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## The Definition of Congestion

'Congestion' means a situation in which an interconnection linking national transmission networks cannot accommodate all physical flows resulting from international trade requested by market participants, because of a lack of capacity of the interconnectors and/or the national transmission systems concerned. (EU 1228/2003)





#### **Cross Border Trade and Security of Supply**

Regulators' objective is to ensure that the regulatory framework facilitates the maximum use of available interconnect capacity and investment in new capacity where that is needed.







#### **Electricity balance 2004**



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**CERA's experience with Congestion Management** 

#### Electricity balance (MWh) 2004

Hydro production	7,001
Thermal production	4,068
Own production	11,069
NPP Krško d.o.o.	2,606
TPP Plomin d.o.o.	1,320
Purchase	2,572
Sale to other power companies	-1,472
Available electricity	16,095
Transmission network losses	587
Auxiliary consumption on transmission network	180
Gross consumption on distribution network	15,328
Consumption on distribution network	14,458
Exchange, purchase, sale and supply outside Croatia	1,637
Gross consumption of electricity	16,095





#### Power Flows in the Year 2004.



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#### **Croatian Market Model**





#### **EU Legislation and CEER document**

- REGULATION (EC) No. 1228/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity.
- CEER Position paper on Principles on the management and allocation of available transfer capacity of interconnections, 2002.





### **Croatian Legislation**

- Laws
  - Electricity Market Act (NN 177/2004)
  - Act on the Regulation of Energy Activities (NN 177/2004)

Four sublegal acts are about to be adopted

- Market Rules (Market Operator)
- Balancing Energy Rules (HEP-TSO)
- Methodology for Balancing Pricing (CERA)
- Cross Border Transmission Rules (HEP-TSO)



CROATIAN ENERGY REGULATORY AGENCY CERA's experience with Congestion Management

## **REGULATION (EC) No 1228/2003**

This Regulation aims at setting fair rules for crossborder exchanges in electricity, thus enhancing competition within the internal electricity market, taking into account the specificities of national and regional markets. This will involve the establishment of a compensation mechanism for cross border flows of electricity and the setting of harmonized principles on cross-border transmission charges and the allocation of available capacities of interconnections between national transmission systems.



## CEER position paper (1)

- 1. Congestion management method should operate in an economically efficient manner and, when it is possible, provide appropriate economic signals for both efficient economic dispatch of existing plant and efficient investment in additional network infrastructure and/or generation.
- 2. Congestion management method should promote effective competition, should not aggravate market power and should be non-discriminatory.
- All relevant information related to cross border trade should be published in a transparent manner.



### CEER position paper (2)

- 4. TSOs should ensure that the maximum capacity of the interconnections and the transmission networks affecting cross border flow is made available while maintaining the network security standards at an acceptable level.
- 5. Congestion management procedures may only generate revenue in case of congestion. The procedure for its distribution should neither distort the allocation process in favor of any party requesting capacity or energy nor provide a disincentive to TSOs to decrease the amount of congestion.



#### Electricity Market Act & Act on the Regulation of Energy Activities

- Pursuant to international agreements binding upon the Republic of Croatia, the transmission system operator must carry out the transit of electricity through the transmission network under terms and conditions stipulated in those agreements, and the technical capacity of interconnections.
- The Agency shall monitor in particular rules on managing and allocating interconnection capacity in cooperation with regulatory bodies of neighboring countries to which the electric power systems are connected and congestion management within the national transmission network/system.





#### **Cross Border Transmission Rules (HEP-TSO)**

- Regulates the way and terms of cross-border capacity allocation and criteria for accessing and using of allocated capacities
- The cross border allocation could be assigned on the yearly, quarterly, monthly, and daily basis.



#### October 2004: Reconnection of the UCTE1 and UCTE2 Zones

- Destruction of transmission network and other infrastructure (400 kV TS Ernestinovo) during the war
- Operation of reconnection the UCTE Zones (south and east Europe) was co-ordinated from Zagreb
- Events of great significance and priority for Croatia, countries of the southeast European region and all of Europe
  - significant increase of cross-border line capacity
  - volume of electricity exchange and trade in region significantly increased
  - increase of electricity quality parameters and decrease of needs for total reserves in electricity generation and transmission systems
- Prerequisite for establishment of the SEE regional electricity market



#### **Reconnection of UCTE Zones (2)**



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#### **Reconnection of UCTE Zones (3)**





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#### Cross Border Lines (1)

- □ 400 kV lines and total capacity:
  - Melina-Divača (Slovenia) : 1100 MVA
  - Tumbri-Krško 1 (Slovenia): 1100 MVA
  - Tumbri-Krško 2 (Slovenia): 1100 MVA
  - Ernestinovo-Sr.Mitrovica 2 (Serbia) : 1100 MVA
  - Ernestinovo-Ugljevik (Bosnia): 1100 MVA
  - Žerjavinec-Hevitz 1 (Hungary): 1100 MVA
  - Žerjavinec-Hevitz 2 (Hungary): 1100 MVA



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### **Cross Border Lines (2)**

- □ 220 kV lines and total capacity:
  - Pehlin-Divača (Slovenia) : 350 MVA
  - Žerjavinec-Cirkovce (Slovenia): 300 MVA
  - Dakovo-Tuzla (Bosnia): 300 MVA
  - Đakovo-Gradačac (Bosnia): 300 MVA
  - Zakučac-Mostar (Bosnia): 300 MVA
  - HE Dubrovnik-Trebinje 2 (Bosnia): 300 MVA
  - Međurić-Prijedor (Bosnia): 300 MVA



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### **Regional Market and Energy Community**

- □ 2002: Croatia signed 1st MoU
- 2003: Croatia signed 2nd MoU
- Croatian experts contributed to the Athens Process (working groups and projects) and preparation of the Energy Community in South-East Europe
  - Ministers, PHLG and regulators
  - SETSO
  - REBIS Project / GIS Project
  - collaboration with donors (USAID, SEETEC, WB, EC...)





#### **Regional Market and Energy Community**

- 2005: Adhering Parties: Croatia, Albania, Bulgaria, Bosnia and Herzegovina, Macedonia, Montenegro, Romania, Serbia, UNMIK Kosovo and the European Community signed the Treaty establishing the Energy Community
- Croatia fully support the Energy Community and the Single European Energy Market
- The Regional Electricity and Gas Market are to be developed
- Power sector restructuring shall progress with an aim to comply with relevant EU Directives and Notes as well as the Energy Community establishment

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#### Conclusions

- For the time being, CERA does not have any particular experience with the congestion management.
- Electricity market in Croatia is in the process of opening.
- The problem of the congestion inside Croatia's borders is not so critical yet because of existence of a vertically integrated company.
- Currently the problem of congestion probably could exist at the Croatian border.
- The EU directives, CEER documents and Croatian law regulate this issue.
- From the 1st of July, Croatia has ratified the Treaty establishing the Energy Community.



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#### Thank you for your attention