

# TOWARDS A JUST COAL TRANSITION A LABOR MARKET PERSPECTIVE



Unravelling affected workers' most viable transition pathways in 3 Polish regions



As Europe's largest coal producer, Poland is today at the forefront of the European coal transition

The disruption to jobs and livelihoods may exacerbate the already challenging labor market environment in remote regions and traditional sectors that have not kept pace with broader economic modernization trends

A series of recent World Bank studies deep-dived into the skills and labor challenges brought about by the transition out of coal in three Polish regions, namely Wielkopolska, Silesia, and Lower Silesia



## LIMITED NUMBER OF WORKERS DIRECTLY AND INDIRECTLY AFFECTED BY THE TRANSITION



Coal mining represents less than 1% of employment nationwide (88k people)



but up to 5% at the regional level (Silesia)



and as much as 40% in municipalities located close to the mines (Bieruńsko-ledziński and Kazimierz Biskupi)

### BIERUŃSKO-LEDZIŃSKI (SILESIA)



40% of coal-related employees work directly for mining conglomerates

6% work for subcontractors of the mines

### KAZIMIERZ BISKUPI (WIELKOPOLSKA)



The mining conglomerate accounts for 39% of total employment

65% of the households feel dependent on the coal and energy sector



## COAL-RELATED EMPLOYMENT IS HIGHLY CONCENTRATED



**Market integration** among a few large firms (mining conglomerates and large subcontractors)

**Spatial concentration** in few municipalities around the mines



In Wielkopolska, 8 in 9 jobs in mining and energy are provided by ZE PAK (including subsidiaries)



7 in 10 jobs provided by the subcontractors are located in Silesia



In Silesia, 28% of indirectly affected workers are employed by the 10 largest subcontractors



80% of contract value goes to subcontractors within a 20km radius of the mines

### World Bank Skills and Preference Survey (2022)

- Over 3,500 employees of mining conglomerates (Wielkopolska and Silesia)
- Over 800 working-age adults of most affected municipalities (4 in Wielkopolska, 2 in Lower Silesia)

### One of the first exercises of this kind to be carried out in the mining sector

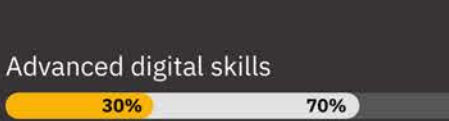
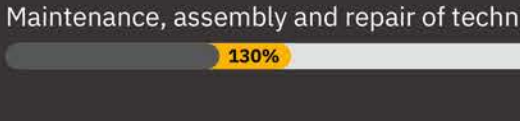
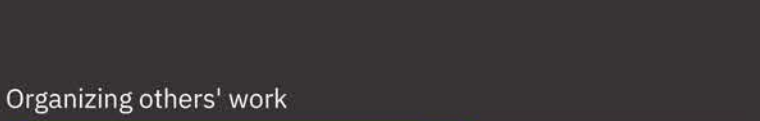
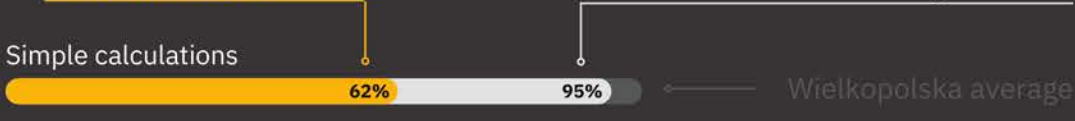
- Large representative sample of affected workers in mines and municipalities
- Bottom-up approach
- Discrete Choice Experiment (DCE): respondents state their preferences by choosing between alternative job scenarios (multidimensional decision making process)



## THE SKILLS OF AFFECTED INDIVIDUALS ARE WORSE FOR NON-MINE WORKERS

Non-mine workers in affected municipalities are less skilled across the board

Mine-workers have skills similar to others (better at machine handling, worse in advanced digital skills)



\* Example using Wielkopolska data.

Legend:   
 - Grey: Wielkopolska region (benchmark)   
 - White: Mining conglomerate   
 - Yellow: Municipalities' residents



## COAL-RELATED WORKERS HAVE A PREFERENCE FOR CONTINUITY AND STABILITY



They want to remain in municipalities where they live



They prefer to work in similar positions/sector of activity



They value job security

An additional hour of commute is worth PLN 5,342 per month (more than the average monthly salary in the Konin subregion), as highlighted by workers from the four most affected municipalities in Wielkopolska.

## JOB MATCHING TOOL TO ASSESS VIABILITY OF LABOR TRANSITIONS AND RESKILLING NEEDS IN CURRENT AND FUTURE LABOR MARKETS

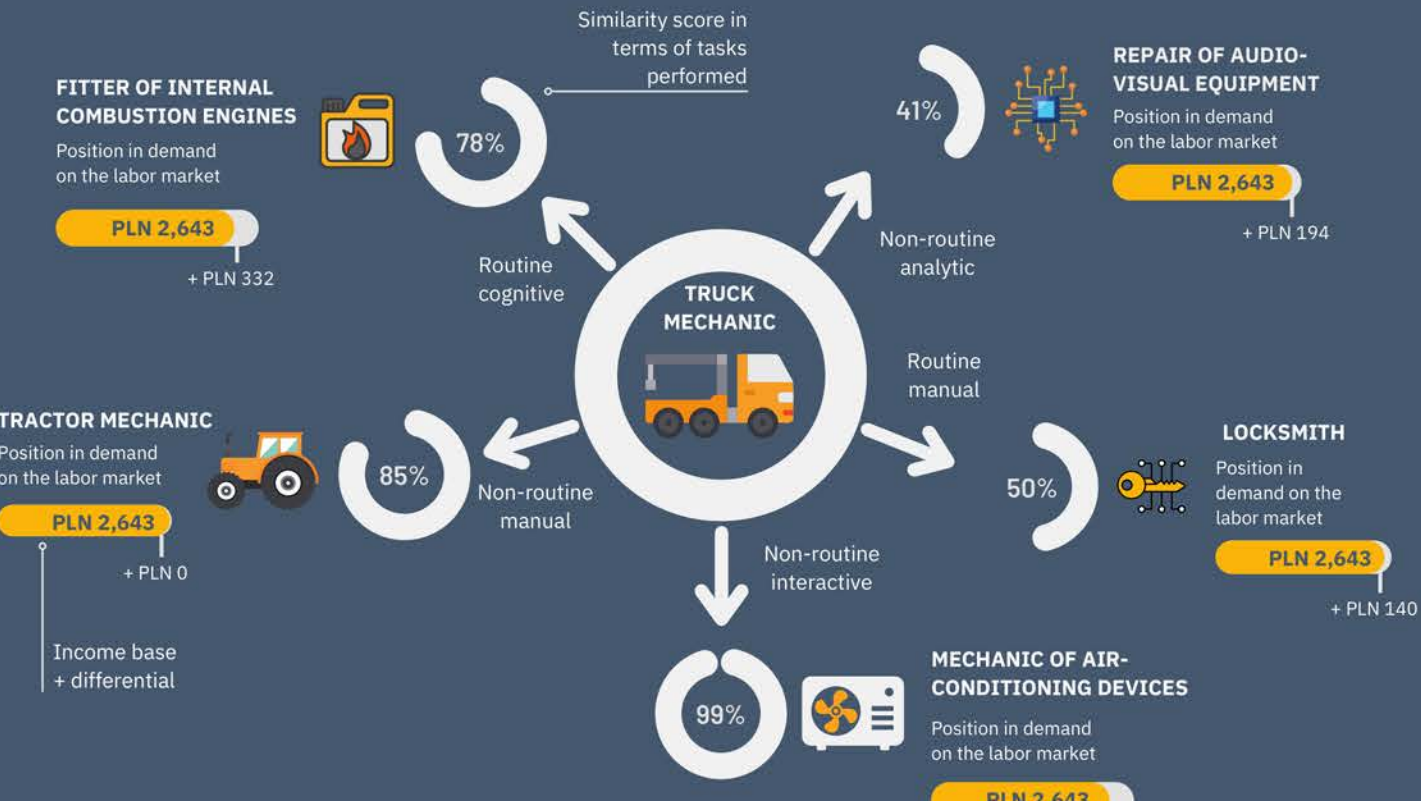


The job matching tool used big data techniques to identify positions requiring skills most similar to the position held by the dismissed worker, narrowing down options to occupations with demand surplus, as identified by the Public Employment Services (PES).

### Example of the 5 most viable job transition pathways for a truck mechanic in Wielkopolska

Highly non-routine manual tasks, moderately non-routine analytical tasks, no interactive and cognitive tasks

Average Salary = PLN 2,643 (USD 600)



## KEY CHALLENGES GOING FORWARD WILL BE



To provide adequate opportunities for affected workers, especially **non-mine workers** in affected municipalities



To implement a **geographic** targeting for income support packages and labor market programs



Combining large and representative datasets, econometric techniques, and machine learning can help develop well-tailored, realistic and acceptable retraining and reskilling programs



These techniques could be used to assist public officials in designing effective labor market transition plans during factory closure in single employer dominated labor markets



These results provide important insights on the design of adequate support packages and labor market programs to enable a Just Coal Transition

## REFERENCES

- Christiaensen, L., C. Ferré, T. Gajderowicz, M. Honorati, and S. Wrona. 2022a. *Towards a Just Coal Transition – Labor Market Challenges in Eastern Wielkopolska*. World Bank Group. Mimeographed.
- Christiaensen, L., C. Ferré, T. Gajderowicz, E. Ruppert Bulmer, and S. Wrona. 2022b. *Towards a Just Coal Transition – Labor Market Challenges in Silesia*. World Bank Group. Mimeographed.
- Christiaensen, L., C. Ferré, T. Gajderowicz, and S. Wrona. 2022c. *Towards a Just Coal Transition – Labor Market Challenges in Lower Silesia*. World Bank Group. Mimeographed.



THE WORLD BANK

worldbank.org/en/topic/jobsanddevelopment