Coal transition in Poland

Aleksander Szpor, Jan Baran
The role of coal in the Polish energy generation
Prevalence of coal in the TPES (Mtoe*)

Source: IEA

*Without electricity; crude oil and oil products combined.
Domination of coal in the electricity production (TWh)
Productivity in Polish hard coal mining sector

Employment and production

- Employment in hard coal sector (thous.)
- Production of hard coal (mln tonnes)

Productivity (tons of coal/person)
Coal – economic vs. social dimension

• Role of coal is not related to profits from this sector

• It is related rather to combination of specific factors:
Wages in mining and other sectors (2014, zloty)

Wages in mining sector are substantially higher compared to sectors with similar workforce characteristics.

Source: SES 2014.
Labour force status of workers a year after leaving particular sectors

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employed</th>
<th>Unemployed</th>
<th>Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>74%</td>
<td>9%</td>
<td>16%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>25%</td>
<td>40%</td>
<td>36%</td>
</tr>
<tr>
<td>Construction</td>
<td>20%</td>
<td>43%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Quitting the mining sector, unlike the manufacturing or construction, ends with inactivity for the vast majority workers.

Source: LFS.
Low level of education among miners (%)

Source: SES 2014.
Sociological and regional development aspects

- Miners have a high social status
- Mining community developed specific strong cultural patterns (e.g., subordinance)
- They are often the single source of income for their families
- Transport and urban infrastructure is closely linked with the industrial character of the region
Problem with the Polish CO$_2$ emissions
Decoupling of CO$_2$ emissions and growth

Source: World Bank
Tonnes of CO$_2$ emissions per capita

Source: World Bank
CO₂ emissions per GDP (PPP) (kg/$)

Source: World Bank
Phasing out coal mining in Poland...?
General policy documents

There are two major documents which are expected to appear possibly this year:

- Polish Energy Policy until 2050
- The National Energy and Climate Plan.

So far the only reference documents are the

- Draft of the Polish Energy Policy until 2050 (from 2015)
- Strategy for Lignite mining sector until 2050 (adopted by the tripartite commission in 2017)
Total primary energy supply (Mtoe)

Source: Draft of the Polish Energy Policy until 2050.
Electricity production (TWh)

Source: Draft of the Polish Energy Policy until 2050
Strategic goals for the coal sector

The 3 goals of the **Polish Energy Policy until 2050** are

1) ensuring energy security
2) increasing the competitiveness and energy efficiency
3) limiting the impact on environment

The main goal of the strategy for the **Hard Coal Sector until 2030**: building a profitable, efficient and modern hard coal mining sector

The main goal of the strategy for the **Lignite Sector until 2050**: ensuring energy security
Hard coal production scenarios until 2030, (mln tonnes).

Lignite production until 2050 (mln tonnes)

Source: Szczepiński J., *Program dla sektora górnictwa węgla brunatnego w Polsce, „Poltegor“, Presentation given on 31 May 2017*
What does it mean in terms of employment?

Age structure in mining sector suggests that a job restructuring would be easier for the lignite sector.
What does it mean in terms of emissions?

In a 1.5 degree scenario the developing economies are expected to achieve 2-3 t CO2/capita. For Poland it should result in reduction to a 20% of the current emissions in 2050.
Just transition

The main Polish Trade Unions representing industries and coal are:

- denying the human impact on climate change
- objecting the idea of coal phase-out in the EU policy
- underlining their commitment to reduction of the coal impact on environment
- supporting further public investment in modernisation of the sector
Tension between the two regional strategies

- Strategy „Silesia 3.0” by the regional government and
- „Strategy for Silesia” by the central government

Two opportunities for case-by-case just transition
- Anti-smog campain
- Konin subregion transformation
Thank you!

In case of questions please contact me at:

aleksander.szpor@ibs.org.pl