

Electricity Market development and regulatory initiatives in South East Europe

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- Overview of actual TSO mechanisms in SEE
 - ITC Mechanism
 - Explicit Flow-based Coordinated Auctions proposal
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- SEE Regulators and ECRB role
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- Conclusions and further actions

Regional working fields

- Market Opening
 - Transparency
 - Regional Balancing
 - Cross Border Transmission Capacity Allocation
 - Mutual Recognition of (trading) licenses
 - Treatment of low income customers
 - Security of Supply
- Initiatives by all Stakeholders: Ministries, Regulators, TSOs, Generation companies, Traders, IFI and Donors

Generation and Transmission Adequacy in SEE region

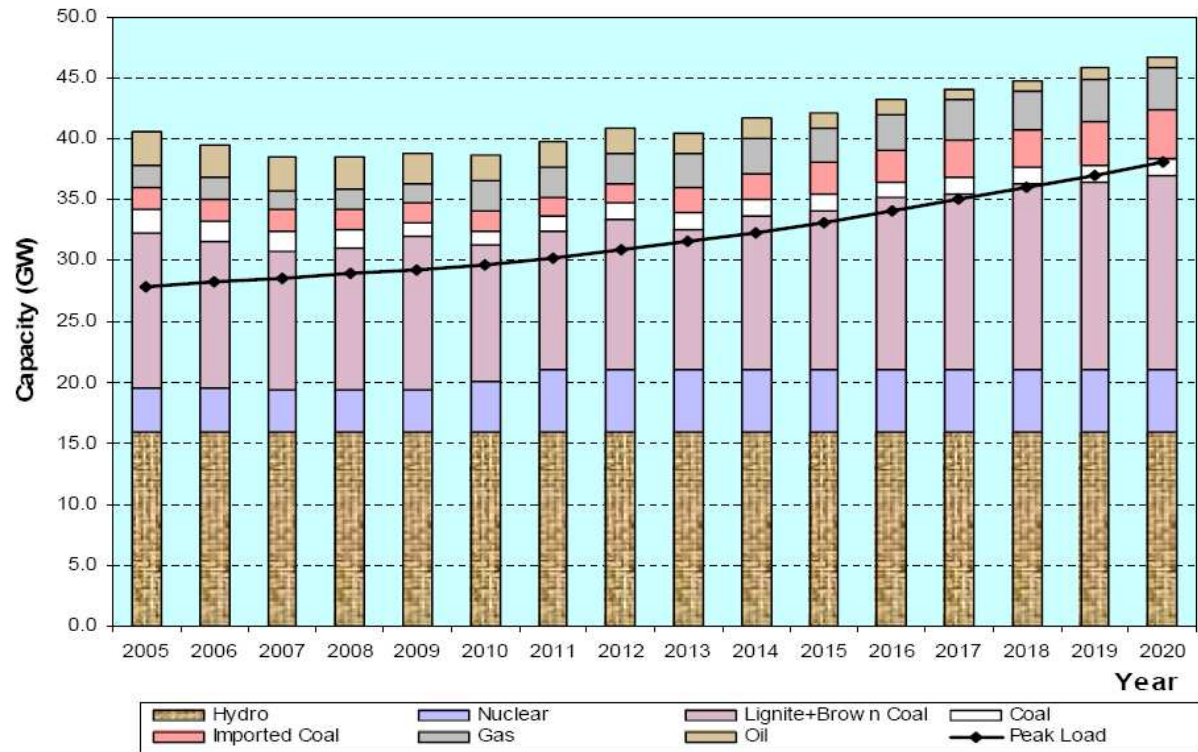


SEE Generating Sources - 2005

Source	Total	42.8 GW	167 TWh	100 %
Hydro	HPP+PS	18.2	47.6	28.5
TPP	Lignite + Brown coal	12.8	74.6	44.7
	Coal domestic and imported	3.7	18.4	11.0
	Oil	2.7	0.2	0.1
	Gas	1.8	2.8	1.7
Nuclear		3.5	23.4	14.0

SEE Peak demand and sources: 2005-2020

- Security of Supply in SEE mainly based on Generation and Transmission availability in SEE region → Main difference between SEE and EU member states
- Demand is growing in SEE → it has big influence to SoS as existing generation capacities cannot cover this increase
- Generation and dispatching facilities often old and inefficiently working

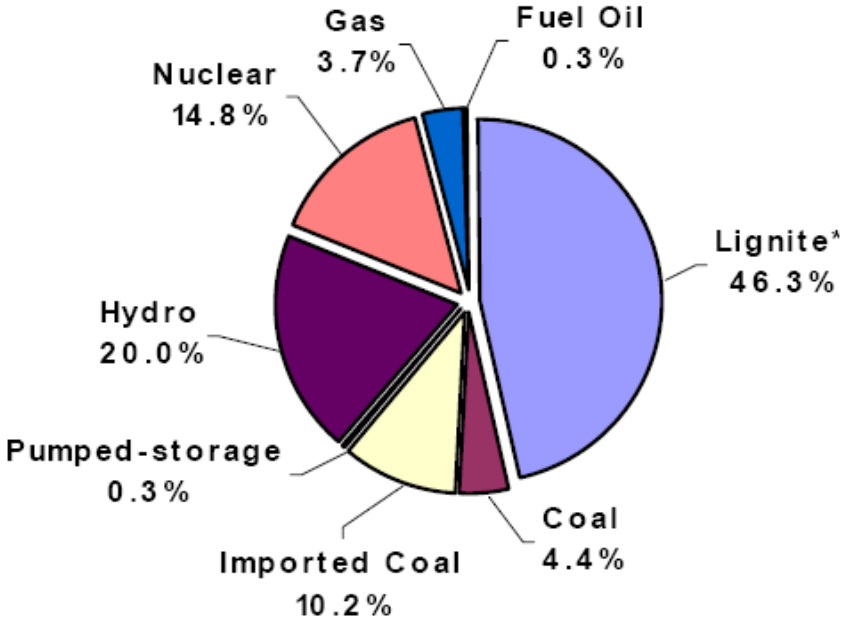


Results of GIS Update

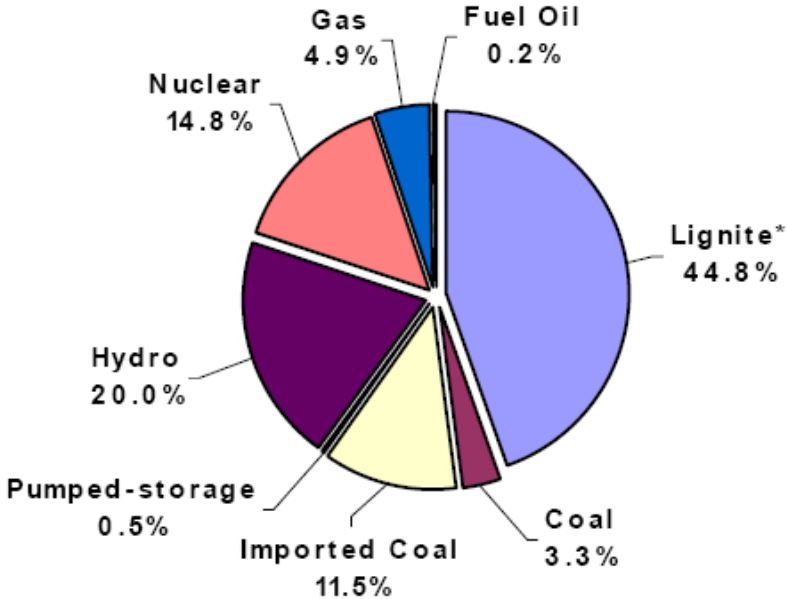
<u>Scenario</u>	<u>Rehab</u> (MW)	<u>New</u> (MW)
■ Official plan:	11,574	11,000
■ Baseline Justified:	9,361	12,696
■ High electricity imports	9,361	6,936
■ High oil/gas prices:	10,061	12,494
■ Low oil/gas prices:	6,814	14,712
■ €20/ton of CO2:	4,573	16,634
■ €30/ton of CO2:	Zero	21,259
■ High gas/CO2 prices	10,061	13,926

SEE Generation mix in 2020

Official Rehabilitation



Justified Rehabilitation



State of play on Generation in SEE

- There is lack of energy in SEE region (present generation vs. consumption growth)
- South of SEE is facing the greatest energy deficit (Albania, Greece, Montenegro, FYROM, UNMIK)
- Clear indicatives for consumption/energy demand growth from 2005-2020 (also due to air-conditioning)
- Cost reflectiveness still not in place
- Energy efficiency still low (electricity use for heating)

Clear conclusions:

- There is an urgent need for generation capacities investments in SEE region
- Lack of energy in SEE is provided through electricity import (present and in near future)
- High Electricity Import prices (40-45 €/MWh vs. 70-80 €/MWh in SEE)

Situation in Electricity Transmission Grid in SEE region

- Huge Electricity imports in SEE started in 2007 (due to NPP Kozlodyi closure of 2 units, 2x440 MW, in January 2007)
- Huge Electricity Transit flows from North (energy sources) to South (area which faces deficit)
- National Electricity Transmission grids (interconnection and internal lines) were not designed for such immense transits from North to South in SEE region
- Therefore, SEE region is facing congestions on almost all electricity borders

Clear Conclusions:

- There is an urgent need for investment in:
 - Construction of new interconnection lines, which are congested
 - Construction of new internal lines, which have influence on congestions
 - Upgrade or rehabilitation of the existing OHLs and internal grid
- Thus, the larger electricity flows in SEE would be enabled

Final Goal

Final Goal:

- Creation of SEE Regional Electricity Market and its inclusion within EU Internal Electricity Market
- Opening of Electricity Market in all SEE countries
- Provide reliable and secure electricity supply for over 50 million consumers in SEE

Performances of SEE Market

- Most of countries in SEE region import electricity and gas
- Even those who are annually energy balanced are facing seasonal energy unbalance
- Cross Border capacities are either not sufficient or contracted
- Market based allocation schemes are less developed and not harmonized

Possible solutions

- Investment in generation and transmission facilities has to be intensified
- Common approach towards new infrastructure needed
- Security of Supply to be dealt at regional level, if possible (infrastructure planning)
- Incentivise investment in generation and transmission through common approach towards new infrastructure
- Harmonization of Market environment (Market Rules, Licenses, Auction Rules, Regulatory competences, ...)
- Cooperation among stakeholders to find suitable scheme to support vulnerable households
- Improvement of level of payment through energy efficiency and target support for low income households

Market Opening in SEE



Wholesale Markets in SEE: Current Status

- Low free wholesale market activity in SEE region, except in Romania
- DisCos (suppliers) are not eligible or are integrated with generation
- Starting privatizing DSOs (FYROM, Albania...)
- Question of metering (“commercial losses”) still not solved in some SEE countries, billing and collection rate still low (responsibility for losses)
- Concept of wholesale or public supplier
- Foreign investors facing a lack of legal environment for collection of electricity bills
- Dominant role of incumbents → free market, even on national level, is far from reality
 - Retail is opening faster than wholesale

Day Ahead Markets

- OPCOM in Romania, and 4 Px in EU border countries
(2 Voluntary: Slovenia/Austria, 1 Mandatory Pool: Greece and 1 Hybrid: Italy)
- Low volumes for Voluntary exchanges but growing in Romania: 7,8% of total volume in 2006 (4.11 TWh); Average price: 51.6 EUR/MWh
- Difficult to participate for foreign participants
- Wide range of regional prices in Day Ahead Markets

Cross-border trading

- Lack of Transparency despite provisions of Regulation 1228/03
- Basic information still missing on TSOs webpages
- Most cross-border trade activities by traders – contracts with utilities/TSOs
- Most trading is based on base load products – traded in band for day, week or month
- Tendering procedures in place in many countries (complex procedures); no optimization and expensive
- Difficult to identify traders' risks with absence of market rules - current situation:
 - Difficult to get access
 - But, inconsistencies between markets and price distortions create trading opportunities

Wholesale market in SEE (1)

- **Regional market design (RMD)**
 - REM - least cost option for sustainable development of national markets (compared to VPPs, generation divestment etc.)
 - Defines targets of regional integration (bilateral contracts and/or DAM and/or balancing mechanism) - respecting the principle of subsidiarity
 - EnCT just sets the level playing field
 - RMD aims to avoid creation of several isolated markets with unfavourable market structure for developing competition
 - Resolving the issue of market concentration - dominant national players become small players in regional context
- **Minimum content of the market rules and compatibility**
 - Strongly dependent on the target market integration
 - Further elaboration needed

Wholesale market in SEE (2)

- **Removing obstacles to cross-border trade**
 - Prerequisite for developing regional market
 - Enable direct contracting btw. generators and suppliers
- **Pending issues**
 - Geographic scope of the regional market (8th region)
 - Responsibility for developing the SEE market design
 - Dealing with associated risks - developing competition with forecasted shortage of generation capacity in the region
 - Political will and commitment
 - Institutional framework and change management

Conclusions (1)

- Emphasis on the development of regional wholesale market arrangements
- Reviewing compliance of SEE national markets with Energy Community Treaty is within competencies of the EnC Secretariat
- Necessity to be coherent with ERGEG regional initiatives
- Regional market design may be developed using the mechanisms of the EnC Treaty
- Compatibility of market rules needed - scope depending on the desired level of market integration
- Commitment of national institutions based on clear benefits for national markets is required

Conclusions (2)

- Lack of WMO in SEE region was pointed out as one of the major reasons for lack of investments in energy sector in SEE region. Question to pose: is it the right reason?
- Implementation of cost-reflective tariff systems in all countries of SEE region is one of the major prerequisites for WMO, which will enable gradual transition of electricity prices from social to market values
- Specific situation in SEE:
 - Absence of full unbundling in SEE region
 - Lack of electricity in SEE region (each national power system is just hardly covering its electricity demand)
 - High electricity prices in SEE region
 - Absence of cost-reflective tariff systems in SEE region (unrealistic low electricity prices for tariff consumers) etc.

Conclusions (3)

- WMO is mainly driven by political influence and national strategies (there is an evident political energy strategy of all national electricity industries in SEE region to keep being “national champions” in order to fulfill national needs for electricity, slow process of electricity sector privatization, etc.)
- WMO is affected by PSO and national procurements for electricity
- Creation of Px in SEE region seems to be the most suitable
- Quick implementation of any proposed solutions for WMO in SEE region is not recommendable, but only an efficient step-by-step approach should be followed

Status of cross-border interconnections in SEE



Progress with market design and regulatory initiatives under the Athens Forum

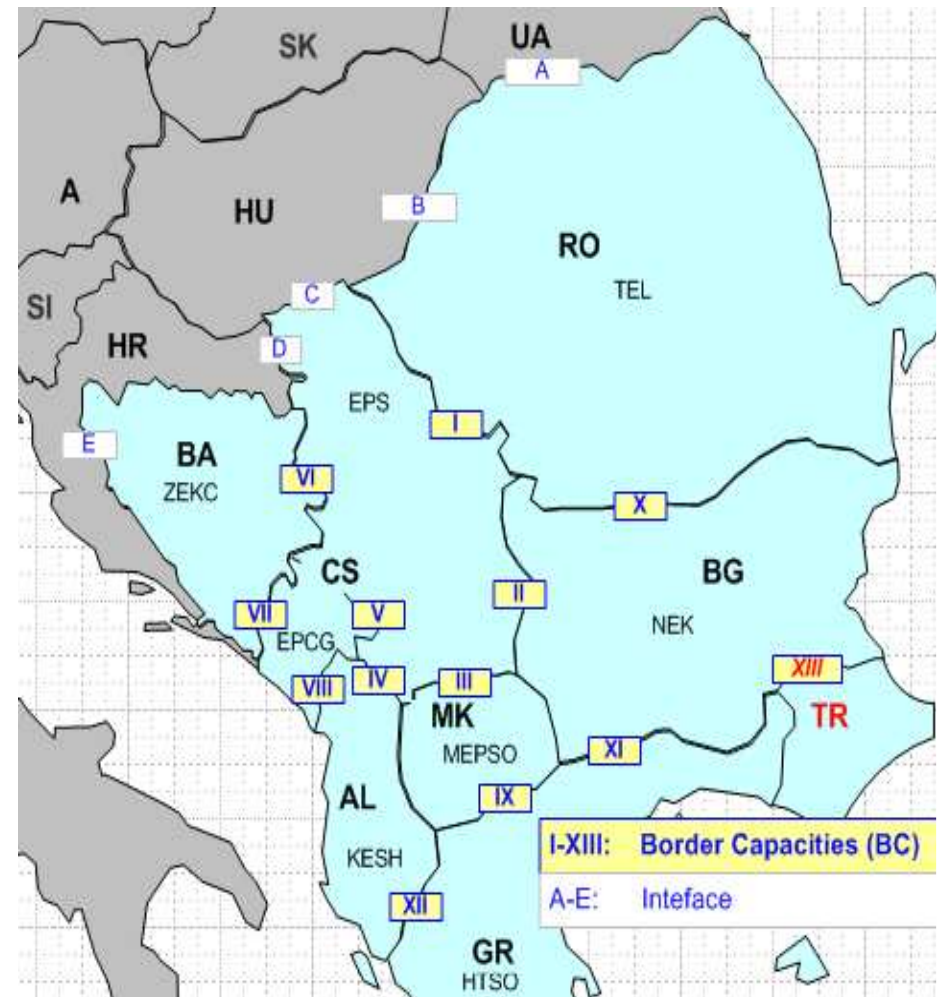
- SEE regional Regulators and TSOs are working to provide and enable the active and efficient market conditions for Electricity Market functioning in SEE
- New TSOs mechanisms were introduced as preconditions for efficient Electricity Market functioning and as initial elements of future SEE Market Design with clear goals:
 - ITC mechanism → remuneration for transits, usage of transmission grid)
 - Explicit Flow-based Coordinated Auctions of interconnected transmission capacities (CAO) → provide one step trading between SEE region towards other EU regions
 - Regional Balancing Mechanism → help TSOs operation and placement of short-term generation surpluses

Capacity allocation and congestion management in SEE



Auction mechanisms in SEE region

- 14 Interconnection lines within SEE region
- NTC based approach in all interconnection lines
- Different transmission capacity auction mechanisms in different borders
- Most of auction mechanism are market-based
- No common auctions in SEE region (except HU-HR, GR-AL, GR-MAC, GR-BUL)
- Most of auction mechanisms are not in compliance with Regulation 1228/03 and CMG



Capacity allocation and congestion management in SEE

- Market-based mechanisms for transmission capacity allocation are in place in most of SEE TSOs – approved by Regulators within Market Rules
- NTC values are determined by TSOs
- Unrealistic and small NTC values as an obstacle to electricity trade in SEE (reasons: protection of national electricity markets, PSO obligations, etc.)
- Regulatory role in approving NTC calculation within Grid Codes – monitoring (sometimes no regulatory reaction to reported low NTC values...)
- Transmission grid highly meshed in SEE and congested due to huge electricity transits from North to South – el. Grid was not designed for it when constructed in 70-80's
- Maximum one year contracts in place – long term contracts abolished in line with EU Regulation

Recent development on CB issues

- Need for overview of current cross-border mechanisms in SEE (ECRB EWG)
- Need for cross-border benchmarking in SEE
- Necessity to work on improving cross-border modalities in SEE
- Investigate how ECRB EWG members are taking necessary steps in order to meet CMG requirements and their awareness of the progress they have to make in order to fulfill them
- CB Questionnaire → Results presented to 12th Athens Forum → Recognize individual deviations from CMG principles → Agree next steps and individual time tables in order to fulfill CMG conditions in the period till CAO establishment

Explicit Flow-based Coordinated Auctions in SEE region



Coordinated Explicit Flow-based Auctions in SEE

- TSOs and Regulators are investigating possibility to implement ETSO proposal for transmission capacity allocation, based on better representation on physical behavior of interconnected electric systems than those widely used on most of the European borders until now (bilateral ATC allocation)
- SEE CAO Implementation Group prepares all necessary activities in order to create CAO involving all stakeholders (TSOs, regulators, traders, donors, ...)
- Dry-run phase since January 2004
- Based on: Border Capacity, PTDF matrix, traders' bids procedure
- Recently introduced Maximum Flows concept concerning interconnection capacity values with aim to make physical limitations more transparent – reporting “critical branches” approach; thermal limits as the only input
- Internet based tool: www.drca.at
- CAO structure will be owned by SEE TSOs
- Future prospects: CAO establishment February 2009
→ Real-run Feb 2010

Status of play: Recent development on CA

- Defining borders of the CAO and consequently the perimeter countries to it (EC and MC)
- After ECRB request: EC announced establishing an 8th region by amending the Congestion Management Guidelines (MC in June 2008)
- Non-EU parties but contracting parties to Energy Community will be integrated into the 8th region through the Energy Community Treaty
- Joint work between Regulators, TSOs and traders within CAO Implementation Group
- Actual: Definition of CAO location list of criteria (preferable in SEE region); Action Plan; TSOs MoU
- Regulatory contribution in analysis of TSOs consultancy material: Maximum Flow approach; Revenue distribution method with weighting factors

ITC Mechanism in SEE region



Inter TSO Compensation (ITC) mechanism

- Establish one single ITC mechanism within EU
- Single EU-SEE ITC fund was created in June 2007
- Monitor ITC process
- Cooperation with ETSO/SETSO TF
- Looking forward for ITC Guidelines

Regulatory role:

- Define loss prices to calculate value of transit losses
- Infrastructure costs, value of assets based on regulated costs as covered by national tariffs
- Commenting proposed (signed) ITC Agreement...

ETSO ITC Agreement for 2008/09

- ITC Clearing and Settlement Agreement for 2008/09 was signed by TSOs on 12 October 2007
- Deadline (till 16 Nov 2007) for regulatory complaints was prescribed by ITC Agreement for 2008/09
- ITC Agreement came into force on 1 Jan 2008
- www.ets-net.org



The screenshot shows the ETSO website homepage. At the top right, there are navigation links: Home, Masthead, Legal notice, Sitemap, Search, and Contact. The ETSO logo is on the left. Below it, a banner features several small images related to energy infrastructure. The main navigation menu includes: Association, Activities, NTC, Conferences, Forums, Members corner, and News. The 'News' section is active, displaying a news article titled 'Pan-European Inter-TSO Mechanism 2008-2009' dated 30-11-2007. The article text states: '39 European Transmission System Operator (TSO) Companies have for the first time reached a voluntary agreement on Inter-TSO Compensation (ITC) for transit flows that covers TSOs in all EU interconnected member countries. It will also be applied by TSOs in a number of non-EU member countries, including South-East Europe. The mechanism will enter into force on 1 January 2008 and last for two years. It makes it possible to suppress cross-border electricity transmission fees, and facilitate trade and market integration (see full text under Press Releases)'. On the left side of the news section, there is a 'Latest news' heading with a small image of power lines, and a 'Press Releases' link below it.

Regional Balancing Mechanism in SEE region



RBM: Final Goal

Based on TSOs concept (developed by SEE TSOs), RBM final aim is:

- To increase margins of balancing resources for SEE TSOs
- TSOs obtain Balancing Energy (BE) in short period and under competitive market prices
- To help TSOs to obtain necessary tertiary reserve easily (emergency help)
- To ensure safe, reliable and secure power system operation
- To reduce TSOs costs for obtaining BE
- To give opportunity to national market players to offer their short-term electricity surpluses via BETSEE/TSOs platform with lower prices
- RBM/BETSEE represents actual state of play of market participants offers for BE depending on real-time situation, introduced on BETSEE internet platform

RBM: State of play...

- Regulators (ECRB EWG) dealing with Legal Questionnaire (LQ) regarding the RBM issues answering the following questions:
 - Transmission System operator ownership and extent of unbundling (legal, accounting, management)
 - Legal
 - Cross Border Capacity
 - Market functioning
 - TSO structural organization, dispatching and balancing
 - National balancing model
 - Licensing
- Analysis of the legal subjects related to the RBM LQ follows



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