

System Operation European Stakeholder Committee

Materials for meeting 1 December 2022



Agenda

Topic	Timing	Presenter
1. Opening <ul style="list-style-type: none">Review of the agenda, approval of last meeting minutesReview of actions	14.00 - 14.15	ACER, Uros Gabrijel ENTSO-E, Cherry Yuen
2. Update on the implementation actions at pan-EU level <ul style="list-style-type: none">Incl. update on NC E&R implementation	14.15 - 14.30	ENTSO-E, Cherry Yuen & Rafal Kuczynski
3. Update on operational preparation for Winter 22/23	14.30 - 14.45	ENTSO-E, Laurent Rosseel or Mauro Caprastianca
4. Cybersecurity Network Code – Status update	14.30 - 14.45	EC & ENTSO-E (TBC)
5. Report on CGM Implementation	14.45 - 15.00	ENTSO-E, Jonathan Boyer
6. Update on Tmin FCR LER	15.15 - 15.25	ENTSO-E, Luca Ortolano
7. AOB <ul style="list-style-type: none">Approval of meeting dates for 2023	15.25 – 15.30	

1. Review of actions

ENTSO-E, Cherry Yuen

1 Review of actions SO ESC

ACTION	ANSWER	STATUS
<p>NC/GL Amendments: EC to inform about their planning and stakeholder involvement on SO ESC September meetings for updates in SO GL</p>	Pending direct answer from EC	Ongoing
<p>Administrative: ENTSO-E secretariat shall update the website</p>	Pending due to resource constraints at ENTSO-E	Ongoing
<p>Administrative: All organisations are asked to update their list of members and respecting the number of seats dedicated to each organisation before the next ESC meeting</p>	<p>ENTSO-E send individual emails to facilitate the work Pending due to resource constraints at ENTSO-E</p>	Ongoing
<p>Invite stakeholders</p>	<p>ENTSO-E will check if COGEN (Gunnar Kaestle) and other stakeholders (e.g. WindEurope) can be invited as guest to the internal group within ENTSO-E in charge of analysis the “wind eclipse”. Update: the analysis is postponed due to the emergency synchronisation project.</p>	Ongoing

1 Review of actions SO ESC

ACTION	ANSWER	STATUS
CGM: ENTSO-E to provide a slide with all the acronyms on the topic	Acronyms sent after the last meeting	Done
CGM: ENTSO-E to check if the software used by RCCs can be disclosed	Software list to be sent to participants via email (not to be made public)	Ongoing
Resilience: ACER to share the link of the policy paper to be published shortly and ahead of the full-fledged public consultation	Link sent by ACER	Done
Resilience: ENTSO-E to provide the slides from CG-ESC on CNC amendments	Link sent by ENTSO-E	Done
KORRR: ENTSO-E to organize a bilateral meeting with EU DSO Entity, involving also ACER	ENTSO-E initiated contact, pending EU DSO Entity reply	Ongoing
KORRR: ENTSO-E to share the documents for KORRR amendments	Documents sent; feedback gathered will be considered and integrated when applicable for the next release of the documents	Ongoing
LLEFD: ENTSO-E to organize a stakeholder workshop on LLEFD (Tmin FCR LER)	Workshop organised	Done

2. Update on the Implementation Actions:

SO GL/NC ER

ENTSO-E, Cherry Yuen & Rafal Kuczynski

Pan-European or regional deliverables 2022: SOGL/NCER

CSAm (Article 44.5)

Secure data collection and validation platform being set up for the PRA (Probabilistic Risk Assessment) methodology expected in 2027

- procurement process for data collection tool done

KORRR

Pending discussions with EU DSO Entity, involving also ACER
Revised version taking into account feedback received from stakeholders will be shared after conclusion

Operational Agreements

Ukraine/Moldova:
Discussions and work ongoing

Pan-European or regional deliverables 2022: SOGL/NCER

SO GL
Implementation -
art. 15

ENTSO-E published annual report on Incidents Classification Scale (ICS) end September 2022 ([link](#))

SO GL
Implementation
- art. 16

ENTSO-E published annual report on Load-Frequency Control (LFC) end September 2022 ([link](#))

SO GL
Implementation
- art. 17

ENTSO-E published annual report on Regional Coordination Assessment end September 2022 ([link](#))

Network Code Emergency & Restoration implementation

Article 4(2) of NC ER – summary (status on 31.10.2022)

	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	24	4	1
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)	19	8	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)

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), DE (Amprion, 50Hertz, TenneT DE, Transnet BW), 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	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	

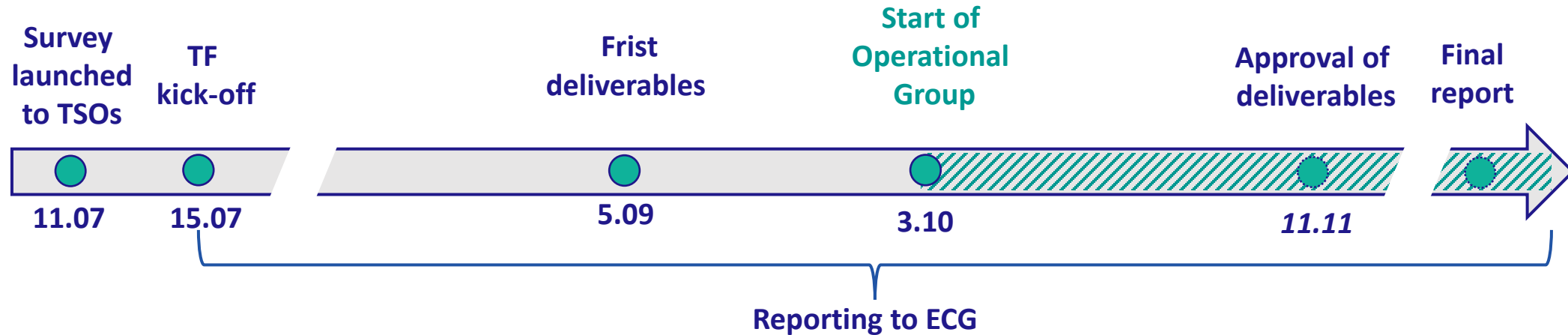
Article 4(2) of NC ER – details (7)

	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), FR (RTE), 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), HU (Mavir), IE (EirGrid), LU (Creos), PT (REN), SE (SvK), NL (TenneT NL)
Not Applicable	

3. Update on operational preparation for Winter

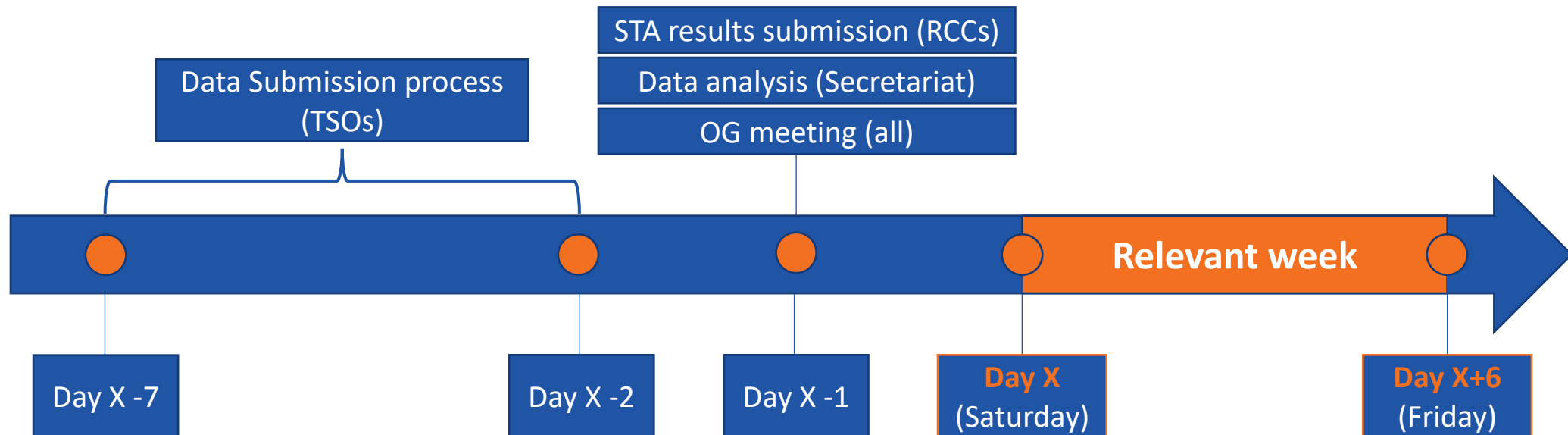
ENTSO-E, Laurent Rosseel

Task Force's work - summary



Operational Group

- All interconnected TSOs and all RCCs participate in the group.
- All TSOs submit the data in **weekly cycle** (fuel supply, status of operating reserves, need for assistance, available DSR, unplanned outages impacting cross-border exchange, weather information, ...).
- RCCs submit the results for **Short-Term Adequacy (STA) process**.
- The data is then analysed and used to prepare an overview of system's status for upcoming week.
- Operational Group meets weekly in order to align on the **forecast of system's situation**.



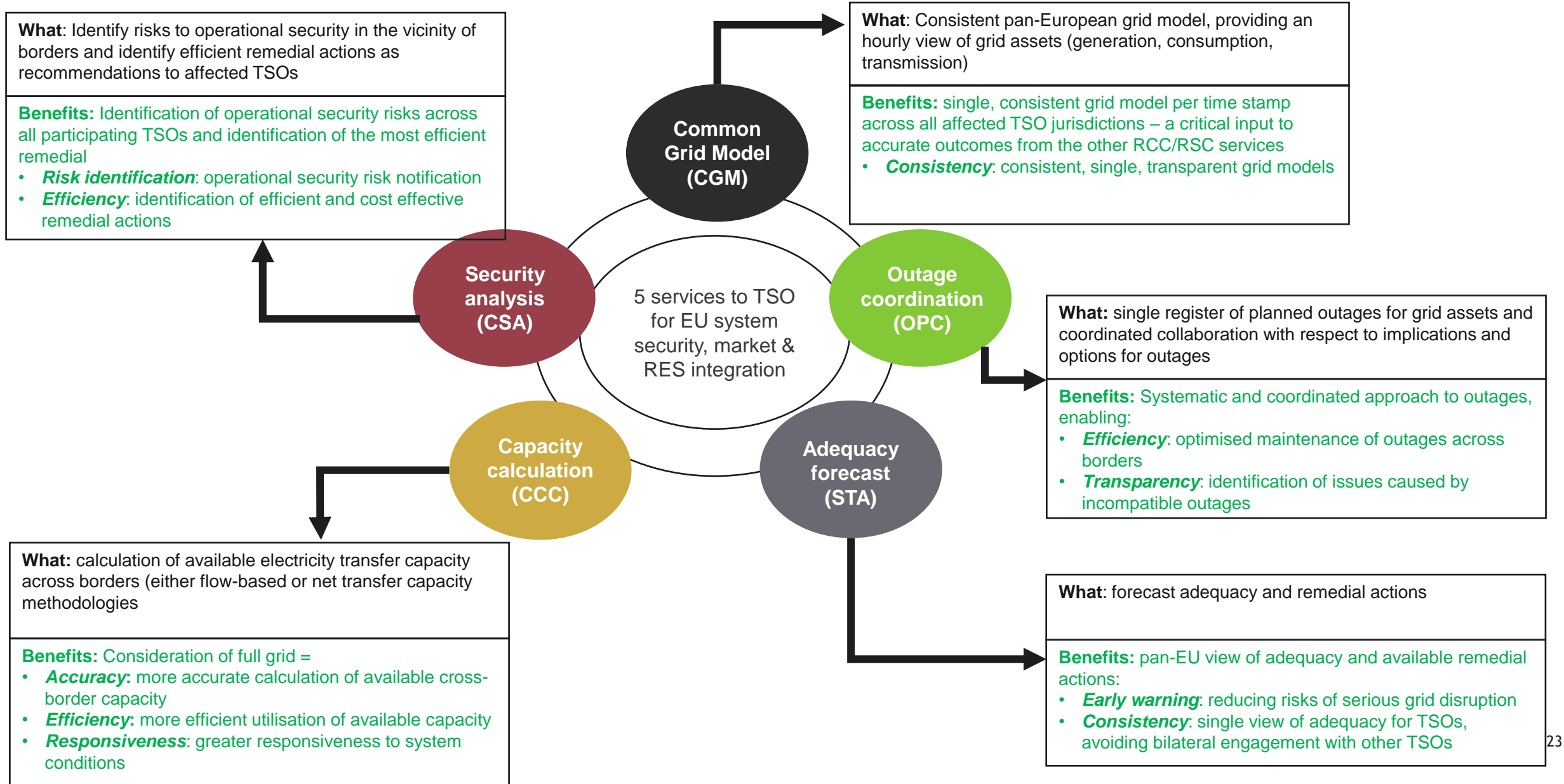
4. Cybersecurity Network Code – Status update

European Commission, Felipe Castro Barrigon

5. Report on CGM Implementation

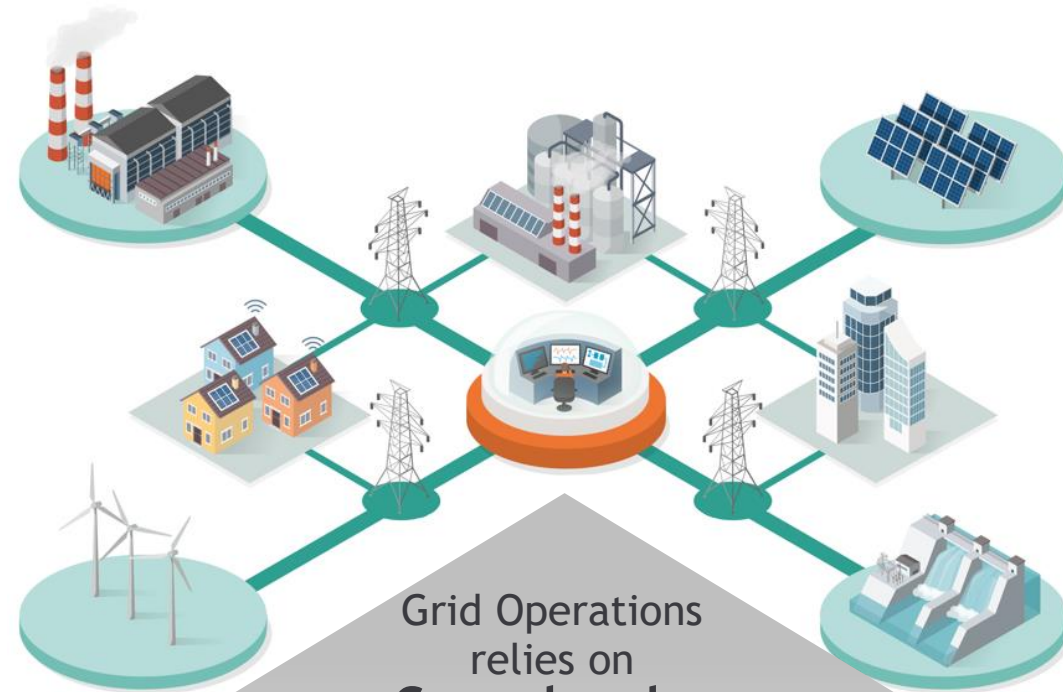
ENTSO-E, Jonathan Boyer

Enabling reliable and efficient grid operations via regional coordination



Importance of CGM and OPDE to facilitate coordinated services

- IGMs/ CGMs are critical inputs to other RSC Services
- OPDE is SOGL-mandated platform for the exchange of all relevant data for these services
- CGM and OPDE are therefore the basic enablers for reliable Grid Operations



Grid Operations relies on **Cross-border Operational Planning**

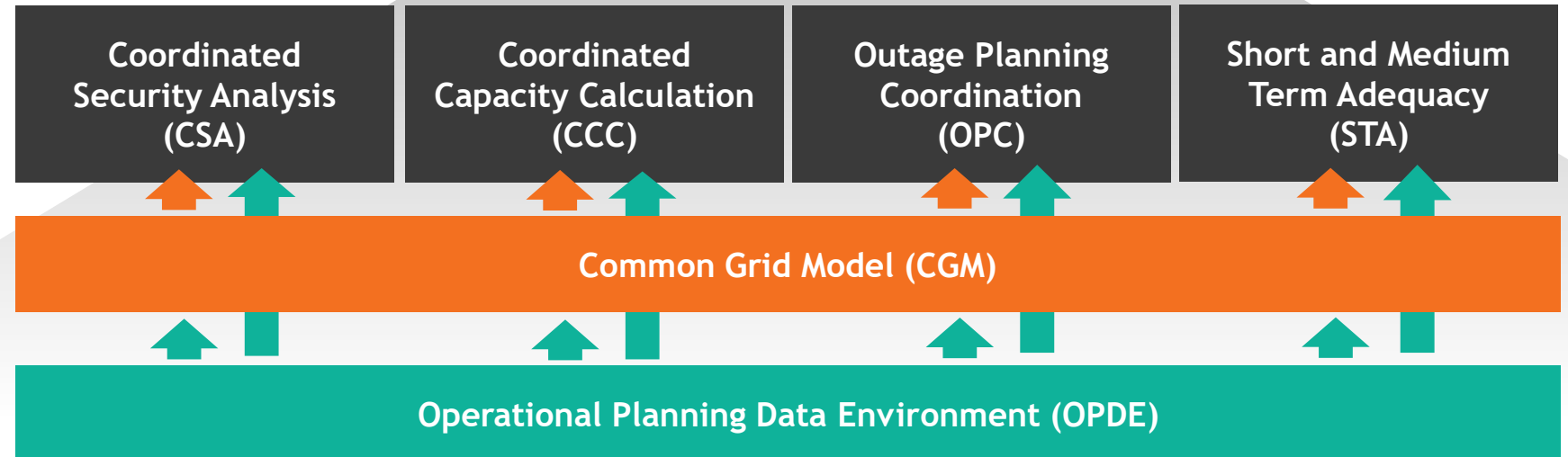
Regional coordination processes

ENABLED BY

Common and shared planning data

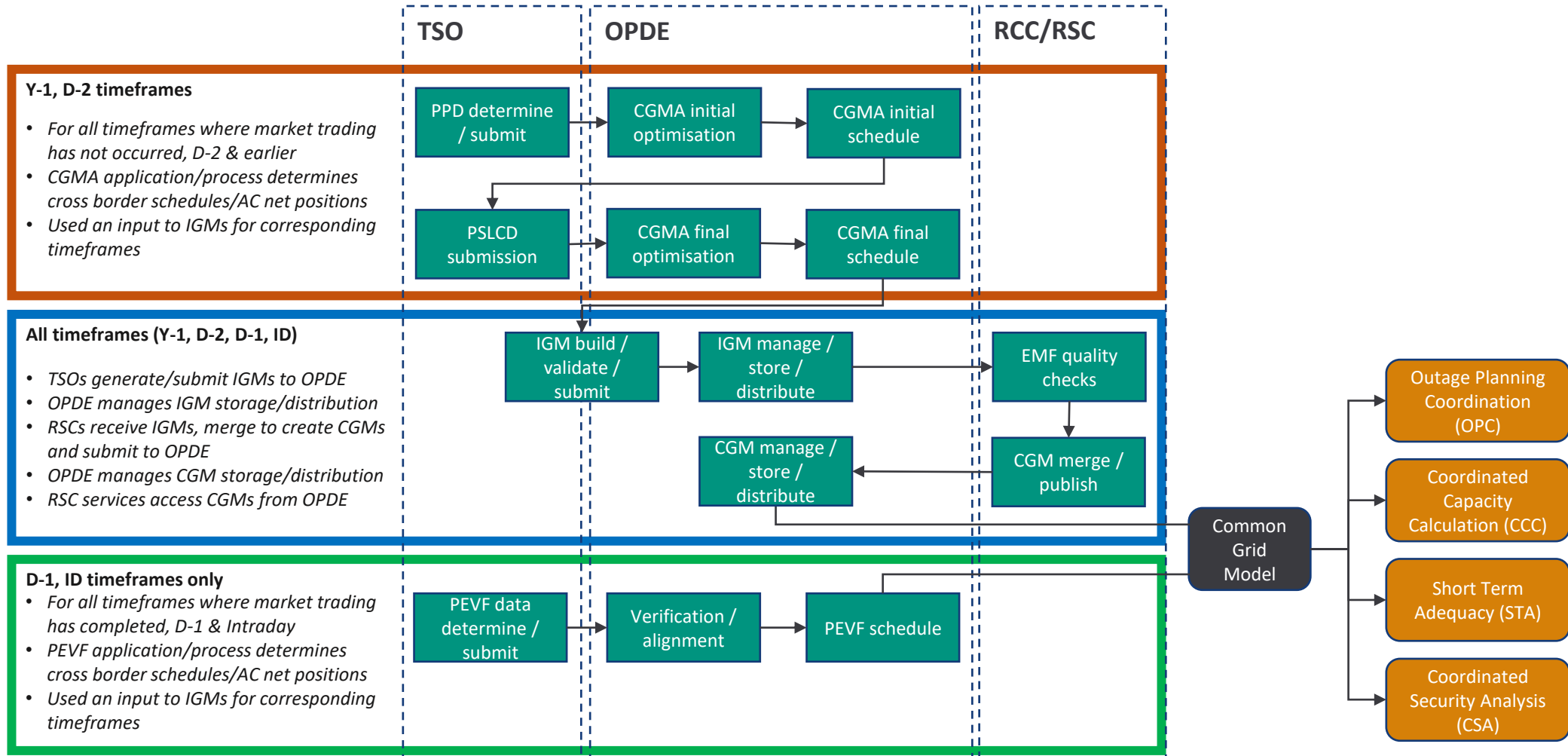
SHARED AND ACCESSED THROUGH

Digital infrastructure for pan-European data exchange & storage

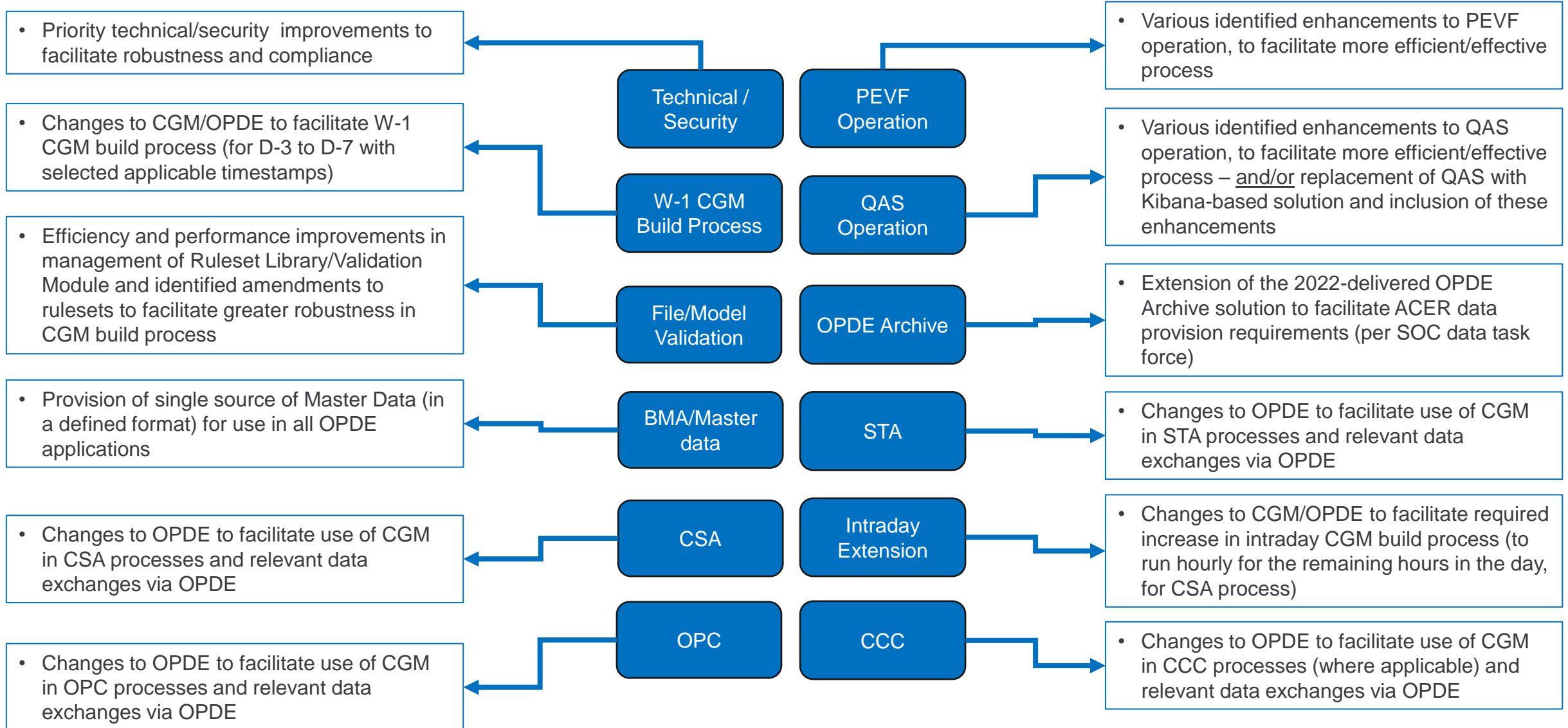


Overview of CGM build process

- The CGM build process produces a consistent pan-European grid model, rely on the data exchange network and applications within OPDE



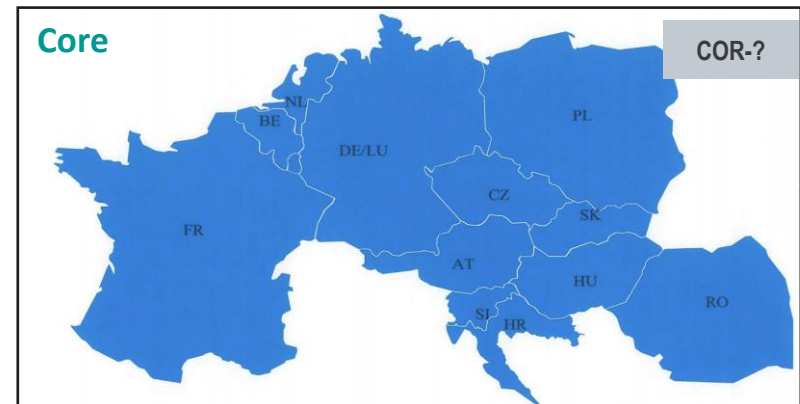
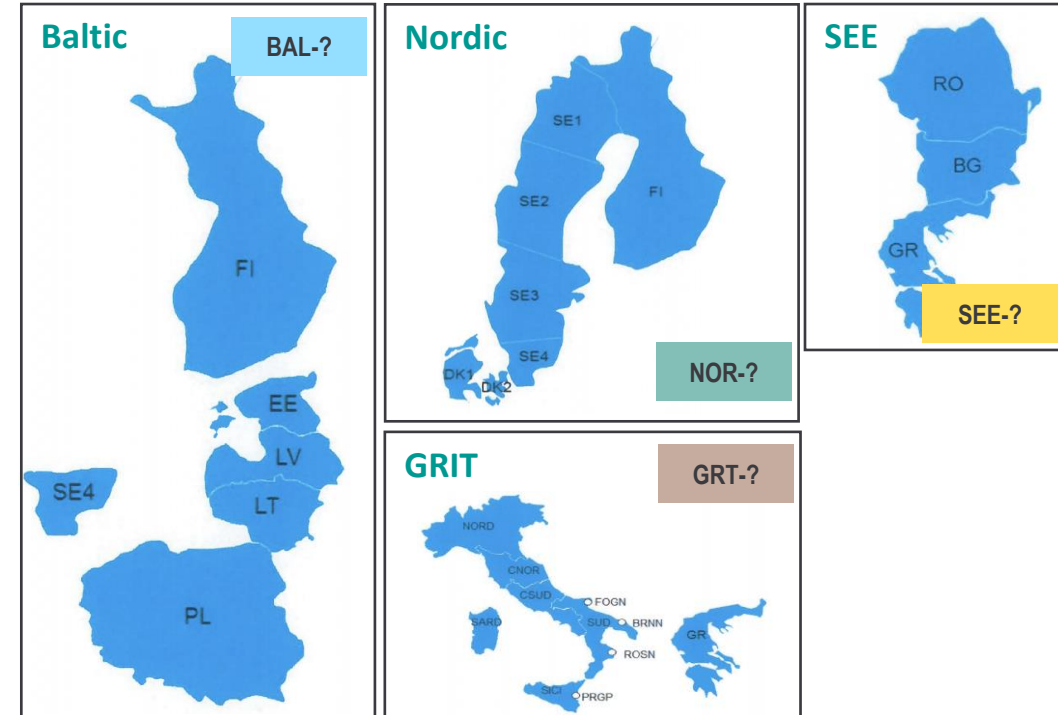
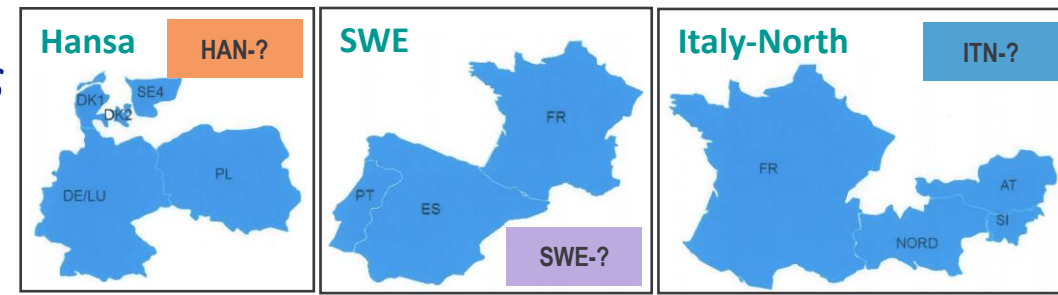
Approved 2023 Priority Focus Areas



Roadmap for use of CGM OPDE in RCC/RSC Services

TARGET IMPLEMENTATION STAGES

	2022	2023	2024	2025	2026		
CCC			COR - DA COR - ID	HAN - DA HAN - ID	COR - LT SWE - DA SWE - ID	ITN - DA ITN - ID	SWE - LT
CSA			COR - D1 COR - ID	SWE - D1 SWE - ID	HAN - D1 ITN - D1	HAN - ID ITN - ID	
STA				REG-W1			
OPC			PAN-W1 GRT - Y1	PAN-Y1 GRT - W1	COR - Y1 SWE - Y1 SEE - Y1 BAL - Y1 ITN - Y1 SCC - W1	COR - W1 SWE - W1 SEE - W1 BAL - W1 ITN - W1	



- Well coordinated planning across RSCs, CCRs, ENTSO-E and TSOs is critical to deliver benefits across the entire community, to avoid inefficiencies and to ensure successful migration.
- Note: where plans not confirmed or later than 2026, they are not displayed.

ID = Intraday | D1 = DA = Day Ahead | D2 = Two Day Ahead | W1 = Week Ahead | M1 = Month Ahead | Y1 = Year Ahead | LT = Long-Term

Regional Coordination

Key factors for migration of RCC/RSC services

1. CGM Readiness Status
2. Implementing additional timeframes (i.e., W-1, M-1) for RCC/RSC services/tasks
3. Requirements arising from regional methodologies
4. Harmonized migration planning between different regions and services/tasks

Key activities to improve completeness and quality of IGMs/CGMs and to ensure harmonized migration

Coordinated RCC Services Planning

Overall objectives:

- *Gathering detailed, existing plans for each service and region*
- *Understanding all dependencies and their priorities, such as data/process timeframes, process timings, data formats, delivery timescales etc.*
- *Determining potential actions/mitigations (i.e., amendment of all TSOs CGM methodology to ensure alignment across methodologies and business processes)*
- *Aimed to significantly enhance what has been included in the Integrated Roadmap to date*

Interoperability Testing

- *Testing performed by ENTSO-E experts on the real data models, including rejected IGMs*

Overall objectives:

- *Providing support to TSOs to identify issues and improve IGMs/CGMs quality*
- *Assessing the impact of new rules for business continuity related to publication of IGMs and CGMs to OPDE; Improving the quality of QoCDC*

Bilateral calls with all TSOs

Overall objectives:

- *Analysing individual TSOs and RCCs issues*
- *Defining the possible mitigation actions and determining what assistance is needed*

Industry-wide Modelling Group

- *Modelling group initiated by Coreso to work on improving IGM/CGM in CGMES format*

Overall objectives:

- *Improving CGMES/OPDE readiness status on Pan-EU level*
- *Further assessing the quality by using EMF tools*
- *Inviting all TSOs and RCCs to participate*

CGM/OPDE Development

Overall objectives:

- *The prioritisation and delivery of changes to CGM/OPDE, in order to:*
- *Facilitate migration of RCC/RSC services*
- *Improve the efficiency or effectiveness of CGM/OPDE services*



Questions?



6. Update on T_{min} FCR LER

ENTSO-E, Walter Sattinger

Outcome of the analysis of the LLEFD

Although all of the identified events have an energetic content potentially impacting LER, **only 6 out of 20 have been previously investigated** within ENTSO-E from SG SF analysis, since only those 6 events triggered the specific criteria for to make a specific check.

All the other events (ranging across the 50 mHz thresholds) **needed to be investigated from scratch:**

- Identifying the **involved TSOs**;
- Collaborating with personnel of involved TSOs to **find out the root causes and the amount** of the unbalances.

Here following are listed some of the general root causes identified so far :

- Several **LLEFDs occur at night at low load conditions**. In these conditions, in some TSOs, the generation park presents technical **limitations to the downward reserves which can be procured**. In such cases the imbalance is temporarily covered by FCR activation, due to lack of downward aFRR/mFRR.
- Extreme **weather condition**, drastically reducing the reserve availability in a Block;
- **Human error** in reconnecting the measuring the inter-area flow (after maintenance);
- **Human error** in the activation of tertiary reserve in the framework of limited mFRR;

Outcome of the analysis of the LLEFD

The key aspect emerging from the investigation is that very often the **LLEFD are due to a combination of several contributing factors which occur at the same time**: e.g. forecast errors, unusual load conditions, extreme weather, human error, power park inflexibility in low load condition,

RG CE TSOs then **confirmed** in a dedicated meeting with the NRAs that the **frequency profiles** used for the proposal made so far **are consistent**.

Beside that, TSOs renewed the availability on continuing the work with NRAs and ACER related to LLEFD and its implication.

NRAs acknowledged the TF study outcome during the meeting and then will give a feedback on the possible way forward.

7. AOB

7. 2023 Meeting dates proposal

Meeting	Date	Location
1	15 March PM <i>(GC ESC: 16 March)</i> <i>(MESC: 9 March)</i>	Online
2	15 June PM <i>(GC ESC: 14 June AM)</i> <i>(MESC: 5 July)</i>	Brussels
3	28 September PM <i>(GC ESC: 29 September AM)</i> <i>(MESC: 12 October)</i>	Ljubjana
4	30 November PM <i>(GC ESC: 1 December)</i> <i>(MESC: 7 December)</i>	Online