System Operation European Stakeholder Committee

Materials for meeting 03 March 2022

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Reliable Sustainable Connected

Agenda

Topic	Timing	Presenter
1. Opening • Review of the agenda • Review and approval of minutes from previous meeting • Review of actions	14.00-14.15	ACER, Uros Gabrijel ENTSO-E, Cherry Yuen
2. Update on the implementation actions at pan-EU level	14.15-14.30	ENTSO-E, Cherry Yuen
3. Cybersecurity Network Code – Next steps	14.30-14.45	ACER, TBD
4. Report on CGM Implementation – transition go-live to implementation	14.45-14.55	ENTSO-E, Markus Besser
5. Network Code Emergency & Restoration implementation monitoring	14.55-15.10	ENTSO-E, Rafal Kuczynski
6. Resilience of the EU generation infrastructure to weather-related hazards	15.10-15.30	ACER, TBD
7. Status update on ENTSO-E investigations on 2021 grid events	15.30-15.45	ENTSO-E
8. AOB • Short update on Tmin FCER LER (ENTSO-E, Luca Ortolano)	15.45-16.00	ACER, TBD

1. Review of actions

ENTSO-E, Cherry Yuen

1 Review of actions SO ESC

ACTION	ANSWER	STATUS
CSAm amendments: ENTSO-E to check the date of the workshop with Capacity Calculation Regions.	Workshop with CCR took place on 18th Feb.	Done
Frequency deviations triggered by vRES generation: ENTSO-E need to internally coordinate for this work, then a dedicated group can be created with stakeholders either under this ESC or as an ad hoc group.	ENTSO-E internal technical analysis has started and is still ongoing. An update will be provided at the next SO ESC.	Ongoing
Investigation of grid incident in Poland: ENTSO-E to follow up if the report is available and if so share link with SO ESC	The factual reports are not published because of security reasons. The final report for this incident as well as for the Iberian peninsula will be published later in March. All the issues addressed in the factual report will be stated there as well.	Ongoing
Minimum activation period for FCR LER: ENTSO-E to organise a public workshop and share the invitation with SO ESC members	The stakeholders' workshop took place on 21st Jan and slides are available on SO ESC website.	Done
Deterministic Frequency Deviations: 1) *Could a reporting regarding the actions taken by TSOs to deal with deterministic frequency deviations (DFD) be put in place with market participants ?* 2) *What is the status of new frequency quality criteria in SAFA as well as the implementation of mitigation measures?*	1) ENTSO-E will share the list of DFD mitigation measures, which has been shared with SO CG in August 2021, with SO ESC; 2) The target parameters in Policy LFC&R B-1-2 are amended each year. These values are part of the public part of SAFA which is published here on the EE website	Ongoing

2. Update on the Implementation Actions

ENTSO-E, Cherry Yuen

Pan-European or regional deliverables 2021

Probabilistic Risk Assessment	ENTSO-E has published in December 2021 a Biennial Progress Report on Operational Probabilistic Coordinated Security Assessment and Risk Management which provides a view on TSOs' progress towards the probabilistic risk assessment methodology to be developed by 2027. Link

Pan-European or regional deliverables 2022

Network Code Emergency and Restoration	ACER has published an NCER Implementation report, which is available [here.](#) The ENTSO-E NCER expert team is analysing the report and ACER's views on the needed improvements.
RCC Training & Certification Task	ENTSO-E has submitted on 18 February the proposal for the Regional Coordination Centres' (RCC) task "training and certification of staff", prepared in accordance with Article 37(1)(g) of the Regulation (EU) 2019/943

Pan-European or regional deliverables 2022

CSAm Amendments
(Article 21 & 27)

A dedicated workshop with CCRs took place on 18th Feb 2022. An assessment by RSC is ongoing on CSA business process. The implementation by CCR will follow.

Operational Agreements

Ukraine/Moldova:

Updates are found here: link (cf. Future interconnection of Ukraine and Moldova with the Continental Europe Power System).
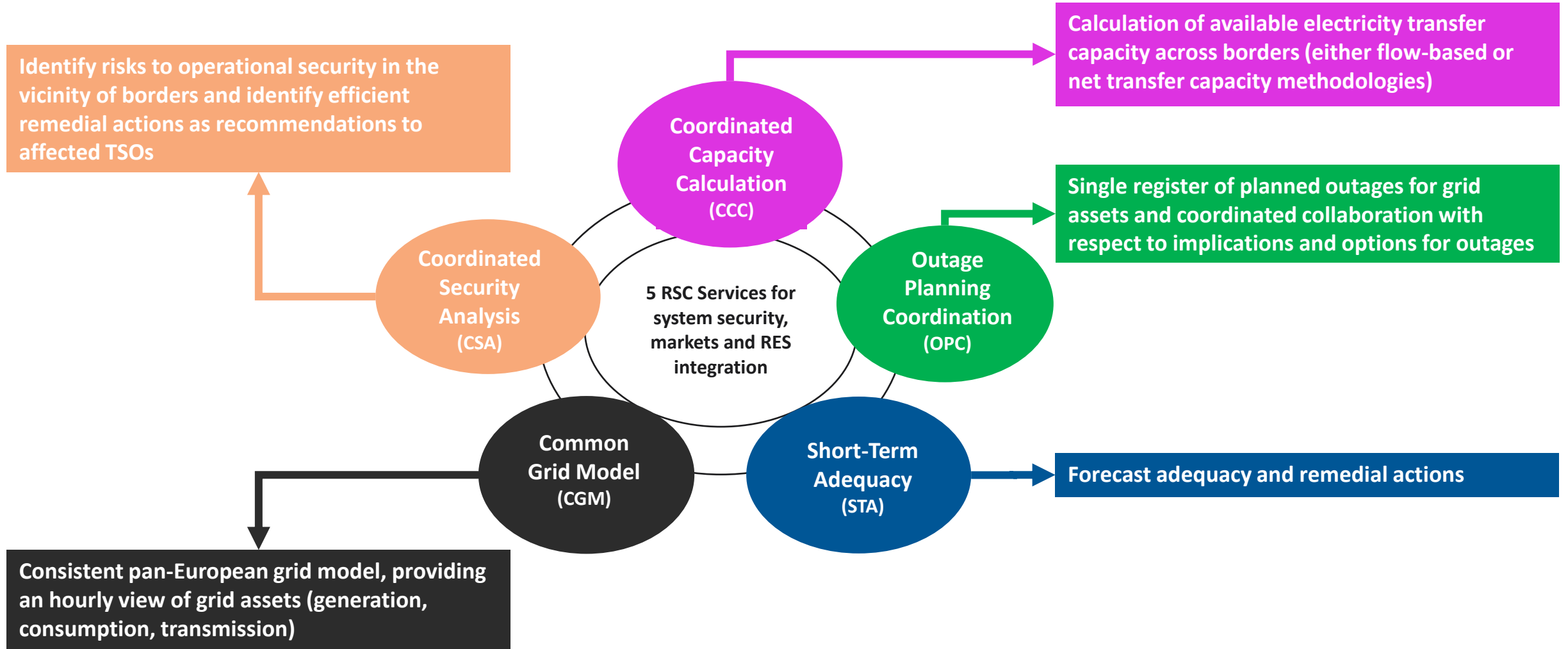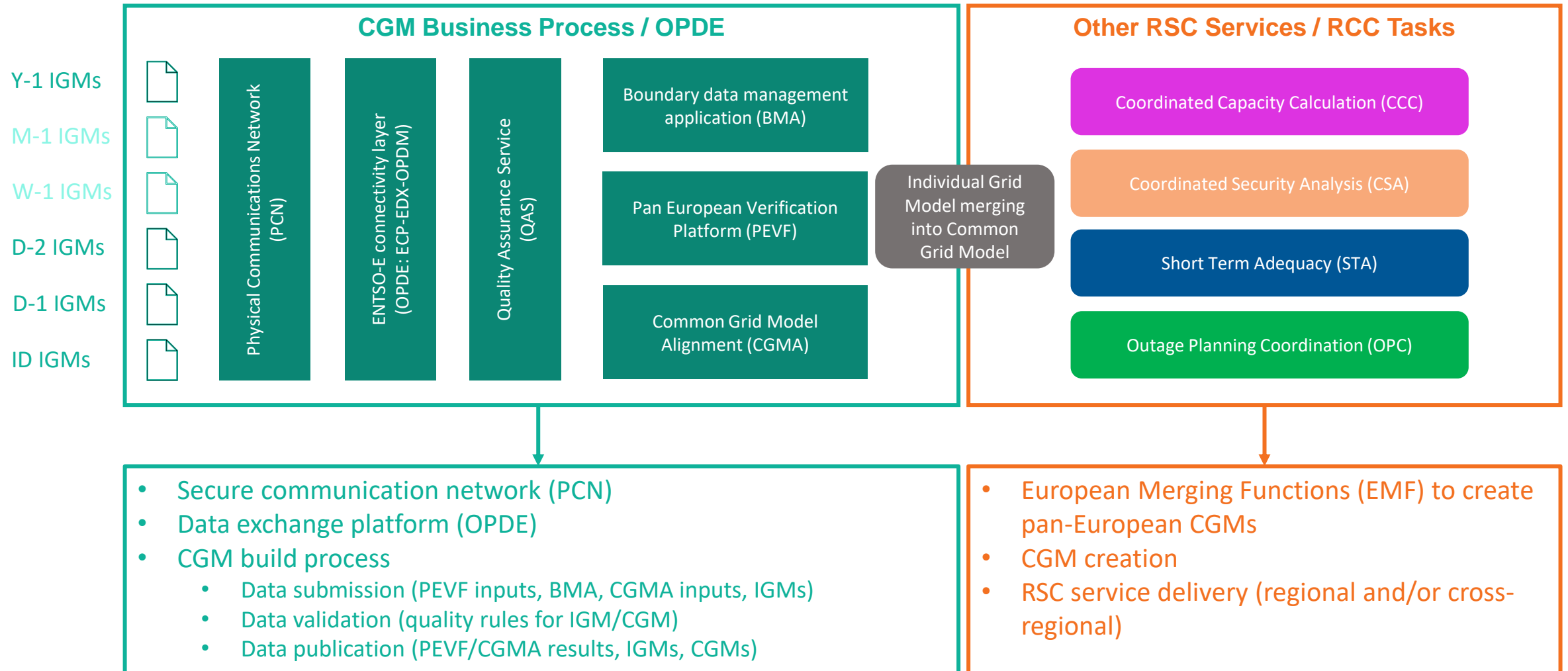
3. Network Code Cybersecurity

ACER

4. Report on CGM Implementation: transition go-live to implementation

ENTSO-E, Markus Besser

Why is regional coordination so important?

Identify risks to operational security in the vicinity of borders and identify efficient remedial actions as recommendations to affected TSOs

Calculation of available electricity transfer capacity across borders (either flow-based or net transfer capacity methodologies)

Single register of planned outages for grid assets and coordinated collaboration with respect to implications and options for outages

Coordinated Capacity Calculation (CCC)

Coordinated Security Analysis (CSA)

Outage Planning Coordination (OPC)

5 RSC Services for system security, markets and RES integration

Common Grid Model (CGM)

Short-Term Adequacy (STA)

Forecast adequacy and remedial actions

Consistent pan-European grid model, providing an hourly view of grid assets (generation, consumption, transmission)

The foundation for RSC Services / RCC Tasks has been delivered

CGM Business Process / OPDE

Y-1 IGMs

M-1 IGMs

W-1 IGMs

D-2 IGMs

D-1 IGMs

ID IGMs

Physical Communications Network (PCN)

ENTSO-E connectivity layer (OPDE: ECP-EDX-OPDM)

Quality Assurance Service (QAS)

Boundary data management application (BMA)

Pan European Verification Platform (PEVF)

Common Grid Model Alignment (CGMA)

Individual Grid Model merging into Common Grid Model

Other RSC Services / RCC Tasks

Coordinated Capacity Calculation (CCC)

Coordinated Security Analysis (CSA)

Short Term Adequacy (STA)

Outage Planning Coordination (OPC)

- Secure communication network (PCN)
- Data exchange platform (OPDE)
- CGM build process
  - Data submission (PEVF inputs, BMA, CGMA inputs, IGMs)
  - Data validation (quality rules for IGM/CGM)
  - Data publication (PEVF/CGMA results, IGMs, CGMs)

- European Merging Functions (EMF) to create pan-European CGMs
- CGM creation
- RSC service delivery (regional and/or cross-regional)

CGM Programme Go-Live in 2021, delivering significant benefits

- CGM Go-Live in 2021 delivers the legal mandate as set out in CGMM

- Although full RSC Services are not delivered yet, CGM MVS Go-Live has significant benefit from end 2021:

Proven data exchange platform (OPDE)
- *Flexible (legally mandated) exchange platform*
- *Provides base "platform services" (e.g. data storage, logging) for use in all future data exchanges*
- *CGM Go-Live enables OPDE to be proven day-to-day*

Operational, pan-European CGM service utilised in a manner that drives out issues
- *Operational experience (TSOs/RSCs), to build confidence*
- *Identify and resolve Issues based on "real" operations*

Active "stake in the ground" for RSC Service
Provides a first "stake in the ground" around which new services can test and be developed

Baseline for model quality and standardisation
- *CGMs produced/exchanged for mandated timeframes*
- *Quality can be refined utilising a flexible validation mechanism*
- *Provides baseline quality, to drive incremental improvement*

Base data exchange flows, ready for additional datasets
- *CGM provides a significant number of "base" flows, upon which development can occur for other services*

Questions?

5. Network Code Emergency & Restoration implementation monitoring

ENTSO-E, Rafal Kuczynski

Article 4(2) of NC ER – summary (status on 15.01.2022)

	Y	N	NA
Article 4(2)(a) – defence service provider - contract	13	3	13
Article 4(2)(b) – restoration service provider - contract	21	4	4
Article 4(2)(c) – list of SGUs and list of measures	20	4	5
Article 4(2)(d) – list of high priority SGUs	19	3	7
Article 4(2)(e) – suspension and restoration of market activities	23	6	0
Article 4(2)(f) – imbalance settlement	23	6	0
Article 4(2)(g) – test plan (Transelectrica & IPTO missed)	18	9	0
29 EU (TSOs) – (NG ESO and SONI excluded)			
Y - approved by NRA			
N - submitted to NRA			
NA - not applicable			

Article 4(2) of NC ER – details (1)

	Article 4(2)(a) – defence service provider - contract
Approved by NRA	AT (APG, VUEN), BG (ESO), CZ (CEPS), DK (energinet), EE (Elering), FI (Fingrid), FR (RTE), HR (HOPS), IE (EirGrid), IT (Terna), LV (AST), SK (SEPS)
Submitted to the NRA, not yet approved	ES (REE), EL (IPTO), RO (Transelectrica)
Not Applicable	BE (Elia), DE (Amprion, 50Hertz, TenneT DE, Transnet BW), HU (Mavir), LT (Litgrid), LU (Creos), NL (TenneT NL), PL (PSE), PT (REN), SE (SvK), SI (ELES),

Article 4(2) of NC ER – details (2)

	Article 4(2)(b) – restoration service provider - contract
Approved by NRA	AT (APG, VUEN), BE (Elia), BG (ESO), CZ (CEPS), DK (energinet), DE (Amprion, 50Hertz, TenneT DE, Transnet BW), EE (Elering), FI (Fingrid), FR (RTE), HR (HOPS), HU (Mavir), IE (EirGrid), IT (Terna), LV (AST), NL (Tennet NL), PL (PSE), SK (SEPS)
Submitted to the NRA, not yet approved	ES (REE), EL (IPTO), PT (REN), RO (Transelectrica),
Not Applicable	LT (Litgrid), LU (Creos), SE (SvK), SI (ELES)

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Article 4(2) of NC ER – details (3)

	Article 4(2)(c) – list of SGUs and list of measures
Approved by NRA	AT (APG, VUEN), BE (Elia), BG (ESO), CZ (CEPS), DK (energinet), EE (Elering), FI (Fingrid), FR (RTE), HR (HOPS), HU (Mavir), IE (EirGrid), IT (Terna), LT (Litgrid), LV (AST), NL (Tennet NL), PL (PSE), SE (SvK), SI (ELES), SK (SEPS)
Submitted to the NRA, not yet approved	ES (REE), EL (IPTO), PT (REN), RO (Transelectrica)
Not Applicable	DE (Amprion, 50Hertz, TenneT DE, Transnet BW), LU (Creos)

Article 4(2) of NC ER – details (4)

	Article 4(2)(d) – list of high priority SGUs
Approved by NRA	AT (APG, VUEN), BE (Elia), BG (ESO), CZ (CEPS), DK (energinet), EE (Elering), FI (Fingrid), FR (RTE), HR (HOPS), HU (Mavir), IT (Terna), LT (Litgrid), LV (AST), NL (Tennet NL), PT (REN), SE (SvK), SI (ELES), SK (SEPS)
Submitted to the NRA, not yet approved	ES (REE), EL (IPTO), RO (Transelectrica),
Not Applicable	DE (Amprion, 50Hertz, TenneT DE, Transnet BW), IE (EirGrid), LU (Creos), PL (PSE),

Article 4(2) of NC ER – details (5)

	Article 4(2)(e) – suspension and restoration of market activities
Approved by NRA	AT (APG, VUEN), BG (ESO), CZ (CEPS), DK (energinet), DE (Amprion, 50Hertz, TenneT DE, Transnet BW), EE (Elering), ES (REE) ,FI (Fingrid), FR (RTE), HR (HOPS), HU (Mavir), IE (EirGrid), IT (Terna), LV (AST), TennetT NL, PL (PSE), SE (SvK), SI (ELES), SK (SEPS)
Submitted to the NRA, not yet approved	BE (Elia), EL (IPTO), LT (Litgrid), LU (Creos), PT (REN), RO (Transelectrica)
Not Applicable	

Article 4(2) of NC ER – details (6)

	Article 4(2)(f) – imbalance settlement
Approved by NRA	AT (APG, VUEN), BG (ESO), CZ (CEPS), DK (energinet), DE (Amprion, 50Hertz, TenneT DE, Transnet BW), EE (Elering), ES (REE) ,FI (Fingrid), FR (RTE), HR (HOPS), HU (Mavir), IE (EirGrid), IT (Terna), LV (AST), TennetT NL, PL (PSE), SE (SvK), SI (ELES), SK (SEPS)
Submitted to the NRA, not yet approved	BE (Elia), EL (IPTO), LT (Litgrid), LU (Creos), PT (REN), RO (Transelectrica)
Not Applicable	

Article 4(2) of NC ER – details (7)

	Article 4(2)(g) – test plan
Approved by NRA	AT (APG, VUEN), BE (Elia), BG (ESO), CZ (CEPS), DK (energinet), DE (Amprion, 50Hertz, TenneT DE, Transnet BW), FI (Fingrid), HR (HOPS), IT (Terna), LT (Litgrid), LV (AST), PL (PSE), SI (ELES), SK (SEPS)
Submitted to the NRA, not yet approved	EE (Elering), ES (REE), FR (RTE), HU (Mavir), IE (EirGrid), LU (Creos), PT (REN), SE (SvK), NL (TenneT NL)
Not Applicable	

Article 4(2) of NC ER – links to the appoved TCM

Document on national implementation are available on ENTSO-E public web page :

https://www.entsoe.eu/active-library/codes/er/

Next update (status of NC ER implementation on 15.07.2022)

6. Resilience of the EU generation infrastructure to weather-related hazards

ACER

7. Status update on ENTSO-E investigations on 2021 grid events (TBD)

ENTSO-E, TBD

8 January 2021 incident

- The Expert Panel (ACER/NRAs/TSOs) has met 5 times and finalised its work on 29th June 2021

- Publication of the [Final Report](#) took place on 15th July 2021

- The ICS Expert Panel has concluded on **22 recommendations** for follow up work, taking the event as an opportunity to improve the processes

- A dedicated workstream has been established between ACER, European Commission and ENTSO-E. Regular meetings take place where implementation of all 22 recommendations is being discussed

17 May 2021 incident

- The Expert Panel (ACER/NRAs/TSOs) shall finalise its work by 15th March 2022

- Publication of the Final Report is scheduled for the week of 14th March 2022

- The ICS Expert Panel has concluded on 2 recommendations for follow up work, taking the event as an opportunity to improve the processes

- More detailed presentation of the report for SO ESC is foreseen once the final report is published.

24 July 2021 incident

- The [Factual Report](#) has been published by ENTSO-E on 12th November 2021

- The Expert Panel (ACER/NRAs/TSOs) shall finalise its work by 15th March 2022

- Publication of the Final Report is scheduled for the week of 14th March 2022

- The ICS Expert Panel has concluded on 5 recommendations for follow up work, taking the event as an opportunity to improve the processes

- Given the similar nature of the incidents, the Expert Panel highlighted the need to proceed with implementation of recommendations from 8 January 2021 incident report, as majority of them are applicable in 24 July incident.

- More detailed presentation of the report for SO ESC is foreseen once the final report is published.

8. AOB

ENTSO-E, Cherry Yuen, Luca Ortolano