



The Developments in South Eastern European Countries

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**The Role of Power Market Design for the
Achievement of the 20% Renewables Target**

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High prospects of I-RESs in S-E Europe require rethinking of grid access model

- Applications for wind farms amount over 40 GW with Greece and Romania exceeding 15 GW each (contracts and connection permits for 6 GW in Romania)
- Intermittent RESs are critically dependent on short notice access to regional market
- i.e. on adequate **resources** and **incentives** for the TSOs to increase network capacity, utilization and flexibility.



Current deficiencies of the SEE market with regard to access to interconnectors

1. Capacity limits are established in different and non-transparent ways
1. Actual capacity usage varies from stated capacity
2. Currently, explicit (flow – based) allocation is promoted in the SEE region.



Commitments in S-E Europe under “Energy Community” Treaty

- In 2005, regional TSOs decided to implement explicit Co-ordinated Auctioning (CA)
- **CA Office (CAO)** would administrate Y / M / D auctions and compensation payment
- CAO related work is coordinated via the **Implementation Group (SEE CAO IG)** of Energy Community Regulatory Board (ECRB), and
- Supported by EC, USAID, WB and BERD.



Dry-runs of Co-ordinated Auctioning

- Since 2006, Dry-run of CA was yearly performed with participation of RO, RS, MK, BG, GR, AL, BiH, HR; the model includes also HU, SL, UA, AT
- 1st auction approach: **Total Border Capacity** as maximum flow: **vulnerable to exchange scenarios**
- 2nd auction approach: **Net Maximum Flow** (critical outages associated to each critical branch):
vulnerable to topology, transactions and national constraints.



Overlasting Dry-runs of CA

- After 5 years, the Dry - runs are not finalized while the CAO is not operational
- Allocating assets owned by different countries/companies and revenue sharing are sensitive issues.

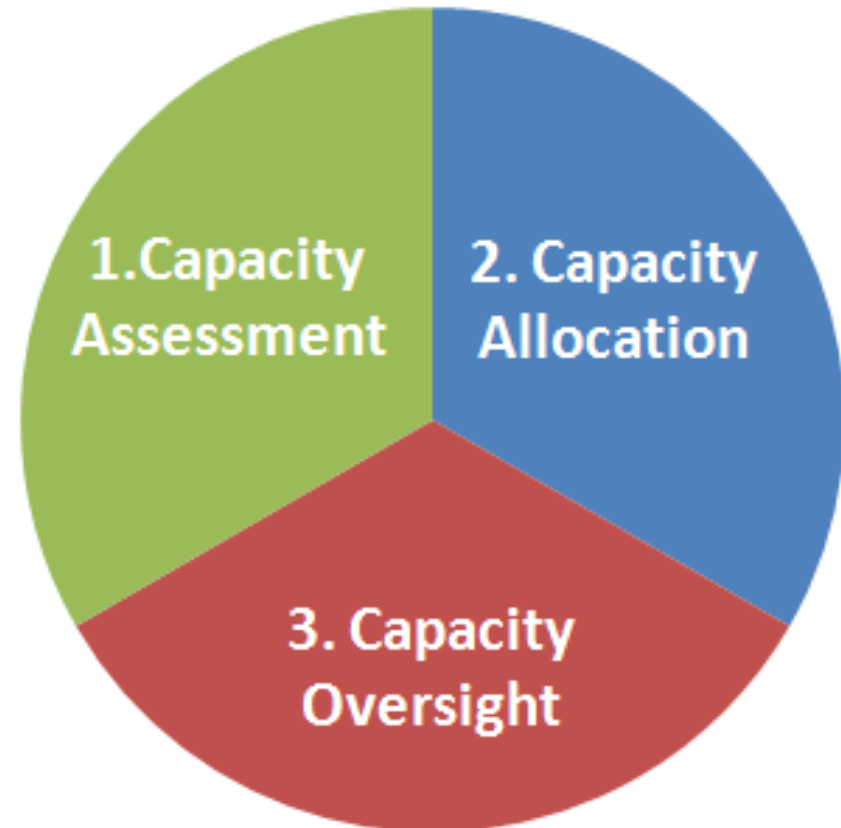


The 15th Athens Forum – 11.25.09

- Emphasized obligation to implement a **coordinated capacity allocation** and CM mechanism for the **8th Region** stemming from Regulation (EC) 1228/2003
- Took note of the remaining challenges and encouraged the responsible bodies to promote ... **the proper definition of transmission capacities** and convergence and consistency across borders
- While supporting day-ahead price coupling between markets.

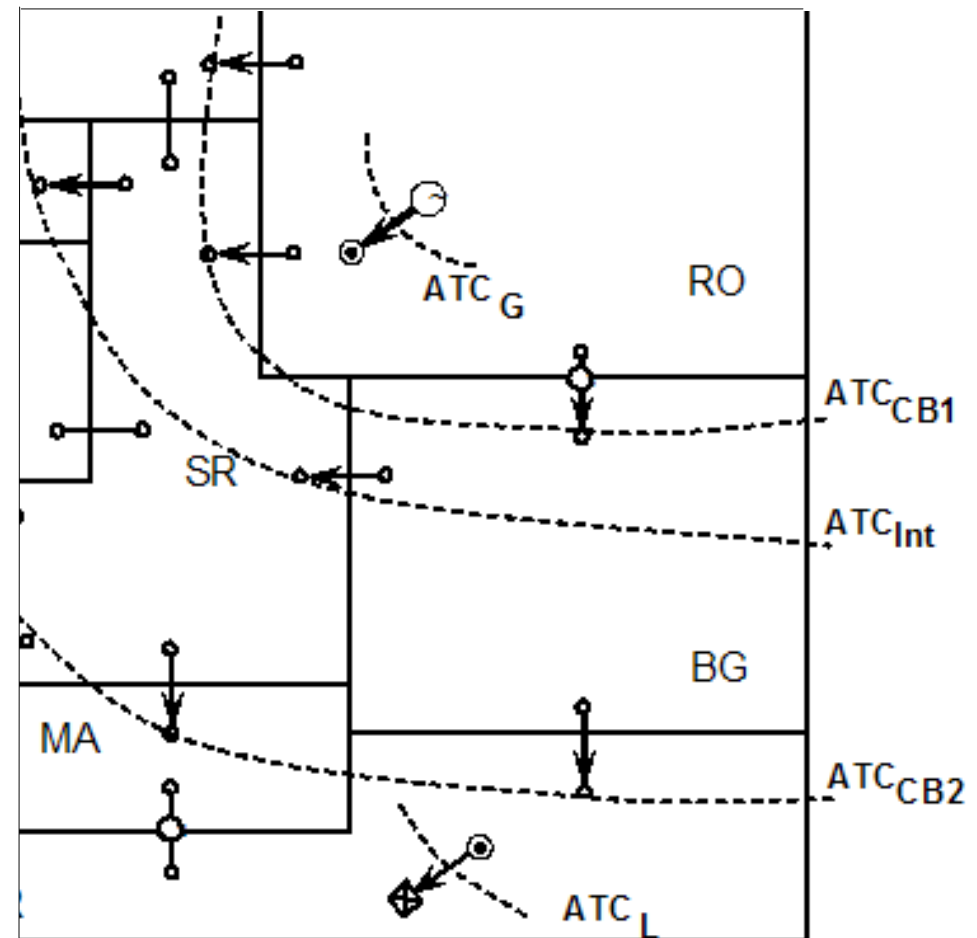
Key questions requesting revisit of the grid access model

- **Definition of capacity:**
where are the relevant transmission physical limits?
- **Allocation of capacity:**
do interconnectors' capacity rights facilitate market integration?



Regional power transmission capabilities

- **Commercial capacity** (a market design issue): transfer capability at grid connection point (“Driving – Point”)
- **Operational capacity** (a PS security issue): transfer limits of grid’s critical paths (“Point – to – Point”).





I. **Market design**: the “nodal” model

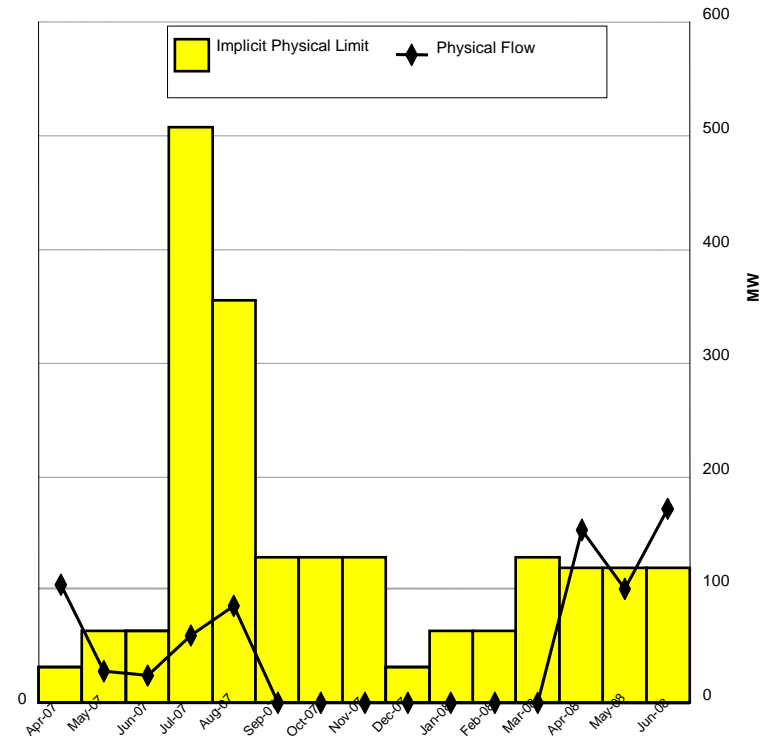
- Transactions, prices, and Transmission Capacity (TC) as well
- **Congestions** defined as (node) transactions changes for releasing the grid **constraints**
- TSO reimburses its customers for the TC non-compliance based on nodal transmission rates.



Unpredictable interconnectors' capacity limits and line - flows

- Variable intensity and direction of power flows
- TSOs are often solving internal bottlenecks by moving congestion to the country border

Capacity limits and line - flows of Bulgaria-to-Romania Interconnection





II. PS operational security: the “source - to - sink” power transfer capability

- Management of network constraints is TSO's operational issue only
- TSO prepares the PS Schedule and ensures the PS dispatch while sharing data with regional TSOs
- Clearing grid bottlenecks with resources from the Balancing Markets.



Instead of CAO, a new institutional approach for the regional coordination

with a **CM and Monitoring Office** assisting:

- TSOs to coordinate PS scheduling to maximise use of the network
- TSOs to take remedial actions when constraints involving several TSOs are detected
- Regulators to gather monitoring data and interpret market signals that indicate market manipulation.



An international consortium of 15 participants was awarded the “South – East European TSO Challenges” R&D project that received EC – FP7 research funding

SEETSOC addresses the needs of TSOs in their efforts towards integration of the SEE region with the European power infrastructure

<http://seetsoc.ntua.gr/>



Objectives of **SEETSOC**:

- New systems and tools that will enable TSOs to improve their efficiency and enhance their services
- Methods and techniques for capacity calculation and allocation
- Procedures to ensure security of power transmission
- Assist in harmonizing regulatory framework in SEE to facilitate CB trading of electricity.

Conclusions

- A meaningful and market - efficient approach of regional grid capability is necessary in the SEE
- Nodal (Driving – point; point of connection) **transmission capacity mirroring tradable capacity of users' facilities** would be a salutary market design paradigm
- To limit capacity pancaking, with congestions moved to the borders, TSOs only should be involved in the operation of interconnectors, including clearing of interconnectors' constraints.



Thank you very much for attention!

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