



# COAL MINING SECTOR TRANSITION IN SLOVAKIA



Zuzana Furmanczuk  
Slovak Renewable Energy Agency

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## INTRODUCTION

In the past years the European union has been working towards reducing its carbon emissions. Since coal is considered the most carbon-intensive energy fuel within the EU's energy mix, declining coal usage has already led to mine closures in a number of countries. There are however currently around 40 regions in the EU where coal is mined. In the "*Clean Energy for All Europeans*" Communication issued on 30th November 2016, the European Commission stated: "*we will examine how to better support the transition in coal and carbon-intensive regions. To this end, it will work in partnership with the actors of these regions, provide guidance, in particular for the access to and use of available funds and programmes, and encourage exchange of good practices, including discussions on industrial roadmaps and re-skilling needs, through targeted platforms.*"<sup>1</sup>

Currently, pilot projects on how coal mining regions can best modernise their economies are underway in three regions: Silesia (Poland), Western Macedonia (Greece), and Trenčín (Slovakia). Project initiatives may include building geothermal and hydro energy plants in former coal mines, investing in e-mobility, digitalisation and data centres, creating innovation parks, forming local energy communities, and developing tourism and agricultural activities. Projects may be eligible for existing EU funding.<sup>2</sup>

The aim of this report is to characterize the coal sector labor market in Slovakia and to analyze the potential for transferring these human resources to other sectors. We will analyze the districts of Partizánske and Prievidza located in the Slovak administrative region of Trenčín. This territory is called the Upper Nitra, with an area of 1,261 km<sup>2</sup> and the population of about 184,000 inhabitants. It is an economically developed region of Slovakia with a large density of industrial sector and it is one of the coal mining regions within the EU, which are expected to be closed in the upcoming years.

As Maroš Šefčovič (Slovak Commissioner to the EU, responsible for the Energy Union) declared, the most responsible approach is to offer an alternative to coal regions, a new future.<sup>3</sup>

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<sup>1</sup> European Commission: Clean energy for all europeans. 2016.

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<sup>2</sup> European Commission: Coal regions in transition. 2017. <https://ec.europa.eu/energy/en/topics/oil-gas-and-coal/coal-and-other-solid-fuels>

<sup>3</sup> <https://www.euractiv.com/section/energy/news/slovakia-discusses-coal-phase-out-in-2023-sefcovic-eyes-geothermal-energy/>

# 1. COAL MINING SECTOR IN SLOVAKIA

The only coal mining company in Slovakia is Hornonitrianske bane Prievidza a.s. It has 100-years of tradition in brown coal and lignite mining. Its main areas of activity are exploration mining treatment and sale of brown coal. Activities of this company stimulate the business in a big part of the economy in the country creating direct and indirect economic benefits in the Upper Nitra area of around 4 000 jobs. *The private mining company and the authorities have long hailed domestic coal as a contribution to the country's security of energy supplies and electricity balancing, as well as to regional employment. The company claims 11 000 jobs in total depend on the Slovak coal industry.*<sup>4</sup> Other business activities (e.g. heat production and supply, electricity generation, rubber industry, engineering industry, transport services, food industry) are linked to the coal sector and account for more than additional 3,000 jobs in the area.<sup>5</sup> According to the JRC science for policy report, *„an interesting fact is, that one of the lacking professions in the district of Upper Nitra is a miner, due to the physically demanding work which is perceived by job-seekers as health and life threatening with inadequate financial compensation as well as fear for the future, due to an expected decline in coal production in Hornonitrianske bane Prievidza, a.s.“*<sup>6</sup>

Coal subsidies in Slovakia are regularly criticized by the European commission for not being in compliance with the EU rules. The pressure from Brussels has forced the Slovak government to take action. The Minister of Environment of Slovakia, László Sólymos declared 2023 as the target year for Slovakia to phase-out coal in both the mining and power sectors. An environmental strategy – *Envirostrategy 2023*, also called *Greener Slovakia*, which has been released in 2018 declares a progressive phase-out of power and heat production for coal, due to local air pollution. Power plant Nováky, which is situated in the Upper Nitra region is considered the country's second-biggest greenhouse-gas emitter. According to Eduard Hulík, Slovakia's representative to the Commission's *Strategic Energy Technology Plan* (SET Plan), the incidence of respiratory diseases is sometimes double than in nearby regions.

In 2017, the ministry of environment calculated that closing down Nováky power plant would save Slovakia annually not only 100 million eur in subsidies but also 500 million in „health

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<sup>4</sup> Euractiv.sk: Slovakia considers exiting coal in 2023, Sefcovic eyes geothermal energy. 2017.

<https://www.euractiv.com/section/energy/news/slovakia-discusses-coal-phase-out-in-2023-sefcovic-eyes-geothermal-energy/>

<sup>5</sup> European Commission: Socio-economic transformation in coal transition regions. JRC science for policy report. 2018.

<sup>6</sup> European Commission: Socio-economic transformation in coal transition regions. JRC science for policy report. 2018.

benefits“. European Commission Vice-President Maroš Šefčovič listed Slovakia as one of the EU's three „pilots“ in the newly launched Coal Regions in Transition Platform. According to him, Upper Nitra could move from coal to geothermal energy.<sup>7</sup>

Since Slovakia has been defined as one of the three pilot projects on how coal mining regions can best modernise their economies, a report has recently been published by the *Joint research centre* called „Socio-economic transformation in coal transition regions: analysis and proposed approach (Pilot case in Upper Nitra, Slovakia)“. In the next chapter we will therefore quote from this report, when describing the human capital in Upper Nitra region.

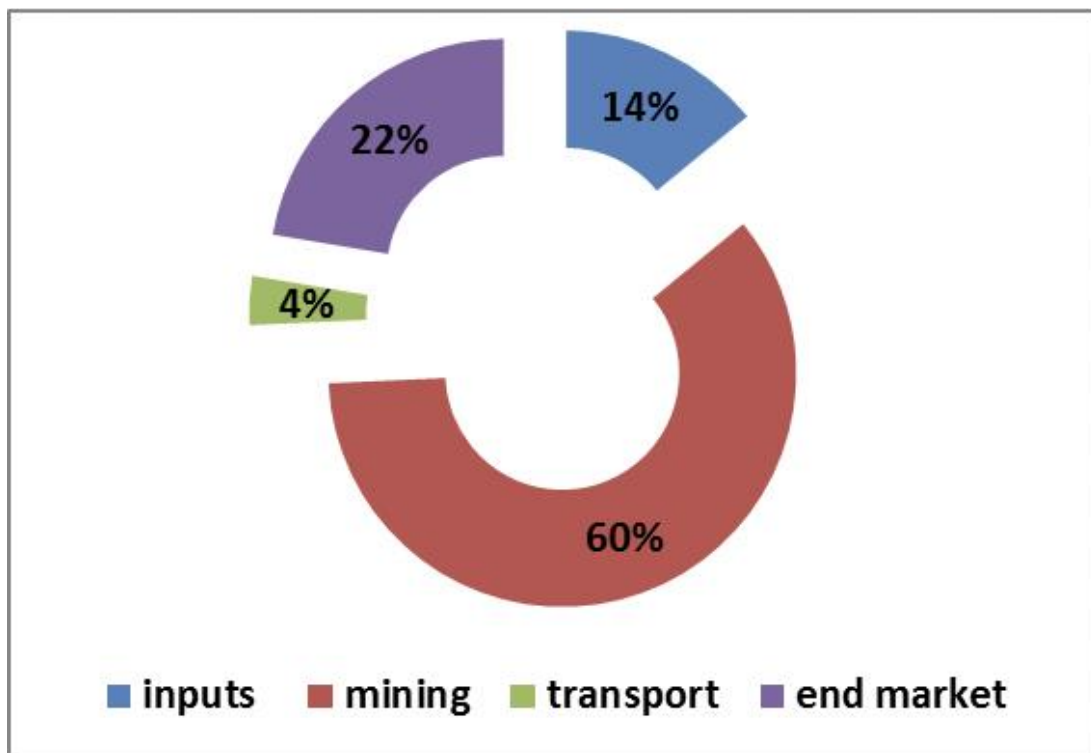
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<sup>7</sup> Euraktiv.sk: Slovakia considers exiting coal in 2023, Šefcovic eyes geothermal energy. 2017.  
<https://www.euractiv.com/section/energy/news/slovakia-discusses-coal-phase-out-in-2023-sefcovic-eyes-geothermal-energy/>

## 2. CHARACTERISTICS OF HUMAN CAPITAL AND LABOR MARKET RESOURCES IN COAL SECTOR<sup>8</sup>

The 60% of the total employees of the Slovakian mining company Hornonitrianske bane Prievidza (HBP), the only coal mining company in Slovakia, together with its suppliers and customers companies is active in the mining segment of the value chain. The second segment where employees are more numerous is the end market, followed by the segment providing the factors of production and finally the transport. Figure 1 shows the share of employees of the HBP coal value chain segment.

**Figure 1: Share of employees of the HBP by coal value chain segment**

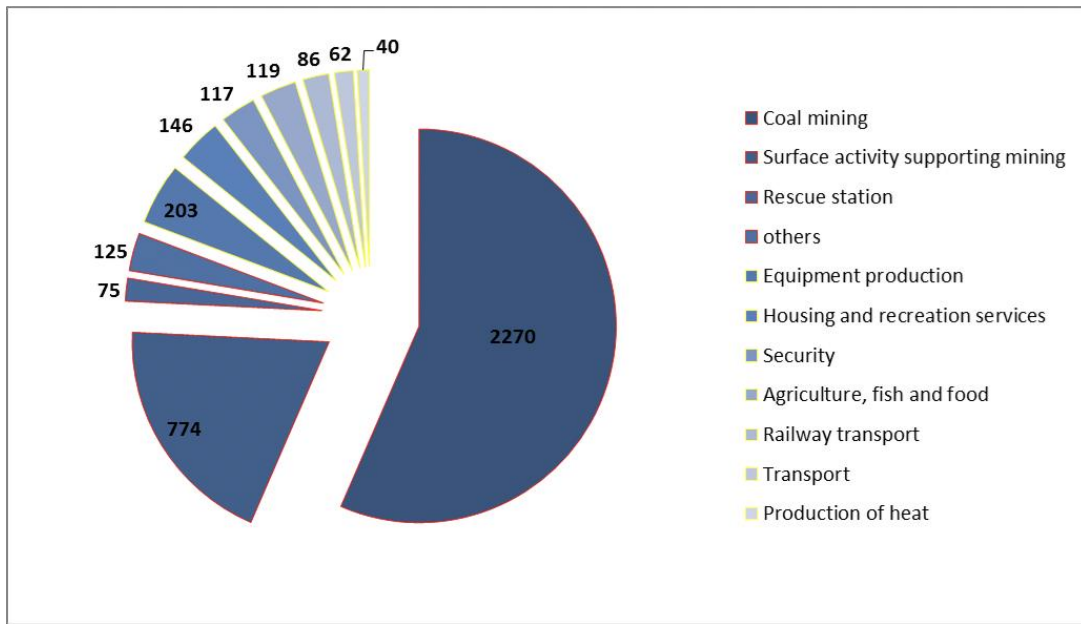


Source: JRC report, page 53

At the end of 2015, 3 329 employees worked at the HBP. 80% of the employment is allocated to the mining activity (Figure 2 - blue shaded area with red line) and the rest in complementary services (Figure 2 - blue shaded area with yellow line).

<sup>8</sup> JRC science for policy report: Socio-economic transformation in coal transition regions. European Commission. 2018.

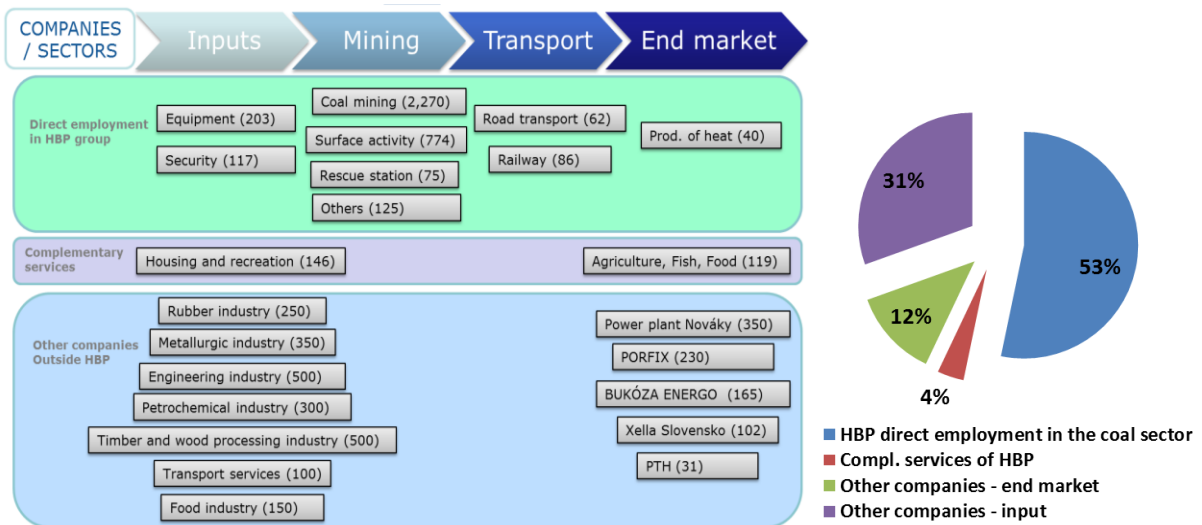
**Figure 2: Detailed employment in HBP group**



Source: JRC report, page 57

Figure 3 shows the number of employees of the HBP Group and directly linked companies by each segment of the coal value chain and the companies' sectors of activity.

**Figure 3: Overview of employment of the HBP and directly linked companies to the mining industry grouped by value chain segments**



Source: JRC report, page 57

Looking in the mining segment of the value chain, in Table 1, different professional skills of the employees are presented. A rich portfolio of professions has been observed by the JRC. Some of these professions, such as drivers, electricians, engineers could potentially be less affected to the closer of the mine.

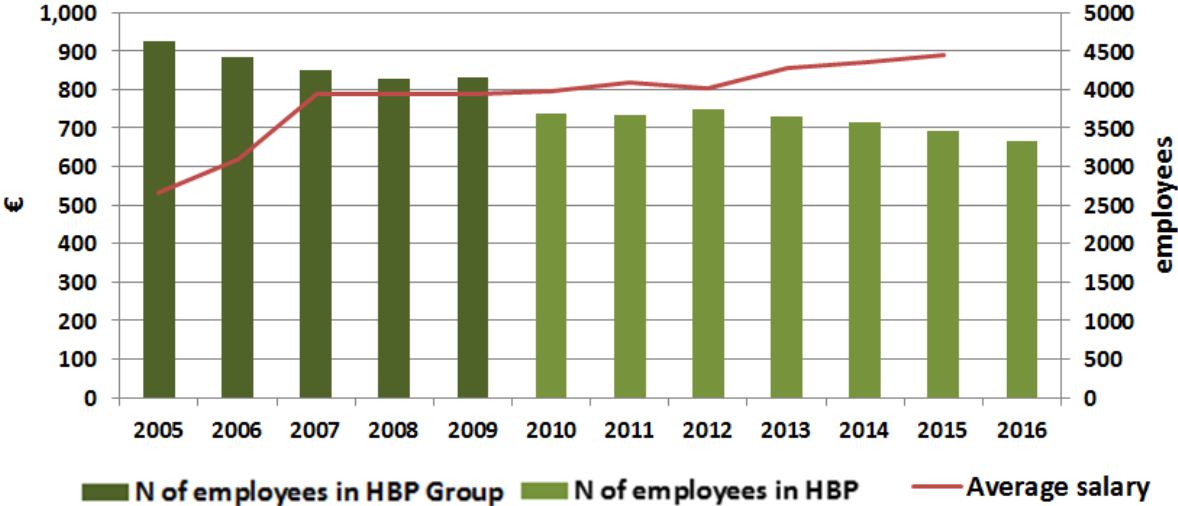
**Table 1: Profession skills of the employees at the mining segment of the value chain**

| <b>Profession</b>   | <b>Number</b> |
|---|---------------|
| Hoisting engineers and power loaders operators                      | 317           |
| Workers with explosives   | 208           |
| Operators of weldings and metal cutting equipment                   | 516           |
| Drivers of mining trolley locomotive                                | 564           |
| Electricians  | 329           |
| Operators of excavation machines - engineers, bottomers, explorers  | 51            |
| Mine surveyors  | 8             |
| Machinists, serviceman of mining machines and equipment             | 175           |
| Workers at the rescue station                                       | 75            |
| Workers in mines without specific qualification                     | 429           |
| Crane operators, slingers, drivers of engine mine cars              | 228           |
| Workers on surface without specific qualification                   | 160           |
| Service at the Novaky power plant                                   | 59            |
| Administration  | 125           |
| <b>Together mining, surface activities and support service</b>      | <b>3244</b>   |
| Metal machinists, millers, lathe operators                          | 34            |
| Welders, metal cutters  | 25            |
| Locksmiths  | 43            |
| Drivers of engine mine cars, crane operators, slingers              | 9             |
| Others  | 92            |
| <b>Together machinists</b>  | <b>203</b>    |
| Engine drivers  | 14            |
| Mine car feeder, train drivers                                      | 13            |
| Rail engineers and technicians, operators of machines and equipment | 33            |
| Other employees   | 26            |
| <b>Together rail transport</b>                                      | <b>86</b>     |
| Road transport  | 62            |
| Heating sector  | 40            |
| Security service  | 117           |
| Agro-fish farming   | 119           |
| Hotels and accomodation services                                    | 146           |
| <b>Together services out of mining</b>                              | <b>484</b>    |
|   |               |
| <b>TOGETHER HBP GROUP</b>   | <b>4017</b>   |

Source: JRC report, page 58

The average salaries increased from an average of EUR 532 a month to almost EUR 900 in correspondence of a reduction in the number of employees from EUR 4,630 in 2005 to EUR 4.171 in 2015 (Figure 4).

**Figure 4: Employees in the HBP Group and HBP coal company and average salaries (2005-2016)**



Source: JRC report, page 59

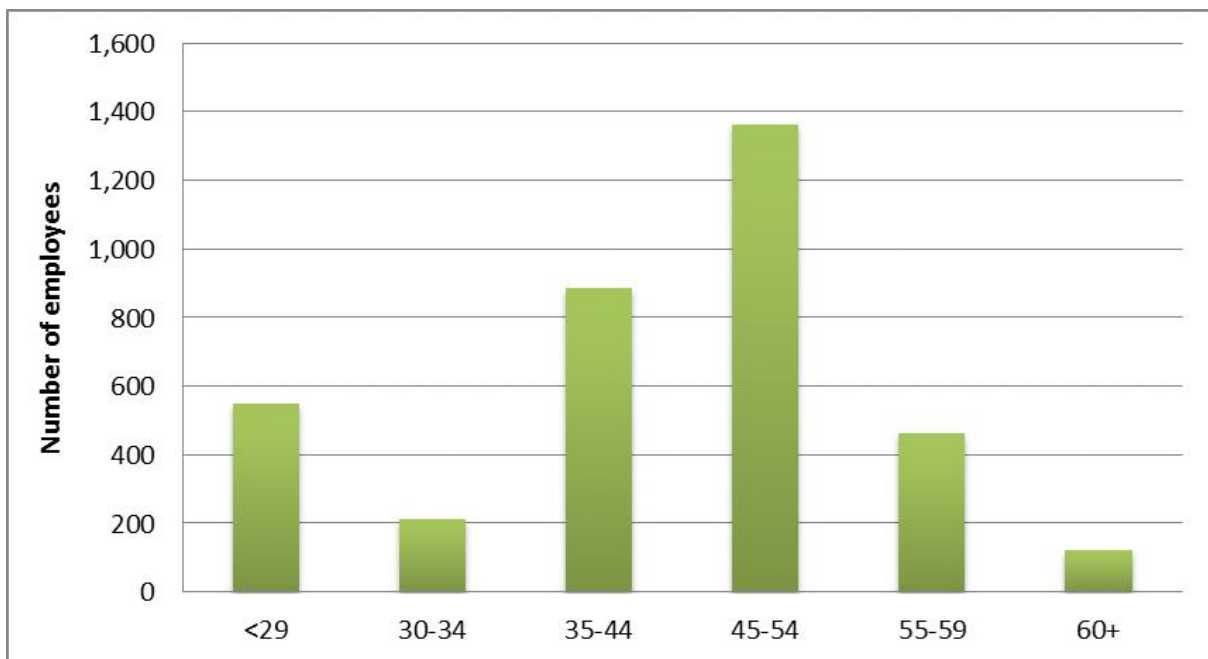
Figure 4 shows how the HBP stimulates the business activity. The company creates indirect economic benefits in the region which in terms of jobs can be quantified in around 4,000 number of jobs at least. This result demonstrates that a planned closure of the mine would have negative impacts of the same magnitude due mainly to the fact that diversification potential of the business in the sectors that are indirectly related to the mining industry may alleviate the socio-economic impacts of a closure plan. The plan of closing the mine will affect mainly the sectors that are directly related to the mining activity which corresponds to at least 53% of the employment of the HBP group and of complementary business and in general those companies whose business depends mainly to the mining activity.

An important role in the number of affected employees plays the current age structure of employees. In 2013, HBP reported that 123 of its employees are in the age group of 60+ and 466 in the age between 55 and 59 (Ministry of economy, 2013). As shown on Figure 5, the largest age group of 1365 employees (38%) were between 45-46 years. Taking in account that the number of employees in HBP has been continuously decreasing and the open positions for mining job are not easily occupied the Office of Employment, Social Affairs and Family,



Prievidza is expecting that only 10% of miners and 20-30% of employees directly linked to the mining activities will be absorbed by the labour market when the mines close its operation (Office of Employment, Social Affairs and Family, Prievidza). Moreover, those companies with a diversified business look to be less at risk in case of mine closure both in terms of possible economic losses and also in terms of lower share of capital at risk. The other segment of the coal value chain the end market is expected to diversify the supply of coal from other sources or through import of coal from abroad.

**Figure 5: Number of employees in HBP per age group in 2013**



Source: JRC report, page 60

#### Main findings of the characteristics of human capital in Horna Nitra

- HBP group employs 4 017 people, of which 2 344 work in mining, surface and support services;
- 53% of the employees in HBP were aged 45+ in 2013;
- companies linked to the coal mining activities employ 3 028 people, of which 350 are located in the power plant Nováky.

## **Data analysis and main problems summary<sup>9</sup>**

Sectors that would be affected the most by the decision of a mine closure in the Upper Nitra region are mainly sectors directly related to the mining activity, such as coal extraction and maintenance of mining equipment, coal transport and end market business whose activity depends mainly on the coal supply, such as heat and electricity production, and steel industry. The JRC report maps the industry at firm-level activities and trade networks at each segment of the value chain to identify the dynamics of the coal sector and the authors quantify the main socio-economic variables, such as employment, salaries, public revenues from income taxes, economic and financial results of companies. The HBP group activity stimulates the business in a big part of the economy in the country creating direct and indirect economic benefits in the Upper Nitra area of around 4,000 jobs at least. Other business activities (e.g. heat production and supply, electricity generation, rubber industry, engineering industry, transport services, food industry) are linked to the coal sector and account for more than additional 3,000 jobs in the area.

The plan of closing the mine will affect mainly the sectors that are directly related to the mining activity which corresponds to at least 53% of the employment of the HBP group and of complementary business and in general those companies whose business depends mainly to the mining activity. However, the important factor in the number of affected employees plays the current age structure of employees and their professional skills. Taking in account that the number of employees in HBP has been continuously decreasing and the open positions for mining job are not easily occupied the Office of Employment, Social Affairs and Family, Prievidza is expecting that only 10% of miners and 20-30% of employees directly linked to the mining activities will be absorbed by the labour market when the mines close their operation.

The negative impacts from a closure of the mine will depend on diversification potential of the business in the sectors that are directly and indirectly related to the mining industry. Those companies with a diversified business look to be less at risk in case of mine closure both in terms of possible economic losses and also in terms of lower share of capital at risk. The end market is expected to diversify the supply of coal from other sources or through import of coal from abroad.

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<sup>9</sup> JRC science for policy report: Socio-economic transformation in coal transition regions. European Commission. 2018.

## CONCLUSIONS AND RECOMMENDATIONS

There is an ongoing discussion in Slovakia about the transformation of the region of Horna Nitra at different levels. On one hand there is the government (together with the company Hornonitrianske bane), who discuss the negative impacts on local employment and energy sector if the mine production should phase-out in 2023. On the other hand there are several NGO`s and politics who claim, there is no need to maintain the mines after 2023, it is just necessary to have a clear and reasonable long term strategy, with certain targets and a certain timeline, which will be well implemented and regularly revised.

The main recommendations for transformation and recovery of the region are the following:

- **infrastructure development:** this is one of the main problems of the region. It is necessary to finalize the highway R2 (and later the R8) and redesign the rail transport.
- **possibilities of employment:** there are possibilities of employment in the region for the miners such as local thermal spa Bojnice, automotive factory Land Rover or even the project of highway construction (R2), which should pass through the region. There are several opportunities in the region which could offer work to workers of the mining sector if re-qualified. An interesting fact is, that some local companies currently seek for labor force in other slovak regions or even abroad, so there does not seem to be a problem with high unemployment in the region.
- **economic support:** EU structural funds should play a crucial role in the financing of transformation of Upper Nitra region. Experts claim, that if these are managed and drawn effectively, there are plenty of possibilities of financing from these funds. Currently, there are also large subsidies of around 100 million eur for the Power plant Novaky, which the households end up paying in their monthly bills. Some claim, these resources could end up in revitalizing the region as well.

The Slovak Commissioner to the EU Maroš Šefčovič thinks geothermal energy could play an important role in the Upper Nitra region transition. He also said he would be very glad, if we managed to turn Upper Nitra into a centre of future technologies. According to him, this would not be the first such centre, highlighting geothermal development in the former Belgian coal region around Genk.

Either way, the EU policy aims to decarbonize member states, and mine region transfers are a matter of common interest. Slovak government has been forced to take action. In 2018, Slovak local, regional and national authorities have started working on *an Action Plan for the*

*post-coal development of the Upper Nitra region.*<sup>10</sup> The main aim of the action plan is to present a vision of a modern, diversified, sustainable and inclusive region, and it should be presented to public at the beginning of 2019. The first priority, according to Richard Raši, responsible for the transformation on behalf of the government, is to solve future possibilities for the miners.

The action plan will also present a certain timeline for the closure of the mines, which should either be the year 2023 or 2025. The mining company itself is also taking part in this action plan, according to them the most important thing will be to secure the employment of the miners. They claim however, that the closure of mines should not be before the year 2030.

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<sup>10</sup> <http://www.peoplesbudget.eu/eu-funds-would-finance-post-coal-development-in-a-slovak-region/>