



Regional Security Coordination in SEE SCC Role

**4th meeting of the Security of Supply Coordination
Sub-Group for Electricity**

Vienna,
July 5th, 2018



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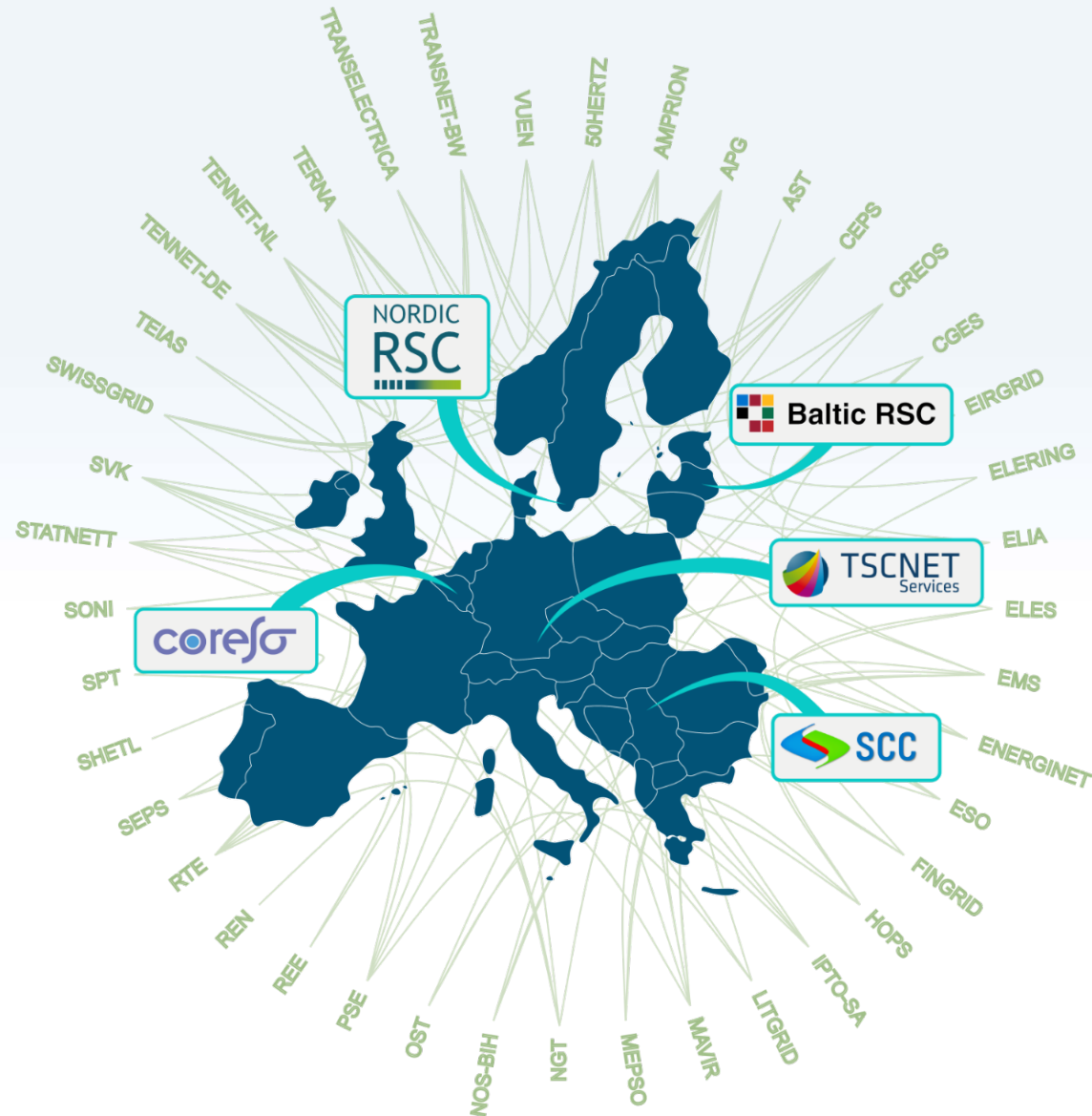


General information - RSCs

❖ RSCs:

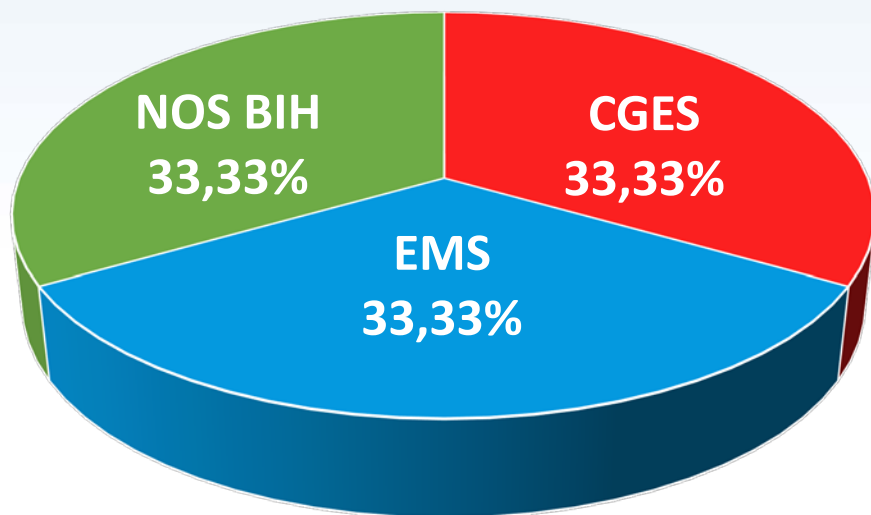
- Coreso (2008)
- TSCNET (2008)
- SCC (2015)
- Nordic RSC (2016)
- Baltic RSC (2016)

❖ 1st of August 2015:
SCC started operational activities



General information - Company structure

❖ Shareholders



❖ Service users



General information - Service users

- ❖ CGES, EMS and NOSBiH - procuring services from August 1st, 2015
- ❖ IPTO - procuring services from December 1st, 2017
- ❖ ESO EAD - procuring services from January 1st, 2018
- ❖ MEPSO - procuring services from March 1st, 2018.
- ❖ OST - procuring services from June 15th, 2018



Legend:

- Shareholders
- Service users

Main SCC services - General

❖ Services and main activities:

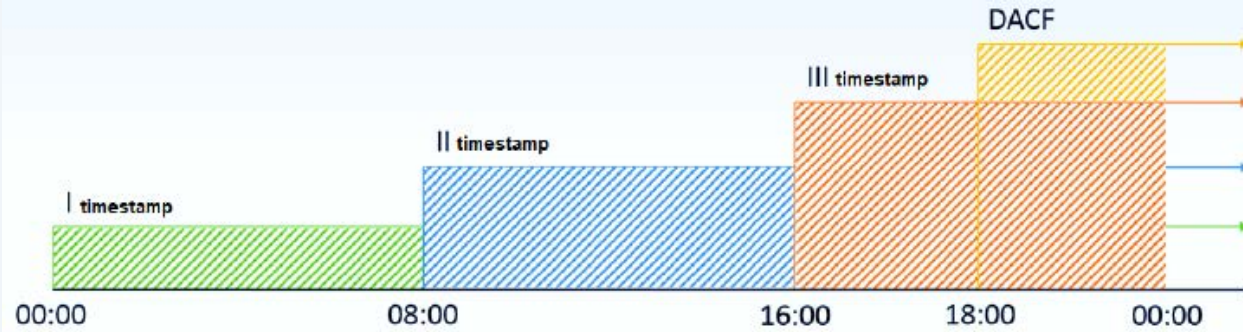
1. Validation of DACF and IDCF Continental Europe (CE) IGMs/creation and delivery of CE CGMs
2. Security analysis
3. Dry Run of day-ahead NTC Calculations
4. Outage planning coordination (OPC)
5. Short and Medium Term Adequacy (SMTA)



Main SCC services - CGM creation and Security analyses



- ❖ DACF/IDCF IGMs download
- ❖ DACF/IDCF IGMs validation
- ❖ DACF/IDCF CGMs creation
- ❖ Security analyses - N-X analyses using DACF/IDCF CGMs
- ❖ Provision of results - local server, QAS Portal, e-mail, phone ...



Area	Purpose	Type	00-24	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
UX	DACF	cont. case		3	OK	OK	OK	OK	OK	OK	4	15	9	22	11	13	10	11	8	8	8	7	6	9	11	10	10
UX	DACF	OL		3	OK	OK	OK	OK	OK	OK	4	8	7	8	11	13	9	9	6	6	6	6	5	8	10	8	9
UX	DACF	OT		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
UX	DACF	DIV		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

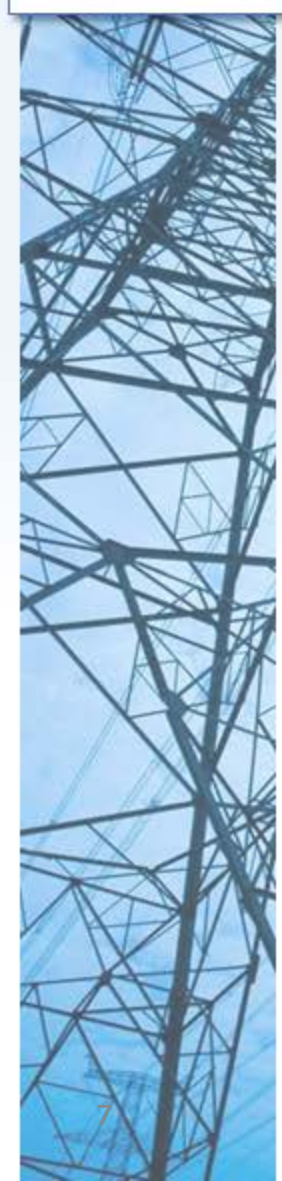
QAS Portal

File Status Monitor

Time	AL	AT	BA	BE	BG	CH	CZ	DE	ES	FR	GR	HR	HU	IT	ME	MK	NL	PL	PT	RO	RS	SI	SK	TR	UA	Vulcanus	RGCE	
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Contingency analysis results

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UX	DACF	DIV		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK



Main SCC services - OPC and SMTA

❖ Outage Planning Coordination (OPC)

- SCC actively participates in Project Group and Core Team for OPC
- Regular Yearly and Weekly OPC processes (as in Coreso and TSCNET)
- Technical support to SEE Maintenance Group to all SEE TSOs (EU: RO, BG and GR, non-EU: WB6 plus TR), recognized important role of SCC for SEE TSOs joining PG OPC as well as their active participation in Weekly and Yearly OPC process

❖ Short and Medium Term Adequacy (SMTA)

- SCC actively participates in Project Group and Task Force for SMTA
- Weekly cross-regional SMTA calculations are performed by all RSCs on 4 week rotating level → SCC performs cross-regional SMTA process and calculations for all ENTSO-E TSOs (EU and non EU)
- SCC proposed the Regional adequacy assessment methodology

❖ OPC and SMTA PGs work - one of main outputs should be pan-European tools that will be used by all TSOs and RSCs

Main SCC services - Participation in ENTSO-E CGM project



SCC is involved in ENTSO-E project Common Grid Model (CGM) through:

- ❖ **Testing the CGMES format,**
- ❖ **OPDE (Operational Planning Data Environment) - All the client components are installed, configured and in operation,**
- ❖ **Participation in Common Grid Model Alignment - SCC is Alignment Agent for its service users,**
- ❖ **Interoperability testing of EMF (European Merging Function),**
- ❖ **RSC IT experts group.**



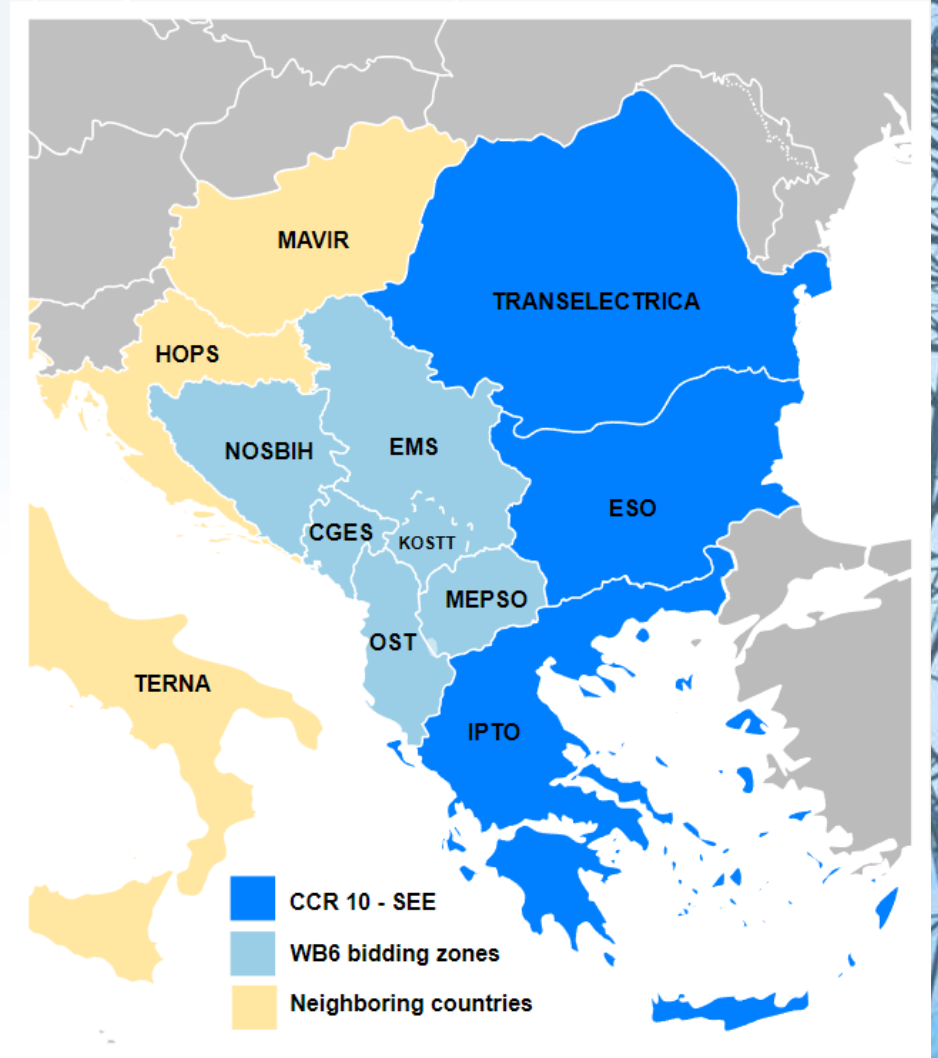
Main SCC services - Coordinated Capacity Calculation

- ❖ SCC performs Dry run of day-ahead NTC calculations for all service users' borders (18 borders)
- ❖ Calculations are based on D2CF models delivered by 9 SEE TSOs on Monday for Wednesday
- ❖ Process includes IGMs validation, CGMs creation and NTC calculation
- ❖ Results are being delivered to service users



Specificities of SEE CCR - Implementation of CACM GL

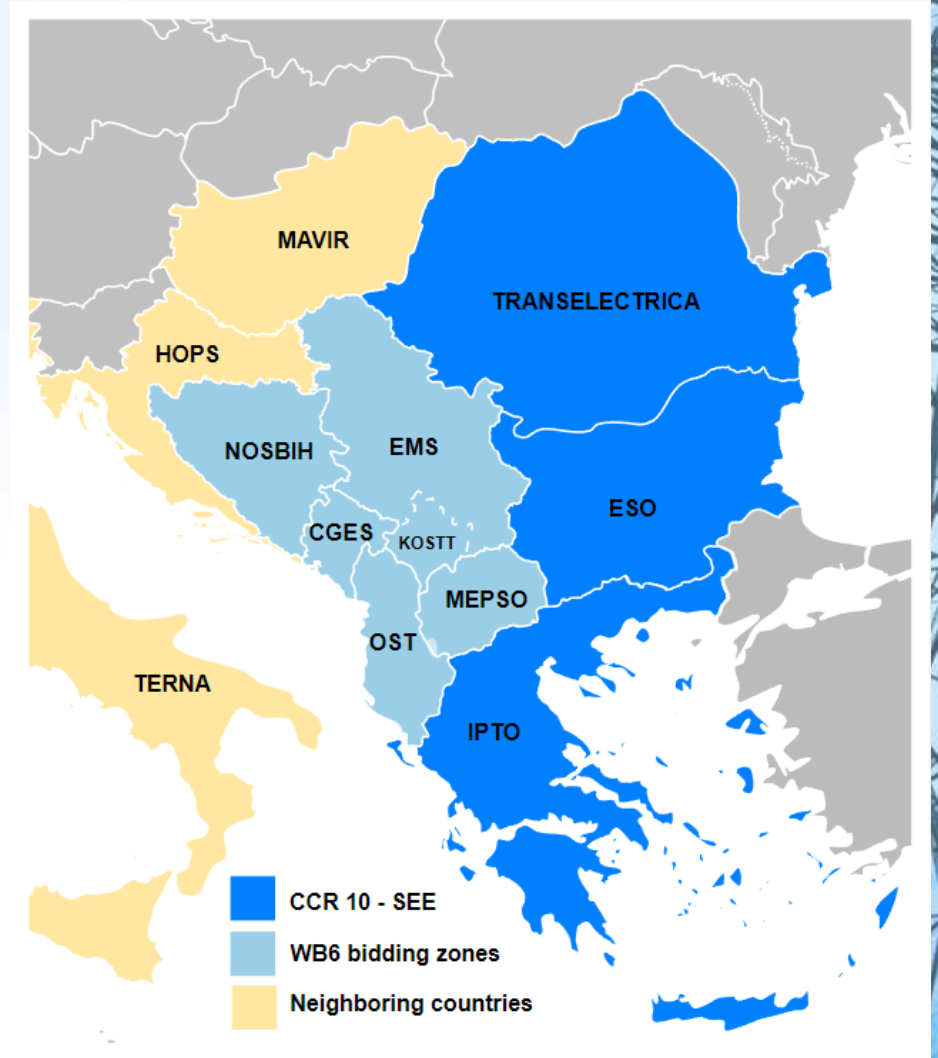
- ❖ **Currently 10 Capacity Calculation Regions (CCRs) are recognised in Europe (defined by ACER, November 17th, 2016)**
- ❖ **Specificity of SEE CCR (CCR 10):**
 - EU TSOs (mandatory implementation of CACM and FCA)
 - NON-EU TSOs ("early implementation" of CACM and FCA?)
- ❖ **Proposal of Coordinated Capacity Calculation (CCC) methodology was developed by RO-BG-GR TSOs and submitted to their NRAs**
- ❖ **Proposed CCC methodology (NTC based) concerns not only EU borders (RO-BG, BG-GR) but also "EU-non EU" borders (BG-RS, GR-TR, RO-RS, BG-MK ...)**



Specificities of SEE CCR - Appointment of Capacity Calculator(s)



- ❖ **Transelectrica (RO) (TSCNET service user), ESO (BG) and IPTO(GR) (SCC service users) shall jointly set up the Capacity Calculator(s) for above mentioned borders (Art. 27 of CACM).**
- ❖ **Possibility for appointment of SCC as Capacity Calculator for SEE CCR (from legal point of view) taking into consideration that owners of SCC Belgrade are non EU TSOs: NOSBIH, CGES and EMS.**
- ❖ **Question: Who will appoint Capacity Calculator(s) for borders between TSCNET and SCC responsibility areas (RO-RS, HU-RS, HR-RS, HR-BA)?**



Specificities of SEE CCR - Appointment of Capacity Calculator(s)

The following letters were exchanged regarding Implementation of the rules on Regional Security Coordinators in the SOGL, especially in SEE:

- ❖ In the letter of Klaus-Dieter Borchardt, Director of EC Directorate-General for Energy to Laurent Schmitt, Secretary General of ENTSO-E (March 22, 2018) the Implementation of the rules on Regional Security Coordinators in the System Operation Guideline (SO GL) was elaborated.
- ❖ In the letter of SCC shareholders (CGES, NOSBiH and EMS) sent to Ben Voorhorst, ENTSO-E President, and L. Schmitt, SG of ENTSO-E, (April 3, 2018) - RSCs are service providers (no decision makers), therefore it does not matter where the RSC seat is (in EU or not), but quality of RSC services is essential.
- ❖ Letter of L. Schmitt to K.D. Borchardt (May 22, 2018) – ENTSO-E answer on EC letter from March 22, 2018 with different interpretation of SOGL articles related to Regional Security Coordinators (comparing to EC interpretation).

Specificities of SEE CCR - SCC Conclusions

Based on the content of previously exchanged letters following conclusions were drawn:

- ❖ Art. 77(1)(a) SO GL foresees multiple RSCs per CCR or multiple CCRs served by 1 RSC.**
- ❖ There is no legal constraints to appoint a non-EU RSC as Capacity Calculator for SEE CCR.**
 - So far, there was no obstacles for non-EU bodies to provide services to EU TSOs - e.g. SEE Coordination Auction Office Podgorica (Montenegro) provides services defined by FCA also to IPTO (Greek TSO), on the mutual benefit.**
- ❖ From technical point of view CCC methodology, business process (including provisions of input data) and Capacity Calculator(s) have to be agreed among all SEE TSOs (EU and non EU).**

Specificities of SEE CCR - Possible solutions on Capacity Calculator(s)

Based on previously conclusions following solutions for capacity calculator(s) could be proposed for borders between TSOs belonging to different RSCs/CCRs:

- ❖ RSC1 (while RSC2 monitors/provides fallback),
- ❖ RSC2 (while RSC1 monitors/provides fallback),
- ❖ Both RSCs can periodically (e.g. on monthly basis) switch the roles of main and fallback capacity calculator
- ❖ Two RSCs can (in coordination with two TSOs) calculate separate NTC values and then harmonise them - this solution could be logical especially for perspective HVDC connection Montenegro - Italy and Greece - Italy, where the capacity of HVDC itself is clear, but two RSCs could separately assess the transfer capabilities of surrounding related AC networks

Specificities of SEE CCR - Possible solutions on Capacity Calculator(s)

1. SCC could be appointed as Capacity Calculator for SEE CCR

- It is the simplest and most efficient solution for all SEE TSOs (EU and non-EU) from organizational and contractual point of view.
- The majority of SEE TSOs are SCC service users.
- More than two years of experience in Dry run NTC calculation for SCC service users and practically for all SEE borders

2. SCC and TSCNET could be appointed as Capacity Calculators for SEE CCR

- More complex solution from organizational and contractual point of view,
- It could be a compromise acceptable for all SEE TSOs (EU and non-EU),
- Also it could be efficient solution for capacity calculations on borders between TSCNET and SCC responsibility areas (RO-RS, HU-RS, HR-RS, HR-BA).

Note – above mentioned is „SCC thinking“, without consultation with TSCNET.

Good cooperation in SEE - EU, non-EU TSOs and SCC (1)

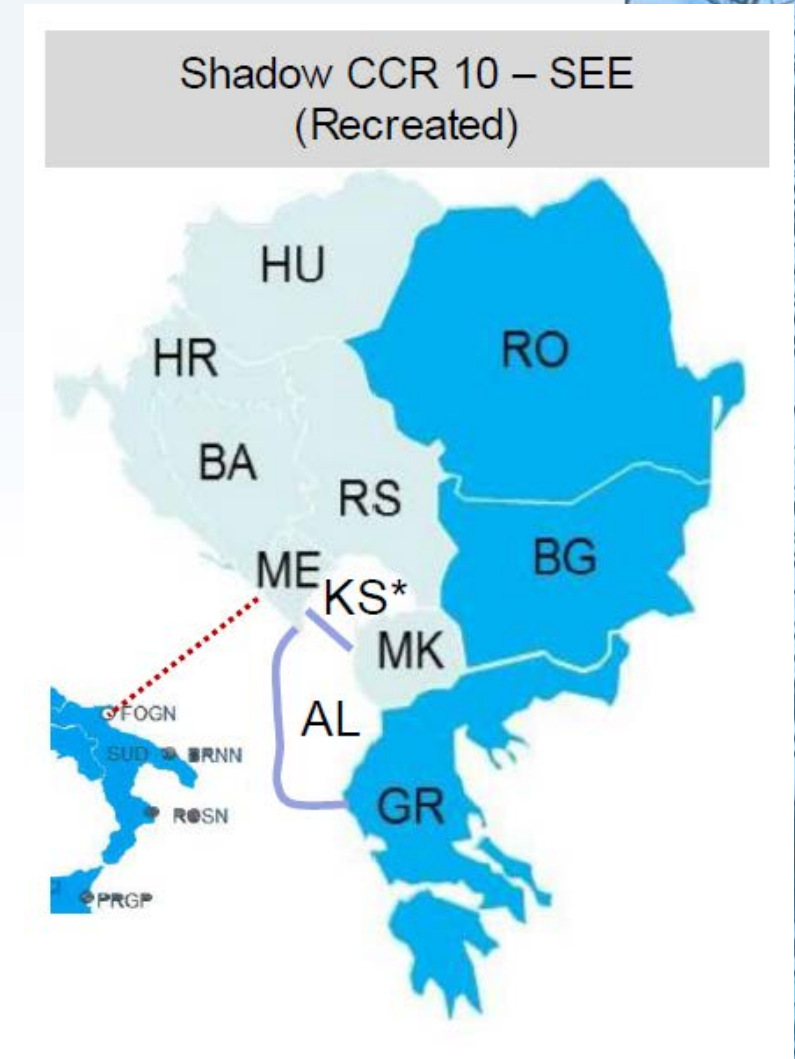
EnC Project: Implementation of regional coordinated capacity calculation in Western Balkans WB6:

❖ The project main goal:

- Facilitating the application of Regional Coordinated Capacity Calculation procedure in shadow CCR 10 region (WB6 and its EU neighbors) on D-2 level

❖ Shadow CCR 10:

- 6 EU parties
 - RO, BG, GR (3 in CCR10)
 - HR, HU, IT (IT after commissioning of DC cable IT-ME)
- 6 WB parties



Good cooperation in SEE - EU, non-EU TSOs and SCC (2)

EnC Project: Implementation of regional coordinated capacity calculation in Western Balkans WB6:

❖ Beneficiaries

- Direct - transmission system operators from the Western Balkans 6
- Indirect - neighboring EU transmission system operators and the relevant RCSs

❖ Key deliverables

- Methodology (shadow methodology) for the CCC in the shadow CCR 10
- Governance proposal and a processes/guidance on CCC in the shadow CCR
- Report on assessment of the readiness of the TSOs to perform CCC, recommendations and required preparatory actions aiming to set up ENTSO-E compatible CCC processes



Implementation of SOGL - general

- ❖ **SOGL Articles related to regional operational security coordination:**
 - **Article 75 Methodology for coordinating operational security analysis**
 - **Article 76 Proposal for regional operational security coordination**
 - **Article 77 Organization for regional operational security coordination**
 - **Article 78 Regional operational security coordination**
 - **Article 79 Common grid model building**
 - **Article 80 Regional outage coordination**
 - **Article 81 Regional adequacy assessment**
- ❖ **Inter-RSC Coordination is required for RSCs when performing their tasks defined in SOGL (Art. 77 to 81).**
- ❖ **According to the Plan approved by PHLG EnC it is envisaged that EnC Ministerial Council will adopt the adapted versions for CACM, FCA, EBGL and SOGL regulations by the end of 2018.**

Implementation of SOGL - Coordinated Security Analyses

- ❖ **Coordinated Security Analyses methodology (CSAm) has been developed pursuant to SO GL Art. 75 on ENTSO-E level:**
 - Provides a set of requirements for TSOs and RSCs,
 - Defines the contents and objectives of inter-RSC coordination.
- ❖ **Security Analyses results must be shared between RSCs to ensure:**
 - Capabilities to understand the requests (such as congestions identified and RA studied to relieve them, call for RA identification, ...)
 - Cross-checks of results (where applicable, eg on overlapping zones)
- ❖ **Needs to design consistent implementation for TSOs and RSCs**
- ❖ **ENTSO-E project for implementation of inter-RSC coordination defined by CSAm established in May 2018.**

Implementation of SOGL in SEE - Definition of OCR

Outage Coordination Region - OCR

- ❖ CCRs defined by CACM and specified by ENTSO-E and ACER.
- ❖ SOGL (article 80) defines that OCR shall be at least equal to the CCR. Two or more CCRs can agree to merge them into one unique OCR.
- ❖ OCRs are not yet officially defined.
- ❖ Existing SEE Maintenance Group for outage coordination could be good representative of OCR in SEE.
- ❖ Transelectrica represents an “overlapping zone”.



Implementation of NC E&R and Non-directly legally binding RSC service

New RSC service:

- ❖ **Consistency assessment of the measures of system defense and restoration plans, according to NC ER Art 6(3) & 6(4).**

Non-directly legally binding service:

- ❖ **Procedure for Coordination in Critical Grid Situation in SEE – Developed by SCC, approved by all SEE TSOs, successfully tested in December 2017 and was ready for implementation during winter 2017/2018.**
- ❖ **Regional support in Critical Grid Situations (CGS) to all SEE TSOs (EU: RO, BG and GR, non-EU: WB6 plus TR)**

Future development

1. Upgrade existing and develop new RSC software tools:

- ❖ **Project financed by WBIF (Western Balkans Investment Framework) supported by EnC, realization in cooperation with KfW:**
 - **Upgrade of software tool for IGM validation and CGM merging process according to latest ENTSO-E EMF (European Merging Function) requirements**
 - **Extension of SW for Security analysis by including Remedial Actions**
 - **Upgrade of initial version of software for NTC calculations for 24 hours per day according to Methodology for regional Coordinated capacity calculations (CCC) in SEE, as well as upgrade SW for Flow Based CCC;**
- ❖ **The contract was signed with Schneider Electric DMS and the design phase started according to the SCC needs and requirements**

2. Active participation in development and implementation of common pan-European methodologies and software tools for OPC and SMTA services.

Conclusions

- ❖ **There is need for close cooperation between SEE TSOs and RSC.**
- ❖ **A flexible solution that would allow performing of RSC functions in mixed SEE region by non-EU RSC or jointly by EU and non-EU RSCs should be considered.**
- ❖ **SCC has technical readiness as well as professional knowledge to provide services at the same level as all other RSCs**
- ❖ **RSCs and TSOs are partners and collaborators on the same task of ensuring the highest security of electricity supply standards in Europe.**
- ❖ **RSCs are key actors for enabling TSO coordination in Europe and should encourage mutual cooperation.**



Conclusions

SEE TSOs regional Forum - Ohrid (MK)

❖ Participants:

- ENTSO-E RG CE, SEE TSOs and SCC

❖ Conclusions:

- SEE TSOs agree that some flexible solution which would allow performing of RSC functions in mixed SEE region (with EU and non-EU TSOs) by non-EU RSC or jointly by EU and non-EU RSCs should be considered.
- SEE TSOs are aware that from technical point of view CCC methodology, business process (including provisions of input data) and Capacity Calculator(s) have to be agreed among all SEE TSOs (EU and non EU), where RSCs together with the TSOs should participate actively and equally.



Thank you for your attention!

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