SEERMAP: Summary of macroeconomic modeling

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Main points 1

Macroeconomic effects of decarbonisation are moderate at the regional level

• Decarbonisation
  ▶ leads to moderate GDP (up to 1.5%) and even smaller employment gains (0.2%)
  ▶ helps to improve the external position of the countries primarily due to higher domestic electricity production through renewables
  ▶ does not affect household expenditures significantly with the exception of the ‘delayed’ scenario
Main points 2

Country results vary to a significant extent

• Macroeconomic gains are higher for smaller countries (BiH, KO, ME) and lower for larger, EU member states

• In countries with higher GDP effects debt positions also improve more significantly

• Household electricity expenditure in the scenarios primarily varies with the size of RES support required
Presentation outline

I. What questions we want to answer?
II. What is the methodology?
III. What are the main results?
What questions we want to answer?

- Macroeconomic gains
  - To what extent decarbonisation contributes to higher level of GDP and employment?

- Vulnerability
  - To what extent decarbonisation changes the sustainability of the fiscal and external positions?

- Affordability
  - How does the burden of the electricity bill change for households due to decarbonisation?
Which scenarios we compare?

- **Baseline**
  - In line with EU PRIMES
  - Only those power plants are built where the final investment decision has been made and later on the sector’s investment rate is kept constant

- We compare the results of the core scenarios (’no target’, ’decarbon’, ’delayed’) to the baseline
Structural macroeconomic models for 9 countries

- The following macroeconomic channels are taken into account
  - Energy investments
    - increase product and labor demand in the short term
    - increase the productive capacity of the economy through higher capital and better technology permanently
    - lower energy imports in case of RES due to domestic electricity production
  - Increasing RES penetration lowers Co2 revenues hence c.p. increase the budget deficit
  - RES support to producers and differing wholesale prices across the scenarios also affect the final retail price
III. What are the main results?
III.1. Macroeconomic gains
Baseline scenario

Slowdown in GDP growth, mostly stable employment
The core scenarios...

...lead to moderate GDP gains at the regional level

GDP and employment (2017-2050)

<table>
<thead>
<tr>
<th></th>
<th>GDP</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>no target</td>
<td>0.6</td>
<td>0.2</td>
</tr>
<tr>
<td>delayed</td>
<td>1.6</td>
<td>0.4</td>
</tr>
<tr>
<td>decarbonisation</td>
<td>1.4</td>
<td>0.2</td>
</tr>
</tbody>
</table>

average % deviation compared to the baseline

GDP and employment (2017-2050)

Significant country variation

GDP (2017-2050 average)

% deviation from baseline

-1.0 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0

AL BiH BG GR KO ME MK RO RS Region

- no target
- delayed
- decarbonisation
III.2. Vulnerability
Baseline scenario

gradual decline in debt levels
Core scenarios

External debt declines significantly, while the effect on public debt is moderate at the regional level.
Again significant country variation
III.3. Affordability
Baseline scenario

Household electricity expenditure slightly increases at the regional level

The increase of real wholesale prices is mostly counteracted by improving energy intensity and declining renewable support
No target scenario

No significant change in household electricity expenditure
Decline in household electricity expenditure at the end of the horizon due to lower real wholesale prices
Delayed scenario

High RES support leads to more significant increase in household expenditure at the end of the projection horizon.
Thank you! Questions?