the suspension and restoration of market activities. However, TSOs from four Member States share the opinion that suspension and restoration of market activities is not necessary. Because of the varied strategies related to the suspension of market activities among the TSOs, it is proposed to investigate and clarify how, if applied, the suspension of any market activity would actually contribute to preventing the deterioration of the system status or contribute to re-energising the transmission system. This exercise also fulfils the stakeholders’ request.
- › Depending on the outcome of the clarification process, the TSOs should focus on harmonising specific market-related processes, as listed in Chapter 8.

# 3 Introduction

ENTSO-E is required to draft a report assessing the level of harmonisation of the rules for suspension and restoration of market activities established by the TSOs and identifying, as appropriate, areas that could benefit from harmonisation (hereafter referred to as the 'report'). This report is to be submitted to ACER, the Agency for the Cooperation of Energy Regulators, in line with Articles 36(7) and 52(1)(d) of the NCER Regulation, by 18 December 2020.

To support the above requirement, ENTSO-E has created a survey comprising 59 detailed questions related to numerous aspects concerning the process of suspending and restoring market activities. The main aim of this survey was to gain detailed background information on the measures available for the TSOs, thereby allowing comparison of the respective measures of the TSOs.

In addition to the answers to the questionnaire, ENTSO-E has reviewed the following English versions of the proposals. These cover all synchronous areas (Continental Europe, Nordic, Baltic, Great Britain, Ireland):

- a) Austrian Power Grid AG,
- b) ČEPS, a.s.,
- c) EirGrid plc / SONI Ltd (consultation document, July 2020),
- d) AS, AS 'Augstsprieguma tīkls' and LITGRID AB,
- e) Elia System Operator SA/NV,
- f) Fingrid Oyj (consultation document, October 2018),
- g) National Grid Electricity System Operator Ltd (letter to Ofgem, January 2020),
- h) Polskie Sieci Elektroenergetyczne SA,
- i) Slovenska elektrizacna prenosova sustava, a.s.,
- j) Réseau de Transport d'Electricité, and
- k) Svenska Kraftnät (version in Swedish translated into English)

The situation for the TSOs of Great Britain<sup>1</sup> and Bosnia and Herzegovina<sup>2</sup> (none of them a Member State of the EU) is as follows. Great Britain is bound by the NCER Regulation during the transition period. The UK is currently in the transition period following its exit from the European Union. It is not yet clear what the requirements will be for Great Britain beginning in January 2021. As for SONI in Northern Ireland, the requirements of Emergency Restoration will remain starting in January 2021 as per Article 4 of the Northern Ireland protocol contained within the UK Withdrawal Agreement. Bosnia and Herzegovina signed an international agreement, known as the Energy Community for Western Balkans. As such, the TSO of Bosnia and Herzegovina has implemented or has the intention of implementing all provisions of the NCER Regulation. Inclusion of Bosnia and Herzegovina in this report has no direct impact on the methodologies of EU TSOs but facilitates cooperation between EU TSOs and non-EU TSOs.

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1 The UK left the EU at midnight CET (23.00 GMT) on 31 January 2020. At the time of submitting this report, the transition period is still ongoing (i. e. 31 December 2020).

2 In February 2016, Bosnia and Herzegovina applied for EU membership. In December 2019, the EU Council endorsed the roadmap prepared by the EU Commission submitted in May 2019 (SWD (2019) 222 final).

The report is organised into the following chapters:

- Chapter 1:  
About ENTSO-E
- Chapter 2:  
Executive summary
- Chapter 3:  
Introduction
- Chapter 4:  
Background
- Chapter 5:  
Legal references and legal status proposals
- Chapter 6:  
Overview of the survey results
- Chapter 7:  
Comparison of different rules for suspension or restoration of market activities
- Chapter 8:  
Assessment of areas worth harmonising
- Chapter 9:  
Next steps
- Chapter 10:  
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# 4 Background

The main reason for a market suspension is to prevent the continuation of market activities that would either deteriorate<sup>3</sup> one or more of the conditions defining an emergency state<sup>4</sup> or would decrease the effectiveness of the restoration process to the normal or alert state significantly. The other two reasons for market suspension are of a pragmatic nature: (1) when the TSOs have exhausted all market options and (2) when the tools and means of communication necessary for the TSOs to facilitate market activities are not available.

Usually, these market activities are applicable in at least the normal and alert system state conditions and are described in EU legislation. In this chapter, we would like to sketch the bigger picture of the wholesale market when a suspension takes place.

The Commission Regulation (EU) 2017/1485 establishing a guideline for electricity transmission system operation (hereafter referred to as 'SO GL regulation') identifies the following system states: normal state, alert state, emergency state, blackout state and restoration state (shown in Figure 1 below).

The definitions of these system states are as follows<sup>5</sup>:

- › 'normal state' means a situation in which the system is within operational security limits in the N-situation and after the occurrence of any contingency from the contingency list, taking into account the effect of the available remedial actions;
- › 'alert state' means the system state in which the system is within operational security limits, but a contingency from the contingency list has been detected and in case of its occurrence the available remedial actions are not sufficient to keep the normal state;
- › 'emergency state' means the system state in which one or more operational security limits are violated;
- › 'blackout state' means the system state in which the operation of part or all of the transmission system is terminated;
- › 'restoration state' means the system state in which the objective of all activities in the transmission system is to re-establish system operation and maintain operational security after the blackout state or the emergency state;

- › 'system defence plan' means the technical and organisational measures to be undertaken to prevent the propagation or deterioration of a disturbance in the transmission system, in order to avoid a wide area disturbance and blackout state.

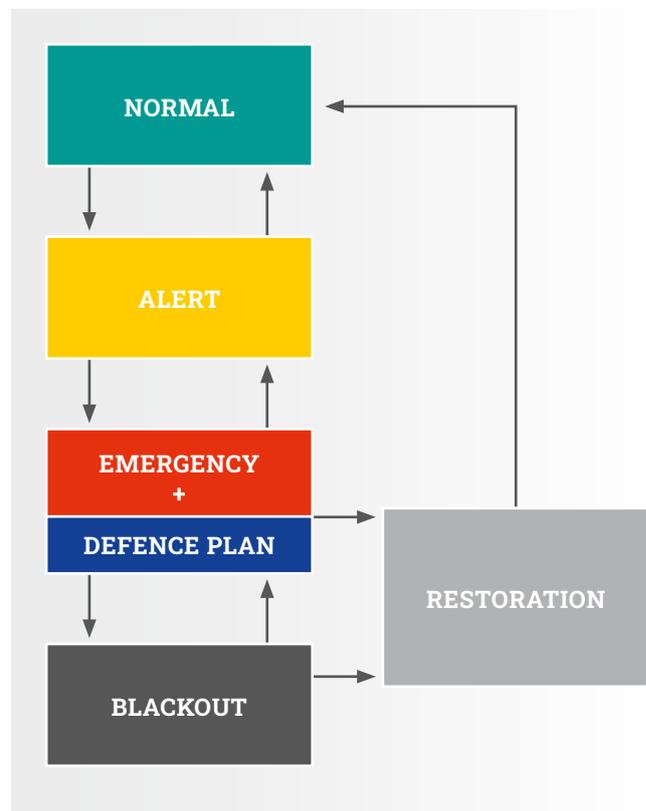


Figure 1: System states.

3 Article 35(1)(b) of the N CER Regulation.

4 Article 18(3) of the SO GL regulation.

5 See Articles 18(1) up to and including Article 18(5) of the SO GL regulation for a detailed quantification of these system states.

The System Defence Plan relates to technical and organisational measures, both automatic (schemes in the NCER Regulation) and manual (procedures in the NCER Regulation), aiming to prevent the propagation or deterioration of a disturbance in the transmission system, avoiding a wide area disturbance and blackout state.

As each subsequent system state indicates a decline in the health of the transmission system, additional decision-making capacity is assigned to the TSO each time it enters a more severe system state. Once a transmission system enters an emergency state, the TSO's options for improving the system's health are numerous, providing TSOs with different tools to operate the system depending on the level of severity of the incident. For example, an essential criterion that specifies the emergency state is the failure of tools, means and facilities for longer than 30 minutes<sup>6</sup>. Hence, the decision that the TSO or TSOs should take is not automatic; in some circumstances, common backup procedures could be used (and in case backup procedures should fail, fall-back procedures are in place), but in other quite similar conditions, market activity should be suspended. An emergency or blackout can take infinite forms, making it impossible to create one clear checklist that a TSO should follow in the case of an emergency or blackout. For this reason, TSOs facing such situations and having suspended and restored market activities must prepare a report detailing the rationale, implementation and impact of the suspension no later than 30 days after market activities have been restored<sup>7</sup>.

This situation implies two realities:

1. It is impossible and even unnecessary to harmonise everything.
2. The aforementioned prepared report could be followed by a dedicated study on the result and effects of suspension of any market activity by the TSO(s) in cooperation with the affected market parties. Such a study could disseminate lessons learnt and provide new insight on how to act during such situations<sup>8</sup>. These insights could also lead to updated processes and protocols for TSOs, NEMOs, etc., even updating the national rules for suspension and restoration of market activities.

In summary, two main categories of situations involving the electrical system are as follows:

- a. normal and alert grid situations, which are dealt with via well-described, detailed, common procedures; if something goes wrong, detailed backup procedures are in place to keep the system in the normal or alert state<sup>9</sup>; and
- b. emergency and blackout situations, which cannot be dealt with using well-described, detailed, common procedures. These situations (and the path leading to them) comprise an infinite variety of possible options for which no clear and detailed (backup) procedure can be described, other than what has been written in the NCER Regulation. Hence, it is recommended that TSOs appoint an emergency team to deal with the situation at hand to restore the system to the alert or normal state.

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6 Article 18(3)(d) of the SO GL regulation.

7 Article 37(6) of the NCER Regulation.

8 In recent events, such as the emergency situation in Great Britain on 9 August 2019, no market activities were suspended or restored.

9 Ultimately, the alert state should transition into the normal state.

# 5 Legal references and legal status proposals

## 5.1 Legal references and requirements

This report ensures the fulfilment of ENTSO-E's reporting obligations as outlined in Articles 36(7) and 52(1)(d) in conjunction with Article 36(8) of the NCER Regulation.

The requirement for ENTSO-E to report on the harmonisation of the suspension and restoration rules is described in Article 36(7) of the NCER Regulation as follows:

*"7. By 18 December 2020, ENTSO for Electricity shall submit to the Agency a report assessing the level of harmonisation of the rules for suspension and restoration of market activities established by the TSOs and identifying, as appropriate, areas that require harmonisation.*

In order to be able to fulfil this requirement, the TSOs were obliged to submit to ENTSO-E the required data in accordance with Article 36(8) of the NCER Regulation as follows:

*8. By 18 June 2019, each TSO shall submit to ENTSO for Electricity the data required to prepare and submit the report in accordance with paragraph 7."*

and Article 52(1)(d) of the NCER Regulation as follows:

*"1. ENTSO for Electricity shall monitor the implementation of this Regulation in accordance with Article 8(8) of Regulation (EC) No 714/2009. Monitoring shall cover in particular the following matters: [...]*

*(d) the level of harmonisation of the rules for suspension and restoration of market activities established by the TSOs in accordance with Article 36(1) and for the purposes of the report provided for in Article 36(7);"*

Additionally, this report relates to the proposals that were drafted by the TSOs in accordance with Article 36(1) of the NCER Regulation:

*"1. By 18 December 2018, each TSO shall develop a proposal for rules concerning the suspension and restoration of market activities."*

The report also relates to the rules for suspension and restoration in accordance with the following stipulation in Article 36(3) of the NCER Regulation:

*"3. The rules for suspension and restoration of market activities shall be compatible to the extent possible with:*

- (a) the rules on provision of cross zonal capacity within the concerned capacity calculation regions;*
- (b) the rules for submission by balancing service providers of balancing capacity and balancing energy bids resulting from arrangements with other TSOs for the coordination of balancing;*
- (c) the rules for provision by balance responsible party of a balanced position at the end of day-ahead time-frame if required by the terms and conditions related to balancing;*
- (d) rules for provision of modifications of the position of balance responsible parties; and*
- (e) the rules for provision of schedules referred to in Article 111(1) and (2) of Regulation (EU) 2017/1485."*

The scope of this report is defined in Articles 2(6), 2(7) of the NCER Regulation:

*“6. This Regulation shall apply to all transmission systems, distribution systems and interconnections in the Union except transmission systems and distribution systems or parts of the transmission systems and distribution systems of islands of Member States of which the systems are not operated synchronously with Continental Europe, Great Britain, Nordic, Ireland and Northern Ireland or Baltic synchronous area, provided that this non-synchronous operation does not result from a disturbance.*

*7. In Member States where more than one transmission system operator exists, this Regulation shall apply to all transmission system operators within that Member State. Where a transmission system operator does not have a function relevant to one or more obligations under this Regulation, Member States may provide that the responsibility for complying with those obligations is assigned to one or more different, specific transmission system operators.”*

The rules for suspension and restoration of market activities must be included in the proposal for the terms and conditions for balancing service providers and balance responsible parties in accordance with Articles 18(1) and 18(2) of the Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (hereinafter referred to as the ‘EB Regulation’), as follows:

*“1. No later than six months after entry into force of this Regulation and for all scheduling areas of a Member State, the TSOs of this Member State shall develop a proposal regarding:*

- a) the terms and conditions for balance service providers;*
- b) the terms and conditions for balance responsible parties.*

*2. The terms and conditions pursuant to paragraph 1 shall also include the rules for suspension and restoration of market activities pursuant to Article 36 of Regulation (EU) 2017/2196 and rules for settlement in case of market suspension pursuant to Article 39 of Regulation (EU) 2017/2196 once approved in accordance with Article 4 of Regulation (EU) 2017/2196.”*

## 5.2 The legal status of the rules concerning the suspension and restoration of market activities proposals

In accordance with Article 36(1) of the NCER Regulation, each TSO(s) developed a proposal for rules concerning the suspension and restoration of market activities and submitted this proposal by 18 December 2018 to their NRA.

The overview depicted in Figure 2 illustrates the countries for which the national submission pursuant to Article 36(1) of the NCER Regulation has been approved by the NRA; last update 30.09.2020.

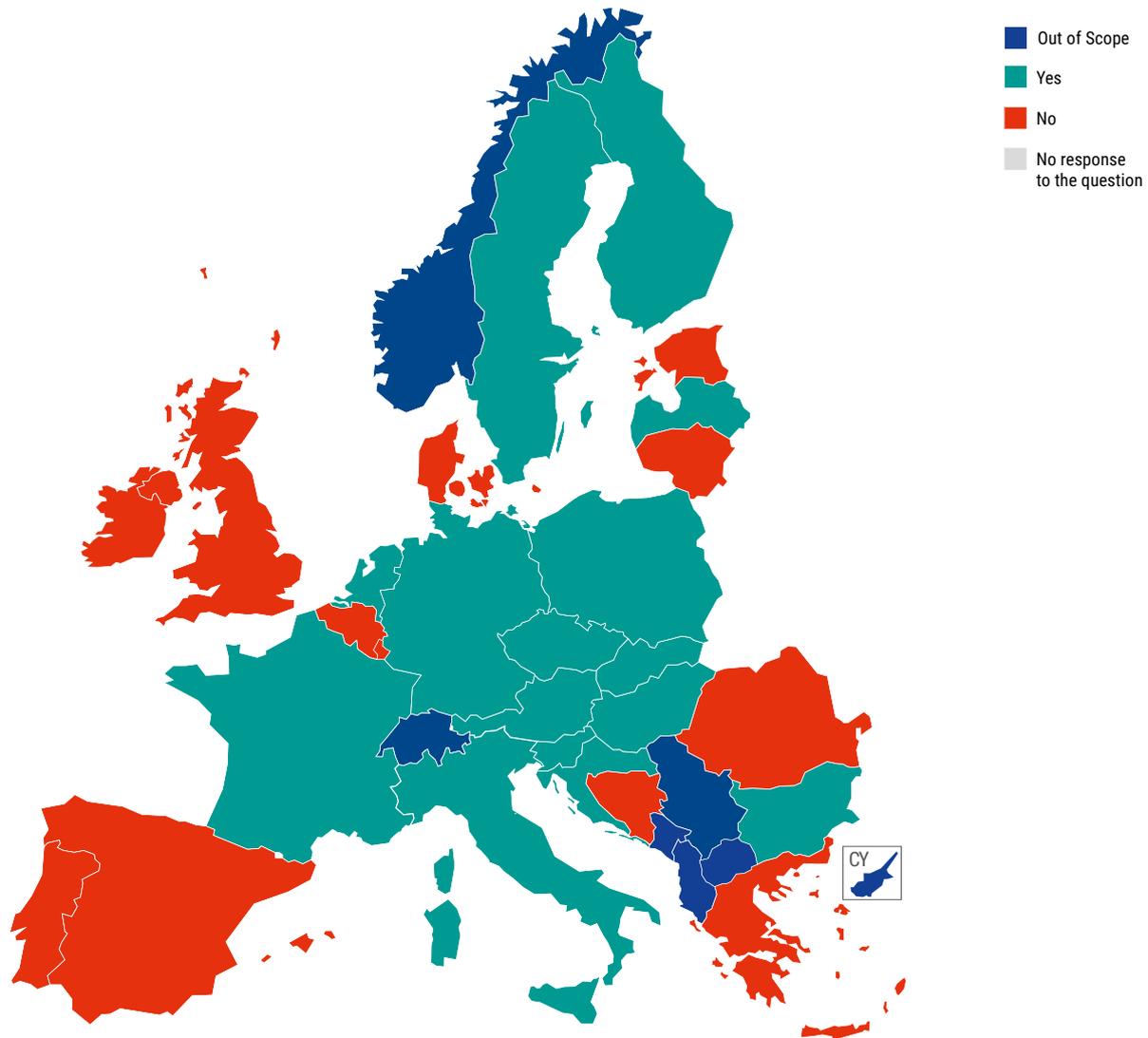


Figure 2: National submissions pursuant to Article 36(1) approved by the NRA (as of September 2020).

The image shows that for numerous countries, the national rules are undergoing in the regulatory approval process. As such, this report at the time of writing does not – and cannot – include a stable image of the (approved) rules for suspension and restoration of market activities in Europe.

An option could have been that ENTSO-E would write this report when all proposals had been approved by the national regulatory authorities. In order to follow this course, ENTSO-E should have asked to extend the deadline for submitting this report. ENTSO-E decided not to ask for an extension of the deadline, as ENTSO-E has assessed it would be able to provide a meaningful report, even given the fact that the approval process by the national regulatory authorities is ongoing.

# 6 Overview of the survey results

As introduced in Chapter 4 of this report, ENTSO-E created a survey consisting of 59 questions related to suspending and restoring market activities. This information-gathering tool was addressed to the TSOs bound by the NCER Regulation in conformity with Articles 2(6) and 2(7) of the NCER Regulation.

The survey aimed to obtain detailed background information on the measures available for TSOs to ensure that ENTSO-E can compare the respective measures from the proposals of the TSOs. The main reason for introducing this survey was to analyse the individual TSOs' proposals and the accompanying documents/letters that the TSOs submitted on 18 December 2018 to the regulatory authorities. These documents and letters were written in the official language(s) of the respective countries, making collection difficult; for most of the TSOs, this survey cut down the time-intensive activity of translating all the proposals into English.

The survey consisted of the following eight sections:

1. Introductory questions
2. Suspension of market activities in case of a blackout, pursuant to Article 35(1)(a) of the NCER Regulation
3. Suspension of market activities in case of an emergency state, pursuant to Article 35(1)(b) of the NCER Regulation
4. Suspension of market activities in the restoration process, pursuant to Article 35(1)(c) of the NCER Regulation
5. Suspension of market activities in case of unavailability of means of communication, pursuant to Article 35(1)(d) of the NCER Regulation
6. Which activities listed in Article 35(2)(a) to Article 35(2)(e) of the NCER Regulation does/do your TSO(s) intend to suspend?
7. Other relevant market activities, pursuant to Article 35(2)(f) of the NCER Regulation
8. Restoration of market activities, pursuant to Article 37(2)(f) of the NCER Regulation

The analyses below are performed per section. Detailed answers per question are provided in Annex II.

Furthermore, the reader should note the following:

- a) The four German TSOs provided a joint response to this survey.
- b) Although Northern Ireland is part of the United Kingdom, the System Operator for Northern Ireland Ltd (SONI) TSO submitted their responses together with EirGrid plc because SONI and EirGrid manage the same load frequency control area, a synchronous area on a joint basis, and the survey relates to technical aspects also relevant to the synchronous area of Ireland. For this reason, the reader should be aware that the word 'Ireland' refers to the synchronous area (hence, the entire island). This situation also has a bearing on the naming of the sovereign state UK: the term Great Britain is used, leaving out Northern Ireland. After the UK's leaving the EU, the EU legislation related to the topic of the report will apply to Northern Ireland (SONI).
- c) The TSOs of Finland (including the Åland Islands) and Sweden provided the same answers, with minor differences in the wording.
- d) The TSOs interpreted the questions on lead time in different ways; for this reason, these questions are out of scope<sup>10</sup>. See the reflection at Q21 for more information.

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10 This point concerns questions 21, 23, 25, 27, 29, 31, 33, 35, 38, 43, 45, 47, 49 and 52.

# Section 1: Introductory questions

Q4–Q10. These questions ask whether: (a) a TSO will suspend market activities, (b) a TSO has a similar right in their national regulation (if so, has it been executed) and (c) suspension by a neighbouring TSO will cause (non-) operational issues. (Q4: see Chapter 5).

By far, the majority of the TSOs reported that they will suspend market activities if necessary<sup>11</sup>.

Zooming in per synchronous area:

- › Ireland's TSO will not suspend market activities. In Great Britain, the market can only be suspended in either a total system shut down or partial system shut down (these conditions are defined in 2.1.7 of the **NGESO System Restoration Plan**, which is subject to approval). If a neighbouring TSO were to take action, it would appear to the other TSO as a flow change under normal or emergency procedures.
- › The TSOs of Sweden and Finland will not suspend market activities.
- › Of the Baltic TSOs, only the Estonian TSO will not suspend market activities. Nevertheless, it is not likely that the Baltic TSOs will anticipate any problem arising from this non-harmonisation in the Baltic region, as the different solutions must still be implemented in line with common Baltic rules. Besides this situation, common TSO-TSO principles should be agreed upon that are compliant with the national solutions.
- › In Continental Europe, the TSOs of Denmark, the Netherlands and Bulgaria will not use this right. Italy's TSO will suspend market activities in the case of blackout and emergency state, while in the case of unavailability of tools/means of communication and during the restoration process, either of these two conditions alone does not suffice to proceed with a suspension; in all situations, the TSOs of the three adjacent Member States (France, Austria and Slovenia) can suspend market activities.
- › In the South-East region<sup>12</sup>, the responses to the survey indicate Bulgaria's TSO as the only TSO not to suspend market activities during the restoration process; in all other situations, the TSOs of the three Member States (Bulgaria, Romania and Greece) will suspend market activities. There was no indication of any significant problem that should be encountered to mitigate this discrepancy.

A TSO that does not suspend market activities would still use national legislation to obtain a similar result, i. e. direct control over Significant Grid Users (SGUs<sup>13</sup>): all but the Netherlands answered in this vein. The situation in the Netherlands is such that although the TSO does not use the instrument of suspending market activities, it may use dispatch instructions to SGUs. From the viewpoint of the TSO of the Netherlands, the dispatch instructions do not contradict operational market activities.

Moreover, most TSOs already had similar rights related to direct control over SGUs before the entry into force of the NCER Regulation. Only the TSOs from Greece and Latvia indicated that they had no such right<sup>14</sup>.

In a few instances, TSOs had executed the right for direct control: Croatia's TSO invoked this right several times (without suspending market activities), while Hungary's TSO indicated they had a few cases when they suspended the provision of cross-zonal capacity for capacity allocation (Article 35(2)(a)) and when they suspended the provision of modifications of the position of balance responsible parties (Article 35(2)(d)), both caused by IT problems; they did not actually execute direct control over SGUs. Denmark's TSO indicated that they used the possibility of direct control once in 2005.

TSOs do not anticipate operational issues where they would suspend and the neighbouring TSO(s) would not suspend market activities. The only situation where an operational issue might appear would be in the situation of a TSO relying on import during the moment an adjacent TSO needs to suspend relevant cross-border market activities; however, the TSO-TSO coordination at a cross-border level aims at avoiding the appearance of operational issues for the neighbouring TSO. This topic should be addressed in future discussions on top-down regeneration of the grid. Settlement issues might occur given the circumstance that automatic settlement processes probably cannot cope with extraordinary situations like emergency or blackout situations. An area that could also give rise to misunderstandings is the remuneration for long-term transmission rights in relation to force majeure.

11 For differentiating of this general picture, see Q11, Q13, Q16 and Q18.

12 This is not to be confused with the South-East Capacity Calculation Region.

13 Pre-existing grid users and new grid users deemed significant based on their impact on the cross-border system performance via influence on the control area's security of supply, including the provision of ancillary services. Term first introduced in the SO GL regulation.

14 It may be somewhat surprising to see Ireland, Denmark, Finland and Bulgaria answering this question (Q7) because their answer to Q5 was NO, and Q7 only needed answering when Q5 was answered with YES. Their answer must be understood to indicate that before EIF of NCER, they had the right to enforce direct control.

## Section 2: Suspension of market activities in case of a blackout (NCER Regulation Art. 35(1)(a))

Q11 – Q12. *Suspension in case of a blackout, plus whether a TSO defined additional criteria beyond Articles 18(4)(a) and (b) of the SO GL regulation.*

Apart from the TSOs from Ireland, Sweden and Finland and the Netherlands, all TSOs could potentially suspend market activities. In Great Britain, the market can only be suspended in either a total system shut down or a partial system shut down. These conditions are defined in Section 2.1.7 of the System Restoration Plan.

Articles 18(4)(a) and (b) of the SO GL regulation define the blackout state: specifically, the loss in demand of more than 50 % and total absence of voltage for at least 3 minutes<sup>15</sup>.

In Continental Europe, only the TSOs of Belgium and France have additional criteria:

› France's TSOs have the authority/right to suspend market activities in the situation when it is impossible to maintain the power-consumption balance.

› Belgium's TSO includes the criterion that market processes shall be suspended when a minimum of 50 % of the BRPs or BSPs are affected<sup>16</sup>. Generally, the Belgian TSO suspends the Intraday market coupling and publication of imbalance prices on its website but leaves the day-ahead market coupling unaffected unless restoration cannot be reasonably achieved for the next day. The other situations where day-ahead coupling can be suspended are the absence of properly functioning tools and means of communication. The Belgian TSO would also suspend the provision of intraday cross-zonal capacity in all situations (NCER Regulation Article 36(4)(a)-(e)).

› Great Britain's TSO could only suspend the market in either a total system shut down or partial system shut down (the conditions within section 2.1.7 of the NGESO System Restoration Plan would need to be met).



<sup>15</sup> SO GL regulation Article 18(3)(d).

<sup>16</sup> This relates to market processes in terms of 'a balanced position at the end of the day-ahead timeframe' and 'the provision of schedules in SO GL regulation Articles 111(1) and 111(2)', BSPs only for the latter, BRPs for both.

## Section 3: Suspension of market activities in case of an emergency state (NCER Regulation Art. 35(1)(b))

*Q13 – Q15. Suspension in case of emergency plus the defined parameters according to Article 36(4) of the NCER Regulation.*

Apart from the TSOs from Ireland, Sweden and Finland, Estonia and Lithuania in the Baltics as well as the TSOs of Luxembourg, the Netherlands and Portugal, all TSOs could potentially suspend market activities in the case of an emergency state. In Great Britain, the market can only be suspended in either a total system shut down or a partial system shut down. These conditions are defined in section 2.1.7 of the System Restoration Plan. In the Baltic area, only Latvia's TSO has additional criteria defined: a) volume of electricity generation is 75 % lower than planned in the frequency control zone of AST, and the frequency varies between 49.0 and 48.0 Hz, b) the measured frequency differs ( $\Delta f \geq 50$  mHz) in at least three substations with the same voltage level, c) basic and backup means of communication for market processes are not available for more than 30 minutes: criterion (c) matches one of the criteria defining the emergency state.

TSOs that could suspend during an emergency state and did not define parameters represent the following countries: Denmark, Slovenia, Hungary, Bosnia and Herzegovina<sup>17</sup>, Bulgaria and Greece.

The TSOs that responded positively have arranged their suspension parameters in line with the relevant sections of Article 36 of the NCER Regulation and Article 18 of the SO GL regulation (defining the system states), for example, the loss of more than 50 % of demand in the concerned TSO's control area. In the case of Italy, the suspension of market

activities depends on an emergency state with at least one of the following conditions: a) a minimum load disconnection of 4.5 %; b) a minimum generation disconnection of 80 % of total tertiary reserve; c) desynchronisation of a transmission system section underlying a minimum load of 4.5 % of the total electricity demand or a minimum generation capacity of 80 % of the total tertiary reserve; d) capacity equal to zero on one or more sections between bidding zones; e) impossibility for NEMO (GME), BSPs, market participants or DSOs to proceed with their market activities; f) partial or total unavailability of Terna's necessary tools for system control, market operations or information exchange. A few TSOs added additional factors not explicitly addressed in legislation, such as:

- (a) market activities that could be suspended if regulatory measures by competent authorities require this (Bulgaria);
- (b) any situation that would make it impossible to maintain the P = C balance (France);
- (c) a TSO having identified a different frequency at one voltage level in three or more substations of the transmission system: ( $\Delta f \geq 50$  mHz: Latvia.  $\Delta f \geq 100$  mHz: Slovakia);
- (d) the amount of disconnected generation in the incident is greater than the available reserve, preventing the restoration of disconnected load (Spain); and
- (e) the volume of electricity generation is 75 % lower than planned, and the frequency is in the range of 48.0 – 49.0 Hz (Latvia).

## Section 4: Suspension of market activities in the restoration process (NCER Regulation Art. 35(1)(c))

*Q16 – Q17. Suspension during the restoration process plus the defined parameters according to Article 36(4) of the NCER Regulation.*

Apart from the TSOs of Ireland, Sweden and Finland, Estonia, Denmark, the Netherlands, Italy and Bulgaria, all TSOs could potentially suspend market activities during the restoration process.

Great Britain's TSO would only suspend the market in either a total system shut down or partial system shut down.

It is worth pointing out that Italy's TSO could maintain the market activities suspended in the restoration process after an emergency state/blackout situation.

The defined parameters show the same tendency as observed in Section 3.

<sup>17</sup> In February 2016, Bosnia and Herzegovina applied for EU membership. In December 2019, the EU Council endorsed the roadmap prepared by the EU Commission submitted in May 2019 (SWD (2019) 222 final).

## Section 5: Suspension of market activities in case of unavailability of tools and communication means (NCER Regulation Art. 35(1)(d))

Q 18 – Q 19. *Suspension in case of unavailability of tools/means of communication plus the defined parameters according to Article 36(4) of the NCER Regulation*

Apart from the TSOs of Ireland, Sweden and Finland, Estonia, Denmark, Luxembourg, the Netherlands and Italy, all TSOs could potentially suspend market activities in the case of unavailability of tools/means of communication.

Great Britain's TSO could do so in the event of partial system shut down or total system shut down.

Italy can suspend market activities if the unavailability of tools/means of communication is simultaneous with an emergency state.

The defined parameters show the same tendency as observed in Sections 3 and 4.

## Section 6: Which activities listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend?

Q 20 – Q 33. *This group of questions relates to the activities listed below plus the accompanying lead times. The answers on the lead time questions diverge considerably. It is advised that Member States reflect further on this aspect of market suspension<sup>18</sup>.*

### Provision of cross-zonal capacity

#### Definition:

This activity is directly towards Market Participants (explicit auctions) or towards NEMOs (implicit auctions). This includes (reduction of unallocated cross-zonal capacity and curtailment of allocated cross-zonal capacity).

#### Who is performing this activity?

TSOs (or RSC/RCC on behalf of TSOs)

#### What happens in case that this activity is suspended?

Curtailment and reduction do not entail suspension of market activities. However, suspension of provision of cross-zonal capacity would in most cases have an equivalent effect. When it has the equivalent effect – it generally needs to be treated as relevant market intervention (reduction, curtailment) – otherwise, this situation would breach that requirements of Art. 36(3)(a) and 39(3) of the NCER Regulation.

The TSOs of Ireland, Sweden and Finland, Estonia, Denmark, Luxembourg, the Netherlands and Croatia shall not suspend this activity, but the TSOs of other Member States might.

Great Britain's TSO could do so in the event of a partial system shut down or total system shut down. When Great Britain's TSO is in an emergency state, emergency instructions can be issued to interconnectors to prevent the risk of partial/total system shut down.

Because the provision of cross-zonal capacity is done on a regional capacity calculation level, the TSOs of the Core region are to agree on what exactly is meant by 'suspension of the provision of cross-zonal capacity'<sup>19</sup>. The aim of the common understanding is that if one TSO suspends the provision of cross-zonal capacity, the other TSOs should know what the impact on their side of the process will be and, hence, should know what to do.

<sup>18</sup> This recommendation also applies for Q23, 25, 27, 29, 31, 33, 35, 38, 43, 45, 47, 49, 52 and 59.

<sup>19</sup> This is not applicable for the Nordic area as they will not suspend market activities at all.

## Submission of balancing capacity bids

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### Definition:

Submission of bids that comprise the volume of reserve capacity that a balancing service provider (BSP) has agreed to hold and in respect to which the BSP has agreed to submit bids for a corresponding volume of balancing energy to the TSO for the duration of the contract.

### Who is performing this activity?

The BSP submits them to the TSO; in return, the TSO submits the balancing capacity bids from standard products to the capacity procurement optimisation function (Articles 16(2) and 33(3) of the EB Regulation)<sup>20</sup>.

### What happens in case this activity is suspended?

If the BSP cannot submit these bids to the TSO, the TSO has backup facilities in place in order to continue fulfilling its duties. If these facilities do not function, the TSO cannot procure balancing capacity and has reduced or no means to perform balancing actions. If the TSO cannot submit these bids to the procurement optimisation function, there are reduced or no capacity bids available to be used by balancing platforms.

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Of the TSOs from 27 Member States, 12 foresee and six do not foresee suspending the submission of balancing capacity bids, whereas TSOs from eight Member States (Germany, Luxembourg, Denmark, Poland, Italy, Greece, Estonia and Lithuania) marked this market activity as not applicable; they do not have such a process in place<sup>21</sup>. The TSOs from 12 Member States that could foresee suspension are the TSOs of Member States located from Belgium down to Portugal and all Member States in South-East Europe excepting Greece<sup>22</sup>. If Great Britain's TSO should experience a partial or total system shut down, it can suspend balancing capacity and balancing energy bids.

## Submission of balancing energy bids

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### Definition:

Submission of bids used by TSOs to perform balancing and provided by a balancing service provider (BSP).

### Who is performing this activity?

The BSP submits bids to the TSO; the TSO in return forwards the balancing energy bids from standard products to the activation optimisation function (Articles 16(4) and definition 38 of the EB Regulation)<sup>23</sup>.

### What happens in case this activity is suspended?

If the BSPs cannot submit these bids, the TSO has backup facilities in place in order to continue fulfilling its duties. If these facilities do not function, the TSOs cannot forward them to the activation optimisation function, and in both cases, the TSOs cannot use energy bids for local balancing, nor for balancing in any of the balancing platforms.

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The TSOs of Ireland, Sweden and Finland, Estonia and Lithuania, Luxembourg, the Netherlands, the Czech Republic and Croatia will not suspend this activity; the TSOs of four Member States (Denmark, Poland, Italy and Greece) marked this activity as not applicable. All the other Member States could potentially suspend this activity. Great Britain's TSO could do so in the event of partial system shut down or total system shut down.

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20 The balancing capacity bids from specific products remain at the disposal of the TSO.

21 Italy explained that this situation is due to the fact that Terna implicitly procures the necessary reserve margins through the activations of upward and downward integrated scheduling bids during the scheduling phase of the Italian Ancillary Services Market.

22 See Figure 16, referring to Q22, for a clear geographical view of the mentioned TSOs.

23 The balancing energy bids from specific products remain at the disposal of the TSO.

## External commercial trade schedules

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### Definition:

A schedule representing the commercial exchange of electricity between market participants in different scheduling areas (definition 75 of the SO GL regulation).

### Who is performing this activity?

The scheduling agent or a central counter party submits external commercial trade schedules to the TSO (Article 111(2) of the SO GL regulation).

### What happens in case this activity is suspended?

The TSOs are unable to check the coherence of schedules. The consequence is that the TSOs cannot create a netted position for their control area, resulting in the inability to perform load frequency control for its control area. A backup facility is to assume a net position equal to zero MW.

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The TSOs of nine Member States do not consider suspending this activity: Ireland, Sweden and Finland, Estonia and Lithuania, the Netherlands, Luxembourg, Denmark and Italy. The rest of the TSOs could suspend this activity. If Great Britain's TSO should experience a partial or total system shut down, it can suspend external and internal communication trade schedules.

## Internal commercial trade schedules

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### Definition:

A schedule representing the commercial exchange of electricity within a scheduling area between different market participants (definition 79 of the SO GL regulation).

### Who is performing this activity?

The scheduling agent or a central counter party submits internal commercial trade schedules to the TSO (Article 111(2) of the SO GL regulation).

### What happens in case this activity is suspended?

The TSOs are unable to check the coherence of schedules. The consequence is that the TSOs cannot perform the regular internal balancing processes anymore, among which the settlement process is the most prominent.

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In addition to the TSOs of Member States that do not consider suspending external (and internal) commercial trade schedules, the Czech Republic TSO also does not suspend this market activity concerning internal commercial trade schedules. The rest of the TSOs do suspend this market activity. If Great Britain's TSO should experience a partial or total system shut down, it can suspend external and internal communication trade schedules.



## Generation schedules

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### Definition:

A schedule representing the electricity generation of a power-generating module or of a group of power-generating modules (definition 78 of the SO GL regulation).

### Who is performing this activity?

The scheduling agent submits generation schedules to the TSO (Article 111(1)(a) of the SO GL regulation).

### What happens in case this activity is suspended?

The TSOs are unable to check the coherence of schedules. The consequence is that the TSOs can no longer perform regular internal processes, among which the (n-1) security analyses are the most prominent.

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Except for Italy and Poland (both not applicable) and the Netherlands and Denmark, the TSOs of all Member States in Continental Europe could suspend the process of generation schedules; also, the TSOs of Great Britain and Latvia could. For Ireland's TSO, this activity is not applicable, either. If Great Britain's TSO should experience a partial or total system shut down, it could suspend generation schedules.

## Consumption schedules

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### Definition:

A schedule representing the consumption of a demand facility or a group of demand facilities (definition 73 of the SO GL regulation).

### Who is performing this activity?

The scheduling agent submits consumption schedules to the TSO (Article 111(1)(b) of the SO GL regulation).

### What happens in case this activity is suspended?

The TSOs are unable to check the coherence of schedules. The consequence is that the TSOs are no longer able to perform regular internal processes, among which the (n-1) security analyses are the most prominent.

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In addition to the TSOs of Member States that marked the activity of generation (and consumption) schedules as not applicable, this process is also not applicable to France's TSO. Bulgaria's TSO mentioned that the obligation to send consumption schedules applies only to the balancing energy providers. As soon as Great Britain's TSO is in a position of partial or total system shut down, it could suspend consumption schedules.

## Section 7: Which other activities does/do your TSO(s) intend to suspend pursuant to Article 35(2)(f) of the NCER Regulation?

*Q34 – Q56. This group of questions relates to the activities listed below plus the accompanying lead times. The answers on the lead time questions diverge considerably. It is recommended that TSOs reflect further on this aspect of market suspension.*

### SDAC/SIDC

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#### Definition:

SDAC: the auctioning process where collected orders are matched and cross-zonal capacity is allocated simultaneously for different bidding zones in the day-ahead market (definition 26 of the CACM Regulation)

SIDC: the continuous process where collected orders are matched and cross-zonal capacity is allocated simultaneously for different bidding zones in the intraday market (definition 27 of the CACM Regulation)

#### Who is performing this activity?

The nominated electricity market operators, NEMOs (Article 7(3) of the CACM Regulation).

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The TSOs of the following Member States could possibly face the suspension of the SDAC by any of their neighbours: Ireland, Sweden and Finland, Estonia, Denmark, Luxembourg, the Netherlands, Portugal, Poland, Czech Republic and Bulgaria<sup>24</sup>.

The TSOs of the following Member States could possibly face the suspension of the SIDC by any of their neighbours: Ireland, Luxembourg, the Netherlands, Poland and Bosnia and Herzegovina<sup>25</sup>.

Cancelling the already matched bids does not necessarily have an impact on the whole EU market; thus, the different answers of the TSOs do not necessarily lead to operational issues. Indeed, if a TSO keeps its cross-border schedules (and delivers energy according to them), then the impact of cancelling these bids is limited to that TSO's bidding zone.

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24 Please bear in mind that Bosnia and Herzegovina is in the process of becoming a Member State and is not part of the SDAC yet.

25 Please bear in mind that Ireland, Great Britain and Bosnia and Herzegovina are not part of the SIDC yet.

TSOs will be allowed to cancel the schedules resulting from SDAC and SID<sup>26</sup> at a national level when the level of severity of the incident requires such action and when the suspension would actually help to restore the grid or would stop the deterioration of the physical condition of the grid. Regarding impact to international trade, even in cases where the level of severity requires cancelling day-ahead (intraday) market results at a national level, the TSO applying these rules will perform actions in coordination with its neighbouring TSOs to facilitate the appropriate energy exchange given the level of severity of the incident.

The survey asked TSOs about further details of the suspension of SAC/SIDC: whether it affects only the unmatched bids and unallocated capacity or the already matched bids and allocated capacity. The answers varied. Therefore, ENTSO-E investigated whether such divergence is a problem for the secure operation of the interconnected power system: if a TSO is not able to deliver energy according to the cross-border schedules, then the remaining mechanisms to deal with such divergence include:

- › Curtailment of allocated capacity (CACM regulation, Art. 72, FCA regulation, art. 25);
- › TSO-TSO deliveries (e. g. Emergency Deliveries, Supportive Power) that are agreed upon in SOAs; or
- › redispatch (based on TSO's system need).

Each TSO can use regular measures to change both the generation and external schedules. The mechanisms for TSOs to change the generation schedules within the regular market rules include redispatching and countertrading.

Several TSOs indicated that in the event of the suspension of market activities affecting interconnectors, Article 72 of the CACM regulation (Firmness in the event of force majeure or emergency situations) allows for the already allocated capacity to be curtailed. The regulation also mentions that anything that might happen will have an indirect effect via the imbalance settlement mechanism.

## Submission of integrated scheduling process bids

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### Definition:

Bids used in an iterative process that uses at least integrated scheduling process bids that contain commercial data, complex technical data of individual power generating facilities or demand facilities and explicitly includes the start-up characteristics, the latest control area adequacy analysis and the operational security limits as an input to the process (definition 19 of the EB Regulation).

### Who is performing this activity?

The TSOs applying a central dispatch system (Article 27(1) of the EB Regulation).

### What happens in case this activity is suspended?

The TSOs applying a central dispatch system cannot perform their balancing duties via the regular process.

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For TSOs of 21 Member States, this process is not applicable as it is valid for TSOs applying a central dispatch model. For the TSOs of Italy and Poland, the submission of integrated scheduling process bids could be suspended as well.

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26 i. e. the schedules listed in Article 111(1)a-d of the SO GL regulation.

## Participation in the balancing platforms (i.e. IN, aFRR, mFRR, RR)

The TSOs were divided on this aspect: the TSOs of 15 Member States do not foresee the suspension of their participation in any balancing platform, whereas the TSOs of 12 Member States could foresee this suspension (Bulgaria's TSO indicates that they could suspend all platforms but RR). Because participation in a balancing platform does not require physical connections to adjacent TSOs (that might suspend),

harmonisation is not a necessity: geographically isolated TSOs participating in a balancing platform could receive input from and send output signals to the platform. In the case where TSO A procured balancing capacity in the control area of TSO B and TSO B suspends its participation in this platform, then TSO A must find alternative resources, probably within its control area.

## Suspension of activation rules for balancing energy bids<sup>27</sup>. This activity relates to two aspects: pricing/clearing and settlement.

The TSOs of Great Britain and Latvia allow for the suspension of activation rules for balancing energy bids. In Continental Europe, the TSOs of the Netherlands, France, Germany, the Czech Republic, Poland, Estonia, Lithuania, Slovenia and Croatia do not suspend this market activity, while the rest could.

The TSOs of Member States that mentioned that the process of submitting balancing energy bids (Q24) is not applicable to them (the TSOs of Denmark, Poland, Italy and Greece) displayed a variety of options: Denmark's TSO will not suspend the activation rules for balancing energy bids, and Poland's TSO mentioned that this process does not apply to them. In contrast, the TSOs of Italy<sup>28</sup> and Greece will suspend

them. The TSOs of Germany and France would not consider suspending the submission of balancing energy bids but would consider suspending the activation rules for balancing energy bids. France added that participation in activation rules can be suspended.

Finally, Croatia's TSO mentioned that in the event of participation in the activation of balancing energy bids from the common merit order list, Croatia's TSO may declare balancing energy bids forwarded to the activation optimisation function unavailable for the activation to other transmission system operators, in accordance with Article 29(4) of the EB Regulation in the situations referred to in Article 35(1) of the NCER Regulation.

## Application of all standard procedures

In Continental Europe, the TSOs of France, the Netherlands and Estonia will not consider suspension. Apart from Great Britain's TSO<sup>29</sup>, the TSOs of the following Member States would consider suspension<sup>30</sup>: Latvia, Lithuania, Poland, Italy, the Czech Republic, Slovakia, Romania, Croatia and Bulgaria. The TSOs of the remaining 12 Member States mentioned that this activity is not applicable to them.

As far as measures regarding long-term markets<sup>31</sup> are concerned, the TSOs of Spain, Germany, the Czech Republic, Slovenia, Hungary and Romania might consider taking measures related to the long-term market. Several TSOs added that this scenario will only happen in extreme conditions like a blackout or when problems exist for an extended period.

The TSOs of Ireland, Great Britain, the Netherlands, Denmark, Poland, Estonia, Italy, Croatia, Bosnia and Herzegovina and Greece will not suspend long-term markets<sup>32</sup>.

Belgium's TSO reflected that the allocation of long-term transmission rights should not be affected as this situation does not affect the system state; it can only be suspended at a later moment in time and after consultation between the Joint Auction Office and the relevant TSOs.

27 Currently, the TSOs have either a pro-rata or a merit-order-based activation of balancing energy. The EB Regulation prescribes a merit-order based activation for standard product bids.

28 Related to Italy, the possibility to suspend the activation rules for balancing energy bids is related to the conversion process of integrated scheduling process bids, submitted by market participants, in standard products bids for balancing energy for participation on the balancing platforms.

29 In the event of partial or total system shut down.

30 This is not to be confused with the South-East Capacity Calculation Region.

31 Please bear in mind that this question does not apply to TSOs that have exemptions under Article 30.7 of the FCA Regulation.

32 Nevertheless, it must be noted that the long-term market could be affected by measures taken on short-term markets, e. g. holders of LT PTRs will not be able to nominate long-term capacities if the submission of external commercial trade schedules is suspended – in this particular situation, the PTR nomination rules in accordance with FCA Regulation Article 36(2) apply.

Poland's TSO left room for suspending any other essential activity necessary to preserve or restore the Polish power system; Slovakia's TSO added the standard evaluation of activated ancillary services and of balancing energy and standard processes of imbalance settlement and balancing energy settlement.

TSOs' decisions regarding suspension depend on the severity of the situation at stake and are in line with the provisions in the NCER Regulation.

For the TSOs of Denmark, Germany, Romania<sup>33</sup> and Bulgaria<sup>34</sup>, the rules for suspension can be applied independently of national legislation. For most TSOs, this question was either not applicable (e. g. the TSOs of Ireland, Sweden, Finland, Estonia, Croatia and Greece) or this independency is not possible (the remaining 14). While some TSOs have domestic rules written in such a way that they can be applied without the involvement of EU legislation, most TSOs clearly linked EU legislation and domestic rules.

## Section 8: Restoration of market activities, pursuant to Article 37

*Q 57 – Q 59. Relates to coordination with NEMOs and RCCs.*

The respondents pointed out that communication concerning NEMO will be done in accordance with all communication procedures agreed upon between the TSOs and NEMOs. Some TSOs have additional operational communication procedures in place; for example, the Czech Republic's TSO has added regular procedural training. The most used means of communication are websites and emails. Great Britain's TSO mentioned that NEMOs will receive a notification on market activities through local reports that are sent to all grid users by a third-party company called Elexon<sup>35</sup>. Finally, the Nordic TSOs indicated that a communication procedure is not yet in place.

As far as the RCCs are concerned, most TSOs refer to operational communication procedures established with them, using websites and emails whenever possible. Moreover, Great Britain's TSO is notified about market restoration through Elexon, and for non-Great Britain TSOs, this process will happen through EAS.

Spain's TSO will coordinate with SWE TSOs (RTE and REN) and the regional capacity calculator.

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33 Romania is currently in the process of making the rules dependent on national legislation.

34 Bulgaria could possibly suspend from the moment they participate in any of the balancing platforms.

35 Elexon administers the Balancing and Settlement Code (BSC) on behalf of the UK electricity industry; among other tasks, the company performs the settlement process.

# 7 Comparison of different rules for suspension or restoration of market activities

## 7.1 General observations

The survey and the available proposals reveal that whatever the choices are related to market suspension, the TSOs seem to act in the same spirit in case of a blackout or an emergency situation. Although not mentioned in so many words, the TSOs' answers conveyed that they would reflect on the following critical issues, and act accordingly, addressing them in order to handle emergency situations in an efficient and effective manner:

- a) the general management of the emergency plan (i. e. determine the overarching strategy);
- b) the follow-up and diagnosis of the state of the grid in real time with all available real-time parameters;
- c) setting the priorities for restoring customers' connection;
- d) deciding on the suspension and restoration of market activities;
- e) deciding on the external stakeholders to be involved and informed;
- f) deciding on the communication towards the external stakeholders in accordance with all relevant communication procedures and following up on these communications; and
- g) recording the rules, decisions and actions taken.

All TSOs would introduce some variation of the TSO dispatch mechanism, dictating to SGUs the set-points of their generators to restore, re-energise or re-synchronise (parts of the electricity system, either as part of a bottom-up approach or a top-down approach). These introductions are independent of whether an individual TSO uses (or labels the action as) market suspension and another TSO does not use (or does not label it as) market suspension. This seeming discrepancy appears to stem from different interpretations of what suspension of market activity actually represents. An example makes this clear: if after a blackout, the cross-zonal capacities are set to zero MW, then some TSOs would argue that the provision of cross-zonal capacities has been suspended, while others would say that it has not been suspended at all. Both interpretations lead to the same physical situation: a disconnection from the neighbouring TSOs' infrastructure. See also paragraph 7.2.a. However, there are already existing reporting obligations:

- › Setting cross-zonal capacity to zero MW necessitates curtailment of FTRs and PTRs, which according to Harmonised Auction Rules (Art. 57(3)) requires communicating 'information on exact operational security limit(s) that are expected to be violated in the absence of curtailment' at the latest 24 hours after notification of curtailment. As it is not possible to fully forecast the progress of system restoration, it may be impossible for a TSO to communicate exact security violations because the situation can fluctuate considerably over a short period of time, as has been experienced during the emergency situation of 4 November 2006; see Chapter 13, Annex III for an illustration.
- › In the case of suspending provision of cross-zonal capacity, the TSO is obliged to provide within 30 days a report containing a detailed explanation of the rationale, implementation and impact of the market suspension and a reference to compliance with the rules for suspension and restoration of market activities, to be submitted to the relevant regulatory authority (Article 36(7) of the NCER Regulation).

## 7.2 Differences

The answers to Q 53 (how to choose which activity to suspend) demonstrated that TSOs' decision whether to suspend market activities depends entirely on the severity of the situation at hand: infinite interdependent issues and situations are possible, making it very difficult to define rules establishing which market activity shall be suspended under which circumstances, and which not.

This situation is fundamentally responsible for the differences in the proposals that the TSOs have drafted, and that have, in some instances, already been approved by the relevant competent regulatory authority. This section addresses and reflects on these differences.

### a) Suspension of market activities

Five TSOs – Ireland the Netherlands, Sweden<sup>36</sup> and Finland – will under no condition perform suspension of any market activity, whilst the remaining majority of the Member States included this possibility in their proposals. The difference is that some TSOs do not see the need to introduce additional rules in the normal situation, while others do.

### b) Cross-zonal capacities

The survey answers to Q 20 (would provision of cross-zonal capacity be suspended) indicate that many TSOs are considering suspending the provision of cross-zonal capacities. This process is related to the SDAC and the SIDC, the suspension of which was dealt with in Q 34 (would SDAC be suspended) and Q 37 (would SIDC be suspended). The TSOs of the Core region should prepare common procedures in case any of the Core TSOs would suspend the provision of cross-zonal capacity pursuant to Article 35(2)(a) of the NCER Regulation. The aim of this common view is that if one TSO suspends the provision of cross-zonal capacity, the other TSOs are aware of the impact on their side of the process. This approach is important as suspending the provision of cross-zonal capacities by one TSO could result in (non-)real-time issues for (at least) adjacent or neighbouring TSOs<sup>37</sup>. For example, a TSO relying on import during a given day could see that import reduced to zero when a neighbouring TSO suspends this provision. This scenario implies that not only the real-time is affected but also the hours ahead of real time that are affected by the suspension. That said, a situation could occur in which the bid of (for example) a producer connected to a control area in blackout is matched on SDAC or SID. In such a situation, the other control areas participating in the SDAC or SIDC would face real-time issues. This causes TSOs in blackout state to either actively reduce the cross-zonal capacity to zero or to suspend the provision of cross-zonal capacity. Such action allows the affected parties time to work

out other arrangements (e. g. find a seller that can deliver the energy). On the other hand, the local demand and generation are still allowed to trade and clear against each other using the OTC mechanism. Barring this, if only the SDAC and not intraday trading is suspended, then there may be opportunities to change cross-zonal positions after the closure of SDAC as well. Because of the variety of unclear situations that might occur, as briefly sketched above, the TSOs need to discuss this topic further and reach conclusions.

### c) The balancing platforms

The answers to Q 44 (would participation in (a) balancing platform(s) be suspended) showed that the TSOs are divided on whether to suspend the balancing platform(s). Because participation in a balancing platform does not require source and sink to be located in electrically neighbouring TSOs (which might suspend a market activity), harmonisation does not seem necessary: geographically isolated TSOs participating in a balancing platform could receive input from and send output signals to the platform, even when this platform is not near the isolated TSO.

### d) Frequency thresholds

When describing how the parameters according to Article 36(4) of the NCER Regulation are applicable in Q 14 and Q 15 (parameters in an emergency state), two Member States mentioned frequency thresholds. If the TSO should identify different frequencies at one voltage level in three or more substations of the transmission system ( $\Delta f \geq 50$  mHz for Latvia's TSO and  $\Delta f \geq 100$  mHz for Slovakia's TSO), then market activities may be suspended. The difference in thresholds used by the TSOs of Latvia and Slovakia is quite significant. Although these TSOs do not have the intention, the effect of these differences could be discriminatory: market participants in Latvia are more often and much sooner at risk to suspension than market participants in Slovakia. These differences in thresholds should be harmonised by the time the Baltic area is synchronously coupled to Continental Europe.

36 It is worth noting that Sweden's TSO mentioned that they may need to change this position due to ongoing implementation of methodologies.

37 It must be stated that this suspension could also affect forthcoming hours.



#### **e) Percentage of load disconnected**

When describing how the parameters according to Article 36(4) of the NCER Regulation are applicable in Q 14 and Q 15 (parameters in an emergency state), some TSOs (e. g. the TSOs of Romania, Latvia, Slovakia, France) mentioned that they might suspend market activities when there is at least 50 % load disconnected in their systems. Italy mentioned that they might suspend market activities when a minimum of 4.5 % of the load has been disconnected, combined with an emergency situation (defined pursuant to SO GL regulation). However, this is not a threshold that on its own can allow for suspension of market activities (like the 50 % mentioned above). The TSOs of the synchronous area should further discuss how these thresholds are applied to establish a well-defined idea of the purposes for which they are used and then consider whether their harmonisation would be appropriate and possible.

#### **f) Suspension of activation rules for balancing energy bids**

The TSOs gave diverging answers to Q46 on activation rules for balancing energy bids (on clearing/pricing and settlement of balancing energy bids). When these answers are read in conjunction with the answers to Q24 on the submission of balancing energy bids, it can be concluded that TSOs need to discuss these topics further.

#### **g) Measures related to long-term markets**

The answers to Q 50 on this topic reveal that several TSOs (e. g. the TSOs of Spain, Germany, Hungary and Romania) might consider taking measures related to the long-term market when it comes to nominated physical transmission rights. Several TSOs added that this will only happen in extreme conditions, such as a blackout, or when problems exist for an extended period. On the other hand, various TSOs (e. g. the TSOs of Ireland, Denmark, Bosnia and Herzegovina) stated the reverse. Finally, Belgium's TSO reflected that the allocation of long-term transmission rights should not be affected as it does not affect the system state; this allocation can only be suspended at a later moment in time and after consultation between the Joint Auction Office and the relevant neighbouring TSOs.

#### **h) 'other market activities'**

When answering the questions related to suspending other market activities (Q 34 – Q 53), the TSOs were not always unanimous in their answers. For example, Belgium's TSO mentioned imbalance price publication, whereas Poland's TSO mentioned EU balancing platforms. In general, these differences should not cause difficulties, and harmonisation is not necessary. See also the reflections in sub a) of this paragraph and in paragraph 7.1.

# 8 Assessment of areas worth harmonising

The previous chapters have established that some topics leave room for discussion on whether harmonisation can be achieved, and if so, how. These topics include:

## a) Wide differences in terms of implementation

For example, some TSOs can suspend market activities when in an emergency state (the TSOs of Poland, France), whereas other TSOs can only suspend when the emergency state is combined with other criteria that must be fulfilled (Italy's TSO). Exploring whether all these differences could benefit from harmonisation would be worthwhile.

## b) The provision of cross-zonal capacities in conjunction with the SDAC/SIDC

Non-harmonisation might not be problematic, either for TSOs and for market participants: the local demand and generation are still allowed to trade and clear against each other on the local instance of the SDAC. Thus, non-harmonisation would only impact the cross-zonal positions (because a mature framework including a firmness regime is in place), which could presumably be set to zero MW, which is not a suspension of market activities. However, when suspension is applied to the provision of cross-zonal capacity for an exchange of balancing energy, this action could have an effect on participation in balancing platforms (in which case there is no mature framework, including firmness regimes). Moreover, if only the SDAC is suspended and not intraday trading, then there may be opportunities to change cross-zonal positions after SDAC as well.

Another notion is that the SDAC and SIDC foresee in part decoupling. Nevertheless, suspension of SDAC or SIDC disrupts a principle of cross-border participation in the capacity market: 'Fulfilment of capacity obligation is performed via relevant market: energy (SDAC, SIDC) or balancing'. Moreover, market participants are deprived of access to these relevant markets but have nonetheless paid the price for it. In other words, suspension of market activities – in the particular suspension of the provision of cross-zonal capacity, SDAC, SIDC – is incompatible with cross-border participation in capacity markets. Furthermore, harmonisation of rules concerning the suspension of SDAC will NOT solve this incompatibility. Poland's suggestion was as follows: TSOs that both have in their area units participating in foreign capacity markets and could potentially suspend market activities, should have an obligation to deliver active power to the neighbouring power system where the given capacity market is established (in the form of Emergency

Deliveries/Supportive Power/etc.) in an amount of at least the sum of the adjusted capacity obligations of those units.

One TSO suggested not using suspension of market activities at all, which would also constitute a form of harmonisation: from its point of view, it is simple and robust and could therefore be more beneficial for market parties than harmonising by applying a suspension. Instead, TSOs would use the existing backup procedures alongside the emergency and restoration procedures. However, such an approach contradicts the assessment of several NRAs that such a measure is needed and justified. Drawbacks of forbidding suspension of SDAC/SIDC, when needed, include:

- › Insufficient control of overactive units (especially in the case of restoration), if redispatching or alternative arrangement is not sufficient;
- › Distortions in settlement of SDAC and hedging instruments depending on imbalance, balancing capacity/energy settlement rules.

Either way, the topic of suspending SDAC/SIDC is worth further discussion among TSOs.

## c) Frequency thresholds

As shown in paragraph 7.2.d., the difference in thresholds that the TSOs of Latvia and Slovakia reported is quite significant. The effect of these difference could be discriminatory: market participants in Latvia are more often and much sooner at risk of suspension than market participants in Slovakia. This situation should be harmonised by the time the Baltic area is synchronously coupled to Continental Europe.

#### d) Percentage of load disconnection

As shown in paragraph 7.2.e., Member States reported some differences in percentage. The TSOs of the synchronous area should further discuss how these thresholds are applied to establish a clear idea of the purposes for which they are used and then consider whether their harmonisation would be appropriate and possible.

#### e) Balancing platforms

It became clear that the TSOs are divided on whether to suspend participation in the balancing platform(s). As explained in paragraph 7.2.b., harmonisation does not seem necessary: geographically isolated TSOs participating in a balancing platform could receive input from and send output signals to the platform, even when this platform is not near the isolated TSO. It could also be the case that a TSO suspends its participation in a balancing platform even though balancing energy bids from the control area of this TSO had been activated before this suspension (in the case where TSO A procured balancing capacity in the control area of TSO B, and TSO B suspends its participation in this platform, then TSO A must find alternative resources, probably within its control area). It is advised that the TSOs should discuss whether to suspend participation in a balancing platform in order to be aware of the consequences if a TSO would suspend such participation; this action will also avoid potential misunderstandings.

#### f) Balancing energy bids

Given the diverging answers to Q46 on activation rules for balancing energy bids (on clearing/pricing and settlement of balancing energy bids) and reading these answers in conjunction with the answers to Q24 on submission of balancing energy bids, it is recommended that the TSOs should further discuss this topic in detail to raise awareness among the TSOs of the consequences should a TSO stop aligning and avoid potential misunderstandings.

#### g) Measures related to long-term markets

It became clear from paragraph 7.2.f that TSOs are quite divided on this topic. Not only because several TSOs could potentially suspend this activity, it is advised that the TSOs should discuss this issue further and try to reach to an agreement on the topic.

#### h) The effect of cross-border procurement of balancing capacity

When cross-border procurement of balancing capacity is implemented, the TSOs participating in such an initiative should agree on and implement appropriate measures to mitigate the impact on TSOs that procure these services abroad in case of suspension of participation in balancing platforms.

#### i) Specific responses

The following TSOs expressed explicit considerations about (the need for) harmonisation. These are listed below:

- › **Belgium's TSO:** Market suspension rules should be harmonised over multiple TSOs of a region or subregion so as not to disturb market functioning. Suspension should always be done in coordination with other neighbouring countries.
- › **Great Britain's TSO:** Harmonisation is not possible as TSOs have varying rules, and some do not intend to suspend the market in any circumstance, while other TSOs may suspend only some markets. The rules for suspension would have to be the same, aligned with local regulation for harmonisation to work. Suspension of activities may require compensation, an idea that not all TSOs are open to.
- › **The TSO of the Netherlands:** The suspension of market activities is not the same as not being able to execute certain activities to facilitate the market (e. g. unavailability of tools). Another way of looking at harmonisation is as follows. As suspension rules (triggers, alternative procedures and procedures to stop the suspension) are quite complex, not applying suspension is simpler and more robust and could therefore be more beneficial for market parties than harmonising by applying suspension. Additionally, if market parties have the same rights and obligations regarding market activities, independent of the system state, the market data containing what market possibilities remain available. This approach ensures that all normal processes can start as soon as possible. Therefore, another option to be explored would be harmonising in such a way that suspension of SDAC is not applied anywhere. Instead, TSOs would use existing backup procedures as well as emergency and restoration procedures.
- › **Sweden's TSO:** The rules for suspension of market activities will probably need an update following the implementation of the new methodologies for imbalance price, settlement, platforms etc.; therefore, it is too early to focus on harmonisation.
- › **Poland's TSO:** A new balancing market model is under development in Poland; after its introduction, some answers may require updating.

# 9 Next steps

Based on the analyses in the previous section, ENTSO-E would like to propose the following next steps to be undertaken by the TSOs:

- › Agree on a shared view on what suspension of market activities encompasses. One important issue is that there is no uniform distinction between fall-back procedures, according to Article 28 of the EB Regulation, that do not constitute suspension of market activities. Furthermore, it is not clear whether some action could be simultaneously fall-back, according to Article 28 of the EB Regulation, and suspension of market activity, according to Article 35 of the NCER Regulation. As the deadline for delivery of Terms and Conditions for Balancing was short – only these issues involving classification were dealt with, together with the respective NRAs (as they have legal consequences) and not with other TSOs (as operational issues are not affected). ENTSO-E proposes that this next step should be carried out together with the national regulatory authorities as several TSO proposals reflecting different approaches to the suspension of market activities have been approved by the respective national regulatory authorities. This approach also implies that the national regulatory authorities do not have a shared view on what a suspension of market activities encompasses<sup>38</sup>; hence, they need to participate in the discussion.
- › Considering the benefit of common terminology, present an explanation showing how a suspension of market activities could positively contribute to each of the four circumstances where a market suspension is allowed in accordance with Article 35(1) of the NCER Regulation:
  1. the TSO's transmission system is in the blackout state; or
  2. the TSO has exhausted all options provided by the market, and the continuation of market activities under the emergency state would deteriorate one or more of the conditions referred to in Article 18(3) of Regulation (EU) 2017/1485; or
  3. the continuation of market activities would significantly decrease the effectiveness of the restoration process to the normal or alert state; or
  4. tools and means of communication necessary for the TSOs to facilitate market activities are not available.
- › Assess the impact of:
  1. the implementation of any suspension on the relevant methodologies (mainly: CT & RD, LT, DA and ID CCM, CSA, Terms and Conditions for balancing);
  2. a non-harmonised approach to suspending market activities, taking into account that some methodologies are subject to a stepwise harmonisation (e.g. terms and conditions for balancing), while some other methodologies do not require harmonising;
  3. the interaction and interdependencies between fall-backs and suspension.
- › Once these topics have been clarified and all proposals have received the approval of the competent regulatory authority, and on the basis of the results of the assessment foreseen in the second as well as the third bullet of Chapter 9, the TSOs (and NRAs with the stakeholders) can work on the identified areas for harmonisation as listed in Chapter 8 (this process should start after the assessment and after approval of all proposals). It is also important to take into consideration ACER's response before proceeding with new steps.
- › It is proposed that the Core CCR TSOs should collaborate in preparing regional procedures in case of suspension of the provision of cross-zonal capacities. This specific and straightforward topic must be addressed in any case. The TSOs can begin this process immediately.

<sup>38</sup> To give an example of what could be explored: What exactly is the nature of the relationship between suspension of market activities and fall-back procedures pursuant to Article 28 of the EB GL Regulation?

# 10 Stakeholders' engagement

As part of the stakeholders' involvement, ENTSO-E has been reporting the progress of this report to the Market Stakeholder Committees throughout 2019 and 2020. Additionally, ENTSO-E has organised a dedicated public webinar open to all interested stakeholders, which was organised on 25 March 2020<sup>39</sup>. The objective of the webinar was to inform stakeholders of the existing TSOs' understanding of the suspension and restoration of market activities, stemming from the legal provisions of the NCER Regulation. Equally, the stakeholders learnt about the process proposed by the TSOs in assessing the level of harmonisation of the rules for suspension and restoration of identified market activities and the role of the survey in that process. The content of that survey was presented during this webinar with the stakeholders, and they were offered the opportunity to provide related feedback.

During the MESC on 23 September 2020, Europex addressed the following recommendations:

- › Understand the triggers for suspension and why these would help, especially for SDAC and SIDC.
- › Provide clarity on:
  - the exact nature of the suspensions;
  - arrangements for economic responsibility following market suspension triggered by TSO(s); and
  - the potential impact on forward markets and balancing (e. g. ISPs) and related arrangements to deal with this impact

ENTSO-E recognises the need for a comprehensive understanding of how suspension could help the restoration process or could stop the deterioration of system conditions; moreover, this topic is addressed as the first point in the next steps (see Chapter 9). Although ENTSO-E understands the request for clarity on settlement issues, this topic is beyond the scope of this report as suspension settlement is nationally handled.

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<sup>39</sup> Please find the link to the webinar and material presented [here](#).

# 11 Annex I – Overview of the questions from the survey

ENTSO-E organised a survey among the TSOs to provide a basis for the drafting of this report assessing the level of harmonisation of the rules for suspension and restoration of market activities. This Annex provides an overview of the questions from this survey. The survey is organised in eight sections, marked bold.

## 1. Introductory questions

- Q 4:** Is your submission pursuant to Article 36(1) NC E&R already approved by the respective authority?
- Q 5:** In case situation listed in Article 35(1) of NC E&R, will your TSO use the rights given by Articles 35(2) and 35(3) of NC E&R?
- Q 6:** If the answer to Question 5 was NO. Do you intend to use local legislation to achieve similar results as suspension of market activities (including direct control – setting up set point of Significant Grid User (SGU) – Article 35(3) of NC E&R?
- Q 7:** If the answer to Question 5 was YES, did you have similar rights before NCER Regulation entered into force (especially direct control – setting up set-point of Significant Grid User (SGU) – Article 35(3) of the NC E&R)?
- Q 8:** If the answer to Question 6 or Question 7 was YES – how many times this possibility was invoked?
- Q 9:** For each neighbouring TSO(s) which does/do not intend to use suspension of market activities but intend to employ local legislation (i. e. the answer to Question 5 was NO, and the answer to Question 6 was YES) – Is it a significant operational problem for the operation of your control area? Please enunciate the neighbour TSO/neighbour TSOs below. Clarification: If your TSO has not such a neighbour or neighbours, please respond 'No such neighbour(s)'
- Q 10:** For each neighbouring TSO(s) which does/do not intend to use suspension of market activities but intend to employ local legislation (i. e. the answer to Question 5 was NO and the answer to Question 6 was YES) – Is it a significant non-operational problem (e. g. settlement) for the operation of your control area? Please enunciate the neighbour TSO/neighbour TSOs below. Clarification: If your TSO has not such a neighbour or neighbours, please respond 'No such neighbour(s)'

## 2. Suspension of market activities in case of a blackout, pursuant to Article 35(1)(a) of NCER Regulation

- Q 11:** Does/Do your TSO(s) consider suspension of market activities in case of a blackout?
- Q 12:** In case of blackout - Did your TSO(s) define additional criteria beyond SO GL (Articles 18(4)(a) and 18(4)(b) of SO GL)? If your TSO have defined additional criteria, please provide the description

## 3. Suspension of market activities in case of the emergency state, pursuant to Article 35(1)(b) of NCER Regulation

- Q 13:** Does/Do your TSO(s) consider suspension of market activities in case of emergency state?
- Q 14:** Did your TSO(s) define the parameters according to article 36(4) of NCER Regulation applicable in an emergency state?
- Q 15:** If your answer to Question 14 was YES, please provide a description

#### **4. Suspension of market activities in the restoration process, pursuant to Article 35(1)(c) of NCER Regulation**

**Q16:** Does/Do your TSO(s) intend to suspend market activities due to the restoration process?

**Q17:** If your answer to Question 16 was YES, please provide the defined parameters according to article 36(4) of NC E&R

#### **5. Suspension of market activities in case of unavailability of tool/communication means, pursuant to Article 35(1)(d) of NCER Regulation**

**Q18:** Does/Do your TSO(s) intend to suspend market activities due to unavailability of tool/communication means?

**Q19:** If your answer to Question 18 was YES, please provide the defined parameters according to article 36(4) of NC E&R

#### **6. Which activities listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend?**

**Q20:** Provision of cross-zonal capacity

**Q21:** Lead time for the provision of cross-zonal capacity (min)

**Q22:** Submission of balancing capacity bids

**Q23:** Lead time for the provision of balancing capacity bids (min)

**Q24:** Submission of balancing energy bids

**Q25:** Lead time for the provision of balancing energy bids (min)

**Q26:** External commercial trade schedules

**Q27:** Lead time for external commercial trade schedules (min)

**Q28:** Internal commercial trade schedules

**Q29:** Lead time for the internal commercial trade schedules (min)

**Q30:** Generation Schedules

**Q31:** Lead time for the generation schedules (min)

**Q32:** Consumption schedules

**Q33:** Lead time for the consumption schedules (min)

## 7. Other activities, pursuant to Article 35(2)(f) of NCER Regulation

- Q34:** Single day ahead coupling
- Q35:** Lead time for single day-ahead coupling (min)
- Q36:** Does the suspension of SDAC has a direct effect on already matched bids/allocated capacity or only for not yet matched bids/ unallocated capacity?
- Q37:** Single intraday coupling
- Q38:** Lead time for the single intraday coupling (min)
- Q39:** Does the suspension of SIDC has a direct effect on already matched bids/allocated capacity or only for not yet matched bids/ unallocated capacity?
- Q40:** What are the possibilities to have an indirect effect on the already matched after bids/allocated capacity?  
Explanation: Where the regular market rules are for example curtailment of allocation capacity where the out-of regular market rules are for example suspension of all standard procedures
- Q41:** Please elaborate below when selecting regular market rules and/or out-of regular market rules
- Q42:** Submission of Integrated scheduling process bids
- Q43:** Lead time for the integrated scheduling process bids (min)
- Q44:** Participation in the balancing platforms (i. e. IN, aFRR, mFRR, RR)
- Q45:** Lead time for the balancing platforms (IN, aFRR, mFRR, RR) (min)
- Q46:** Suspension of activation rules for balancing energy bids
- Q47:** Lead time for the activation rules for balancing energy bids (min)
- Q48:** Application of all standard procedures
- Q49:** Lead time for all standard procedures (min)
- Q50:** Does your TSO consider any measures concerning long-term market?
- Q51:** Others, please describe below
- Q52:** Lead time for Others (min)
- Q53:** How is your TSO going to choose which activities to suspend?

**Q54:** Can your rules for suspension and restoration of market activities for your Member State be applied independently from grid code/national TCMs (Term, Conditions and Methodologies)?

**Q55:** Please, describe the reasoning of your response to the previous question (Question 54)

**Q56:** Do you see any additional point requiring harmonisation/clarification? Any other comments, remarks?

## 8. Restoration of market activities, pursuant to Article 35(2)(f) of NCER Regulation

**Q57:** What type of coordination is in place/foreseen at your TSO with the concern NEMO(s) for the restoration of market activities, in accordance with Articles 37(3) and 37(5) of NCER Regulation?

**Q58:** What type of coordination is in place/foreseen at your TSO with your regional capacity calculator (RCC) for the restoration of market activities, in accordance with Article 37(4)(b) of NCER Regulation?

**Q59:** What is the lead time to restore, so market participants are duly informed in advance, in accordance with Article 37(1)(b) of NCER Regulation (min)

# 12 Annex II – Geographic overview (where applicable) and summary of the answers per question

This summary starts with question 5(Q5): Q1 – Q3 relate to TSO-related data; Q4 is treated in Chapter 5 regarding the approval status of the proposals.

**Q5: In case situations listed in Article 35(1) of NCER regulation, will your TSO use the rights given by Articles 35(2) and 35(3) of NCER regulation?**

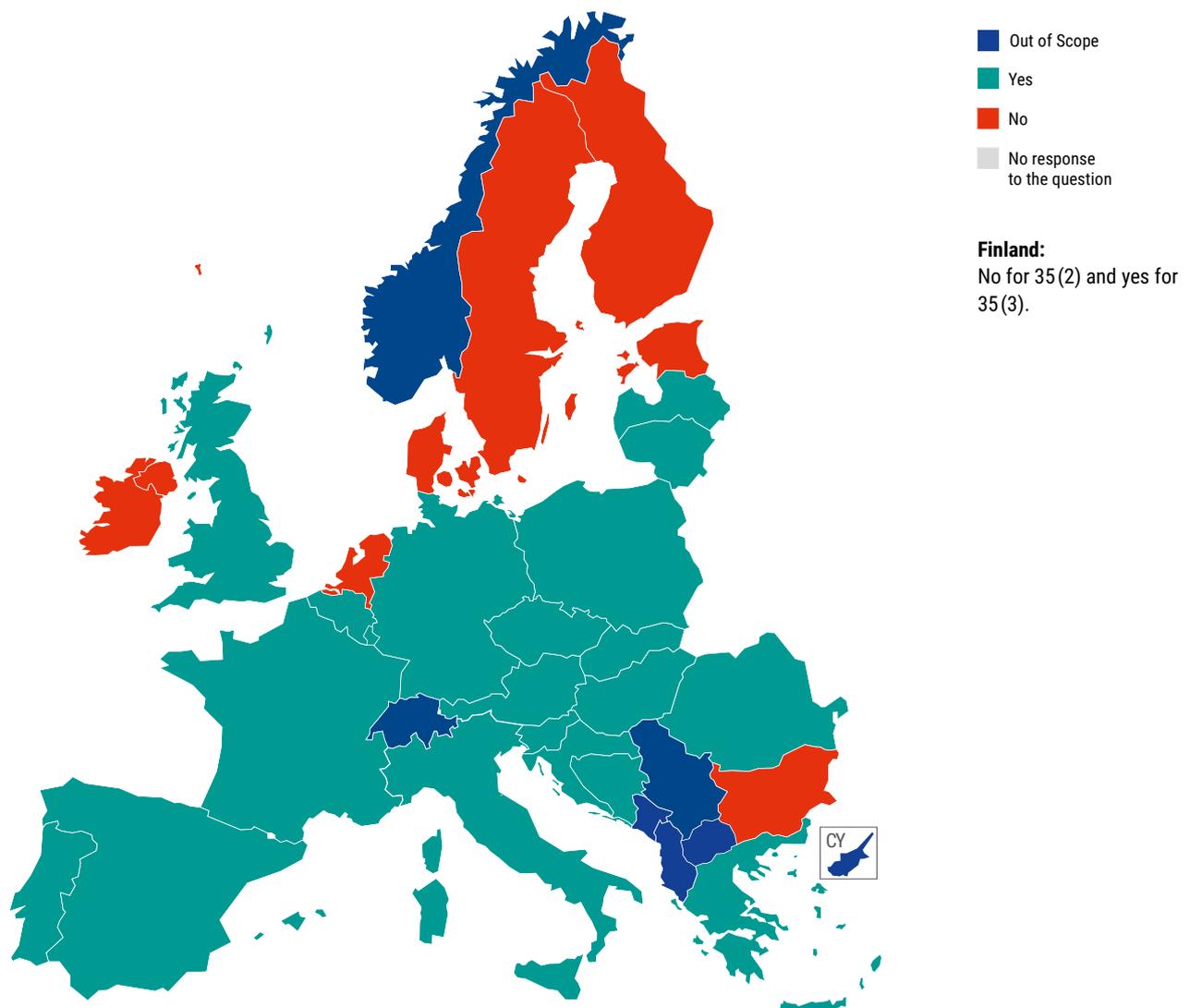


Figure 3: Question 5

*This question is related to detailed questions Q 11 (suspension in a blackout), Q 13 (suspension in an emergency), Q 16 (suspension because of the restoration process) and Q 18 (suspension due to unavailability of tools and communications means) and are summarised together.*

The TSOs of Ireland, Sweden and Finland will not suspend market activities pursuant to Article 35(2) of the NCER Regulation, and each SGU shall not operate in accordance with Article 35(3) of the NCER Regulation, as a result of market suspension, at an active power set-point established by the TSO. Finland emphasized that they will use direct control over SGUs in the case of an emergency or blackout. They are harmonised in this respect.

Among the Baltic countries, only Estonia's TSO will not suspend, pursuant to Article 35(2) of the NCER Regulation. Nevertheless, it is not likely that the Baltic TSOs will anticipate problems arising from this non-harmonisation in the Baltic region, as the different solutions must still be implemented in line with common Baltic rules. Additionally, common TSO-TSO principles should be agreed in compliance with the national solutions.

Continental Europe has three TSOs not suspending their market activities pursuant to Article 35(2) of the NCER Regulation. These are the TSOs of Denmark, the Netherlands and Bulgaria; the others will use the rights foreseen by the aforesaid Article of the NCER Regulation if needed. The other mentioned questions in the italic section above reveal some nuances: the survey showed that Italy's TSO would suspend market activities in the case of unavailability of tools/means of communication when the latter is simultaneous with an emergency state and could maintain this suspension in the restoration process after an emergency state/blackout situation; in all other situations, all four TSOs will (including the TSOs of France, Austria and Slovenia, being adjacent to Italy) suspend market activities.

The TSOs of Ireland and Great Britain: the survey showed that Ireland's TSO will not suspend market activities at all. Great Britain's TSO can only suspend in either a total system shut down or partial system shut down (these conditions are defined in 2.1.7 of the NGESO System Restoration Plan, which is subject to approval). If a neighbouring TSO took an action, such a contingency would appear for the other TSO as a change of the flow under either normal or emergency procedures.

For the South-East region, the survey indicated that only Bulgaria's TSO will not suspend market activities during the restoration process; in all other situations, the TSOs of the 3 Member States (Bulgaria, Romania and Greece) will (potentially) suspend market activities. This region does not anticipate problems proceeding from this discrepancy.



**Q6: If the answer to Question 5 was NO. Do you intend to use local legislation to achieve similar results as suspension of market activities (including direct control – setting up set point of Significant Grid User (SGU) – Article 35(3) of NCER regulation?)**

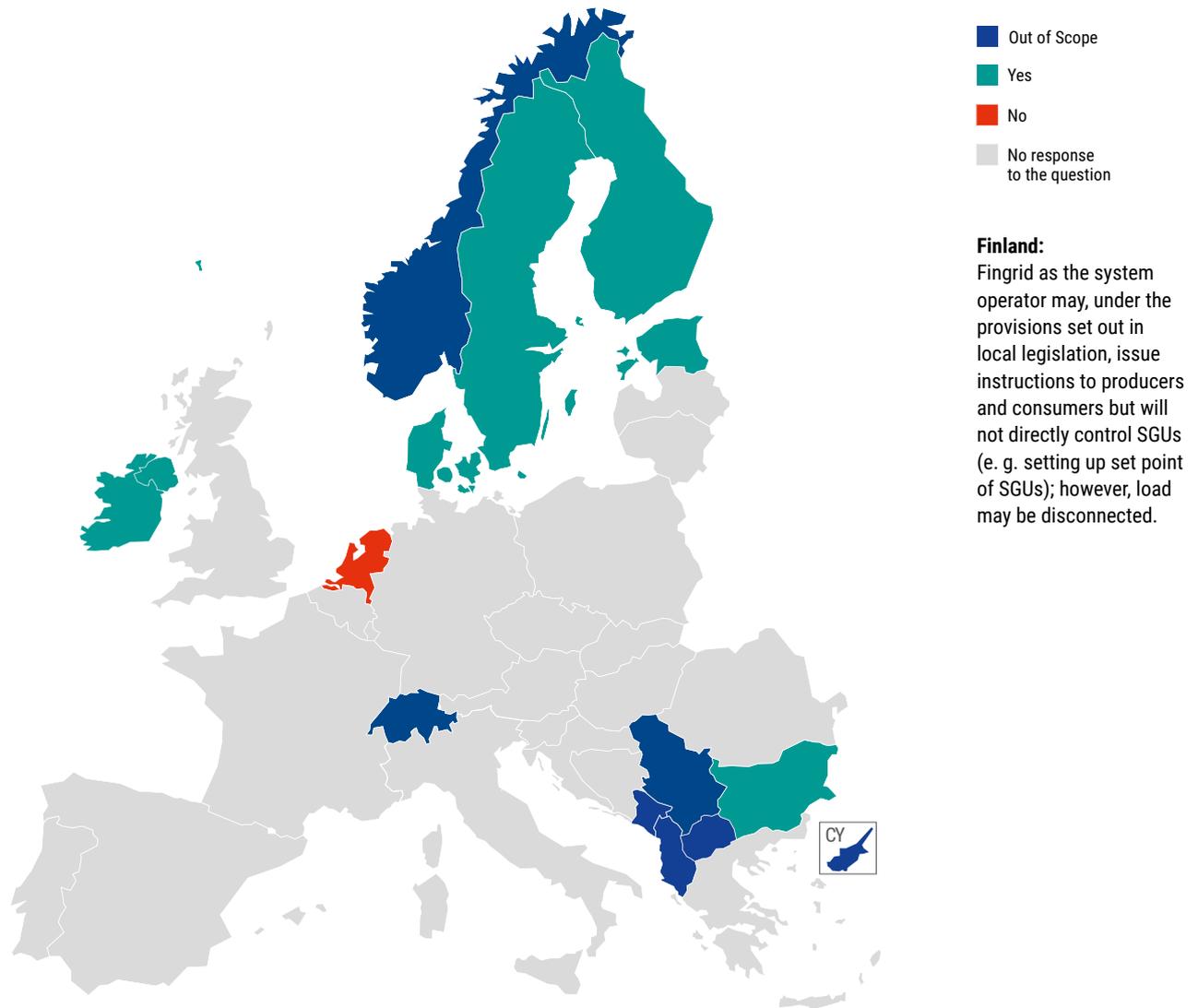


Figure 4: Question 6

*Note: suspending market activities indeed results in a central dispatch situation. However, this does **not** mean that if a TSO does not suspend market activities that this TSO cannot perform central dispatch in an emergency or blackout situation.*

If a TSO does not suspend market activities, it would still use national legislation to obtain a similar result, i. e. direct control over SGUs. All but the TSO of the Netherlands answered in this vein. The situation with the TSO of the Netherlands is such that although it does not use the instrument of suspending market activities, the TSO may use dispatch instructions to SGUs. In the view of the TSO of the Netherlands, the dispatch instructions do not contradict operational market activities.

**Q7: If the answer to Question 5 was YES, did you have similar rights before NCER Regulation Entered Into Force (especially direct control – setting up set-point of Significant Grid User (SGU) – Article 35(3) of the NCER Regulation)?**

Q5

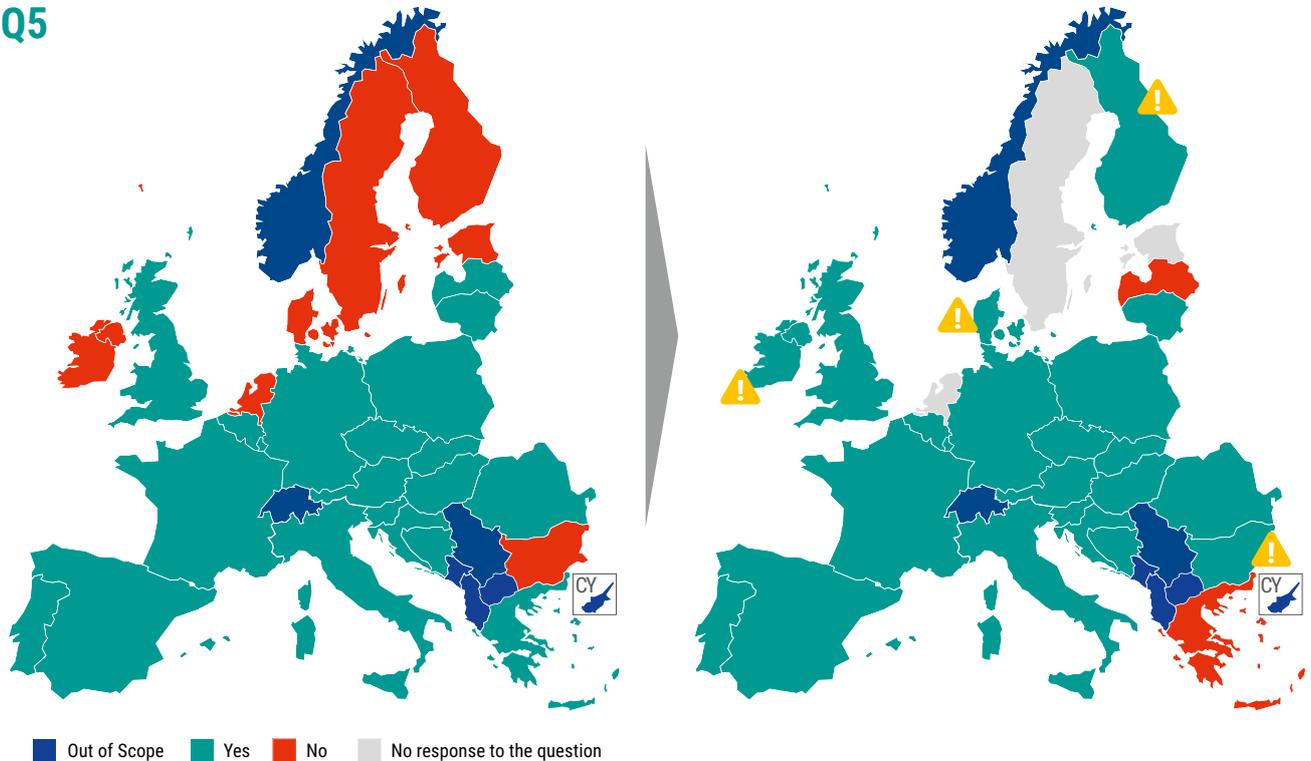


Figure 5: Question 7

The TSOs of Greece and Latvia indicated that they have no similar right (for direct control) before entry into force of the NCER Regulation<sup>40</sup>.

It may be a bit surprising to see the TSOs of Ireland, Denmark, Finland and Bulgaria answering this question because their answer to Q5 was NO. Their answer must be understood as indicating that before entry into force of the NCER Regulation, they had the right to enforce direct control.

<sup>40</sup> This right was not explicitly laid down in Greek law before the entry into force of the NCER Regulation.

**Q8: If the answer to Question 6 or Question 7 was YES – how many times this possibility was invoked?**

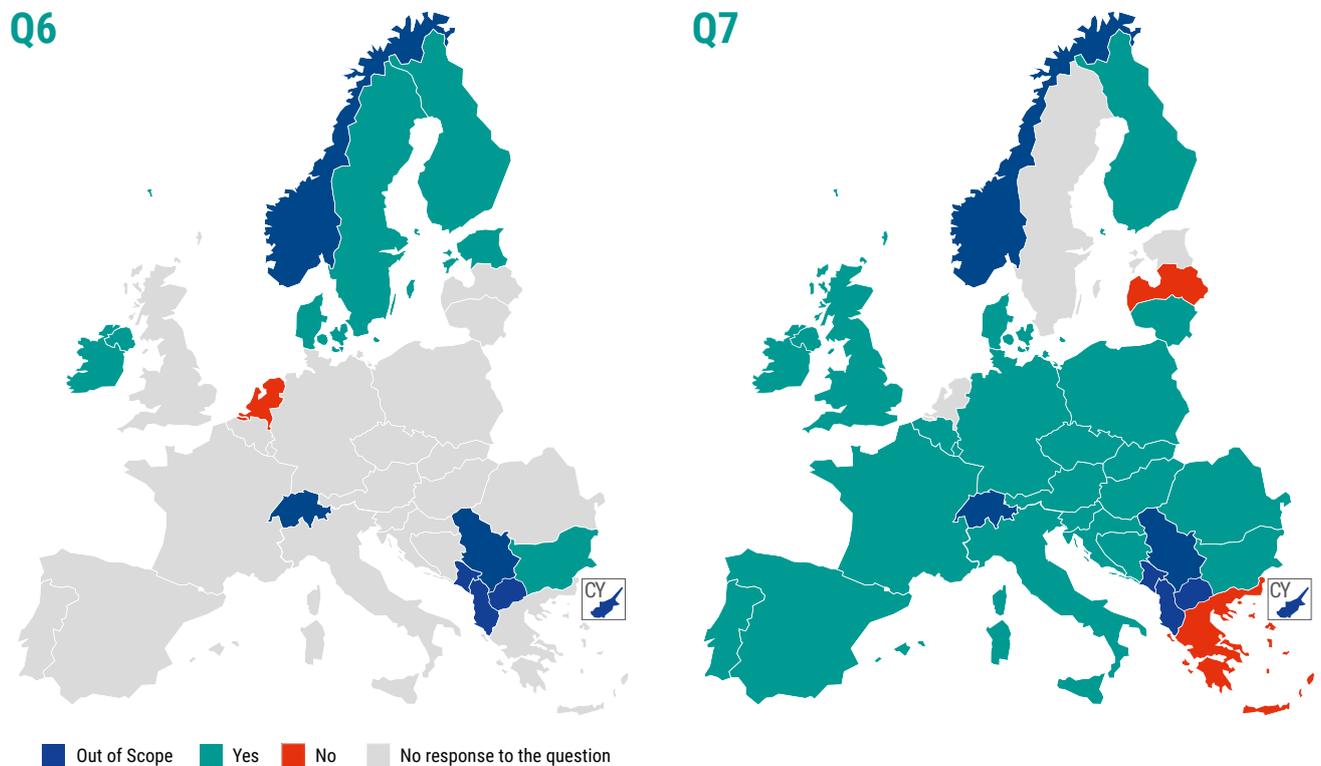


Figure 6: Question 8

Croatia's TSO indicated that it invoked the possibility to set up the set-point of SGUs several times, but none of the market activities was suspended at the same time. Later, clarification showed that this action should be classified as redispatch.

Hungary's TSO indicated that they had a few cases where they suspended the provision of cross-zonal capacity for capacity allocation (Article 35(2)(a)) and where they suspended the provision of modifications of the position of balance responsible parties (Article 35(2)(d)), both caused by IT problems.

Denmark's TSO indicated that they had used the possibility of direct control once in 2005.

For all other responders, the possibility was not invoked in (at least) the past 10 years.

**Q9: For each neighbouring TSO(s) which does (do) not intend to use suspension of market activities but intend to employ local legislation (i.e. the answer to question 5 was NO, and the answer to question 6 was YES): is it a significant operational problem for the operation of your control area?**

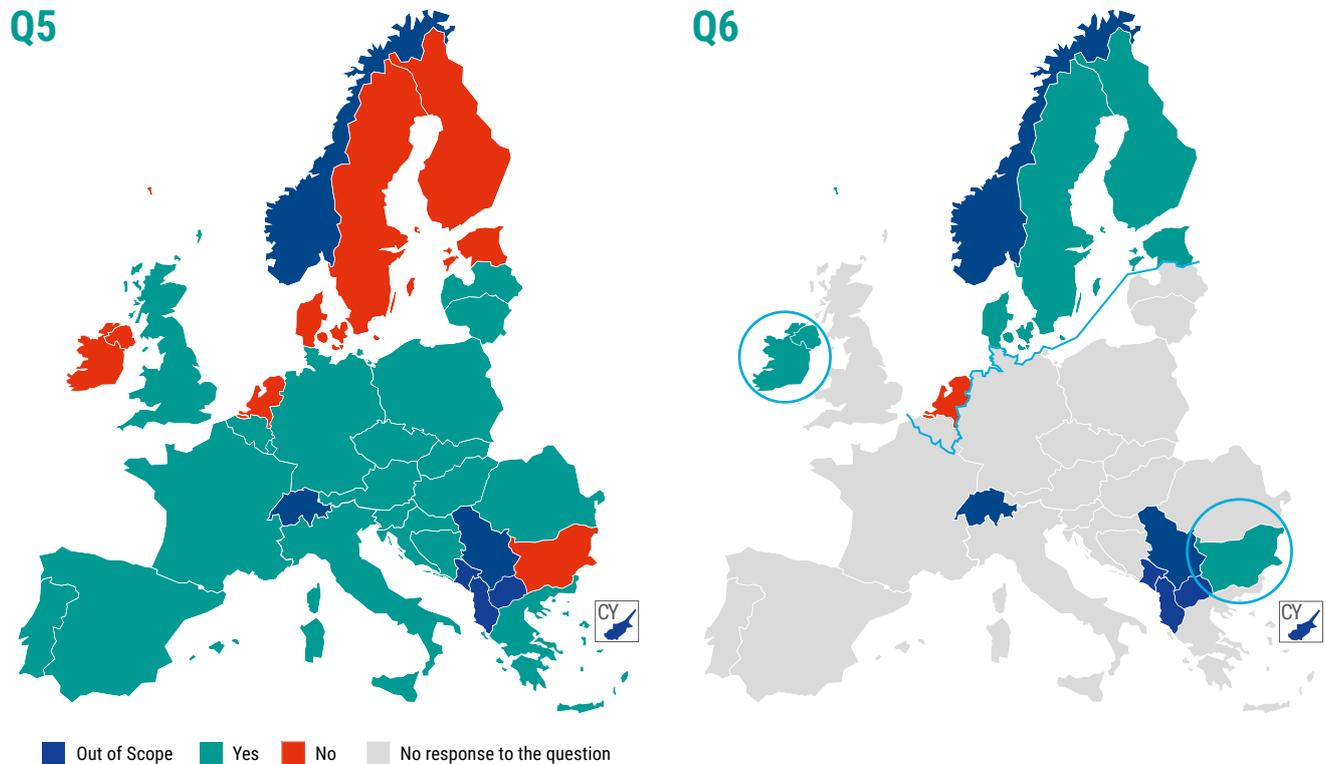


Figure 7: Question 9

Based on the survey results for Q5 and Q6, this question relates to the borders between Ireland-UK, Netherlands-Belgium, Netherlands-Germany, Germany-Denmark (DK 2), Poland-Germany/Sweden and Estonia-Latvia.

The only situation where an operational issue might appear is in the situation of a TSO relying on import during the moment adjacent TSOs want to suspend relevant cross-border market activities. This topic should be addressed in future discussions on top-down regeneration of the grid.

**Q10: For each neighbouring TSO(s) which does (do) not intend to use suspension of market activities but intend to employ local legislation (i.e. the answer to question 5 was NO, and the answer to question 6 was YES): is it a significant non-operational problem (e.g. settlement) for the operation of your control area?**

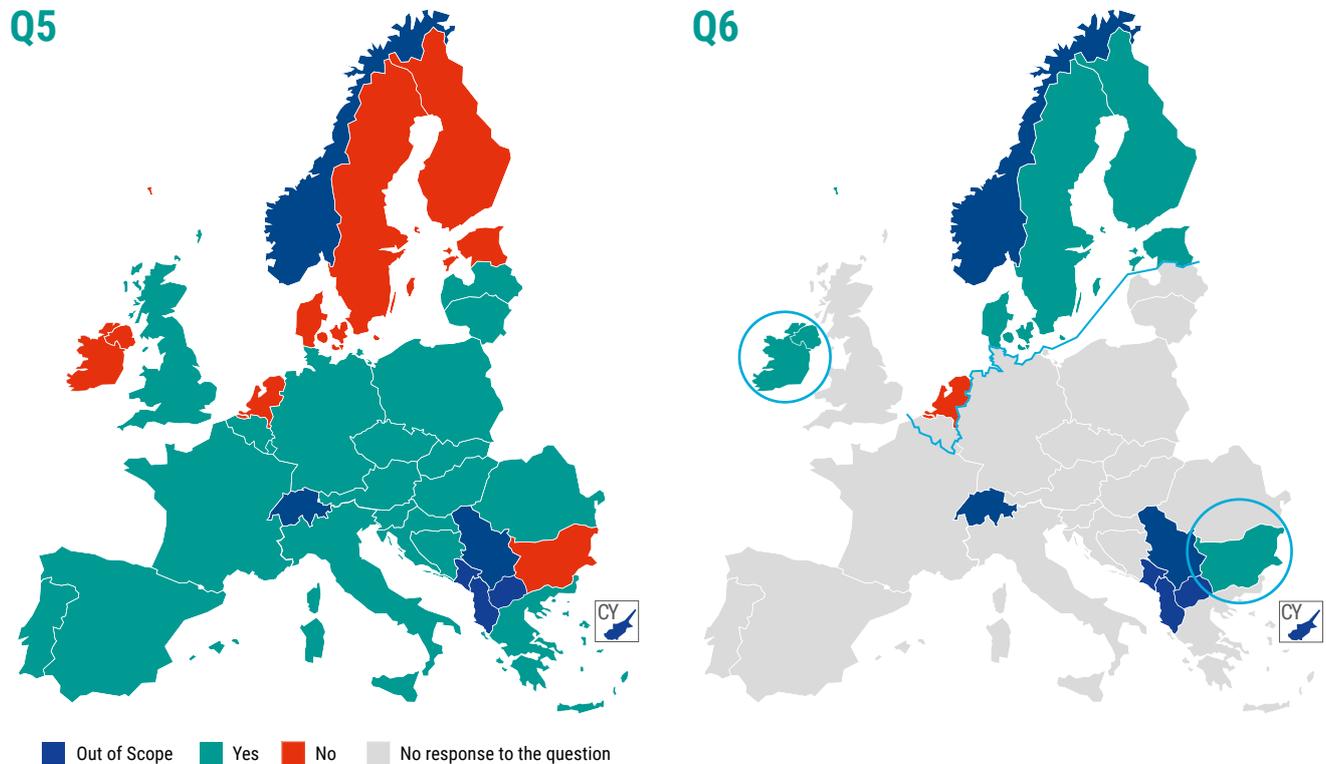


Figure 8: Question 10

Based on the survey results for Q 5 and Q 6, this question relates to the borders between Ireland-UK, Netherlands-Belgium, Netherlands-Germany, Germany-Denmark (DK 2), Poland-Sweden, Germany-Sweden and Estonia-Latvia.

Settlement issues might occur given the circumstance that automatic settlement processes probably cannot cope with extraordinary situations like emergency or blackout situations. An area that could also give rise to misunderstandings is the remuneration for long-term transmission rights in relation to force majeure.

## Q11: Does (Do) your TSO(s) consider suspension of market activities in case of a blackout?

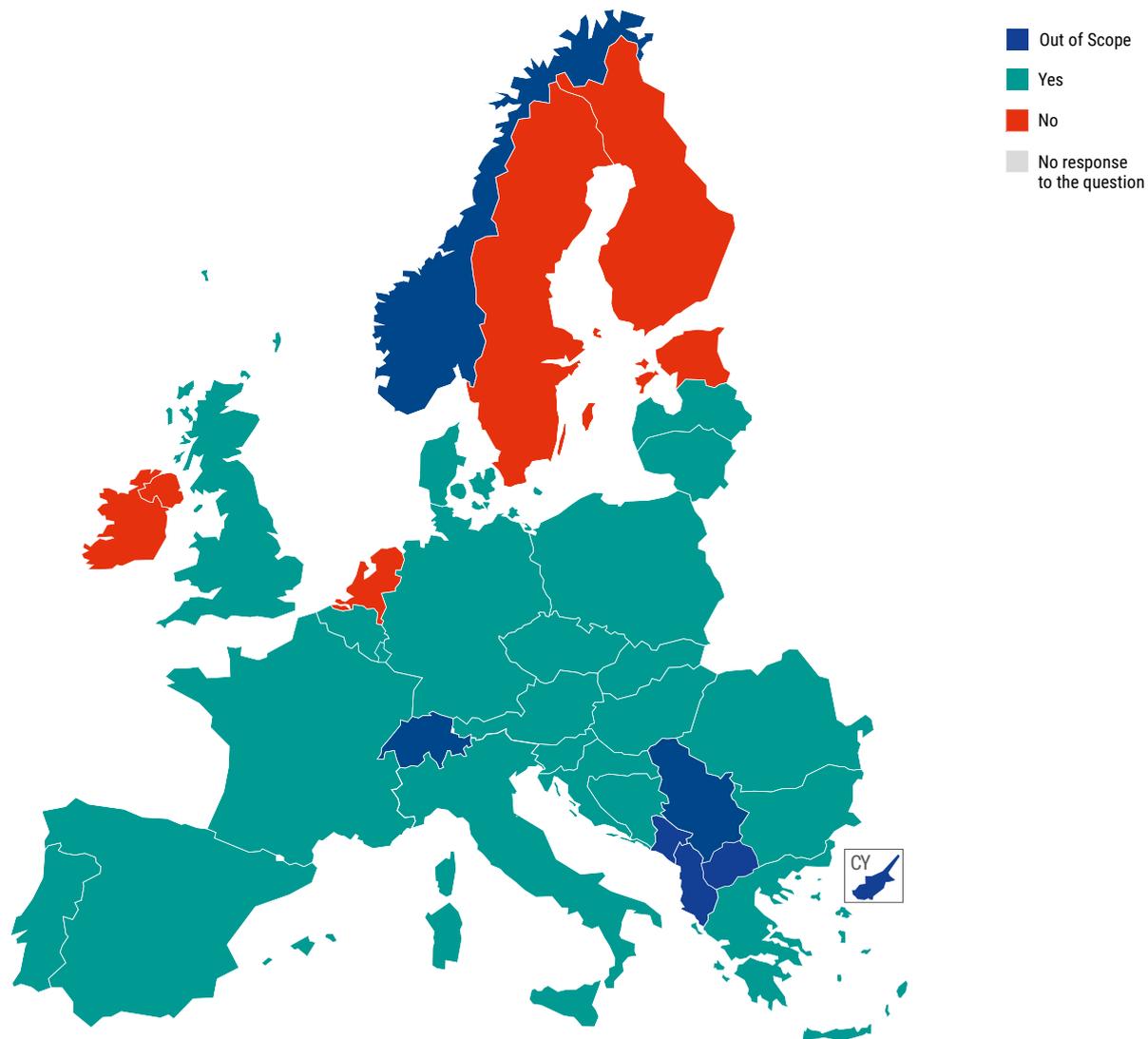


Figure 9: Question 11

See Q5.

## Q12: In case of blackout – Did your TSO define additional criteria beyond SOGL regulation (Article 18(4)(a) and 18(4)(b))?

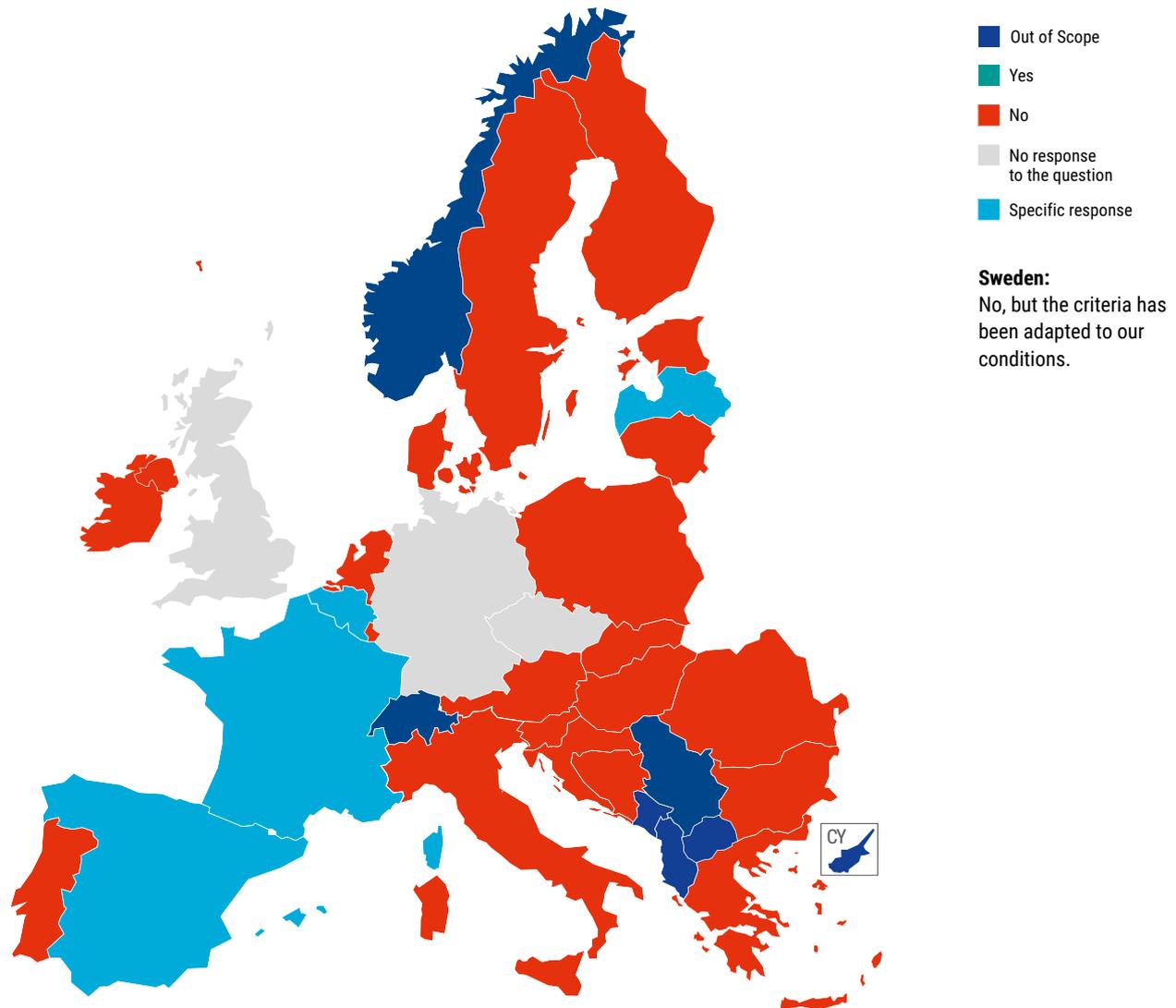


Figure 10: Question 12

Articles 18(4)(a) and (b) of the SO GL regulation define the blackout state; respectively, the loss of more than 50 % of demand and total absence of voltage for at least 3 minutes.

Most Member States do not go beyond the SO GL regulation criteria. In the Baltic area, Latvia mentioned that it is possible to suspend market activities if at least one of the following cases occurs:

1. loss in demand of more than 50 %
2. total absence of voltage for at least 3 minutes
3. volume of electricity generation is 75 % lower than planned in the frequency control zone of Latvia's TSO, and the frequency varies between 49.0 and 48.0 Hz

4. the measured frequency differs ( $\Delta f \geq 50$  mHz) in at least three substations with the same voltage level
5. basic and backup means of communication for market processes are not available for more than 30 minutes, which matches one of the criteria defining the emergency state<sup>41</sup>.

In Continental Europe, most countries did not define additional criteria (no responses from the TSOs of Germany and Bosnia and Herzegovina). The TSOs of Belgium, Spain and France have additional criteria. Specifically, the TSOs of Spain and France have added a criterion that any situation that would make it impossible to maintain the Power-Consumption balance gives France's TSO the right to suspend market activities, while Belgium's TSO has included the criterion that

<sup>41</sup> SO GL regulation Article 18(3)(d).

market processes shall be suspended when a minimum 50 % of the BRPs or BSPs are affected. This latter case relates to market processes in terms of 'a balanced position at the end of the day-ahead timeframe' and 'the provision of schedules in SO GL regulation Articles 111(1) and 111(2)', BSPs only for the latter, BRPs for both. Generally, Belgium's TSO suspends Intraday market coupling and publication of imbalance prices on its website but would leave the day-ahead market

coupling unaffected unless restoration cannot be reasonably achieved for the next day. The other situations where the day-ahead coupling can be suspended are the absence of properly functioning tools and means of communication. Belgium's TSO would also suspend the provision of intraday cross-zonal capacity in all situations (NCER Regulation Article 36(4)(a)-(e)).

**Q13: Does (Do) your TSO(s) consider suspension of market activities in case of emergency state?**

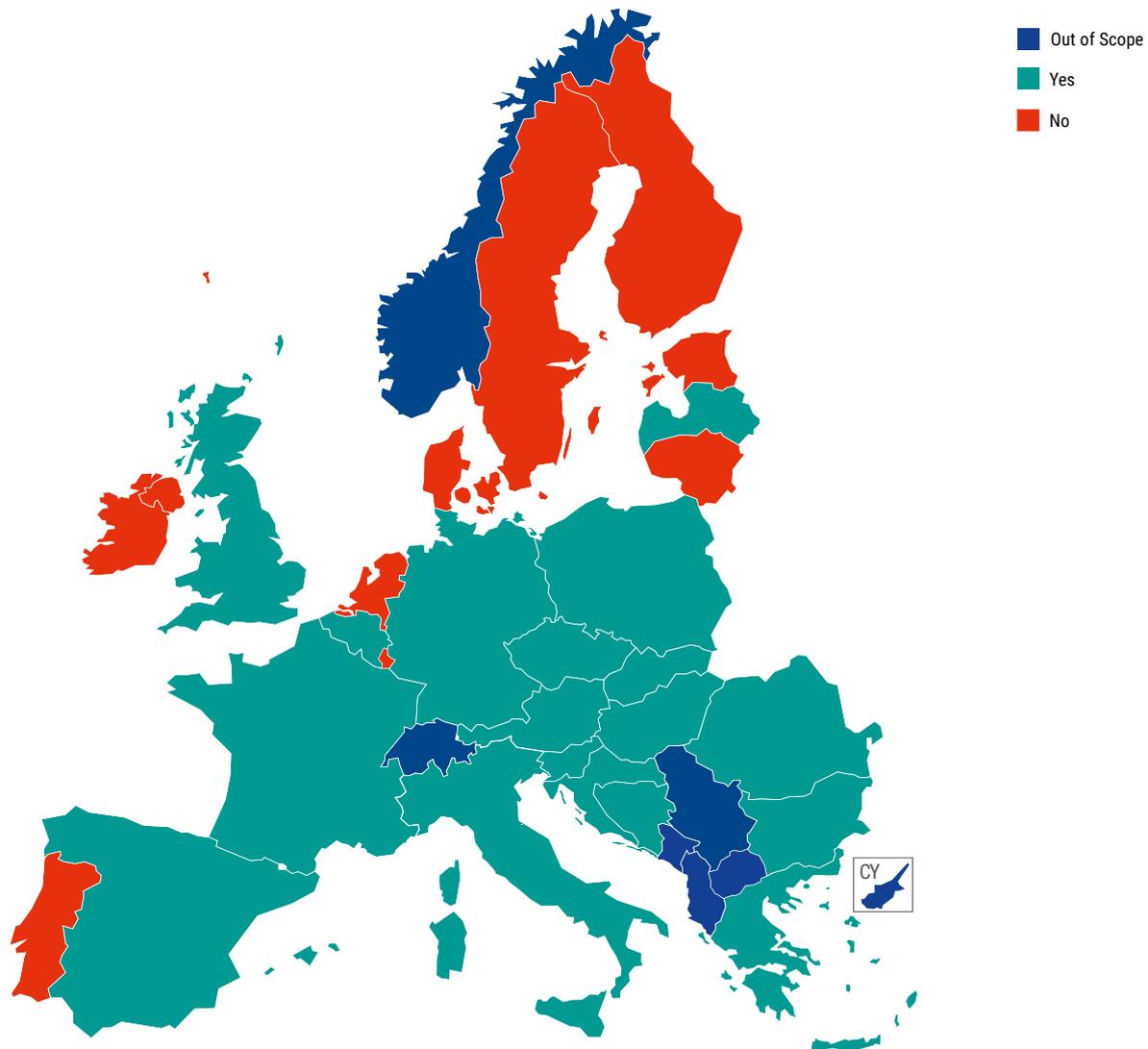


Figure 11: Question 13

See Q5.

## Q14: Did your TSO(s) define the parameters according to article 36(4) of NCER Regulation applicable in an emergency state?

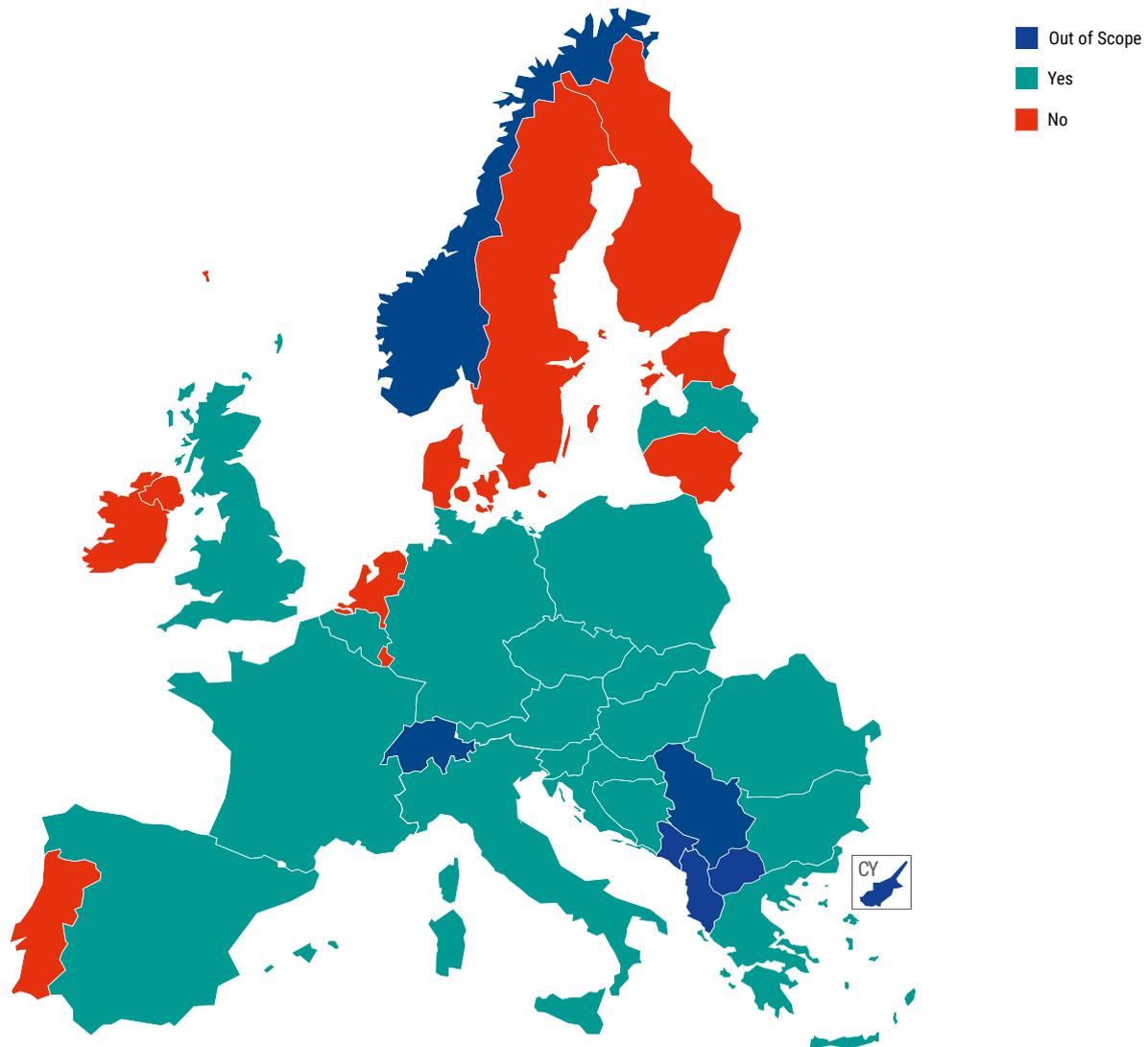


Figure 12: Question 14

*This question is related to question Q15; see also Q5.*

Most of the TSOs answered this question positively; only the TSOs of Ireland, Sweden, Finland, Estonia, Lithuania, Denmark, Luxembourg, the Netherlands, and Portugal answered negatively.

## Q15: If your answer to Question 14 was YES, please provide a description.

The TSOs that responded positively have arranged their suspension parameters in line with relevant sections of Article 36 of the NCER Regulation and Article 18 of the SO GL regulation (definitions of the system states). A few TSOs provided additional factors not explicitly addressed in legislation, including:

1. market activities that could be suspended if regulatory measures by competent authorities require this (Bulgaria);
2. any situation that would make it impossible to maintain the P = C balance (France);
3. a Member State identified different frequency at one voltage level in three or more substations of the transmission system: ( $\Delta f \geq 50$  mHz: Latvia.  $\Delta f \geq 100$  mHz: Slovakia);
4. the amount of disconnected generation in the incident is greater than the available reserve, preventing the restoration of the disconnected load (Spain);
5. the volume of electricity generation is 75 % lower than planned, and the frequency is in the range of 48.0 – 49.0 Hz (Latvia).

## Q16: Does (Do) your TSO(s) intend to suspend market activities due to the restoration process?

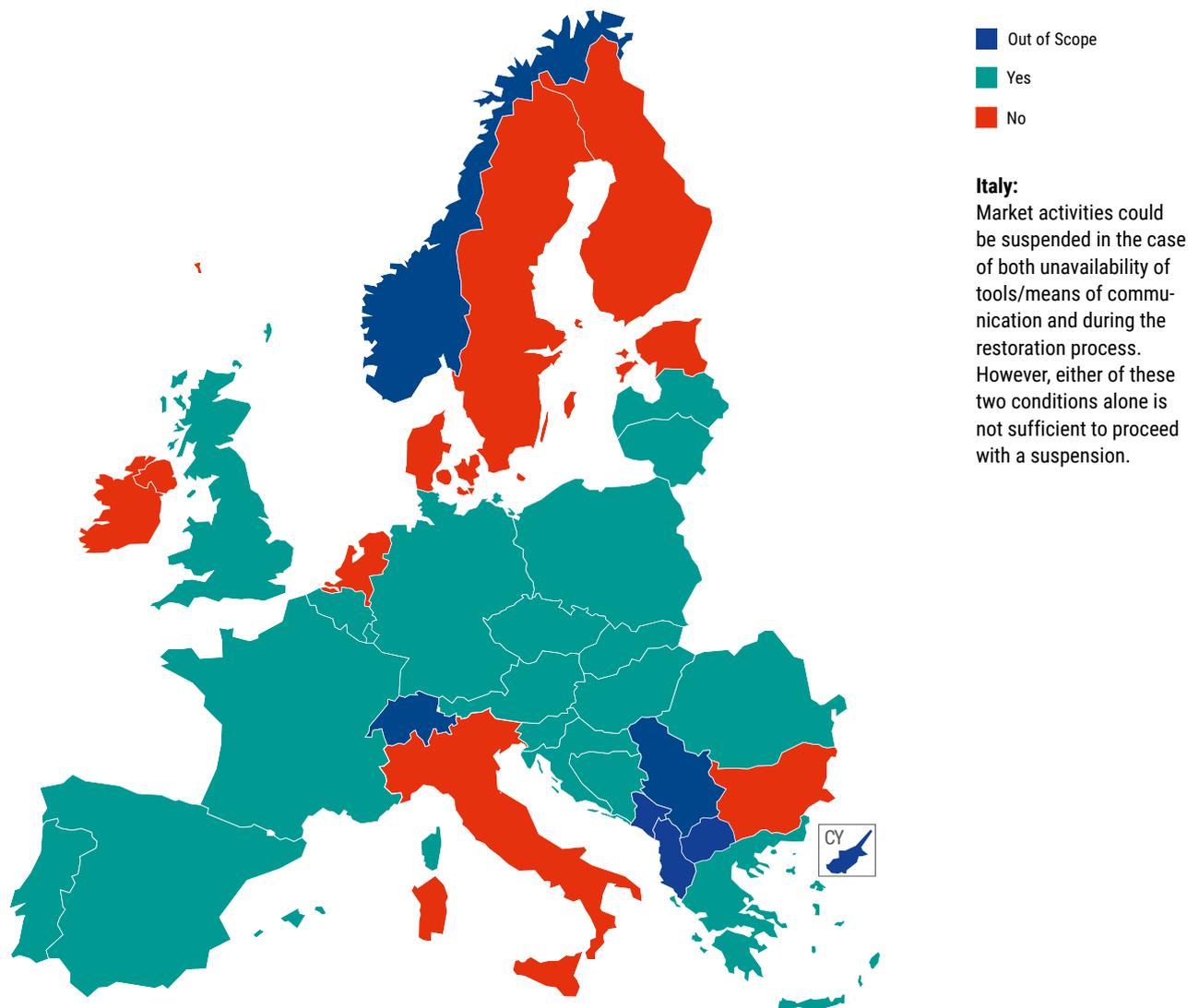


Figure 13: Question 16

See Q5.

**Q17: If your answer to Question 16 was YES, please provide the defined parameters according to Article 36(4) of the NCER Regulation.**

*The defined parameters show the same tendency as observed in Q 15.*

**Q18: Does (Do) your TSO(s) intend to suspend market activities due to unavailability of the tool/communication means?**

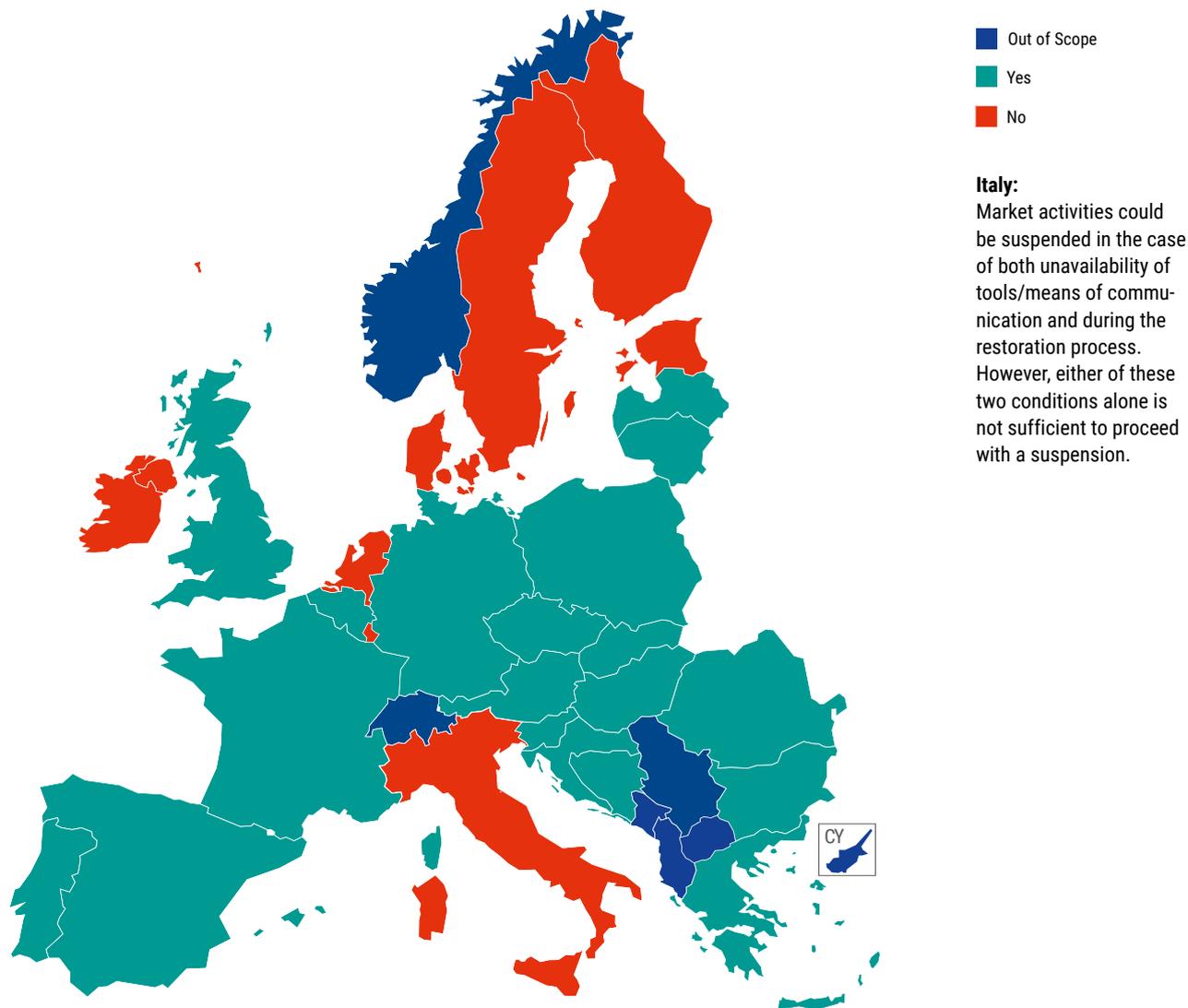


Figure 14: Question 18

See Q 5.

**Q19: If your answer to question 18 was YES, please provide the defined parameters according to Article 36(4) of the NCER Regulation.**

*The defined parameters show the same tendency as observed at Q 15.*

## Q20: Which activity listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend? Provision of cross-zonal capacity

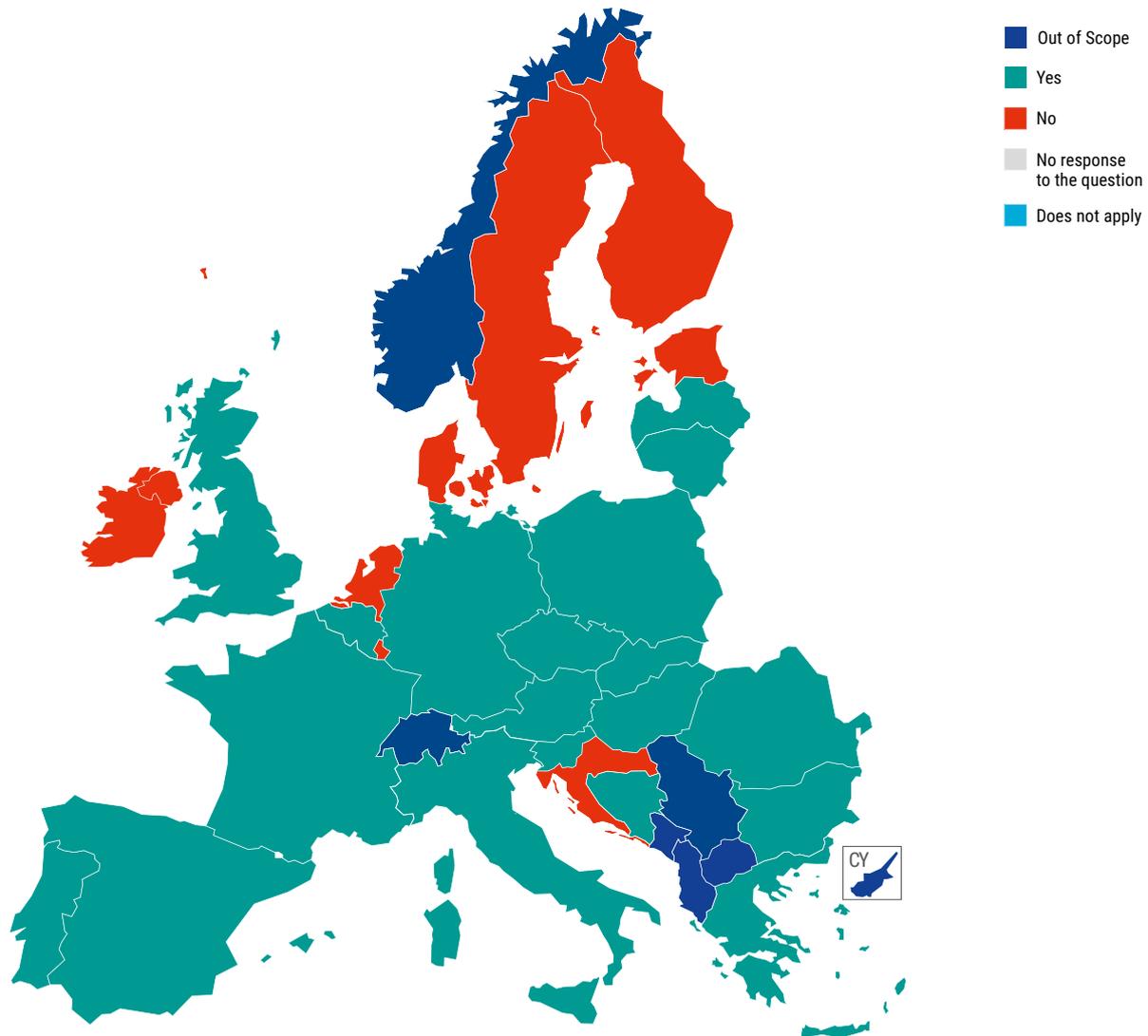


Figure 15: Question 20

Because the provision of cross-zonal capacity is done on a capacity calculation regional level, the TSOs of the Core region are to agree on what, exactly, 'suspension of the provision of cross-zonal capacity'<sup>42</sup> means. The aim of a common

understanding is that if one of the TSOs suspends the provision of cross-zonal capacity, the other TSOs should know what the impact will be on their side of the process and, hence, should know how to respond.

## Q21: Lead time for the provision of cross-zonal capacity (min)

The answers on the lead time questions diverge considerably. It is advised that TSOs reflect further on this aspect of market

suspension. This recommendation also applies for Q23, 25, 27, 29, 31, 33, 35, 38, 43, 45, 47, 49, 52 and 59.

42 This is not applicable for the Nordic area, as they will not suspend market activities at all.

## Q22: Which activities listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend? Submission of balancing capacity bids

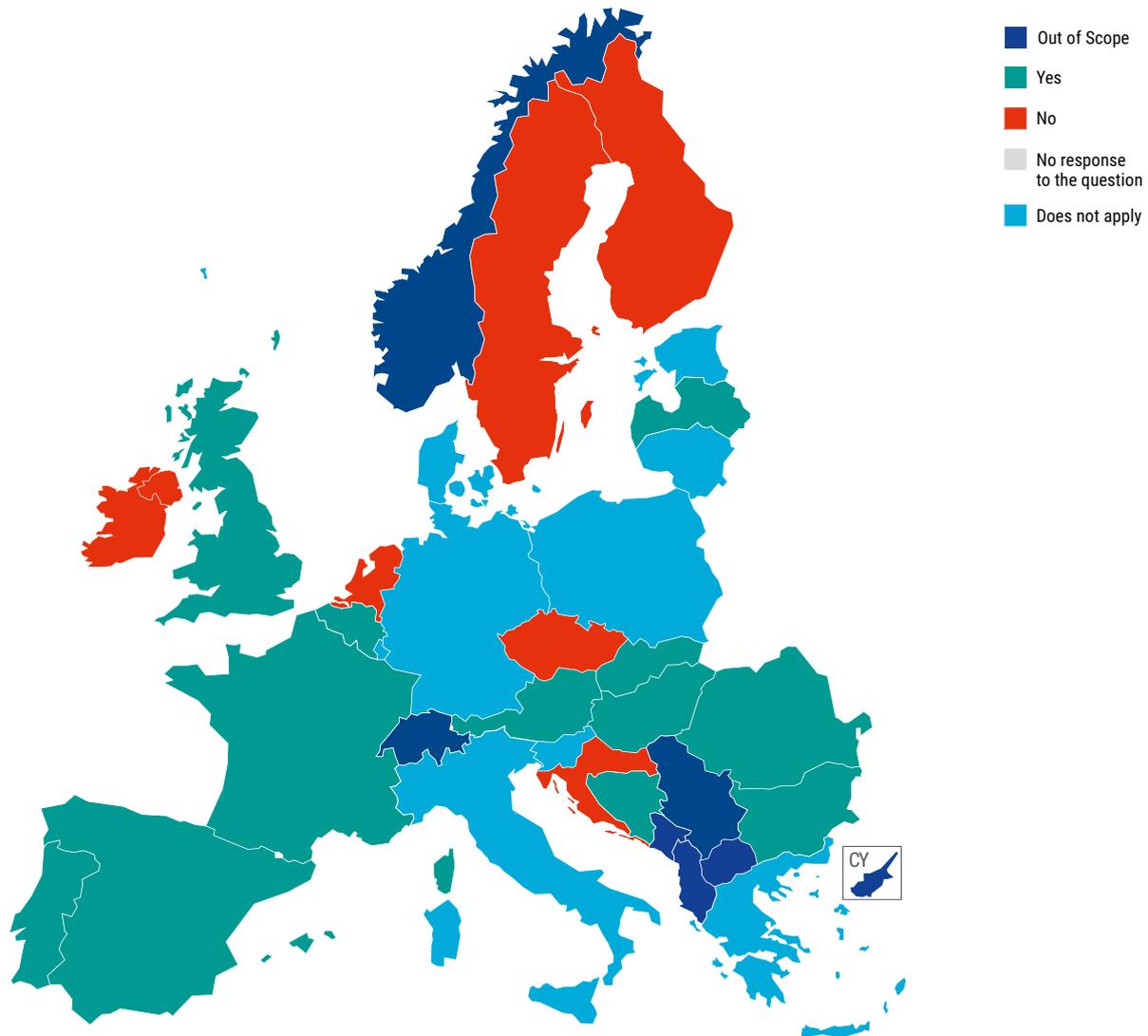


Figure 16: Question 22

Of the 27 respondents, 12 TSOs foresee and 6 TSOs do not anticipate suspending the submission of balancing capacity bids, whereas 9 TSOs marked this market activity as not applicable. The 12 TSOs that answered yes are NGESO, plus the TSOs located from Belgium down to Portugal and all TSOs in

South-East Europe except Greece. The TSOs of the Member States indicating that this question was not applicable (Luxembourg, Denmark, Poland, Italy<sup>43</sup>, Greece and Estonia and Lithuania) do not have such a process in place.

## Q23: Lead time for the provision of balancing capacity bids (min)

See Q21.

<sup>43</sup> Italy implicitly procures the necessary reserve margins through the activations of upward and downward integrated scheduling bids during the scheduling phase of the Italian Ancillary Services Market.

**Q24: Which activities listed in Article 35(2)(a-e) of NCER Regulation does/do your TSO(s) intend to suspend? Submission of balancing energy bids**

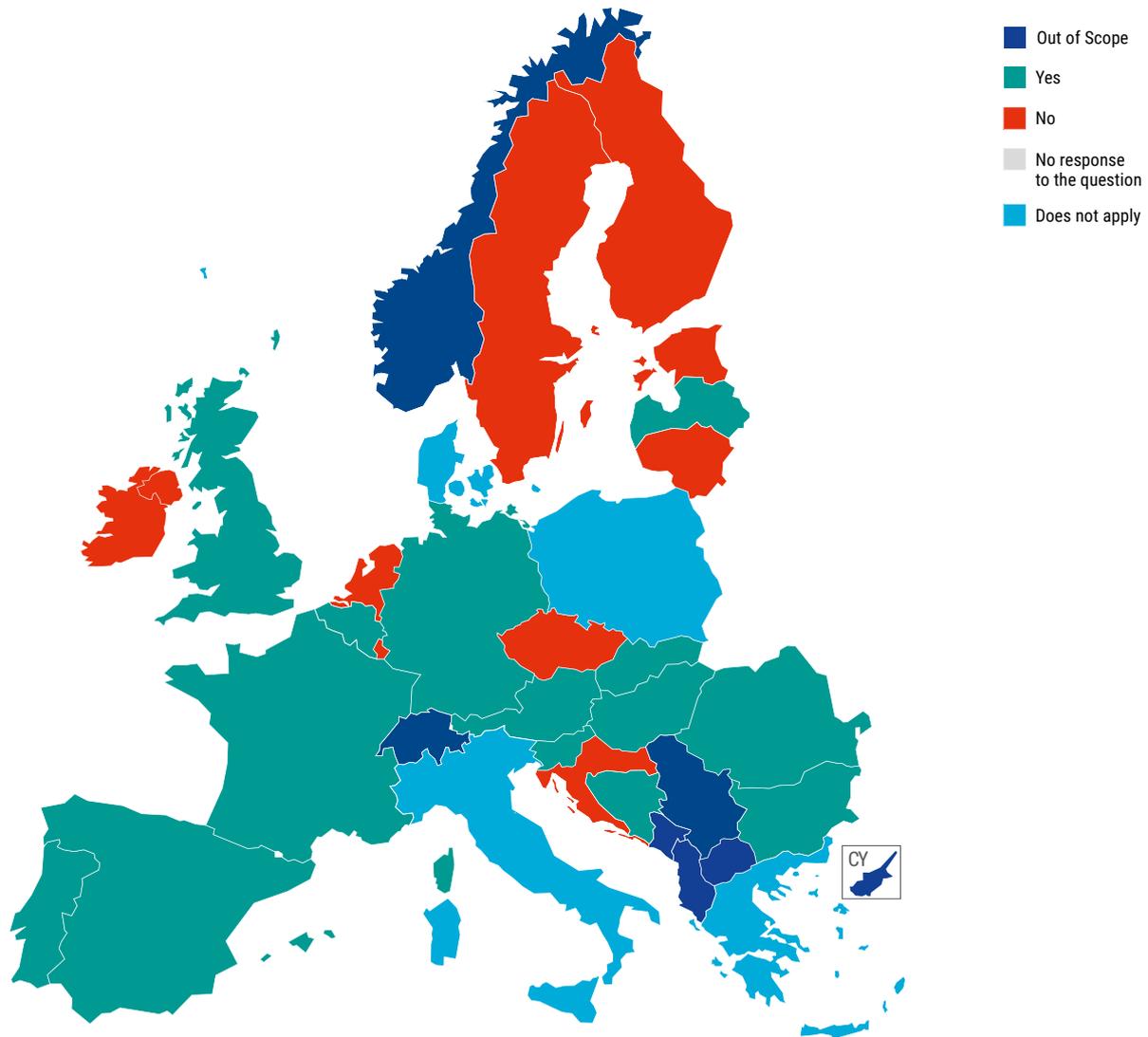


Figure 17: Question 24

Of the TSOs surveyed, 14 TSOs anticipate, and nine TSOs do not anticipate suspending the submission of balancing energy bids. This market activity is more relevant for TSOs as only

four TSOs (the TSOs of Denmark, Poland, Italy and Greece) marked this activity as not applicable.

**Q25: Lead time for the provision of balancing energy bids (min)**

See Q21.

## Q26: Which activities listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend? External commercial trade schedules

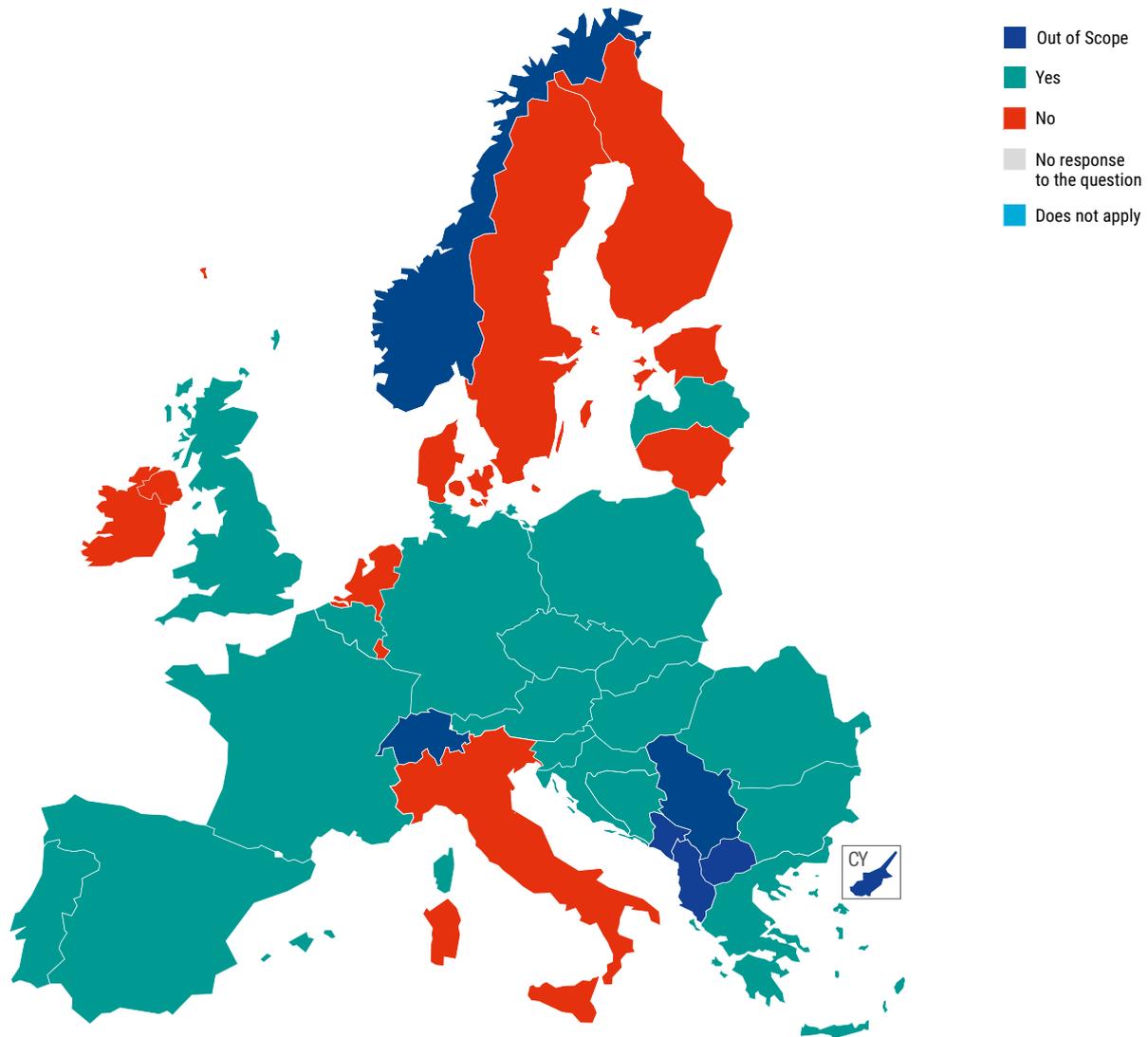


Figure 18: Question 26

External commercial trade schedules are applicable to all TSOs. In all, 18 TSOs could suspend this activity, while nine do not consider suspending it: Sweden and Finland, Ireland,

Luxembourg, the Netherlands, Denmark, Estonia, Lithuania and Italy.

## Q27: Lead time for external commercial trade schedules (min)

See Q21.

## Q28: Which activities listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend? Internal commercial trade schedules

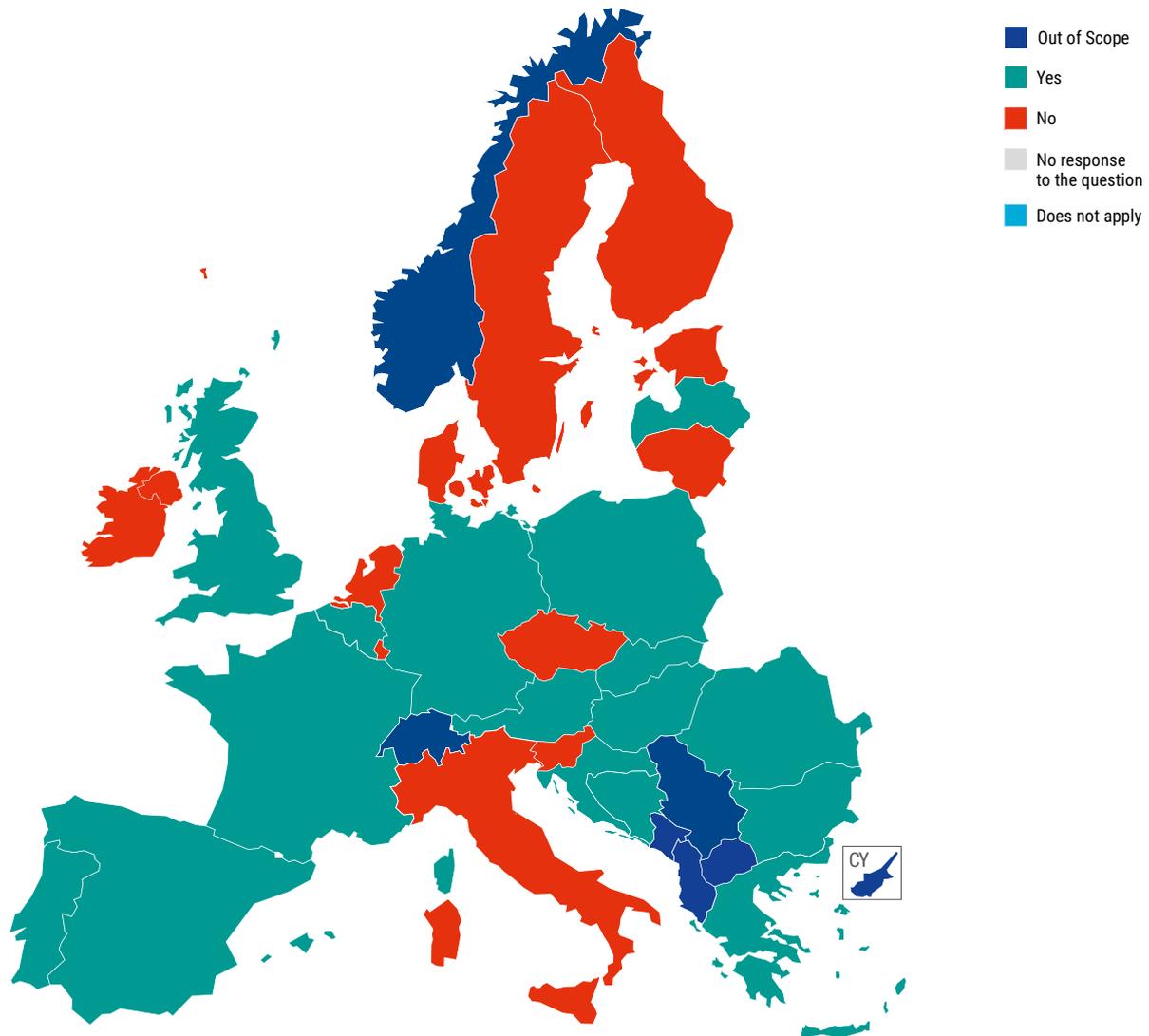


Figure 19: Question 28

In addition to the TSOs that do not consider suspending the external (and internal) commercial trade schedules, the Czech

Republic's TSO also does not plan to suspend this market activity involving internal commercial trade schedules.

## Q29: Lead time for the internal commercial trade schedules (min)

See Q21.

### Q30: Which activities listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend? Generation schedules

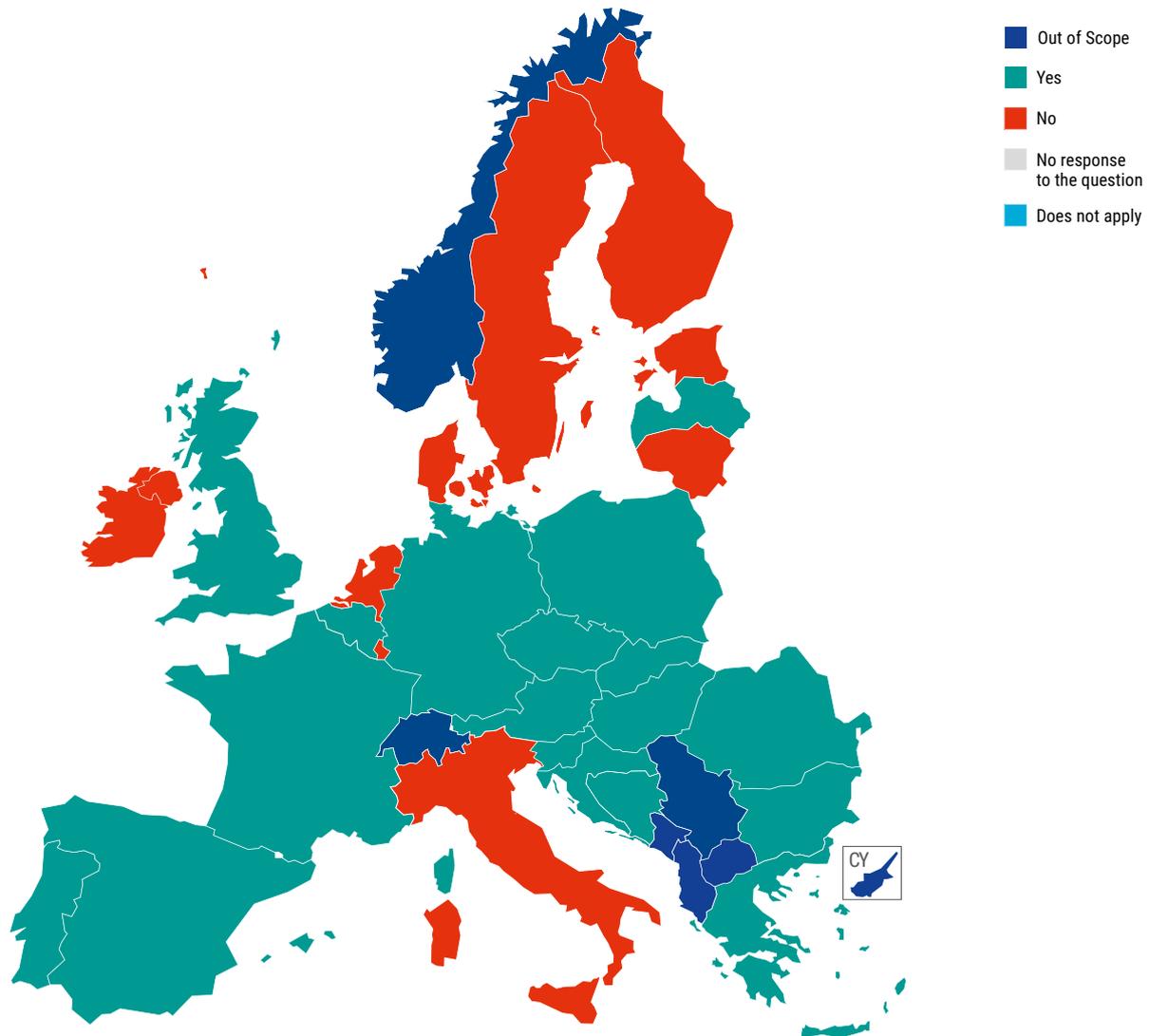


Figure 20: Question 30

Except for the TSOs of Italy and Poland (both not applicable) and the TSOs of Luxembourg, the Netherlands and Denmark, all TSOs in Continental Europe could suspend the process

of generation schedules; also, the TSOs of Great Britain and Latvia could. However, this item is not applicable to Ireland’s TSO.

### Q31: Lead time for the generation schedules (min)

See Q21.

### Q32: Which activities listed in Article 35(2)(a-e) does/do your TSO(s) intend to suspend? Consumption schedules

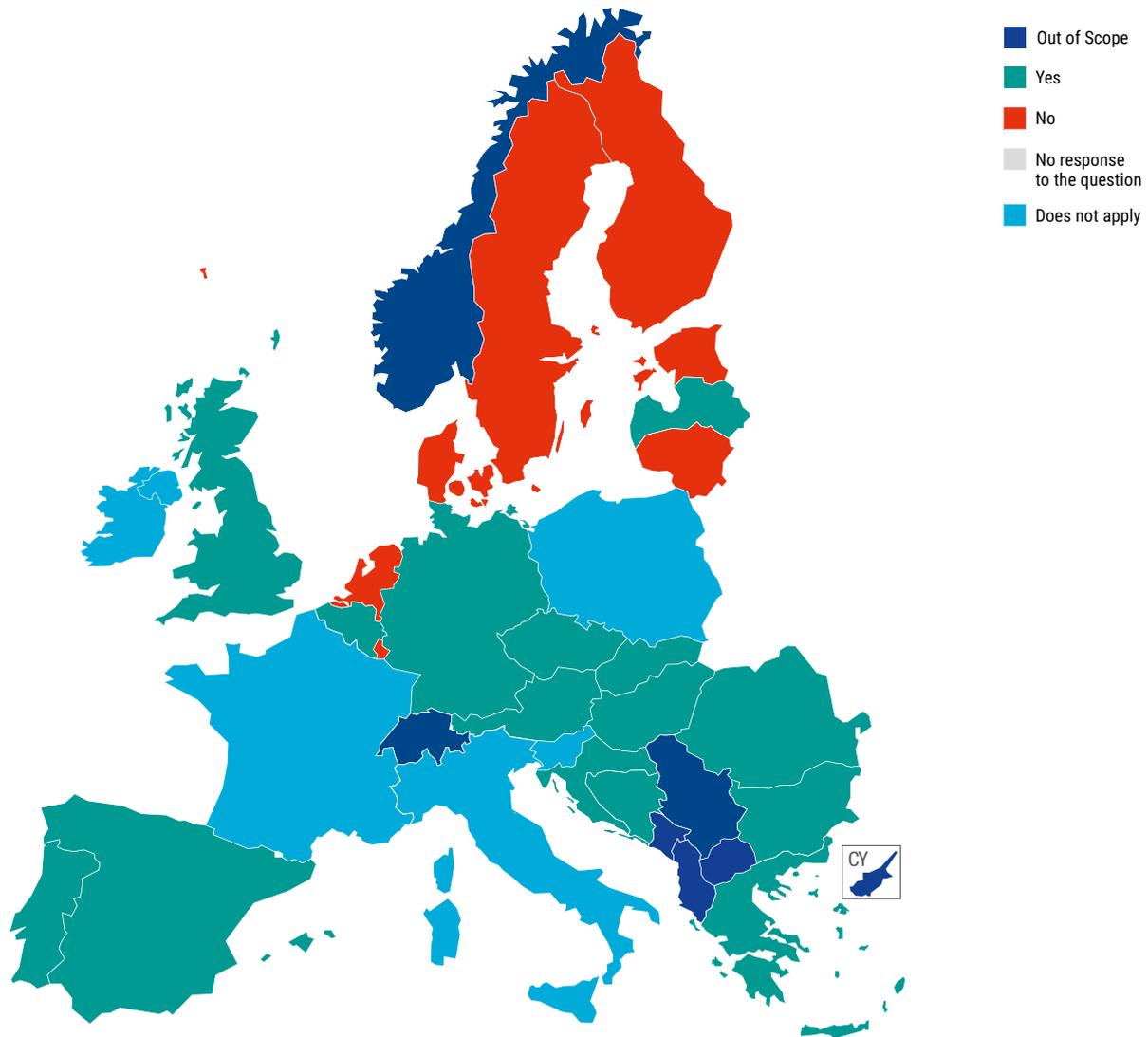


Figure 21: Question 32

In addition to the TSOs that marked the activity of generation (and consumption) schedules as not applicable, this process is also not applicable to France's TSO. Bulgaria's TSO

mentioned that the obligation to send consumption schedules applies only to the balancing energy providers.

### Q33: Lead time for the consumption schedules (min)

See Q21.

## Q34: Other activities listed in Article 35(2)f; does your TSO intend to suspend SDAC?

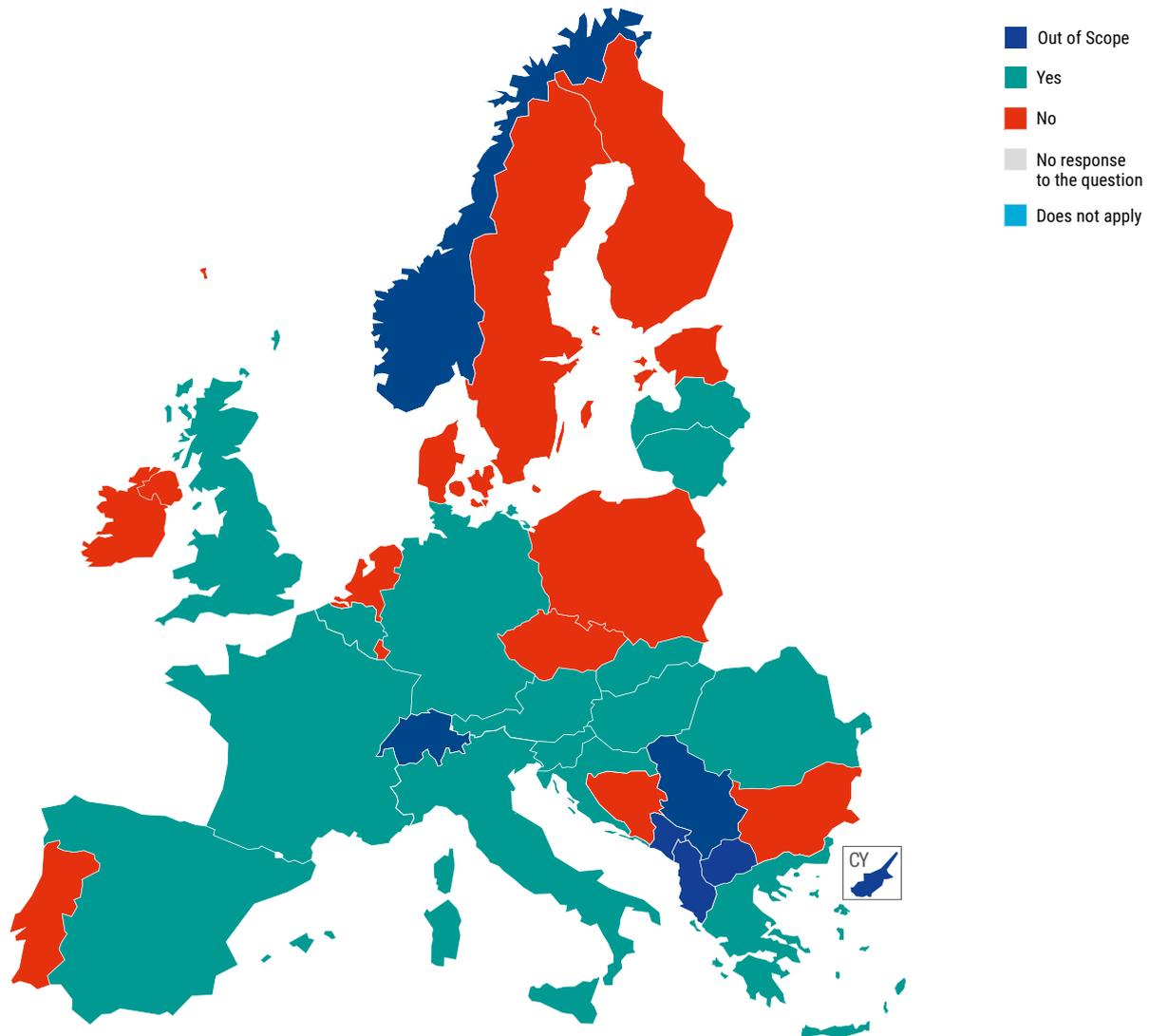


Figure 22: Question 34

*This question is related to questions Q35 – Q52.*

The following TSOs could possibly face the suspension of the SDAC by any of its neighbours: the TSOs of Portugal, Luxembourg, the Netherlands, Poland, the Czech Republic, Denmark, Ireland, Bosnia and Herzegovina (the latter not part of SDAC yet) and Bulgaria.

## Q35: Lead time for the SDAC (min)

See Q21.



### **Q36: Does the suspension of SDAC have a direct effect<sup>44</sup> on already matched bids/allocated capacity or only for not yet matched bids/unallocated capacity?**

Although the TSOs' answers may appear contradictory at first sight, this is not the case, as cancelling the already matched bids could have an impact on the whole market. However, if cross-border schedules are kept (and deliver energy according to them), then the impact of cancelling these bids is limited to the bidding zone.

TSOs will be allowed to cancel the schedules resulting from SDAC at a national level when the level of severity of the incident requires doing so and when the suspension would actually help to restore the grid or would stop the deterioration of the physical condition of the grid. Regarding the

impact to international trade, even in cases where the level of severity required cancelling day-ahead (intraday) market results at a national level, the TSO applying these rules will, in coordination with its neighbouring TSOs, perform actions to facilitate energy exchange allowed given the level of severity of the incident. If one is not able to deliver energy according to cross-border schedules, then the remaining mechanisms, including curtailment of allocated capacity (from CACM) and TSO-TSO deliveries (e. g. Emergency Deliveries, Supportive Power) that are agreed upon in SOAs, could be used.

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44 An effect that directly affects the bid, e. g. rejection of submitted internal commercial schedules, curtailment of allocated cross-zonal capacity.

### Q37: Other activities listed in Article 35(2)f; does your TSO intend to suspend SIDC?

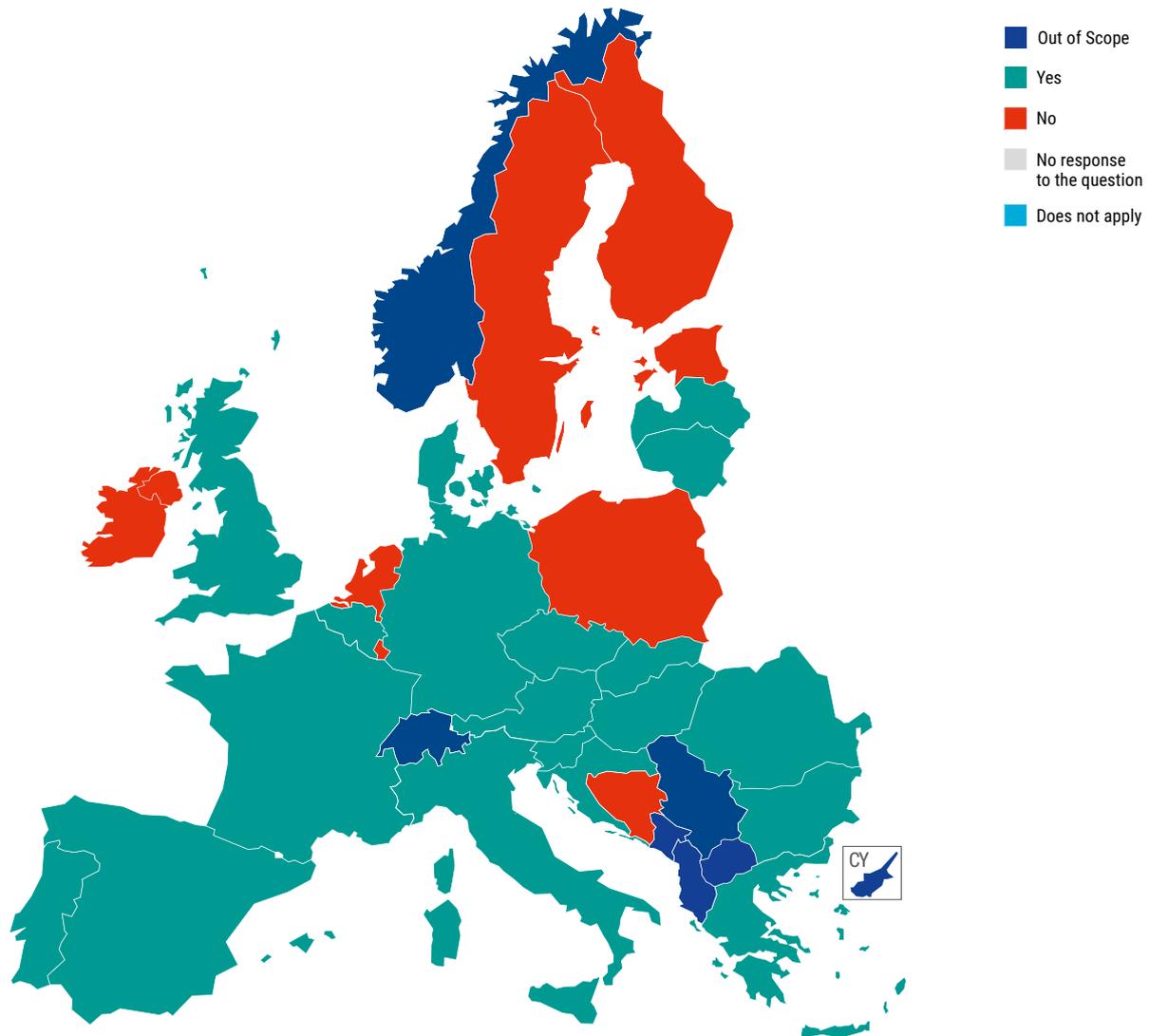


Figure 23: Question 37

*This question is related to questions Q35 – Q52.*

The following TSOs could possibly face the suspension of the SIDC by any of its neighbours: the TSOs of Ireland, Luxembourg, the Netherlands, Poland and Bosnia and Herzegovina<sup>45</sup>.

### Q38: Lead time for the SIDC (min)

See Q21.

<sup>45</sup> Ireland and Bosnia and Herzegovina are not part of SIDC yet.

### **Q39: Does the suspension of SIDC have a direct effect on already matched bids/allocated capacity or only for not yet matched bids/unallocated capacity?**

Although the TSOs' answers may appear contradictory at first sight, this is not the case, as cancelling the already matched bids could have an impact on the whole market. However, if a TSO keeps its cross-border schedules (and delivers energy according to them), then any impact of cancelling these bids is limited to that TSO's bidding zone.

TSOs will be allowed to cancel the schedules resulting from SIDC at a national level when the level of severity of the incident requires such an action and when the suspension would actually help to restore the grid or would stop the deterioration of the physical condition of the grid. Regarding the impact to international trade, even in cases where the level

of severity required cancelling day-ahead (intraday) market results at a national level, the TSO applying these rules will, in coordination with its neighbouring TSOs, perform actions to facilitate energy exchange allowed given the level of severity of the incident. If one is not able to deliver energy according to cross-border schedules, then the remaining mechanisms, including curtailment of allocated capacity (from CACM) and TSO-TSO deliveries (e. g. Emergency Deliveries, Supportive Power) that are agreed upon in SOAs, could be used.



**Q40: What are the possibilities to have an indirect effect<sup>46</sup> on the already matched after bids/allocated capacity? Where the regular market rules are, for example, curtailment of allocation capacity where the out-of-regular market rules are, for example, suspension of all standard procedures. In other words: usually, the market participants and TSOs follow the SDAC-results. In case these are suspended, the remaining alternatives for a required change in generator output are redispatch (based on TSO's system need), or a special less often used measures like financial agreements between generator company and the TSO.**

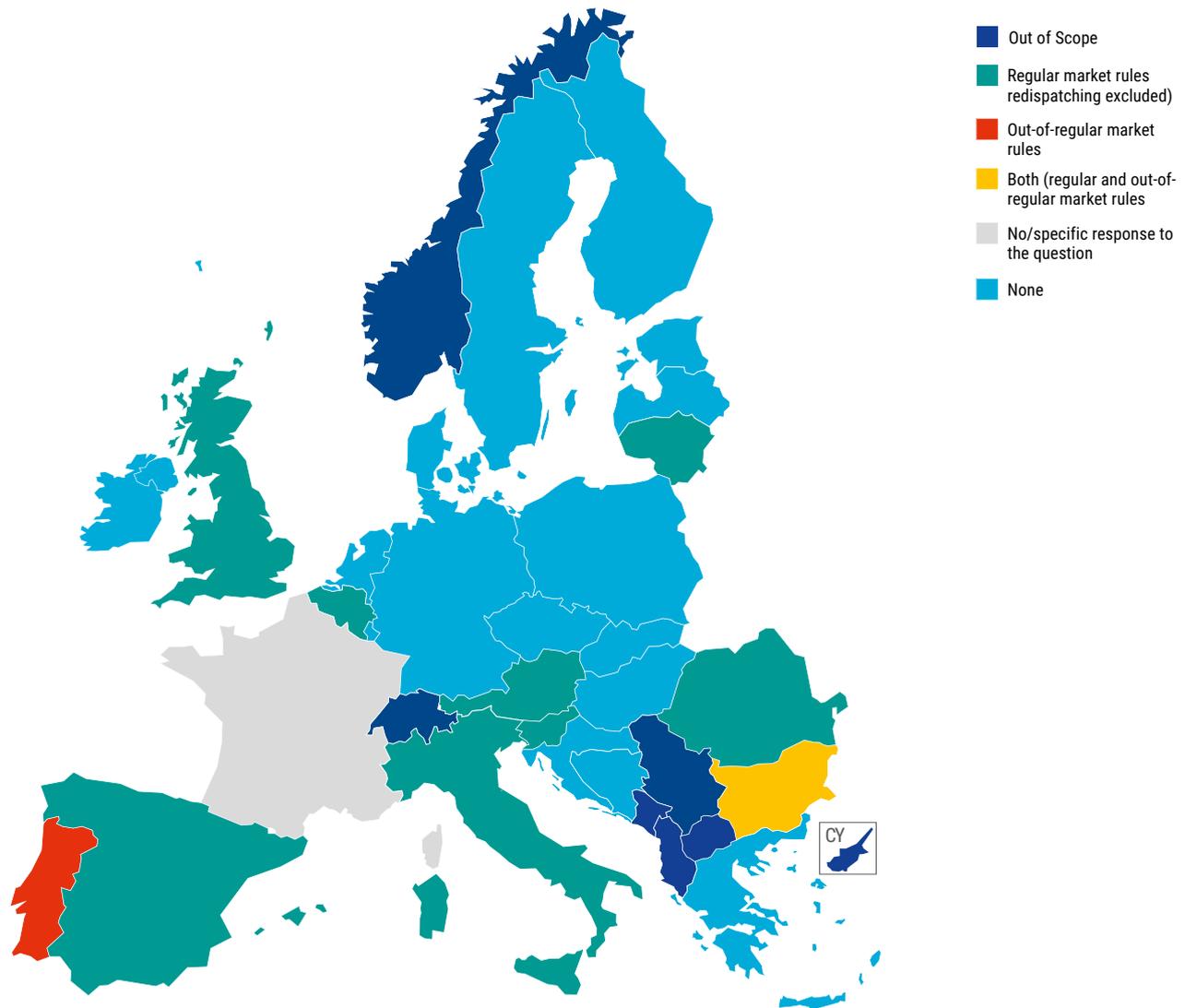


Figure 24: Question 40

The TSOs of 15 Member States indicated that no other possibilities exist that could replace following the already allocated capacity profiles. The TSOs of eight Member States indicated they could use redispatch as an option.

The TSOs of Poland and Bulgaria have both regular and out-of-regular measures available. Portugal's TSO could use only out-of-regular measures.

<sup>46</sup> The effect that indirectly changes the treatment of the bid, e. g. (a) accepting internal commercial trade/generation/consumption schedule and financial negotiation of submitted schedule if applicable (i. e. only financial settlement without physical realisation). In the case of direct TSO control, (b) redispatching (please keep in mind that redispatching is explicitly excluded from including in the relevant answer as long as this redispatching is performed within regular market rules).

## Q41: Please elaborate below when selecting regular market rules and/or out-of-regular market rules.

Related to Q40.

Several TSOs indicated that in the event of the suspension of markets at interconnectors, Article 72 of the CACM regulation (Firmness in the event of force majeure or emergency

situations) allows the already allocated capacity to be curtailed. TSOs also mentioned that anything that might happen will have an indirect effect via the imbalance settlement mechanism.

## Q42: Other activities listed in Article 35(2)f; does your TSO intend to suspend submission of integrated scheduling process bids<sup>47</sup>?

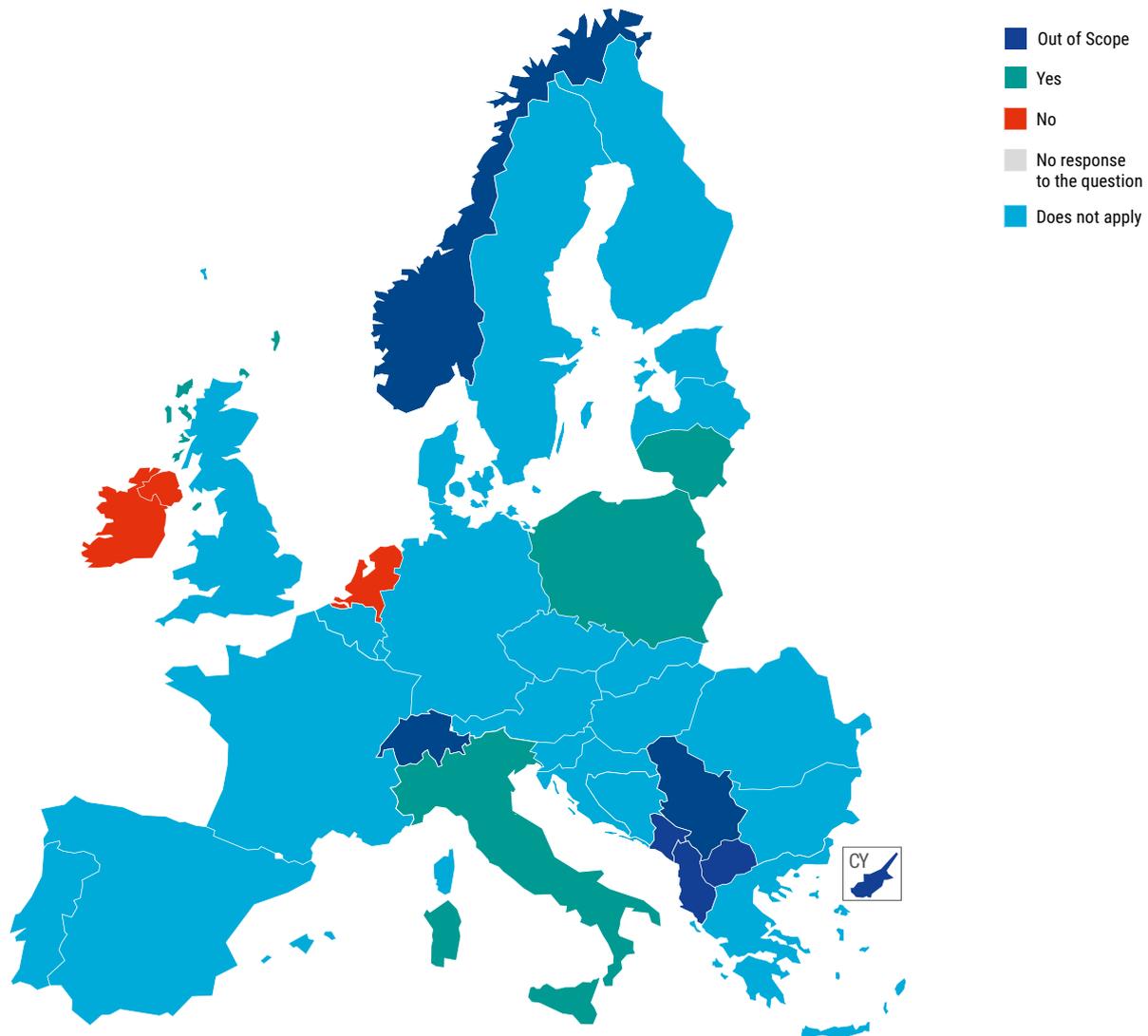


Figure 25: Question 42

For TSOs of 21 Member States process is not applicable. For the TSOs of Great Britain, Italy and Poland, the submission of integrated scheduling process bids could be suspended as well. See section 7 of Chapter 6 for more details.

<sup>47</sup> These are to be used by TSOs applying a central dispatch model (Article 27(1) of the EB Regulation); definition (19) in the EB Regulation of integrated scheduling process.

## Q43: Lead time for the integrated scheduling process bids (min)

See Q21.

## Q44: Other activities listed in Article 35(2)f; does your TSO intend to suspend participation in the balancing platforms (i.e. IN, aFRR, mFRR, RR)?

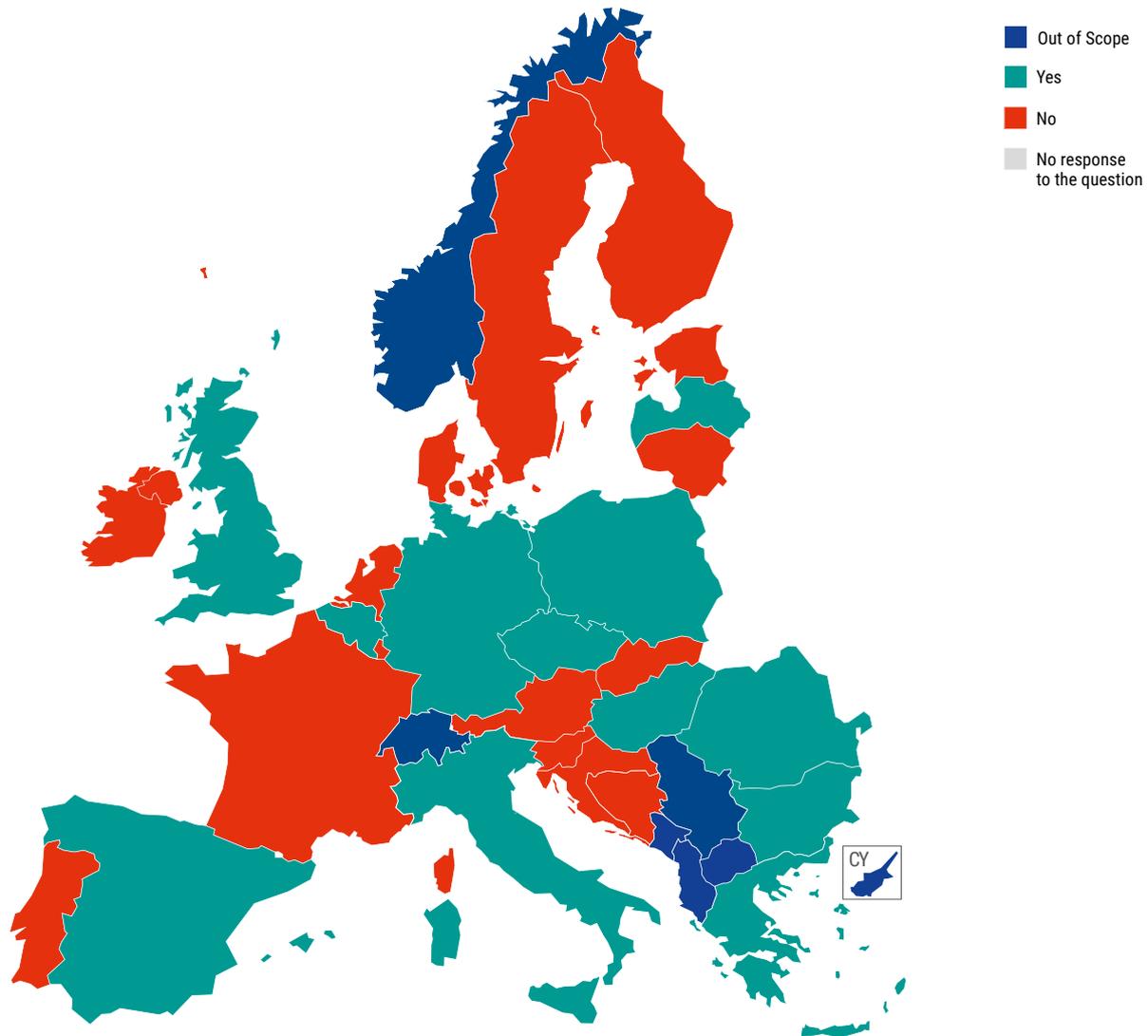


Figure 26: Question 44

The TSOs were divided on this aspect: the TSOs of 15 Member States do not anticipate the suspension of their participation in any balancing platform, whereas the TSOs of 12 Member States could foresee this suspension (Bulgaria's TSO indicated that it could suspend all platforms but RR). Because

participation in a balancing platform does not require physical connections to adjacent TSOs (which might suspend), harmonisation is not a necessity: geographically isolated TSOs participating in a balancing platform could receive input from and send output signals to the platform.

## Q45: Lead time for the balancing platforms (IN, aFRR, mFRR, RR)(min)

See Q21.

**Q46: Other activities listed in Article 35(2)f; does your TSO intend to suspend suspension of activation rules for balancing energy bids? This topic relates to two aspects: pricing/clearing and settlement.**

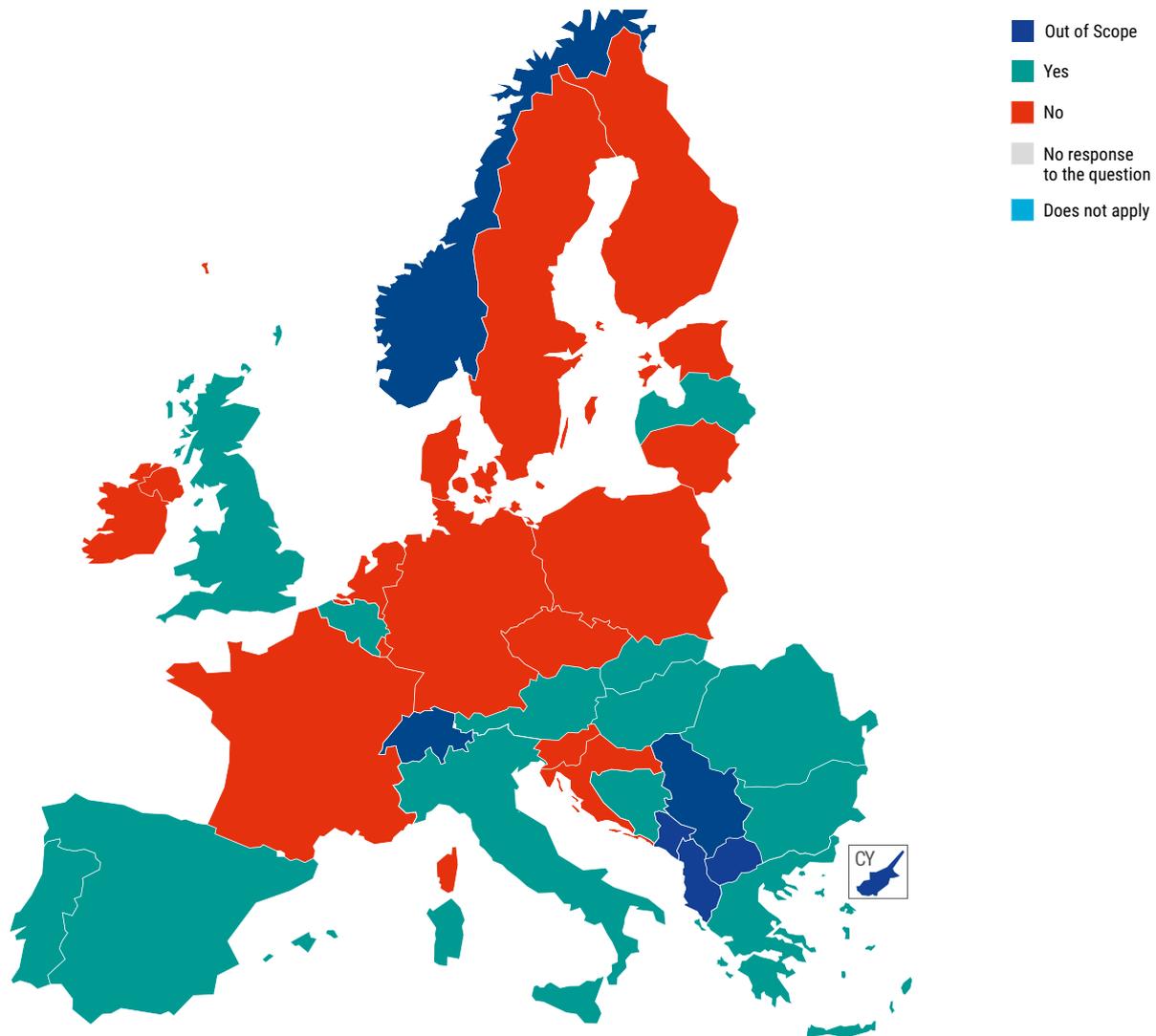


Figure 27: Question 46

The TSOs of Great Britain and Latvia allow for the suspension of activation rules for balancing energy bids. In Continental Europe, the TSOs of the Netherlands, France, Germany, the Czech Republic, Poland, Estonia, Lithuania, Slovenia and Croatia do not suspend this market activity, but all the others could; see Figure 27.

The TSOs that mentioned that the process of submission of balancing energy bids (Q24) is not applicable to them (Denmark, Poland, Italy and Greece) revealed varying options: Denmark's TSO will not suspend the activation rules for balancing energy bids, Poland's TSO mentioned that this process does not apply to them, whereas the TSOs of Italy<sup>48</sup> and Greece will suspend them. The TSOs of Germany and

France would not consider suspending the submission of balancing energy bids but would consider suspending the activation rules for balancing energy bids. France's TSO added that participation in activation rules can be suspended.

Finally, Croatia's TSO mentioned that in the event of participation in the activation of balancing energy bids from the common merit order list, this TSO may declare balancing energy bids forwarded to the activation optimisation function unavailable for activation to other transmission system operators, in accordance with Article 29(4) of the EB Regulation in the situations referred to in Article 35(1) of the NCER Regulation.

<sup>48</sup> The possibility to suspend the activation rules for balancing energy bids is related to the conversion process of integrated scheduling process bids, submitted by market participants, in standard product bids for balancing energy for the participation on the balancing platforms.

## Q47: Lead time for the activation rules for balancing energy bids (min)

See Q21.

## Q48: Other activities listed in Article 35(2)f; does your TSO intend to suspend application of all standard procedures?

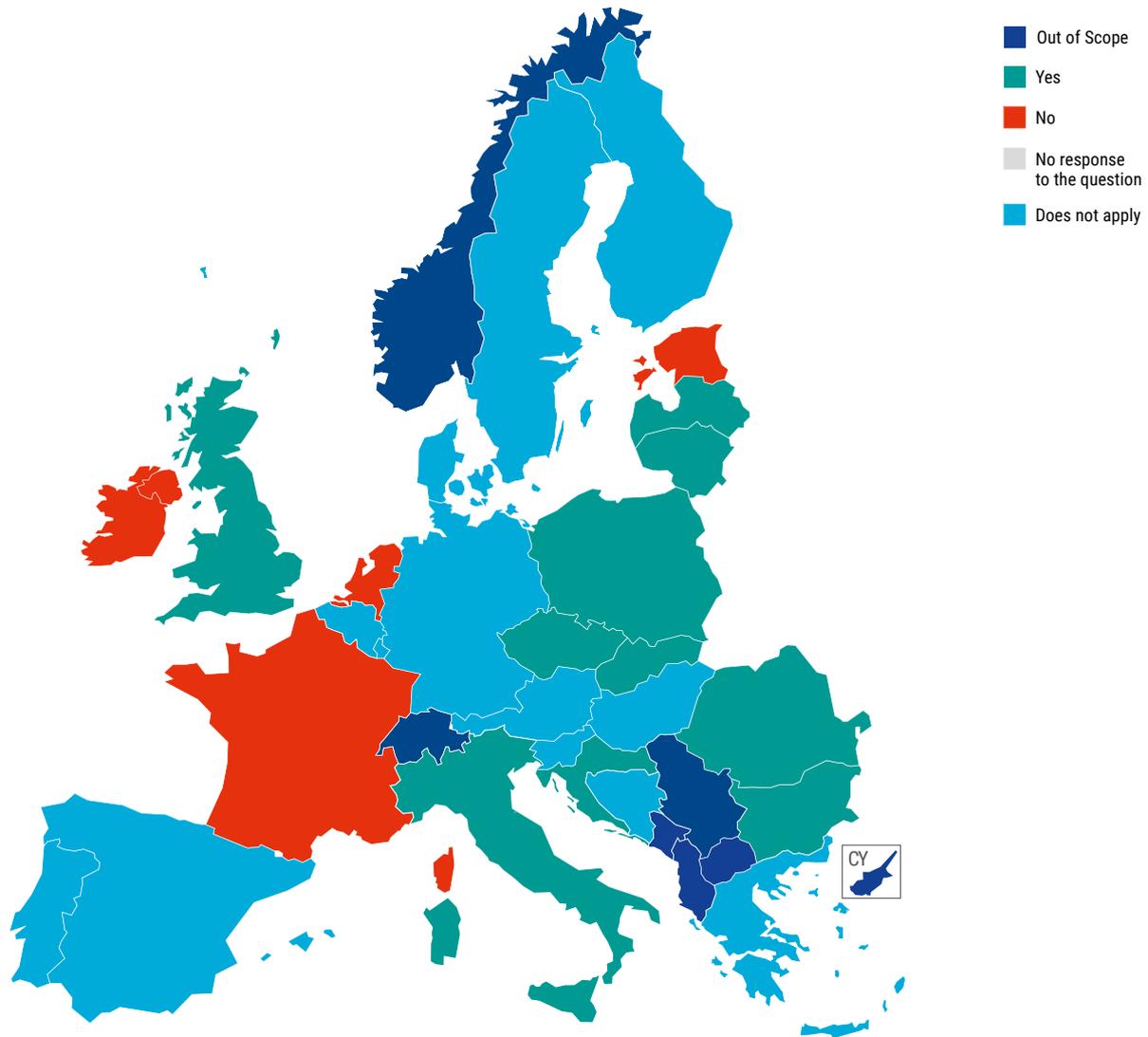


Figure 28: Question 48

In Continental Europe, the TSOs of France, the Netherlands and Estonia will not consider suspension. Apart from Great Britain's TSO, the TSOs of the following Member States do not consider suspension: Latvia, Lithuania, Poland, Italy, the

Czech Republic, Slovakia, Romania, Croatia and Bulgaria. The remaining 12 TSOs mentioned that this issue is not applicable to them.

## Q49: Lead time for all standard procedures (min)

See Q21.

## Q50: Does your TSO consider any measures concerning the long-term market?

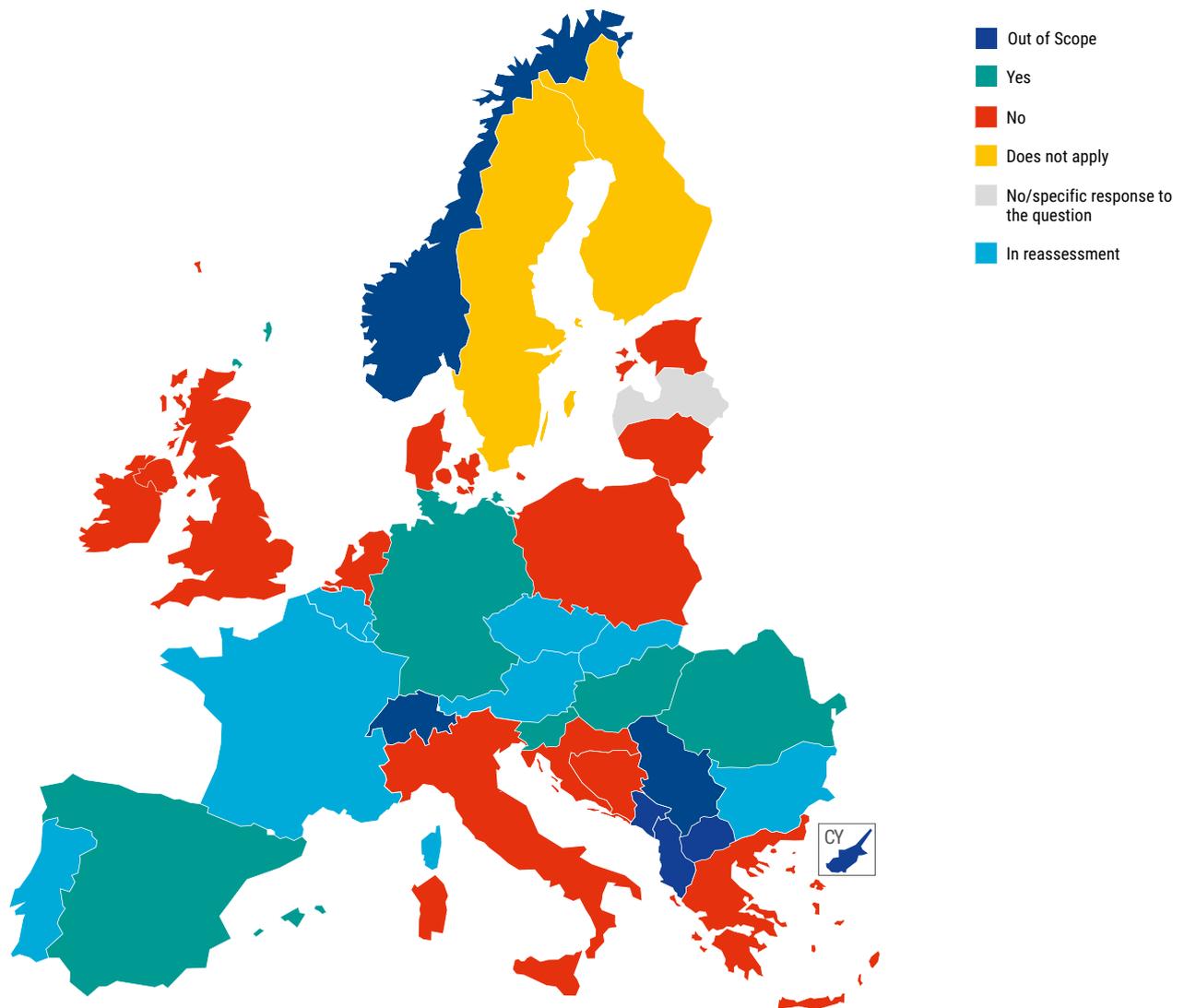


Figure 29: Question 50

*This question does not apply to TSOs that have an exemption from Article 30(7) of the FCA Regulation.*

The TSOs of Spain, Germany, the Czech Republic, Slovenia, Hungary and Romania might consider taking measures related to the long-term market. Several TSOs added that this action will only happen in extreme conditions, such as a blackout or problems that exist over an extended period.

The TSOs of Ireland, Great Britain, the Netherlands, Denmark, Poland, Estonia, Italy, Croatia, Bosnia and Herzegovina and Greece will not suspend long-term markets.

Belgium's TSO reflected that the allocation of long-term transmission rights should not be affected as this process does not affect the system state; it can only be suspended at a later moment in time and after consultation between the Joint Auction Office and the relevant TSOs.

### **Q51: Other activities listed in Article 35(2)f; does your TSO intend to suspend any other activity? Please describe below.**

Poland's TSO left room for suspending any other essential activity necessary to preserve or restore the Polish power system; Slovakia's TSO added the standard evaluation of

activated ancillary services and of balancing energy and standard processes of imbalance settlement and balancing energy settlement.

### **Q52: Lead time for others (min)**

See Q21.

### **Q53: How is your TSO going to choose which activities to suspend?**

The decision of the TSOs regarding suspension depends on the severity of the situation at hand and is in line with the provisions in the NCER Regulation.

**Q54: Can your rules for suspension and restoration of market activities for your Member State be applied independently from grid code/ national TCMs (Term, Conditions and Methodologies)?**

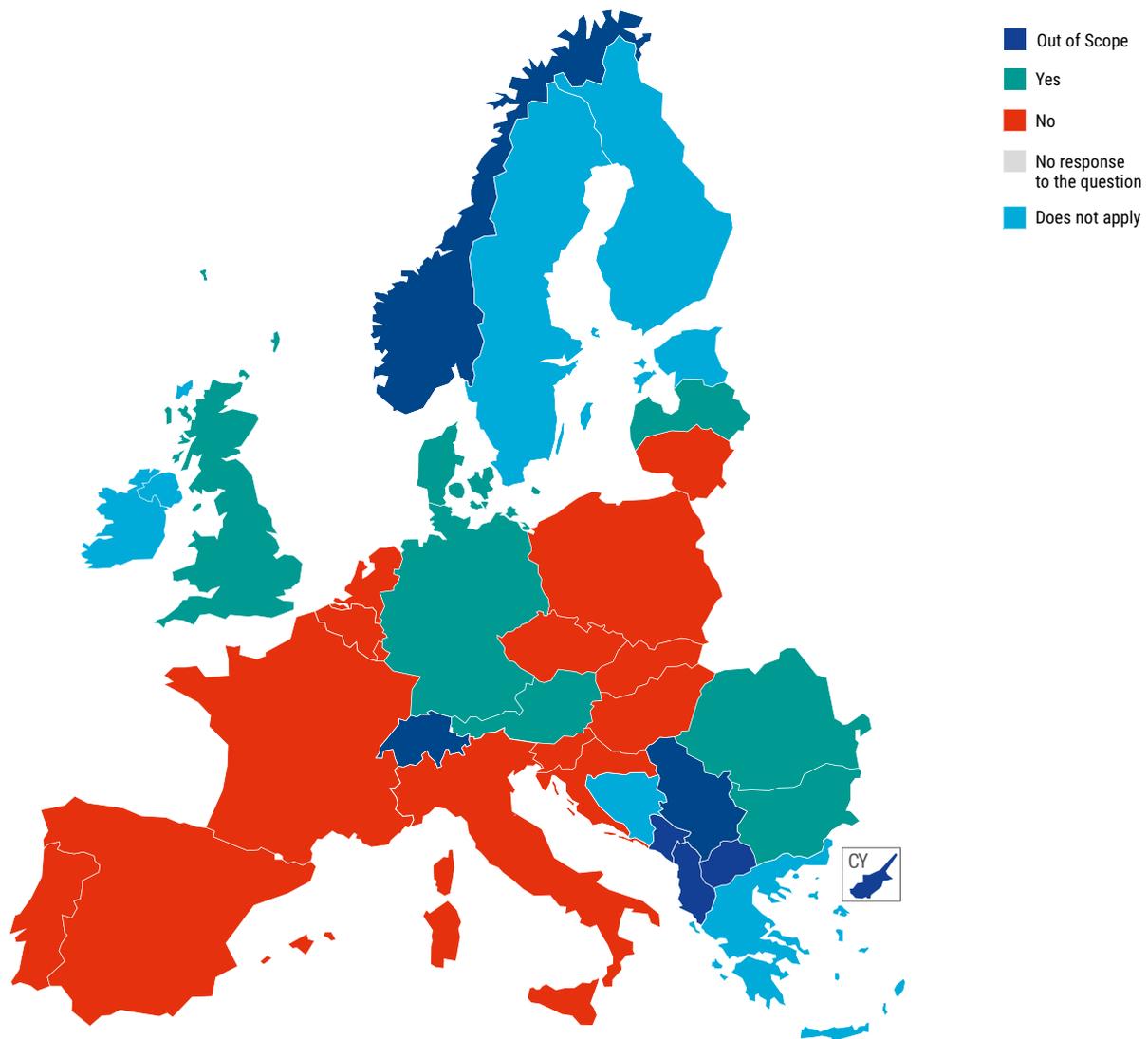


Figure 30: Question 54

For the TSOs of Great Britain, Denmark, Germany, Latvia, Romania and Bulgaria, the rules for suspension can be applied independently from national legislation. For most TSOs, this

question was either not applicable (e. g. the TSOs of Ireland, Sweden, Finland, Estonia, Croatia and Greece) or this independency is not possible (14 TSOs).

**Q55: Please describe the reasoning for your response to the previous question (Question 54).**

A few TSOs have domestic rules written in such a way that they can be applied without the involvement of EU legislation,

but most TSOs made a clear link between EU legislation and domestic rules.

## Q56: Do you see any additional points requiring harmonisation/clarification? Any other comments, remarks?

The following reflections were provided:

Belgium's TSO: Market suspension rules should be harmonised over multiple TSOs of a region or subregion in order not to disturb market functioning. Suspension should always be done in coordination with neighbouring countries.

Croatia's TSO: This TSO will not suspend the cross-zonal capacity allocation at the relevant borders of the Croatian Bidding Zone for any market time unit in which the transmission system is not expected to be restored to the normal or alert state. However, HOPS reserves the right to curtail the cross-zonal capacity previously offered in explicit and/or implicit allocation procedures, in the case when such a measure can help restore the system to a normal or alert state.

Great Britain's TSO: No, TSOs have varying rules; some do not intend to suspend the market for any circumstance, while other TSOs may suspend only some markets. The rules for

suspension would have to be the same and aligned with local regulation in order for harmonisation to work. Suspension of activities may require compensation, and not all TSOs are open to this idea.

The TSO of the Netherlands: The suspension of market activities is not the same as not being able to execute certain activities to facilitate the market (e. g. unavailability of tools). This TSO also requested consideration of their explanatory document (draft).

Poland's TSO: A new balancing market model in Poland is under development, and after its introduction, some answers may need to be revised.

Sweden's TSO: The rules for the suspension of market activities will probably need updating following the implementation of the new methodologies for imbalance price, settlement, platforms, etc.

## Q57: What type of coordination is in place/foreseen at your TSO with the concern NEMO(s) for the restoration of market activities, in accordance with Articles 37(3) and 37(5) of NCER Regulation?

The respondents pointed out that communication concerning NEMO will be done in accordance with all communication procedures agreed upon between the TSOs and NEMOs. Some TSOs have additional operational communication procedures in place; for example, the Czech Republic's TSO has added regular procedural training. The most used means

of communication are websites and emails. Great Britain's TSO mentioned that NEMOs will receive notification about market activities through local reports that are sent to all grid users by a third-party company called Elexon<sup>49</sup>. Finally, the Nordic TSOs indicated that a communication procedure is not yet in place.

## Q58: What type of coordination is in place/foreseen at your TSO with your regional capacity calculator (RCC) for the restoration of market activities, in accordance with Article 37(4)(b) of NCER Regulation?

Most TSOs referred to operational communication procedures with RCCs, possibly using websites and emails.

Spain will coordinate with SWE TSOs (RTE and REN) and the regional capacity calculator.

Great Britain's TSO is notified of market restoration through Elexon; for non-Great Britain TSOs, such notifications will happen through EAS.

## Q59: What is the lead time to restore, so market participants are duly informed in advance, in accordance with Article 37(1)(b) of NCER Regulation (min)

See Q21.

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<sup>49</sup> Elexon administers the Balancing and Settlement Code (BSC) on behalf of the UK electricity industry; among other tasks, the company performs the settlement process.

# 13 Annex III – Example of sequence of line tripping

The following picture illustrates how quickly security violations can change (see Chapter 7.1). This example illustrates why it may be impossible for TSOs to report on exact security violations in the case of curtailment in line with Article 57(3) of the Harmonised Auction Rules.

The picture is a part of *Annex 3 – Sequence of tripped lines from the UCTE Final Report, System disturbance on 4 November 2006*<sup>50</sup>.

Nr	HOUR	COUNTRY	TSO	EVENTS	CAUSE OF EVENT
1	22:10:13	DE	RWE TSO - E.ON Netz	380 kV Wehrendorf-Landesbergen tripped by automatic protection systems	Overload – Distance Protection (2120 A)
2	22:10:15	DE	RWE TSO - E.ON Netz	220 kV Bielefeld/Ost-Spexard tripped by automatic protection systems	Overcurrent – Distance Protection
3	22:10:19	DE	E.ON Netz	380 kV Bechterdissen-Eisen tripped by automatic protection systems	Overcurrent – Distance Protection
4	22:10:22	DE	E.ON Netz	220 kV Paderborn/Süd-Bechterdissen/Gütersloh tripped by automatic protection systems	Overcurrent – Distance Protection
	22:10:22	DE	E.ON Netz	380 kV Dipperz-Großkrotzenburg 1 tripped by automatic protection systems	Overcurrent – Distance Protection
5	22:10:25	DE	E.ON Netz	380 kV Großkrotzenburg-Dipperz 2 tripped by automatic protection systems	Overcurrent – Distance Protection
6	22:10:27	DE	E.ON Netz	380 kV Redwitz-Raitersaich tripped by automatic protection systems	Overcurrent – Distance Protection
	22:10:27	DE	E.ON Netz	380 kV Oberhaid-Grafenrheinfeld tripped by automatic protection systems	Overcurrent – Distance Protection
	22:10:27	DE	E.ON Netz	380 kV Redwitz-Oberhaid tripped by automatic protection systems	Overcurrent – Distance Protection
	22:10:27	DE	E.ON Netz	380 kV Redwitz-Etzenricht tripped by automatic protection systems	Overcurrent – Distance Protection
	22:10:27	DE	E.ON Netz	220 kV Würgau-Redwitz tripped by automatic protection systems	Overcurrent – Distance Protection
	22:10:27	DE	E.ON Netz	380 kV Etzenricht-Schwandorf tripped by automatic protection systems	Overcurrent – Distance Protection
6	22:10:27	DE	E.ON Netz	220 kV Mechlenreuth-Schwandorf tripped by automatic protection systems	Overcurrent – Distance Protection
	22:10:27	DE	E.ON Netz	380 kV Schwandorf-Pleinting tripped by automatic protection systems	Overcurrent – Distance Protection

50 <https://eepublicdownloads.entsoe.eu/clean-documents/pre2015/publications/ce/otherreports/Final-Report-20070130.pdf>.

# 14 Annex IV – Glossary of acronyms

Acronym	Meaning
<b>ACER</b>	The European Union Agency for the Cooperation of Energy Regulators
<b>aFRR</b>	Automatic frequency restoration reserves (Picasso)
<b>BRP</b>	Balance responsible party
<b>BSP</b>	Balance service provider
<b>CACM</b>	COMMISSION REGULATION (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management
<b>CCR</b>	Capacity calculation region
<b>CSA</b>	Coordinated security analyses
<b>CT&amp;RD</b>	Countertrade & redispatch
<b>DA CCM</b>	Day-ahead capacity calculation methodology
<b>DSO</b>	Distribution system operator
<b>EB</b>	COMMISSION REGULATION (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing
<b>EC</b>	European Commission
<b>ENTSO-E</b>	European Network of Transmission System Operators for Electricity
<b>EU</b>	European Union
<b>FCA</b>	COMMISSION REGULATION (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation
<b>FTR</b>	Financial transmission rights
<b>ID CCM</b>	Intraday capacity calculation methodology
<b>IN</b>	Imbalance Netting Platform
<b>ISP</b>	Imbalance settlement period
<b>LT</b>	Long-term
<b>MESC</b>	Market European stakeholder committee

<b>Acronym</b>	<b>Meaning</b>
<b>mFRR</b>	Manual frequency restoration reserves (Mari)
<b>NCER</b>	Commission Regulation (EU) 2017/2196 of 24 November 2017
<b>NEMO</b>	Nominated electricity market operator
<b>NRA</b>	National regulatory authority
<b>OTC</b>	Over the counter (trade)
<b>PTR</b>	Physical transmission rights
<b>RCC</b>	Regional coordination centre
<b>RR</b>	Replacement reserve platform (Terre)
<b>RSC</b>	Regional security coordinator
<b>SDAC</b>	Single day-ahead coupling
<b>SGU</b>	Significant grid user
<b>SIDC</b>	Single intraday coupling
<b>SOA</b>	System operation agreements
<b>SO GL</b>	COMMISSION REGULATION (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation
<b>SWE</b>	South-West Europe
<b>TSO</b>	Transmission system operatorAcronym

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