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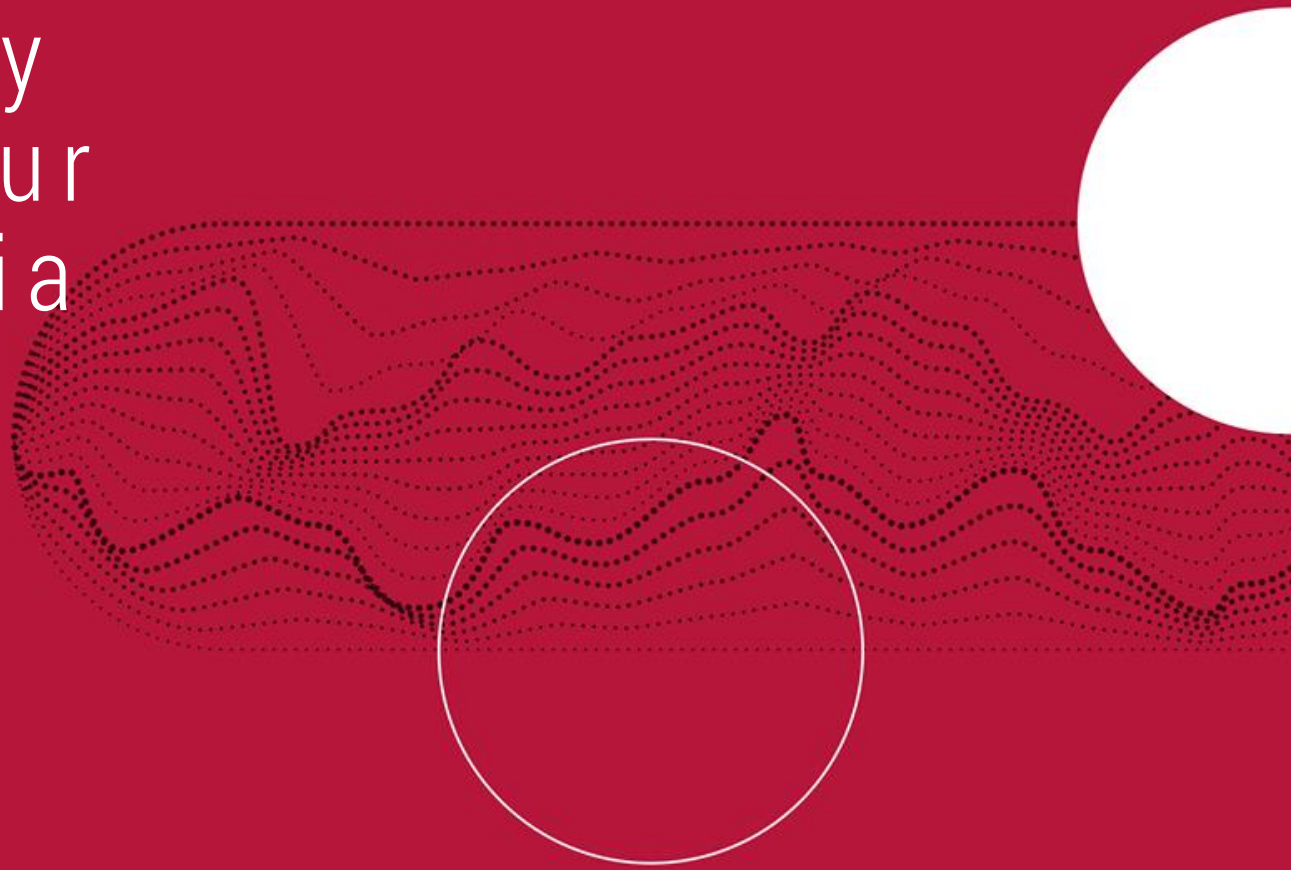
The influence of the 2050 carbon neutrality scenarios on the labour market in Upper Silesia



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What will be the consequences of achieving net neutrality in 2050 for employment in the coal mining industry?

We create employment scenarios in the coal mining industry, resulting from:

- implementation of decarbonisation scenarios.
- the change in employment structure.

We will use the results to discuss the mechanisms of a just transformation of the Upper Silesian labour market and we will make them available for the decision-makers at various levels.

We use available NET-ZERO 2050 scenarios and data from mining institutions to forecast the demand and supply for labor in the mining industry

Demand for labor in mining

- Available decarbonisation scenarios (Instrat, ARE, ENTSO-E, McKinsey), taking into account their limitations
- The results are an introduction to the discussion about changes in employment as a result of decarbonization
- We will update the employment scenarios as further decarbonisation forecasts appear (KOBiZE-CAKE)

Labor supply in mining

- Overall employment structure (gender, position, institution and workplace)
- Detailed employment structure in selected companies (age, work experience and education)

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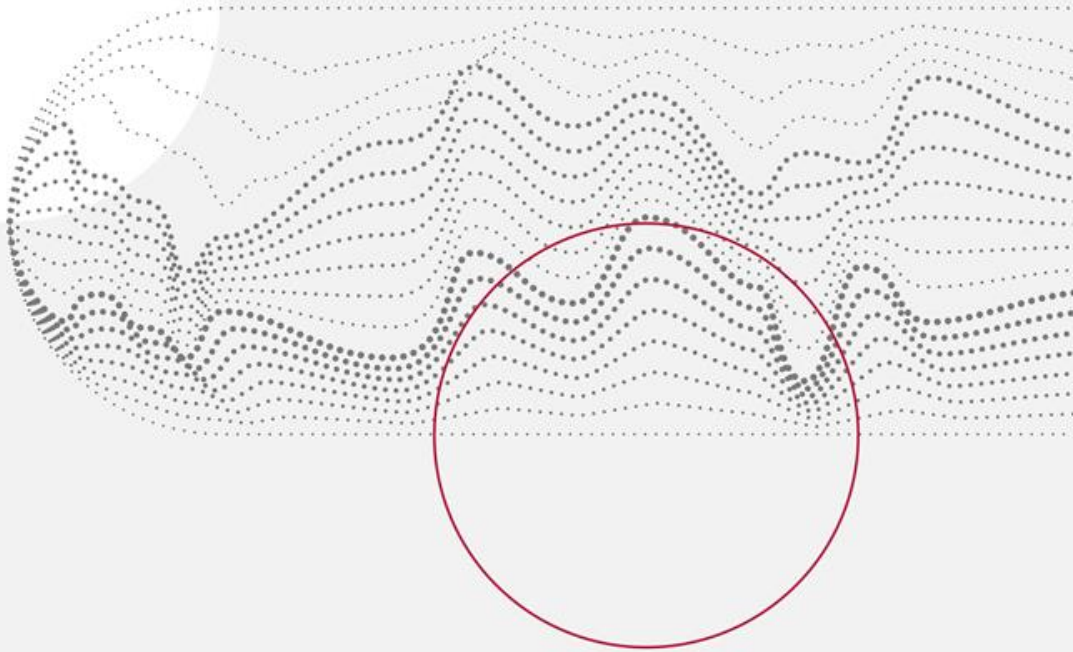
SCENARIOS

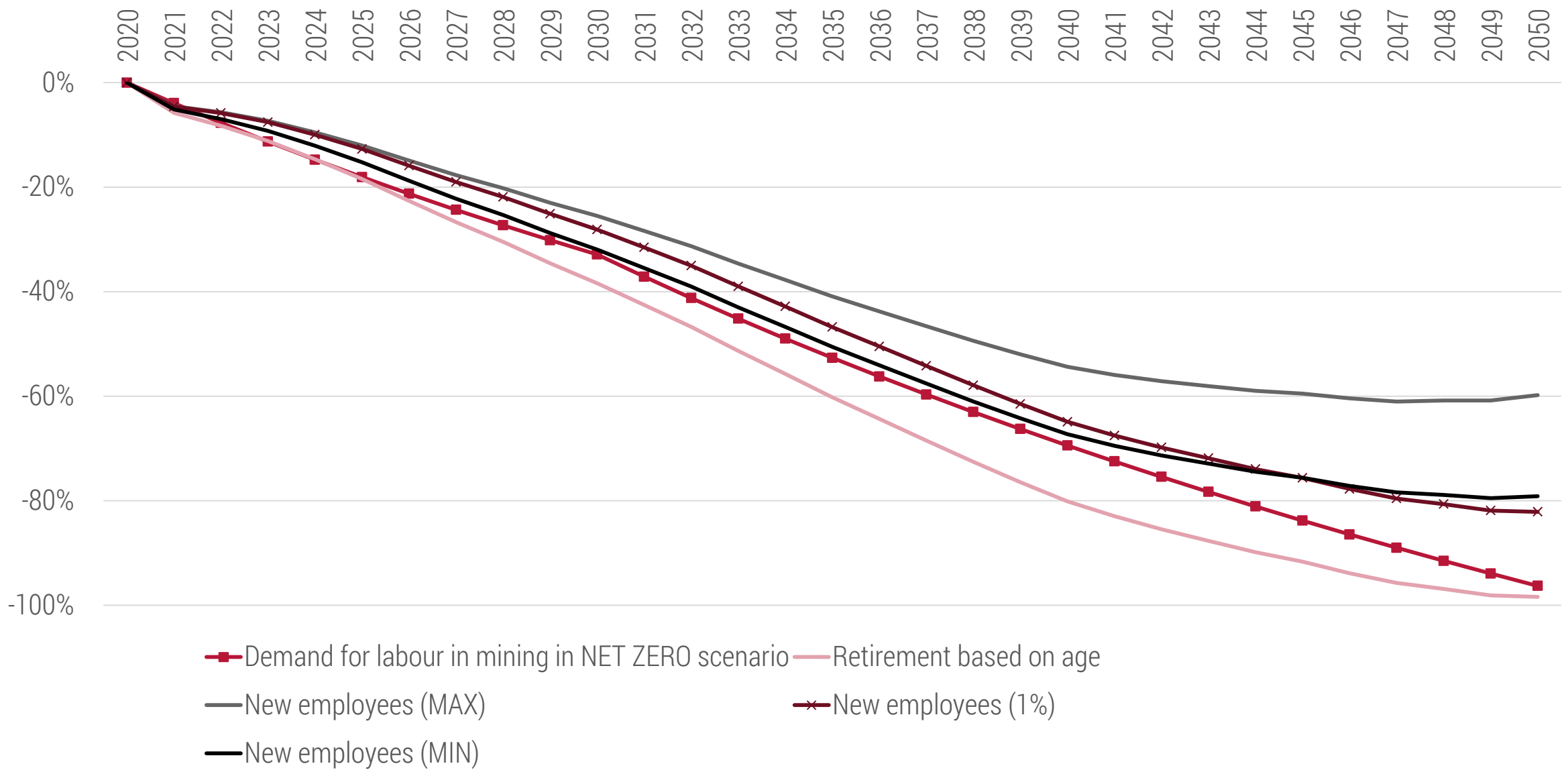


Climate neutrality means no coal in the energy sector and a significant reduction in the demand for labor in mining (96% by 2050)

We have developed 4 alternative labour supply scenarios:

1. Retirement - employees reaching the retirement age in a given year quit and no new employees are hired
2. Retirement + new employees
3. MAX – all persons acquiring mining qualifications are hired
2. 1% - 1% of the employees in a given year is hired
3. MIN – 25% of those acquiring mining qualifications are hired

In the scenario of achieving climate neutrality, no more than ¼ of those acquiring mining qualifications should be employed



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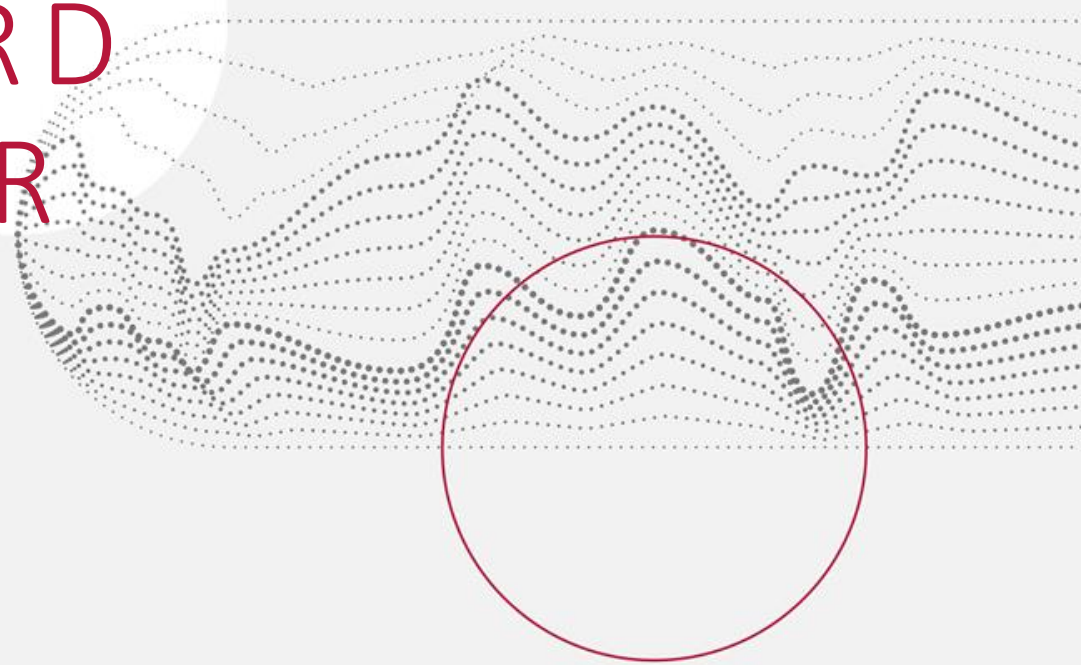
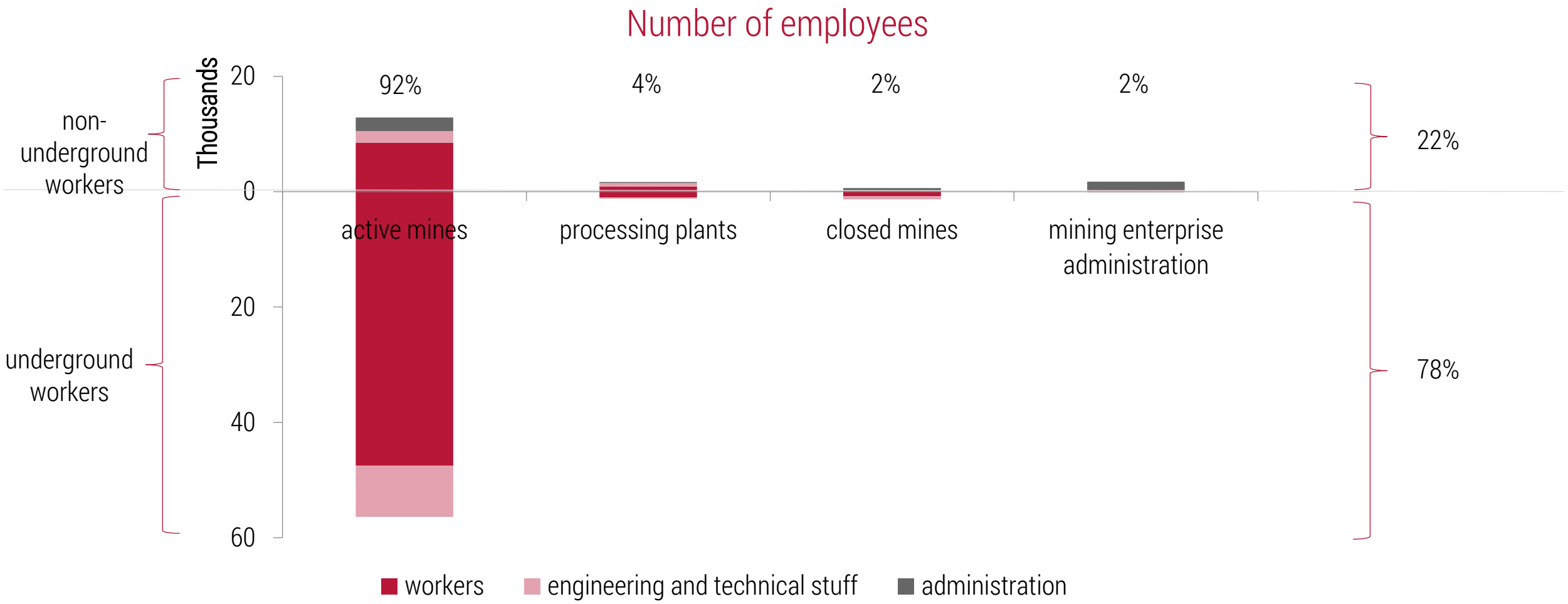
EMPLOYMENT IN HARD COAL MINING SECTOR



Almost 90% of Polish colliers works in Upper Silesia

- Hard coal mining in the Upper Silesia Basin provides jobs for 78 thousand people.
- There are 26 active and 17 closed hard coal mines in that area.
- 94% of people in hard coal sector are employed in mines.
- 4% of people works in associated processing plants, 2% in mining enterprise administration.
- More than 1,9 thousand colliers are still working in closed mines.

Nearly 80% of employees in hard coal mining works underground



Own elaboration on the basis of Industrial Development Agency, Branch Office in Katowice (2018)
Private coal mines (PG Silesia, Ekoplus, Siltech) were excluded from the analysis.

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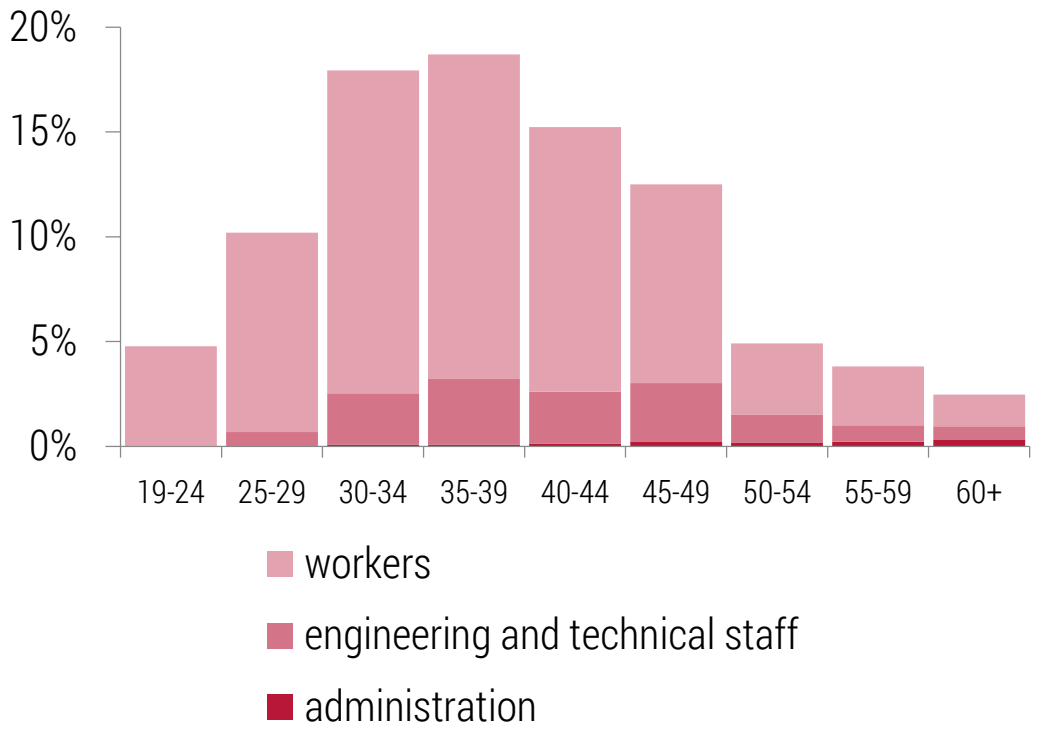
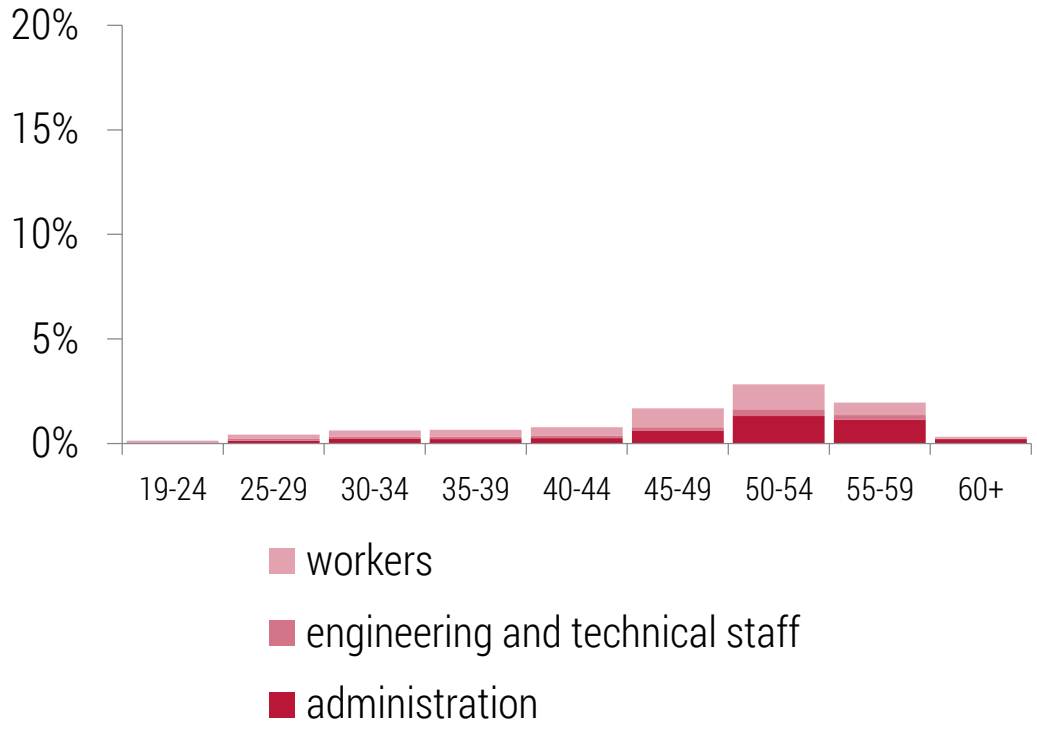
9 out of 10 people in hard coal mining are men

Men



Women



Own calculations.

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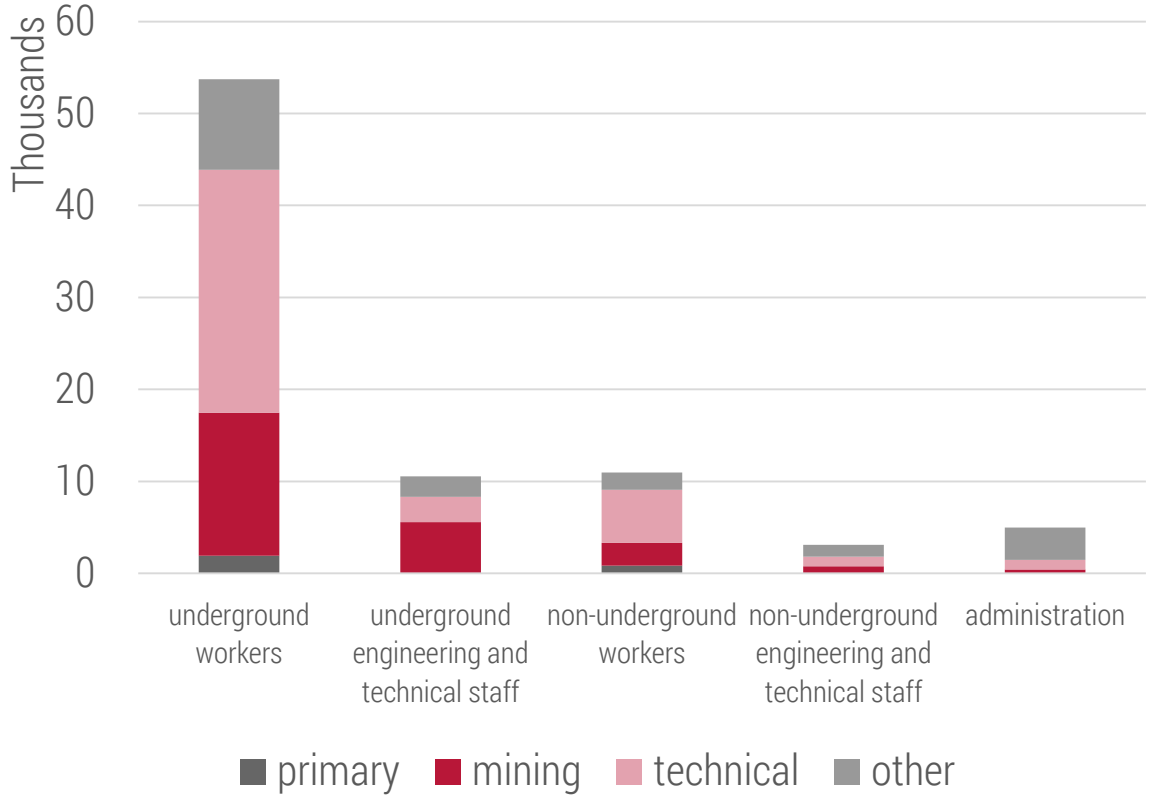
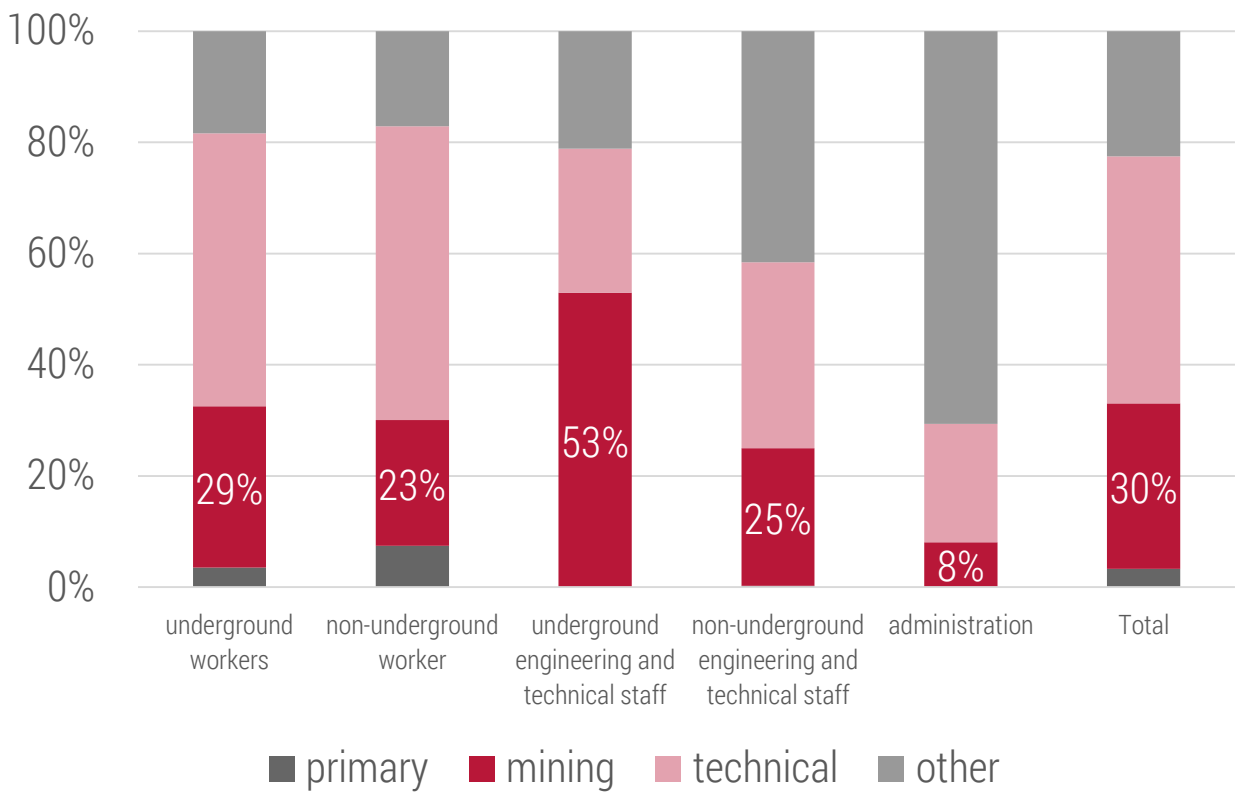
30% of hard coal employees finished profile mining education

Number of employees according to education profile



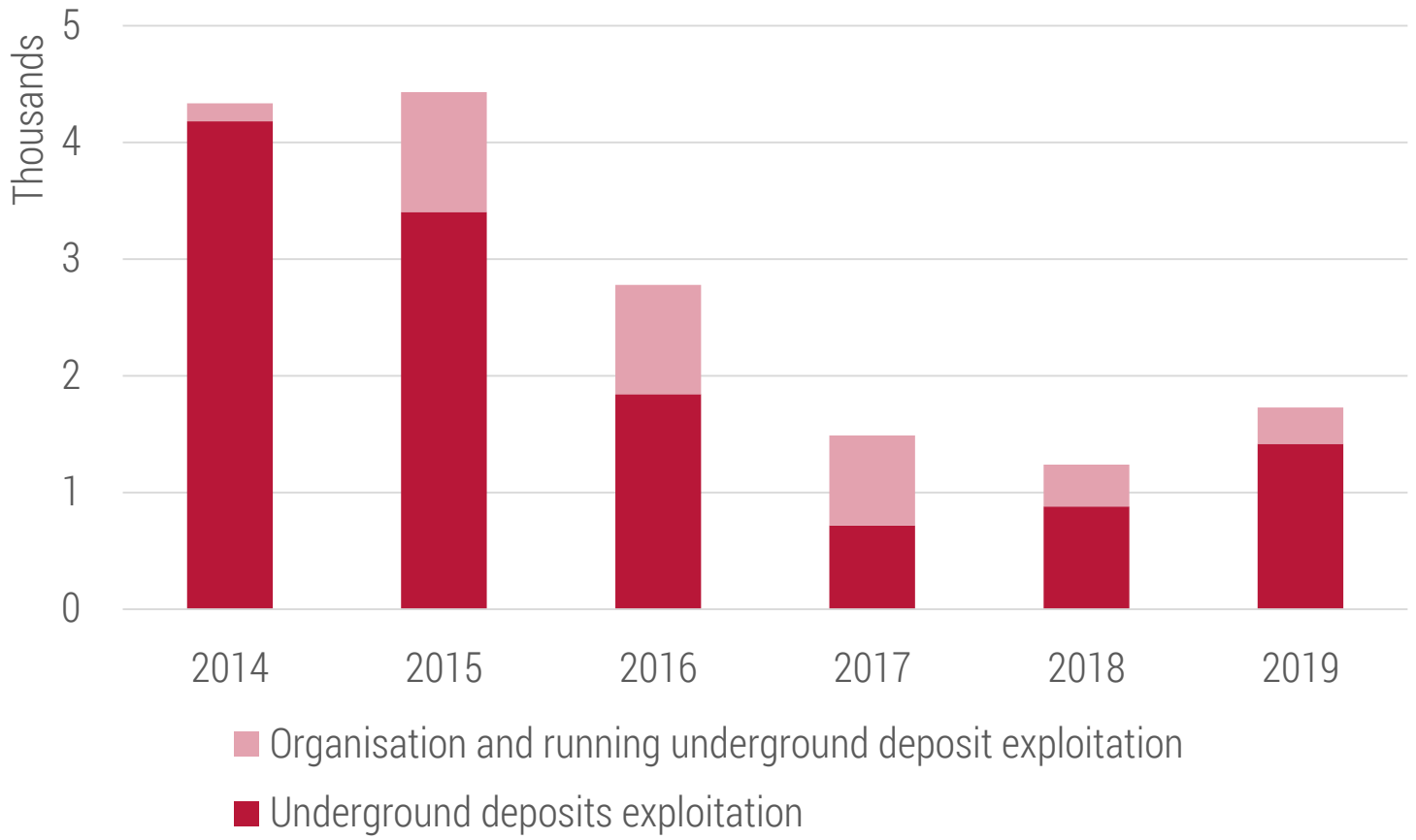
Employment structure



Own elaboration on the basis of Industrial Development Agency, Branch Office in Katowice (2018)

Interest in profile mining education has been decreasing

Number of people obtaining qualifications in mining

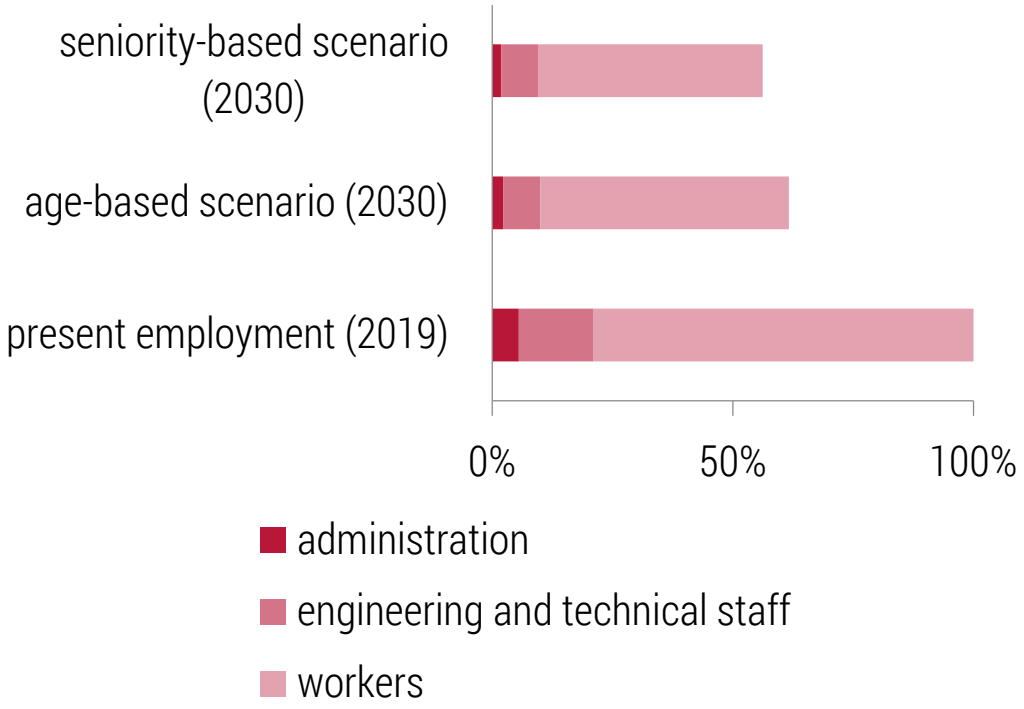


Own calculations on the basis of District Examining Board [OKE]

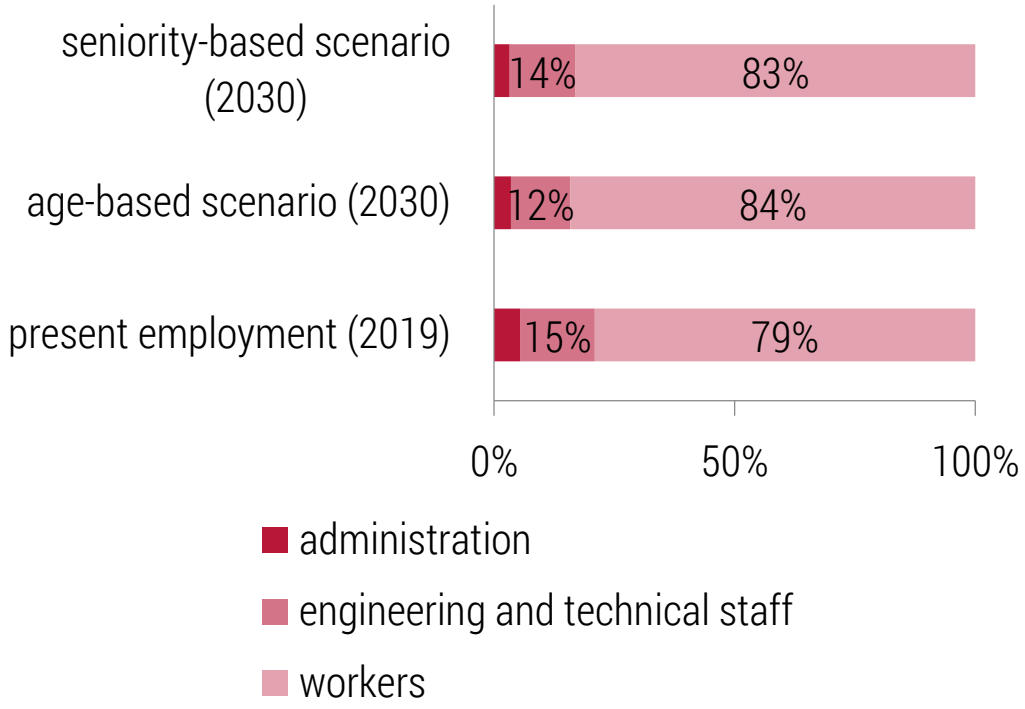
- Technical, vocational school graduates and graduates of dedicated profile trainings are eligible to pass the exam to obtain mining qualifications.
- Most of candidates completed dedicated profile trainings. In 2019 they constituted 97% of the 'underground deposit exploatation' and 91% of the 'organisation and running underground deposit exploitation' exam participants.

Considering retirements at the normal age and limited influx of new workers, a hard coal mining employment structure will be similar in 2030

Number of employees (2019 = 100%)



Employment structure



Own calculations.

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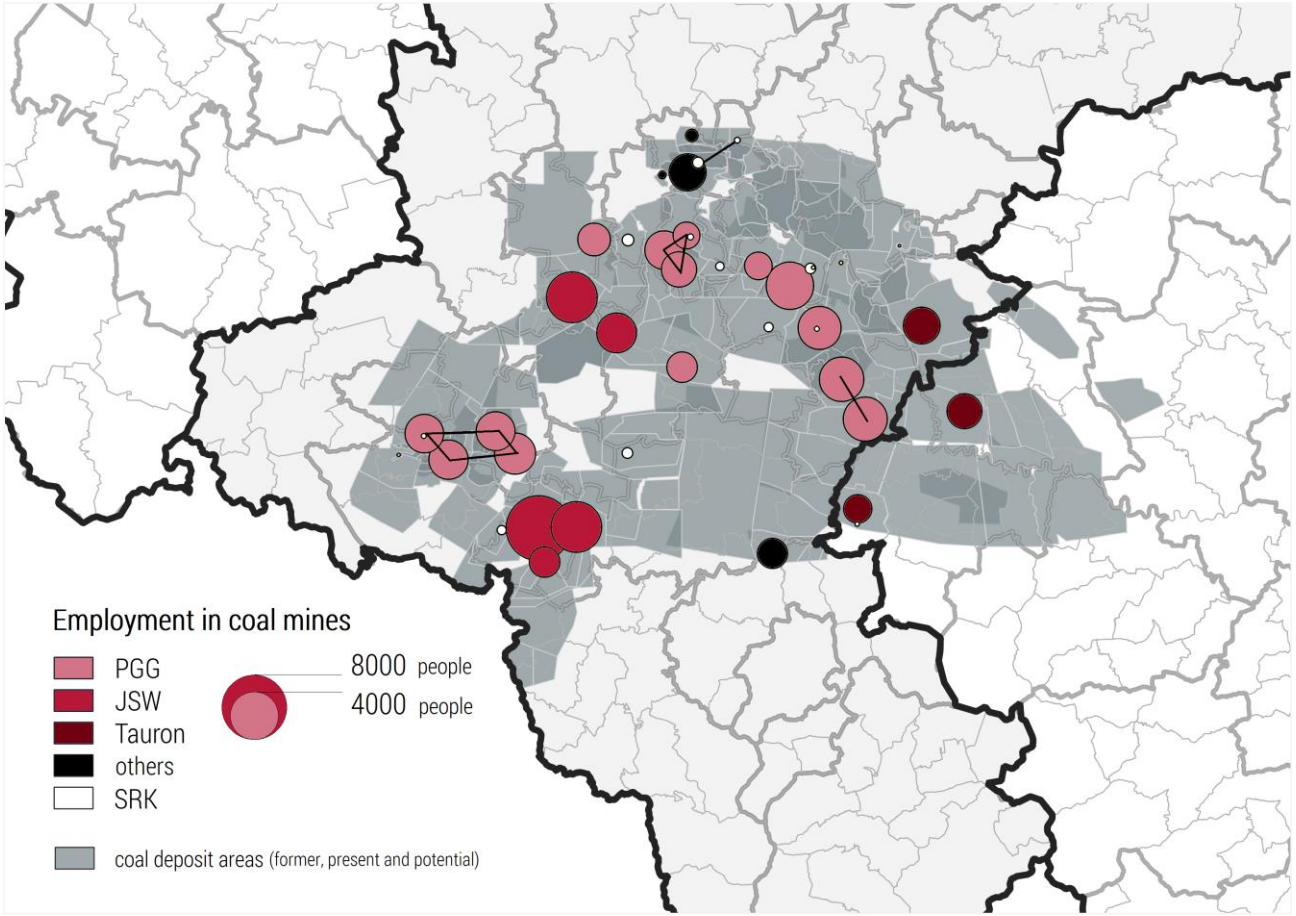
Hard coal mines are spatially close to each other

The scale of employment in hard coal mines



- Towns with ≥2 mines: Ruda Śląska, Rybnik, Jastrzębie-Zdrój, Katowice
- Two active mines in Lesser Poland
- Underground deposits located under cities often belong to more than one mining company
- The highest share of mining in employment: bieruńsko-lędziński poviat and Jastrzębie-Zdrój

Own elaboration on the basis of Industrial Development Agency, Branch Office in Katowice (2018)

Normal retirement age and limited influx of new workers is a soft and just method of transition process

- In terms of gender, place and work position, employment structure between hard coal mines is similar, the age structure is different
- The number of people obtaining mining profile qualifications is decreasing
- The location and employment structure seems to allow reallocating workers between mines
- Just transition should include all employees in mining sector regardless of their work position
- A clear coal phase-out date and schedule is needed to ensure effective just transition plan

The lack of scheduled transition plan may cause rapid shock in areas which are still strongly depended on mining sector

The registered unemployment rate in Upper Silesia was 4,2% as of May 2020.*

At the beginning of June, government suspended works in 12 hard coal mines for three weeks because of COVID-19.

- hypothetical decision about closing down these mines and registration of all employers in the labour offices would increase unemployment rate to 5,9% within Upper Silesia region.
- unemployment rate would exceed 10% in poviats strongly depended on mining such as bieruńsko-lędziński, gliwicki, wodzisławski and will be higher than now in Bytom (9,5%).

**Voivodeship Labour Office in Katowice – Information about labour market situation in Upper Silesia as of May 2020*

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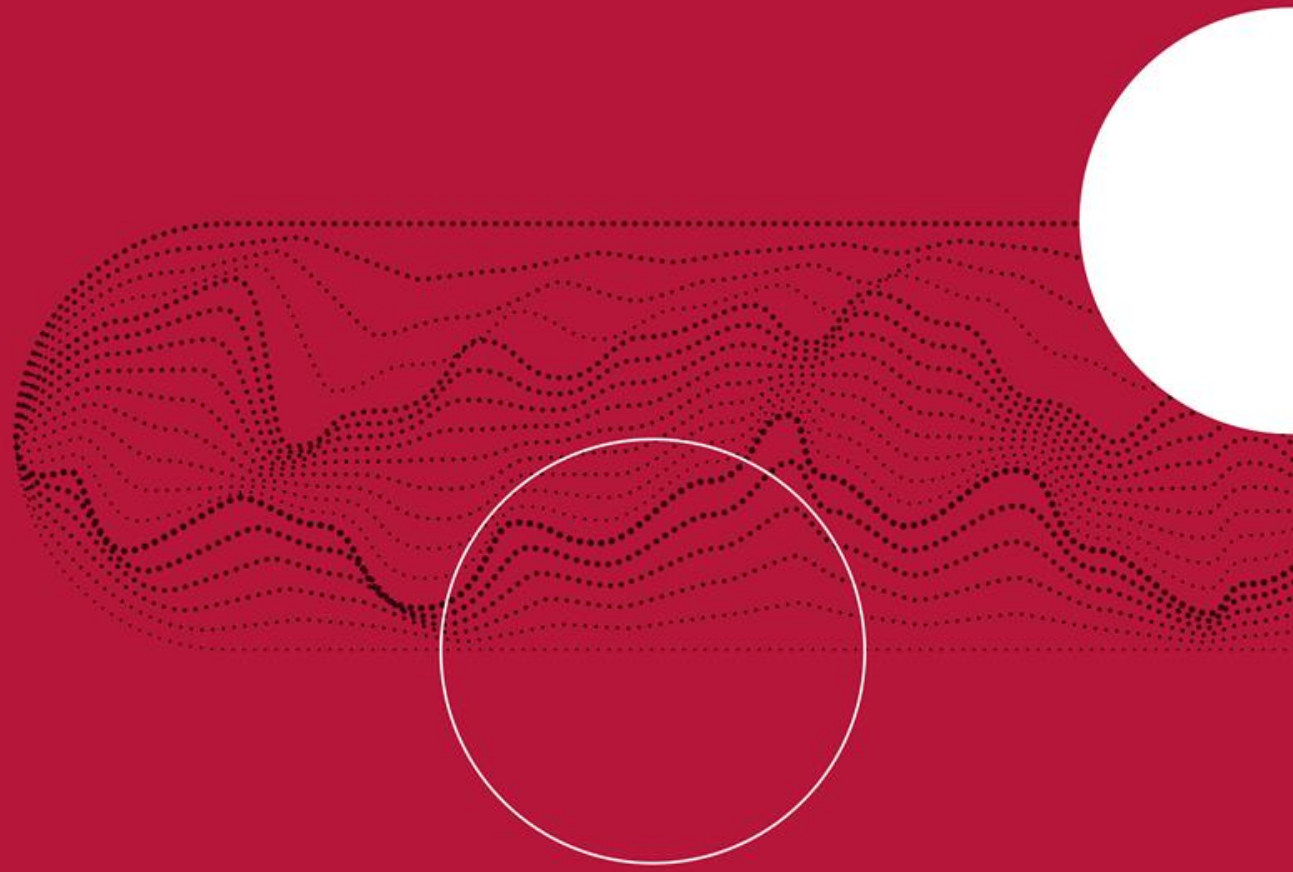

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