The Touring exhibition called The Fame of the Ore Mountains Mining has been prepared within a cross-boundary project of the same title under the support of the Cíl3/ Ziel3 Programme, which is financed by the European Union by means of the European Regional Development Fund: Investing in Your Future.

The Cíl3/ Ziel3 Programme supports all cross-boundary projects that follow common goals of the Free State of Saxony and the Czech Republic. Thus, this programme has offered a lot of materials that could also be exploited for creating an exhibition dealing with the common mining history of Saxony and Bohemia. The exhibition is devoted to different aspects of more than eight-century-old common mining history on both sides of the Ore Mountains. The reminder of the mining fame of the historic area of the Montan-region Krušnohoří/Erzgebirge is presented on 20 boards in a simplified form, while individual themes of the exhibition are described in greater detail in guidebooks in Czech, English and German languages.

The Ústí Region, which is closely connected with its mining history and traditionally supports the birth of cultural and tourist networks, is a project partner. The project itself has been elaborated by the Department of Culture and Heritage Preservation of the Regional Authority of the Ústí Region, whose representatives are members of the preparatory team for the nomination of the Mining Cultural Landscape Krušnohoří/Erzgebirge for inscription on the UNESCO World Heritage List.

Wirtschaftsförderung Erzgebirge, GmbH, has provided the project with management and organization and thanks to warm bilateral cooperation this exhibition came into existence and in addition to that also some other outputs supporting the promotion of tourist activities in the Krušnohoří/Erzgebirge mining region.

We hope that you will also like to be reminded of the stories of miners coming to our mountains since the Middle Ages to find wealth and fame here. At the same time, filled with hope, they used to settle down in this area and in spite of their living in very hard conditions, they connected their lives, just like we do at present, with the Ore Mountains.
Since the 12th century the development of the Ore Mountains has been significantly influenced by the mining activities that caused formation of a unique cultural landscape on both the sides of the Czech – German boundary. Numerous technical monuments, well-preserved until the present day, and original relics of rich mining and metallurgical activities give us testimony about more than 800-year-old common history of the Ore Mountains. The traditions and customs closely connected with mining, as well as the typical technological, scientific and artistic development, have become the most characteristic features of this region. A unique combination of material and non-material values of this Region and the diversity of its natural resources confirm, together with the continuity of time, an extraordinary universal value of this cultural mining landscape for all mankind. The Ore Mountains cultural landscape is represented by 14 mining regions that strive for inscription on the prestigious World Heritage List of the UNESCO Cultural and Natural Heritage. The following 6 component parts have been nominated for registration on the World Heritage List on the Czech side: Krupka Mining Cultural Landscape, Jáchymov Mining Cultural Landscape, Abertamy – Horní Blatná – Boží Dar Mining Cultural Landscape, Mědník Hill, the Lime Works in Háj near Loučná pod Klínovcem, and the National Cultural Monument called The Red Tower of Death, which is located in Vykmanov near the town of Ostrov. On the Saxon side, 8 component parts have been nominated for the registration on the World Heritage List, including 500 individual sites from the Altenberg, Freiberg, Marienberg, Annaberg, Schneeberg, Schwarzenberg Mining Areas, and some other areas of uranium and coal mining.
The Czech side of the Ore Mountains is represented by ensembles of mining monuments united in the following cultural landscapes and individual mining areas.

**The Krupka Mining Landscape**
The area surrounding the town of Krupka belongs to the oldest mining districts in the Ore Mountains. One of the most significant mining monuments is the Starý Martin Gallery. It opens the cassiterite vein called Lukáš, which stands for the longest tin vein in central Europe. The well-preserved buildings dating back to the Gothic and Renaissance periods remind us of the historical significance of this mining town.

**Mědník Hill**
Mědník Hill is a key mining monument in the Ore Mountains central area, which uniquely exemplifies the method of copper and silver ores mining in one place from the 14th to the 20th century. The hill called Mědník (Copper Hill) is quite unique in its leaving a great amount of survivals of the mining activities (approx. 70 relics). Exceptionally valuable are the galleries inside this hill since they bring authentic evidence of the methods of historic mining, such as the Shaft (Gallery) of Our Lady of Perpetual Help, accessible to the public, and The Promised Land Gallery. The Baroque Chapel of the Immaculate Conception of Virgin Mary, dating back to 1674, erected in the form of a rotunda, is a dominant historical feature and one of the main symbols of this part of the Ore Mountains.

**The Limeworks and Quarry in Háj near Loučná pod Klínovcem**
In the past there used to be a deposit of crystalline limestone in the cadastral area of Háj near Loučná pod Klínovcem. In the first decades of the 19th century the lime works was built here to process the extracted material for the construction and metallurgical purposes. In the 1850s, after the reconstruction making use of a valuable architectural design, the lime works got a very precious appearance that has been preserved so far as one of very few technical monuments of this type in the Ore Mountains.
Jáchymov Mining Landscape

Jáchymov as a silver metropolis of the Renaissance Ore Mountains used to be a place of extraordinary importance. This town is considered to be a birthplace of mining sciences since the first mining school in the world was founded here as early as 1716. The town is also an important representative of the silver and uranium ores mining and the systematic mining of uranium started in the shaft known as Svornost (Concord) as early as the 19th century. In addition to that, in 1906 the first radon spa in the world was founded in Jáchymov.

Abertamy – Horní Blatná – Boží Dar Mining Landscape

The monuments in the Hřebečná mining landscape clarify a 400-year-old history of tinstone mining from steep channels in granular quartz formations. The sub-surface seams of the important mine called Mauritius belong among the biggest ones of this sort in the whole world. Horní Blatná is an excellent example of the plan-based development of a mining town in the Ore Mountains at the beginning of the 16th century. Its chess-board town plan was inspired by the street-plan of Marienberg. In the 16th century the tin ore and later also quartz, iron and manganese ores started to be extracted in numerous local mines. Since the 16th century the Blatná water canal has been the longest and most significant man-made water channel in the Czech part of the Ore Mountains and a witness of the development of the montane mining system for gaining energy. The Boží Dar mining landscape offers monuments of mining activities that represent the mining of silver and cobalt ores and polymetallic ores from the 16th to the 19th century.

National Cultural Monument – The Red Tower of Death

The national cultural monument called the Red Tower of Death is a place commemorating the uranium ore mining in Czechoslovakia of the 1950s. Due to the permanent shortage of manpower in Jáchymov uranium mining, the first forced labour camps were founded here, near Jáchymov. The so called Red Tower (Tower of Death), the camp workplace in Vykov designated with the code name “L”, was an extremely dangerous workplace in the Jáchymov area.
The Saxon side of the Ore Mountains is represented by ensembles of mining monuments united in the following districts.

**Altenberg Mining District**
The Altenberg mining area is represented by the mining cultural landscapes of Altenberg and Zinnwald, the chateau and town church at Lauenstein, the technical monuments documenting the manufacture of watches at Glashütte and the medieval silver mines in Dippoldiswalde. Such major towns as Altenberg, Glashütte or Dippoldiswalde were also the seats of independent mining offices. While mainly silver was extracted in the surroundings of Dippoldiswalde and Glashütte, tin ore mining was predominant in the vicinity of Altenberg and Zinnwald.

**Freiberg Mining District**
The mining cultural landscape of Freiberg embraces the montane and mining landscapes of Gersdorf, Brand-Erbisdorf, the Himmelfahrt Fundgrube and Zug shafts, the historical old town of Freiberg, the Muldenhütten smelting works, as well as Halsbrücke with a canal through which ore was transported, or the mines in the northern part of the Freiberg mining district. The Altzella Cistercian Monastery and the Rothschönberger Stolln mine.

**Marienberg Mining District**
The Marienberg mining area is namely represented by Augustusburg hunting manor, the Lengefeld lime, the historical old town of Marienberg or the mining landscape surrounding Lauta, the mining area include Grüner Graben in Pobershau, the Saigerhütte (smelting works) historical complex in Olbernhau and the Spielzeugdorf Seiffen Museum of Toys.

**Annaberg Mining District**
The town of Annaberg, along with the montane landscape of Frohnau, the mining cultural landscape of Pöhlberg, Buchholz (with the Church of Saint Catherine) and Ehrenfriedersdorf, or the Jöhstadt iron works with the manor house and blast furnace representing this region. Various mineral resources were mined in the Annaberg district, such as silver, copper, tin, iron ore, bismuth, cobalt and various rock and soil types.
Schneeberg Mining District
The Schneeberg mining district was an area of intense ore mining, namely of silver, copper, bismuth, cobalt, and nickel. In addition, kaolin necessary for the production of china (porcelain) was extracted in the area. Founded in the late 15th century, Schneeberg gradually became the first major mining town in the western part of the Ore Mountain region and it is therefore included among the locations nominated to become part of the World Heritage Site. Other nominated locations feature technical monuments representing the history of mining in the town of Aue, the mining cultural landscape of Bad Schlema, Schneeberg and Hoher Forst (near Kirchberg), as well as the Weißer Hirsch mine. These locations are complemented with the 15-kilometre long Schneeberg log canal, and the blue dye house, the so-called “Schindlers Werk” in Zschorlau, commemorating the manufacture of the traditional cobalt dye in the Ore Mountains region.

Schwarzenberg Mining District
The Schwarzenberg mining district is the westernmost mining area in the Saxon part of the Mining Cultural Landscape Erzgebirge/Krušnohoří. A chateau bearing the name of the house of Schwarzenberg indicates that the owners of the dominion controlled and managed tin and iron ore mining in the western part of the Ore Mountain region, and it also suggests a close connection of the mining district with mining areas at Horní Blatná and Boží Dar in Bohemia. The Mining Cultural Landscape Erzgebirge/Krušnohoří also embraces placer fields and mining pools in the Eibenstock mining landscape, the Erlahammer iron works near Schwarzenberg, the Scheibenberg geotop, and the paper works in Niederzwönitz. In the Schwarzenberg district, mining operations were carried out at various shafts with deposits of silver, tin, iron, as well as bismuth, cobalt or nickel.

Uranium Ore and Black Coal Mining in the Saxonian Ore Mountains
In the 20th century, uranium ore mining was considerably affected by the nuclear arms race during the Cold War. Major mining areas were located in the western part of the Ore Mountains region, e.g. Johanngeorgenstadt, Schneeberg and Schlema. Mine No. 371 near Bad Schlema, the reclaimed dump No. 366 near Aue, the head office of the Wismut company in Chemnitz, as well as the former miners’ hospital in Erlabrunn all bear evidence of this mining era. The Lugau-Oelsnitz black coal district is the youngest of the three large-scale coal deposits in Saxony, Germany.
At the very beginning of mining, the ore was extracted by surface mining from the most easily accessible deposits at the rise of the ore veins; after this type of surface mining holes or surface depressions are usually left behind in the landscape. Further, the ore was also gained by panning in brook sediments. The waste rock heaps, the so called placers, which can be found for instance near the town of Boží Dar, are the remains preserved in the landscape until the present day. The Boží Dar Placers belong among the biggest placer deposits in the Ore Mountains, their area covers approx. 250 000 square meters. The evidence of panning can be also found in Krupka.

After the surface deposits had been exploited, more expensive sub-surface mining methods started to be introduced. The sub-surface mining was carried out, according to the situation at the site, by means of a horizontally dug out system of galleries, later by means of a system of vertical shafts. The shafts were dug out vertically or they copied the vein inclination, the galleries were led across or along the vein system. The extraction operations started to be faster when miners used the underhand stope method to extract a line of benches downwards, between two floor levels, where the miners could work at the same time. In the Ore Mountains the most frequently spread technique was the 20–100 meter-long gallery mining led from the beat on the slope in the direction following the vein. As the extraction progressed, the galleries started to be lengthened up to several kilometres, while shafts spread in the vertical direction. These methods gradually led to the formation of a multiple-floor mine working. The main galleries were extended by rock headings and stopes. There were problems with the leakage of underground water that led to the gradual digging out of hereditary galleries draining such mine workings. The size of underground spaces varied and in some roads the miner had to work in the sitting or even in the lying position, but we can also find the dug out spaces that are several tens of meters wide and tens of meters high. These were, for example, the spaces equipped with the underground water wheels which served as a drive for the machines used in the mines. Some other spaces also served as underground chapels for miners.
The miner worked with the so called hammer and pick. The pick was sharp at one side and was used with the help of the hammer for hammering and cutting off parts of the rock. According to the type of pick different sizes of picks were used. Soft rocks were mined by a gad, a tool similar to pickaxe but with long sharp point. The extracted material, the so called spoil, was removed by a three-sided sharp hoe known as digger. The manual way of mining was considerably laborious. In the course of a six-hour shift the miner advanced with his work by approx. 2.5 cm at the area of 2×1 meter, the estimated progress was about 32–40 m in a year in hard rocks and approx. 60–64 m in soft rocks. If the conditions in the mine allowed, the fire-setting method was used. The blazing heat of the fire made cracks in the rock which started to break down and made the mining easier. The broken up ore was transported in wood washtubs which were either carried or pulled on a rope by the miner. In some mines wicker baskets or blowers made of bovine leather were used. Later the first wagons started to appear. If possible, the extracted rock was separated in the mine with the help of drains making use running water. The separated waste rock was used for strengthening the walls or for filling up the worked-out areas in the mines. Underground areas were lightened by miners’ lamps, which were ceramic bowls filled with oil into which a wick was inserted. They were used in the course of older time periods. These old lamps, which were attached to the rock by clay, left behind typical scorched places on the walls of shafts. The rock containing ore was transported to the surface by manually operated winches that were replaced by horse driven whims at larger mine workings. In the mines which were several hundred meters deep it was necessary to use more efficient devices driven by water wheels.

**Underground areas were lightened by miners’ lamps. A little miner’s earthenware safety lamp from the exposition showing the mining of tin in Krupka; from the collection of the Regional Museum in Teplice.**
In the early stages of mining, the ore was hauled to the surface by means of wooden winches driven by manpower. Since the second half of the 15th century at the latest, huge mining machines, the so called whims, driven by horse or bovine power, had been used for transportation of the material extracted from the mines.

Where the terrain enabled to use water power, it was possible to use transportation in both directions. In that case the water was driven through big wooden wheels with double blades (so called reversible water wheels). In 1551 the flatrod system, a device in the form of rods that transmitted motion energy from the water wheel to pistons of water pumps, was introduced in Jáchymov for the first time in the world. Soon, this invention became widespread and gained fame not only in the Ore Mountains but also in other European mining districts.

Water was still the most important source of energy in the Ore Mountains and provided energy continuously for different devices, e.g. mills, hammer mills, ore-preparation plants, ironworks and factories built in the valleys along waterways.

As the majority of mines were not situated near waterways, it was necessary to bring it to the right place in the form of water ditches. Water ditches could be found in all mining districts and some of these devices still continue bringing water to the places where water is required. The components of water management systems also included water tanks (or mining ponds).

The machine used for pumping water – the piston pump developed in Ehrenfriedersdorf. A colour wood-cut of Agricola’s work De Re Metallica XII.
The process of ore dressing was also improved in the course of the 16th century. Its purpose was to separate the ores according to their quality, grind them and wash them in the water flow to get rid of any unwanted admixtures and then, after the ore was ground to small grains, to prepare the ore concentrate for smelting. The Jáchymov mining district has served as an experimental centre since the beginning of the 16th century. At that time it was also a district where a lot of technical innovations from the whole Europe used to be tested. In 1519 the Tyrolean method of washing heads (the ore concentrate) on leaned drains through cloth was introduced so that metal losses could be decreased. For the same purpose the Saxon modification of the stamp mill for ore grinding was introduced in 1521. In the previous period only the dry method was used, but after the new method was applied, the process was improved by making use of the permanent water supply and with the help of the placed separation drains it was possible to prevent the leakage of fine metal particles by dusting. These so called wet stamp mills started spread to very quickly into all Czech mining districts.
The list of planned World Heritage Objects at the Saxon side:

Altenberg Mining District
1. Mining landscape of Altenberg
2. Mining landscape of Zinnwald
3. Chateau and town church at Lauenstein
4. Technical monuments documenting the manufacture of watches at Glashütte
5. Medieval silver mines in Dippoldiswalde

Freiberg Mining District
6. Mining landscape of Brand-Erbisdorf
7. Historical old town Freiberg
8. Mining landscape — the Himmelfahrt Fundgrube
9. Mining landscape of Zug
10. Halsbrücke with a canal through which ore was transported, or the mines in the northern part of the Freiberg mining district
11. Muldenhütten smelting works
12. Rothschenberger Stolln mine
13. “Revierwasserlaufanstalt” water management system
14. Mining landscape of Gersdorf with the Altzella Cistercian Monastery

Annaberg Mining District
15. Historical old town Annaberg
16. Mining landscape of Frohnau
17. Mining landscape of Buchholz with the Church of Saint Catherine
18. Mining landscape of Pöhlerberg
19. Mining landscape of Ehrenfriedersdorf
20. Jöhstadt iron works with the manor house and blast furnace

Marienberg Mining District
21. Augustusburg hunting manor
22. Historical old town Marienberg
23. Mining landscape of Lauta
24. The Lengefeld lime works
25. Saigerhütte (smelting works)
26. Historical complex in Oberhau
27. Spielzeugdorf Seiffen Museum of Toys
28. The Grüner Graben in Pobershau

Schneeberg Mining District
29. Monuments of mining history in Aue
30. The Schneeberg log canal
31. Historical old town Schneeberg
32. The Weißer Hirsch mine
33. The Schindlers Werk in Zschorlau
34. Mining landscape of Hoher Forst

Schwarzenberg Mining District
35. Mining landscape of Eibenstock
36. Erlahammer iron works near Schwarzenberg
37. The Chateau Schwarzenberg
38. Scheibenberg geotop
39. The Paper works in Niederzwölnitz

Uranium Ore Mining District
40. The Head office of the Wismut company in Chemnitz
41. Uranium mining landscape

Black Coal Mining District
42. Karl-Liebknecht-Schacht complex
43. Mining landscape of Oelsnitz/Erzgeb.

The list of planned World Heritage Objects at the Czech side:

Hornická krajina Krupka / Mining landscape of Krupka
Vrch Mědník / The Mědník Hill
Vápenka a lom v Háji u Loučné pod Klínovcem / The Limeworks and Quarry in Háj u Loučné pod Klínovcem
Hornická krajina Jáchymov / Mining landscape of Jáchymov
Hornická krajina Horní Blatná / Mining landscape of Horní Blatná
Hornická krajina Boží Dar / Mining landscape of Boží Dar
Hornická krajina Abertamy – Hřebečná / Mining landscape of Abertamy – Hřebečná
Rudá věž smrti v Vykmanově / The Red Tower of Death in Vykmanov
The list of planned World Heritage Objects at the Saxon side: – at the Czech side:

- Altzella Cistercian Monastery
- Mining landscape of Gersdorf
- Muldenhütten smelting works
- Halsbrücke with a canal through which ore was transported
- Mining landscape of Zug
- Mediaval silver mines in Dippoldiswalde
- Technical monuments documenting the Freiberg mining district
- Rothschönberger Stolln mine
- Mining landscape of Brand-Erbisdorf
- Technical monuments documenting the Annaberg Mining District
- Historical old town Marienberg
- Augustusburg hunting manor
- Marienberg Mining District
- Jöhstadt iron works with the manor house
- Mining landscape of Ehrenfriedersdorf
- Mining landscape of Pöhlberg
- Mining landscape of Buchholz
- Mining landscape of Frohnau
- Mining landscape of Altenberg
- Altenberg Mining District
- The Grüner Graben in Pobershau
- Spielzeugdorf Seiffen Museum of Toys
- Historical old town Annaberg
- Mining landscape of Schneeberg
- The Chateau Schwarzenberg
- Erlahammer iron works near Schwarzenberg
- The Chateau Schwarzenberg
- The Schneeberg log canal
- Monuments of mining history in Aue
- Black Coal Mining District
- Uranium Ore Mining District
- scheibenberg geotop
- Hornická krajina Krupka / Mining landscape of Krupka
- Hornická krajina Jáchymov / Mining landscape of Jáchymov
- Hornická krajina Horní Blatná / Mining landscape of Horní Blatná
- Hornická krajina Boží Dar / Mining landscape of Boží Dar
- Hornická krajina Abertamy – Hřebečná / Mining landscape of Abertamy – Hřebečná
- Rudá věž smrti ve Vykmanově / The Red Tower of Death in Vykmanov
- Rudá věž smrti ve Vykmanově / The Red Tower of Death in Vykmanov

– at the Czech side:

- The Head office of the Wismut company in Chemnitz
- Uranium mining landscape
- Schwarzenberg Mining District
- Monuments of mining history in Aue
- Mining landscape of Eibenstock
- The Head office of the Wismut company in Chemnitz
- Uranium mining landscape
- The Schneeburg log canal
- Black Coal Mining District
- Uranium Ore Mining District
- Mining landscape of Oelsnitz/Erzgeb.
- Mining landscape of Oelsnitz/Erzgeb.
Smelting was a process which was done by specialized workers who weighed the ore, calcined and prepared it for furnace, by adding fluxing agents, and for further refining. At first the ore processing was carried out in small independents smelters or those belonging to the mines. In the 16th century the smelting operations were concentrated into a few places.

**Silver Smelting**

Silver was often found in silver-bearing ores, mainly in galenite, sphalerite and chalcopyrite. The Silver content in these ores was approximately tenths of per cent. To gain pure silver it was necessary to sort out these ores, grind and wash them and subsequently they were calcined and added to molten lead. From the final smelted lead the silver was gained by the process of cupellation. The air was blasted with the help of bellows into the furnace; the lead oxidized at the surface, changed into the liquid formation and drained away. Silver gradually settled at the bottom of the furnace where pure melt was formed.

A significant discovery in metallurgy was the process of copper liquation which enabled elimination of silver from silver-bearing ores. The melt, the so called black copper, was straightened after solidification together with pieces of coal into the liquation furnace which was made of two copper panels on the walled base that were sloped opposite each other into the form of letter “V” and in the middle there was left a gap for the flowing lead. The silver-bearing lead was percolated from ingots and copper was left at the bottom of the furnace. Black copper was produced, for instance, in the smelters in Hora Svaté Kateřiny and delivered to Jáchymov. In the 18th century it was sold to Seigerhütte in Grünthal in Saxony.

**Iron Smelting**

Important changes of iron production came after the half of the 15th and in the 16th centuries when blast furnaces and bigger and more efficient ironworks with their own production of raw iron started to be introduced instead of numerous iron ore hammer mills. In the surroundings of places where iron was processed independent communities were founded (Schwarzenberg, Jöhstadt, Potůčky, Gabrielina Huť).
In the oldest Latin sources there is rich evidence of the miners called fossores – i.e. mine diggers or diggers, while smelters used to be called ferrarri or iron workers. In the course of time individual activities were divided into specialist mining jobs or occupations. Thus, there were landers who transported the spoil to the winches. Winchmen pulled or wound the load up with the help of hoists. People working with horses on the whims were called whim workers. Drainmen took care of cleaning drain ditches, water rings, and sludge pits. Ventilation shaft servicemen guaranteed the maintenance of ventilation shafts. Mine carpenters made gallery timbering, mining ladders and prepared additional wooden equipment of a mine. Even all other general jobs started to be specialized under the influence of the mining industry, for instance mine blacksmiths mainly produced tools or ironwork for mining machines. At the surface the spoil had to be crushed, separated and the sludge was elutriated. This work was usually done by miners’ women and their children. The ore was further processed by smelting and for that reason there were other specialists who weighed and calcined the ore and then prepared furnaces for smelting. Technological methods of ore processing were operated by assayers who checked the quality of the metal and also prepared the minting metal alloys. The supervision during individual extraction was done by mine overseer, known as the so called steiger. All decision-making competences and mining organization were in the hands of the mine manager in the Kutná Hora district and in the Jáchymov district this office was held by the shift manager. The copyist or writer in the mine was responsible for clerical labour associated with mining. All of them were subordinated to the supreme master of the mint in the kingdom.

A drawer transporting loose rock (broken ore) to wooden hauling winches (in Czech called “hašple”). A wood-cut published in Georgius Agricola’s work “De Re Metallica Libri XII”.

-15-
The design of miners’ working clothes was completely influenced by their usefulness and effort to protect the miners from the consequences resulting from their work in cold and wet shafts. The working clothes consisted of a pair of trousers and the linen coat called the “kirtle” (in Czech perkytyl or kytlice), which reached the miner’s knees and was fastened with a belt. The kirtle had a hood at its end which protected the miner from dirt and humidity. On the belt the miners wore a bag – tscherper bag – on the left side. In this bag they stored tools for lighting up the miner’s lamp, a wick and a knife. A spare pick and hammer that were worn by miners on their backs threaded through a belt frequently became parts of the miners’ equipment as well.

A miner’s apron started to be used in the 16th century. The miners used to sit down on the apron when they were descending a chute in a mine or when working they laid it under their knees. Approximately from the beginning of the 16th century mining officers, ore buyers and representatives of the mining industry are more or less portrayed in fashionable rich clothes with fur-lined coats and hats. At that time the miner’s axe called “švancara” becomes a symbol of the highest class mining representatives. Thus, the original carpenter’s tool has been transformed into decorative symbolic axes that were embossed with decorative colours, such as gold, silver or black, and expressed the position of their holders.

Life in closed mining society led to gradual self-awareness of the miners as a special social group. As a symbol of their increasing self-confidence the miners started to use working clothes as a festive costume. This created a basis for the present-day mining uniforms. Parts of these festive clothes were the miner’s kirtle with the hood, the miner’s cap, apron, bag and knife sheath (hunting knife). The miner’s axe and burner were also considered to be the necessary accessories of the miner’s uniform. In the course of the 19th century the miner’s period costume was transformed into the festive uniform with the codified directives and essentials relating to this uniform.
The Ore Mountains are unique for the amount of the extracted and processed raw materials; with the most significant of them being silver. Further materials that were mined there included tin, iron, lead, copper, cobalt, nickel, uranium, bismuth, wolfram and zinc ores.

Silver
The fame of the Ore Mountains was brought by the mining of silver which appears in the form of pure metal in this mining district or mainly as a component of sulfidic ores, such as argentite, proustite and pyrargyrite (ruby silver ore). To a lesser extent, silver is also found in the ores of non-ferrous metals, such as galenite. Silver is connected with the foundation of many towns, such as Freiberg, Annaberg, Jáchymov or Marienberg.

Tin
Thanks to easy meltability and workability this metal was used separately for the manufacture of dishes. It had even a much wider spectrum of application as an initial material for the production of bronze. The evidence of tin mining dates back to the 13th or 14th centuries, as the case may be in Ehrenfriedersdorf and Krupka. The main tin ore was tinstone (cassiterite).

Lead
The lead was used mainly in local smelters for the production of silver by applying the method of the so called cupellation. The similar process was used in liqation smelters.

Copper
The copper ores are located in deposits of different types, such as vein deposits (Freiberg, OT Zug, Annaberg, Schlema, Kirchberg, and Hora Svaté Kateřiny) or narrow-reef deposits (Měděnec, Zlatý Kopec). The development of silver-bearing copper ore mining appeared after the introduction of liqation smelters in the 15th century.

Bismuth
All over the world bismuth is ranked among relatively rare metals. These ores were extracted together with silver, cobalt and later also with uranium ores, for instance in Schneeberg, Schneeberg – Neu-städtel or in Jáchymov.
Cobalt
Since the 16th century bismuth and cobalt became more important and were mined in the surroundings of Jáchymov and Horní Blatná for production of colours and enamels. Cobalt colours from the Ore Mountains were applied in the whole world for production of Venetian and Czech glass, Delft ceramics, Saxon or Czech porcelain.

Nickel
Nickel was already known as early as the Middle Ages. At that times nickel was considered to be worthless, which is also reflected in its name (nickel means a villain in the German language). The mining of nickel ores together with cobalt ores was carried out in the main mining districts, such as Schneeberg or Jáchymov.

Iron
Important for the early economic development of the region was the mining and processing of iron ores in the central Ore Mountains, which can be proved by records from the 13th century. The most abundant deposits in the German part of the Ore Mountains were discovered in its western part, near the towns of Schwarzenberg, Eibenstock and Schneeberg, in the Czech part it was mainly near Měděnec, Kovářská and Přísečnice, in the surroundings of Horní Blatná and Nejdek.

Uranium, Polonium, Radium and Radon
The mining of uranium ores started as late as the end of the 18th century. Most of uranium deposits are bound to the veins of which some were already known from previous silver, cobalt and nickel ores mining. Since the 19th century uranium compounds were used for the colouring of glass and for porcelain glazing, later also for making photographs. The growing demand for uranium colours in 1854 gradually led to the construction of a factory for uranium colour production in Jáchymov. From the waste left after the manufacture of colours Marie and Pierre Curie separated new elements of polonium and radium at the beginning of the 20th century. In the Jáchymov mining district more than 7 000 tonnes of uranium were extracted after the Second World War.
The birth of town settlements in the Ore Mountains in connection with intensive ore mining can be considered as one of the most important cultural and human performances in the European context. The transformation of mining settlements into stable towns was in progress during the first phase of the Silver Rush in the Ore Mountains and proceeded in a relatively quick way. The first town there was Christiansdorf, later renamed to Freiberg as early as the end of the 12th century; the first Czech town in this area was Krupka.

The second boom in the process of the formation of mining towns appeared in the 16th century. At that time the following towns, for example, were founded in the Ore mountains: Abertamy, Altenberg, Annaberg, Boží Dar, Buchholz, Ehrenfriedersdorf, Glashütte, Hora Svaté Kateřiny, Hora Svatého Šebestiána, Horní Blatná, Jáchymov, Marienberg, Oloví, Scheibenberg, Schneeberg u. v. a. Until the 17th century mining industry stimulated foundation of more than 30 mining towns on the Saxon side of the Ore Mountains and more than 20 in the Czech part. The mining towns usually obtained special rights that contributed to their fast economic development.

While the urban agglomerations were founded spontaneously in the first boom of town formations, being usually formed by mining settlements concentrated around individual (mine) workings, in the course of the 15th and 16th centuries the towns were founded in a more systematic way. Typical town planning elements of the towns founded “in the greenfields” are squares of the regular square-plan and the right-angled street network. This model was used for the first time in the Ore Mountains when the of Marienberg was founded and subsequently this model was repeatedly used in the Czech towns, such as Horní Blatná, Hora Sv. Šebestiána or Výsluní.

In the course of further centuries of the historical development the largest continual occurrence of mining towns in the world was formed in the Czech and Saxon Ore Mountains area.

FAME OF THE TOWNS FOUNDED IN THE ORE MOUNTAINS
In the Ore Mountains we can find a lot of places where new scientific knowledge, technical and technological innovations were born. The mines, preparation plants and smelters have belonged among the most modern mining devices in the Ore Mountains for a very long period of time. The increasing depth of mining works, connected with urgency of the effective mining of raw materials and the pumping of ground water, gradually led to constant introduction of new techniques and technologies. The machines for water pumping, such as the flatrod system from Jáchymov or the pump developed in Ehrenfriederdorf, spread from the Ore Mountains to the whole world.

The Ore Mountains were also at the top position as to the development of the ore preparation and processing. The preparation technology of wet grinding of ores, developed in the eastern Ore Mountains in the course of the 16th century, has to be mentioned as well. Later, completely new types of furnaces with the lower consumption of fuels were developed for the smelting process of the extracted ores. In the sphere of metallurgical technologies the first industrial application of the amalgamation process appeared. It was introduced in Halsbrücke at the end of the 18th century and was preceded by very intensive scientific preparation at the Bergakademie Freiberg.

The tub boat lift for lifting boats loaded with the excavated ore (Kahnhebehaus) in Halsbrücke, dating back to the 1780s, the inventor of which is the mining expert J. F. Mende, is considered to be the oldest equipment in the world making use of the system of the vertical lifting of boats.

In 1906 the first radon spa in the world was founded in Jáchymov; in Saxony radioactive springs were discovered near Schlema and that was the reason for stimulating the construction of a spa in Niederschlema in 1911.
The Ore Mountains area (Krušnohoří) creates a unique entity of the mining landscape, the individual parts of which are always, to a certain extent, associated with its settlement, mining activities or subsequent processing of the ores extracted in this area. The cultural landscape in this area started to come into existence in the course of the 12th and the 13th centuries in connection with the concurrent colonization from the old settlements in Bohemia and the then-existing Meissen area. It was the period of time when the Ore Mountains Silver Rush was in progress and the first mining settlements were being established. They soon developed into the first Ore Mountains mining towns and other centres of the economic development of the region, predominantly monasteries, for instance those in Altzelle and Osek. The growing development of ore mining gradually led to the growing density of the Ore Mountains settlement and the continuing requirements for qualified labour resulted in the natural turn-over of labourers, which was influenced by the current situation in individual European mining districts. This situation can be better observed in the 16th century, which represented the second important stage of the Ore Mountains fame. Many personalities, whose contribution to the Ore Mountains fame has not been appreciated properly so far, came to this area. It was also the century in which new mining towns were being founded, which was accompanied by a great variety of new contacts concerning the latest mining technologies, on many occasions shared by top mining specialists and experts of that time, whether it was Georgius Agricolla or Lazarus Ercker, who belong among the most significant personalities of the Ore Mountains mining history.

In the following periods of history the region was politically divided, in particular in connection with the Seven Years’ War and the religious conflicts between the Protestants and the Catholics. However, those circumstances did not prevent people from developing mutual cross-boundary contacts or from making use of the knowledge of various significant persons from other production spheres. The identical living conditions on both sides of the newly created border line determined and directed further development of the Ore Mountains in the similar direction. Although the paths of the people living on both the sides of the Ore Mountains partially separated, by means of this project they start to discover again now what has always connected their lives in the Ore Mountains.
By issuing Ius Regale Montanorum (IRM) in the year 1300 the most significant stage started in the history of mining law on the territory of the Czech state. It had a character of fundamental as well as general mining law and was presented as a tool of management, administration and monitoring of all mines in the Bohemian Kingdom. The rapid expansion of deep (underground) mining, in particular silver ores mining in the course of the 13th century, led to the enforcement of regional legal regulations in writing. Until the Annaberg Code of Mining was accepted in Jáchymov in the year 1518, a number of codes of mining had been issued there since the year 1300. Apart from the Jihlava Code of Mining from the first half of the 14th century, there were two Krupka Mining Codes from the second half of the 15th century, and one Slavkov Mining Code from the year 1507. The issue of Jáchymov Codes of Mining in the 16th century meant a more extensive breakthrough in IRM jurisdiction as well as the IRM mining and legal competences. Its territorial validity was limited most of all by the Jáchymov Mining Code of 1548, which was gradually introduced to/in individual mining districts of the Ore Mountains by Ferdinand I. Many IRM provisions that had been overcome were replaced by new directives and regulations after the stagnation of ore mining in the 17th century and after the invasion of coal mining at the end of the 18th century. The provisions of Ius Regale Montanorum finally lost their legal liability as late as 1854 when completely new mining law was issued.
One of the oldest show galleries is the Gallery of Our Lady of Perpetual Help (or the Mariahilf Gallery) in Měděnec, which was open to the public for the first time between the years 1910 and 1944. At present there is a 300-metre long tour. The Promised Land Gallery is located on Copper Hill (on the hill called Mědník). The historic gallery offers well-preserved demonstrations of mining techniques used in the 16th century. http://stola-zeime-zaslibena-mednik-med.webnode.cz

The show gallery of Starý Martin is open to the public in the town of Krupka. The guided tour is approximately 1 km long. Visitors to this gallery can see the longest tin vein in central Europe. In the open space of the gallery grounds there is an open-air museum of historic and present-day mining techniques. http://www.krupka-mesto.cz

The Lehnschafter Gallery is situated in Mikulov. The 12-level mine work is nearly 250 metres deep and was largely excavated manually. http://www.speleo-agricola.wbs.cz/Prohlidkova-stola-Lehnschafter.html

The Mikulášská Gallery in the Hora Svaté Kateřiny (St. Catherine Mountain) was opened to the public between the year 1936 and 1938. Silver and copper were extracted here in the medieval times. http://www.horasvatekateriny.cz

The Jáchymov mine called Concord (Svornost) has been in operation since 1518 and has become the oldest mine in Europe. Since the beginning of uranium mining in the 19th century, when a heavy spring welled out in the depth of 500 m, the local spa has been supplied with curative radon water. Gallery No. 1, from which uranium ores were extracted from 1952 to 1953, has also become part of this mine and in 2008 it was opened to the public. http://www.omks.cz

Another cultural monument – the mining work called Mauritius – can be found in Hřebečná. At present the opening of the Kryštof Gallery is being prepared. It is one of the oldest galleries in this mining district, which can be confirmed by various tin mining techniques from the 16th to the 18th century. http://www.abertamy.eu
Touring Exhibition Guidebook
Fame of the Ore Mountains Mining

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