Decarbonisation on a slow speed: Recommendations on the Bulgarian National Energy and Climate Plan

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Assessment of the Bulgarian NECP

✓ NECP project lacks ambition, a long-term perspective and a clear vision
✓ Relies heavily on coal, gas and nuclear by 2030
✓ Low RES targets, except for biomass with foreseen increase of 68%
✓ Missing detailed energy scenarios’ modelling
✓ Missing justification of policy measures and targets
✓ Rise of prosumers, energy communities (cooperatives) and small-scale producers is underestimated and generally neglected
Space for improvement ...

✓ Benefit from the existing or new scenarios modelling of the electricity sector development
✓ Introduce evidence-based analysis to justify the selected targets and macro-economic assumptions
✓ Put “full-scale” decarbonisation scenario at the core of all planned targets and measures
✓ Use the recent modelling studies to benefit fully from the existing RES potential of the country
✓ Decrease the foreseen growth of biomass, incl. through incentivizing medium-scale biomass facilities on community level
✓ Start planning total coal-phase out at latest by 2025/2030
Installed capacity - SEERMAP scenarios

- 45% of current fossil fuel generation capacity (2600 MW) expected to be decommissioned by 2030; 97% by 2050
- Shift in generation mix from fossil fuel to renewables, driven primarily by increasing carbon and wholesale electricity prices and decreasing renewable technology costs

Source: South East Europe Electricity Roadmap (SEERMAP) country report for Bulgaria, 2017
Decarbonisation scenario: EUR 16.5 bln investments in RES by 2050; out of them EUR 4.0 bln public expenditures

Source: South East Europe Electricity Roadmap (SEERMAP) country report for Bulgaria, 2017
Policy recommendations (1)

✓ A long-term strategy for a coal phase-out and just transition is urgently needed

✓ Review the current draft NECP targets to be on track with 2050 energy and climate framework

✓ Conducting a detailed ex-ante impact assessment of the NECP’s targets and energy system projections

✓ Review and utilize the existing modelling studies to justify the NECP policy measures and targets
### Long-term RES utilization potential by 2050

<table>
<thead>
<tr>
<th>Technologies</th>
<th>Electricity generation (GWh)</th>
<th>Capacity equivalent (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biogas</td>
<td>1 999</td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>3 971</td>
<td></td>
</tr>
<tr>
<td>Biowaste</td>
<td>266</td>
<td></td>
</tr>
<tr>
<td>Geothermal electricity</td>
<td>1 162</td>
<td>180</td>
</tr>
<tr>
<td>Hydropower - small-scale up to 10 MW</td>
<td>1 930</td>
<td>506</td>
</tr>
<tr>
<td>Hydropower - large-scale above 10 MW</td>
<td>7 488</td>
<td>3 750</td>
</tr>
<tr>
<td>Photovoltaics - decentralized systems</td>
<td>5 470</td>
<td>5 629</td>
</tr>
<tr>
<td>Photovoltaics - centralized systems</td>
<td>5 268</td>
<td>4 221</td>
</tr>
<tr>
<td>Wind onshore (incl. technical /power system/ constraints and land use constraints)</td>
<td>16 385</td>
<td>10 110</td>
</tr>
<tr>
<td>Wind offshore</td>
<td>3 424</td>
<td>1 200</td>
</tr>
<tr>
<td><strong>TOTAL RES-E</strong></td>
<td><strong>47 363</strong></td>
<td></td>
</tr>
</tbody>
</table>

*For comparison: gross electricity demand 2017: 35 242*

Source: South East Europe Electricity Roadmap (SEERMAP) / Green-X model database, 2017
Policy recommendations (2)

- Implement more integrated approach to heating & cooling, electricity and transport sectors
- Develop regulatory framework for and incentivize energy communities
- Develop subsidized program for residential buildings’ small-scale RES, esp. for vulnerable groups
- Develop a specific financing facility to incentivize the use of medium-scale biomass (community) installations in rural areas and small towns;
Thank you!

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