NYS PSC and HERA Partnership

June 2-5, 2008 Zagreb, Croatia

The Republic of Croatia basic information

- Population: 4.437.460
- Households: 1.455.116
- □ Peak load ≈ 3000 MW
- □ Installed capacity ≈ 4000 MW
- LV electricity customers: **2.123.642**
- LV household electricity customers: **1.935.663**
- □ Households electricity consumption ≈ 6 TWh
- □ Penetration of electrification ≈ 98%







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 (B-H): 1100 MVA
 - Žerjavinec-Hevitz 1 (Hungary): 1100 MVA
 - Žerjavinec-Hevitz 2 (Hungary): 1100 MVA



Cross Border Lines (2)

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

Croatian Energy Regulatory Agency

Plans for T&D System Development And Construction For Three-Year Period

Croatian Market Model





Croatian Energy Regulatory Agency

Distribution District	Custo	omers	Lines (km)				Consumption (GWh)	
	Total	LV	LV	MV	ΗV	Total	LV	
DP Zagreb	455,017	454,637	6,006	3, 984	48	2,959	2,136	
DP Zabok	64,593	64,564	2,583	994	0	309	220	
DP Varaždin	64,960	64,903	2,601	1,102	16	382	267	
DP Čakovec	43,730	43,676	917	698	0	236	185	
DP Koprivnica	51,126	51,085	2,405	1,088	0	259	174	
DP Bjelovar	50,538	50,530	1,650	1,128	0	237	219	
DP Križ	74,637	74,589	2,288	1,819	0	421	263	
DP Osijek	144,277	144,094	3,402	2,461	0	907	589	
DP Vinkovci	76,814	76,711	1,822	1,459	0	431	351	
DP SI. Brod	61,138	61,054	1,423	992	0	302	231	
DP Pula	124,940	124,718	3,706	2,693	0	899	550	
DP Rijeka	181,834	181,674	4,346	2,465	0	1,316	894	
DP Split	242,447	242,306	8,530	3,849	1	1,602	1,167	
DP Zadar	98,639	98,548	3,223	1,964	0	456	388	
DP Šibenik	71,154	71,121	2,560	1,568	0	369	263	
DP Dubrovnik	46,038	45,980	1,877	1,145	0	263	229	
DP Karlovac	83,677	83,596	3,581	2,147	0	406	297	
DP Sisak	52,044	52,005	2,478	1,725	6	354	194	
DP Gospić	37,669	37,646	2,853	2,347	0	127	113	
DP Virovitica	27,571	27,541	861	709	0	152	104	
DP Požega	25,915	25,875	772	647	0	144	90	
Total	2,078,758	2,076,853	59,884	36,984	71	12,532	8,924	

Croatian Energy Regulatory Agency

Plans for T&D System Development And Construction For Three-Year Period

Five "Largest" Distribution Districts

Distribution district	Customers (%)	Energy Consumption (%)
Zagreb	21,9	23,6
Split	11,6	12,8
Rijeka	8,7	10,5
Osijek	6,9	7,2
Pula	6,0	7,2
Total	55,1	61,1

	Distribution district	Average concumption per
\$F	Distribution district	Average consumption per
		(kWh/year)
	DP Zagreb	4 609
	DP Zabek	2,406
	DP Zabok	3,400
	DP varazdin	4,110
	DP Cakovec	4,228
	DP Koprivnica	3,400
	DP Bjelovar	4,328
	DP Križ	3,524
	DP Osijek	4,088
	DP Vinkovci	4,578
	DP SI. Brod	3,784
	DP Pula	4,413
	DP Rijeka	4,920
	DP Split	4,816
	DP Zadar	3,941
	DP Šibenik	3,700
	DP Dubrovnik	4,981
	DP Karlovac	3,548
	DP Sisak	3,737
	DP Gospić	3,013
	DP Virovitica	3,776
	DP Požega	3,484
	Total average	4,297



Legal Framework (Electricity Market Act)

- The transmission system operator shall, with prior approval from the Agency, pass a plan for transmission system development and construction for a period of three years.
- The distribution system operator shall, with prior approval from the Agency, pass a plan for development and construction of the distribution system for a period of three years.
- When planning development, the measures for energy efficiency, consumption management and distributed generation, which may postpone the need to reinforce the distribution network, shall be taken into consideration.



Legal Framework (Electricity Market Act)

- Plans shall be passed pursuant to the Energy Development Strategy and the Energy Development Strategy Implementation Plan.
- Tariff items for electricity transmission and distribution shall be established taking into account the development and construction plans.

Plans for T&D System Development And Construction For Three-Year Period

Goals and Purposes of the Plans

Primary goal is to determine necessary investments for the next three-year period (2008-2010) in order to ensure balanced and efficient development of the T&D networks.					
The tree-year plan encompass:					
development of the detailed yearly plans (procurement plan, investment plan, business plan)					
timely finance planning and acquirement of financial resources,					
standardization of equipment,					
 efficient preparation of energy facilities construction and refurbishment 					
 timely synchronization and adjustment of transmission and distribution network plans 					
 continuous input for depending parties (customers, equipment producers,) 					
Input data for the Ministry of Environmental Protection, Physical Planning and Construction					



Basic Planning Parameters

- Technical (thermal rating, voltage drops,...)
- Economical (investments costs, technical and non technical losses, non delivered energy,...)
- Planned price levels of standard facilities and equipment based on the previous period



Categories and Priorities for the Investments

- Categories of capital investments for new infrastructure and facilities
- Investments in network expansion, reinforcement and reconstruction
- Investments for the purpose of efficiency and cost cutting (ripple control, network management systems, smart metering,...)
- Investments in other infrastructure (buildings, vehicles,...)



Plans for T&D System Development And Construction For Three-Year Period Seven Business Goals

- Adequate quality of supply
- Efficient company organization and management
- Strategic business development
- Optimal use of human resources
- Improvement of public relations
- Better asset management
- Increase of company capital





Thank you for your attention!

june 2008.

Presentation of the rules

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