SEERMAP: Long term outlook to the South East Europe electricity sector

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Main issues to consider:

• Why the SEE region is important for us?
  • Strong connection to CEE, price dynamics is influenced by SEE
  • Investment opportunities

• Long term energy transition - What is the role of RES, natural gas and coal in the SEE markets?
  • Impacts and cooperation opportunities with CEE (e.g. in RES investments, reserve sharing etc.)

• Does the system provides enough flexibility in 2030?
## The SEERMAP and Agora projects

### Project title
- **South East European Electricity Roadmap (2017)**

### Region
- Albania, Bosnia, Kosovo, Montenegro, Macedonia, Serbia, Romania, Bulgaria, Greece

### Partners
- REKK (lead), TU Wien, OG Research, EKC

### Donors
- Austrian Federal Ministry of Agriculture, Forestry, Environment and Water
- European Climate Foundation

### Web
- www.seermap.rekk.hu

### Objectives
- Analyse the impact of the transition to a low carbon and energy secure pathway the electricity sector until 2050
- Develop a Long Term Electricity Roadmap for SEE

### AGORA project on system flexibility (2018)

### Assessment on flexibility
- AGORA project: analyse the system over a full year if sufficient flexibility is present
Models applied and interlinkages

EPMM*: Unit Commitment model to analyse system flexibility in a full year
Three scenarios

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<th>No Target</th>
<th>Delayed</th>
<th>Decarbonization</th>
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<tbody>
<tr>
<td>CO₂ target</td>
<td>No target</td>
<td>Delayed implementation</td>
<td>Ambitious decarbonisation policy</td>
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<tr>
<td>Fossil plants</td>
<td>Many new coal plants</td>
<td>Many new coal plants</td>
<td>Only few coal plants</td>
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<tr>
<td>SEERMAP RES target</td>
<td>NO new RES Support</td>
<td>Continuation of current policies</td>
<td>Ambitious RES support</td>
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MODELLING RESULTS FOR THE SEERMAP REGION
• Gradual phase out of fossil capacities

• Role of natural gas is uncertain: bridging role in 'decarbonisation' and 'delayed' scenario, where gas is crowded out from the market, and more permanent role in the 'no target'

• Dynamic uptake of RES technologies, especially wind and solar
Fossil and RES investment cost

- All scenarios require dynamic investment uptake in the region.
- RES investment costs dominate the post 2020 period.
- EnC countries will have to follow competitive procurement of RES investments.
- Source of financing: EU and IFIs.
WHAT IS THE ROLE OF NATURAL GAS IN SEE OVER THE LONG TERM?
Natural gas consumption in electricity generation

- Bridging role of natural gas in all scenarios
- In ’delayed’ and ’decarbonisation’ scenario gas based generation is crowded out from the market by 2050
- GR, RO and BG are the large gas consumers. In WB6 AL, MK and RS show the highest increase
Gas infrastructure plans in CEE and SEE

- Eastring, BRUA, South Stream would deliver the same volumes to the same markets
- Competing infrastructures, risk of non-realisation
- Do we need all these infrastructure developments for the long term supply?
DOES THE ELECTRICITY SYSTEM OF SEE HAS ENOUGH FLEXIBILITY?
EPMM: Critical week assessment: electricity mix – winter, SEE region

➢ More variability in production, export and pump storage by 2030 due to higher RES but the SEE system balances!
EPMM: Critical week remaining margin – winter, SEE Region

➢ Reserve margin does not fall below 35% in 2030 on regional level, except if new interconnectors are not built (NTCs)

*Available import: Additional import possibilities taken into account above the utilised ones
Conclusions

RES
- RES deployment increases in all scenarios, even without support significant growth after 2040
- To secure financing is a key - role of IFIs and EU!
- Opportunity to CEE investors as well

Natural gas
- Role of gas is transitionary in electricity generation:
  - in the 'no target' scenario it peaks at 2040
  - in the 'delayed' and 'decarbonisation' scenarios it is fully replaced by RES by 2050

Coal
- Gradual elimination of coal capacity and production in all scenarios
- Very low utilization from 2040 onwards (below 20% - closure)
- Stranded cost in these assets ranges between 2-8 €/MWh
Thank you very much for your attention!

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