SECI Regional Electricity Projects

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Geneva, 18 November 2003
Contents:

• Introduction and SEE Region Definition
• SEE Power Systems status and Reconnection to UCTE
• SECI Electricity Project Group
• Regional Power Sector Investment aspects
Participating Countries/Companies

- Albania, KESH
- B&H (3+1)
- Bulgaria, NEK
- Croatia, HEP +EIHP
- Greece, HTSO
- Hungary, MVM
- Macedonia, ESM
- Romania, Transelectrica
- Slovenia, ELES
- Turkey, TEIAS
- YUG, Montenegro, EPCG
- YUG, Serbia, EPS+EKC
- Kosovo, UNMIK+KEK
RECONNECTION, 2nd UCTE ZONE TO MAIN GRID
EXPECTED FOR 2004
SECI Electricity Project Group

- SECI (South East European Cooperative Imitative) Electricity Project Group was established in 1998
- Governmental initiative, Macedonia hosted the project Group & ESM organizational & experts coordination
- SECI Project Group, in the initial phase, prepared the TORs for 5 Projects of common interest
- Few practical projects are performing, mainly supported by USAID and participating companies
Three SECI Project’s activities

- Teleinformation System Among National Dispatch Centers/TSOs of SECI Countries (1st phase 2000/01, 2nd phase 02/04)
- Regional Transmission System Planning (1st phase 2001/02, 2nd phase 2003/04)
- Regional Role of Hydro Generation in the light of REM (performed 2002/03)
Regional Interconnection Aspects

Based on SECI Transmission Planning Project
## New Transmission Interconnection Investments

<table>
<thead>
<tr>
<th>Project</th>
<th>Countries involved</th>
<th>Current status</th>
<th>Length [km]</th>
<th>Financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ernestinovo – Pecs</td>
<td>CRO, HUN</td>
<td>Pre-FS</td>
<td>90</td>
<td>Open</td>
</tr>
<tr>
<td>Sombor – Pecs</td>
<td>YUG, HUN</td>
<td>Prep or FS</td>
<td>80</td>
<td>Open</td>
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<tr>
<td>Nis – Skopje 5</td>
<td>YUG, MKD</td>
<td>FS</td>
<td>195</td>
<td>GRE</td>
</tr>
<tr>
<td>S. Mitrovica – Ugljevik</td>
<td>YUG, B&amp;H</td>
<td>Prep. Construction!</td>
<td>75</td>
<td>Open, Int.!</td>
</tr>
<tr>
<td>B. Luka – Tumbri</td>
<td>B&amp;H, CRO</td>
<td>Idea</td>
<td>230</td>
<td>Open</td>
</tr>
<tr>
<td>Bekescaba – Oradea</td>
<td>HUN, ROM</td>
<td>FS</td>
<td>92</td>
<td>EBRD</td>
</tr>
<tr>
<td>Elbasan – Tirana</td>
<td>ALB</td>
<td>FS</td>
<td></td>
<td>GRE</td>
</tr>
<tr>
<td>Tirana – Podgorica</td>
<td>ALB, SCG</td>
<td>FS</td>
<td>203</td>
<td>KfW!?</td>
</tr>
<tr>
<td>Tirana – Kosovo B</td>
<td>ALB, SCG</td>
<td>FS</td>
<td>~ 200</td>
<td>KfW! WB?</td>
</tr>
<tr>
<td>Tirana – Skopje</td>
<td>ALB, MKD</td>
<td>Prelim. Analyses</td>
<td>~ 200</td>
<td>Open</td>
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<tr>
<td>Maritza 3 – Filippi</td>
<td>BUL, GRE</td>
<td>Decision for constr.</td>
<td>257</td>
<td>Open</td>
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<tr>
<td>Filippi - Babaeski</td>
<td>GRE, TUR</td>
<td>Prep. Construction</td>
<td></td>
<td></td>
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<tr>
<td>Bitola – Florina</td>
<td>MKD, GRE</td>
<td>Prep. Construction</td>
<td>40</td>
<td>MKD, GRE</td>
</tr>
<tr>
<td>Stip – C. Mogila</td>
<td>MKD, BUL</td>
<td>Prep. Construction</td>
<td>150</td>
<td>EBRD</td>
</tr>
</tbody>
</table>

- **In operation in 2005**
- **Option**
Regional Teleinformation Aspects

Based on SECI Teleinformation Project
SECI TI Simplified Map, toward UCTE EH

- Existing or Committed Links
- NA Information
- Uncertain implementation
Follow on Activities on TSP Project 2003/04 (1/3)

1. Updating and improving existing Regional Model
   • Model should be refreshed and updated
   • Try to avoid as much as possible internal equivalent elements in the model
   • Try to improve equivalent of the UCTE system

2. Identification of bottlenecks and future evaluation

3. Updating the Study Approach
   • Considerations of new project options
   • Combinations of the optional lines
   • Expand planning criteria, particularly for interconnection lines
Follow on Activities on TSP Project 2003/04 (2/3)

4. Expanding the existing Regional Model
   • Details for switching studies (short circuits)
   • Details for dynamics simulations

5. Expanding the Regional Model for future time horizon
   • Upgrading the model for year 2010
   • Option, update the model periodically
   • Definition of guidelines and recommendations for upgrading the model every year
Follow on Activities on TSP Project 2003/04 (3/3)

7. Study for light load (off peak) conditions and voltage problem consideration

8. Simulations of predicted realistic market based scenarios based on the GTMax and SDDP outputs

9. Training
   - For advanced PSS/E users
   - Internal PSS/E trainings for additional experts in region
   - Additional training for GTMax software
REGIONAL TRANSMISSION SYSTEM PLANNING PROJECT
Project Management & Organization Scheme

Steering Committee (SC)

Technical Coordination Group (TCG)

Working Group #1 (WG 1)
Task Force Group #1 (TFG 1)

Working Group #2 (WG 2)
Task Force Group #2 (TFG 2)
Bottlenecks evaluation

Task Force Group #3 (TFG 3)
Studies execution

Task Force Group #4 (TFG 4)
Dynamics models database construction
Regional investment approach

- SEE REM development as driving factor for regional investment approach and regional investment prioritizing
- Solutions to national energy issues based on isolated national markets are neither capable nor desirable as a means to satisfy regional supply and demand imbalances
- Balance between national & regional approach
Regional Demand and Supply

The basic information

Population (million)
total 55.7

4.6
$ 4625

4.2
$ 1195

10.0
$ 984

2.0
$ 1750

3.4
$ 1282

22.6
$ 1700

8.2
$ 1605

10.6
$ 11,002

GDP per capita ($)
average values for
SEE countries $ 1765
Demand and supply outlook 2003-2012

- An average growth rate of about 2.3% is expected by regional utilities
- The region aims to add a net new capacity of about 4500 MW through 2012
- Rehabilitation of about 4000 MW of existing capacity would be required
- Without investments in generation the region may loose up to 6500 MW
Generation Investment Study

- EC & WB in the REM Framework
- Scope Demand & Supply outlook
- Time horizon 2015-20
- Regional Investment Prioritization
- SECI Project Group will cover Transmission and Interconnection aspects