Prospects for coal in the power sector of the Energy Community

Milka Mumović
Available fuel and used fuels

Fuel mix in primary production 2017

Gross inland consumption 2017

- Solid fossil fuels
- Oil and petroleum products
- Natural gas
- Renewables and biofuels
- Hydro
- Nuclear heat

- Solid fossil fuel
- Oil and derivatives
- Natural gas
- Hydro
- Other RES
- Nuclear heat
- Electricity
Import dependency - why coal

Share of import in available energy

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## Security of supply / fuel mix in electricity production

### Generation capacities in the Energy Community 2017

<table>
<thead>
<tr>
<th>Contracting Party</th>
<th>Share in %</th>
<th>Generation capacities (in TWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>0%</td>
<td>2,156</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>49%</td>
<td>56%</td>
</tr>
<tr>
<td>Georgia</td>
<td>0%</td>
<td>960</td>
</tr>
<tr>
<td>Kosovo*</td>
<td>93%</td>
<td>49%</td>
</tr>
<tr>
<td>Moldova</td>
<td>0%</td>
<td>825</td>
</tr>
<tr>
<td>Montenegro</td>
<td>22%</td>
<td>219</td>
</tr>
<tr>
<td>North Macedonia</td>
<td>42%</td>
<td>24,565</td>
</tr>
<tr>
<td>Serbia</td>
<td>54%</td>
<td>32,792</td>
</tr>
<tr>
<td>Ukraine</td>
<td>45%</td>
<td>4,054</td>
</tr>
<tr>
<td>Energy Community</td>
<td>43%</td>
<td>All TPP 56%</td>
</tr>
</tbody>
</table>

**All TPP 56%**
The Energy Community towards a low carbon energy
Impact of incentives for renewables

Change in capacity 2013-2017 (in MW)

-279
-428
0
73
21
0
143
46

Installed capacity in the Energy Community (in MW)

Coal-fired
Gas-fired
Oil-fired
Biomass
Biogas
Nuclear
Hydro, total
Wind
Solar

2013
2014
2015
2016
2017
Final consumption of electricity, Index 2017=1

- Bosnia and Herzegovina
- Kosovo*
- North Macedonia
- Montenegro
- Serbia
- Ukraine
- Energy Community

Years: 2013-2017
Demand for certain fossil fuels 2012-2017 (Index 2017=1)

Oil and petroleum products

Solid fossil fuels

2012 2013 2014 2015 2016 2017

2012 2013 2014 2015 2016 2017

Montenegro
Albania
Bosnia and Herzegovina
Moldova
Georgia
North Macedonia
Serbia
Kosovo
Moldova
Ukraine
Georgia

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Profitability concerns: Coal

**Costs of coal and Value of coal**

**Access to and availability of coal**

*Domestic:* close to or integrated with PP or

*Import:* reference market price (port, hub) and transportation costs

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**Costs of coal: estimates**

**Hard coal** (production/import (API 2.50 – 4.25 EUR/GJ) + transport costs) 3.00-4.50 EUR/GJ

**Brown coal** (locally available, close or integrated with power plant) 2.50 – 6.00 EUR/GJ

**Lignite** (usually integrated with power plant) 2.00 – 4.00 EUR/GJ

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**Reserves:**

- Indicated, measured, proven vs commercially viable

- Cost effectiveness of coal combustion vs emerging technologies (gasification, liquefaction…)

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**Land devastation / Reclamation**
Study on direct and selected hidden subsidies to coal electricity production in the Contracting Parties*

- EUR 2.4 billion of direct and certain types of indirect subsidies annually
- EUR 1.2 billion of direct subsidies 2015-2017 (EUR 400 million annually on average)
- Indirect subsidies:
  - Non-payment of CO2 emissions
  - Operation at a low or negative level of profitability
- Without direct and indirect subsidization of electricity generated from coal and other market distortions, and in particular cross-subsidization between industry and households, the price of electricity to supply households and industry would need to be increased by some 15% to 52%

* https://www.energy-community.org/dam/jcr:23503de3-fccd-48f8-a469-c633e8ac5232/EnC_Coal_Study_062019.pdf
Incentives and subsidies....

**Direct subsidy per unit of electricity produced in EUR (2015-2017 average)**

- Bosnia and Herzegovina: 3.28
- Kosovo: 2.93
- Montenegro: 0.70
- North Macedonia: 1.23
- Serbia: 3.87
- Ukraine: 5.69

**Paid subsidies for RES and coal in the end users prices in 2017**

- Bosnia and Herzegovina: 2.13 RES, 3.90 coal
- Kosovo: 1.39 RES, 1.87 coal
- Montenegro: 1.39 RES, 0.24 coal
- North Macedonia: 3.15 RES, 0.46 coal
- Serbia: 2.74 RES, 1.18 coal
- Ukraine: 2.36 RES, 1.78 coal
Adding Carbon costs in existing TPPs

Estimated cost of production
Return on assets
Direct subsidies
Carbon costs
Market concerns

State aid and subsidies

Impact of Carbon pricing in EU vs EnC
• carbon leakage
• trade barriers (EU border tax)
• disintegration of markets

Social protection schemes - Yes, but:
(De)coupling of the indigenous generation costs from retail market prices

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Full costs of production of electricity

- Full costs of production from coal

- energy costs charged to households 2018
- energy costs charged to industry 2018
Managing the transition

Security of supply concerns

- Energy mix (current and long term perspective of fossil fuel in power generation portfolio)
- (De)Commissioning to comply with emission caps / environment protection

Market concerns

- State aid and subsidies
- Impact of Carbon pricing in EU vs EnC (carbon leakage to EnC, trade barriers to EU, disintegration of markets)
- (De)coupling of the indigenous generation costs from retail market prices

Profitability concerns

- **Costs of compliance**: plant rehabilitation, site reclamation,
- **Subsidies** phase out
- Costs of **emission**: carbon price
- **Customer protection scheme** passed on generation
Social impact

Social protection scheme – yes, but:

- **Low prices for end customers at the expense of coal and/or coal fired TPP are not sustainable in the long run.**
- **Low price as a social cohesion measure must not be preserved at the expense of environment.**
- **Operation at loss or without profit prevents power plant from re-investing in new plants and new technologies.**
- **Social protection measures must target population employed in coal mining and coal mining sites, too.**
- **Sale price has to reflect actual costs, including costs of emission, to allow demand to react to scarcity.**
Coal Regions in Transition and the Energy Community

High-level Policy Talk on Coal Regions in Transition and the Energy Community held in Natolin, Warsaw on 13th September 2019

Event co-organised by:
- Energy Community Secretariat
- European Commission
- World Bank
- College of Europe
- under the auspices of the COP24 Polish Presidency

More than 80 participants including:
- Ministers and Deputy Ministers, mayors and other representatives of local governments from coal regions, industry, NGOs, social partners and academia from the Energy Community and the European Union
Thank you for your attention!
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