Hydropower Development
- a regional and integrated approach

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Energy and Transport – South East Europe and Turkey
Agenda

- Long Tradition of Hydropower use in the Western Balkan
- Present hydropower use in the Western Balkan
- Hydropower potential in the Western Balkan
- Perspective of Hydropower use in the Western Balkan
- Assistance of KfW for sustainable development of the region
Long Tradition of Hydropower use in the Western Balkan

Albania
- HPP Ulza was constructed in 1957

Bosnia and Herzegovina
- Construction of HPP Jablanica started 1954

FYR of Macedonia
- HPP Matka was put into operation in 1938

Kosovo
- HPP Prizrenasja was built in 1926-1928

Montenegro
- HPP Perucica was put into operation in 1960

Serbia
- HPP Pod gradom in Užice on Djetinja river started operating in 1900
### Present hydropower use in the Western Balkan

<table>
<thead>
<tr>
<th></th>
<th>ALB</th>
<th>BiH</th>
<th>FYROM</th>
<th>KOS</th>
<th>MNE</th>
<th>SRB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Installed Generation Capacity</strong></td>
<td>ALB</td>
<td>BiH</td>
<td>FYROM</td>
<td>KOS</td>
<td>MNE</td>
<td>SRB</td>
</tr>
<tr>
<td>- <em>Thermal</em></td>
<td>98 MW</td>
<td>1,856 MW</td>
<td>1,304 MW</td>
<td>1,171 MW</td>
<td>218 MW</td>
<td>4,112 MW</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>47%</td>
<td>67%</td>
<td>96%</td>
<td>25%</td>
<td>59%</td>
</tr>
<tr>
<td>- <em>Hydro</em></td>
<td>1,688 MW</td>
<td>2,120 MW</td>
<td>649 MW</td>
<td>44 MW</td>
<td>658 MW</td>
<td>2,886 MW</td>
</tr>
<tr>
<td></td>
<td>95%</td>
<td>53%</td>
<td>33%</td>
<td>4%</td>
<td>75%</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,786 MW</td>
<td>3,976 MW</td>
<td>1,953 MW</td>
<td>1,215 MW</td>
<td>876 MW</td>
<td>6,998 MW</td>
</tr>
<tr>
<td><strong>Electricity Generation [2013]</strong></td>
<td>ALB</td>
<td>BiH</td>
<td>FYROM</td>
<td>KOS</td>
<td>MNE</td>
<td>SRB</td>
</tr>
<tr>
<td>- <em>Thermal</em></td>
<td>0 GWh</td>
<td>10,215 GWh</td>
<td>4,510 GWh</td>
<td>6,382 GWh</td>
<td>1,441 GWh</td>
<td>29,024 GWh</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>59%</td>
<td>74%</td>
<td>98%</td>
<td>36%</td>
<td>73%</td>
</tr>
<tr>
<td>- <em>Hydro</em></td>
<td>6,959 GWh</td>
<td>7,236 GWh</td>
<td>1,584 GWh</td>
<td>143 GWh</td>
<td>2,504 GWh</td>
<td>10,853 GWh</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>41%</td>
<td>26%</td>
<td>2%</td>
<td>64%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,323 GWh</td>
<td>17,451 GWh</td>
<td>6,094 GWh</td>
<td>6,525 GWh</td>
<td>3,945 GWh</td>
<td>39,877 GWh</td>
</tr>
<tr>
<td>- <em>Import</em></td>
<td>2,323 GWh</td>
<td>- 3,695 GWh</td>
<td>2,429 GWh</td>
<td>- 342 GWh</td>
<td>167 GWh</td>
<td>- 2,537 GWh</td>
</tr>
</tbody>
</table>

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Hydropower potential in the Western Balkan

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hydropower Potential [GWh/yr]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Theoretical potential</em></td>
<td>40,000</td>
<td>70,128</td>
<td>8,863</td>
<td>n.a.</td>
<td>n.a.</td>
<td>27,300</td>
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<tr>
<td><em>Technically feasible potential</em></td>
<td>15,000</td>
<td>24,000</td>
<td>5,500</td>
<td>n.a.</td>
<td>10,846</td>
<td>17,600</td>
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<tr>
<td><em>Economically feasible potential</em></td>
<td>11,750</td>
<td>19,000</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>Hydro based generation in 2013</strong></td>
<td>6,959</td>
<td>7,236</td>
<td>1,584</td>
<td>143</td>
<td>2,504</td>
<td>10,853</td>
</tr>
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Hydropower potential in the Western Balkan


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Perspective of Hydropower use in the Western Balkan

Review of hydropower potential
- Revision of the economically and ecologically feasible potential
- Identification of exploitable hydropower in line with contemporary Integrated River Management strategies
- Identification of highly valuable biospheres and definition of “No Go-areas”

Particular Focus on rehabilitation and non-powered dams
- Safeguarding of existing hydropower schemes along with power upgrades
- Identification of water regulating dams which are presently not used as HPPs

Multi-benefit installations
- Combined use of dam structures as HPP, flood retention, irrigation, tourism

Strengthening Connectivity
- trans-national use of water resources
- balancing power (e.g. pumped-storage) with increasing HV grid integration
- Development of bigger projects and limitation of small hydropower
Assistance of KfW for sustainable development of the region

**Bi-lateral Financial Cooperation**
- German Government strongly supports conversion towards REs
- Competence of KfW regarding RE project implementation
- Technical Assistance (e.g. “Hydropower Atlas”)

**Multi-lateral Financial Cooperation**
- Bundling of resources of different donors (mandates) for bigger projects

**Cooperation with EU bodies**
- Support of Acquis
- Further strengthening of Berlin process
- Initiation of WBIF-financed project ideas
- Active participation in Energy Community Working Groups
Thank you for your attention and valuable comments.