



European Network of  
Transmission System Operators  
for Electricity

---

# ADDITIONAL QUESTIONS ANALYSIS OF THE COMPLIANCE SELF-ASSESSMENT QUESTIONNAIRE 2010

---

MAY 2011

---

ENTSO-E REGIONAL GROUP  
CONTINENTAL EUROPE  
COMPLIANCE MONITORING PROGRAM 2010

## TABLE OF CONTENTS

<b>1</b>	<b>ANALYSING PRINCIPLES .....</b>	<b>3</b>
<b>2</b>	<b>OH STANDARD P1-A-S1.1.....</b>	<b>5</b>
<b>3</b>	<b>OH STANDARD P1-B-S4 .....</b>	<b>7</b>
<b>4</b>	<b>OH STANDARD P2-A-S4.....</b>	<b>9</b>
<b>5</b>	<b>OH STANDARD P2-A-S5.....</b>	<b>11</b>
<b>6</b>	<b>OH STANDARD P3-A1-S2.....</b>	<b>14</b>
<b>7</b>	<b>OH STANDARD P3-A2-S5.2.....</b>	<b>16</b>
<b>8</b>	<b>OH STANDARD P3-A2-S6.....</b>	<b>18</b>
<b>9</b>	<b>OH STANDARD P3-A3-S2.....</b>	<b>20</b>
<b>10</b>	<b>OH STANDARD P3-A3-S4.1 .....</b>	<b>22</b>
<b>11</b>	<b>OH STANDARD P3-A4-S3.....</b>	<b>24</b>
<b>12</b>	<b>OH STANDARD P3-A4-S4.1 .....</b>	<b>27</b>
<b>13</b>	<b>OH STANDARD P3-B-S1.2.2 .....</b>	<b>29</b>
<b>14</b>	<b>OH STANDARD P3-B-S2.1.2 .....</b>	<b>31</b>
<b>15</b>	<b>OH STANDARD P3-D-S2 .....</b>	<b>33</b>

# 1 ANALYSING PRINCIPLES

In this Annex the detailed results of the analysis of the additional questions are given. In total, on 14 selected standards from the policies 1, 2 and 3, additional questions were asked to all TSOs, in the framework of the self-assessment process and as described in chapter 3.4 of the report. In this Annex there is a table for each of the 14 standards, showing an evaluation of the answers given by all TSOs to the questions related to each standard. The most recent answers received from the TSOs (i.e. after the second round of answering) are used for the evaluation.

In the header of each table it can be seen the text of the concerned standard and besides that, the additional questions asked. The additional questions are both Yes/No questions and open questions. The table shows for each TSO:

- The compliance level declared;
- The answer given for Yes/No questions; in case a Yes/No question is answered for more than one border, Yes is filled in the table, when this was the answer for all borders, otherwise the answer is No;
- The score for the open questions, which is O for bad and X for good; bad in case the TSO gives an answer which is only slightly addressing the additional question or the answer is even missing and good in case the TSO gives an answer which touches all the details of the additional question;
- Comments (if appropriate).

Finally, there is a coloring in the table with the following meaning:

- when looking at one single additional question, the correspondence is:
  - answer marked with "Y", "N", "X" implies **green** (good answer)
  - answer marked with an "O" implies **yellow** (bad answer)
  - answer missing implies **red**
- when looking at the standard, the correspondence is:
  - all additional questions green, implies **green** (good answer)
  - at least 1 yellow color for one of the additional questions, without any red one, implies **yellow** (bad answer)
  - at least 1 red color for one of the additional questions, implies **red**

This coloring is also used in the table which is part of chapter 3.4 of the report.

Below table, there is a short evaluation/analysis of the TSOs' answers related to each of the standards.

**Legend to tables on the following pages**

Compliance level:

FC = fully compliant (this implies that no mitigation plan is needed)

SC = sufficiently compliant (an improvement plan to reach full compliance is necessary)

NC = non-compliant (a mitigation plan to remove non-compliance is obligatory)

N/A = not applicable

Quality of answer:

O = bad, TSO gives an answer which is **only slightly** addressing the additional question or the answer is even **missing**.

X = good, TSO gives an answer which touches **all the details** of the additional question.

Colors:

**Green**, all answers are good

**Yellow**, at least one answer is bad

**Red**, at least one answer is missing

## 2 OH STANDARD P1-A-S1.1

PRIMARY CONTROL Organisation. An organisational procedure to cover requirements and obligations for PRIMARY CONTROL actions and reserves performed by third parties in the CONTROL AREA including a monitoring procedure must be in place (e.g. Grid Code, regulation, association agreement or contract).									
Q1	Y / N	Do you have a formal procedure in place to ensure compliance with this standard?							
Q2	Open	What level of legal support does the procedure entitle? (i.e. law, grid code, agreement, other)							
Q3	Open	How do you monitor the primary control response of your Control area? (i.e. as a whole, for each single generation unit, etc. timeframe: real time/retrospective)							
TSO	Compliance level	Quality of answer						Comments	
		Q1	Q2	Q3					
AT - TIWAG Netz AG	FC	Y	X	X					
AT - APG	SC	Y	X	X					
AT - VKW-Netz AG	FC	Y	X	X					
BA - ISO-BiH	FC	Y	X	X					
BE - Elia	FC	Y	X	X					
BG - ESO EAD	FC	Y	X	X					
CH - swissgrid	FC	Y	X	X					
CZ - CEPS	FC	Y	X	X					
DE - EnBW TNG	FC	Y	X	X					
DE - TenneT	FC	Y	X	X					
DE - Amprion	FC	Y	X	X					
DE - 50Hertz	FC	Y	X	X					
DK_W - Energinet.dk	FC							Missing answers to additional question	
ES - REE	FC	Y	X	X					
FR - RTE	FC	Y	X	X					
GR - HTSO/DESMIE	FC	Y	X	X					
HR - HEP-OPS	FC	Y	X	O				The answer to Q3 is not complete (no time reference)	
HU - MAVIR ZRt.	FC	Y	X	X					

IT - Terna S.p.A.	FC	Y	X	X					
LU - CREOS				O	O				No data provided in due time
ME - CGES	FC			O	O				Missing answers to additional questions
MK - MEPSO	FC	Y	X	X					Declared CL is FC but the answer to Q3 is a negative one
NL - TenneT	FC	Y	X	X					
PL - PSE-Operator SA	FC	Y	X	X					
PT - REN	FC	Y	X	O					The answer to Q3 is not complete (no time reference);
RO - Transelectrica	FC	Y	X	X					
RS - JP EMS	FC	Y	X	X					
SI - ELES	SC	Y	X	X					
SK - SEPS	FC	Y	X	X					

- All TSOs that provided valid answers declared to have a procedure in place to ensure compliance with the standard and answered YES at the first question.
- Generally speaking, majority of TSOs (13 of the TSOs) have regulatory support as well as service contracts with providers for primary control supply. 9 of the TSOs do not establish any contract with providers, having enough regulative support (Grid Code and/or Law and/or similar items), while 4 TSOs do not need specific regulation for primary control supply, using exclusively contracts with providers. All TSOs that provided answers have been marked with “X” at the second question,
- The control of primary response is done by majority of all TSOs, except MK - MEPSO who informed that is not currently monitoring the primary control response. 8 TSOs inform explicitly that they control the provision of primary control in real time, while the rest of TSOs evaluated it after the fact. most of TSOs (11) survey the performance of every single generation unit (probably the significant ones), 7 TSOs monitor primary control response of the control area both as a whole and for each single generation unit, while 7 TSOs control the response of the groups only as a whole. At this third question, 2 of the TSOs that provided answers have been marked with “O”. The reason was that the answer is not offering information about the time reference used. For MK - MEPSO, the answer is in contradiction with the full compliance declared for this standard.

### 3 OH STANDARD P1-B-S4

SECONDARY CONTROL RESERVE. An adequate SECONDARY CONTROL RESERVE must be available to cover expected DEMAND and generation fluctuations. If the loss of the largest generating unit of the CONTROL AREA is not already covered by the requisite SECONDARY CONTROL RESERVE, additional TERTIARY CONTROL RESERVE (see -> P1-C) has to be activated to offset the shortfall within the required time (see P1-B-S2.1).									
Q1	Y / N	Does the sum of allocated Secondary and Tertiary Reserve cover normally and within the required time the loss of the largest generation unit connected in your control area?							
Q2	Open	How does your TSO monitor and report about the technical availability of TERTIARY RESERVE?							
TSO	Compliance level	Quality of answer						Comments	
		Q1	Q2						
AT - TIWAG Netz AG	FC	Y	X						
AT - APG	FC	Y	X						
AT - VKW-Netz AG	FC	Y	X						
BA - ISO-BiH	FC	Y	X						
BE - Elia	FC	Y	X						
BG - ESO EAD	FC	Y	X						
CH - swissgrid	FC	Y	X						
CZ - CEPS	FC	Y	X						
DE - EnBW TNG	FC	Y	X						
DE - TenneT	FC	Y	X						
DE - Amprion	FC	Y	X						
DE - 50Hertz	FC	Y	X						
DK_W - Energinet.dk	FC								Missing answers to additional questions
ES - REE	FC	Y	X						
FR - RTE	FC	Y	X						
GR - HTSO/DESMIE	FC	Y	X						
HR - HEP-OPS	FC	Y	O						Answer too vague
HU - MAVIR ZRt.	FC	Y	X						

IT - Terna S.p.A.	FC	Y	X						
LU - CREOS									No data provided in due time
ME - CGES	FC								Missing answers to additional questions
MK - MEPSO	FC	Y	X						
NL - TenneT	FC	Y	X						
PL - PSE-Operator SA	FC	Y	X						
PT - REN	FC	Y	X						
RO - Transelectrica	FC	Y	X						
RS - JP EMS	FC	Y	X						
SI - ELES	FC	Y	X						
SK - SEPS	FC	Y	X						

- All TSOs that provided valid answers, mention that the sum of allocated Secondary and Tertiary Reserve cover normally and within the required time the loss of the largest generation unit connected in the control area, and answered YES to the first additional question.
- The availability of Tertiary Reserve is monitored by the TSOs, either by using market information (bids, day ahead programs..) or by real time electrical measurements in a quite equal proportion. In some of the answers it is explicitly said that TSOs apply both these methods in order to monitor non-availability of tertiary reserves in case the reserve is not activated on request. All TSOs that provided answers have been marked with “X” at the second question, except HR - HEP-OPS, whose answer does not offer enough information about the procedure used for monitoring the availability of tertiary reserve.



## 4 OH STANDARD P2-A-S4

**General Agreements between UCTE System Operators who are affected by cross border scheduling. For performing a proper matching process and especially for cases of troubleshooting the UCTE bodies (Control Areas, Control Blocks and CO-ORDINATION CENTRES) have to document common agreed rules, e.g.**

**A-S-4.1 Agreed MTFs and number of digits**

**A-S-4.2 Solution for mismatches (see Guidelines)**

**A-S-4.3 Troubleshooting in case of problems with data exchange and matching process. (see P2-A-G2 & P2-A-G3 & P2-A-G4)**

Q1	Y / N	Do you have common agreed documents with corresponding ENTSO-E bodies for Scheduling of Power Exchange?						
Q2	Y / N	Do you have an agreement which specifies MTFs (Multi Time Frame System) and number of digits?						
Q3	Open	What procedure do you apply for solving mismatches?						
TSO	Compliance level	Quality of answer						Comments
		Q1	Q2	Q3				
AT - TIWAG Netz AG	FC	N	Y	X				
AT - APG	FC	N	Y	X				
AT - VKW-Netz AG	FC	Y	Y	O				The answer doesn't refer to the Q3
BA - ISO-BiH	SC	Y	N	X				
BE - Elia	FC	Y	Y	X				
BG - ESO EAD	FC	Y	Y	X				
CH - swissgrid	FC	Y	Y	X				
CZ - CEPS	FC	Y	Y	X				
DE - EnBW TNG	FC	Y	Y	X				
DE - TenneT	FC	Y	Y	X				
DE - Amprion	FC	Y	Y	X				
DE - 50Hertz	FC	Y	Y	X				
DK_W - Energinet.dk	FC	Y	Y	O				No answer to Q3
ES - REE	FC	Y	Y	X				

FR - RTE	FC	Y	Y	X					
GR - HTSO/DESMIE	FC	Y	Y	O					No answer to Q3
HR - HEP-OPS	FC	Y	Y	X					
HU - MAVIR ZRt.	FC	Y	Y	X					
IT - Terna S.p.A.	FC	Y	Y	X					
LU - CREOS	I	I	I	O					No data provided in due time
ME - CGES	I	I	I	O					No answers due to problems with web access (Info from CGES)
MK - MEPSO	FC	Y	Y	X					
NL - TenneT	FC	Y	Y	X					
PL - PSE-Operator SA	FC	Y	Y	X					
PT - REN	FC	Y	Y	X					
RO - Transelectrica	FC	Y	Y	X					
RS - JP EMS	FC	Y	Y	X					
SI - ELES	FC	N	N	X					
SK - SEPS	FC	Y	N	X					

- 3 of 27 TSOs declared that they have no common agreed documents with corresponding ENTSO-E bodies for Scheduling of Power Exchange
- 3 of 27 TSOs declared that they have no agreement which specifies MTFs (Multi Time Frame System) and number of digits
- 3 of 27 TSOs gave no or no sufficient answer to the question what procedure they apply for solving mismatches

## 5 OH STANDARD P2-A-S5

**General Agreements between neighbouring CONTROL AREAS. For automatic matching neighbouring CONTROL AREAS have to document their agreement for common rules for their border. Rules relevant for Market Parties must be published or communicated towards the parties in question. This document has to contain:**

**A-S-5.1 Identification Code used-either EIC or GS1 (former EAN)**

**A-S-5.2 Agreement on the contents and granularity of the exchanged CAS (e.g. MTFS, resolution) in order to allow a sufficient matching**

**A-S-5.3 Agreed timing for processes (e.g. exchange of programs, matching, day ahead and intra day process, Gate Closure, Cut-Off Time)**

**A-S-5.4 Rules to solve mismatches at Cut-Off Time**

**A-S-5.5 Responsibilities (e.g. matching, CAPACITY check)**

**Neighbouring CONTROL AREAS shall implement and run their matching process according to the “Implementation Guide for the EES (ETSO Scheduling System) in the UCTE processes”**

Q1	Y / N	Do you perform automatic matching with your neighbouring CONTROL AREAS?							
Q2	Y / N	Do you have documented agreements on automatic matching with your neighbours?							
Q3	Y / N	Do you have agreements which define the contents and granularity of the exchanged CAS in order to allow sufficient matching?							
Q4	Y / N	Do the agreements include timing for processes (e.g. exchange of programs, matching, day ahead and intraday process, Gate Closure, Cut-Off Time )?							
Q5	Y / N	Do you have rules which are agreed in advance to solve mismatches at Cut-Off Time?							
Q6	Y / N	Does the agreed responsibilities assignation follow the “Implementation Guide for the ESS (ETSO Scheduling System) in the UCTE processes”?							
Q7	Open	How are the relevant rules communicated to the Market Parties?							
TSO	Compliance level	Quality of answer							Comments
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	
AT - TIWAG Netz AG	-	N	N	Y	Y	Y	Y	X	

AT - APG			N	N	Y	Y	Y	Y	X	
AT - VKW-Netz AG			N	N	Y	Y	Y	N	X	
BA - ISO-BiH			N	N	N	N	N	N	X	
BE - Elia			Y	Y	Y	Y	Y	Y	O	the answer doesn't refer to Q7
BG - ESO EAD			N	N	N	N	N	N	X	
CH - swissgrid			Y	Y	Y	Y	Y		X	answer to Q6 is missing
CZ - CEPS			N	Y	Y	Y	Y	Y	X	
DE - EnBW TNG			Y	Y	Y	Y	Y	N	X	
DE - TenneT			Y	Y	Y	Y	Y	Y	X	
DE - Amprion			Y	Y	Y	Y	Y	N	X	
DE - 50Hertz			Y	Y	Y	Y	Y	Y	X	
DK_W - Energinet.dk			Y	Y	Y	Y	Y	Y	O	no answer to Q7
ES - REE			Y	Y	Y	Y	Y	Y	X	
FR - RTE			Y	Y	Y	Y	Y	N	X	
GR - HTSO/DESMIE			N	N	Y	Y	N	N	O	no answer to Q7
HR - HEP-OPS			Y	Y	Y	Y	Y	Y	X	
HU - MAVIR ZRt.			Y	Y	Y	Y	Y	Y	X	
IT - Terna S.p.A.			Y	Y	Y	Y	Y	Y	X	
LU - CREOS									O	no data provided in due time
ME - CGES									O	no answers due to problems with web access (Info from CGES)
MK - MEPSO			N	N	Y	Y	Y	Y	O	no answer to Q7
NL - TenneT			Y	Y	Y	Y	Y	Y	X	
PL - PSE-Operator SA			Y	Y	Y	Y	Y	Y	X	
PT - REN			Y	Y	Y	Y	Y	Y	X	
RO - Transelectrica			N	N	Y	Y	Y	Y	X	
RS - JP EMS			Y	Y	Y	Y	Y	Y	X	
SI - ELES			N	N	N	N	N	Y	X	
SK - SEPS			Y	Y	Y	Y	Y	Y	X	

- 10 of 27 TSOs declared that they don't perform automatic matching with their neighbouring control areas

- 9 of 27 TSOs declared that they don't have documented agreements on automatic matching with their neighbours
- 3 of 27 TSOs declared that they don't have agreements which define the contents and granularity of the exchanged CAS in order to allow sufficient matching
- 3 of 27 TSOs declared that the agreements don't include timing for processes (e.g. exchange of programs, matching, day ahead and intra day process, Gate Closure, Cut-Off Time )
- 4 of 27 TSOs declared that they don't have rules which are agreed in advance to solve mismatches at Cut-Off Time
- 7 of 27 TSOs declared that the agreed responsibilities assignation doesn't follow the "Implementation Guide for the ESS (ETSO Scheduling System) in the UCTE processes"; one TSO gave no answer
- 4 of 27 TSOs gave no or no sufficient answer to the question how the relevant rules are communicated to the Market Parties

## 6 OH STANDARD P3-A1-S2

**Coordination for exceptional type of contingency. It is the responsibility of the operator of the concerned network elements to establish the list of the exceptional type of contingency for security calculation based on the likelihood of occurrence of the event and to communicate this list to the neighbouring TSOs. Each TSO selects these exceptional contingencies based on the respective risk assessment by itself (see P3-A2-S1). Some exceptional events are considered only in case of temporary specific operational conditions, which have to be communicated to neighbours with a view of security calculation.**

**If a TSO A considers a resulting risk for an exceptional type of contingency for elements located in the area of TSO B not considered in the contingency list of TSO B, both TSOs reconsider together their contingency lists.**

Q1	Y / N	Do you establish and communicate to other TSOs a formal list of exceptional contingencies?						
Q2	Y / N	Do you consider the exceptional list from the neighbouring TSOs and reconsider your own contingency list with your neighbour TSO if needed?						
Q3	Open	How do you coordinate with your neighbouring TSOs the exceptional contingency list as of what to take into account and how to manage the list?						
TSO	Compliance level	Quality of answer						Comments
		Q1	Q2	Q3				
AT - TIWAG Netz AG	FC	N	N	X				Mismatch between Compliance Level and answers Q1 , Q2
AT - APG	SC	N	Y	X				
AT - VKW-Netz AG	SC	N	Y	X				The answer in Q3 is not specific
BA - ISO-BiH	N/A	N	N	X				Mismatch between Compliance Level and answers Q1 , Q2
BE - Elia	SC	Y	Y	X				
BG - ESO EAD	SC	N	Y	X				They have such lists defined in "bilateral agreements" but answered "no" to Q1 (at least for 3 of 4 partners).
CH - swissgrid	SC	N	N	X				
CZ - CEPS	SC	N	N	X				
DE - EnBW TNG	NC	N	Y	X				
DE - TenneT	NC	N	Y	X				
DE - Amprion	NC	N	Y	X				
DE - 50Hertz	NC	N	Y	X				

DK_W - Energinet.dk	SC	N	N	X					They have an addendum until 07/2011. They perform an ad-hoc analysis in case of an occurring risk of an exceptional contingency.
ES - REE	FC	Y	Y	X					
FR - RTE	SC	N	N	X					
GR - HTSO/DESMIE	SC	N	N	X					Answer to Q1 is “no” for both partners, but answer to Q3 says, they exchange such a list periodically by e-mail.
HR - HEP-OPS	FC	N	N	X					
HU - MAVIR Zrt.	FC	Y	Y	X					
IT - Terna S.p.A.	FC	Y	Y	X					
LU - CREOS				O					No data provided in due time
ME - CGES	FC	Y	Y	X					
MK - MEPSO	SC	N	Y	X					Answers to Q3 for 2 of 3 partners are not quite clear (“unformal list only by communication on expert level” and “list is coordinated in the framework of control block SMM”); answers to Q1 for those partners are both “no”.
NL - TenneT	SC	Y	Y	X					
PL - PSE-Operator SA	FC	Y	Y	X					The answer Q3 should be more detailed explaining meaning of TSC
PT - REN	FC	Y	Y	X					
RO - Transelectrica	FC	Y	Y	X					
RS - JP EMS	N/A	N	N	X					
SI - ELES	FC	Y	Y	X					
SK - SEPS	FC	Y	Y	X					Very good explanation

- For Q3 quality of evaluated answer: X means good explanation of how particular TSO fulfils the standard, O – means that answer was “no coordination” with minimum one neighbouring TSO

## 7 OH STANDARD P3-A2-S5.2

Abroad consequences of TSOs decisions in operational planning and in real time. In case of changing the network configuration for network branches included in the external observability list of neighbours (e.g. outage of elements, double busbar operation) or major changes of generation pattern, the TSO must inform in due time and firstly in the operational planning phase its affected neighbours. If needed corresponding measures have to be coordinated to prevent counter-effects in neighbouring networks									
Q1	Y / N	Have you implemented a procedure ensuring exchange of information related to changes of network configuration or major changes of generation pattern in operational planning and real time operation?							
Q2	Y / N	Do you have any agreed procedures in which counter measures to prevent counter-effect in neighbouring networks are determined?							
TSO	Compliance level	Quality of answer							Comments
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	
AT - TIWAG Netz AG	FC	Y	N						
AT - APG	FC	Y	N						
AT - VKW-Netz AG	FC	Y	Y						
BA - ISO-BiH	SC	Y	N						
BE - Elia	FC	Y	Y						
BG - ESO EAD	FC	Y	Y						
CH - swissgrid	FC	Y	Y						
CZ - CEPS	FC	Y	Y						
DE - EnBW TNG	FC	Y	Y						
DE - TenneT	FC	Y	Y						
DE - Amprion	FC	Y	Y						
DE - 50Hertz	FC	Y	Y						
DK_W - Energinet.dk	FC	Y	Y						
ES - REE	FC	Y	Y						
FR - RTE	FC	Y	N						
GR - HTSO/DESMIE	FC	N	N						Confusing - "FC" does not really fit to twice "no" to Q1 and





## 8 OH STANDARD P3-A2-S6

Data provision. The TSO has to provide its neighbours in due time with all needed information for adequate simulations.									
Each TSO must provide the real-time telemetry and the network characteristics to its neighbours that is necessary for the neighbouring TSOs to have a sufficient external network model of the observability area for the state estimator and for the N-1 security calculations. This implies among others all data related to switching status, active and reactive power flows, voltage, injections and loads, tap changer position of transformers.									
Q1	Y / N	Do you have an agreement with your neighbouring TSOs which precises in details what data have to be exchanged concerning the network elements identified in the observability area ?							
Q2	Open	What kind of communication methods do you use for data provision? (e.g. email, data server,...)							
TSO	Compliance level	Quality of answer							Comments
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	
AT - TIWAG Netz AG	FC	Y	X						
AT - APG	FC	Y	X						
AT - VKW-Netz AG	FC	Y	X						
BA - ISO-BiH	SC	N	X						
BE - Elia	FC	Y	X						Answer to Q2 is insufficient: "As a minimum the elements in the observability area are electronically exchanged between TSO's" and does not really define the exact method ("electronically" is basically everything)
BG - ESO EAD	FC	Y	X						
CH - swissgrid	FC	Y	X						
CZ - CEPS	FC	Y	X						
DE - EnBW TNG	FC	Y	X						
DE - TenneT	FC	Y	X						
DE - Amprion	FC	Y	X						
DE - 50Hertz	FC	Y	X						
DK_W - Energinet.dk	N/A	Y	X						Confusing: Compliance level is "N/A", but "FC" for the bilateral compliance level to partner "TenneT"

ES - REE	N/A	Y	X							Confusing: Compliance level is "N/A", but "FC" for the bilateral compliance level to partners "RTE" and "REN"
FR - RTE	FC	Y	X							
GR - HTSO/DESMIE	SC	N	X							Answer to Q1 is "yes" for one partner, "no" for the other
HR - HEP-OPS	FC	Y	X							
HU - MAVIR Zrt.	SC	Y	X							
IT - Terna S.p.A.	FC	Y	X							
LU - CREOS										No data provided in due time
ME - CGES	FC	Y	X							
MK - MEPSO	NC	N	X							They defined the methods used in near future
NL - TenneT	FC	Y	X							
PL - PSE-Operator SA	FC	Y	X							
PT - REN	FC	Y	X							
RO - Transelectrica	FC	Y	X							
RS - JP EMS	SC	N	X							
SI - ELES	FC	Y	X							
SK - SEPS	FC	Y	X							

- Only LU Creos receive "red" mark due to the fact that we didn't receive any answer in due time

## 9 OH STANDARD P3-A3-S2

Overloads in N-1 situation (simulation). Considering the loss of a network element (N-1 situation) overloads on impacted network elements are admitted only if remedial actions are available as to get back any overloaded network element below its respective Permanent Admissible Transmission Loading PATL.									
Q1	open	Which measures do you take if there is no possible remedial action in terms of topological modifications and generation redispatching available in such a case? (That means remedial actions allowed by laws, regulators,... which can be applied in such a situation, but which are not prepared in advance for regular application, e.g. no contracts,...)							
Q2	open	If a remedial action is considered as "available", which time lag is taken into account for this action to become effective?							
TSO	Compliance level	Quality of answer							Comments
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	
AT – TIWAG Netz AG	FC	X	X						
AT - APG	FC	X	X						
AT - VKW-Netz AG	FC	X	X						
BA - ISO-BiH	FC	X	X						
BE – Elia	FC	X	X						
BG - ESO EAD	FC	X	X						
CH - swissgrid	FC	X	X						
CZ – CEPS	FC	X	X						
DE - EnBW TNG	FC	X	X						
DE - TenneT	FC	X	X						
DE - Amprion	FC	X	X						
DE - 50Hertz	FC	X	X						
DK_W - Energinet.dk	FC	X	X						
ES - REE	FC	X	X						

FR - RTE	FC	X	X						
GR - HTSO/DESMIE	FC	X	X						
HR - HEP-OPS	FC	X	X						
HU - MAVIR ZRt.	FC	X	X						
IT - Terna S.p.A.	FC	X	X						
LU - CREOS	I	O	O						No data provided in due time
ME - CGES	FC	X	O						It is not clear what is meant by "no significant time lag"
MK - MEPSO	FC	X	X						
NL - TenneT	FC	X	X						
PL - PSE-Operator SA	FC	O	X						The type of remedial actions is not specified
PT - REN	FC	X	X						
RO - Transelectrica	FC	X	O						Based on the answer it is not clear which time lag is needed for actions to become effective
RS - JP EMS	FC	X	X						
SI - ELES	FC	X	X						
SK - SEPS	FC	X	X						

- In case no possible remedial action is available in terms of topological modifications and generation re-dispatching, TSOs have applied other types of remedial actions, such as voltage reduction, use of phase shifters, stopping maintenance, disconnection of tie-lines, curtailment of external schedules, countertrading or even load shedding. When the situation is very complicated with no usual solutions available, TSOs put their system state at the “emergency” level and can use emergency procedures previously implemented.
- Concerning the actions considered as available, the time lag taken into account for an action to become effective depends on the kind of measure TSOs had in mind when answering the question: from few milliseconds until minutes or hours. Most of the actions are related to a time delay of 15 minutes.

## 10 OH STANDARD P3-A3-S4.1

Tie-lines operating conditions. The information on values of PATL, TATL or couples (TATL; Duration), overload conditions (acceptable duration of overload), and TC of tie-lines must be shared with adjacent TSOs. Mutual information must be agreed and implemented. In case of settings changes TSO has to inform the adjacent TSO on the new values.									
Q1	Y / N	Do you share values of PATL, TATL and TC for all tie-line with adjacent TSOs?							
Q2	Y / N	Do you inform neighbours in case of settings changes at the time of the change?							
TSO	Compliance level	Quality of answer							Comments
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	
AT - TIWAG Netz AG	FC	Y	Y						
AT - APG	FC	Y	Y						
AT - VKW-Netz AG	SC	Y	Y						
BA - ISO-BiH	FC	Y	Y						
BE - Elia	FC	Y	Y						
BG - ESO EAD	FC	Y	Y						
CH - swissgrid	FC	Y	Y						
CZ - CEPS	SC	Y	Y						
DE - EnBW TNG	FC	Y	Y						
DE - TenneT	FC	Y	Y						
DE - Amprion	FC	Y	Y						
DE - 50Hertz	FC	Y	Y						
DK_W - Energinet.dk	FC	Y	Y						
ES - REE	FC	Y	Y						
FR - RTE	FC	Y	Y						
GR - HTSO/DESMIE	FC	Y	Y						
HR - HEP-OPS	SC	Y	Y						
HU - MAVIR ZRt.	FC	Y	Y						
IT - Terna S.p.A.	FC	Y	Y						
LU - CREOS									No data provided in due time

ME - CGES	FC	Y	Y							
MK - MEPSO	FC	Y	Y							
NL - TenneT	FC	Y	Y							
PL - PSE-Operator SA	SC	Y	Y							
PT - REN	FC	Y	Y							
RO - Transelectrica	FC	Y	Y							
RS - JP EMS	FC	Y	Y							
SI - ELES	FC	Y	Y							
SK - SEPS	SC	Y	Y							

- All TSOs that provided valid answers declared to share values of PATL, TATL and TC for all tie-line with adjacent TSOs and inform neighbours in case of settings changes at the time of the change.

## 110H STANDARD P3-A4-S3

Principle of “No cascading with impact outside my border”. TSOs commonly identify, prepare and implement in a coordinated way all possible operational measures and remedial actions (doing their best efforts in accordance with their legal framework) so that the simulated situations based on the contingency lists cannot lead to the propagation of cascading effects outside their borders.								
Q1	Y/N	Do you share datasets and additional information to identify risks of cascading effects on the interconnection by the means of calculations?						
Q2	Y/N	Do you define in advance a set of contingencies and relative coordinated remedial actions with neighbouring TSOs?						
Q3	Open	How do you check the effectiveness of prepared measures for situations based on the contingency list?						
Q4	Y/N	Do you have a procedure to coordinate remedial actions with your neighbouring TSOs in case of detected violations on the interconnection?						
Q5	Y/N	Do you have agreed methods of cost sharing?						
TSO	Compliance level	Quality of answer						Comments
		Q1	Q2	Q3	Q4	Q5		
AT - TIWAG Netz AG	FC	Y	Y	O	Y	N		
AT - APG	SC	Y	Y	O	N	N		Agreed methods for cost sharing are not necessary and only non-cost measures are currently implemented.
AT - VKW-Netz AG	FC	Y	Y	X	Y	N		
BA - ISO-BiH	FC	Y	Y	O	N	N		
BE - Elia	FC	Y	N	O	Y	Y		
BG - ESO EAD	FC	Y	Y	O	Y	N		
CH - swissgrid	FC	Y	Y	O	Y	N		
CZ - CEPS	SC	Y	Y	X	Y	Y		New CTDS platform planned by beginning of 2011
DE - EnBW TNG	FC	Y	Y	X	Y	N		
DE - TenneT	FC	Y	Y	X	Y	Y		
DE - Amprion	FC	Y	Y	X	Y	N		



DE - 50Hertz	FC	Y	Y	X	Y	Y		
DK_W - Energinet.dk	FC	N	N	X	Y	Y		Very small grid
ES - REE	FC	Y	Y	X	Y	Y		
FR - RTE	FC	Y	N	X	Y	Y		
GR - HTSO/DESMIE	SC	Y	Y	O	N	N		No actions and no deadline to reach FC defined
HR - HEP-OPS	FC	Y	Y	X	Y	N		
HU - MAVIR ZRt.	SC	Y	N	O	Y	Y		Update of the operational agreement with SEPS planned by June 2011
IT - Terna S.p.A.	FC	Y	Y	X	Y	Y		
LU - CREOS								No data provided in due time
ME - CGES	FC	Y	Y	O	Y	Y		
MK - MEPSO	SC	N	N	O	N	N		None of the N-1 single outages is expected to jeopardize regional network.
NL - TenneT	FC	Y	Y	X	Y	N		
PL - PSE-Operator SA	FC	Y	Y	X	N	N		
PT - REN	FC	Y	Y	O	Y	Y		
RO - Transelectrica	FC	Y	Y	O	Y	Y		
RS - JP EMS	FC	Y	Y	O	Y	N		
SI - ELES	FC	Y	Y	X	Y	N		
SK - SEPS	SC	Y	N	X	N	N		Update of some operational agreements planned by December 2011

- 6 of the 29 TSOs declared Sufficient Compliance level (AT – VERBUND APG, CZ – CEPS, GR - HTSO/DESMIE, HU - MAVIR ZRt., MK – MEPSO and SK – SEPS); all the others TSOs declared Fully Compliance level even if some of them do not have the contingency list with related remedial measures
- Additional Question n. Q1: 2 TSOs do not share datasets and additional information to identify risks of cascading effects on the interconnection by the means of calculations (DK\_W - Energinet.dk and MK – MEPSO)
- Additional Question n. Q2: 4 TSOs do not define in advance a set of contingencies and relative coordinated remedial actions with neighbouring TSOs (BE – Elia, DK\_W - Energinet.dk, FR – RTE and MK – MEPSO).

- Additional Question n. Q3: the best practice to check the effectiveness of prepared measures consists on the regular simulation, carried out individually by each TSO during all operational phases, of the faults in the contingency list and the related remedial actions. Furthermore, security assessment on the interconnection border should be performed with bordering TSOs in a common framework in order to regulate the analysis performed in the planning phase (i.e. NTC evaluation, scheduled maintenance, etc.), in the real time operation (congestion management), and in the post operation. Descriptions for Question 3 are usually equal for all borders of a TSO.
- Additional Question n. Q5: the meaning of cost sharing might be different among the TSOs. agreed methods of cost sharing do not represent a wide spread practice and 10 TSOs (AT – VERBUND APG, BA – ISO-BIH, BG - ESO EAD, GR - HTSO/DESMIE, HR – HEP-OPS, MK – MEPSO, NL – TenneT, RS – JP EMS, SI - ELES and SK – SEPS) do not have such a procedure.

## 120H STANDARD P3-A4-S4.1

Regional agreement for the set of remedial actions. For probable constraints impacting neighbouring control areas TSOs have to agree in advance with their neighbours in the same region on a set of remedial actions and on related procedures of activation.									
Q1	Y/N	Do you have any written agreements on procedures to provide maximal assistance to adjacent TSOs no longer capable to face a critical situation, taking into account cross-border remedial actions. (i.e. changes of network topology, cross-border re-dispatching, counter-trading, NTC curtailment, etc.)?							
TSO	Compliance level	Quality of answer							Comments
		Q1							
AT - TIWAG Netz AG	FC	N							
AT - APG	FC	N							
AT - VKW-Netz AG	FC								No answers provided for additional question.
BA - ISO-BiH	SC	Y							Development of Bilateral and regional agreements planned by December 2010
BE – Elia	FC	Y							
BG - ESO EAD	SC	Y							Development of Bilateral and Regional agreements planned by December 2011
CH - swissgrid	FC	N							
CZ - CEPS	FC	Y							
DE - EnBW TNG	FC	Y							
DE - TenneT	FC	Y							
DE - Amprion	FC	N							
DE - 50Hertz	FC	Y							
DK_W - Energinet.dk	FC	Y							
ES - REE	FC	Y							
FR - RTE	FC	Y							
GR - HTSO/DESMIE	NC	N							Development of written agreements with neighbouring TSOs planned by December 2013

HR - HEP-OPS	FC	N							
HU - MAVIR ZRt.	SC	Y							Development of Bilateral agreement with SEPS planned by June 2011
IT - Terna S.p.A.	FC	Y							
LU - CREOS									No data provided in due time
ME – CGES	FC	N							
MK - MEPSO	NC	N							Development of Bilateral agreement with JP EMS planned by January 2012.)
NL - TenneT	FC	Y							
PL - PSE-Operator SA	SC	N							Development of Bilateral agreement with SEPS planned by June 2011
PT - REN	FC	Y							
RO - Transelectrica	SC	Y							Development of Bilateral and regional agreements planned by January 2011
RS – JP EMS	N/A	Y							
SI - ELES	SC	Y							Development of Bilateral agreement with HEP-OPS planned by December 2010
SK - SEPS	SC	N							Development of Regional agreements with MAVIR and PSE-planned by December 2011

- 18 of the 29 declared Fully Compliance level; 7 of the 29 TSOs declared Sufficient compliance level (BA - ISO-BiH, BG - ESO EAD, HU - MAVIR ZRt., PL - PSE-Operator SA, RO – Transelectrica, SI - ELES and SK – SEPS; 2 TSOs declared Not Compliance level (GR - HTSO/DESMIE and MK – MEPSO); RS - JP EMS declared this standard Not Applicable.
- Additional Question n. Q1: The question was asked for each border to neighbouring TSOs. 3 TSOs do not have any written agreements on procedures to provide assistance to bordering TSOs, taking into account cross-border remedial actions such as topological modifications, cross-border re-dispatching, NTC curtailment, etc. Despite that, these TSOs (AT - TIWAG Netz AG, AT - APG and ME – CGES) declared FC level. 6 TSOs do not have written agreements with all neighbouring TSOs.

## 130H STANDARD P3-B-S1.2.2

Other REACTIVE POWER generation/absorption resources. TSOs have to keep available a sufficient number of other reactive power sources like generators, capacitors and reactors connected to the grid, which contribute to REACTIVE POWER generation or absorption, in order to maintain or get back the voltage in normal ranges after any contingency.								
Q1	Y/N	Do you check regularly whether you have a sufficient additional reserve of reactive power in order to recover the normal range in N-1 situation						
Q2	Y/N	Do you have information about the availability/restriction of reactive power reserves?						
Q3	Y/N	Do you have any contracts with adjacent TSOs for the exchange of reactive power reserve in case of necessity (e.g. voltage margins violations)?						
TSO	Compliance level	Quality of answer						Comments
		Q1	Q2	Q3				
AT - TIWAG Netz AG	FC	Y	Y	N				
AT - APG	SC	Y	Y	N				Temporarily low inductive reserves for adequate voltage control. Additional reactive power elements planned by September 2011
AT - VKW-Netz AG	FC	Y	Y	N				
BA – ISO-BiH	SC	Y	Y	N				Capacity of generation units is temporarily not sufficient
BE – Elia	FC	N	Y	N				
BG - ESO EAD	FC	Y	Y	Y				
CH - swissgrid	FC	Y	Y	N				
CZ - CEPS	FC	N	Y	N				
DE - EnBW TNG	FC	Y	Y	Y				
DE - TenneT	FC	Y	Y	Y				
DE - Amprion	FC	Y	Y	Y				
DE - 50Hertz	FC	Y	Y	Y				
DK_W - Energinet.dk	FC	Y	Y	Y				
ES - REE	FC	Y	Y	Y				

FR - RTE	FC	Y	Y	N					
GR - HTSO/DESMIE	FC	Y	Y	N					
HR - HEP-OPS	FC	Y	Y	N					
HU - MAVIR Zrt.	FC	Y	Y	Y					
IT - Terna S.p.A.	FC	Y	Y	N					
LU - CREOS									No data provided in due time
ME - CGES	FC	Y	Y	N					
MK - MEPSO	FC	Y	Y	N					
NL - TenneT	SC	Y	Y	N					New coils are planned by December 2011
PL - PSE-Operator SA	FC	Y	Y	N					
PT - REN	FC	Y	Y	N					
RO - Transelectrica	FC	Y	Y	N					
RS - JP EMS	FC	Y	Y	N					
SI - ELES	SC	Y	Y	Y					New centralized reactive power control planned by December 2012
SK - SEPS	FC	Y	Y	N					

- 4 of the 29 TSOs declared Sufficient compliance level (AT – VERBUND APG, BA - ISO-BiH, NL – TenneT and SI - ELES); all the others TSOs (24/29) declared Fully compliance level
- Additional Question n. Q1: two TSOs (BE – Elia, CZ – CEPS) do not have a regular process to check whether they have a sufficient additional reserve of reactive power in order to recover the normal range in N-1 situation
- Additional Question n. Q2: LU – CREOS is the only TSO which does not have adequate information about the availability/restriction of reactive power reserves, all other TSOs having reliable and effective data on that
- Additional Question n. Q3: agreed contracts with adjacent TSOs to the exchange of reactive power reserve in case of necessity do not represent a wide spread practice and many TSOs (19/29) do not have such contracts

## 14OH STANDARD P3-B-S2.1.2

Coordination for voltage and reactive power management. A coordination between adjacent TSOs is needed in order to manage voltage control (primary and other means) and reactive power resources near boundary preventing that individual actions have a contrary effect to the security of neighbours (including border nodes for voltage) in normal operation and in case of disturbances.								
Q1	Y / N	Do you inform your neighbours in advance if you intend to perform an action that will cause significant increase or decrease of voltage at your boundary substations?						
Q2	Y / N	Do you inform your neighbours if a disturbance which occurred in your system causes a significant change of voltage at boundary substations and additional reactive flows on tie-lines?						
Q3	Open	How do you control voltages and reactive power flows on tie-lines (i.e. using of reactors or capacitors, generator based reactive power dispatch, etc.)?						
Q4	Y / N	Do you have any reactive power resources which are placed near to the boundaries of your system?						
TSO	Compliance level	Quality of answer						Comments
		Q1	Q2	Q3	Q4			
AT - TIWAG Netz AG	FC	N	N	X	Y			The given compliance level is not in relation to the answers given to Q1 and Q2.
AT - APG	FC	N	N	X	Y			The given compliance level is not in relation to the answers given to Q1 and Q2.
AT - VKW-Netz AG	SC	Y	Y	X	Y			The reason for SC is that SC is declared only with 1 of 4 neighbours and FC with all the others.
BA - ISO-BiH	FC	Y	Y	X	Y			
BE - Elia	FC	Y	Y	X	Y			
BG - ESO EAD	FC	Y	Y	X	Y			
CH - swissgrid	SC	Y	Y	X	Y			The reason for SC is that SC is declared only with 1 of 6 neighbours and FC with all the others.
CZ - CEPS	FC	Y	Y	X	Y			
DE - EnBW TNG	FC	Y	Y	X	Y			
DE - TenneT	FC	Y	Y	X	Y			
DE - Amprion	FC	Y	Y	X	Y			

DE - 50Hertz	FC	Y	Y	X	Y			
DK_W - Energinet.dk	FC	Y	Y	X	Y			
ES - REE	FC	Y	Y	X	Y			
FR - RTE	FC	Y	Y	X	Y			
GR - HTSO/DESMIE	SC	Y	Y	X	Y			Actions to reach compliance are missing.
HR - HEP-OPS	FC	Y	Y	X	Y			
HU - MAVIR ZRt.	FC	Y	Y	X	Y			
IT - Terna S.p.A.	FC	Y	Y	X	Y			
LU - CREOS								No data provided in due time
ME - CGES	FC	Y	Y	X	Y			
MK - MEPSO	SC	Y	Y	X	N			Q4:The reactive power sources are placed only near to boundary with HTSO/DESMIE.
NL - TenneT	SC	Y	Y	X	N			The reason for SC is that SC is declared only with 1 of 3 neighbours and FC with all the others.
PL - PSE-Operator SA	FC	Y	Y	X	Y			
PT - REN	FC	Y	Y	X				Q4:missing answer
RO - Transelectrica	FC	Y	Y	X	Y			
RS - JP EMS	FC	Y	Y	X	Y			
SI - ELES	FC	Y	Y	X	Y			
SK - SEPS	FC	Y	Y	X	Y			

- Voltage control is coordinated between almost all adjacent TSOs. Adjacent TSOs are informed about expected and occurred significant voltage changes. The TSOs generally have sufficient reactive power resources to control the reactive power flow on tie-lines.



## 150H STANDARD P3-D-S2

<b>Transient angle Stability calculation. Each TSO has at its own disposal relevant dynamic models and dedicated software in order to carry out dynamic simulations ensuring transient angle stability in its responsibility area.</b>								
Q1	Y / N	Do you have relevant dynamic models in order to carry out dynamic simulations ensuring transient angle stability in your responsibility area?						
TSO	Compliance level	Quality of answer						Comments
		Q1						
AT - TIWAG Netz AG	FC	N						The given compliance level is not in relation to the answers given.
AT - APG	NC	N						Addendum till 12/2010
AT - VKW-Netz AG	NC	N						Addendum till 12/2010
BA - ISO-BiH	FC	Y						
BE - Elia	FC	Y						
BG - ESO EAD	FC	Y						
CH - swissgrid	FC	Y						
CZ - CEPS	FC	Y						
DE - EnBW TNG	FC	Y						
DE - TenneT	FC	Y						
DE - Amprion	FC	Y						
DE - 50Hertz	FC	Y						
DK_W - Energinet.dk	FC	Y						
ES - REE	FC	Y						
FR - RTE	FC	Y						
GR - HTSO/DESMIE	FC	Y						
HR - HEP-OPS	FC	Y						
HU - MAVIR Zrt.	FC	Y						
IT - Terna S.p.A.	FC	Y						
LU - CREOS								No data provided in due time

ME - CGES	FC	Y								
MK - MEPSO	SC	N								The given compliance level might not be in relation to the answers given.
NL - TenneT	NC	N								Addendum does not exist.
PL - PSE-Operator SA	FC	Y								
PT - REN	FC	Y								
RO - Transelectrica	FC	Y								
RS - JP EMS	FC	Y								
SI - ELES	SC	Y								
SK - SEPS	FC	Y								

- About 80 % of the TSOs declared that they had relevant dynamic models in order to carry out dynamic simulations ensuring transient angle stability in their own responsibility area.