LIFE-IP North-HU-Trans - North Hungary in Transition – Project actions

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WBGC CARI workshop
26 January 2022
Gross inland energy use trend and mix in Hungary

In 2019:
- 6.8% solid fuels
- 3.8% lignite

12% of the produced electricity comes from solid fossil fuels

Most of the lignite is used for electricity production and a smaller amount in residential use

Source: Eurostat
Air pollution by sectors

Source: Hungarian Meteorological Service
Air pollution of the Mátra Power Plant

Sulfur oxides (SOx) - national emission

NOx - large point sources (LPS)

<table>
<thead>
<tr>
<th>Sulfur oxides (SOx)</th>
<th>Share in national emission</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>4%</td>
</tr>
<tr>
<td>SOx</td>
<td>33%</td>
</tr>
<tr>
<td>Hg</td>
<td>24%</td>
</tr>
<tr>
<td>CO2</td>
<td>9,2%</td>
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</tbody>
</table>
Air pollution of households

- Solid fuel use at households is responsible for most of the particulate matter pollution ($PM_{2.5}$:77%; $PM_{10}$:50%; BC: 64%)
- 3% of households use coal
- Most combustion installations are decades old
# Targets and goals of Hungary’s National Energy and Climate Plan

<table>
<thead>
<tr>
<th>Energy union dimensions</th>
<th>Indicators</th>
<th>2030 targets</th>
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<tbody>
<tr>
<td><strong>Decarbonisation</strong></td>
<td>GHG emission reduction vs. 1990</td>
<td>min. -40%</td>
</tr>
<tr>
<td></td>
<td>GHG intensity reduction of GDP</td>
<td>Continuously reduce</td>
</tr>
<tr>
<td></td>
<td>A non-ETS emission reduction compared to 2005</td>
<td>min. -7%</td>
</tr>
<tr>
<td></td>
<td>Share of renewables in gross final energy consumption</td>
<td>min. 21%</td>
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</tbody>
</table>
| **Energy efficiency**   | Final energy consumption | max. 785 PJ
|                         | An additional energy use should be covered by renewables between 2030 and 2040 |

- Goals related to coal-phase out:
  - Transformation of the lignite-fired Mátra Power Plant based on low-carbon technologies.
  - Replacing residential heating with clean energy and reducing energy consumption.
  - Particular attention should be paid to the diversification of the region's economy and labor market and to a fair transition.
Economic and social importance of the power plant

- Nearly 1,000 supply chain companies have contracts with MPP
- Heat for 6 industrial companies
- Benefits for other industries
- Business tax for 11 municipalities
- 2,100 direct jobs in one power plant and two mines (average age 50 years)
- 4,700 indirect jobs
- Provides lignite for ~25,000 households

Image: Maps showing minimum contracted value by district and settlement, and no. of employees by location and transportation by settlement.
Vision of the Mátra Power Plant

CCGT
• Natural gas fired, high efficiency, low CO2 intensity, flexibly controlled CCGT unit.
• 500-600 MWe capacity
• It may also be suitable for burning 30-50% mixed hydrogen

Biomass/RDF
• Further use of currently burned annual biomass / RDF fuel.
• Biomass / RDF (~ 38 MWe) block construction.
• It contributes to the achievement of national waste strategic goals.
• Continuing to use biomass / RDF on site is a national waste strategy task.

PV
• Establishment of PV power plants in the Visonta and Bükkábrányi Mines.
• In order to increase renewable capacities by 2x100 MWe and to reduce reclamation costs

CCS/CCU pilot
• Implementation of a pilot project using CCUS technology.

Source: MVM Zrt.
Project actions

• Stakeholder analysis
• Sustainable Transition Governance Model
  ➢ Establishment of the Coal Commission
• Capacity building
• Impact assessment for electricity and heating sector & renewable energy potential assessment
• Socio-economic impact assessment
  ➢ Economic situation of the region;
  ➢ Contribution of coal industry to economic activity of the region;
  ➢ Description of the value chain of the MPP, exploring the effect of transition;
  ➢ Workforce profile of the MPP;
  ➢ Identified growing / developing sectors and activities in the region;
  ➢ Report on evaluation of contribution of MPP to the financial operation of local municipalities;
Project actions

- Ex-ante environmental impact assessment
  - Air quality, geological hazards, ecosystems
- Recultivation strategy for the sites of the mines
- Phase-out roadmap for the lignite blocks
- Installation of prototype projects on the premises of Mátra Power Plant
- Providing just transition for the workers of the power plant
  - Building a database
  - Outplacement services
  - Training plans
  - Follow-up
- Mentoring for related companies
- Studies on the future of carbon neutral energy production on the site of the power plant
- Identification of complementary funds
- Monitoring of results
Project actions

- The two mines provide fuel for households as well
- Households in the area that are sensitive to the energy prices
- Evaluation of energy poverty and lignite use
- Energy community and residential decarbonisation pilot projects
Just transition plans

- **Just transition mechanism:** to ensure that the transition towards a climate-neutral economy happens in a fair way, leaving no one behind. It provides targeted support to help mobilise around €55 billion over the period 2021-2027 in the most affected regions, to alleviate the socio-economic impact of the transition.

- **Eligible counties in Hungary:** Heves county (in Northern Hungary), Borsod-Abaúj-Zemplén county (in Northern Hungary), and Baranya county (in Southern Transdanubia)

- Just transition plans are created for every eligible county
- Our LIFE project provides inputs for the creation of the plans
- The plans are not finalised yet
- Ongoing consultation with the European Commission
Just transition plans

Preliminary list of measures in the just transition plans:

• Providing complex **labor market services for employees at risk** of transition or already losing their jobs, organizing further training and retraining, and changing jobs.

• **Supporting entrepreneurship** and starting a business.

• **Business incubation centers** for existing and start-up businesses viable in the green economy, corporate mentoring programs.

• Supporting **technology change** to lower GHG emissions.

• **Funding of research and development co-operations** involving the capacities of university centers and enterprises operating in the counties affected by the Territorial Fair Transition Plans, in order to promote efficiency-enhancing research and development activities with GHG emission reductions and significant green economy innovation potential.

• Supporting the **diversification of enterprises in the green economy**, in particular small and medium-sized enterprises.

• Support for **innovative energy storage pilot projects**

• Support for **the renovation of energy-using systems, residential buildings** and the purchase and **installation of solar systems** to support the replacement of residential coal

• **Green awareness-raising** mentoring program

• **Innovative green transport pilot projects** to reduce the need for mobility in the counties affected by the Territorial Fair Transition Plans

• Support for recovery projects related to the **reclamation of mines** to be closed and industrial sites for alternative uses of the affected areas
## Lignite use in Western Balkan countries

<table>
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<th>Lignite in GIC</th>
<th>Lignite in FIC of households</th>
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<tbody>
<tr>
<td>Montenegro</td>
<td>33,1%</td>
<td>0,9%</td>
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<tr>
<td>North Macedonia</td>
<td>32,2%</td>
<td>0,1%</td>
</tr>
<tr>
<td>Albania</td>
<td>0,0%</td>
<td>0,0%</td>
</tr>
<tr>
<td>Serbia</td>
<td>43,9%</td>
<td>2,8%</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>45,2%</td>
<td>3,4%</td>
</tr>
<tr>
<td>Kosovo</td>
<td>56,4%</td>
<td>0,4%</td>
</tr>
</tbody>
</table>
The project can provide good practice for other coal regions, also in Western Balkan countries.

Similar characteristics
Thank you for your attention!