

SLOVENIA AND ITS COAL REGIONS

Coal Regions in Transition Platform

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SLOVENIA IN FIGURES



Area 20,273 km²,
Population 2,066,000



Bled



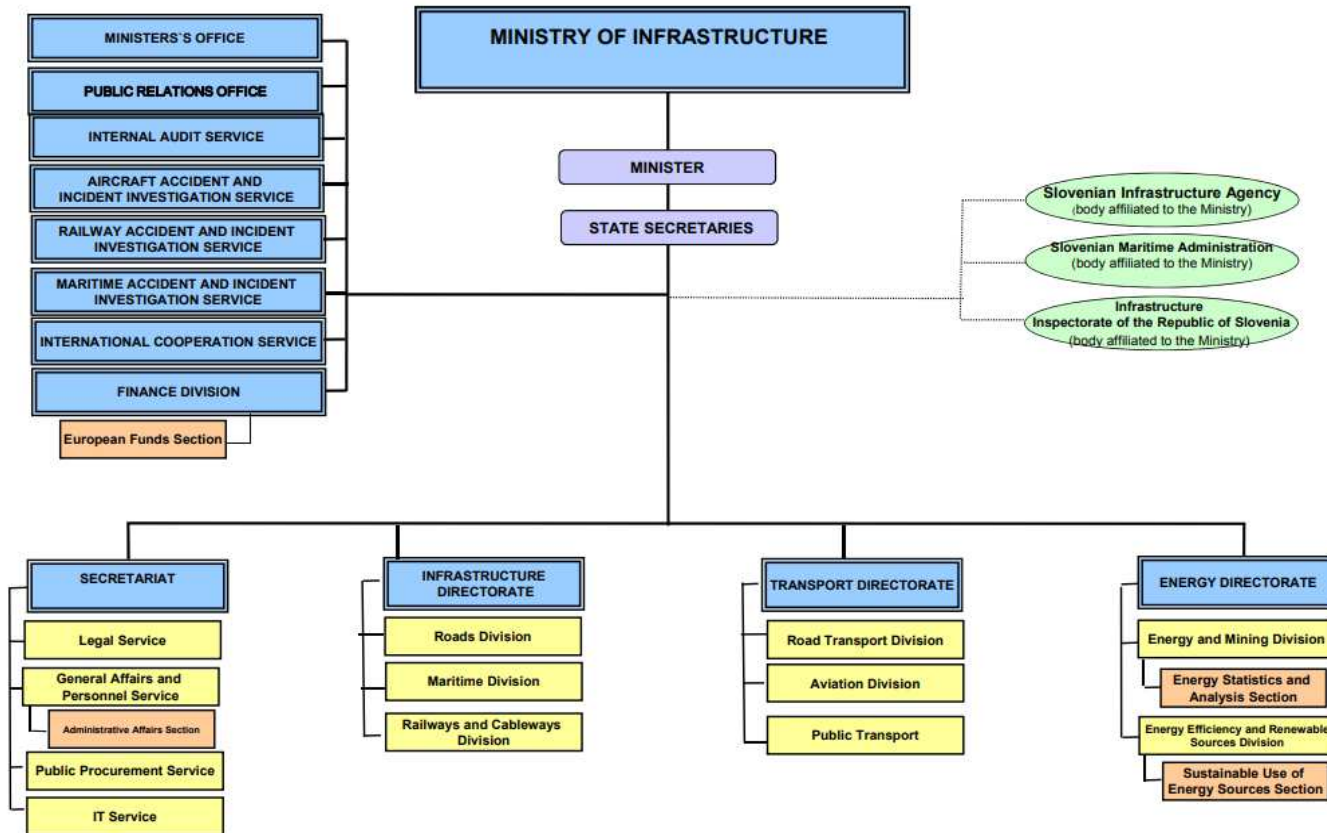
Piran



Triglav

MINISTRY OF INFRASTRUCTURE

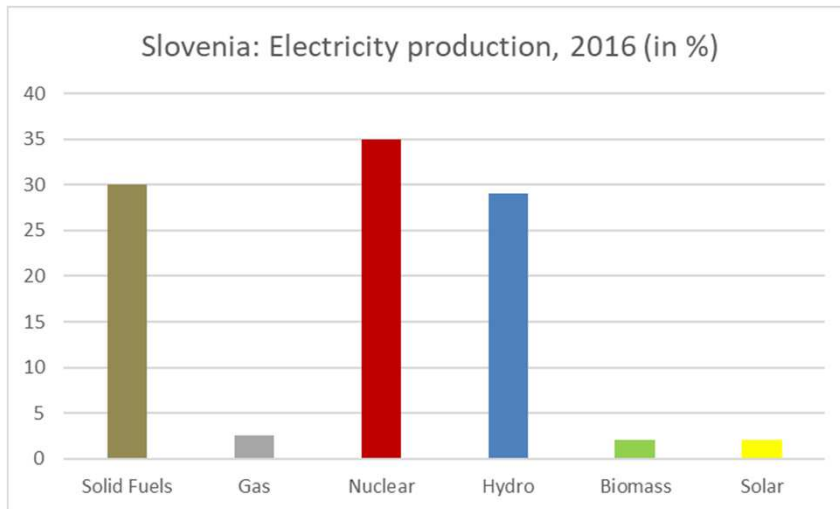
Organization:



REGULATIONS

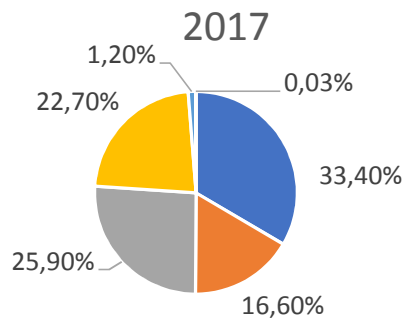
- Mining Act:
 - Energy mineral resources:
 - all types of coal: black coal, brown coal and lignite
 - geothermal energy sources
 - all types of hydrocarbons: crude oil, condensates and natural gases
 - radioactive or nuclear mineral resources
 - Conditions for prospection, exploration and exploitation of mineral resources:
 - a permit for exploration and
 - a concession for exploitation
- Energy Act:
 - Slovenian energy concept
 - Integrated National Energy and Climate plan
 - Long-term national decarbonisation strategy
 - National coal phase-out program

NATIONAL ELECTRICITY PRODUCTION



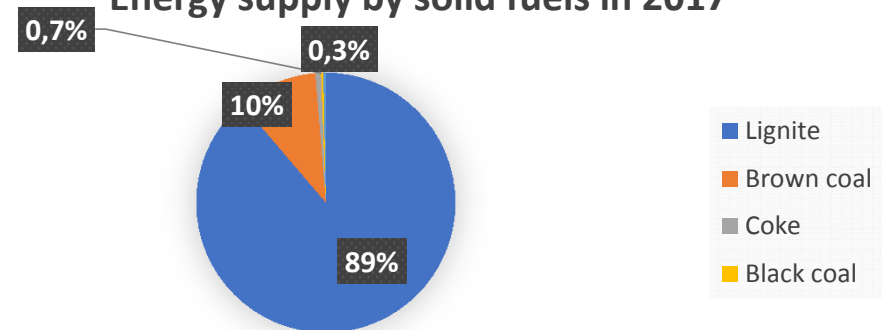
- Coal/lignite: 1/3 of the total national electricity production – thus representing a crucial element of security of supply!
- Mining Law considers this primary energy source as source of a strategic national value.

Structure of available electricity in



■ Import ■ Hydro ■ Thermal ■ Nuclear ■ Solar ■ Wind

Energy supply by solid fuels in 2017



SLOVENIAN MINES



Slika 8: Premogovniki v Republiki Sloveniji v letu 2012

- **Zasavje region and Trbovlje-Hrastnik mine:** brown coal extraction ended, Law on Mine Closure extended until 2021.

- **Savinjsko-Šaleška region and Velenje mine:** lignite extraction foreseen by the end of TEŠ 6 TPP's lifetime (2054).

Two regions as one pilot region under the Coal Regions in Transition Platform.

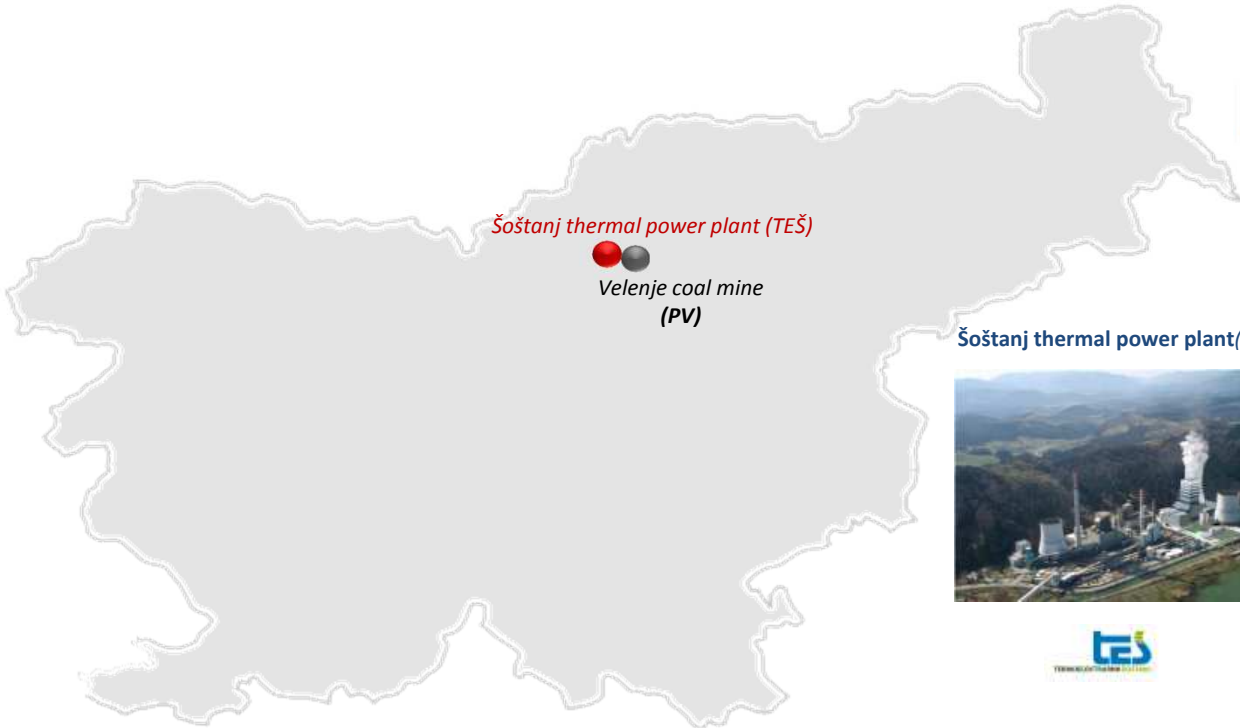
THERMAL POWER PRODUCTION AND MINING ACITIVITIES IN THE ŠALEŠKA REGION

THERMAL POWER PLANT & COAL MINE	Workforce:	Production:	Capacity:	Nr. of units:
	2.465	3.967 GWh	871 MW	2 units and 2 gas turbines

HSE Group
100% owned
by Republic
of Slovenia

~70% of electricity
production
in Slovenia

hse Group



Šoštanj thermal power plant (100% HSE owned)

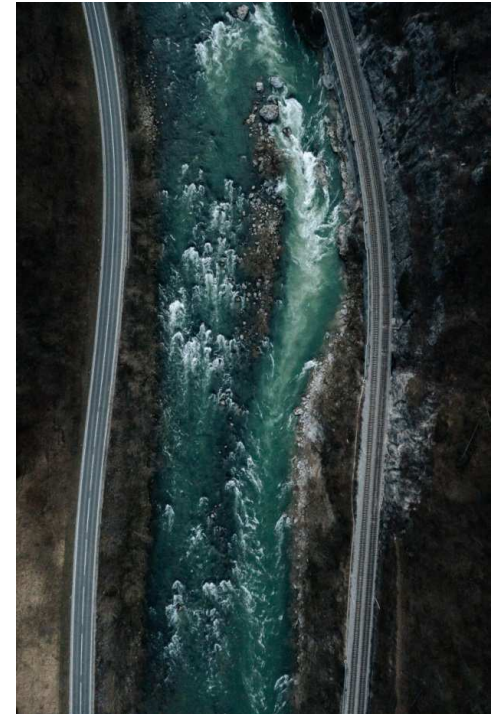


Velenje coal mine (100% HSE owned)



ZASAVJE DEVELOPMENT REGION

- Zasavje development region (NUTS 3) has the size of 264 square km and 42.250 inhabitants
- Zasavje had more than 250 years of mine history, which also led to the rise of glass, chemical, still and electro industry in the region
- In the year 1990 the gradual shut down of the mines begun, which led also to the shut down of mine dependent industry. In the 2015 the last mine ceased to operate together with the thermal power plant in Trbovlje.
- It is estimated that more than 4000 well-paid jobs were lost due to the closure of mine and mine dependent industry, therefore the regional socio-economic situation has been deteriorating ever since the mine closure has begun
- The region still has the reputation of being one of the country's energy regions (has good energy infrastructure and the high number of technically skilled workers)
- The HSE Group, the largest group for producing and selling of electricity in Slovenia, has layed down the plans to build three hydropower plants on the Sava river that flows through the region.



VELENJE COAL MINE

- The Velenje Coal Mine (VCM) is one of the largest and most modern deep coal mining sites in Europe. The mining method used is known as Velenje Mining Method (VMM). Underground coal mining excavation leads to surface subsidence and also to formation of depression lakes.
- The annual output of Velenje Coal Mine is approximately 3.5 million tons of lignite coal, which is entirely used by the Šoštanj Thermal Power Plant (TEŠ) for the production of electricity and heat.
- New Thermal Power Plant Unit 6 ceases to operate by 2054, as well Velenje Coal Mine.



Exploitation Area

1104 ha

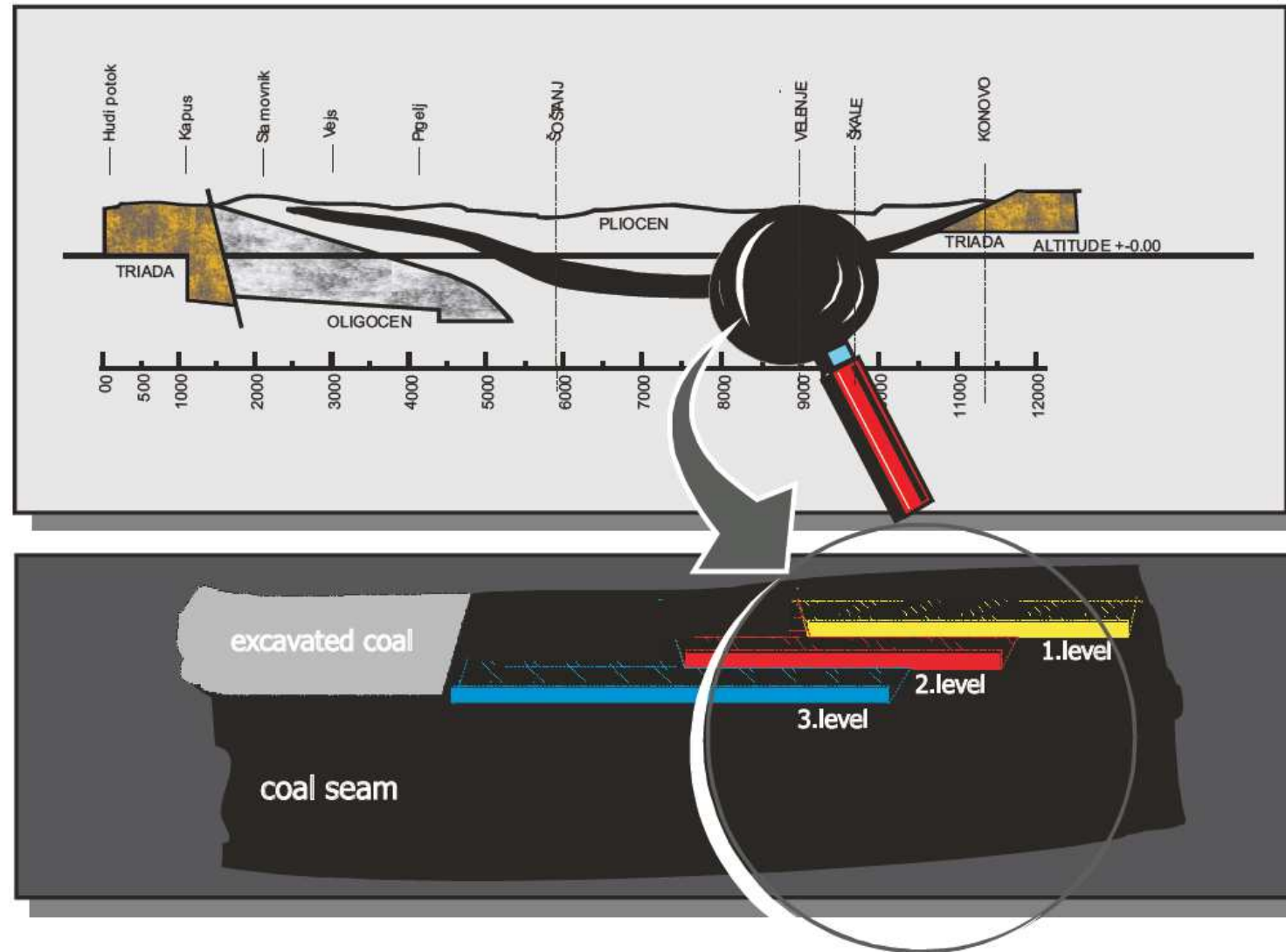


VELENJE COAL MINE – The Velenje Mining Method

Velenje Coal Mine operates on the largest Slovenian coal deposit and on one of the thickest known coal layers in the world. The coal seam is 8.3 km long and up to 2.5 km wide at a depth between 200 m and 500 m. Its average thickness is 60 m, with maximum values reaching up to 170 m.

The Velenje Mining Method (VMM) is the most effective method for extracting thick coal seams.

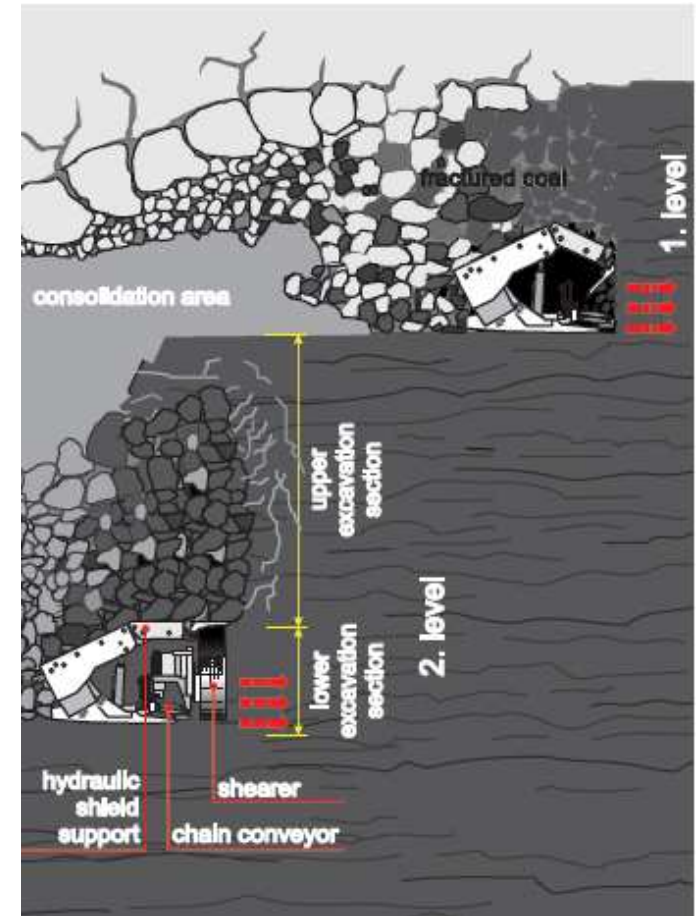
Sequence of seam extraction by levels.



VELENJE COAL MINE – The Velenje Mining Method

Basic parameters of mining technology:

- face length: 140 –230 m,
- face height: 4 –18 m,
- face progress: 4 –9 m/day,
- daily excavated quantity on one face: 6,000– 15,000 t/day,
- productivity: 43– 60 t/m/day,
- mining effect: 100– 160 t/day's work,

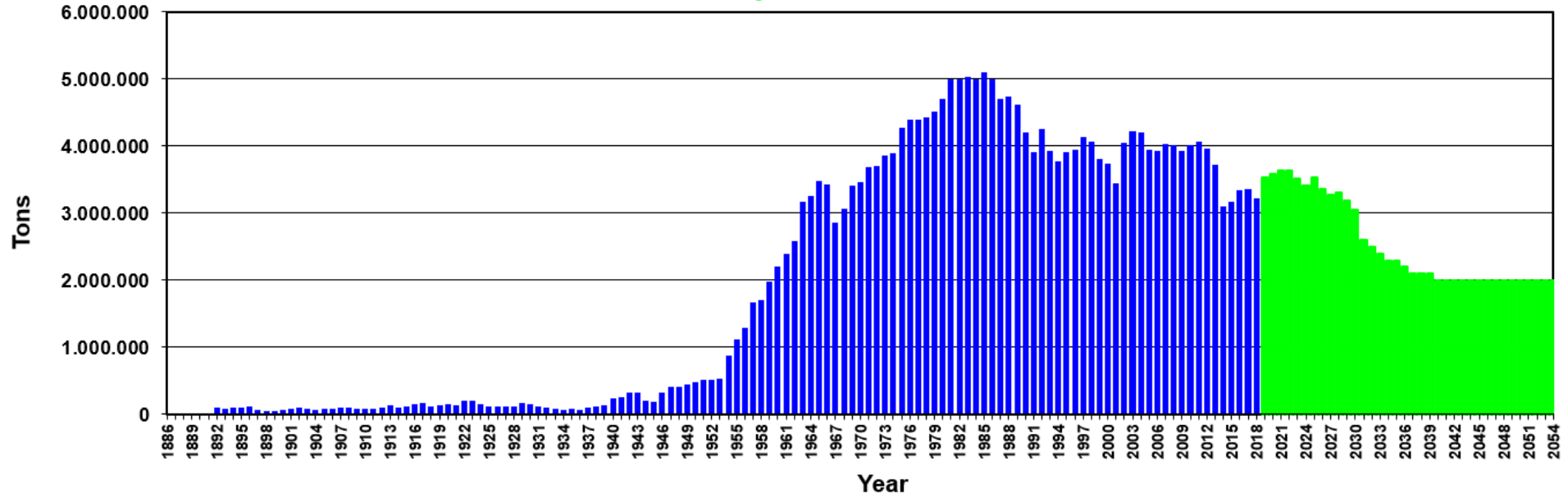


VMM is a completely mechanised method with some automated phases and can offer high productivity if natural factors of caving-in in the upper excavation section are provided.

VELENJE COAL MINE

- In Velenje Coal Mine exploration research started in 1875. The biggest expansion of the production was after WW II with annual output over 5 mio tons per year in 1981 – 1986.
- Average annual production in period from 1960 until 2018 is 3.9 mio tons/year.
- Average plan production till 2030 is approximately 3.4 mio tons/year, afterwards production gradually decreases to 2 mio tons/year in 2040 – 2054.

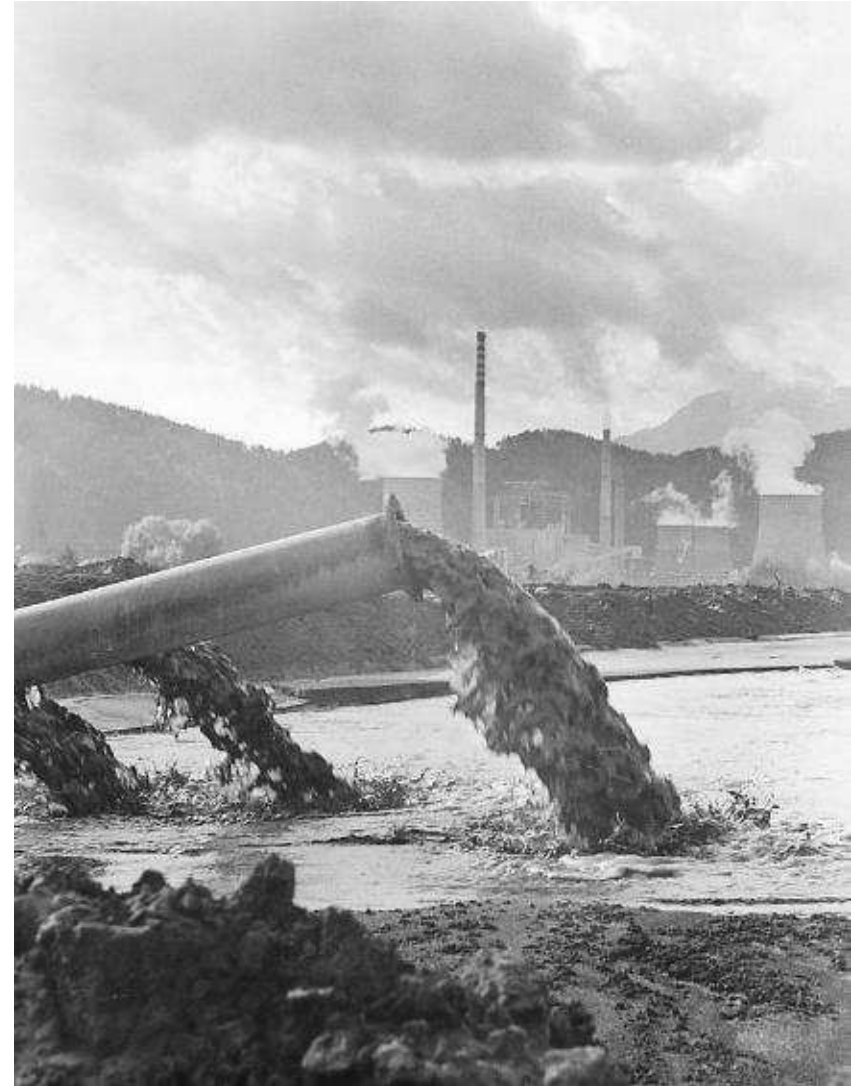
PRODUCTION 1875 - 2018; PLAN 2019 - 2054
total 250 mio ton; plan 92 mio ton



VELENJE COAL MINE – In the past

The consequences of mining and energy activities in the Šaleška valley were severe:

- over 800 collapsed buildings,
- more than 2,000 resettlers,
- pollution of air, water, soil, emissions ...



VELENJE COAL MINE – In the past



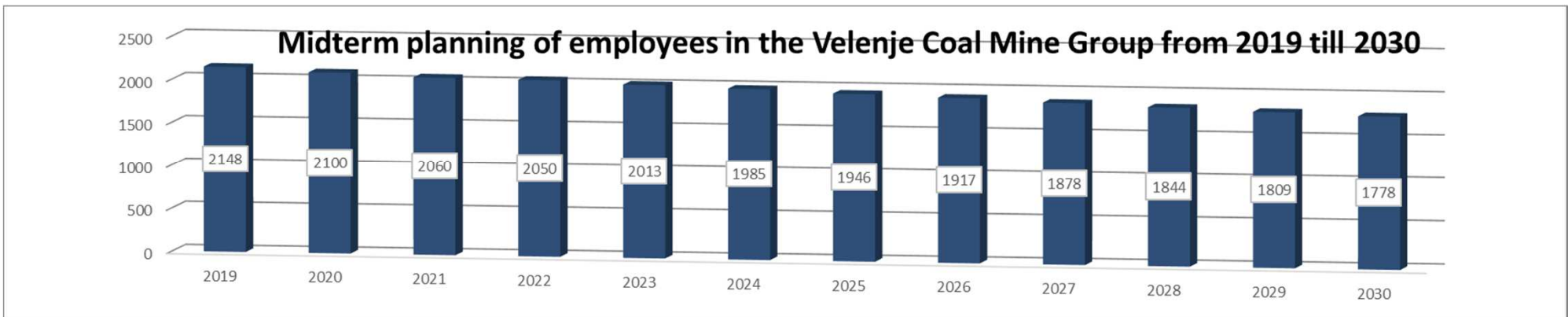
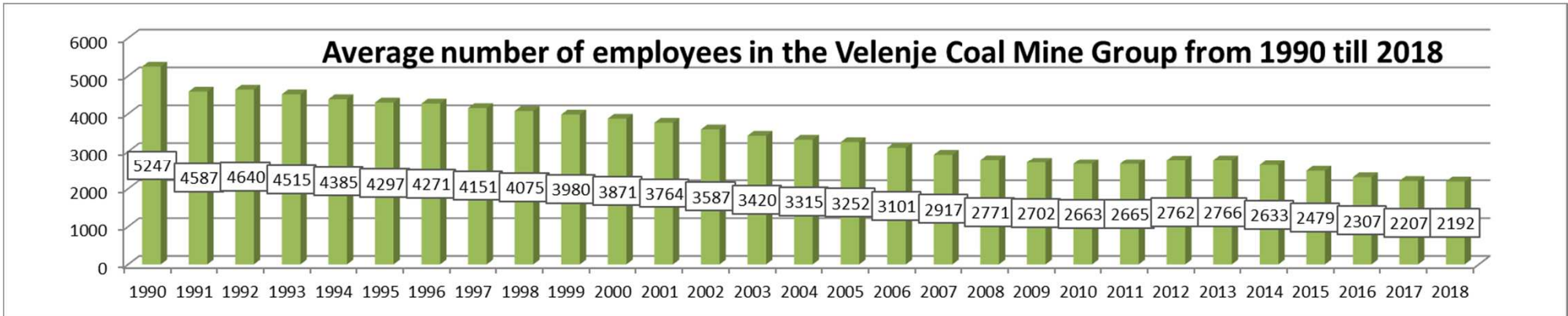
VELENJE COAL MINE – Present

The results of planned work give positive results:

- systematic investment in environmental remediation,
- no specific budget allocation,
- without a law on the closure of the mine,
- all included in the cost of production of coal and electricity.



VELENJE COAL MINE



Slovenia Unemployment Rate in January 2019: 8,6 %
 Velenje Unemployment Rate in January 2019: 10,0 %

Uncertain unemployment rate after The Velenje Coal Mine closure.

ENERGY STRATEGY IN SLOVENIA - WHERE WE STAND REGARDING COAL

SLOVENIAN ENERGY CONCEPT (under preparation - draft August 2018):

*„The use of coal is foreseen only for existing installations and until the end of their operation lifetime. The use of coal will gradually decrease in relations to more electricity production from RE, costs of emission allowances and the need for security of supply. The use of coal based on current technologies will end by 2054 at the latest. **To achieve decarbonisation goals a national coal phase-out program, based on just transition principles, will be prepared.**“*

- Integrated National Energy and Climate plan 2030 with a view to 2040 - in a process of public consultation, will clarify the necessary steps, including the coal phase-out strategy (due: December 2019).

- Long-term national decarbonisation strategy 2050 - under preparation (due: January 2020).

In 2020 we should have all key strategic documents in place and synchronised to move forward with the comprehensive national coal phase-out program!

- National coal phase-out program, including all the necessary legislation regarding the gradual closure of Velenje coal mine and the restructuring of the region will be prepared by 2022.

THE FUTURE OF COAL IN SLOVENIA – NEXT STEPS

- At the government level we are in a process of establishing a national working group on just transition for the purpose of cooperating in the Platform and preparing the national coal phase-out strategy.
- Working group will include various relevant stakeholders at a national and regional level.
- We welcome Commission's proposal to establish a country team in a process of establishing a pilot region.

We expect the Commission's guidance and offer of expertise with regards to preparation of national coal phase-out strategy and restructuring of the mining regions, including sustainable social and financial solutions for implementing the just transition of our regions.