



Extractive Industries Transparency Initiative

**Germany**

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## Greeting and remarks from the D-EITI Special Representative, Elisabeth Winkelmeier-Becker

Ladies and gentlemen,

The German government has supported the Extractive Industries Transparency Initiative (EITI) since 2003 – and the EITI has since developed into the main transparency initiative in the global extractive sector. Building on this long-term support, we were able to report here last year on the decision to implement the EITI in Germany.

As the new EITI Special Representative of the Federal Government, it gives me great pleasure to tell you that Germany became a validated, full member of the EITI this year! I would like to thank all the members of the Multi-Stakeholder Group (MSG) from the executive, industry and civil society, who put a lot of effort into ensuring that the validation of Germany would already be successful with its first EITI report – this is a first in the history of the EITI. We also thank the companies in the extractive industry which participated in the voluntary reporting, and the cooperating administrations at federal and state level.

The first D-EITI report was a key element for validation. The approach taken by the MSG in its drawing up of the report was very well received within the international EITI family. Many partner countries particularly praised the topics that went beyond the mandatory requirements of the EITI standard. The current report ties in with this successful model by not only updating or concretising the special topics of the 1st D-EITI Report, but also by adding further topics that are relevant for the German extractive sector, such as recycling or social and employment issues. The report also contains the findings of an expert report commissioned by the MSG to ascertain the effects of the energy transition on the demand for natural resources.

The D-EITI will thus continue to live up to its claim of not only creating added value for the German extractive sector through innovative implementation, but also setting an example and pointing the way for the international discussion in the extractive sector. The comprehensive and comprehensibly-prepared transparency portal which was created in [www.rohstofftransparenz.de](http://www.rohstofftransparenz.de) and which provides information on the extractive sector has also proved successful in this respect.

In the future, the MSG will pursue its mission on the basis of the updated EITI standard adopted in June 2019, which includes obligations to disclose 'beneficial ownership'. While these requirements are met by the legal framework in Germany, MSG has set itself a number of other goals, such as informing the population about its work, discussing experiences from the implementation process in a federal state with other EITI partner countries, and contributing to the further development of the EITI standard. The 2nd D-EITI report is a solid foundation on which to continue the implementation of this ambitious programme. I look forward to working with all the members of the MSG to ensure that Germany contributes to more transparency in the global extractive sector.



Signed, Elisabeth Winkelmeier-Becker

Special Representative of the Federal Government for the implementation of EITI in Germany  
Parliamentary State Secretary to the Federal Minister of Economic Affairs and Energy

## Greeting and remarks from Matthias Wachter for the private sector

Ladies and gentlemen,

Transparency and sustainability are integral components of a modern raw materials policy. Requirements and obligations for the extractive and processing industry are continuously increasing. Our companies are already mining raw materials in Germany in accordance with the highest environmental, social and safety standards in the world. Corruption does not exist in the German extractive sector. However, the German extractive industry is actively involved in the Extractive Industries Transparency Initiative (EITI). This commitment should serve as an example for other resource-rich countries and encourage them to join the initiative.

This is why we have always advocated German EITI membership and have played a constructive role in its implementation from the outset. 52 countries and all major extractive companies meanwhile participate in the initiative. EITI's voluntary multi-stakeholder approach has proven to be a key success factor in this respect.

We have always valued the German Multi-Stakeholder Group (MSG) as a platform for an objective debate on the extraction of natural resources. By ensuring that MSG has equal representation from government, industry and civil society, the EITI contributes to a broad social debate on the extraction of natural resources and to the German policy regarding such resources. The process thus makes an important contribution to objectifying the discussion. One major joint success of the MSG is the validation of the first report. The fact that Germany has now become a full member of the EITI sends a clear and important signal to other industrialised countries.

It was important for us to avoid double burdens for companies caused by D-EITI. This has been achieved through the close link with the Accounting Directive Implementation Law (BilRUG). This pragmatic solution leads to a high data quality standard for payment reconciliation, and also limits the amount of effort and expenditure for the reporting companies.

I would like to take this opportunity to express my special thanks to all the companies that have participated in EITI and voluntarily waived their tax secrecy to do so. The very high degree of coverage, in some cases over 90%, shows how great the willingness for transparency is among the extractive companies. I would also like to thank all the participants from the private sector, the government and civil society for their constructive and objective cooperation in the Multi-Stakeholder Group. I am very much looking forward to the further exchange of information.



Matthias Wachter

Head of the Security and Raw Materials Department  
Bundesverband der Deutschen Industrie e.V. (Federation of German Industries)

## Greeting and remarks from Jürgen Maier for the civil society

Ladies and gentlemen,

The international Extractive Industries Transparency Initiative (EITI) has its origins in the fight against corruption in resource-rich developing countries. It is obvious that we can only expect such countries to participate in this initiative if we do so ourselves. It was therefore only logical for Germany to join the EITI. Following the submission of the first report in 2017, Germany had already fulfilled all the key requirements of the international EITI standard, which proves that the Multi-Stakeholder Group (MSG) of the German EITI process had done a good job.

It was no surprise that the payment reconciliation in the first report made it clear that the payments made by the extractive industries to government agencies had also been received in full. However, the report is more than just the payment reconciliation. The presentation of the context in which natural resources are mined and used in Germany constitutes the actual informative added value of the German report.

It is a comprehensive collection of facts, which makes an important contribution to comprehension for both the national and international public – and all the more so since natural resources extraction and the associated policy are generally the subject of controversial discussions.

With the second report, business, government and civil society have now made another joint presentation of this topic available, but this time supplemented by new aspects such as the recycling of natural resources and the social factors involved in their extraction. All the groups involved have presented their various points of view and interests and ultimately consolidated them. For this I would also like to thank all those involved on behalf of the civil society. Despite all the differences, it is nevertheless gratifying that in the oft-invoked ‘post-factual age’ it is possible to present facts together, even if they are evaluated differently. This also makes an important contribution to a social debate about the costs and benefits of the extraction of natural resources that is based on hard facts. Transparency is the prerequisite for an informed discussion and for advancing the necessary steps from natural resources consumption to the sustainable use of natural resources.

The EITI process has already advanced transparency in the German extractive sector and the German natural resources policy. I hope that the German EITI process will continue along this path, because the German economy is facing a structural change in the natural resources sector, which could easily lead to structural breakdowns without the highest possible level of transparency. Climate neutrality can only be achieved by phasing out the use of fossil fuels. The progressive digitalisation in the industry will also bring about far-reaching changes. However, this will also lead to significant increase in the demand for other natural resources such as lithium and rare earths. The reusability of these metals will also have an impact on product design.

The second report shows that the multi-stakeholder group of the German EITI process is addressing these issues, making this report relevant to the social and political debate. I would be delighted if the German EITI process can continue to achieve this in the future, because the topics covered in this report are likely to become even more important in the future.



Jürgen Maier

Managing Director,  
Forum Umwelt und Entwicklung (Forum on Environment and Development)

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# LIST OF ABBREVIATIONS

AGG	Allgemeines Gleichbehandlungsgesetz (Equal Treatment Act)
AO	Abgabenordnung (Fiscal code)
APG	Anpassungsgeld (Adaption payment)
BBergG	Bundesberggesetz (Federal Mining Act)
bbs	German Building Materials Association – Quarried natural resources
BilRUG	Bilanzrichtlinie-Umsetzungsgesetz (German Accounting Directive Implementation Act)
BMWi	Bundesministerium für Wirtschaft und Energie (Federal Ministry for Economic Affairs and Energy)
BNatSchG	Bundesnaturschutzgesetz (Federal Nature Conservation Act)
CSR	Corporate Social Responsibility
D-EITI	Deutschland Extractive Industries Transparency Initiative (German Extractive Industries Transparency Initiative)
Destatis	Statistisches Bundesamt (Federal Statistical Office)
DrittelbG	Drittelbeteiligungs-Gesetz von 2004 (One-Third Participation Act of 2004)
EITI	Extractive Industries Transparency Initiative
ElektroG	Elektro- und Elektronikgerätegesetz (Electrical and Electronic Equipment Act)
EnergieStG	Energiesteuergesetz (Energy Taxation Act)
EnSTransV	Verordnung zur Umsetzung unionsrechtlicher Veröffentlichungs-, Informations- und Transparenzpflichten im Energiesteuer- und Stromsteuergesetz (Ordinance for the implementation of transparency obligations in the Energy Tax and Electricity Tax Acts pursuant to the requirements of the European Union)
EnWG	Energiewirtschaftsgesetz (Energy Act)
GDP	Gross Domestic Product
GDR	German Democratic Republic
HGB	Handelsgesetzbuch (Commercial Code)
IG BCE	Industriegewerkschaft Bergbau, Chemie, Energie (Mining, Chemical and Energy Industrial Trade Union)
KrWG	Kreislaufwirtschaftsgesetz (Recycling Management Act)
LBP	Landschaftspflegerischer Begleitplan (Landscape Management Plan)
LNatSchG	Landesnaturschutzgesetz (State-level Nature Conservation Law)
MSG	Multi-Stakeholder Group
MontanMitbestG	Montanmitbestimmungsgesetz von 1951 (Coal and Steel Co-Determination Act of 1951)
MontanMitbestGErgG	Mitbestimmungsergänzungsgesetz von 1956 (Supplementary Co-Determination Act of 1956)
NABU	Naturschutzbund Deutschland (German Nature and Biodiversity Conservation Union)
NAP	National Action Plan
PublG	Gesetz über die Rechnungslegung von bestimmten Unternehmen und Konzernen – Publizitätsgesetz (Publicity Act – Act on the Accounting of Certain Companies and Groups)
RAG AG	RAG Aktiengesellschaft (RAG plc)
StromStG	Stromsteuergesetz (Electricity Taxation Act)
UVP	Umweltverträglichkeitsprüfung (Environmental Impact Assessment)
UVP-Bergbau	Umweltverträglichkeitsprüfung bergbaulicher Vorhaben (Environmental Impact Assessment of Mining Projects)
WRRL	Wasserrahmenrichtlinie (EU Water Framework Directive)

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# 1

## INTRODUCTION



The 'Extractive Industries Transparency Initiative – EITI' is a global standard the aim of which is to achieve more financial transparency and accountability in the recording and disclosure of revenue generated by the extractive industry. Through their implementation of the voluntary initiative of the EITI standard, more than 50 countries around the world are meanwhile contributing to the fight against corruption and mismanagement, and to the promotion of good governance in this important economic sector.

In order to implement the EITI standard in Germany, a national Multi-Stakeholder Group (MSG) consisting of representatives from the government, companies and civil society was established at the beginning of 2015. The MSG is responsible for implementing the initiative and preparing the EITI reports, which are published annually in accordance with the EITI standard.

The German EITI report is intended to give citizens the opportunity to obtain comprehensive information about the extractive industry in Germany. The report contains extensive contextual information about the German natural resources extractive sector, e.g. about the legal and tax conditions involved in the extraction of natural resources and important data about the sector. The members of the MSG compiled and updated this information for the respective reporting year.

The information is supplemented by various D-EITI special topics. Special topics are those which go beyond the mandatory requirements of the international EITI standard and which were included on the basis of a decision made by the MSG. The first report already contained information on subsidies, tax concessions, renewable energies and dealing with interventions in nature, including the topics of making provisions, implementation securities and water. For this second report, the topics of renewable energies

and dealing with interventions in nature have been revised and supplemented by the new topics of recycling, employment and social affairs.

The reports also contain a reconciliation of the payments made by extractive companies to government agencies, with the corresponding incoming payments in the financial administration. This payment reconciliation is carried out by the Independent Administrator appointed by the MSG.

The Independent Administrator also has the task of clarifying discrepancies that occur and making relevant recommendations. Companies participate in the reporting on a voluntary basis.

This second D-EITI report for the reporting year 2017 was prepared by the German MSG in cooperation with the Independent Administrator, the auditing company Warth & Klein Grant Thornton AG Wirtschaftsprüfungsgesellschaft of Düsseldorf. The report was published on December 23, 2019 and sent to the International Secretariat of the EITI.

All the information and data here can also be found online on the D-EITI report portal at [www.rohstoff-transparenz.de](http://www.rohstoff-transparenz.de)

Information about the D-EITI process and the Multi-Stakeholder Group of the D-EITI can be found at [www.d-eiti.de](http://www.d-eiti.de)

### MSG objectives for D-EITI:

We, the Multi-Stakeholder Group, commit to the principles set forth in the EITI Standard 2019 by setting ourselves the following objectives with respect to EITI implementation in Germany in which we undertake to:

1. Produce timely reports that are understandable and accessible to the general public and based on a transparent, open and innovative EITI process in Germany; and
2. Process contextual information concerning the German extractive sector, with a view to promoting a broad debate on resource policy that includes aspects of (economic, environmental, and social) sustainability; and
3. Achieve an understandable, commensurate and increasingly comprehensive reporting to the general public in compliance with the EITI Standard and in harmony with the EU Accounting and Transparency Directives. Concomitantly, additional value shall be generated; and
4. Contribute to the further development of the EITI Standard and its implementation and acceptance as a de-facto global standard, to support the global striving for transparency and accountability as well as the fight against corruption in the extractive sector; and
5. Share experiences from the multi-stakeholder process, in particular with respect to participatory democracy, citizen engagement and knowledge transfer, and also with regard to EITI implementation in a federal state; and
6. Substantially enhance Germany's credibility as regards its political and financial support for EITI; and
7. Ensure the ongoing implementation of the D-EITI with the intended multi-stakeholder model while building capacity for broad-scale public debate.

# 2

## THE EXTRACTIVE INDUSTRY IN GERMANY



## a. The sectors of the extractive industry in Germany

### i. Crude oil

#### History

Crude oil has been industrially extracted in Germany for more than 150 years. The successful oil well in Wietze near Celle in 1858/59 is generally recognised as being one of the first in the world. Crude oil production in Germany peaked in 1968 with an annual production of around 8 million tonnes. Annual production in 2017 amounted to 2.2 million tonnes. Proven and potential crude oil reserves in Germany were estimated to be around 31.8 million tonnes as of January 1, 2017.

#### Economic importance

In 2017, current domestic oil production amounted to around 2% of Germany's annual consumption. The value of crude oil produced in 2017 was estimated at €778 million. In terms of economic significance, crude oil thus ranked third behind natural gas and lignite in the list of fossil energy raw materials produced in Germany. In a 2017 international comparison of crude oil-producing countries, Germany was in 56th place (1970: 26th place). At the end of 2017, 8,385 persons were employed in oil and gas production in Germany<sup>1</sup>.

#### Extraction

In 2017, as in the previous year, 50 oil fields were in production in Germany. These fields extract oil by means of some 1,000 production wells in drilling installations (onshore) and production platforms (offshore). In 2017, the oilfields of Schleswig-Holstein and Lower Saxony yielded almost 91% of the total German production. The remaining production was mainly produced in the Rhineland-Palatinate as well as Bavaria, together with very low production levels in Hamburg, Brandenburg and Mecklenburg-Western Pomerania. The largest German crude oil field is the Mittelplate/Dieksand in the Schleswig-Holstein Wadden Sea (Wattenmeer) National Park. It has been

developed since 1987 by a drilling and production island and by oil well facilities on the mainland. This oilfield accounted for more than half of Germany's total crude oil production in 2017.

#### Uses

Crude oil is a fossil energy source. It is primarily used as a fuel for vehicular transportation and to heat buildings. Crude oil is also used in the chemical industry for e.g. the manufacture of plastics.

#### Interesting facts

- Germany covered about 2% of its crude oil demand with domestic production in 2017.
- In 2017, the Mittelplate/Dieksand oil field in the Wadden Sea contained approx. 13 million tonnes, almost half of Germany's recoverable oil reserves.
- Crude oil is created by huge deposits of plankton.
- On average, crude oil deposits are found at a depth of around 1.5 km. Technical progress, however, has made it possible to open up oilfields at a depth of 5 km and more.
- More than 22,000 drilling operations have been carried out since crude oil and natural gas production began in Germany.

### ii. Natural gas

#### History

In 1910, natural gas was found in Neuengamme (which is a district of Hamburg today) when drilling for water. The industrial production of natural gas started in 1913. However, natural gas production in Germany remained minimal until the end of the 1960s, with only a 1% share of the primary energy consumption in Germany (West). The oil crises of the 1970s focused increased attention on the consumption of energy and the need for the development of energy sources. Domestic production grew with the discovery of large gas deposits on the German-Dutch border and the increasing conversion of town and coke-oven gas to natural gas. This was accompanied

<sup>1</sup> BVEG 2018



by a steady expansion of the gas infrastructure (from 12 to 20 billion m<sup>3</sup>(Vn) of raw gas between 1970 and 2005). In 2005, domestic natural gas production covered up to 25% of German natural gas consumption. Since then, however, production has declined. In 2017, it amounted to around 7.9 billion m<sup>3</sup>(Vn) of raw gas, covering only about 7% of domestic natural gas consumption. The safe and probable reserves of natural gas are also declining. These levels amounted to around 63 billion m<sup>3</sup>(Vn) at the end of 2017. This means that the static range of the German natural gas reserves totalled 8 years. The decline in natural gas reserves and production is mainly due to the increasing depletion of the large deposits and the resulting natural decline in extraction. There have been no significant new discoveries in recent years. A legislative process lasting several years was also responsible for the decline in reserves; during this process, the topics discussed included future requirements for the use of fracking technology, which led to new legislation in 2016.

### Economic importance

Germany ranked number 46 in the comparison of all natural gas-producing countries in 2017. The country's share of global gas production amounted to approx. 0.2% in 2017. Natural gas is of relatively significant economic importance in relation to other extracted natural resources such as lignite. The value of the natural gas extracted in 2017 amounted to an estimated €1.43 billion. Natural gas accounted for around 12% of the total value of natural resources produced in Germany in 2017. At the end of 2017, 3,384 persons were employed in oil and gas production in Germany.<sup>2</sup>

### Extraction

95% of German natural gas was extracted in Lower Saxony in 2017. Other federal states (Saxony-Anhalt, Schleswig-Holstein, Thuringia and Bavaria) contributed only marginally to the total production. 449 production wells extracted the natural gas on 77 gas fields. The A6/B4 gas field in the 'Entenschnabel' (duckbill) – an economic zone in the German Bight (North Sea) – is

the only German offshore gas field. Like crude oil, natural gas occurs in underground deposits. Similar to the exploration of crude oil, the exploration of natural gas takes place primarily through seismic surveys and exploration drilling. Gas extraction takes place through a borehole stabilised with cement and steel and a riser pipe is then inserted through the hole.

### Uses

As a fossil energy source, natural gas is mainly used to heat residential and commercial premises, to supply heat for thermal processes in trade and industry (e.g. in large bakeries, brick factories, cement factories, foundries and smelters) and to generate electrical power; it is used as fuel for ships and motor vehicles. Natural gas also has many other significant uses – as a reactant in chemical processes (e.g. for ammonia synthesis in the Haber-Bosch process (nitrogen fertilizer)), for iron ore reduction in the blast furnace process and in the production of hydrogen.

### Interesting facts

- In contrast to coal and oil, natural gas has only been used as an energy source relatively recently.
- Germany has an active offshore gas field in the German Bight. Natural gas is extracted on this one-hectare operating facility and supplied to some 15,000 households.
- Natural gas has been extracted from gas fields in Germany for the past 100 years.
- 7% of the demand for natural gas in Germany was covered by domestic production in 2017. 95% of the natural gas was extracted in Lower Saxony.

<sup>2</sup> This data contains only employment figures for companies subject to mining law.

### iii. Hard coal

#### History

The hard coal industry in Germany gained in economic importance during the industrial revolution of the 19th and 20th centuries. Production increased steadily, reaching an annual peak of more than 200 million tonnes at the beginning of the Second World War. After WW2, German hard coal was used in the electricity, steel and heat supply industries. In the mid-1950s, more than 600,000 employees in 170 mines extracted 150 million tonnes of hard coal every year. This situation changed at the end of the 1950s. German hard coal could no longer compete efficiently in the world market since its extraction was (and is) carried out exclusively through underground mining. Even today it still needs subsidies from public authorities. In recent decades, imported coal and, above all, cheaper crude oil have replaced domestic hard coal.

The current situation of the German coal industry is the result of a continuous adaptation process. This started with the founding of the Ruhrkohle AG – a merger of 51 Ruhr area mines – in 1969.

#### Outlook

On February 7, 2007, the German Federal Government, the states of North Rhine-Westphalia and Saarland, the RAG AG and the Mining, Chemical and Energy Industrial Union (IG BCE) agreed to end the subsidised production of hard coal in Germany at the end of 2018 in a socially-acceptable manner. The phase-out process is governed by the 'socially acceptable phasing-out of subsidised hard coal mining in Germany' framework agreement of August 14, 2007 and by the German Hard Coal Financing Act, which came into force in December 2007. For more on this, please refer to Chapter 7 on state subsidies and tax concessions.

#### Economic importance

In 2017, hard coal in Germany covered 10.9% of primary energy consumption and contributed 14.1% to German electricity generation. In 2017, power stations accounted for roughly 61% of the total

consumption of hard coal, the steel industry accounted for 36% while other producing industries, the domestic heating sector and small consumers accounted for some 3%. 3.7 million tonnes of German hard coal were extracted in 2017, equivalent to a value of some €337 million. In 2017, 5,711 hard coal industry personnel were currently employed in Germany's only two remaining hard coal mines in Bottrop and Ibbenbüren. In view of this development, imports in 2017 covered around 93% of the demand for hard coal and hard coal products (50.3 million tonnes).

#### Interesting facts

- The subsidised hard coal mining industry in Germany ended on December 31, 2018 with the closure of the last remaining mines in Bottrop and Ibbenbüren.
- The termination will be carried out in a socially acceptable manner and on a legal basis.
- With approx. 3.7 million tonnes extracted in 2017, German hard coal covered around 7% of the German requirements.
- Around 93% of the required hard coal is imported, mainly from Russia, Colombia, the USA and Australia.
- In an international comparison, German hard coal mining is characterised by difficult geological conditions (extreme mining depths, thin seams, high rock pressure) and an extensive, subterranean infrastructure.

## iv. Lignite

### History

As early as the 17th century in Germany, lignite was being produced as a replacement fuel for wood, which was becoming increasingly scarce. With increasing industrialisation and the development of new deposits, the 19th century saw an increase in lignite production from 170,000 tonnes in 1840 to 40 million tonnes in 1900. This trend continued unabated in the 20th century until production reached an all-time peak in 1985 with 433 million tonnes produced that year. Much of this increase in overall German lignite production was attributable to the East German lignite coalfields. After the East/West German reunification, lignite production in East German lignite coalfields declined by 67% between 1989 and 1994, caused mainly by a change in the energy source mix. Total German production fell from 410 million tonnes to 207 million tonnes during this period.

### Extraction

Lignite is mainly extracted in three areas – the Rhenish, Lausitz and Central German regions, where mining is only carried out in opencast mines close to the surface. Annual production in 2017 amounted to approximately 171.3 million tonnes and has largely remained constant in recent years. The value of the brown coal (lignite) subsidised in Germany in 2017 amounted to €2.3 billion. This means that lignite is the most important natural resource in Germany, in terms of the value of production. With the decline in lignite production in the wake of German reunification, the number of persons directly employed in lignite mining fell from 130,000 in 1990 to 20,891 in 2017.

### Uses

Around 90% of the lignite Germany produces is used to generate electricity and district heating. The economic advantages in using lignite result from the combination of the opencast mine and power plant being near the location of the lignite deposits. Around 10% of the lignite produced is refined into solid or pulverised fuels for commercial use and private households (e.g. brown coal briquettes, pulverised

lignite, fluidised bed lignite and lignite coke). In 2017, lignite accounted for 11.1% of the primary energy consumption and contributed to 22.5% of electricity generation. The domestic production of lignite covers the country's annual consumption.

### Interesting facts

- With production at around 171.3 million tonnes in 2017, lignite accounted for almost 11.1% of primary energy production in Germany.
- Lignite accounted for around 22.5% of gross electricity generation in 2017.
- Lignite is currently mined in 10 active open-cast mining sites on 3 lignite coalfields. The Rhineland is the largest brown coal region in Europe and Germany is the world's largest producer of lignite.
- Germany covers 100% of its lignite requirements from its domestic reserves.
- Recultivation and compensation for land required for mining are important issues for the German lignite mining industry.

## v. Salts

### History

In addition to the mineral natural resources described in the following section (vi. Other industrial minerals), salts are industrial minerals. Industrial minerals are mineral rocks that can be immediately used in industry due to their special chemical and physical properties, i.e. without any substance conversion. A distinction is made between rock salt, potash salts and magnesium salts.

Germany has large salt deposits, which are mainly concentrated in northern Germany. Over millions of years, deposits of salts resulted in several 100m-thick layers. Bavarian and Austrian Alps salt is of a similar age and has been extracted for thousands of years.

The commissioning of the first potash plant in the world in Staßfurt in 1861 founded the almost 150-year tradition of German potash mining. The

extraction of salt by solubilisation, i.e. by making it soluble using water injected via boreholes, or by mining in salt mines, has a long history. People were digging for salt in the Berchtesgaden area as early as the 12th century. In the 16th century a salt mine was built there which is still in operation today.

### Economic importance

In 2017, the amount produced in Germany was approximately 14.6 million tonnes of rock salt (including industrial brine) and some 6.7 million tonnes of potash and potash salt products. With a total production of approx. 5%, Germany was the fourth largest producer of salt in the world in 2017, after China, the USA and India, and also the fifth largest potash producer with around 7% of the world's total production.

In 2017, a total of 8,260 persons were directly employed in potash mining in Germany and a further 2,434 in salt mining.

### Extraction

Extraction takes place in Germany in six potash mines (in Hesse, Lower Saxony, Saxony-Anhalt and Thuringia), seven salt mines (in Baden-Wuerttemberg, Bavaria, Lower Saxony, North Rhine-Westphalia, Saxony-Anhalt and Thuringia), seven salt works (in Baden-Wuerttemberg, Bavaria, Mecklenburg-Western Pomerania, Lower Saxony and North Rhine-Westphalia) and ten solubilisation facilities (in North Rhine-Westphalia, Schleswig-Holstein, Lower Saxony and Saxony-Anhalt). Salt mining is carried out in the mines by means of drilling, blasting or cutting techniques or by brining out underground deposits. Brining out is done by introducing freshwater or half-brine into the salt deposits through borehole probes, after which the salts dissolve. The brine is then pumped through a probe and processed above ground in salt works, where it eventually becomes salt (and other by-products).

### Uses

Rock salt and evaporated salt is used as commercial and industrial salt – we also use it on our food and for de-icing purposes. Salt is an indispensable natural resource for the chemical industry, e.g. in the production of soda, chlorine and caustic soda. Glass, plastic and aluminium could not be produced without salt. It is used as regenerating salt in water softening plants, in the feed industry, in road services, for snow clearing and in the food industry. Sodium chloride meets particularly high purity requirements as an active pharmaceutical ingredient.

### Interesting facts

- Salt has been actively extracted by humans for over 5000 years.
- The importance of salt for many cities is often reflected in their names.
- If saline sources were discovered in a town, the syllable 'Bad' (spa) was added to the town's name. This ushered in the birth of today's spas.
- In the mid-19th century, Justus von Liebig discovered the importance of potassium as an essential plant nutrient.
- When miners coincidentally discovered the world's first known potash deposit while searching for rock salt near Staßfurt in 1856, the first potash mines and works were subsequently established in Germany around 1860.
- In the high-medieval period, the brine pipeline relocated from the Reichenhall mine to Traunstein was one of the first pipelines for natural resources in the world.
- The Werra potash mine is the largest underground mining area in Germany.

The potash crude salts extracted by mining are mainly used in agriculture as fertilisers. However, they are also used as industrial salts in electrolysis and other industrial processes – and there is a demand for these salts in highly-purified form for the food and feed industries and for pharmaceutical purposes.

## vi. Quarried natural resources

Quarried natural resources comprise a great number of mineral deposits, in particular gravel and sands, broken natural stone, lime, marl and dolomite stones, gypsum and anhydrite stones, as well as clays and loams. Quarried natural resources are bulk raw materials; due to geological conditions, they are site-bound and not distributed evenly across the country.

### History

Quarrying has been handed down since the beginning of human history. According to scientific findings, the oldest known 'stones from human hands' originate from the 9th to the 8th century B.C., taken from ground fortifications in the Middle East. The extraction of quarried natural resources also has a very long tradition in Germany. In the past, these raw materials were mainly extracted by hand, but companies today use modern technology. Geophysics, GPS, intelligent machine and plant control and largely automated processes control the extraction of these natural resources.

### Extraction

Every year, the building materials and quarrying industry extracts roughly 550 million tonnes of primary raw materials or uses these materials in production. In 2017, gravel and sands, with around 257 million tonnes, and broken natural stone with some 220 million tonnes were among the most important raw materials in the German extractive industry. The building materials and quarrying industry (earth and stone) in Germany comprises some 1,600 companies operating approximately 3,100 extraction facilities.

### Outlook Gypsum

The expansion of renewable energies in the course of the energy transition is linked to the reduction and future phase-out of coal-fired power generation. This has major implications for the gypsum industry, which largely manufactures its products on the basis of FGD gypsum from coal-fired power plants. FGD gypsum is produced as a by-product in the flue gas desulphurisation plants (FGD) of coal-fired power stations or power stations that are operated with fossil fuels.

Due to the reduction or phase-out of coal-fired power generation, the demand for gypsum must therefore in future be covered by other means, for example by the extraction of natural gypsum or by gypsum recycling.

### Uses

Around 80% of the quarried natural resources is supplied to the building industry and around 20% is used in the chemical, steel or glass industries. In addition to the extracted primary earth and stone, almost 100 million tonnes of secondary raw materials (mineral construction waste and by-products from industrial processes) are used in the building industry every year. These result from e.g. the demolition of buildings, the production of pig iron (blast furnace slag) or from electricity generation in conventional power stations (FGD gypsum, see outlook for gypsum; fly ash). The use of secondary raw materials contributes to the substitution of primary natural sources. The substitution rate is around 15%.

### Interesting facts

- Every year, the building materials and quarrying industry extracts roughly 550 million tonnes of primary raw materials or uses these materials in production. In addition, almost 100 million tonnes of secondary raw materials are used every year in the production of building materials to conserve resources.
- Quarried natural resources include a variety of mineral deposits; gravel, sand and natural stone account for the largest proportion of the extracted materials in terms of volume.
- Around 80% of the quarried materials are supplied to the building industry, while around 20% is used in the chemical, steel or glass industries.
- Quarried natural resources are needed for the manufacture of many products that we use in our daily lives. Stone powder, for example, is the basic ingredient of toothpaste.
- Statistically, each one of us needs 1 kg of plaster, stone dust, sand, gravel or natural stones per hour.

## vii. Other natural resources

### Industrial minerals

#### History

Industrial minerals are mineral rocks that can be immediately used in industry due to their special chemical and physical properties, i.e. without any substance conversion. In addition to the salts already mentioned, this group includes kaolin (also called china clay or porcelain earth), quartz sand, quartzite, feldspar, sticky sand, bentonite, special clay, silicas, fluorite and barite.

Industrial minerals have been extracted in Germany for hundreds of years in very diverse quantities. Apart from salts, the two most important industrial minerals in Germany in terms of volume are quartz sand/gravel and special clay with production volumes of

around 10.3 million tonnes and about 6 million tonnes respectively in 2017.

#### Extraction

The extraction of industrial minerals in Germany is extremely regional in structure, due to natural conditions. While, for example, china clay and silica are mainly extracted in Bavaria, the extraction of special clay is mainly concentrated in Rhineland-Palatinate and Hesse.

Apart from salts, industrial minerals in Germany are mainly mined above ground by small and medium-sized enterprises. In contrast, fluorite and barite are also mined underground. In 2014, Germany boasted a total of 627 active production sites, around half of which were dedicated solely to the extraction of quartz and quartz sands.

#### Uses

Due to their chemical and physical properties, industrial minerals are mainly used in the paper, chemical, glass, ceramic, refractory, foundry and steel industries. However, the pharmaceutical industry, environmental management (exhaust gas purification, wastewater treatment plants, solar panel and wind turbine plants) and the automotive industry also use industrial minerals.

### Iron ore

In Germany, iron ore is mined in North Rhine-Westphalia and Saxony. The iron ore extracted here is not smelted into iron, however; it is used mostly in the form of crushed stone, chippings and brittle sands as a coloured and iron-rich aggregate for the concrete or cement industry.

## b. Natural resources extraction totals

A wide range of different mineral resources and energy resources is mined in Germany. The following tables

list the natural resources extracted in Germany by quantities and estimated value in 2017.

**Table 1:** Extraction of natural resources in Germany in 2017 (quantities)

Natural resource	Quantity (2017)
Hard coal*	3.7 million tonnes <sup>I</sup>
Lignite	171.3 million tonnes <sup>I</sup>
Crude oil	2.2 million tonnes <sup>II</sup>
Natural gas**	7.9 million m <sup>3</sup> <sup>II</sup>
Potash salt	35.97 million tonnes
Potash and potash salt products	6.7 million tonnes <sup>III</sup>
Special clay	6.0 million tonnes <sup>III</sup>
Rock salt and industrial brine	14.6 million tonnes NaCl content <sup>III</sup>
China clay	1.1 million tonnes <sup>III</sup>
Quartz gravel and sand	10.3 million tonnes <sup>III</sup>
Gravel and sand	257.0 million tonnes <sup>III</sup>
Broken natural stone	220.0 million tonnes <sup>II</sup>
Ashlar	0.5 million tonnes <sup>III</sup>
Limestone/marlstone/dolomite	56.2 million tonnes <sup>III</sup>

\* Useable extracted output

\*\* incl. petroleum gas

I [SDK 2018], (Statistics of the coal industry), for detailed source reference, see final note<sup>I</sup>

II [LBEG 2018] (State Office for Mining, Energy and Geology), for detailed source reference see final note<sup>I</sup>

III [BGR 2018] (State Office for Mining, Energy and Geology), for detailed source reference see final note<sup>I</sup>

**Table 2:** Extraction of natural resources in Germany in 2017 (value)

Natural resource	Value (2017) in millions of €
Hard coal*	337 <sup>IV</sup>
Lignite	2,259 <sup>IV</sup>
Crude oil	778 <sup>IV</sup>
Natural gas**	1,425 <sup>IV</sup>
Potash salt	No information available <sup>V</sup>
Potash and potash salt products	1,726 <sup>IV</sup>
Special clay	141 <sup>IV</sup>
Rock salt and industrial brine	346 <sup>IV</sup>
China clay	84 <sup>IV</sup>
Quartz gravel and sand	219 <sup>IV</sup>
Gravel and sand	1,587 <sup>I</sup>
Broken natural stone	1,529 <sup>IV</sup>
Ashlar	39 <sup>IV</sup>
Limestone/marlstone/dolomite	822 <sup>IV</sup>

\* Useable extracted output

\*\* Including associated gas

<sup>IV</sup> [BGR 2018] (State Office for Mining, Energy and Geology), for detailed source reference see final note<sup>i</sup>

<sup>V</sup> These values can only be reported for potash and potash salt products.



# 3

## LEGAL FRAMEWORK FOR THE EXTRACTIVE INDUSTRY



## a. Who is responsible?

### Laws and the responsibilities of public authorities

The extraction of raw materials is regulated in Germany by the BBergG (German Federal Mining Act, hereinafter BBergG). In 1982, it replaced the old mining laws of the Federal States and the numerous ancillary mining laws of the Federal and state governments. The overall control of the mining law within the Federal Government is the responsibility of the Federal Ministry for Economic Affairs and Energy. The mining authorities of the Federal States (see Fig. 1) implement the Act and also bear the responsibility for the authorisation and supervision of mining activities (depending on the natural resources in question). The Federal States have passed some of their own mining regulations in order to meet the specific requirements and characteristics of their own regions.

Germany differentiates between three groups of natural resources in terms of their legal regulation (also see Fig. 2):

- **Free-to-mine natural resources** are not the property of the landowner. The exploration and extraction of these natural resources are subject to the BBergG (German Federal Mining Act) and must be approved by the mining authorities of the Federal States in a two-stage procedure: firstly, the granting of a mining license (public-law concession) and secondly, the site-specific approval of the operating plan procedure.

- **Privately-owned natural resources** are the property of the landowner and are subject to mining law (see §2(1), No. 1 BBergG. The prospecting and extraction of these mineral resources does not require any mining authorisation, but is subject to approval by the mining authorities of the Federal States.
- **Landowners' natural resources** are natural resources that are neither free-to-mine nor privately owned. They are the property of the landowner. However, they are not subject to mining law and the supervision of the mining authorities. The approval procedure for landowners' natural resources is carried out in accordance with the regulations of the Federal Immission Control Act, or in accordance with legal state regulations (e.g. excavation, water and construction laws).

Depending on the Federal state, the natural resource and the type of extraction involved, middle and lower-management levels of governmental bodies are responsible for the landowners' natural resources category.

**Figure 1: Competent public authorities in Germany**

 <b>Bundesministerium für Wirtschaft und Energie</b>		
<b>Baden-Wuerttemberg</b> Ministry for the Environment, Climate Protection and the Energy Sector  Freiburg Regional Council, State Office for Geology, Raw Materials and Mining	<b>Bavaria</b> Ministry for Economic Affairs, Region- al Development and Energy  Government of Upper Bavaria, Mining Office of Southern Bavaria, District Government of Upper Franconia, Mining Office of Northern Bavaria	<b>Berlin</b> Senate Administration for Economics Energy and Public Enterprises  State Office for Mining, Geology and Natural Resources, Brandenburg
<b>Brandenburg</b> Ministry for Economic Affairs and Energy  State Office for Mining, Geology and Natural Resources, Brandenburg	<b>Bremen</b> Senator for Economics, Labour and Europe  State Office for Mining, Energy and Geology	<b>Hamburg</b> Authority for Economic Affairs, Transport and Innovation  State Office for Mining, Energy and Geology
<b>Hesse</b> Ministry for Environment, Climate Protection, Agriculture and Consumer Protection  Regional Council of Darmstadt Department of Occupational Health and the Environment, Wiesbaden		<b>Mecklenburg-Western Pomerania</b> Ministry for Energy, Infrastructure and Digitalisation  Stralsund Mining Office
<b>Lower Saxony</b> Ministry for Economic Affairs, Labour, Transport and Digitalisation  State Office for Mining, Energy and Geology		<b>North Rhine-Westphalia</b> Ministry for Economic Affairs, Innovation, and Energy  Regional Government Arnsberg Department of Mining and Energy in North Rhine-Westphalia, Dortmund
<b>Rhineland-Palatinate</b> Ministry for Economic Affairs, Agriculture and Viticulture  State Office for Geology and Mining		<b>Saxony</b> State Ministry for Economic Affairs, Labour and Transport  Upper Mining Office
<b>Saxony-Anhalt</b> Ministry for Economic Affairs, Science and Digitalisation  State Office for Geology and Mining	<b>Saarland</b> Ministry for Economic Affairs, Labour, Energy and Transport  Upper Mining Office	<b>Schleswig-Holstein</b> Ministry of Energy, Agriculture, the Environment, Nature and Digitalization  State Office for Mining, Energy and Geology
		<b>Thuringia</b> Ministry of Environment, Energy and Nature Conservation  State Mining Office

**Figure 2:** Legal division of natural resources in Germany

Legal division	Free-to-mine natural resources (subject to mining law)	Privately-owned natural resources (subject to mining law)	Landowners' natural resources (not subject to mining law)
Subject-specific subdivision	<p><i>Energy resources:</i> coals, hydrocarbons, geothermal energy</p> <p><i>Industrial minerals:</i> fluorite, graphite, lithium, phosphorus, all salts that are readily soluble in water, sulphur, barite, strontium, zirconium</p> <p><i>Metal ores:</i> e.g. iron, copper, lead, zinc ores, etc.</p> <p><i>Also:</i> All natural resources in the area of the continental shelf and coastal waters (including gravel and natural stones)</p>	<p><i>Industrial minerals:</i> Bentonite and other montmorillonite clays, feldspar, mica, china clay, diatomaceous earth (diatomite), 'pegmatite sand', quartz (quartz sand and gravel) &amp; quartzite (if suitable for refractory products and ferrosilicon production), soapstone, talk and clay (if fireproof and acid-proof).</p> <p><i>Quarried natural resources:</i> basaltic lava (except columnar basalt), roofing slate, trass.</p> <p><i>Also:</i> all privately-owned natural resources, which have been extracted underground (incl. gypsum, natural stone, brick clays etc).</p>	<p><i>Quarried natural resources (in opencast mining):</i> Anhydrite, gypsum, limestone, basalt columns and other natural stones, gravel and sand, quartz and quartzite (if unsuitable for the manufacture of refractory products and ferrosilicon) and other natural resources not listed in this table</p> <p><i>Also:</i> peat</p>
Right of disposal over natural resources	These natural resources are 'free', viz., they do not belong to the landowner. Their exploitation requires mining rights and the permission of the mining authorities.	These mineral resources belong to the landowner. The landowner is entitled to use them.	
Type of legal regulation	Regulated pursuant to the BBergG (German Federal Mining Act) §3(3) §3(4)		Governed by other legal jurisdictions, e.g., Construction Law (Excavation Law). Water Resources Act or State Water Act. Federal Immission Control Act. Federal or State Nature Act

Own presentation. Based on the following source: State Geological Service of the Federal Republic of Germany, Securing of Raw Materials 2008.

[https://www.infogeo.de/Infogeo/DE/Downloads/rohstoffsicherung\\_2008.pdf?\\_\\_blob=publicationFile&v=2](https://www.infogeo.de/Infogeo/DE/Downloads/rohstoffsicherung_2008.pdf?__blob=publicationFile&v=2)

## b. How are mining projects approved?

The procedures for the approval and supervision of mining projects are not all equally regulated for all natural resources in Germany. They vary depending on the type of natural resource and its legal foundation in Federal and state governments.

**Figure 3:** Steps for the approval of mining projects according to the type of natural resources

Free-to-mine natural resources	Privately-owned natural resources	Landowners' natural resources
<b>Right to mine</b> must be granted by the responsible mining authority	<b>Proof of ownership</b> of the land, e.g. land leasing contract must be submitted to the mining authority.	<b>Proof of ownership</b> of the land e.g. land leasing contract must be available.
<b>Approval of the operating plan by the mining authority (approval of the main operating plans every two years)</b> An operation-relevant approval specifies the technical and legal environmental conditions under which natural resources can be explored and extracted.		Approval procedures as per the Federal Immission Control Act, the State's Excavation Laws, Building Laws or its Water Resources Legislation (in wet extraction) are carried out. The materials in question are mostly 'bulk materials' from the quarried natural resources sector.
<b>Supervision by the mining authorities of the Federal States</b> The extraction of free-to-mine and privately-owned natural resources is subject to supervision by the relevant mining authority (mining inspection authorities (mining authorities; §69(1) BBergG). In addition to awarding mining rights and granting operating plan approvals, the third core competence of the mining authorities is the supervision of mining operations.  According to the Federal Mining Act, mine inspectors may enter the mines, demand information, visit facilities and carry out tests – and they may also impose requirements in individual cases. The mining entrepreneurs also have obligations, e.g. to report incidents and accidents, to accept the actions of the mining inspection authorities and to accompany the mine inspectors on tours of the mines and mine buildings (inspections).		

## Mining rights

Mining rights constitute the basis for the exploration and extraction of free-to-mine natural resources. Applications are made in the form of a permit, a license or proprietary mining rights.

There are three different types of mining rights:

### Permit

The permit is a mining right which grants the right to carry out explorations for free-to-mine natural resources on a specific, permitted minesite. The permit is time-limited to a maximum of 5 years and may be extended for a further three years (see §16(4) BBergG). A legal entitlement to the granting of a permit exists, unless there are grounds for refusal. The permit may be refused if, for example, no work programme exists or the fixed time period is not taken into account in the planning. The grounds for refusal are fully itemised in §11 BBergG. If explorations have not started within one year, for reasons for which the permit holder is responsible, the permit will be revoked (§18 BBergG).

### Licence

The licence is a mining right which grants the right to carry out exploration operations for free-to-mine natural resources on a specific, licensed minesite. The licence defines ‘a reasonable period of time for the implementation of extraction in individual cases’. Fifty years may only be exceeded if this is necessary in view of the investment normally required for the extraction. A time extension is possible (see §16(5) BBergG). A legal entitlement to the granting of a license exists, unless there are grounds for refusal.

The licence may be refused if, for example, it cannot be proven that the resources can be extracted, due to their location and nature (see §12 BBergG). If extraction work has not started within three years, as a rule, the licence must be revoked (§18 BBergG). The grounds for refusal are fully itemised in §12 BBergG.

### Proprietary mining rights

Mining may be carried out under these rights. They include the licence with the possibility of eligibility as collateral with the relevant easements and mortgages. The licence expires when proprietary mining rights become valid. The proprietary mining rights details are entered in the Land Register, viz., the name and address of the applicant and details of the minesite. Proprietary mining rights define ‘a reasonable period of time for the implementation of extraction in individual cases’. Fifty years may only be exceeded if this is necessary in view of the investment normally required for the extraction. A time extension is possible (see §16(5) BBergG). If regular extraction of the natural resources is interrupted for more than 10 years, as a rule, the proprietary mining rights must be revoked (see §18 BBergG). To apply for proprietary mining rights, the applicant must already be in possession of a licence for the minesite in question. Proprietary mining rights may also be refused if, for example, evidence cannot be furnished that an economic extraction of the natural resources is to be expected (see §13 BBergG).

In compliance with §75 et seq. of the BBergG, mining authorisations and mining maps are created to document the mining rights. Information about licences, permits, proprietary mining rights and on the mine sites in question is available in these documents.

### Special case: Mining rights under the old laws

The various forms of mining rights described above (permit, licence and proprietary mining rights) are also supplemented by older legal mining rights, which are described as old rights. These are mining rights that were granted before the current Federal Mining Act of 1982 came into force, e.g. the lignite opencast mines in the Rhenish mining region. Under current law, these rights are still valid (see §149(1), sentence 1 BBergG) if they were shown to the relevant mining authority during a phase-out period of three years after the Mining Law of 1982 came into force and if they were confirmed by mining inspection authorities. In contrast to mining rights under the new BBergG, rights under the old laws are not time-limited and

neither extraction nor minesite royalties have to be paid. In practice, these old rights mainly apply to hard coal and lignite. An operating plan must be approved before these natural resources can be extracted under old law.

#### Special case: Unique features in the 'new' German Federal States

The mining rights system of the GDR only applied to the (communist) state-owned and other mineral resources. The state-owned natural resources mainly comprised free-to-mine and privately-owned resources and were the property of the communist state. Other natural resources primarily comprised landowners' natural resources and were allocated to the land ownership category. The Bestowal Regulation of August 15, 1990 created the foundation for the conversion of mining rights for state-owned natural resources into free-to-mine resources, which were subsequently recognised by the legal system of the reunited Germany. The transferred mining rights are deemed to be proprietary mining rights. Like the mining rights under old law, the transferred rights are not time-restricted and are also exempt from minesite and extraction royalties (see §149 and §151

BBergG). In contrast to the Federal States of the former West Germany, the validity of the old rights (see section on mining rights under the old laws) in the 'new' Federal States does not only extend until 1980, but also applies to deposits explored up to and including 1990. These rights also apply to both free-to-mine and privately-owned natural resources. Exploration and extraction rights for privately-owned natural resources were also governed by GDR laws on state-awarded mining rights.

**Figure 4:** Overview of old mining laws, mining laws in the GDR and modern mining laws

	Rights under the old mining laws (West Germany)	Rights under GDR mining laws	Rights under the modern mining laws
Description of natural resource	Free-to-mine natural resources	State-owned natural resources	Free-to-mine natural resources
Payment of minesite and extraction royalties	No	No	Decisions made at Federal state level
Time-limited	No	No	Yes (see notes on mining rights)

## Approval of an operating plan

Exploration, extraction and beneficiation operations may only be set up, managed and discontinued if they are based on an operating plan. These plans are drawn up by the prospective mine operator and approved by the responsible authority. The approval of such operational plans is tied to conditions (conditions of approval). These conditions address operational and work safety, the protection of the surface area, the prevention of harmful impacts, the protection of the deposits and the preventive measures regarding the proper restoration of the areas affected by the extraction of the natural resources. For further information see Chapter 6 Managing human intervention in nature.

Operating plans basically include the following:

- A presentation of the scope of the project
- A presentation of the technical implementation of the project
- The duration of the project
- Evidence that the conditions of approval have been met.

The operation of a mine is dynamic in nature due to the mine's continuous adaptation to the deposit's characteristics. This mode of operation also entails specific risks for employees and third parties. Due to these conditions, continuous monitoring of the operation is necessary, at specified intervals. The main operating plan should generally not exceed a period of two years and should be approved by the mining authority. Constant coordination between the entrepreneur and the mining inspection authorities is required to ensure both intensive state control of the mining operations and planning flexibility.

In principle, the conditions under which natural resources are extracted in Germany are not directly negotiated between the extractive companies and the government agencies. The conditions for the exploration and extraction of natural resources are generally validated by law and implemented by the respective competent authorities.

In addition to the approval procedures, contractual agreements between companies and government agencies are occasionally concluded. However, as explained above, such cases do not represent the rule but the exception. Where private-law agreements are relevant for extractive companies in Germany, they are listed and explained in the payment reconciliation (Chapter 11).

## Environmental impact assessment

As with other projects with environmental impacts, environmental impact assessments are also required for projects under mining law. Under the conditions laid down in the Ordinance on the Environmental Impact Assessment of Mining Projects (UVP-V Bergbau), an environmental impact assessment (UVP) or a preliminary examination of the individual mining law case is necessary. As a rule, the UVP obligation for mining projects depends on the size of the project, measured by extracted volumes or the required excavation area. An example of this can be seen in the following table. In addition, all mining projects are subject to UVP if they appear on the list of UVP projects subject to UVP under the UVP Act.



**Figure 5:** Overview of mining projects subject to UVP or a preliminary UVP (not an exhaustive enumeration)

	Compulsory UVP	Compulsory preliminary UVP
<b>Civil engineering</b> <ul style="list-style-type: none"> <li>• Operating parts of a mine that are above ground, from 10 ha upwards</li> <li>• Surface subsidence from 3 m</li> <li>• Surface subsidence from 1–3 m</li> </ul>	X X	X
<b>Opencast mining</b> <ul style="list-style-type: none"> <li>• Mining area from 25 ha</li> <li>• Mining area from 10 ha to 25 ha</li> <li>• in nature protection and Natura 2000 areas</li> <li>• with watercourse development (creation, disposal or substantial redesigning)</li> <li>• large-scale groundwater lowering with abstraction or replenishment from 5 million m<sup>3</sup>/a</li> </ul>	X  X X X	 X  X
<b>Crude oil and natural gas</b> <ul style="list-style-type: none"> <li>• Production volume from 500 t/d crude oil or from 500,000 m<sup>3</sup>/d natural gas</li> <li>• smaller production volumes</li> <li>• with crushing of rock under hydraulic pressure</li> <li>• in coastal waters and the continental shelf</li> </ul>	X  X X	 X
<b>Waste dumps</b> <ul style="list-style-type: none"> <li>• from 10 ha</li> </ul>	X	

If an UVP is necessary, a planning approval procedure must be carried out in accordance with mining law. This procedure includes the affected population by making the plans for the extraction of mineral resources accessible to the affected population so that objections can be submitted. The authorities concerned then address the objections and a public hearing is held, with the participation of all official bodies and persons who have expressed objections. A decision on

the objections is made by the competent authority (in this case the mining authorities), and adopted as an administrative act. The planning approval procedure under mining law is also a bound decision, one which is not characterised by planning considerations and discretion. In addition, it not only binds the decisions of other authorities at the horizontal level, it also applies to the following operating plans (vertical concentration) as per §57a(5) BBergG.

## c. Where can information about granted licences be found?

### i. Register of licences

#### Legal base

In Germany, the Federal State in question only grants the right to explore and extract free-to-mine natural resources. The right of disposal over a free-to-mine natural resource is designated as the right to mine, which can be requested from the mining authorities of the Federal States (see Chapter 3.b.).

Pursuant to §75 of the BBergG (German Federal Mining Act), the mining authorities keep mining authorisation books and mining maps, in which newly-granted mining rights are entered (pursuant to the BBergG) or 'Old Rights and Contracts' are maintained pursuant to §149 of the BBergG.

Public inspection of these books and maps was initiated within the framework of the implementation of the D-EITI. Since July 21, 2017 and pursuant to §76(3) of the BBergG, the following information on granted and maintained mining rights can be viewed upon application to the mining authorities, (without evidence of a legitimate interest):

- Owner
- Extraction sites to which the mining right refers
- Date of the application and granting of the right
- Term
- Natural resource(s) to which the mining right refers

Permits and authorisations for mining exploration can also be inspected as a result of the legal amendment (see also explanation of mining rights in Chapter 3.b.).

The competent authorities may also make this information directly accessible to the public, and this has already been taking place for some time now in many federal states. In this way, several federal states pub-

lish a transparent online licence cadastre (i.e. land registration). Other Federal States are also planning to set up similar systems.

All hydrocarbon-segment mining licences in Germany can also be viewed in the annual publication 'Erdöl und Erdgas in der Bundesrepublik Deutschland' (Crude oil and natural gas in the Federal Republic of Germany).

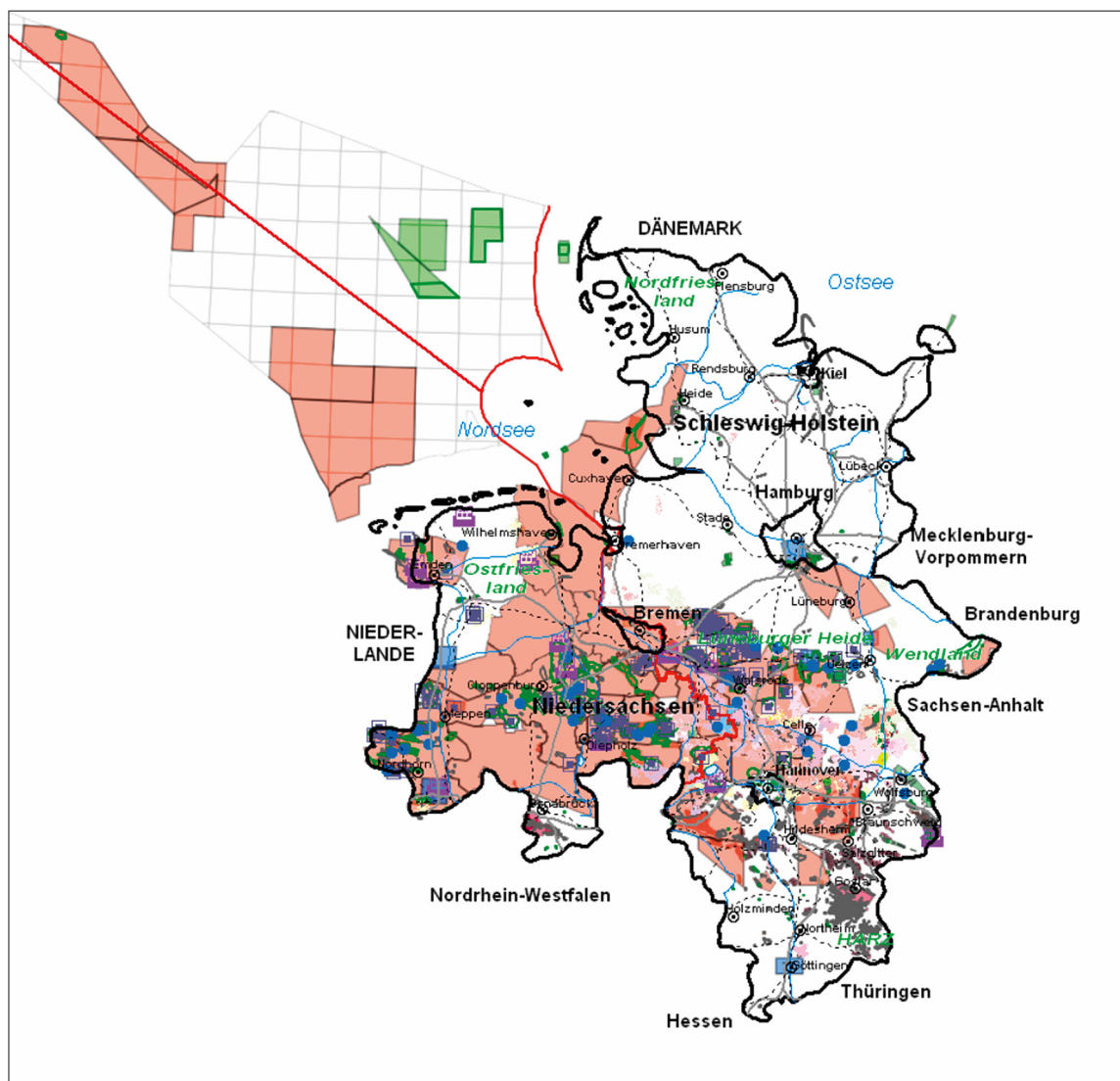
You can find an overview of all mining rights at <http://www.rohstofftransparenz.de/downloads/#daten-bergbau-berechtigungen>

#### Example of an online system: the NIBIS (Lower Saxony Educational Server) map server

One good example of the publication of information on mining rights on the Internet is the NIBIS map server of the Lower Saxony State Office for Mining, Energy and Geology (LBEG). On this website, citizens can obtain information about 400 specialist maps on topics such as contaminated sites, mining, soil science, erosion, geology, geothermal energy, geophysics, hydrogeology, geologic engineering, climate and natural resources. With regard to mining rights, the NIBIS regularly makes the following data available for viewing by the public on the map server for the Federal States of Lower Saxony, Bremen, Hamburg and Schleswig-Holstein:

- Information about the licence holder
- Coordinates of the licensed area
- Date the licence was granted and term of the licence.
- Type of natural resource

**Figure 6:** Mining rights in the NIBIS map server



### Implementation in other Federal States

Other Federal States have also created online sites for inspecting mining authorisation books and maps. Examples here are Baden-Wuerttemberg at <https://maps.lgrb-bw.de/>, Berlin and Brandenburg at <http://www.geo.brandenburg.de/lbgr/bergbau> and the Saarland at [www.geoportal.saarland.de](http://www.geoportal.saarland.de).

### ii. Beneficial Ownership

The question of who is behind a company and who is the 'beneficial owner' has become increasingly important in recent years for combating terrorist financing and eradicating money laundering together with their predicate offenses, such as tax law violations. The beneficial owners of companies are natural persons who

ultimately own a company or control it, and/or natural persons on whose initiative a transaction<sup>3</sup> is ultimately carried out or a business relationship is ultimately founded (cf. §3(11) GwG [Money Laundering Act]). Improved accessibility to this information is intended to facilitate the fight against money laundering and terrorist financing.

### **German Transparency Register**

In Germany, the beneficial owner can be found in the information contained in publicly-accessible registers, such as the trade, cooperative, partnership, association or enterprise registers. A Transparency Register was established on June 26, 2017 within the framework of the implementation of the Fourth Money Laundering Directive (EU) 2015/849 from May 20, 2015. The Register contains beneficial owner data in the form of an Internet portal. In concrete terms, this means that the portal primarily contains information from already-existing, publicly-accessible electronic registers (see above.) Obligatory notification from a beneficial owner to the Transparency Register is demanded only if the identity of the beneficial owner cannot be revealed after perusal. The Transparency Register thus expands and completes the information on beneficial owners. This also applies to trusts and similar legal forms which have hitherto remained unidentified.

The register is electronically accessible on the website at [www.transparenzregister.de](http://www.transparenzregister.de). Where the obligation to notify the Transparency Register exists because the beneficial owner does not already exist in other registers, such notification had to be carried out by October 1, 2017. Information about beneficial owners – and this also concerns companies in the extractive industry – are available for viewing in the register from December 27, 2017 (for details, see ‘Obtaining information from the Transparency Register’ below).

### **Information on beneficial owners in the Transparency Register**

The first name and surname of the beneficial owner, his or her date of birth, place of residence, and the type and extent of the economic interest are recorded. Nationality is also recorded in the case of trusts and trust-like legal forms (cf. §§19(1), 21 GwG).

### **Management of the Transparency Register**

The Transparency Register is managed technically by the Bundesanzeiger Verlag GmbH (Federal Gazette publishing company). In principle, the associations and legal entities in Germany mentioned in §20 and §21 GwG are obliged to report the current information on the beneficial owner in electronic form to the Transparency Register, unless their information has already been recorded in another register (see details in §20(2) GwG).

### **Obtaining information from the Transparency Register**

Access to the information about beneficial owners in the Transparency Register is provided to certain governmental authorities within the scope of their statutory tasks, to persons and bodies legally obliged to combat money laundering in the performance of their due diligence obligations, and any other person or body with a legitimate interest in viewing the Register (e.g. NGOs or journalists) (§ 23(1) GwG). Such interest particularly exists when a connection can be established (in a comprehensible manner) to the prevention and combating of terrorist financing and money laundering, as well as their associated predicate offenses such as corruption. On July 2, 2014, the Federal Government decided to initiate the candidacy of Germany with the international ‘Initiative for Transparency in the Extractive Industries Transparency Initiative’ (EITI). With the implementation of the EITI in Germany (D-EITI), the Federal Government is strengthening international efforts to combat corruption in the context of natural resources business transactions. This stated objective establishes the

3 The term transaction here means all acts which have the purpose or the effect of a monetary movement or other asset movement.

D-EITI's legitimate interest in gaining access to the Transparency Register.

#### **Extension of the possibility to inspect the Transparency Register**

With the amending Directive to the 4th Money Laundering Directive (EU) 2018/843 which came into force on July 9, 2018 In accordance with the Money Laundering Directive (EU) 2018/843 of May 30, 2018, the majority of the provisions of which are to be implemented by the member states by January 10, 2020, access to the register must in future be made public, i.e. the

previously-staggered access with proof of a justified interest in inspection no longer applies. The possibility (already provided for under the current legal structure) also exists that beneficial owners can restrict the possibility of inspection of the Transparency Register if they state that they are at risk of becoming victims of certain criminal offences (e.g. extortion). Germany will implement the EU legal requirements into national law in due time; and on July 31, 2019 the Federal Cabinet adopted the government draft for a corresponding adaptation of the legal framework.

# 4

## REVENUES GENERATED BY THE EXTRACTIVE INDUSTRY



Companies, which extract natural resources in Germany, pay various fees, duties and taxes on their activities. A company that extracts free-to-mine natural resources in a Federal state pays specific minesite and extraction royalties to that state as per the Federal Mining Act. Excluded from this are mineral resources that are extracted on the basis of 'old rights' (see Chapter 3.b.). In this case, however, the owners of the still-valid old production rights or the former mining rights may be entitled to payment of a so-called production interest (e.g. in the case of so-called old oil or natural gas contracts) by the companies. Regardless of the activity involved, all companies in the natural resources sector – and most other companies – are subject to trade and corporation tax.

## **a. Who is responsible for revenue collection?**

Due to the federal structure of the Federal Republic of Germany, tax administration is split between the Federal Government and the states. Depending on the type of tax, it is levied by the financial authorities of the Federal Government, the states or the local authorities. One exception to this rule is minesite and extraction royalties, which are levied by the mining authorities of the states.

## **b. Which payments are made by the extractive industry?**

### **i. Corporation tax**

A company (which extracts natural resources) with the legal form of a limited company (in particular a limited liability company or public limited company) which has its head office or management in Germany is subject to unlimited corporation tax. Limited companies which do not have their head offices and management in Germany are subject to corporation tax on the income generated in Germany. In Germany, corporation tax amounts to 15% of the taxable income. The revenue is shared by the Federal Govern-

ment and the states. Corporation tax is levied by the tax authorities of the Federal States.

### **ii. Minesite and extraction royalties**

Companies and persons require a permit to prospect for 'free-to-mine' mineral resources (§7 BBergG). Owners of this type of permit are required to pay an annual minesite royalty as per §30 BBergG. Pursuant to §30(3), first sentence, of the BBergG, this generally amounts to €5 per square kilometre of a minesite in the first year after the permit has been granted; the amount increases by €5 per year to a maximum of €25 per year, whereby the legislation of individual states may provide for differing royalty amounts and even exemptions under certain conditions (see §32(2), BBergG and the table on page 38–46). The expenses incurred for prospecting are set off against the minesite royalties. Minesite royalties must be paid to the state in which the licenced minesite is located.

If natural resources are found, a permit is required for their extraction. However, extraction is only possible if the necessary operating plan permit and any other permits such as water rights permits have already been granted. If the extracted natural resources can be used for financial gain, the permit holder must pay extraction royalties for the extracted free-to-mine natural resources as per §31 BBergG. The standard rate for extraction royalties is 10% of the market value of the natural resources in question (§31(2), sentence 1, BBergG). Here too, individual states may stipulate different regulations in their legislation for the calculation of minesite and extraction royalties under certain conditions (see §32 BBergG and the table on page 38–46). Minesite and extraction royalties only apply to free-to-mine natural resources. While minesite royalties are appropriated into the respective state's budget, the revenue from extraction royalties is used for inter-state financial equalisation. Minesite and extraction royalties are levied by the mining authorities of the Federal States.

**Table 3:** Federal state law regulations on minesite and extraction royalties\*

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Baden-Wuerttemberg	<ul style="list-style-type: none"> <li>VO (Ordinance) of the Ministry of the Environment on minesite and extraction royalties of December 11, 2006 (GBl. (Legal Gazette) p. 395), as last amended by VO (Ordinance) of November 24, 2016 (GBl. p. 618)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, rock salt and brine, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate crude oil, natural gas: €80</li> <li>Maximum rate rock salt and brine: €60</li> </ul>	<ul style="list-style-type: none"> <li>Assessed at market value               <ul style="list-style-type: none"> <li>Crude oil: 19%</li> <li>Rock salt: 5% or 2.5%<sup>5</sup></li> </ul> </li> <li>Natural gas: 37% of the price obtained<sup>7</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Geothermal energy</li> <li>Brine</li> </ul> </li> <li>Crude oil and natural gas: Site conditioning costs at the levy rate<sup>2</sup></li> <li>In the case of rock salt, the costs of processing it up to the quality level of industrial salt are credited to extraction royalties at the levy rate.</li> </ul>
Bavaria	<ul style="list-style-type: none"> <li>Ordinance on minesite and extraction royalties of December 22, 1998 (GVBl. 1998 p. 1050), last amended €-regulation</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: €60</li> </ul>	<ul style="list-style-type: none"> <li>5% of the market value for oil extracted in the Aitingen area</li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Crude oil with the exception of the Aitingen area</li> <li>Natural gas with the exception of the Breitbrunn-Eggstätt area</li> </ul> </li> </ul>
Berlin	<ul style="list-style-type: none"> <li>see Brandenburg</li> </ul>			

1 Increases by €20 for each subsequent year up to the specified maximum rate.

2 Upper limit: The total extraction royalties levied on the deposits/fields in question, as per the state ordinance (LVO)

5 Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

7 In €/kWh including the further transport costs. In the state of Bremen, a reduction in the assessed rate by the actual further transport costs is possible. It applies to natural gas used in purification plants to the amount of €0.002045/m<sup>3</sup>.

\* The specified state-specific levy rates are based on the German Federal guidelines for minesite and extraction royalties pursuant to the BbergG.  
 \*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).



Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Brandenburg	<ul style="list-style-type: none"> <li>Ordinance of December 11, 2015 on minesite and extraction royalties in the state of Brandenburg (Brandenburg Extraction Royalties Ordinance – BbgFördAV) (GVBl. II/15 No. 69)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: € 60</li> </ul>	<ul style="list-style-type: none"> <li>Assessed at market value               <ul style="list-style-type: none"> <li>Crude oil, argillaceous (clayey) rocks: 10%</li> <li>Gravels and sands: 7%</li> <li>Peat, including available organic silt and natural stone: 5%</li> <li>Rock salt and brine: 1% or 0.5%<sup>5</sup></li> </ul> </li> <li>Natural gas: 10% of the assessed rate<sup>8</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Geothermal energy</li> <li>Natural brine and peat, extracted for balneological purposes or as a carrier for geothermal energy</li> </ul> </li> <li>Crude oil and natural gas: Site conditioning costs at the levy rate<sup>2</sup></li> </ul>
Bremen	<ul style="list-style-type: none"> <li>Bremen Ordinance (VO) of May 10, 2012 on minesite and extraction royalties (Legal Gazette of the Free Hanseatic City of Bremen, p. 180)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: €80</li> </ul>	<ul style="list-style-type: none"> <li>Natural gas: 36% of the price obtained<sup>7</sup></li> <li>Crude oil: 9% of the market value multiplied by the taxable quantity<sup>6</sup></li> <li>Sands and gravel sands: 10% of the market value for extraction in coastal waters and continental shelf zones</li> <li>Brine: 1% or 0.5% of the market value<sup>6</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Geothermal energy</li> <li>Natural brine, extracted for balneological purposes</li> <li>Sulphur</li> </ul> </li> <li>Crude oil and natural gas: Site conditioning costs at the levy rate<sup>2</sup>, and</li> <li>75% in the year extraction was started, and in the following 5 calendar years (in the case of extraction from deposit areas with an average effective permeability below 0.6 millidarcy)               <ul style="list-style-type: none"> <li>40% in the case of extraction from almost depleted deposits with an average extraction rate of less than 4,500 m<sup>3</sup>/h.</li> </ul> </li> </ul>

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).

1 Increases by €20 for each subsequent year up to the specified maximum rate.

2 Upper limit: The total extraction royalties levied on the deposits/fields in question, as per the state ordinance (LVO)

5 Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

6 Applies to crude oil, which is extracted (1) from abandoned deposits which have been re-developed, (2) from drill holes with a depth of more than 4,000 m or (3) (additionally) by means of tertiary processes.

7 In €/kWh including the further transport costs. In the state of Bremen, a reduction in the assessed rate by the actual further transport costs is possible. It applies to natural gas used in purification plants to the amount of €0.002045/m<sup>3</sup>.

8 The weighted average of the cross-border prices for natural gas as published monthly by Destatis during the levy period in €/kWh.

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Hamburg	<ul style="list-style-type: none"> <li>Ordinance on minesite and extraction royalties of December 24, 1985 (HmbGVBl. (Hamburg Law and Ordinance Gazette) p. 389), as last amended by regulation of April 22, 2014 (HmbGVBl. p. 142)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: €80</li> </ul>	<ul style="list-style-type: none"> <li>Assessed at market value <ul style="list-style-type: none"> <li>Crude oil: 7%</li> <li>Brine: 1% or 0.5%<sup>5</sup></li> </ul> </li> <li>Natural gas: 37% of the assessed rate<sup>7</sup> multiplied by the taxable volume. Currently exempted from all duties under an annual renewal clause.</li> </ul>	<ul style="list-style-type: none"> <li>100% exemption <ul style="list-style-type: none"> <li>Geothermal energy</li> <li>Natural brine, extracted for balneological purposes</li> <li>Sulphur</li> </ul> </li> <li>Crude oil and natural gas: Site conditioning costs at the levy rate<sup>2</sup></li> </ul>
Hesse	<ul style="list-style-type: none"> <li>Ordinance of October 6, 2014, amending the Hessian ordinance on minesite and extraction royalties (GVBl. I p. 232) (for a limited period until December 31, 2019)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: €60</li> </ul>	<ul style="list-style-type: none"> <li>Assessed at market value <ul style="list-style-type: none"> <li>Non-ferrous metals and barite: 1%</li> <li>Rock salt and brine: 1% or 0.5%<sup>5</sup></li> </ul> </li> <li>Potash, magnesium and boron salts: 1% of the assessed rate<sup>10</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption</li> <li>Geothermal energy <ul style="list-style-type: none"> <li>Natural brine, extracted for balneological purposes</li> </ul> </li> <li>Non-ferrous metals and barite: Royalties in the amount of the guaranteed percentage of the processing costs (incurred during the levying period) that are necessary in order to produce the commercial product.</li> </ul>

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).

1 Increases by €20 for each subsequent year up to the specified maximum rate.

2 Upper limit: The total extraction royalties levied on the deposits/fields in question, as per the state ordinance (LVO)

5 Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

7 In €/kWh including the further transport costs. In the state of Bremen, a reduction in the assessed rate by the actual further transport costs is possible. It applies to natural gas used in purification plants to the amount of €0.002045/m<sup>3</sup>.

10 Sum of the products of (1) the average content of potassium oxide (K<sub>2</sub>O) and magnesium sulphate (MgSO<sub>4</sub>) extracted from the crude salts on the licenced site and (2) the amount of €0.75 for potassium oxide (K<sub>2</sub>O) and €0.25 for magnesium sulphate (MgSO<sub>4</sub>) per ton and percentage point thereof.

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Mecklenburg-Western Pomerania	<ul style="list-style-type: none"> <li>Ordinance of April 8, 2014 on minesite and extraction royalties (FeFördAVO MV) (GVOBL. M-V p. 140)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: €80</li> </ul>	<ul style="list-style-type: none"> <li>Assessed at market value <ul style="list-style-type: none"> <li>Crude oil: 21%</li> <li>Gravels, chalk, limestone, gravel, quartz and special sands and clayey rocks: 10 %</li> <li>Peat/Organic Silt: 5 %</li> <li>Brine: 1% or 0.5%<sup>5</sup></li> </ul> </li> <li>Natural &amp; petroleum gas: 20% of the assessed rate<sup>8</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption <ul style="list-style-type: none"> <li>Geothermal energy</li> <li>Marine pebbles and sands, collected for coastal protection purposes</li> <li>Sulphur</li> </ul> </li> </ul>

1 Increases by €20 for each subsequent year up to the specified maximum rate.

5 Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

8 The weighted average of the cross-border prices for natural gas as published monthly by Destatis during the levy period in €/kWh.

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Lower Saxony	<ul style="list-style-type: none"> <li>Nds ordinance on minesite and extraction royalties of December 10, 2010 (Nds GVBL. p. 564), as last amended by ordinance of 15 December 2016 (Nds. GVBL. p. 273)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: €80</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil: 18% of the market value for crude oil extracted from the Bramberge, Emlichheim, Georgsdorf, Ringe and Rühlermoor Valendis deposits</li> <li>Natural gas: 30% of the assessed rate<sup>8</sup> multiplied by the taxable volume</li> <li>Brine: 1% or 0.5%<sup>5</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption <ul style="list-style-type: none"> <li>Geothermal energy</li> <li>Natural brine, extracted for balneological purposes</li> <li>Sulphur</li> </ul> </li> <li>Crude oil: Site conditioning costs at the levy rate for the taxable areas<sup>2</sup>, and <ul style="list-style-type: none"> <li>50% in the case of extraction using tertiary procedures</li> </ul> </li> <li>Natural gas: site conditioning costs at the levy rate<sup>2</sup>, and <ul style="list-style-type: none"> <li>50% in the case of extraction from a deposit (1.) in the area of the continental shelf or (2.) in coastal waters using production platforms</li> <li>75% in the year extraction was started, and in the following 5 calendar years (in the case of extraction from deposit areas with an average effective permeability below 0.6 millidarcy)</li> <li>40% in the case of extraction from almost depleted deposits with an average extraction rate of less than 4,500 m<sup>3</sup>/h.</li> </ul> </li> </ul>

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).

<sup>1</sup> Increases by €20 for each subsequent year up to the specified maximum rate.

<sup>2</sup> Upper limit: The total extraction royalties levied on the deposits/fields in question, as per the state ordinance (LVO)

<sup>5</sup> Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

<sup>8</sup> The weighted average of the cross-border prices for natural gas as published monthly by Destatis during the levy period in €/kWh.

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
North Rhine-Westphalia	<ul style="list-style-type: none"> <li>VO of December 14, 1998, on minesite and extraction royalties (FFVO)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: €60</li> </ul>	<ul style="list-style-type: none"> <li>Mine gas 0.3 € cents per m<sup>3</sup> of methane<sup>12</sup></li> <li>Natural gas: 16% of the assessed rate<sup>9, 12 13</sup></li> <li>Rock salt and brine: 1% or 0.5%<sup>5</sup> of the market value</li> </ul>	<ul style="list-style-type: none"> <li>100% exemption <ul style="list-style-type: none"> <li>Geothermal energy</li> <li>Natural brine, extracted for balneological purposes</li> </ul> </li> <li>Natural and mine gas: Site conditioning costs at the levy rate<sup>3</sup>, as well as <ul style="list-style-type: none"> <li>50% on gas, which (1.) is additionally extracted by means of processes for opening up low-permeability deposits, (2.) is extracted at depths of more than 5,000 metres or (3.) extracted from hard coal seams at the surface</li> <li>50% for a period of 5 years from the start of extraction in the case of extraction in areas in which development operations were started during the period from January 1, 1999 to December 31, 2005</li> <li>in whole or in part upon application in individual cases, insofar as any threat to public safety or order caused by the extraction operation is averted.</li> </ul> </li> </ul>

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).

- 1 Increases by €20 for each subsequent year up to the specified maximum rate.  
3 Upper limit: The value of the natural gas extracted in the natural gas field, assessed pursuant to the state ordinance (LVO).  
5 Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.  
9 The quotient of the cross-border value and the amount of natural gas imported during the levy period in €cents/m<sup>3</sup>.  
12 A reduction of the assessed rate by a flat rate for further transport costs is possible.  
13 A reduction of the assessed rate by 0.205 €cents/m<sup>3</sup> for natural gas found in refining plants is possible.

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Rhineland-Palatinate	<ul style="list-style-type: none"> <li>State ordinance (LVO) on mine-site and extraction royalties of September 23, 1986 (GVBl (Law and Ordinance Gazette) 1986, p. 271), as last amended by ordinance of December 13, 2016 (GVBl. p. 602)</li> </ul>		<ul style="list-style-type: none"> <li>Assessed at market value <ul style="list-style-type: none"> <li>Crude oil: 12%; for the Römerberg-Speyer und Rülzheim deposits 15% and 7% resp.</li> <li>10% for crude oil, which is extracted from (1.) dead oil deposits, (2.) abandoned deposits which have been re-developed, (3.) depths of more than 4,000 metres, or extracted additionally by means of (4.) tertiary processes or (5.) processes for opening up low-permeability deposits.</li> <li>Brine: 1% or 0.5%<sup>5</sup></li> </ul> </li> <li>Petroleum gas: 10% of the price obtained<sup>7,12</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption <ul style="list-style-type: none"> <li>Natural brine, extracted for balneological purposes</li> <li>Geothermal energy</li> <li>Natural gas extracted for direct conversion into electricity</li> </ul> </li> <li>Crude oil and natural gas: Site conditioning costs at the levy rate<sup>4</sup></li> </ul>
Saarland	<ul style="list-style-type: none"> <li>Ordinance of March 5, 1987 on minesite and extraction royalties (Official Gazette, p. 250), last amended by the law of November 7, 2001 (Official Gazette, p. 2158)</li> </ul>		<ul style="list-style-type: none"> <li>Natural gas: 10% of the price obtained<sup>7</sup></li> </ul>	<ul style="list-style-type: none"> <li>Natural gas: Site conditioning costs at the levy rate<sup>3</sup></li> </ul>

<sup>3</sup> Upper limit: The value of the natural gas extracted in the natural gas field, assessed pursuant to the state ordinance (LVO).

<sup>4</sup> Upper limit: Market value or the value of the crude oil and petroleum gas extracted in the oil field, assessed pursuant to § 31(2), 2nd sentence of the BBergG.

<sup>5</sup> Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

<sup>7</sup> In €/kWh including the further transport costs. In the state of Bremen, a reduction in the assessed rate by the actual further transport costs is possible. It applies to natural gas used in purification plants to the amount of €0.002045/m<sup>3</sup>.

<sup>12</sup> A reduction of the assessed rate by a flat rate for further transport costs is possible.

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Saxony	<ul style="list-style-type: none"> <li>Saxon State Ministry of Economy, Labour and Transport ordinance of July 21, 1997 on mine-site and extraction royalties (FFAVO); legally amended as of January 1, 2009; last amended by VO (ordinance) of June 20, 2012 (Saxon GVBL. p. 442).</li> </ul>		<ul style="list-style-type: none"> <li>Assessed at market value               <ul style="list-style-type: none"> <li>Fluorite                   <ul style="list-style-type: none"> <li>&gt;€280/t: 1 %</li> <li>&gt;€ 320/t: 2 %</li> <li>&gt;€ 360/t: 4 %</li> <li>&gt;€ 400/t: 10 %</li> </ul> </li> <li>Gravels and gravel sands: 8 %</li> <li>Natural stone: 4 %</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Lignite</li> <li>Geothermal energy</li> <li>Fluorite &lt; € 280/ton</li> <li>Marble</li> <li>Barite</li> <li>Brine</li> <li>Free-to-mine natural resources extracted together with fluorite</li> </ul> </li> </ul>
Saxony-Anhalt	<ul style="list-style-type: none"> <li>Ordinance on minesite and extraction royalties of July 15, 2019 (GVBL. LSA p. 192)</li> </ul>		<ul style="list-style-type: none"> <li>Assessed at market value               <ul style="list-style-type: none"> <li>Gravels, sands, quartz and special sands: 8 %</li> <li>Natural stone: 5 %</li> <li>Rock salt and brine: 1% or 0.5%<sup>5</sup></li> </ul> </li> <li>Stone for the production of ashlar and decorative stones from sandstone: 4 % of the assessed rate<sup>11</sup></li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Lignite</li> <li>naturally occurring brine used for balneological and tourist purposes</li> </ul> </li> </ul>

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).

5 Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

11 20% of the quotients of the production value and the production volume of the production achieved during the levy period in €/ton, assessed from the data collected by Destatis.

Federal State	Legal basis	Minesite royalties	Extraction royalties**	
			Levy rates	Special regulations
Schleswig-Holstein	<ul style="list-style-type: none"> <li>Ordinance on minesite and extraction royalties of December 11, 2012 (Law and Ordinance Gazette Schl.-H. p. 776), amended by State VO of December 3, 2014, Law and Ordinance Gazette. Schl.-H. p. 496)</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, natural gas, €20 for each km<sup>2</sup> or fraction thereof for the first year<sup>1</sup></li> <li>Maximum rate: € 80</li> </ul>	<ul style="list-style-type: none"> <li>Assessed at market value               <ul style="list-style-type: none"> <li>Crude oil: 40%, multiplied by the taxable amount. In the case of extractions from the Deutsche Nordsee A6/B4 and Heide-Mittelplate I licenced extraction sites, the calculation of the extraction interest is carried out as follows: <math>Z = 0.0076 * \ddot{O}P^2 - 1.15 * \ddot{O}P + 64.5</math> (Z = interest, <math>\ddot{O}P</math> is one thousandth of the market value multiplied by 135), where the minimum extraction interest rate is 21%, with a maximum of 40%.</li> <li>Brine: 1 % or 0.5 %<sup>5</sup></li> </ul> </li> <li>Natural gas: 40% of the assessed rate <sup>8</sup> multiplied by the taxable volume. 18% in the case of extractions from the Deutsche Nordsee A6/B4 and Heide-Mittelplate I authorised deposits</li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Natural brine, extracted for balneological purposes</li> <li>Geothermal energy</li> </ul> </li> <li>Crude oil and natural gas: Natural gas: site conditioning costs at the levy rate<sup>2</sup></li> </ul>
Thuringia	<ul style="list-style-type: none"> <li>Thuringia Ordinance (VO) on minesite and extraction royalties, August 23, 2005, last amended by the VO of November 30, 2015 (GVBl. p. 210)</li> </ul>		<ul style="list-style-type: none"> <li>Assessed at market value               <ul style="list-style-type: none"> <li>Gypsum and anhydrite: 5 %</li> <li>Gravels and gravel sands: 8 %</li> <li>Natural stone: 5 %</li> <li>Peat/Organic Silt 3%</li> <li>Ashlar and decorative stones: 4 % of the assessed rate<sup>11</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>100% exemption               <ul style="list-style-type: none"> <li>Geothermal energy: Prospecting and extraction</li> <li>Rock salt: Extraction</li> </ul> </li> </ul>

<sup>1</sup> Increases by €20 for each subsequent year up to the specified maximum rate.

<sup>2</sup> Upper limit: The total extraction royalties levied on the deposits/fields in question, as per the state ordinance (LVO)

<sup>5</sup> Applies to rock salt extracted during the construction of an underground store, but which is not economically exploited.

<sup>8</sup> The weighted average of the cross-border prices for natural gas as published monthly by Destatis during the levy period in €/kWh.

<sup>11</sup> 20% of the quotients of the production value and the production volume of the production achieved during the levy period in €/ton, assessed from the data collected by Destatis.

\*\* All regulations on the amount of the levy rates and all special regulations are time-limited. They are regularly checked and adjusted by updating the state regulations on minesite and extraction royalties (where required).



### iii. Trade tax

The municipalities are responsible for trade tax. It is levied by the municipality in which the enterprise is located. The purpose of the trade tax is to tax the objective earning potential of a commercial enterprise. However, unlike corporation tax, trade tax is not linked to economic performance. Additions and deductions correct the income of the commercial enterprise (§§8 and 9 GewStG \[Trade Tax Act]). To calculate trade tax, the responsible tax office determines the taxable amount, which is 3.5% of the objective earning potential. For all the companies in its area of jurisdiction, the responsible municipality sets a uniform tax factor, which must be at least 200 % (§16(4), 2nd sentence GewStG) and calculates the trade tax based on the taxable amount determined by the tax office and the individual tax factor.

A company (which extracts natural resources) with the legal form of a partnership or limited company is subject to trade tax. If operating facilities are located in an area belonging to several municipalities or are operated in a number of municipalities, the assessment basis for trade tax is distributed among these individual municipalities (so-called 'reallocation'). As a general rule, the wages in the individual operating facilities are used as a yardstick for the calculations. This means that each affected municipality can levy its share of the trade tax of an extractive company.

An overview of the trade tax assessment rates (2017) of the municipalities in Germany is available via the Federal Statistical Office. Commercial taxation is the main source of tax for municipalities, followed by land tax. The municipalities must pay a portion of their tax revenue to the Federal and state governments as trade tax apportionments. The remainder of the trade tax for the municipalities flows into their general budgets, thus helping to finance the local infrastructure and to provide education and social services among other things.

### iv. Lease payments

In Germany, the extraction of natural resources is governed by the BBergG, if the resources concerned are free-to-mine or privately-owned natural resources. As per §3(3), BBergG, free-to-mine natural resources include metals, salts and fossil fuels such as hydrocarbons, lignite and hard coal. The ownership of a property does not extend to free-to-mine natural resources, so in this respect the property rights of the landowner are limited. In contrast, privately owned natural resources are the property of the landowner. The landowner may carry out prospecting and extract the resources if found, without the need for any additional special legal title in addition to the operating permit and other required public-law permits. Its inclusion in the scope of validity of the BBergG aims to make their extraction subject to a uniform legal framework throughout Germany and (in particular) to uniformly regulate natural resource extraction in underground mining and ensure uniformity in the management of mine inspection authorities.

In addition to privately owned natural resources, there are the so-called 'landowner's natural resources'. These are bulk raw materials, such as gravel and sands, which are predominantly used as building materials and are extracted through opencast mining. Like the privately owned natural resources, these are also the property of the landowner, but they are neither subject to mining law nor to mining inspection.

A company does not have to own the land to extract privately owned natural resources and landowners' natural resources. If the owner of the land simply makes it available to the company on the basis of a legal private contract (e.g. through a lease agreement) – and this is often the case – that alone suffices. Such contractual arrangements may include fixed payments or payments that depend on the quantity extracted, or a combination of both variants. On the Federal state side, official bodies including local authorities (e.g. counties or municipalities) and forestry offices may have the roles of landowners and landlords. The revenues from the leaseholds are

therefore transferred to municipal budgets or state budgets, thus making it possible to finance statutory tasks (et alia).

## v. Excise duties

Energy and electricity taxes are particularly relevant for companies in the natural resources sector, within the framework of excise duties. Like the other excise duties, energy and electricity taxes are explicitly excluded from the reporting obligation within the framework of the legal commercial (corporation) payment report, as per the EU Accounting Directive and its implementation in §341r, No. 3b of the HGB (German Commercial Code).

The Energy and Electricity Tax Act is based on the harmonised provisions of the EU Energy Tax Directive 2003/96/EC of October 27, 2003. On April 1, 1999, the electricity tax was introduced in Germany within the framework of the law covering entry into the ecological tax reform, and the tax rates of the energy tax (at that time still called mineral oil tax) were gradually increased. This created incentives to reduce energy consumption and to develop resource-conserving products and production processes.

The Electricity Tax Act and the Electricity Tax Implementing Ordinance constitute the legal basis for levying electricity tax. The Federal Government is entitled to electricity tax revenues, which amounted to €6.9 billion in 2017. The revenue from the electricity tax and the higher taxation of fuels and heating materials obtained in connection with the ecological tax reform contribute to keeping social insurance contributions at a manageable level. Administration and collection tasks are carried out by customs administration.

The electricity tax is levied for consumption, but it is usually levied as an indirect tax on the supplier and passed on to consumers via the electricity price for

practical reasons. This means that companies in the extractive sector must also pay electricity tax. The statutory tax rate is €20.50 per megawatt hour. Reduced tax rates can be considered for various purposes, e.g. railway electricity, whereas the production industry can particularly benefit from tax relief (see Chapter 7).

The energy tax is an excise duty on energy products. It is governed by Federal legislation, and levied to tax the use of energy products as fuels or heating fuels within the German tax territory. The Energy Tax Act defines energy products as being (in particular), petrol, diesel fuel, light and heavy fuel oil, liquefied petroleum gas, natural gas, natural gas and coal as well as biodiesel, vegetable oil and energy products of a similar nature that are used as motor or heating fuels. The amount of the tax varies according to the energy product and its intended use and is regulated in the Energy Tax Act. Tax concessions are standardised in the Energy Tax Act for certain energy products and intended uses (see Chapter 7). Like the electricity tax, energy tax is levied by the customs administration, and the revenues flow to the Federal Government. In 2017, energy tax revenues amounted to approx. €41.0 billion. The revenue from energy and electricity taxes is the third-largest source of income for the Federal Government, after income tax and VAT.

The sheer financial volume of electricity and energy tax payments by companies in the natural resources extractive sector, and the financial scale of electricity and energy tax concessions (see Chapter 7) cannot be feasibly presented without a disproportionate amount of bureaucratic effort. No statistics showing the electricity and energy tax payments for individual economic sectors exist as yet.<sup>4</sup>

<sup>4</sup> In the MSG, there was no consensus on the extent to which energy and electricity tax payments were among the most important payment flows, therefore they are not included in the payment reconciliation.

## c. How important is tax secrecy in Germany?

Tax secrecy has a high priority in Germany. Since taxpayers must fully disclose their tax details to the financial authorities within the framework of their co-operation obligations, the privacy of their information must be ensured. This is ensured by the General Data Protection Regulation (DSGVO) and tax secrecy provisions (§§30 et seq. of the German Tax Code (AO)). The provisions of the §§30 et seq. AO regulate who must protect tax secrecy and under what conditions the disclosure or utilisation of data (which is subject to tax secrecy) is permitted. Tax secrecy thus serves to protect the taxpayer.

A breach of tax secrecy can only be permitted under very strict conditions. Any disclosure of information which is subject to tax secrecy is normally only permitted if expressly authorised by law, if the person concerned agrees to the disclosure, or if there is a compelling public interest in the tax data in question.

This is why the disclosure of data for voluntary reporting initiatives – like the Extractive Industries Transparency Initiative – requires the explicit consent of the companies concerned. Similarly, the implementation of reconciliation regarding tax payments within the framework of the EITI process requires the permission of the taxpayer in the form of a power of attorney for the Independent Administrator to query the relevant tax data.

## d. Public reports

### i. Statutory reporting obligation for extractive companies (§§341q et seq. HGB)

The Accounting Directive Implementation Law (Bil-RUG) of July 23, 2015, implemented the requirements of the EU Accounting Directive 2013/34/EU of June 26, 2013 into German legislation. Many provisions of §§341 et seq. HGB largely correspond to the require-

ments of the EITI. All the 'large' limited companies and limited liability partnerships involved in the extractive sector or in the logging sector in primary forests are subject to these reporting requirements under commercial law (cf. §341q HGB). The term 'large' in the legal sense refers to companies that exceed at least two of the following three criteria on two successive reporting dates (§267(3), HGB):

1. Balance sheet total of €20 million.
2. Net turnover of €40 million.
3. An annual average of 250 employees.

Within the meaning of §264d of the HGB, capital market-oriented limited companies, as well as credit institutions and insurance companies in the legal form of limited companies (including limited liability commercial partnerships) are also subject to the reporting obligation, irrespective of their size. Subsidiaries (in corporate group structures) that meet the size criteria and the criterion of activity in combination with their parent companies are also subject to reporting obligations. The size and location of the pertinent subsidiary is not relevant in this case.

The companies subject to the legal provisions are required to disclose all payments (specified in §341r, No. 3 HGB) made to government agencies above a 'materiality threshold' of €100,000 per government agency, if these payments fall under one of the reasons for payment specified in §341r, No. 3 HGB. In addition to tax payments, this includes e.g. licenses, concessions and other contractual relationships related to the extraction of natural resources. The data must be allocated to individual projects if more than one project was carried out in the year under review.

## ii. Similarities and differences in the reporting obligation as per EITI

In addition to the reporting obligations pursuant to §§341q et seq. HGB, the most important financial flows of the extractive industries are also disclosed via the EITI (see Chapter 11). The reporting requirements under commercial law largely correspond to those of the EITI. However, there are also differences.

One fundamental difference between the reporting obligations stipulated by the HGB and the EITI lies in the extent of the reporting. EITI stipulates that the participating companies from the natural resources extractive sector publish all significant payments they make to government agencies. In contrast to the HGB, the material payments are not exhaustively listed by the EITI and must be clarified in the course of the EITI process (see Chapter 11). The EITI standard does not provide for a distinction between payments above or below the limit of at least €100,000 annually. The stakeholders of the German EITI have agreed to adopt the materiality threshold of §341t(4) HGB.

In contrast to the HGB provisions, EITI relies on the mutual disclosure of the payment flows. The state must also therefore grant an insight into its income from the extractive industry, for the purposes of payment reconciliation. In this context, one of EITI's main concerns is to make the payment flows available in the form of open data, thereby supporting the public debate.

## e. How are the revenues of the extractive industry allocated?

The Federal state structure of the Federal Republic of Germany is reflected in the distribution of tax revenues. The level which has the authority for the revenues, i.e. how they are distributed between the Federal Government, the states and the municipalities is regulated by Article 106 of the Basic Law (GG). Here a distinction is made between so-called 'community taxes' and taxes which flow in their entirety to the municipalities, states or Federal Government. In the

case of community taxes, the revenues are shared between the Federal Government and the states.

With regard to the extraction of natural resources, corporation tax and income tax are relevant examples of community taxes. The Federal Government and the states are each allocated 50% of corporation tax revenues.

Trade tax, on the other hand, is purely a municipal tax. As the most important source of income of the communities, it is allocated to the individual municipalities in which the relevant operating facilities are situated. The Federal Government and the states' share in the revenues of the trade tax through a specific allocation and redistribution mechanism.

With regard to the revenues from extraction royalties, redistribution between the Federal Government and the states also takes place. The revenues flow into inter-state financial equalisation. The Federal Government is entitled to the revenues from electricity and energy taxes.

As per §3 of the Tax Code, the tax revenues from the extraction of natural resources are not earmarked for a specific purpose; the persons responsible for the Federal Budget, the state budgets and the municipal budgets decide how they will be used. The amount and use of revenues and expenditure are disclosed in detail every year. To this end, the Federal Government and the states adopt budget laws (the municipalities adopt budget statutes) that include their own budgets. When the budgets are published, all citizens then have free access to the information.

To facilitate public access to information on the use of tax revenues, the BMF publishes information about the Federal Budget on the <https://www.bundeshaushalt.de/#> web platform. You can also visit the <https://offenerhaushalt.de/> website for information on other budgets.

# 5

## THE ECONOMIC IMPORTANCE OF THE EXTRACTIVE INDUSTRY IN GERMANY



## a. Contribution to the GDP

In 2017, the gross domestic product (GDP) in Germany amounted to €3,277.3 billion at current prices. According to the World Bank, Germany is thus the largest national economy in Europe and the fourth largest in the world.<sup>5</sup> The gross value added of the 'mining and quarrying' economic sector amounted in 2017 to €3.27 billion, which is equivalent to 0.10% of the GDP (for detailed sources see the final note).

## b. Contribution to government revenue

The natural resources sector generates revenue for the State at different Federal levels. The most important revenues are the taxes from general company taxation (corporation tax, income tax, trade tax and the solidarity surcharge), as well as natural resource-specific minesite and extraction royalties. Added together, these revenues from the extractive industry amounted to around €555 million in 2017. This corresponds to a share of 0.04% of the total income of the Federal German government. The coverage of this revenue by payment reconciliation is explained in more detail in Chapter 11c. Other payments are also made by the extractive sector to the state, such as leaseholds, energy and electricity taxes (see Chapter 4), as well as payments relating to interventions in nature conservation legislation and water use (see Chapter 6), which are not shown in this chapter.

## i. Taxes

The sum of the above-mentioned taxes paid by the extractive industry in 2017 amounted to €300 million. This corresponds to a proportion of around 0.02% of the State's total income. The largest amount of tax revenues is generated by trade and corporation taxes. However, tax revenues from the extractive industry have considerably declined in recent years.

The following table shows the estimated revenues from the above taxes of the extractive industry and their share of the total tax revenue (for detailed source information see final note<sup>iii</sup>). Other payment flows not addressed in the following table are described in Chapters 4 and 6.

<sup>5</sup> [https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?year\\_high\\_desc=true](https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?year_high_desc=true)

**Table 4:** Tax revenues from the natural resources sector (corporation tax, trade tax, income tax and the solidarity surcharge)

Type of tax	Year						
	2011	2012	2013	2014	2015	2016	2017
	In millions of €						
Corporation tax	154	173	153	98	93	83	81
Trade tax	248	287	160	201	190	170	166
Income tax	34	59	54	60	57	51	45
Solidarity surcharge	10	13	11	9	8	7	7
<b>Totals</b>	<b>446</b>	<b>532</b>	<b>378</b>	<b>368</b>	<b>347</b>	<b>311</b>	<b>299</b>
Total income of the State	1,182,702	1,220,853	1,259,033	1,308,541	1,356,490	1,415,506	1,473,847
Proportion of the above-mentioned taxes compared to total revenue	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	0.02%
for information only:							
Updating factor					-5.63%	-10.59%	-2.25%

For detailed source information see final note<sup>III</sup>.

## ii. Extraction and minesite royalties

Extraction royalties are levied by the mining authorities of the Federal States. They vary greatly, depending on the local mining activity and the fixed tax rates in the individual Federal States. A total of €255.9 million in extractive sector revenues was levied in Germany in 2017. The front runner was by far the state of Lower Saxony, with more than €181 million.

Schleswig-Holstein was ranked second with around €62 million, followed by the Rhineland-Palatinate with around €4.6 million. In the case of some Federal States, the amount of revenue has been subject to significant fluctuations in the past few years. This may have different reasons, e.g. falling world market prices for raw materials or changes in production quantities (for detailed source information see final note<sup>iv</sup>).

**Table 5:** Revenue from extraction royalties paid by the extractive sector in 2016 and 2017

Extraction royalties in thousands of €	2016	2017
Federal State		
Baden-Wuerttemberg	128	211
Bavaria	1,480	503
Berlin	0	0
Brandenburg	537	704
Bremen	0	0
Hamburg	87	90
Hesse	463	398
Lower Saxony	172,076	180,737
North Rhine-Westphalia	667	683
Rhineland-Palatinate	5,192	4,639
Saarland	33	74
Schleswig-Holstein	48,140	62,102



Mecklenburg-Western Pomerania	248	636
Saxony	524	1,728
Saxony-Anhalt	1,478	1,547
Thuringia	1,454	1,851
<b>Total extraction royalties</b>	<b>232,505</b>	<b>255.902</b>
<b>Total income of the Federal State in millions of €</b>	<b>1,415,506</b>	<b>1,473,847</b>
<b>Proportion</b>	<b>0.02%</b>	<b>0.02%</b>

For detailed source information see final note<sup>iv</sup>.

The revenues from minesite royalties of the Federal States are not systematically compiled or published on a nationwide basis. Their amount is significantly

lower than the amount of extractive sector revenues and they are only applicable in some federal States (see Table 6):

**Table 6:** Revenue from minesite royalties paid by the extractive sector in 2016 and 2017

Minesite royalties in thousands of €	2016	2017
<b>Federal State</b>		
Bavaria	17.5	28.2
Brandenburg	14.5	7.9
Lower Saxony	242	560

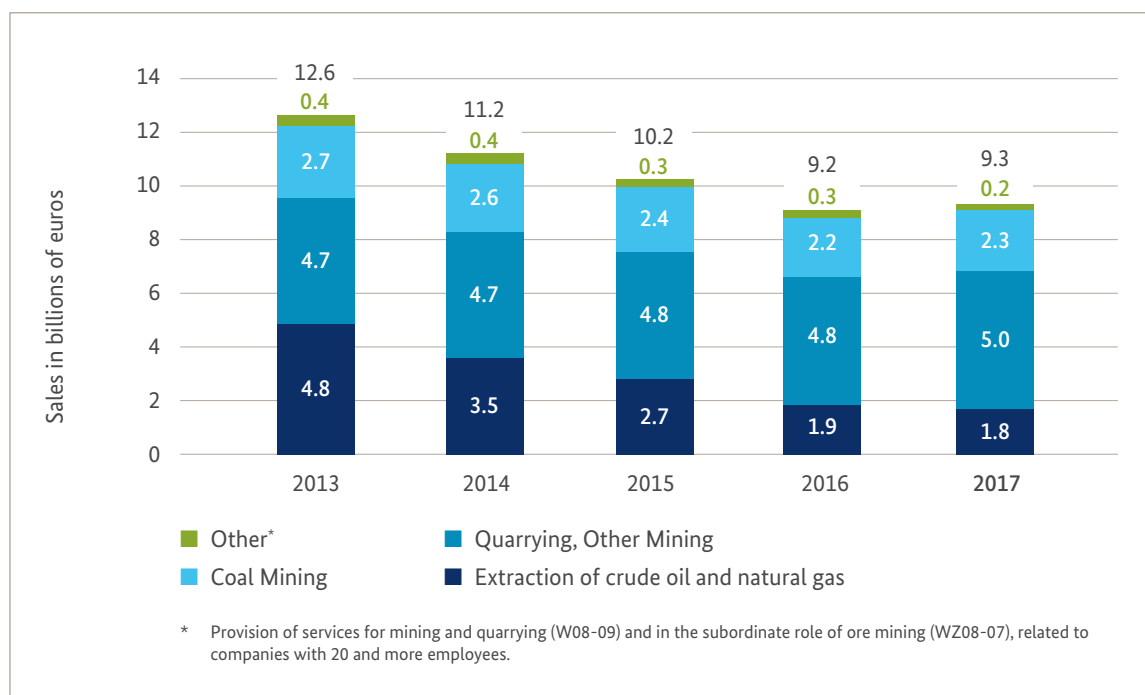
For detailed source information see final note<sup>iv</sup>.

## c. Turnover

'Mining and Quarrying' sector companies generated a total turnover of around €9.4 billion in 2017. Around €8.3 billion (about 88%) of this sum was attributable

to domestic sales and €1.2 billion (about 12%) to foreign sales.

**Graphic 1: Sales in the 'Mining and Quarrying sector', 2013 – 2017**



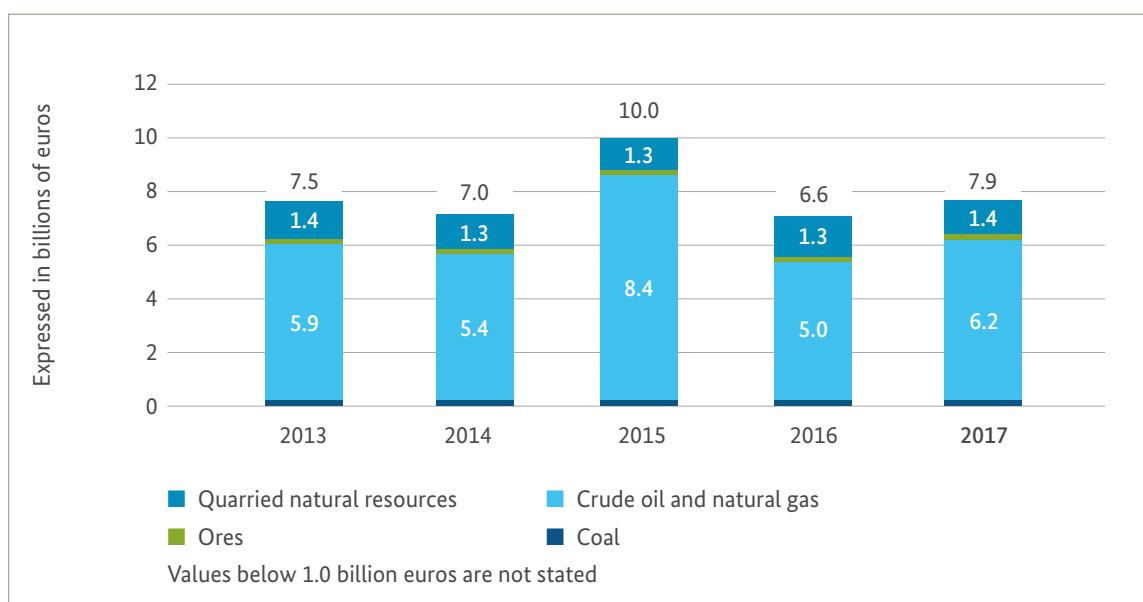
For detailed source information see final note\*. Own presentation.

## d. Contribution to export

Germany is characterised by a strongly export-oriented and diversified economic structure. In 2017, the country exported goods worth a total of €1,3 trillion. Products of the extractive industries accounted for some €7.9 billion of this amount, equivalent to 0.61% of total exports. The crude oil and natural gas sectors accounted for the largest share of exports at almost

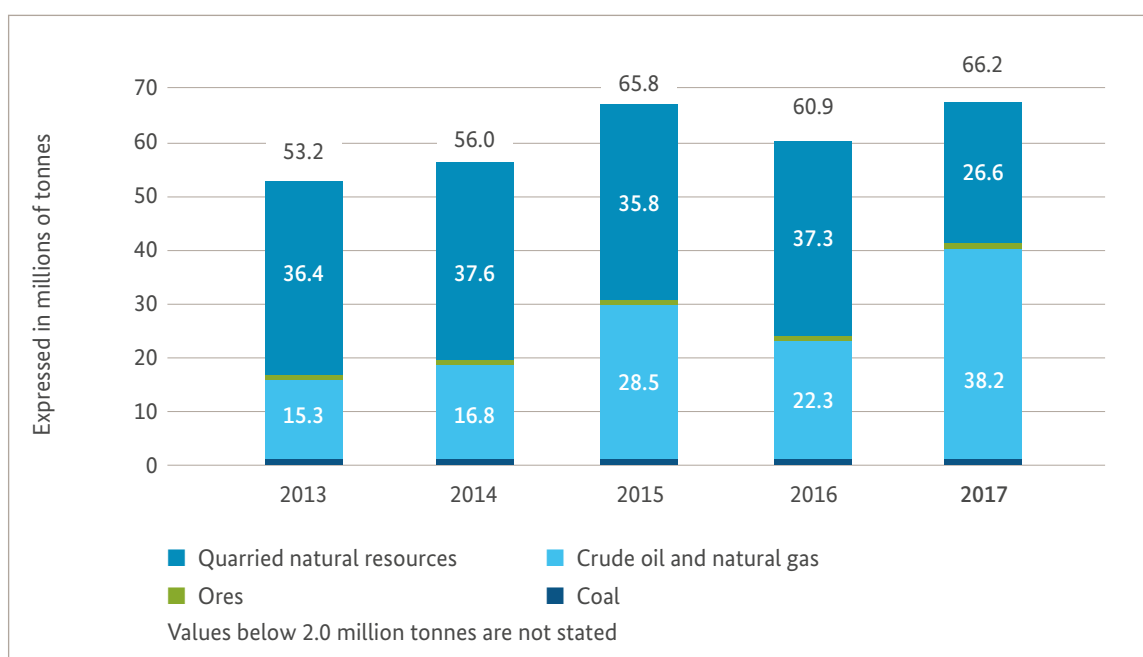
€6 billion. However, this mainly involved re-exports of natural gas. Domestically-extracted natural gas is almost completely consumed in Germany. This sector is followed by 'Quarried natural resources, other mining products' with €1.4 billion. Exports also included ores (around €111 million) and coals (about €124 million). Here too, the figures include re-exports, but to a much lesser extent compared to natural gas.

**Graphic 2: Exports in the 'Mining & Quarrying sector', 2013 – 2017 (value)**



For detailed source information see final note<sup>vi</sup>. Own presentation.

**Graphic 3: Exports in the 'Mining & Quarrying sector', 2013 – 2017 (volume)**



For detailed source information see final note<sup>vi</sup>. Own presentation.

# 6

## DEALING WITH HUMAN INTERVENTION IN NATURE



## a. Rules of intervention under nature conservation law

Every mining activity is associated with interventions in nature and landscape and can result in serious environmental impacts. At the same time, however, a contribution can be made to the conservation of biodiversity on former mine sites and on certain areas of operating mine sites. Compensatory actions, such as compensatory or substitution measures and compensatory payments are intended to compensate for interventions in nature and landscape and to restore their natural function.

It is estimated that around 1% of Germany's entire area will be necessary to ensure the country's natural resources in the medium to long term. The area currently being mined amounts to 30 km<sup>2</sup>, or 0.008% of the total area of Germany (Federal Institute for Geosciences and Natural Resources 2017, BGR). This corresponds to a daily area utilisation of an average of 8 ha. However, the areas used for the extraction of natural resources differ in their concentrations in the various regions, as a result of which the associated interventions in nature and landscape also evince great regional differences and concentrations.

### Legal framework

In the Federal Nature Conservation Act (BNatSchG), the general principle regarding interventions is that major interventions in nature and landscape are to be primarily avoided and minimised by the polluter. Unavoidable interventions are to be compensated by means of compensatory or substitution measures (hereinafter 'compensatory measures') or, if this is not possible, by a compensatory payment in monetary form (§13 BNatSchG). This general principle thus forms a processing cascade, which first provides for avoidance, then compensatory measures and, as a last resort, a compensatory payment. In the case of mining measures, this avoidance rule primarily targets a variant that is as environmentally-friendly as possible, since site alternatives due to the type of natural resource and technical considerations cannot be possible, and zero variances can be eliminated due

to the economic priority of natural resources extraction. Unavoidable interventions in nature and landscape must therefore be offset or mitigated, particularly through the promotion of natural succession, renaturation, near-natural design, rehabilitation or recultivation (§1(5), p. 4 BNatSchG (Federal Nature Conservation Act)).

Compensatory measures must be maintained and legally secured during the required period of time. The period of maintenance is determined by the approval authority in the certificate of approval. The perpetrator of the intervention (the polluter) or its legal successor is responsible for the execution, maintenance and safeguarding of the compensatory measures.

In accordance with German federal and European regulations, the possible effects of a project on particularly-protected species of animals and plants (special species protection legislation) and on the European protected area network NATURA 2000 must be examined in the approval procedures for nature conservation law interventions.

The BNatSchG contains a full regulation, viz. that the laws and norms of the Federal States on the instrumental design of the intervention regulation may not contradict it. In order to make the regulation more applicable, some states have made supplementary regulations, whereby the practice differs from state to state. For example, the concrete assessment of the amount and the use of compensatory payments differs from state to state.

### Approval practices in the extraction of natural resources

If a company plans to intervene in nature and landscape by extracting natural resources, the nature conservation legislation on intervention regulation is dealt with at the level of the responsible approval authority. Depending on the respective type of natural resource, these are either the mining authorities of the German states (in the case of free-to-mine and privately-owned natural resources) or the state authorities in charge of the execution of the state-

based excavation laws, the building and water resources management laws and the Federal Immission Control Act (in the case of so-called landowners' natural resources). This procedure corresponds to the so-called 'piggy-back' procedure, which stipulates (in §17 BNatSchG) that the approval of all projects, which nevertheless require approval by an authority due to other legal provisions, will be carried out by the competent authority in conformity with the responsible nature conservation authority. The competent nature conservation authority must therefore be given a voice in the approval procedure, whereby the relevant approval authority is not bound by the recommendations of the nature conservation authority. However, the provisions of the specific species protection are compulsory and are not subject to consideration in this respect. Designations of protected areas must also be observed

As part of the approval procedure, the entrepreneur shall also provide the competent authority with a Landscape Management Plan (LBP), which shall provide information on the location, nature, extent and timing of the intervention, as well as the intended avoidance and compensatory measures and, where required, the amount of the compensatory payment. In this case, the major part of the necessary compensation is to be regularly provided for renaturation or recultivation (see target definition BNatSchG). Compensatory measures on external surfaces are necessary if certain landscape or biotope structures cannot be restored or if specific measures are necessary for reasons of species protection.

In the case of the extraction of the so-called 'free-to-mine' (e.g. coal, salts, oil and natural gas) and privately-owned resources (e.g. stone, earths and industrial minerals) governed by the German Federal Mining Act (BBergG), the intervention regulation is processed as per the BNatSchG in accordance with the operating plan procedure under mining law, whereby the obligations as per the BNatSchG apply in full. Compensation for interventions can already take place within the scope of the obligation under mining law to rehabilitate the area (§55(1), No. 7 BBergG, §1(5), 4th sentence BNatSchG). If this is not possible, compensatory and/or substitution measures or subordinated compensatory payments pursuant to BNatSchG are necessary (see North Rhine-Westphalia (NRW) example below). In the case of procedures which are subject to the Federal Mining Act (BBergG), the legal instruments of the Federal Mining Act are applied, such as (and in particular) regular monitoring based on the main operating plans, which must generally be submitted and re-approved every two years.

#### **Documentation of compensatory measures for interventions in nature**

Since the amendment of the BNatSchG in 2010, German Federal States are obliged to create compensation directories for all interventions in nature. However, these take various forms and are not publicly available in all Federal States.

**Figure 7:** Overview of compensation directories in the Federal States

Federal State	Publicly available	Central for the Federal State	Comprehensive information on the intervention area and the compensation type	Weblink	Information on compensatory payments
Baden-Wuerttemberg	Yes	No	Yes	<a href="https://www.lubw.baden-wuerttemberg.de/natur-und-landschaft/kompensationsverzeichnis">https://www.lubw.baden-wuerttemberg.de/natur-und-landschaft/kompensationsverzeichnis</a>	A list of compensatory payments can be obtained on request from the Stiftung Naturschutzfonds (Nature Conservation Trust Fund).
Bavaria	Yes	Yes	Yes	<a href="https://www.lfu.bayern.de/natur/oefka_oeko/oekoflaechenkataster/index.htm">https://www.lfu.bayern.de/natur/oefka_oeko/oekoflaechenkataster/index.htm</a>	Lists of compensatory payments can be requested from district-level administrative authorities.
Berlin	Yes	Yes	No	<a href="http://fbinter.stadt-berlin.de/fb/index.jsp">http://fbinter.stadt-berlin.de/fb/index.jsp</a>	Lists of compensatory payments can be requested from regional-level administrative authorities.
Brandenburg	No	Yes	No	Under development	Lists of compensatory payments can be requested from the Ministry of Agriculture, Environment and Climate Protection.
Bremen	Yes	Yes	Yes	<a href="https://www.bauumwelt.bremen.de/umwelt/natur/gis_dienste__geodaten-48536">https://www.bauumwelt.bremen.de/umwelt/natur/gis_dienste__geodaten-48536</a>	A list of compensatory payments can be requested from the Senator for Climate Protection, Environment, Mobility, Urban Development and Housing.
Hamburg	Yes	Yes	Yes	<a href="http://www.geoportal-hamburg.de/geo-online/">http://www.geoportal-hamburg.de/geo-online/</a>	Gesamtbetrag der Ersatzzahlungen ist über die Jahresbilanz des Sondervermögens für Naturschutz öffentlich einsehbar.

Federal State	Publicly available	Central for the Federal State	Comprehensive information on the intervention area and the compensation type	Weblink	Information on compensatory payments
Hesse	Yes	Yes	Yes	<a href="http://natureg.hessen.de/mapapps/resources/apps/natureg/index.html?lang=de">http://natureg.hessen.de/mapapps/resources/apps/natureg/index.html?lang=de</a>	Compensatory payments cannot be viewed by the public.
Mecklenburg-Western Pomerania	Yes	Yes	Yes	<a href="https://www.kompensationsflaechen-mv.de/wiki/index.php/Hauptseite">https://www.kompensationsflaechen-mv.de/wiki/index.php/Hauptseite</a> <a href="https://www.umweltkarten.mv-regierung.de/atlas/script/index.php">https://www.umweltkarten.mv-regierung.de/atlas/script/index.php</a>	Compensatory payments cannot be viewed by the public.
Lower Saxony	To some extent	No	To some extent (e.g. County of Cuxhaven)	e.g. County of Cuxhaven <a href="https://cuxland-gis.landkreis-cuxhaven.de/internet/kompensationsflaechen">https://cuxland-gis.landkreis-cuxhaven.de/internet/kompensationsflaechen</a>	Compensatory payments cannot be viewed by the public.
North Rhine-Westphalia	Planned	No	Yes	–	Lists of compensatory payments can be requested from district-level administrative authorities.
Rhineland-Palatinate	Yes	Yes	Yes	<a href="http://www.naturschutz.rlp.de/?q=kartendi-enst">http://www.naturschutz.rlp.de/?q=kartendi-enst</a>	A list of compensatory payments can be requested from the Foundation for Nature and Environment.
Saarland	No	No	No	–	Eco-account measures can be viewed on the Saarland Geoportal ( <a href="http://www.geoportal.saarland.de">www.geoportal.saarland.de</a> ).
Saxony	No	Yes	No	<a href="https://www.umwelt.sachsen.de/umwelt/natur/15205.htm">https://www.umwelt.sachsen.de/umwelt/natur/15205.htm</a>	Lists of compensatory payments can be requested from district-level administrative authorities



Federal State	Publicly available	Central for the Federal State	Comprehensive information on the intervention area and the compensation type	Weblink	Information on compensatory payments
Saxony-Anhalt	To some extent (eco-accounts: Yes, compensation directory: No)	Yes	No	<a href="http://ekis.geolock.de/">http://ekis.geolock.de/</a>	Compensatory payments cannot be viewed by the public.
Schleswig-Holstein	Yes	No	No	<a href="http://www.lksh.de/forst/oekokonto/natur-raume-mit-okokonten-in-sh/">http://www.lksh.de/forst/oekokonto/natur-raume-mit-okokonten-in-sh/</a>	A list of compensatory payments can be requested from the Ministry of Energy, Agriculture, the Environment, Nature and Digitalization.
Thuringia	No	Yes	Yes	–	

Own presentation, as of: December 2019.

### Example of the transparency of compensation directories in Baden-Wuerttemberg

The basis of the compensation directory in Baden-Wuerttemberg is formed by §17(6) of the BNatSchG, the compensation directory regulation and the eco-account regulation of the state, which provide for the obligation to make documentation available for the public. The latter two regulations can be downloaded from the website of the Ministry of the Environment of Baden-Wuerttemberg. The Baden-Wuerttemberg compensation directory is divided into 'eco-account' and the 'intervention compensation' sections.

An eco-account is an instrument for the perpetrators of interventions (polluters). It enables them to temporally and spatially decouple compensation measures from the mining area, making the measures more flexible to manage. Compensatory measures can be stockpiled via so-called 'eco-points', which are accumulated by means of the targeted ecological upgrading of external areas. The corresponding eco-points can be used for later interventions to compensate for the interventions either in whole or in part. Polluters such as natural resource companies and local authorities are involved here as producers, consumers and traders of eco-points.

A central overview of the total number of all interventions in Baden-Wuerttemberg, including their compensatory measures, is not available; however, the legal environmental protection eco-account measures and the compensatory measures already assigned to an intervention under nature conservation law can be accessed via the Internet sites of the responsible nature conservation sub-authorities at city and county levels (<https://www.lubw.baden-wuerttemberg.de/natur-und-landschaft/oeffentlich-einsehbares-verzeichnis-eingriffskompensation>), where the following information on the nature conservation compensatory measures of the counties is available:

- description of the approval authority and the compensatory measure (short description),
- file number and date of the approval certificate,
- type of project causing the intervention,

- project developer,
- location of the compensation area,
- measures for the timely implementation of the compensatory measure and the fixed period of maintenance,
- state of the implementation.

The following information on eco-account measures can also be accessed:

- complex of measures,
- status,
- natural area,
- location of the measure,
- eco-points.

Compensatory measures on intervention areas and substitute areas are documented in the compensation directory of the state of Baden-Wuerttemberg. Measures taken since April 2011 have been listed.

### Example of the assessment of compensatory payments in North Rhine-Westphalia

In the case of an authorised intervention, compensatory money can be levied as an Ultima Ratio if negative impacts on nature are unavoidable, or if they cannot be compensated or replaced within a reasonable period. As per the BNatSchG, the compensatory payment is based on the average costs of the non-feasible compensation measures, including the necessary costs for their planning and maintenance, as well as the provision of the area, which encompasses personnel and other administrative costs. If these cannot be ascertained, the compensatory payment is based on the duration and severity of the intervention, taking into account the advantages accruing to the polluter (§15(6), 1st sentence et seq., BNatSchG).

The assessment of the amounts of compensatory payment is the exception rather than the rule in the approval of the activities of the extractive industry in North Rhine-Westphalia. Nevertheless, there are cases in which, for example, the major part of the compensation takes place in recultivation, but a small computational, compensational deficit still must be implemented on an external area, or the assessment of the compensation through rehabilitation will not be appropriate. If the area in question or the required measure is unavailable, or can neither be implemented nor is expedient at a reasonable cost, a relevant compensatory payment is assessed. In North Rhine-Westphalia, this assessment is made in accordance with the provisions of the State-level Nature Conservation Law (LNatSchG NRW) in consultation with the relevant higher authority for nature conservation (§33(1), LNatSchG NRW).

The beneficiary of the compensatory payment is the regionally-responsible sub-authority for nature conservation, which must use the compensatory money for measures involving nature conservation and landscape management (§31(4), LNatSchG NRW (State-level Nature Conservation Law)). If the compensatory payment is to be paid for an intervention in forested areas or to be used for the afforestation of land, the payment will be made available to the forestry administration (§31(4) LNatSchG NRW).

Examples of the assessments of compensatory payments are the open-cast gravel mines in the open-cast mining zones in front of the lignite mining projects. In three of the open-cast mines, an ecologically-valuable rehabilitation was not indicated because open-cast lignite mining would use the area directly after the gravel or sand extraction operations. In these cases, the local sub-authority for landscapes developed a simplified procedure by means of which an appropriate compensatory payment could be assessed. A total of €265,767.90 in compensatory payments was assessed for the three projects mentioned above.

For another open-cast gravel mining project, a small-scale expansion was planned for which

a compensatory payment was assessed, if the intended recultivation could not be implemented. The county sub-authority for nature conservation, however, would have to use the compensatory payment of €21,900 it received to implement another equivalent compensatory measure. (This list of examples is not exhaustive).

In the years between 2011 and 2015, a total of around €300,000 in compensatory payments were assessed for the North Rhine-Westphalia mining authorities. So far, there have been no compensatory payments for the lignite mining industry in North-Rhine Westphalia; intervention compensation is mainly carried out in the form of rehabilitation. The ratio of the many open-cast mining projects in NRW (especially lignite mining projects, some of which are on a very large scale) to the few small projects mentioned above shows that the assessment of compensatory payments plays a subordinate role in the procedures carried out under mining law.

### Cooperation between stakeholders

Since each extraction of natural resources represents a significant intervention in nature and landscape, an environmentally-friendly extraction development and technology approach should be standard for companies in this sector. Timely renaturation and recultivation can contribute to the promotion of biological diversity; but operating extraction sites are also habitats for rare animals and plants. Cooperation between the extractive companies, the employees there and nature conservationists who are familiar with the area has proven to be useful. This means that operational management can be adapted to local and specific biodiversity requirements. This usually succeeds if the company management and employees are continually involved in dialogue with specialist nature conservation institutions and persons. In the case of expansions or new extraction projects, an early dialogue between the stakeholders can also avoid conflicts before they arise. Information and training materials on the subject help to broaden the impact of initiatives like this,

which are supported by strong memberships in the environmental and nature conservation associations, the mining, chemicals, energy and construction-agri-environment industrial trade unions, and economic associations at federal and state levels.

## b. Provisions

In Germany, federal legislation stipulates that companies which extract natural resources must carry out recultivation measures. The companies are also obliged to create and maintain long-term accounting provisions ('financing provisions'). These usually include measures which are still necessary after closure of the mine concerned, such as measures for the rehabilitation of the mine area and recultivation measures. Provisions are set aside for these financial obligations under accounting rules.

The amount of the provisions to be set aside is based on the anticipated expenses for various planned measures. Long-term tax provisions with a residual maturity of more than one year are also discounted, using a legally-defined interest rate and taking future cost increases into consideration. The expected dates of fulfilment are essentially dependent on the remaining economic useful life of the extraction sites in question. The obligations of some companies extend far beyond the year 2050.

Provisions for mining are shown on the liabilities side of the balance sheet in the annual financial statements of the extractive sector companies. This is why they are audited by professional auditors as balance sheet items. Provisions must be fully adequate in accordance with the relevant rules. This is audited by the tax authorities with regard to tax issues.

Provisions made by companies which must publish their annual financial statements are shown transparently at <http://www.bundesanzeiger.de>. The duty of disclosure applies to all limited companies pursuant to §325 HGB, all commercial partnerships without a

natural person as a personally-liable shareholder (e.g. GmbH & Co. KG) and other companies that exceed a certain size.

## c. Implementation securities

Implementation securities are an instrument provided in Germany to implement the renaturation, safeguarding and rehabilitation measures to be carried out by extractive sector companies. If a company should fail or refuse to carry out the above measures, the authorities ensure that no additional costs will have to be paid by the general public by means of so-called 'substitute performances'.

Implementation securities are expressly provided for under the Federal Mining Act (BBergG) as an official instrument for natural resources extraction projects which are subject to the BBergG. Individual Federal States have introduced similar legislation in their excavation laws (or other subordinate excavation regulations) for the extraction of natural resources which is outside the legal scope of the BBergG. Implementation securities can also be established to ensure the implementation of compensatory and substitution measures for interventions in nature and landscape, pursuant to §17(5) of the Federal Nature Conservation Act (BNatSchG).

Within the scope of its discretion pursuant to §56(2) BBergG, the mining authority may make the granting of operating plan permits dependent on an implementation security, if this is necessary to guarantee (in particular) the implementation of measures for risk prevention and rehabilitation in the areas affected by the extraction of the natural resources. This applies to follow-up measures of mining activities such as water drainage, for example, but also to the dismantling of equipment, the removal of water-endangering substances and the securing of former extraction sites by backfilling them or blocking them off completely.

In principle, the mining authority may permit any suitable form of implementation security if it considers that such a security is necessary and if there are no restrictions arising from the relevant statutory provisions. Forms of implementation security include the deposit of cash and bonds, mortgages, special default insurances, operational provisions, bank or group guarantees and so-called strict letters of comfort.

Operating provisions, bank guarantees or insurance guarantees and, particularly in the case of large companies, corporate guarantees and letters of comfort are customary in the natural resources extractive sector. Cash and bonds are not usually accepted as securities, since the management of these is too complex for the authorities. Implementation securities are therefore not payments from companies to state agencies.

The amount of the implementation security to be set is oriented on the estimated cost of a (possibly necessary) substitute performance. If a project is to be carried out in stages, the implementation security is set up in stages on the basis of the actual intervention and is approved on a pro rata basis after successful partial rehabilitation.

#### d. Abstraction of water for the extraction of natural resources

The abstraction of ground and surface water may be necessary during the course of the extraction and further processing of natural resources. The volumes of water abstracted for the activities of the natural resources extractive sector are published by the relevant statistical authorities of the individual Federal States.<sup>7</sup> An overview is shown in Fig. 4.

The 'Mining and Quarrying' sector abstracted a total of 1,583 million m<sup>3</sup> of water in 2013 (mainly groundwater). Coal mining accounted for around 75% of this

volume. This corresponds to around 5% of the total water abstracted in Germany by industry and private households in 2013.<sup>8</sup> Depending on the regional importance of the natural resources sector – particularly coal mining – the proportion is higher in some states than in others (up to 30% in individual cases).

##### Example: Use of water in potash and rock salt mining

In potash and rock salt mining, water from different origins and of different quality levels including river water, groundwater and drinking water is used in many processes.

Raw salt is generally mined by means of drilling and blasting in the underground mining of potash and rock salt. However, salt can also be extracted in a brine plant, where fresh water is introduced into soluble (salt) rock by means of a borehole, resulting in the creation of chambers filled with salt water. The salt-saturated water (so-called brine) is then conveyed to the surface via another pipeline. The salt is ultimately extracted when the brine evaporates.

##### Use of water

During the initial development of a deposit of raw materials, the pumping out of ground water can lead to a lowering of the groundwater level. Water abstractions during extraction of the natural resources may also be necessary e.g. to keep shafts or excavation pits dry. This so-called drainage and mine water is treated, purified and then used as cooling water, provided to the public as drinking and industrial water, used as water for the protection and maintenance of moist biotopes, or introduced into surface water without being used further.

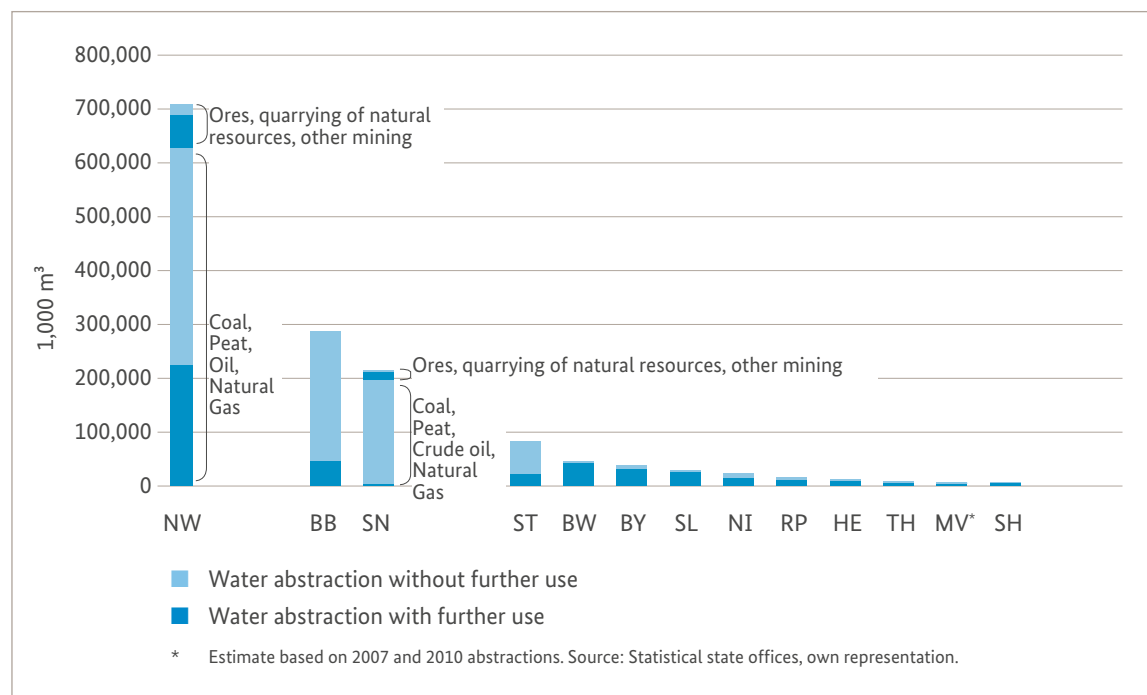
<sup>7</sup> Source: Federal Statistical Office of Germany, National Environmental Accounting <https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Umwelt/Materialfluesse-Energiefluesse/Tabellen/entnahme-wasser.html>

<sup>8</sup> In some Federal States, a distinction is made between the following two sectors: 1. ores, quarried natural resources, other mining products and 2. coal, peat, oil and natural gas; e.g. Saxony State Office of Statistics (2013): Water supply and waste water disposal in the operations of the non-public sector in the Free State of Saxony, [https://www.statistik.sachsen.de/download/100\\_Berichte-Q/Q\\_I\\_2\\_3j\\_13\\_SN.pdf](https://www.statistik.sachsen.de/download/100_Berichte-Q/Q_I_2_3j_13_SN.pdf)

The use of water by the mining industry is associated with consequences for the water balance. Environmental impacts can result from, among other causes,

the change in the groundwater level, the flow rate of water bodies and the introduction of drainage and mine water into surface waters.

**Graphic 4: Water extraction in the natural resources sector by state in 2013 (in thousands of m<sup>3</sup>)**



### Legal framework for water abstraction

An EU-wide legal framework for the protection of water and groundwater was created in 2000 with the Water Framework Directive (EU) 2000/60/EC of October 23, 2000 (WRRL). The WRRL stipulates (inter alia) that the costs of water services (including certain water abstractions) and environmental and resource-related costs are covered by the polluter-pays principle.<sup>9</sup> Water abstractions must also be checked for compliance with the general environment targets of the WRRL. If the volume of ground or surface water abstracted exceeds certain thresholds, environmental impact assessments must be carried out for the projects concerned.

The implementation of the WRRL into national law took place in Germany through the Water Resources Act, which regulates the protection and use of surface and groundwater at national level. Water abstraction procedures are subject to the reservation on the granting of permission by the water authorities. The water laws of the Federal States supplement and concretise the federal water laws. They particularly determine the amount of water abstraction fees.

### Structuring of water abstraction fees

The structuring of fees for water abstraction is carried out by the states that receive these fees. This is why water abstraction fees levied in Germany differ widely

<sup>9</sup> In its ruling of September 11, 2014 (docket ref. C-525/12), the European Court of Justice (ECJ) confirmed that with these federal and state regulations, Germany had sufficiently implemented the principle of cost recovery from the EU Water Framework Directive. The ECJ also expressly points out that in accordance with the provisions of Article 9(4) of this directive, the EU Member States are in any case empowered not to apply the cost-covering principle to certain water uses, while addressing the purposes and objectives of the directive.

in 13 of the 16 states, the three exceptions being Hesse, Bavaria and Thuringia. The total revenue in the 2017 budgetary plans of the states was estimated at around €417 million. These revenues are partly used for water management tasks, or they flow into the general budget of the respective Federal State.<sup>10</sup>

Most Federal States levy consumption-related fees for the abstraction of ground and surface water. Depending on the individual structure, these fees are also intended to reflect the 'value of the public services' for the utilisation of resources and can therefore act as incentive taxes for a sustainable water management programme and for the allocation of environmental and resource costs (§ 1 and § 6a of the Water Resources Act).<sup>11</sup>

In most German states, levy rates differ according to the type of abstraction, volume, origin of the water (surface water or ground water) and the purpose for which the water is to be used. There are also various state-specific deviations from the relevant rules through exemptions or discounts, and these may also apply to the natural resources sector.

#### **Water abstraction fees in the natural resources sector**

Very different rates are levied nationwide for the abstraction of water in the natural resources sector. For example, fees of between 0.3 and 5 €cents/litre for surface water are applied in some Federal States for certain types of mining operations (e.g. in Baden-Wuerttemberg, Lower Saxony, Mecklenburg-Western Pomerania), while in other states, the fees for groundwater abstraction can range from 5 to 31 cents/m<sup>3</sup>.<sup>12</sup>

In Rhineland-Palatinate and Schleswig-Holstein, on the other hand, groundwater excavation is exempt from water abstraction charges. In some Federal States, there are explicit regulations for dewatering operations in mines, or for water that is reintroduced into surface waters without being subsequently used.

The various fee levy rates, exemptions and discount rules are published in the individual state water laws. The German Federal Environment Agency provides an overview of the relevant fee levy rates in the natural resources sector.<sup>13</sup> However, a publicly-accessible source of information on the amount of revenue from water abstraction fees paid by the natural resources sector does not exist.

Water abstraction fees represent a flow of cash between companies that extract natural resources and the German State. Due to the different levy rates (inter alia) in individual Federal States, the payments probably lie below the materiality threshold, which is why they are not included for payment reconciliation purposes. Where companies in the extractive sector have reported water abstraction charges above the materiality threshold of €100,000, this report provides a link to the reports of the companies in the Federal Gazette (see Chapter 11).

10 Association of municipal enterprises e. V. (VKU) (2018): Comparison of water abstraction charges in the Federal States (Wasserentnahmeentgelte der Bundesländer im Vergleich) [https://www.vku.de/fileadmin/user\\_upload/Verbandsseite/Sparten/Wasser\\_Abwasser/180409\\_VKU-Grafik\\_Wasserentnahmeentgelte\\_2018.pdf](https://www.vku.de/fileadmin/user_upload/Verbandsseite/Sparten/Wasser_Abwasser/180409_VKU-Grafik_Wasserentnahmeentgelte_2018.pdf)

11 Gawel/Bretschneider (2016): Water abstraction fees in Baden-Wuerttemberg Inventory and Evaluation. Helmholtz Centre for Environmental Research [https://um.baden-wuerttemberg.de/fileadmin/redaktion/m-um/intern/Dateien/Dokumente/3\\_Umwelt/Schutz\\_natuerlicher\\_Lebensgrundlagen/Wasser/Rechtsvorschriften/WEE/160630\\_Endbericht\\_WEE\\_UFZ.pdf](https://um.baden-wuerttemberg.de/fileadmin/redaktion/m-um/intern/Dateien/Dokumente/3_Umwelt/Schutz_natuerlicher_Lebensgrundlagen/Wasser/Rechtsvorschriften/WEE/160630_Endbericht_WEE_UFZ.pdf)

12 German Federal Environment Agency (2017): Table of water abstraction fees in the natural resources sector in German states, [https://www.umweltbundesamt.de/sites/default/files/medien/2466/dokumente/tabelle\\_wasserentnahmeentgelte\\_im\\_rohstoffsektor\\_uba\\_neu.docx](https://www.umweltbundesamt.de/sites/default/files/medien/2466/dokumente/tabelle_wasserentnahmeentgelte_im_rohstoffsektor_uba_neu.docx)

13 See <https://www.umweltbundesamt.de/themen/wasser/wasser-bewirtschaften/oekonomische-fragen#textpart-1>

# 7

## STATE SUBSIDIES AND TAX CONCESSIONS

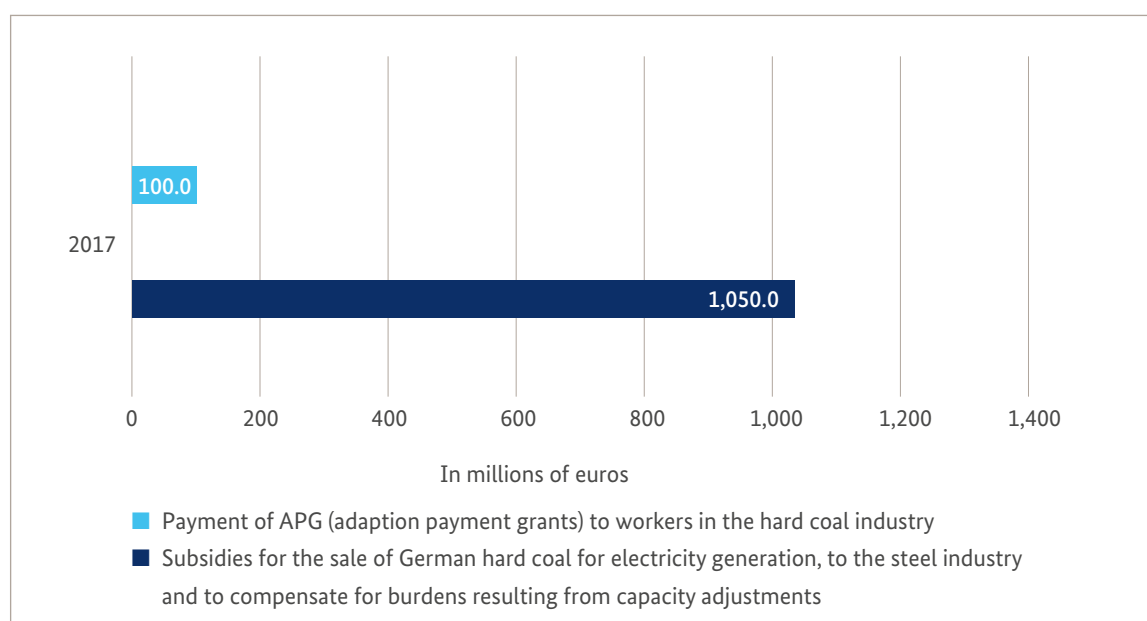




In addition to the payments which extractive companies make to public authorities, the state also financially supports the sector with subsidies and tax concession programmes. Financial help is provided for the hard coal mining industry: there are subsidies for the sales of hard coal, compensation for bottlenecks resulting from capacity adjustments and adaption payments for socially-acceptable personnel reductions in the sector. The State also grants concessions for energy and electricity taxes for production industry companies (see Chapter 7.c.).

There are different definitions of the term subsidies at both national and international levels, and several methodological approaches are used to tackle the topic. The term used here is based on the definition of the subsidy report of the Federal Government. According to this report, only directly budget-relevant subsidies of the Federal Government are considered for private companies and economic sectors. Subsidies at Federal state level are available in the subsidy reports of the Federal States (see Annex 5 of the Subsidy Report of the Federal Government).

**Graphic 5: Subsidies in the German hard coal industry 2017**



For detailed source information see final note<sup>viii</sup>. Own presentation.

## a. Subsidies for the sales of hard coal

The German hard coal industry is not competitive, mainly because of geologically-related high production costs. An agreement was therefore reached in 2007 between the Federal Government, the hard coal-producing states of North Rhine-Westphalia and Saarland, the RAG AG (the largest German coal mining corporation based in the Ruhr region) and the Mining, Chemical and Energy Industrial Trade Union (IG BCE) that the subsidised hard coal industry would be terminated in socially-responsible manner by the year 2018. The agreement was based on the Hard Coal Mining Financing Law of Thursday, December 20, 2007 and on a framework agreement between the Federal Government, the hard coal-producing Federal States, the RAG AG and the IG BCE. The public sector grants temporary aid to promote sales (balancing the difference between domestic production costs and the world market price) and to cope with the necessary decommissioning measures. The subsidies are gradually reduced and ultimately cycled out, a move that also addresses climate protection and resource conservation.

### Development

In 2017, the amount of Federal aid for the sales of hard coal amounted to €1,050 million. The state of

North Rhine-Westphalia provided more financial aid. The subsidies pledged to the hard coal mining industry are being reduced over time. Between 1998 and 2005, Federal subsidies were cut by approximately 50% – and they were again reduced by 25% between 2006 and 2014. Deviations from the declining trend of subsidisation are based on the fluctuating world market prices for hard coal (inter alia).

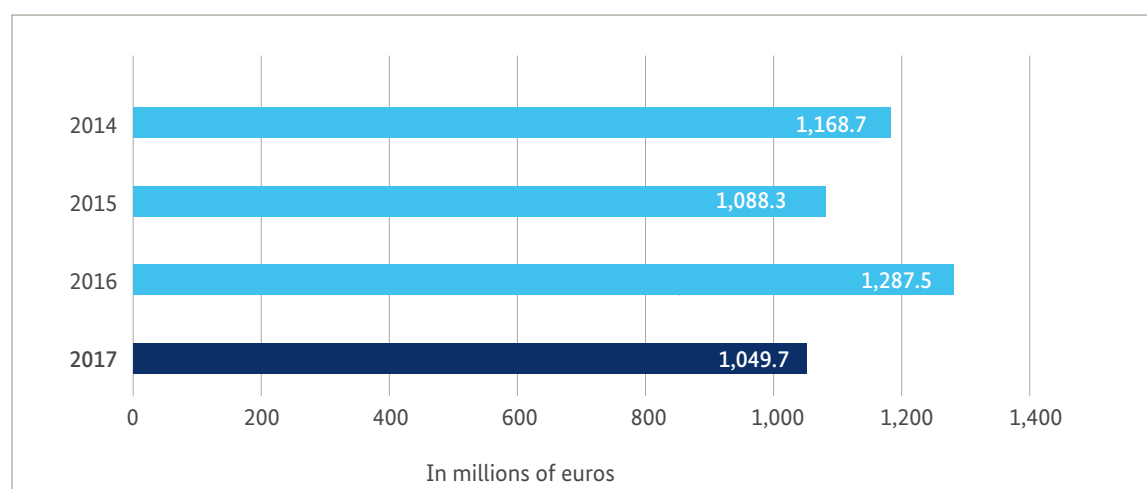
### Control measures

The subsidisation of the German hard coal industry is subject to approval by the EU and has been reviewed and approved by the EU Commission. The German Federal Office of Economics and Export Control (in cooperation with auditors) also monitors how these financial subsidies are being used on an annual basis.

### Prevention

To cope with the necessary decommissioning activities, the private-law RAG Foundation is making the former investment assets of the RAG AG available to finance the remaining perpetual burdens following the closure of the mines (burdens such as mine water drainage, permanent land subsidence and ground-water purification). If these assets are not sufficient to cover the perpetual burdens, the Federal Government and the hard coal-producing Federal States will provide subsidies at a ratio of one-third to two-thirds respectively.

■ **Graphic 6:** Subsidies for the sale and closure of German hard coal from 2014 to 2017 (Federal Government amounts)



For detailed source information see final note<sup>viii</sup>. Own presentation.

## b. Adaption payment

Employees who are at least 50 and 57 years old (underground workers and surface employees respectively) and who will lose their jobs before January 1, 2023 due to the closing-down of mines or rationalisation measures, will receive adaption payment (APG) as an interim benefit for a maximum of 5 years until their entitlement to pension insurance becomes valid. The adaption payment reflects the social responsibility of the Federal Government and the hard coal-producing Federal States. In 2017, the Federal Government guaranteed adaption payment totalling €100.1 million.

### Employees

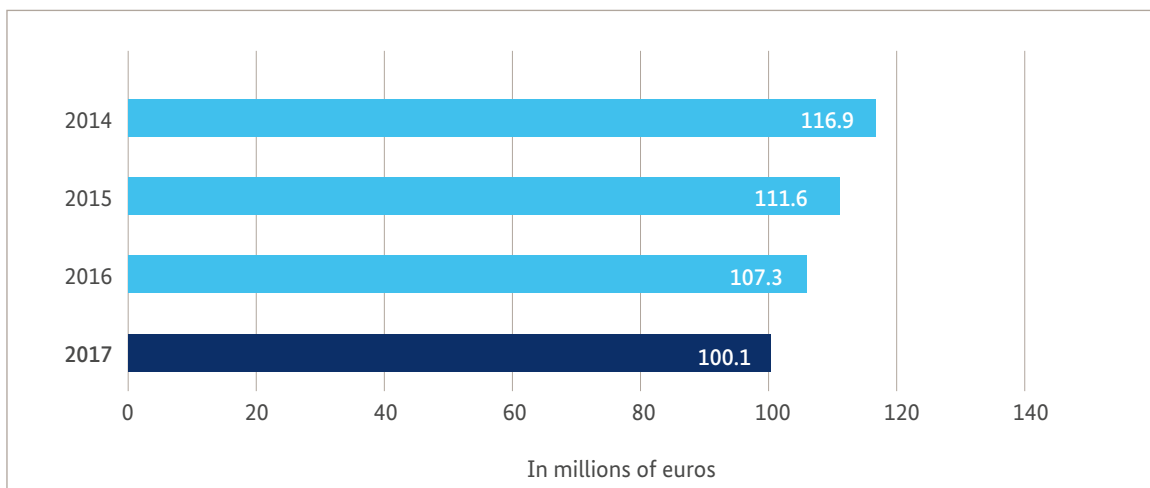
The number of employees is declining. At the beginning of 2008, 32,803 persons were employed in hard

coal mining. By the end of 2015 the number of employees had been reduced to 9,640 employees. The number of persons entitled to adaption payment is following this reduction trend, albeit with a time lag. Since more employees will be retiring after the last mine closures at the end of 2018 and a declining number of employees will still be needed after 2018 to complete the closure of mines, the current adaption payment guidelines will still apply until 2027.

### Control measures

In addition to the monitoring of the intended use of funds by the German Federal Office of Economics and Export Control in cooperation with external auditors, the German Federal Audit Office also randomly reviews individual adaption payment cases within the framework of the Federal Office's annual budget review.

■ **Graphic 7:** Adaption payment 2014 – 2017 (Federal Government amounts)



For detailed source information see final note<sup>viii</sup>. Own presentation.

## c. Concessions for electricity and energy taxes

There are various tax concessions for both electricity and energy taxes, including tax exemptions, tax reductions and tax relief. The Electricity Taxation Act (StromStG) provides for certain types of use, or electricity generation. The Energy Taxation Act (EnergieStG) also covers uses in which energy products are tax-favoured. A part of these concessions is mandatory under the Energy Tax Directive EU 2003/96/EC of October 27, 2003.

As production industry companies, extractive sector enterprises can particularly profit from the different tax relief possibilities provided by energy and electricity tax legislation.

### Three regulations are particularly relevant here:

- Tax relief for companies (§54 EnergieStG, §9 b StromStG):  
If a production industry company applies for electricity and energy tax concessions and its application is approved, it is granted a reduction of 25% of the tax rates on electricity, heating and the fuels used in its production facilities eligible for tax concession.
- Tax relief in the form of so-called peak compensation (§55 EnergieStG, §10 StromStG):  
The additional burden of the 'ecological tax reform' on production industry companies is lightened by a reduction in their energy and electricity taxes. Since the increase in revenues generated by the ecological tax reform also served to reduce the factor of 'work' and contributed to companies paying less for employers' contributions to pension insurance schemes in comparison to 1999, a comparative peak compensation calculation is carried out for companies in question. In order to avoid double relief for the employers' pension insurance as well as for the energy used, saved pension contributions are taken into

account in the calculation of the tax relief. The amount of relief is therefore calculated individually depending on the company, and is also capped at a maximum of 90% of the electricity tax paid and 90% of the tax share pursuant to §55(3) of the EnergieStG. Prerequisites for claiming peak compensation are, among other things, evidence of a certified energy management system and an annual energy intensity reduction (by a statutory value) achieved by all the plants of the production industry company. The comparative value is the average energy intensity value for production industry companies between 2007 and 2012.

- Certain processes and procedures/manufacturer privilege (§9a StromStG, §51 EnergieStG, §§26, 37, 44 and 47 EnergieStG):  
Companies in the manufacturing industry can use electricity or energy products for specific, energy-intensive purposes (such as electrolysis, metal production, manufacture of glassware, etc.) and reduce their tax bills by 100%. In addition, companies that produce energy products on their own premises (refineries, gas extraction and coal mining companies) can use these self-produced energy products tax-free (or obtain tax relief) for the purposes of maintaining operations within their own companies.

The subsidy report of the Federal Government contains the total subsidies for the entire production industry; they are not shown separately for each sector such as the extractive sector. However, from July 1, 2016, the member states of the European Union must annually disclose comprehensive information on any government support granted above a threshold of €500,000 per company, per benefit and per year on a detailed financial aid website.<sup>14</sup> In Germany, tax concessions are published in accordance with the regulation on the implementation of publication, information and transparency obligations under EU law in the Energy Tax and Electricity Tax Ordinance (EnSTransV). Under this regulation, the customs administration

<sup>14</sup> <https://webgate.ec.europa.eu/competition/transparency/public/search>

may collect, process, store, transmit and delete data relating to energy and electricity tax concessions.

The extent of the concessions<sup>15</sup> granted to extractive sector companies reporting under EnSTransV is between €10.5 and €22 million<sup>16</sup> for the general tax con-

cessions pursuant to §9b StromStG, €24.5 – €61 million for peak compensation pursuant to §10 StromStG, €0.5 – €1 million for peak compensation pursuant to §55 EnergieStG and €1 – €2 million for production facilities eligible for tax concession, pursuant to §3 EnergieStG.

<sup>15</sup> only benefits exceeding €500,000 per year, company and reason for the benefit; information given for 2017, accessed on October 24, 2019

<sup>16</sup> Classification in the European Union State Aid Register is based on the following increments (€0.5–€1 million; €1–€2 million; €2–€5 million; €5–€10 million; €10–€30 million; > €30 million), the lower and upper limits are therefore shown.

# 8

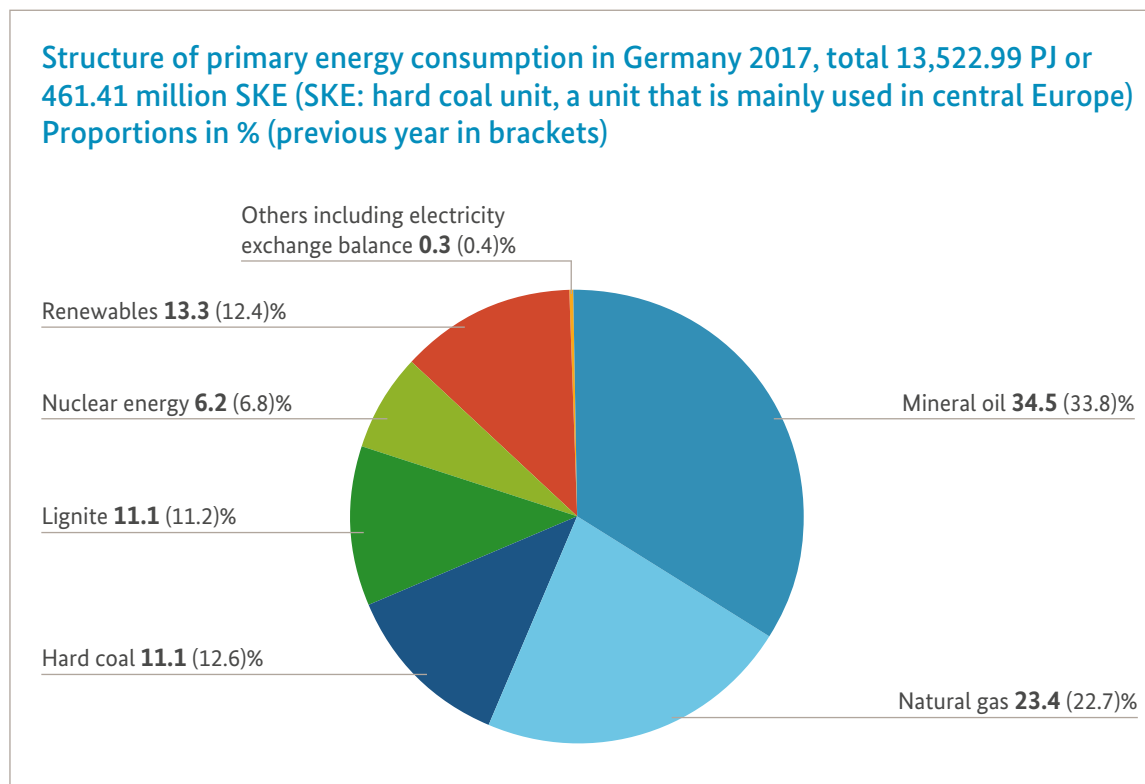
## RENEWABLE ENERGIES



Renewable energies<sup>17</sup> make a large and growing contribution to Germany's energy supply. In 2017, the share

of renewable energies amounted to 13.1% of the total primary energy consumption.

**Graphic 8:** Structure of the primary energy consumption in Germany in 2017



Source: Working Group on Energy Balances – April 2020. For detailed source information see final note<sup>18</sup>.

The contribution to the electricity sector is particularly high; more than 36.2% of the gross electricity consumption is covered by renewable sources (more than 217,900 GWh). The Federal Government has set itself the goal of decarbonising the energy supply almost completely by 2050, thus reducing greenhouse gas emissions. In 2017, the combustion of fossil energies accounted for more than 85% of greenhouse gas emissions in Germany (756 Mt CO<sub>2</sub> equivalents). Fossil-fuelled power plants are currently needed (in addition to renewable energies) to meet energy requirements in Germany.

The technologies of renewable energies require steel, cement or petrochemical raw materials as the following example shows: The components of a wind

turbine consist of roughly 45% crude oil and petrochemical industry products. One wind turbine blade can be 30 to 50 metres long in large wind turbines and it contains up to 12,000 kg of petrochemical products.

Some of the metals required for the energy transition (e.g. electronic elements such as indium, germanium and gallium) are additional raw materials, i.e. they are obtained as by-products during the extraction of a different metal. In the case of these metals, the regulatory mechanisms for the supply of natural resources only function to a limited extent. In Germany and Europe, potential deposits like this do exist, with the result that import dependencies could be reduced

<sup>17</sup> Source of the figures stated in the report: BMWi (2018) (Federal Ministry for Economic Affairs and Energy): Renewable energies in numbers, <https://www.bmwi.de/Redaktion/DE/Publikationen/Energie/erneuerbare-energien-in-zahlen-2017.html>

through the targeted development of these deposits and the extraction of their natural resources.

In 2017, investments in renewable energies amounted to €15.7 billion, while the operation of the existing plants generated €16.2 billion in sales. The expansion of renewable energies can affect employment by increasing demand for the energies' related goods and services. Wind power led the way – in 2017 the sector employed more than 115,000 people. The expansion of renewable energies is financed by feed-in tariffs which are higher than the stock exchange electricity price and this benefits renewable energy system operators. These feed-in tariffs are paid by the end users in the form of an additional charge on their electricity bills. If renewable energies are to expand further, industrial energy projects must be suitably combined with the development of the renewable energies. This also applies to the German natural resources industry, which has already established a series of wind, biomass, geothermal, solar and hydroelectric power projects in Germany.

Renewable energy sources are used in electricity and heat generation and in the transport sector. The most important renewable energy source in the electricity sector is wind power:

In 2017, 48.9% of the renewable electricity was generated from wind energy. Wind energy plays a vital role in the expansion of renewable energies, an expansion which will ultimately result in an economically-viable and climate-friendly energy supply at reasonable prices and with a high level of general prosperity. The use of wind energy now accounts for more than 17.7% of German electricity consumption. Wind turbines have been built on various closed minesites in North Rhine-Westphalia, mainly on now-green colliery slag heaps on which favourable wind conditions exist – and these man-made hills have a 'model character' in Germany. In addition to the further development of suitable land sites and the replacement of older, smaller wind turbines by modern and more powerful models – so-called 'repowering' – the expansion of wind energy at sea is also becoming increasingly important. In 2017 alone, wind energy

turbines were installed with a capacity of around 5,484 MW on land and roughly 1,275 MW at sea. Wind turbines with a total capacity of around 55,759 MW are now operating in Germany; they produced almost 106,600 GWh of electricity in 2017, one sixth of which was generated by wind turbines at sea. The Federal Government is planning to have an off-shore wind power of 15,000 MW on the grid by the year 2030. In view of this expansion and the ever-increasing power units (more than 10 MW per wind turbine), the need for mineral natural resources will also increase. Concrete, for example, is required for the construction of wind turbine foundations. This also means a correspondingly higher demand for limestone for cement production and for aggregates such as gravel and sand.

Biomass has also become a very relevant energy source for electricity generation. The total capacity of biomass electricity generation plants is around 8,000 MW; electricity generation in 2017 amounted to more than 51,000 GWh (8.5% of the total electricity consumption and 23.5% of the renewable electricity generation). In addition to biogas (including biomethane and landfill and sewage gas), solid and liquid biomasses and biogenic waste are also used to generate electricity, but biogas is the most important single biogenic energy source for electricity generation with 63% (2017) of the entire biomass.

Solar energy can also be used to generate electricity. More than 1.5 million photovoltaic plants convert the sun's radiation energy directly into electricity – these plants represented a total of around 42,000 MW of installed capacity in Germany at the end of 2017, and around 1,700 MW of power were added in that year. Electricity generation from photovoltaics continues to rise steadily as a result, attaining approximately 40,000 GWh in 2017. Photovoltaics thus accounted for 6.6% of the total electricity consumption and contributed 18.3% to the renewable energy supply. German mining companies are also increasingly opting for the use of photovoltaic systems at various mining sites in Germany.



In addition to wind, biomass and photovoltaics, hydropower also contributed to electricity generation with around 20,200 GWh in 2017.

Renewable energy sources are also increasingly being used in the heating sector. In 2017, a total of 162,000 GWh was produced by renewable heat sources. The most important renewable energy sources for heat generation are biogenic solids with 107,000 GWh, produced mainly by wood in the form of e.g. wood pellets. Biogas, biogenic waste and geothermal energy and heat harnessed by heat pumps are also relevant renewable heat sources, each of which generated heat in excess of 10,000 GWh in 2017. As a base load-capable form of energy with a high annual production performance (the target for geothermal power plants target is >8,000 h), deep geothermal energy is an integral part of a meaningful energy mix. Geothermal energy for heating is steadily growing in importance. Solar thermal energy also contributed to the supply of heat with around 7,000 GWh.

In the transport sector, biomass can reduce CO<sub>2</sub> emissions, especially in the form of biofuels such as bioethanol, biodiesel and biogas for cars, trucks, trains, ships and aircraft. Electric vehicles are another option for reducing CO<sub>2</sub> emissions. In 2017, renewable energies accounted for 5.2% of fuel consumption in Germany.

Thanks to its flexible use in the electricity, heating and transport sectors, biomass is the most important renewable energy source. In 2017, 54% of the total final energy from renewable energy sources was provided by the various types of biomass used for energy purposes.

The expansion of renewable energies helps to avoid greenhouse gas emissions and reduces the use of fossil energy sources which are mainly imported. Despite the expansion of renewable energies, con-

ventional power plants are still needed. Since fossil fuels such as mineral oil, natural gas and hard coal are mostly imported in Germany, savings in this sector will also lead to a reduction in German energy imports: Renewable energies, as well as electricity generation based on Germany's own energy raw materials can significantly reduce these import dependencies and thus increase energy security.

## a. The demand for natural resources in the field of renewable energies

The MSG has set itself the goal of examining the effects of renewable energies on future natural resource requirements and the associated socio-economic implications in more detail for the second D-EITI report. The Prognos Institute, commissioned with the implementation of this task as an external service provider, prepared the study entitled 'Raw material requirements in the field of renewable energies' (2019) and submitted it to the MSG. The complete study is available at <https://d-eiti.de/wp-content/uploads/2020/02/Rohstoffbedarf-im-Bereich-der-erneuerbaren-Energien.Langfassung.pdf>.

However, the study did not deal with the extent to which the future demand for base and technology metals for EE (renewable energy) plants can be met by the mining of natural resources in Germany. Information on the deposits and extraction of these resources in Germany can be found in the 2016 Federal Institute for Geosciences and Natural Resources (BGR) reports:

**BGR (2018): 'Germany – Raw Materials Situation 2017'**<sup>18</sup>

**BGR (2017): 'Domestic mineral resources – indispensable for Germany!'**<sup>19</sup>

The following sections are taken from the summary of the study. The MSG is neither responsible for the content of the study nor for the contents reproduced here and does not adopt them as its own.

<sup>18</sup> [https://www.bgr.bund.de/DE/Themen/Min\\_rohstoffe/Downloads/rohsit-2017.pdf?\\_\\_blob=publicationFile&v=3](https://www.bgr.bund.de/DE/Themen/Min_rohstoffe/Downloads/rohsit-2017.pdf?__blob=publicationFile&v=3)

<sup>19</sup> [https://www.bgr.bund.de/DE/Themen/Min\\_rohstoffe/Downloads/studie\\_mineralische\\_rohstoffe\\_2017.pdf?\\_\\_blob=publicationFile&v=3](https://www.bgr.bund.de/DE/Themen/Min_rohstoffe/Downloads/studie_mineralische_rohstoffe_2017.pdf?__blob=publicationFile&v=3)

## Classification of the renewable energies in Germany's energy supply and presentation of the natural resources requirements for EE plants

'[...] The conversion of the energy supply to renewable energy sources creates an additional demand for raw materials, while the demand for fossil raw materials is declining. The analysis of the raw material requirements carried out in the report relates both to energy conversion plants (wind power and photovoltaics) and to significant technological changes in the use of energy sources (stationary storage facilities and batteries for electric mobility). The study examined construction raw materials, base metals and technology metals. The estimation of the raw material requirements is carried out until 2030. The estimations are based on a future development of the energy system in Germany according to scenario B of the German grid development plan 2019 of the German transmission grid operators.<sup>20</sup> This scenario shows a possible development path of the energy system taking into account the political objectives, i.e. in particular to achieve a share of renewable energies in gross electricity consumption of 65%.

In the case of construction raw materials, raw materials for concrete production play a significant role. In 2018, the demand for concrete used for newly installed wind turbines amounted to 1.8 million tonnes. The average annual demand is expected to remain constant at around this level in the future. However, the demand for construction raw materials caused by the energy transition is rather low compared to the demand in residential and road construction (Germany had a demand for ready-mix concrete of around 115 million tonnes in 2018).

Important base metals for the energy transition are steel and aluminium as well as copper and nickel. Steel is used in many plants as a building material. The demand for steel caused by the energy transition is of secondary importance compared to the overall

demand for steel in Germany. Aluminium is widely used in wind turbines and car components. The expansion of electromobility is expected to result in an additional annual demand for aluminium of around 162,000 tonnes in 2030. In addition to wind power and PV systems, copper is also used in electric mobility. Copper is likely to experience significant demand impulses as a result of the energy transition. While the copper demand for wind power and PV plants was 11,200 tonnes in 2013, the annual copper demand will increase by an additional 73,500 tonnes for batteries, electric motors and power electronics by 2030. The demand for nickel for electromobility is estimated to be around 1,050 tonnes in 2016. A ramp-up to around 1 million newly registered electric vehicles in 2030 would result in a nickel requirement of around 56,000 tonnes.

In connection with the energy transition, the technology metals gallium, indium, selenium and silicon are of relevance due to their use in PV modules. The same applies to cobalt and lithium due to their use in lithium-ion batteries and to neodymium and dysprosium due to their use in wind turbines and electric motors. The future annual demand for technology metals for the production of PV modules will remain more or less constant. The annual demand for cobalt and lithium is rising significantly due to increasing battery sales. The same applies to the demand for the rare earth metals neodymium and dysprosium. This is in particular due to the increase in electromobility and to a lesser share due to the construction of wind turbines. Table 1 provides an overview of the future demand for technology metals for key technologies of the energy turnaround.

The primary extraction of some of the raw materials required, e.g. cobalt, can be associated with high

<sup>20</sup> Please refer to: <https://www.netzentwicklungsplan.de/de/netzentwicklungsplaene/netzentwicklungsplan-2030-2019>

human rights, social and ecological risks, especially in countries with weak governance structures. In artisanal mining, child labour and a lack of social and safety standards can go hand in hand, which can also lead to health problems for the local population.

Environmental pollution from the extraction of primary raw materials is also caused, for example, by deforestation (e.g. bauxite extraction), water evaporation (e.g. lithium extraction from salt lakes) and dam fractures (risk at mining sites).

**Table I:** Demand for technology metals for key technologies of the energy transition according to scenario B 2030

Technology metals	Technologies considered	Cumulated demand, 2018 – 2030, in tonnes	Calculated average, in tonnes per year
Gallium (Ga)	Thin-film PV	12	0.92
Indium (In)	Thin-film PV, thick-film PV	165	13
Cobalt (Co)	Lithium-ion batteries (e-mobility and stationary storage)	74,000	5,700
Lithium (Li)	Lithium-ion batteries (e-mobility and stationary storage)	50,000	3,800
Neodymium (Nd)	Permanent magnet generators for wind turbines, electric engines for HEV, PHEV, BEV, Pedelecs	3,750	290
Dysprosium (Dy)	Permanent magnet generators for wind turbines, electric engines for HEV, PHEV, BEV, Pedelecs	660	50
Selenium (Se)	Thin-film PV	64	5
Silicon (Si)	Thick-film PV (Thin-film PV)	132,000	10,150

Source: own calculations according to (OEKO 2019) and (OEKO/IZT 2019)

## Socio-economic significance of renewable energies

In 1990, the Electricity Feed-in Act (Stromeinspeisungsgesetz) introduced a subsidy mechanism to initiate the transformation of the energy system. For the first time, energy supply companies in Germany were obliged to purchase electrical energy from renewable generation processes (wind- and hydropower as well as solar energy and biomass). Today, the use of renewable energies in Germany is largely promoted financially by the Renewable Energy Act (EEG). The EEG introduced a levy on electricity consumption (with the exception of energy-intensive commercial consumers) in addition to the electricity price. The levy is used to finance the feed-in tariffs for renewable power generation. The EEG levy for 2019 is 6.4 ct/kWh. The expected levy for 2019 amounts to EUR 23 billion.

Employment in the lead market „environmentally friendly energy generation, transport and storage“ amounted to 284,000 full person equivalents in 2018. The number of direct and induced jobs is subject to fluctuations and stood at 338,500 in 2016. Fluctuations in employment can be attributed among other things to fluctuations in the production of renewable energy plants and fluctuations in the number of plants installed in Germany.

A declared goal of the federal government is to increase the share of gross electricity consumption from renewable energy sources to 65%. Currently, the share of renewable energies in gross electricity consumption is approx. 38%. In order to achieve the targeted share, the installed capacity must be increased accordingly from 2018 to 2030. These expansion targets face numerous challenges in the development of renewable resources. Challenges exist with regard to the designation of suitable areas and securing social acceptance.

The report then illustrates the socio-economic significance of renewable energies based on a regional analysis. The following three German regions will be presented: A North German wind region (consisting of the Federal States of Schleswig-Holstein, Mecklen-

burg-Western Pomerania and Lower Saxony) with a focus on wind energy, a Central German region (Hesse, Saxony-Anhalt and Thuringia) with bioenergy use, and a South-East German solar region (Baden-Wuerttemberg, Bavaria and Brandenburg), where solar energy plays a major role.

In 2017, 8,100 companies and 50,000 employees were active in the field of renewable energies in the north German wind region. The gross value added in 2018 was about EUR 5 billion. In the wind energy sector, around 4,000 companies and around 17,900 people were employed in 2018, which is roughly double the figure for 2010. Despite the strong growth to date, fluctuations are to be expected regarding future developments. For example, if the expansion of wind power plants stagnates, employment is expected to fall.

In 2017, 5,900 companies and around 37,000 employees were active in the renewable energy sector in the central German bioenergy region. Gross value added in 2018 was around EUR 4.5 billion. In the field of bioenergy, around 2,000 companies with around 7,600 employees were active in 2018, which corresponds to a slight increase from 5,100 employees in the industry in 2010. The largest increase took place in the area of operation and maintenance.

In 2017, 16,700 companies and almost 100,000 employees were active in the field of renewable energies in the South-East German solar region. The gross value added in 2018 was around EUR 11 billion. In the field of solar energy, around 5,500 companies with around 20,100 employees were active in 2018, which corresponds to less than half of the 2010 active workforce in the sector. The reasons for the decline in employment and value added include the relocation of plant production abroad and a decline in the installation of new plants compared with the high installation figures during the years 2010 to 2012.

The expansion of renewable energies also faces challenges. These include issues of volatility and security

of supply as well as social acceptance of generation capacity expansion. While the majority are generally in favour of expansion, this support varies depending on the type of technology and appears to be decrea-

sing depending on the degree of direct impact. Questions of nature and species conservation as well as noise and odour emissions also lead to acceptance problems.'

Source: Prognosis (2019) Raw materials requirements in the field of renewable energies, on behalf of the Federal Ministry for Economic Affairs and Energy  
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# 9

## EMPLOYMENT AND SOCIAL AFFAIRS



## Employment in the extractive sector

The extractive industry offers good industrial jobs, with a variety of different professions and activities. At the end of 2017 almost 67,000 persons<sup>21</sup> were employed in the extractive industry. This corresponds to around 0.21% of all employees in Germany who are subject to social insurance contributions. At around

55%, most of the employees worked in the quarried natural resources and other mining products sector, followed by coal mining (lignite and hard coal) at around 21%.

Compared to the 2016 reporting period, the sector employed about 4,100 fewer workers, mainly due to the phasing out of hard coal mining by the end of 2018.

**Table 7:** Employment under the mandatory social security scheme by economic sector

	Persons employed under the mandatory social security scheme as of the reporting date on December 31, 2017			No. of apprentices among these employees		
	Total	Men	Women	Total	Men	Women
Mining and quarrying in total; including:	66,966	58,350	8,616	2,445		
Coal mining (lignite and hard coal)	13,731	12,183	1,548	726	656	70
Extraction of crude oil and natural gas	3,140	2,445	695	125	98	27
Ore mining	809	721	88	17	*	*
Quarried natural resources, other mining products	36,997	32,301	4,696	1,275	1,095	180
Provision of Services for Mining	12,289	10,700	1,589	302	257	45

Source: Federal Employment Agency 2017. For detailed source information see final note<sup>vii</sup>

\* For reasons of data protection and statistical confidentiality, numerical values of 1 or 2 and data from which such numerical values can be mathematically deduced are made anonymous.

21 Federal Employment Agency, Employment by economic sector (WZ 2008) – Germany, West/East and States (quarterly figures) – December 2017 [https://statistik.arbeitsagentur.de/nn\\_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche\\_Form.html?view=processForm&resourceId=210368&input\\_=&pageLocale=de&topicId=746698&year\\_month=201712&year\\_month.GROUP=1&search=Suchen](https://statistik.arbeitsagentur.de/nn_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche_Form.html?view=processForm&resourceId=210368&input_=&pageLocale=de&topicId=746698&year_month=201712&year_month.GROUP=1&search=Suchen)

Each direct job in the extractive industry is linked to 2 to 2.5<sup>22</sup> further jobs in upstream and downstream economic sectors. The employment effect of natural resources extraction in Germany thus totals around 155,000 persons.

## The role of legislation

The German economic system is characterised by the interaction of free market activity and State social policy. However, a pronounced social partnership also exists – especially in the natural resources sector – and it can be used to balance existing differences of interest between employers and employees.

In principle, German legislation regulates a uniform (minimum) level of protection for employees (e.g., working hours, holidays, protection against dismissal, protective rights for young people, pregnant women and severely disabled persons, as well as safety and health at work, etc., etc.). Above this level of protection and within the framework of their collective bargaining autonomy guaranteed by §9(3) of the German Constitution, the social partners are free to regulate working conditions independently for the particular company or the respective sector.

German legislation protects employed persons and their relatives against the greatest life risks (unemployment, illness, need for care, accidents, old age). A legally-regulated, five-pillar care system and security net<sup>23</sup> for the insured was developed to this end. Social insurance benefits are mainly financed by equal contributions from employees and employers. One exception to this, however, is industrial accident insurance, which is financed exclusively by the employer. Tax revenue is also used for financing in some segments. The insurance companies thus formed are

self-governing and guarantee the participation of the social partners.

## The role and cooperation of the social partners

### Co-Determination

One of the main pillars of the social market economy in Germany is co-determination, i.e. the right of employees and their representatives to participate in operational or business decisions. The scope and form of co-determination differ according to the company's size, legal form and industry.

Corporate Co-Determination is most extensive in mining<sup>24</sup> (Montan Co-Determination; Montan-MitbestG [Coal and Steel Co-Determination Act<sup>25</sup>] Montan-MitbestGErgG [Supplementary Co-Determination Act])<sup>26</sup>: In this case the supervisory boards are composed equally of shareholder and employee representatives. A labour director responsible for personnel and social matters is also appointed as an equal member of the management. Pursuant to the MontanMitbestG, his or her appointment is dependent on the approval of the majority of the employee representatives on the supervisory board.

For other companies which are managed in the legal form of a corporation and have more than 2,000 employees, the equal representation of employees and shareholders in the supervisory bodies also applies pursuant to the German Co-Determination Act (MitbestG). For companies with 500 to 2,000 employees, the 1/3 participation of employee representatives on the supervisory board applies (DrittelbG<sup>27</sup>).

22 The employment impact varies between 1.94 and 2.66 in the individual sectors. Hillebrand, Elmar (2016): Sector Analysis in the Natural Resources Industry (Branchenanalyse Rohstoffindustrie), published by the Hans-Böckler Stiftung, Page 71. at: [www.boeckler.de/pdf/p\\_study\\_hbs\\_315.pdf](http://www.boeckler.de/pdf/p_study_hbs_315.pdf).

23 (1.) Health insurance; (2.) Accident insurance; (3.) Pension insurance; (4.) Unemployment insurance; (5.) Nursing care insurance.

24 as well as in the 'iron and steel-producing industry'.

25 Montan Mitbestimmungsgesetz (MontanMitbestG) of 1951.

26 Montan-MitbestGErgG of 1956.

27 One-third participation Act of 2004.



Company Co-Determination is regulated in the **Works Constitution Act**, which states that an elected works council has participation rights in economic, personnel and social matters. In principle, a works council can be set up in every company in Germany with at least five employees. A central instrument in works council work is company agreements, which – like collective agreements – are legally-binding agreements between the employer and the works council and regulate the employment relationship of the employees. Frequent topics are company regulations on working hours, data protection, health promotion, work safety and further training, all of which are tailored to the conditions prevailing in the company.

### Tariff commitment

Freedom of association and the right to collective bargaining are guaranteed in Germany by **German Basic Law, §9 GG**. Collective agreements are concluded by one or more employers or employers' associations with one or more trade unions. They are solely binding for their members (tariff commitment). However, it is common practice for employers bound by collective agreements to allow non-unionised employees to participate in the collective agreement by referring to individual collective agreements. Many companies that are not bound by collective bargaining agreements also orient themselves on existing collective agreements. In 2014,<sup>28</sup> 30% of the natural resources sector companies<sup>29</sup> were bound by collective agreements; 27% by a regional collective agreement and 3% by a company collective agreement. However, the collective agreements apply to almost two-thirds (62%) of the employees in the sector, with 46% being subject to the conditions of a regional collective agreement and 16% to those of a company collective agreement.

## Training

The demanding activities of the extractive industry require well-trained specialist personnel. More than 70% of the employees have a recognised vocational qualification<sup>30</sup> and another 10%+ have an academic qualification<sup>31</sup>, e.g. in engineering.

Vocational training in Germany is essentially provided through the dual vocational training system, in which training takes place in parallel at two places of learning. The trainee concludes a training contract with the company and learns the necessary practical skills and competences close to the workplace. The second pillar of the system is the vocational school, which provides general and job-related theoretical knowledge. The duration of the training depends on the profession involved and varies between 2 and 3.5 years. During this time, the trainee receives a training allowance from the company. The successful completion of the course qualifies the candidate to directly exercise his or her profession as a qualified specialist.

The industry trains personnel in a number of different professions, including e.g. mechatronics technicians, electronics technicians, industrial and process mechanics, processing mechanics, mining and machine operators, mining technologists and industrial clerks. On the reporting date,<sup>32</sup> there were 2,445 trainees among the employees of the extractive industry, which equates with a training rate of 3.7%, which was below the German average of 4.9%. A look at the individual sectors reveals a relatively differentiated picture for the extractive industry. For example, training rates in the quarried natural resources industry vary from 2.5 to 7.4% (2017) because the importance of training occupations varies and the proportion of semi-skilled workers varies accordingly.

28 <https://www.destatis.de/DE/Themen/Arbeit/Verdienste/Tarifverdienste-Tarifbindung/Tabellen/tarifbindung-betriebe.html>

29 Section B of the WZ 2008

30 'Recognised vocational qualification' is the sum of 'with recognised vocational training' and 'master craftsman/technician/equivalent technical college degree'

31 'Academic degree' is the sum of 'Bachelor', 'Diploma/Magister/Master/State Examination' and 'Doctorate'

32 Federal Employment Agency, Employment by economic sector (WZ 2008) – Germany, West/East and States (quarterly figures) – December 2017 [https://statistik.arbeitsagentur.de/nn\\_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche\\_Form.html?view=processForm&resourceId=210368&input\\_=&pageLocale=de&topicId=746698&year\\_month=201712&year\\_month.GROUP=1&search=Suchen](https://statistik.arbeitsagentur.de/nn_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche_Form.html?view=processForm&resourceId=210368&input_=&pageLocale=de&topicId=746698&year_month=201712&year_month.GROUP=1&search=Suchen)

## Income level

Gainful employment plays a central role both in social and individual terms. There is no doubt that work is seen as the main source of livelihood, and that earnings are the most important component of personal income for employees. The average gross monthly earnings of full-time employees in the sector in 2017 amounted to €4,069 per month, and an additional € 462 was paid monthly in special payments.<sup>33</sup> The average monthly income in the extractive industry is thus around 4% higher than the average in the manufacturing industry and about 17% higher than the average income<sup>34</sup> in Germany as a whole. Due to the deductible income tax and the proportionate social insurance contributions to be paid, the individual net wages of employees are significantly lower than the gross wages.

The average paid weekly working time was 40.7 hours, which was relatively high compared to the manufacturing industry as a whole.

The principle of equality between men and women applies in Germany. This principle also applies to wage determination and it means that gender pay gaps in particular must be further reduced. The Act on the Promotion of Pay Transparency between Women and Men has been in force since 2017. This continues the principle of equal pay (equal pay for women and men for equal work and work of equal value) which is already standardised in the General Equal Treatment Act (AGG) and includes an individual right to information for employees, reporting obligations for large companies and the request to large private employers to carry out company audits of the pay structure. The average gross monthly earnings of women in the extractive industry was €3,802, which amounts to 92.9% of the male employees' earnings (€4,093) and is thus above the average ratio of 82.7% in the manufacturing industry as a whole.

## Diversity and equal opportunities

Different life experiences and work horizons of employees make a significant contribution to the economic success of companies. By consciously promoting diversity, companies can tap into an important success and competitive factor that has a positive impact on both companies and their workforces.

Diversity can be measured by a number of quantitative indicators, such as the proportion of women in all workforces and management, the proportion of foreign workers and the age structure of the workforce.

In 2017, the proportion of women among employees in the sector was 14.8%. The proportion of foreign employees was 6.5% of the total staff.<sup>35</sup>

The proportion of female supervisory board members in the industry is very low at 10.7%. Only 4.4% of the board members of German extractive companies are women. Compared to other sectors, the extractive industry must act to increase the proportion of women in the workforce and in management positions. It should be noted here that the employment structure in the extractive industry has traditionally been characterised by male-dominated technical training occupations and courses of study.

At 64.5%, the 25 to under 55 age group represented by far the largest proportion of the workforce, followed by the 55 to under 65 group at 27.2%. 7.4% of the employees were in the under 25 group, while 1% were over 65.

Equal opportunities are promoted in Germany by legal instruments such as the AGG, which states that 'Discrimination on the grounds of race or ethnic origin, gender, religion, beliefs, disability, age or sexual identity must be prevented or [...] eliminated',<sup>36</sup> both in working life and in civil law.

33 Federal Statistical Office, Statistical Yearbook 2018, Page 388 (Economic Sector B)

34 <https://de.statista.com/themen/293/durchschnittseinkommen/>

35 Federal Employment Agency, Employment by economic sector (WZ 2008) – Germany, West/East and States (quarterly figures) – December 2017 [https://statistik.arbeitsagentur.de/nn\\_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche\\_Form.html?view=processForm&resourceId=210368&input\\_=&pageLocale=de&topicId=746698&year\\_month=201712](https://statistik.arbeitsagentur.de/nn_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche_Form.html?view=processForm&resourceId=210368&input_=&pageLocale=de&topicId=746698&year_month=201712)

36 <https://www.gesetze-im-internet.de/agg/>

## Climate policy and structural change

The Federal Government has committed itself to implement the climate goals of the **Paris Agreement**. In support of this commitment, lignite production and coal-fired power generation in Germany are to be phased out by 2038, in addition to the cessation of hard coal production. To this end, the Federal Government established (inter alia) the ‘Growth, Structural Change and Employment’ commission<sup>37</sup>, which created proposals for the shaping the structural change in Germany based on energy and climate policies. The objective of the commission was to maintain and create new, good jobs in the regions concerned that were covered by collective agreements, to ensure a secure and affordable supply of electricity and heat at all times, and to maintain and further develop the coal-mining areas into regions that would remain habitable and attractive.

Coal mining and coal-fired electricity generation are usually located in structurally-weaker regions, which account for a considerable proportion of industrial value added. One industrial job creates around two more jobs in the regional, industry-related or service sector.

At the same time, opencast lignite minesites have a very strong impact on the economic, ecological and social structure of the communities directly affected by them and on the opencast mining communities on the fringes of the mining districts. 120,000 persons have been resettled<sup>38</sup> since the beginning of German lignite mining and villages are still affected by resettlement. The owners of the affected areas are compensated by the companies for the resettlement. The

lignite exit path agreement is expected to reduce or completely rule out some extensions to opencast mines.

The lignite mining areas<sup>39</sup> will now be supported by the Structural Strengthening of Coal Regions Act, which will enable these areas to develop into modern economic regions and compensate for the loss of employment at the same time. The draft law provides for up to €40 billion in investments until 2038, especially for transport and broadband infrastructure and for the establishment of research facilities. The Federal Government has also set itself the goal of maintaining or creating up to 5,000 jobs in federal authorities and other federal institutions in the coal regions. A new ‘Zukunft Revier’ (Future for Coal Regions) funding programme will support the regions in terms of consumption-related, structurally-effective expenditure.

The coal phaseout is to be arranged in a socially-acceptable manner for the affected employees in the lignite and hard coal industries.<sup>40</sup> Against this background, the ‘Growth, Structural Change and Employment’ Commission has proposed adaption payments for employees in the lignite industry. A cross-departmental project group was set up at the Federal Ministry for Economic Affairs and Energy to prepare the legal implementation of the adaption payments.

## Corporate responsibility

German companies are closely integrated into global supply and value chains. As a result, they bear a special responsibility to address the conditions under which raw materials are mined and to combine economic success with social justice and ecological

37 <https://www.bmwi.de/Redaktion/DE/Publikationen/Wirtschaft/abschlussbericht-kommission-wachstum-strukturwandel-und-beschaeftigung.html>

38 Final Report of the Commission for Growth, Structural Change and Employment

39 Lusatian territory (Federal States: Brandenburg/Saxony), Central German territory (Saxony/Saxony-Anhalt/Thuringia), Rhenish territory (North Rhine-Westphalia), Helmstedt territory (Lower Saxony)

40 In the hard coal sector, employment from 2019 onwards will relate exclusively to the generation of electricity from (imported) hard coal, as hard coal mining in Germany was phased out at the end of 2018. Overall, direct employment in the hard coal sector in hard coal-fired power plants amounts to 5.7 thousand persons.

See: [https://www.bmwi.de/Redaktion/DE/Publikationen/Studien/strukturdaten-der-kommission-wachstum-strukturwandel-und-beschaeftigung.pdf?\\_\\_blob=publicationFile&v=4](https://www.bmwi.de/Redaktion/DE/Publikationen/Studien/strukturdaten-der-kommission-wachstum-strukturwandel-und-beschaeftigung.pdf?__blob=publicationFile&v=4)

compatibility, not only on a national level but also internationally. This is particularly true in international mining, which can be associated with high human rights, social and environmental risks. Legislation, the Federal Government and companies are meeting these challenges at several levels.

The **National Action Plan** (NAP) of the Federal Government for the Implementation of the **UN Guiding Principles on Business and Human Rights** contains a broad catalogue of measures for the protection of human rights. For the first time, the German government has also anchored the responsibility of German companies to respect human rights in the action plan.

For the first time, binding due diligence obligations for EU importers of tin, tantalum, tungsten, their ores and gold (3TG) from conflict and high risk areas have now been introduced with the so-called Conflict Minerals Regulation (EU 2017/821). The Regulation is aimed at preventing that the proceeds from the sale of these minerals are used to finance armed conflicts. It provides for numerous due diligence obligations with which importers of 3TG must comply from January 1, 2021. A national implementing law will ensure the effective application of the Conflict Minerals Regulation in Germany.

The reporting requirements for companies in connection with their corporate responsibility (often referred to as Corporate Social Responsibility (CSR)) have been increased. The CSR Directive Implementation Act, which implements the EU CSR Directive (2014/95/EU) into national legislation, obliges companies – and especially large listed companies with more than 500 employees – to report on key environmental, labour, social and human rights issues and on anti-corruption measures.

An increasing number of initiatives for greater sustainability are also being introduced at industry level. For example, the Mining, Chemical and Energy industrial union and the Construction, Agriculture, Environment industrial union compiled a joint declaration on the sustainable use of raw materials<sup>41</sup> together with the German Building Materials Association and the German Nature and Biodiversity Conservation Union (NABU) in 2004. The high priority given to employee training is addressed in addition to the most environmentally-friendly mining of raw materials and the strengthening of biodiversity and resource efficiency. Employees and employers are also jointly committed to more sustainability in the industrial processing of raw materials. For example, the social partners (trade unions and associations) in the German cement industry founded the ‘Zement verbindet nachhaltig’ (Cement bonds sustainably) initiative as early as 2002. In addition to nature conservation and environmental protection measures, the main topics here include the safeguarding of domestic production, the economic interests of the companies and the social interests of the employees. The main objective of the sustainability initiative is dialogue between politics and society, as well as trade unions and employers.<sup>42</sup>

<sup>41</sup> [https://www.baustoffindustrie.de/fileadmin/user\\_upload/bbs/Dateien/gem-rohstoff-erklaerung.pdf](https://www.baustoffindustrie.de/fileadmin/user_upload/bbs/Dateien/gem-rohstoff-erklaerung.pdf)

<sup>42</sup> <https://www.zement-verbundet-nachhaltig.de/>

# 10

## RECYCLING



## Significance

As an industrial nation, Germany is particularly dependent on the reliable availability of raw materials. The protection of natural resources, their economical use and the extraction of secondary natural resources<sup>43</sup> from waste or residues are highly important, not only for man and the environment, but also especially for the German industry, which is dependent on imports for a number of natural resources it needs.

Particularly against the background of the increasing global demand for natural resources, but also the challenges posed by climate change, the focus is increasingly shifting to a circular economy in which the aim is to achieve closed natural resource cycles with as little material loss as possible as early as the product development stage.

The first legal foundations for waste disposal were already developed in some parts of the country at the beginning of the 19th century. The first uniform federal regulation was created in 1972 with the enactment of the Waste Disposal Act.

## Legal base

Environmental pollution, the scarcity of landfill sites in the 1980s and the growing realisation that materials and energy sources derived from nature are valuable resources have triggered the development of a modern recycling economy. This is largely shaped by the Recycling Management Act (KrWG), which is based on the EU Waste Framework Directive 2008/98/EC of 19 November 2008. An essential element of the KrWG is the so-called five-level waste hierarchy to be applied by waste owners and producers in the following order of priority: 1. Avoidance, 2. Preparation for reutilization, 3. Recycling, 4. Other form of recovery – particularly energy recovery and

backfilling, 5. Disposal. One component of German waste legislation is the transfer of product responsibility to producers and distributors, who must ensure that the generation of waste is reduced during both production and use and that environmentally-sound recycling or disposal procedures are in place.

The goal of a modern recycling economy is a sustainable use of recyclable materials and the decoupling of waste volumes from economic performance, preferably a reduction in waste volumes with increasing economic growth. This goes hand-in-hand with the protection of water, soil and the climate by avoiding e.g. climate-damaging gases from landfills. In Germany, a landfill ban for untreated municipal waste has been in force since 2005.

## Waste volume and recycling

The total gross waste volume in Germany in 2017 was €412.2 million tonnes; the net volume amounted to €359 million (excluding double counting) tonnes. Construction and demolition waste accounted for €220.3 million tonnes, slightly more than half of the total volume (53%). The volume of municipal waste, secondary waste (from waste treatment plants) and other waste, which comes mainly from production and industry, amounts to between 52 and 56 million tonnes (for each of the three types), well below the above volume. Around 31 million tonnes of waste was generated from the extraction and processing of natural resources. 332.5 million tonnes of waste were recycled in 2017, of which 284.8 million tonnes were material and 47.7 million tonnes energy-related waste.<sup>44</sup> In the last ten years the recycling rate has continuously increased, with a simultaneous increase of the waste quantity from 74.3% (2006) to 81% (2017).<sup>45</sup> The recycling rate measures the proportion

43 Glossary, DNR: <https://www.dnr.de/rohstoffpolitik-20/glossar/grundbegriffe/primaer-und-sekundaerrohstoffe/>, Accessed on 15 July 2019.

44 Pursuant to §3(25) of the KrWG, material recovery (recycling) means any recycling process by means of which waste is processed into products, materials or substances, either for the original purpose or for other purposes; it includes the processing of organic materials, but not energy-related recycling. Energy-related recovery, on the other hand, means the preparation of waste for thermal recycling by means of incineration. However, a portion of the waste is also incinerated to dispose of it.

45 Destatis, Waste balance 2017, as of 2019.

(input) of the collected waste that is fed into a material or energy-related recycling process.

A comprehensive network of 15,500 pre-treatment, treatment, sorting and processing plants has been established in Germany for the recycling and material recovery of waste. The network includes soil treatment plants, building rubble processing plants, sorting and dismantling plants (inter alia) in addition to chemical-physical, biological and mechanical treatment plants.

## Examples of recycling and usage rates<sup>46</sup>

The recycling rate for steel in 2016 was about 95%.<sup>47</sup> Around 20 million tonnes of steel scrap were used in steel production. This corresponds to a usage rate of 43%.<sup>48</sup> In 2017, around 2.6 million tonnes of non-ferrous metals (e.g. copper, aluminium, zinc, bronze, lead, brass) were produced. The usage rate of these recycled materials was around 1.4 million tonnes at 53%.<sup>49</sup>

Aluminium recycling rates range from 90 to 95% depending on the sector. The energy usage for the recycling of aluminium is up to 95% lower compared to primary production.<sup>50</sup> In 2016, the usage rate was 57%. The recycling rate for copper is about 45%. In copper production 41% of recycled copper<sup>51</sup> is used.

Paper and glass also have high recycling and usage rates, but the recycling of plastics still requires additional efforts:

- Paper/paperboard/cardboard, which is mainly collected separately, achieves a recycling rate of almost 100%. The usage rate of recovered paper is 75%. Recycling saves primary raw materials such as wood, kaolin and lime, but also water and energy. However, paper is not infinitely recyclable, since the fibres become progressively shorter during recycling.
- In the case of glass, the recycling rate also amounts to almost 100%.<sup>52</sup> However, this only applies to appropriately-sorted glass. Today, every glass packaging unit consists of up to 60% recycled glass, and for green glass the usage rate is as high as 90%.<sup>53</sup> The recovery of the glass reduces the demand for the primary raw material quartz sand.
- Around 46% of the plastic waste (6.15 million tonnes) went into the material recycling process in 2017, the remainder was either recycled for energy purposes, dumped or exported. According to the agreements within the framework of the Basel Convention on Waste<sup>54</sup>, free export should in future only be allowed for plastic waste that is contaminant-free and is easily recyclable. An export and import permit from the countries involved is required for compounds. The export of hazardous or non-recyclable waste from the EU to developing countries will be prohibited from 2021.

<sup>46</sup> The recycling rate (calculated on the basis of the weight of waste sent to recycling facilities) differs from the usage rate (which is the percentage of materials actually recycled and their actual use in production).

<sup>47</sup> Fraunhofer Umsicht: Technical, economic, ecological and social factors of steel scrap, 3. (Technische, ökonomische, ökologische und gesellschaftliche Faktoren von Stahlschrott, 3. November 2016).

<sup>48</sup> Steel scrap balances of the bvse and BDSV.

<sup>49</sup> Metal Trade Association (Wirtschaftsvereinigung Metalle) – Metal Statistics 2017 (Metallstatistik 2017).

<sup>50</sup> General Association of the Aluminium Industry.

<sup>51</sup> BGR and status report of the German recycling industry.

<sup>52</sup> Destatis, waste balance 2017, as of 2019.

<sup>53</sup> Federal Association of the German Glass Industry.

<sup>54</sup> Amendment of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal on 5 May 2019 (Änderung des Basler Übereinkommens über die Kontrolle der grenzüberschreitenden Verbringung gefährlicher Abfälle und ihrer Entsorgung am 5 Mai 2019).



As far as the building sector is concerned, it is more a question of recovery rates than of recycling rates, because not all building and demolition waste has to be prepared for recycling. Of the 214.6 million tonnes (2016) of construction and demolition waste, 192.6 million tonnes (89.8% was recycled).<sup>55</sup> The processing of mineral building waste enabled the manufacture of 72.2 million tonnes of recycled building materials. These were used 52.8% in road construction, 22% in earthworks, 4.2% in other applications (mainly landfill construction) and 21% as aggregates in asphalt and concrete production.

The building and waste disposal industry thus makes an important contribution to a sustainable and resource-efficient society. Thanks to the collection, sorting and material-based and energy-related recycling of waste, this industry not only fulfils an important ecological function, it also supplies our economy with raw materials, supplying 15% of the raw materials needed in Germany.<sup>56</sup> This means that annual imports of raw materials worth €10 billion are saved.<sup>57</sup> The recycling industry also contributes significantly to Germany's economic performance.

It provides jobs for around 290,000 employees in some 10,800 municipal and private companies and has a turnover of around €76 billion. The gross value added amounts to €21.5 billion.<sup>58</sup> The substitution of primary raw materials with secondary raw materials is also associated with significant savings in energy consumption, for example.<sup>59</sup>

## Future challenges/Outlook

Germany has made a number of efforts to better close material cycles and to manage resources more sparingly. Nevertheless, there are several areas where there is potential for improvement.

For example, it is mainly the heavy, easily-recoverable raw materials and bulk metals such as iron, steel, copper, aluminium and very valuable precious metals are recycled. In addition to the economic cost, this is also due to the systematic nature of the existing recycling rates, which contribute to neglecting the recovery of low-concentration special elements. There is a need for action and catching up, particularly with regard to the strategically-important raw materials that are needed for new developments, the extraction of which can be problematic from ecological and human rights standpoints.<sup>60</sup> They are partially used in very small quantities in e.g. electrical appliances, mobile phones, computers, solar panels and circuit boards. Recovery is often not yet economically feasible, even if it is technically possible and in some cases ecologically sensible.

The objective of the Electrical and Electronic Equipment Act (ElektroG) is to ensure that considerably more valuable raw materials are recovered in the future from old devices in Germany – and that the collection rate of 65% specified by the EU from 2019 is achieved.<sup>61</sup> This is to be achieved through specified

<sup>55</sup> Recycling management, building & mineral construction waste – Monitoring 2016. (Kreislaufwirtschaft Bau, Mineralische Bauabfälle – Monitoring 2016).

<sup>56</sup> German Building Materials Association – Quarried natural resources e.V. (Bundesverband Baustoffe – Steine und Erden e.V.) (bbs), Study entitled 'The demand for primary and secondary raw materials of the quarried natural resources industry in Germany until 2035' (Die Nachfrage nach Primär- und Sekundärrohstoffen der Steine-und-Erden-Industrie bis 2035 in Deutschland).

<sup>57</sup> Recycling in Germany – Wuppertal Institute study (Recycling in Deutschland – Studie Wuppertal Institut).

<sup>58</sup> Status report of the German recycling industry 2018 (Statusbericht der deutschen Kreislaufwirtschaft 2018).

<sup>59</sup> UBA study, 'Material-flow oriented determination of the contribution of the secondary raw materials industry to the conservation of primary raw materials and increase in resource productivity', April 2019 (Stoffstromorientierte Ermittlung des Beitrags der Sekundärrohstoffwirtschaft zur Schonung von Primärrohstoffen und Steigerung der Ressourcenproduktivität, April 2019).

<sup>60</sup> These include the 17 metals of the rare earths group such as neodymium, but also conflict raw materials such as tin, tantalum (coltan), tungsten and even platinum and lithium.

<sup>61</sup> With a collection rate of around 45%, Germany was still below the EU average of around 49% in 2017. On average, roughly 1 million tonnes of old (waste) electrical and electronic equipment are not collected in Germany or are collected improperly per year.



requirements for the management of these old devices. The obligation for wholesalers with a shop area of 400 m<sup>2</sup> and more to take back old electrical and electronic equipment compacts the collection network is compacted, enabling consumers to dispose of old electrical and electronic equipment more easily and separating them from unsorted municipal waste at an early stage.

One particular problem in this context is the illegal export of old electrical and electronic equipment to e.g. Africa and Asia, since extremely high-risk situations for both humans and the environment can arise, especially if the old devices are improperly handled. The ElektroG is intended to put a stop to this, since it provides for strict criteria for the differentiation of used and old electrical equipment. According to this

principle, only checked and functional used equipment which is adequately protected against damage during transport and which has been properly documented may be exported as non-waste. The burden of proof lies with the exporter.

The EU's 2018 recycling management package commits the member states to a number of further steps to strengthen the waste hierarchy. For example, member states must take measures to promote the re-utilisation of products. The availability of spare parts, operating manuals and technical information is also to be improved.<sup>62</sup>

62 For detailed source references see final note<sup>6</sup>.

# 11

## DISCLOSED PAYMENT FLOWS AND PAYMENT RECONCILIATION



## a. Which cash flows are reported?

### i. Selection of sectors

The EITI standard requires that all the important cash flows of a country's extractive sector are considered. During various meetings, the MSG discussed which sectors of the natural resources extraction industry should be included in the second D-EITI report. The following individual sectors were addressed:

- Lignite
- Crude oil and natural gas
- Potash and salts
- Quarried natural resources

The mining of hard coal was terminated in Germany at the end of 2018. The sector is therefore not included in the payment reconciliation process (no change compared to previous reports). (cf. the general remarks on hard coal mining in Germany and State financial aid for the hard coal sector in Chapter 2.a.iii., and in Chapter 7).

### ii. Selection of companies

The EITI standard does not provide direct guidance for the process of selecting companies to be included in reporting – on the contrary, the selection of the companies should be oriented on the objective of the EITI initiative (analogue with the selection of the sectors) to make the revenues of a country's extractive industry transparent and to disclose all the significant cash flows between companies and government agencies in this respect. Pursuant to EITI requirement 4.1(a), payments and revenues are deemed to be significant if their non-consideration or misrepresentation could significantly affect the completeness of the EITI report.

With regard to the selection of companies, the MSG has resolved to comply with the requirements of EU Accounting Directive 2013/34 of June 26, 2013. The stated objectives of the EITI initiative and of the cash flows specified by the EITI are also largely congruent

with the provisions of the EU Accounting Directive. Recital 44 and 45 of the Directive even explicitly state that

- the new regulations are intended to help governments in the implementation of the EITI principles and criteria and
- that payments should be recorded which are comparable to those of the EITI.

The EU Directive has been implemented into German law by the BilRUG. Pursuant to §§341q et seq. HGB, companies in the mineral extractive industry must submit (consolidated) payment reports under certain conditions (registered office, legal form, size, activity). (see the comments in Chapter 4.d.).

During several meetings, the MSG agreed to carry out the further content-related development formulation of the D-EITI process in accordance with the new provisions of §§341q et seq. HGB. This particularly affects:

- the criteria for the identification of the companies that are eligible for reporting,
- the relevant period of reporting
- and the establishment of materiality thresholds for the cash flows which are to be reported.

The link to the statutory provisions of the HGB is intended to create the prerequisites for the widest possible participation of the companies; possible double burdens (for the participating companies), which could result from differences between the legal requirements for the (consolidated group) payment report and the reporting requirements for the EITI should also be avoided (see also Chapter 4.d.ii.).

Pursuant to § 267(3) of the HGB, the criteria for 'large' companies were therefore used as an initial basis for the identification of the companies. In this case, two of the following three criteria for classification as a 'large' company must be fulfilled on at least two successive two successive closing dates:

- Balance sheet total of €20 million
- Sales of more than €40 million
- A yearly average of more than 250 employees

With regard to the question whether or not an ‘activity’ exists in the extractive industry, reference was made

to Regulation 1893/2006/EC of December 20, 2006, which regulates the details of the statistical classification of economic activities. Section B of Annex I of this Regulation is divided into sub-sections 05 to 08 as follows:

**Table 8:** Statistical classification of economic activities

Subsection	WZ 2008 Code	Economic sector (WZ) 2008 – description (a. n. g. = not specified elsewhere)	ISIC Rev. 4
	B	SECTION B – MINING AND QUARRYING	
05		Coal mining	
	05.1	Hard coal mining	
	05.10	Hard coal mining	0510
	05.2	Lignite mining	
	05.20	Lignite mining	0520
06		Extraction of crude oil and natural gas	
	06.1	Extraction of crude oil	
	06.10	Extraction of crude oil	0610
	06.2	Extraction of natural gas	
	06.20	Extraction of natural gas	0620
	06.20.0	Extraction of natural gas	
07		Ore mining	
	07.1	Iron ore mining	
	07.10	Iron ore mining	0710
	07.2	Non-ferrous metal ore mining	
	07.21	Mining of uranium and thorium ores	0721

Subsection	WZ 2008 Code	Economic sector (WZ) 2008 – description (a. n. g. = not specified elsewhere)	ISIC Rev. 4
	07.21.0	Mining of uranium and thorium ores	
	07.29	Other non-ferrous metal ore mining	0729
08		Quarried natural resources, other mining products	
	08.1	Quarrying of natural stone, gravels, sand, clay and china clay	
	08.11	Quarrying of natural and artificial stone, limestone, gypsum, chalk and slate	0810
	08.12	Extraction of gravel, sand, clay and china clay	0810
	08.9	Other mining; quarrying a. n. g.	
	08.91	Mining of chemical and fertiliser minerals	0891
	08.92	Peat extraction	0892
	08.93	Extraction of salt	0893
	08.99	Quarrying a. n. g.	0899

For the purpose of identifying possible companies, companies assigned to one of the sub-sections 05 to 08 are considered to be primarily 'active' in the extractive industry. In addition to the statutory duty to draw up payment reports for 'large' companies, there is also an obligation for parent companies to prepare group (consolidated) financial statements if at least one subsidiary is active in the extractive industry. The size of this 'active' subsidiary is not relevant here (a 'consolidated tax group infection'), so that even companies which are themselves not classified as being 'large' can trigger a reporting obligation simply through being combined with a 'large' parent company.

The approach to 'consolidated tax group infection' was also addressed for the purpose of identifying extractive industry companies; and the number of such companies increased accordingly. As a result, the selection is made using a combination of size and activity criteria (cf. the explanations in Chapter 11.b.i.).

In addition to the size of the companies and the economic classification, the MSG also used a substantial coverage of the sectors as a criterion for the selection of companies.

Depending on the natural resource in question, there are significant differences in the number of companies and active employees in the various sectors in

Germany's extractive industry. The coal mining and crude oil and gas production sectors are dominated by a few, large companies, for instance. The quarried natural resources sector, on the other hand, is characterised by a structural mix of few large suppliers and a high proportion of small and medium-sized enterprises. Hardly any of the companies in the sector are subject to any legal obligation to draw up payment reports and cannot consequently be identified through the criteria intended for the identification of the companies for the EITI report (see also the explanations in Chapter 11.b.ii.).

Requirements 2.6, 4.5 and 6.2 of the EITI standard are related to government shareholdings in extractive companies. In Germany, an extractive company with a majority state participation was identified. According to the 2018 annual report, the town of Heilbronn has 46.6% of the voting rights and the State of Baden-Wuerttemberg 45% of the voting rights in this company (see Annual Report 2018, pages 128 and 129). The dividend paid in 2018 for the previous financial year amounted to €16,812,000.00, equivalent to €1.60 per share (see Annual Report 2018, p.93). The share capital stands at €27 million and is divided into 10,507,500 individual shares.

The annual report for 2018 can be viewed at <https://www.salzwerke.de/de/investor-relations/finanzberichte/geschaeftsberichte.html>

Virtually fiscal revenues, as queried under requirement 6.2 of the EITI standard, are not known.

In the MSG's view, requirements 2.6, 4.5 and 6.2 of the EITI standard are sufficiently met by the above explanations.

### iii. Selection of cash flows

In accordance with the EITI standard, cash flows from the extractive industry must be taken into account if they are regarded as significant for a complete presentation of the company payments and state revenues. The following cash flows are recorded within the framework of the second D-EITI report or are subject to the payment reconciliation with the revenues of the government agencies (cf. the explanations in Chapter 4.b.).

### Taxes

#### Corporation tax

Corporation tax is the main income tax of limited companies in Germany. It is not a specific tax for extractive industry companies, but is levied on all limited companies that are domiciled in Germany or are active in the country. The assessment basis for corporation tax is the taxable commercial income, which is derived from the annual net profit; any tax modifications that may apply are also considered. If an enterprise is also active in other sectors as well as in the extractive sector, there may be delimitation problems regarding the share of corporation tax attributable to the activities in the extractive sector, since the corporation tax is calculated on the basis of the total taxable income (cf. Chapter 4.b.i.).

For this reason, corporation tax is classified as a non-project-related payment in the payment reports to be prepared under commercial law. Allocation of these payments to activities within and outside the extractive sector can be selectively carried out by companies if a proper and reliable coding (based on appropriate allocation criteria) is possible. This commercial practice is pursued for the purposes of EITI reporting.

### Trade tax

Commercial enterprises in Germany are subject to trade tax. The municipalities in which the company in question has its operating facilities are entitled to levy trade tax; an operating facility may also extend across several municipalities. Payment recipients for trade tax payments are the relevant individual municipalities, and not the Federal Government or the federal states. This reflects the federal structure of the state in Germany (see also Chapter 4.b.iii.). In view of the large number of municipalities, this poses special challenges for payment reconciliation with regard to trade tax. In addition to this, individual municipalities – unlike the individual tax offices in the case of corporation tax – cannot be centrally addressed via an organisational unit.

For a better understanding of the payments of corporation tax or trade tax reported in the context of data collection, further information on the recording of tax payments in certain parent-subsidiary constellations or on special features of tax payments in the context of fiscal inter-company relationships are provided below. In the course of the evaluation of the data collection and the reconciliation of payments, it became apparent that both aspects are of particular relevance for the classification and assessment of the reported tax payments.

### Particularities with regard to the recording of tax payments in certain parent-subsidiary constellations

Business partnerships such as the GmbH & Co. KG traditionally play a leading role in Germany's small and medium-sized enterprises, in contrast to many other jurisdictions. They are subject to trade tax, but not to corporation tax. Corporation tax is first levied at shareholder level, but only if the shareholder is a limited company. In this respect, one special feature of the German tax law should be noted, according to which business partnerships are not themselves the subject of taxes in terms of income tax; the income generated by the company is subject to taxation at

the level of the shareholders, together with the income they have earned from other sources.

In the subsidiary-partnership constellation of a parent limited company, consequences may arise for the recording of the tax payments (trade tax and corporation tax) within the framework of data collection for the EITI report; examples of such consequences are shown below. In each case, it is assumed that a company has voluntarily participated in the data collection for the EITI report if it is active in the extractive industry.

If both the parent limited company and the subsidiary business partnership are active in the extractive industry, all the relevant tax payments (trade tax of the subsidiary and the parent company as well as corporation tax at the parent company level) are recorded in the EITI report. If, on the other hand, the subsidiary or parent company is not active in the natural resources sector, either not all or too many tax payments to government agencies are recorded. If, for example, the parent limited company is active in the extractive industry, but the subsidiary-business partnership is not, the reported corporation tax payments of the parent company also include the financial results of the subsidiary. From the viewpoint of commercial law, it is possible (but not obligatory) to allocate corporate tax payments to activities both within the extractive sector and outside of it. If, on the other hand, the subsidiary-business partnership is active in the extractive industry, but the parent limited company is not, trade tax payments are only recorded for the subsidiary through the subsidiary's (sole) participation in the data collection, but not, the corporation tax paid by the parent limited company (on a pro rata basis) for the financial results of the subsidiary.

This handling of corporation tax is due to the German tax system. The MSG has decided to pursue this legal, tax-related standpoint, also for EITI purposes.

### Particularities with regard to recording the tax payments of consolidated tax groups

German tax law has specific special arrangements in the case of trade tax and corporation tax for corporate groups. Under certain conditions, a so-called ‘consolidated tax group’ may exist.

In constellations like this, the incorporated companies (subsidiary organisations), which are themselves limited companies do not usually pay tax; the payment of taxes levied on the financial result of all the companies incorporated in the consolidated tax group is carried out entirely and exclusively by the parent company. The parent company in turn pays taxes on its own income and on the income of its subsidiaries, which may not exclusively result from activities related to the extraction of natural resources.

For the purposes of the (consolidated group) payment report under German commercial law, the following differentiations are made at the level of the parent company:

- If the consolidated tax group is mainly active in the extractive industry pursuant to §341r No. 1 HGB, reporting can be carried out for the total amount of the taxes paid by the parent company. There is no obligation to allocate the tax payments to activities within or outside the scope of §341r No. 1 HGB.
- If, on the other hand, the consolidated tax group is not mainly active in the extractive industry as set down in §341r No. 1 of the HGB, the tax payments made by the parent company may be allocated on a voluntary basis. Otherwise, details of the tax payments made by the parent company will be omitted.

The results of the payment reconciliation substantiate the major practical importance of consolidated tax groups in the taxation of groups of companies. In various cases concerning the companies participating in the payment reconciliation, details of the taxes paid by the parent company are consequently omitted (cf. the figures on the results of the payment reconciliation in Chapter 11.c.).

With regard to the recording of tax payments within the framework of consolidated tax groups, the MSG has also opted to pursue the viewpoint according to German commercial law for EITI purposes.

### Minesite and extraction royalties pursuant to the BBergG

Minesite and extraction royalties are levied as a specific tax on extractive companies for free-to-mine natural resources, based on the German Federal Mining Act (§§30, 31 BBergG) (for further details see Chapter 4.b.ii.).

The MSG has decided to include minesite and extraction royalties in the EITI report as a cash flow and to make these royalties subject to payment reconciliation.

### Lease payments

Minesite and extraction royalties are the only taxes that are levied for the exploration and extraction of free-to-mine natural resources in Germany. However, lease payments may be paid to public authorities in connection with the extraction of raw materials that are not free-to-mine, particularly in the quarrying sector. This is the case when state agencies as land-owners conclude private-law contracts with the extractive industry for the extraction of raw materials. Such contractual arrangements may include fixed payments or payments that depend on the quantity extracted, or a combination of both variants.



The recipients of the lease payments are the government agencies that have concluded the contractual arrangements with the company (e.g. municipalities, forestry offices, as well as state property administration and moor management authorities). The content and the number of contracts are not centrally documented (cf. Chapter 4.b.iv.). In addition, the individual government agencies which have concluded lease contracts – unlike the individual tax offices in the case of corporation tax – cannot be centrally addressed via an organisational unit. As in the case of trade tax, this leads to particular difficulties in payment reconciliation.

Just which government agencies – and how many of them – receive lease payments cannot be foreseen. This information can only be provided by the participating companies themselves within the framework of the data collection process.

Lease payments by companies to government agencies are therefore recorded as part of the data collection (no change here from the first German EITI report), but are not included in the payment reconciliation.

## Payments for the improvement of the infrastructure

The cash flow corresponds to the legal regulation of the (consolidated) payment report in §341r, No. 3 g) HGB. The payments were collected for the first time for this second German EITI report and the data reports to the participating companies were supplemented in this respect. The payments notified generally include measures taken by companies to compensate for interventions in nature and landscape, e.g. payments to promote municipal investments and educational institutions or for the creation or maintenance of public infrastructure.

At the request of the MSG, the content and the composition of the reported payments were analysed in more detail by the Independent Administrator in line with the first D-EITI report. The results were then presented to the MSG. The results show a high degree of heterogeneity of the recorded payments. This stems from the variety of measures taken in connection with the compensation of impacts from the respective mining operation.

**Figure 8:** Disclosed payment flows and payment reconciliation

Cash flow	Data reporting by companies	Payment reconciliation
Corporation tax	yes	yes
Minesite and extraction royalties	yes	yes
Trade tax	yes	yes
Lease payments	yes	no
Payments for the improvement of the infrastructure	yes	no

#### iv. Project level reporting

The EITI standard generally requires reporting at project levels (EITI Requirement 4.7). The MSG has decided to implement the content and scope of the project concept by the analogous application of legal regulation §341r, No. 5 HGB. Payments to government agencies must therefore be detailed for each project if the reporting company has carried out more than one project during the reporting period. The concept of the project is concretised in §341r(5) HGB in the form of a summary of operational activities which form the foundation for payment obligations to a government agency and which are based on a contract, license, lease agreement, concession or similar legal agreement.

As a rule, no project-related reporting is provided for 'corporation tax' and 'trade tax' cash flows, since these are flows that are based on a legal regulation and not on one of the legal agreements set down in §341r(5) HGB.

In the case of the 'minesite and extraction royalties' cash flow, specifying the relevant permit/extraction site within the scope of the data report ensures the sufficient determinability of the project in question. In the case of lease payments and payments for

infrastructure improvements, the data collection templates provide for a breakdown of payments between projects per government agency.

#### v. Materiality of payments

The commercial regulations for the preparation of (consolidated group) payment reports stipulate that the companies concerned must report payments of €100,000 and upwards made to individual government agencies per reporting year (cf. §341t(4) HGB). A government agency to which less than €100,000 has been paid during the reporting period does not have to be included.

The MSG has decided to adopt these rules for the second D-EITI report. If payments made during reporting year 2017 amounted to less than €100,000 per government agency, the data collection templates require relevant proof of the existence of payments, but without mentioning any specific amounts.

## b. Procedure for payment reconciliation

### i. Explanation of the nature and extent of the work of the Independent Administrator

The work of the Independent Administrator encompasses the performance of investigative measures as per the International Standard on Related Services (ISRS) 4400, 'Engagements to Perform Agreed-Upon Procedures'. The nature and scope of the work of the Independent Administrator has been particularly described and/or explained within the scope of the following chapters of the EITI report:

- Chapter 11.b.ii.: Identification of companies eligible for participation in the EITI process,
- Chapter 11.b.v.: Measures for safeguarding confidential data.
- Chapter 11.b.vi.: Development of data collection templates and notes on data collection,
- Chapter 11.c.: Implementation of the payment reconciliation and the presentation of its results.

The investigative measures carried out by the Independent Administrator do not constitute a (final) examination or auditor's examination in accordance with the professional standards accepted in Germany or recognised internationally, therefore the Independent Administrator did not submit an overall judgment (neither with sufficient nor with limited judicial certainty) in terms of the subject of the investigation measures. The Independent Administrator did not undertake any specific investigations to verify the correctness, completeness and reliability of the payment data, in particular with regard to the data notifications of the participating companies and/or of the government agencies. In addition, the objectives of the investigative measures carried out were neither to uncover errors nor to detect violations on the part of the participating companies or government agencies.

### ii. Identification of companies

The first step was to identify the companies that were relevant for the second D-EITI report. Here the Independent Administrator used a database analysis<sup>63</sup> to select all the companies which are mainly active in the extractive industry and which are allocated to the lignite, crude oil/natural gas, potash/salts and quarried natural resources sectors. The classification criterion was the allocation of the companies to sub-sections 05 to 08 pursuant to Regulation 1893/2006/EC of December 20, 2006 (cf. Chapter 11.a.ii.). In the second step, these companies were filtered according to the size criteria stipulated by the HGB for 'large' companies.

The Independent Administrator manually expanded the group of these provisionally-identified companies by including groups of companies in which a potential 'consolidated tax group infection' caused by 'active' subsidiaries existed (for details, see Chapter 11.a.ii.). The following aspects are unchanged from the first D-EITI report and must be addressed:

- Companies the main activities of which are allocated to the storage (e.g. construction and operation of cavern storage facilities for the storage of natural gas) of natural resources underground are not considered, since the extraction of natural resources is not their primary activity, despite their being allocated to sub-sections 05 to 08.
- All the companies identified and allocated to sub-section 07 (ore mining) do not actively engage in extractive mining in Germany and are therefore not considered.

On the basis of the above-described selection process, and the experience gained from the first D-EITI report, a total of 49 companies and/or consolidated groups of companies were identified for possible participation in the D-EITI process and were requested to take part. Against the background of the legal requirements (cf. §§341 q et seq. HGB) and the resulting

63 Orbis Europe database of the provider Bureau van Dijk ([www.bvdinfo.com](http://www.bvdinfo.com)), accessed on 2. October 2018.

interpretation possibilities, a final identification of all the companies obliged to report payments pursuant to HGB is not ensured, even with regard to the second D-EITI report. Nevertheless, on the basis of the payment reports for 2016 and 2017 that have been published in the meantime, it can be stated that the companies identified using the methodology described above are almost identical to the companies that have actually published a payment report to date.

It is evident that the selection criteria specified by the MSG ensured a prominent level of coverage for the lignite, crude oil and/or natural gas, potash and salts/ industrial brine sectors (cf. Chapter 11.c.). These are solely free-to-mine natural resources. They contain comparatively few, but relatively large business units. On the other hand, quarried natural resources are extracted by a very high number of business operations with many extraction facilities and/or mines. According to estimates by the German Building Materials Association – Quarried Natural Resources (BBS), the 25 largest quarried natural resources suppliers account for only about 1.6% of the total number of companies in the industry and around 22% of the total number of the industry's extraction sites. It must therefore also be assumed that a number of companies and/or consolidated companies (which are already among the 25 largest providers in this sector) do not fulfil the size criteria in Chapter 11.a.ii. and are therefore not identified by the selection criteria screen adopted by the MSG. As a result of the high number of non-identified small and medium-sized enterprises in the quarried natural resources sector, the coverage of this sector clearly lags behind that of the other sectors.

### iii. Identification of government agencies

The total number of government bodies that generate revenues from the extractive industry in Germany stem directly from the cash flows that were defined for this second D-EITI report. No central recording of the relevant cash flows is possible, however, due to the federal

structure of the administration in Germany. The following individual government agencies are responsible for:

- Corporation tax: the responsible tax offices at the respective headquarters of the companies
- Mining and extraction royalties: the responsible mining authorities of the Federal States in which the approved/licenced site is located
- Trade tax: the municipalities in the territory of which the taxable operating facilities are located
- Lease payments and payments to improve the infrastructure: government agencies at State or municipal level, depending on the type of payment (without payment reconciliation)

### iv. Managing tax secrecy

Both the EITI reporting and the payment reconciliation processes encompass tax data, viz. cash flows relating to corporation tax and trade tax, which are subject to tax secrecy pursuant to §§30 et seq. AO (German Tax Code, cf. the comments in Chapter 4.c.). The following aspects are particularly significant in the context of tax secrecy:

1. In the course of the preparation of the EITI report, the cash flows reported by the companies and received by government agencies were prepared and disclosed. This also affected tax payments, i.e. data that is subject to tax secrecy. This usage of tax-relevant data is only permissible if the taxpayer, i.e. the respective company, expressly agrees (§30(4), No. 3 AO). The data collection templates ensure that this consent is obtained from each company for the purpose of publishing the data in the context of EITI reporting.
2. As part of the payment reconciliation to be carried out, the tax payments reported by a company must be reconciled with the data reported by the tax authorities, which are the recipients of the payments. Due to tax secrecy, the tax authorities are not allowed to make this data available for the

purposes of payment reconciliation. Rather, this requires an express authorisation by the taxpayer in favour of the Independent Administrator.

The form and the content of this power of attorney were examined by the competent departments of the Federal Ministry of Finance and the Federal States and were also approved by a joint Federal-State committee. The power of attorney was subsequently exercised, both for the purposes of reconciling corporate income tax and trade tax, as well as for reconciling minesite and extraction royalties.

## **v. Measures for safeguarding confidential data**

All project-related communication via e-mail and all other project-related data was stored in an ISO 27001 and ISO 9001-certified data centre in Germany. A platform was specifically made available for the exchange of project-related data, and companies could use this to upload data (several times where required). Uploaded data could not be changed for security reasons. Measures were taken to prevent any company from gaining access to the data of other participants. The administration of the data exchange, storage and e-mail service was the responsibility of the D-EITI Secretariat in Berlin.

## **vi. Templates and notes on data collection**

In accordance with the decisions made by the MSG regarding the shaping of the contents of the D-EITI reporting process, the Independent Administrator has developed an Excel-based template for the collection of relevant payment reconciliation data. In addition to the data collection templates, the Independent Administrator has also created further 'Notes on data collection within the framework of the D-EITI process'. These notes will give companies practical tips and help them to understand and use the data collection templates.

## **vii. Quality of data provided by companies and government agencies**

Companies in Germany are subject to comprehensive, legally-regulated

- accounting,
- disclosure and
- auditing obligations.

These obligations depend on the company's size, legal form and activity. Limited companies and limited liability partnerships within the meaning of § 264 a of the HGB must draw up an annual financial statement with notes and (where required) a management report at the end of each fiscal year. The obligation to carry out the annual audit is regulated (inter alia) in the HGB (§§316 et seq. HGB) and in §6 of the Act on the Accounting of Certain Companies and Groups (PublG). The HGB stipulates a statutory audit obligation (inter alia) for 'medium-sized' and/or 'large' companies, whereby two of three criteria for grouping into the size classes must be met within a given period of time, pursuant to §267 HGB.

The statutory audit must at least include the annual accounts (balance sheet, profit and loss account and notes), plus the management report and the accounting records. The auditor must determine whether or not the accounting is consistent with the underlying accounting principles and with any other legal basis such as the Articles of Association or the deed of partnership (compliance/regularity audit). Furthermore, it must also be determined whether the respective financial statements and the associated management report provide an accurate picture of the Company's position as a whole. An assessment of whether or not the opportunities and risks of future development are presented accurately in the management report must also be carried out. The result of the audit is summarised by the auditor in the auditor's report (see §322 HGB). In the case of statutory audits, the auditor's report must be disclosed with the annual financial

statements and the management report and thus made available to the public.<sup>64</sup>

In contrast to the annual reports, the (consolidated group) payment reports pursuant to §§341q et seq. HGB, however, are not yet subject to statutory audit obligations. Within the scope of their obligation to report pursuant to §321(1) and (2) HGB, however, if the auditors establish that a (consolidated group) payment report has neither been prepared nor disclosed in the course of their audit work, despite a statutory obligation for companies to do so, the auditors must include this in their audit report.

Due to the Federal State structure in Germany, there are independent, state-owned audit offices to control the budgetary economy at both Federal and state levels. The jurisdiction of the German Federal Audit Office is restricted to the sphere of the Federal Government's financial practices<sup>65</sup>, it has no legal supervisory rights or right of direction over the states' audit offices. The Audit Offices are independent, supreme Federal and State authorities. Their tasks, position and powers are derived from the Basic Law (Article 114 GG) or the state constitutions, which are defined in detail by Federal and state budgetary regulations.

The audit offices also assume the task of external financial auditing (the 'supra-local audit') at local territorial authority level (municipalities and associations), depending on the Federal State in question. Internal administrative control ('local audit') is carried out by municipal audit offices and/or reviewing offices.

The following principles apply as a standard of review for the auditing of state and municipal budgetary and economic administration:

- the regularity of the execution of the law and administrative action, as well as
- economic efficiency and economical practices in budgetary and economic administration

The principle of regularity includes (inter alia) the accounting correctness (proper and legal calculation, justification and booking) of the individual invoice amounts. The respective audit office is solely responsible for the content, scope and frequency of the auditing procedures.

The results of the audit offices' work are made known to the relevant government agencies in the form of audit reports. The audit office may communicate the audit result to agencies other than those reviewed if it considers this action necessary for particular reasons. Selected audit results are nevertheless summarised in annual reports that are accessible to the public.<sup>66</sup>

The German accounting offices support the implementation of International Standards of Supreme Audit Institutions (ISSAIs) developed by the International Federation of Supreme Audit Institutions (INTOSAI). Since July 1, 2016, the President of the Federal Court of Audit has been a member of the Council of Auditors of the United Nations<sup>67</sup> and will remain so until 2022 (a period of six years). Within this framework, Germany is responsible for the auditing of nine international organisations.<sup>68</sup> All audits are performed in accordance with INTOSAI standards.<sup>69</sup>

Also the individual states' courts of audit are involved in international exchange and discuss current standards and applied audit methods regularly in the context of the European Organisation of Supreme Audit Institutions (EURORAI).<sup>70</sup> The maintenance of high auditing standards at both national and sub-national level can therefore be regarded as given.

64 <https://www.bundesanzeiger.de>

65 <https://www.bundesrechnungshof.de/de/bundesrechnungshof>

66 <https://www.bundesrechnungshof.de/de/veroeffentlichungen/bemerkungen-jahresberichte>

67 <https://www.bundesrechnungshof.de/de/bundesrechnungshof>

68 <https://www.bundesrechnungshof.de/de/veroeffentlichungen/bemerkungen-jahresberichte>

69 <http://www.un.org/en/auditors/panel/>

70 [http://www.eurorai.org/eurorai/eurorai\\_ger.nsf/documento/portada?opendocument&menu=C1257288005BC6A9C125730500304C6A](http://www.eurorai.org/eurorai/eurorai_ger.nsf/documento/portada?opendocument&menu=C1257288005BC6A9C125730500304C6A)

In addition to external control processes carried out by the audit offices, internal administrative control processes are also of key importance for assessing government agencies' data quality. These standards essentially consist of strict internal rules for the allocation of responsibilities (separation of functions) between the (notification-) issuing authority and the agency receiving the payment (cash and enforcement units). In addition, control mechanisms involving the '4-eyes principle' are also set up within the authorities in the context of the drafting of the relevant communications. There are also functioning sanctions regimes should public funds be misappropriated.

## **c. Data collection and payment reconciliation**

### **i. Participating companies and coverage of the sectors**

Of the 49 companies and/or consolidated group companies identified by the Independent Administrator in accordance with the requirements of the MSG, a total of 17 companies or groups of companies participated in the reporting process during the preparation of this EITI report. This means that the number of participating companies or consolidated groups of companies has increased by three participants since the first D-EITI report.

It should be noted that the identification of companies or groups of companies was based on an estimate of the companies likely to be subject to the statutory requirements (see Chapter 11.b.ii. for details). Following the expiry of the deadlines for publication of the payment reports for the period from January 1, 2017 to December 31, 2017 and the experience gained from the publication of the payment reports for the period from January 1, 2016 to December 31, 2016, it has become apparent that the number of payment reports actually published is lagging behind the number of companies or consolidated groups that have been identified. An estimation or assessment of the number of companies or groups of companies participating in the EITI reporting process should therefore also be made against the background of the actually-published payment reports. Taking into account the high coverage in the lignite, natural gas, crude oil, potash and salt sectors with regard to the production volume and the reported mining and extraction royalties, the participation can be assessed as positive.

All payment reports submitted by companies pursuant to §§341 q et seq. HGB are publicly available and can be inspected in the Federal Gazette.<sup>71</sup> In the course of drawing up the first D-EITI report, the MSG, at the suggestion of the civil society, made a list of the companies identified that did not participate in the reporting for the first report of the D-EITI or in that of the supplementary report. In view of the public availability of the payment reports and the legal objections that the government has raised against naming these companies, the MSG has refrained from naming the non-participating companies for this second D-EITI report, as it did for the first D-EITI report. The legal concerns which, from the government's point of view, oppose the naming of the companies are set out as follows:

On the one hand, data protection law applies in cases where the company name allows conclusions to be drawn about a specific natural person, such as when a company is named as a sole trader (possibly with further details such as the registered office). This is the case for at least two companies that have not reported under D-EITI, so that they may not be named for reasons of data protection.

On the other hand, it is to be feared that the publication of company names in the D-EITI report without sufficient legal basis could interfere with the fundamental right of companies to freely exercise their profession (Article 12 GG). There is no legal obligation to name the companies. Protected property in Art. 12 GG

includes free entrepreneurial activity serving profit purposes. The publication of the company names in the D-EITI report would intervene in the protected property as an act of state economic control, because the publication of all those company names that did not participate in the reconciliation could result in a certain pillory effect which could lead in turn to the fact that the companies feel compelled to agree to a reconciliation. This problem is exacerbated by the fact that the data to be transmitted by the companies (payment flows such as corporate income tax, extraction and minesite royalties, (incl. trade tax) are actually trade, business and tax secrets.

Publishing the names of these companies would also not be legally justifiable with regard to the decisions of the BVerfG (Federal Constitutional Court) in the so-called Glykol<sup>72</sup> or Scientology<sup>73</sup> case. In the cases in question, the Federal Constitutional Court decided that the Federal Government could fulfil its warning and information obligations even without a legal basis, especially if (e.g. as in the case of glycol) there are interests worth protecting on the part of consumers which are in favour of a warning (consumer health). However, there are no comparable interests among the companies, which did not report under the D-EITI.

The following overview shows the distribution of the participating companies and/or consolidated companies throughout the various sectors for the second D-EITI report:

71 <https://www.bundesanzeiger.de/>; enter the search term 'Payment reports' under 'Search'.

72 BVerfG ((Federal Constitutional Court), Resolution of the First Senate of 26 June 2002, 1 BvR 558/91 – recital no. (1–79), [http://www.bverfg.de/e/rs20020626\\_1bvr055891.html](http://www.bverfg.de/e/rs20020626_1bvr055891.html)

73 BVerfG, Resolution of the 2nd chamber of the First Senate of 16 August 2002 – 1 BvR 1241/91 – recital no. (1–25), [http://www.bverfg.de/e/rk20020816\\_1bvr124197.html](http://www.bverfg.de/e/rk20020816_1bvr124197.html)



**Figure 9:** Participating companies and/or groups of companies per sector

		Sector
1.	BEB Erdgas und Erdöl GmbH & Co. KG, Hanover	Crude oil and natural gas
2.	DEA Deutsche Erdoel AG, Hamburg (today: Wintershall DEA Deutschland GmbH)	Crude oil and natural gas
3.	Dyckerhoff-Gruppe, Wiesbaden	Quarried natural resources
4.	ExxonMobil Central Europe Holding GmbH, Hamburg	Crude oil and natural gas
5.	Heidelberger Sand und Kies GmbH, Heidelberg	Quarried natural resources
6.	Holcim (Deutschland) GmbH, Hamburg	Quarried natural resources
7.	JTSD-Braunkohlebergbau GmbH, Zeitz	Lignite
8.	K+S – Gruppe esco – european salt company GmbH & Co. KG, Hannover K+S Kali GmbH, Kassel	Potash and salts Potash and salts
9.	Lausitz Energie Bergbau AG, Cottbus	Lignite
10.	Neptune Energy Deutschland GmbH, Lingen (Ems)	Crude oil and natural gas
11.	Quarzwerte GmbH, Frechen	Quarried natural resources
12.	RWE – Gruppe Rheinische Baustoffwerke GmbH, Bergheim RWE Power AG, Essen	Quarried natural resources Lignite
13.	Sibelco Deutschland GmbH, Ransbach-Baumbach	Quarried natural resources
14.	Südwestdeutsche Salzwerke AG, Heilbronn	Potash and salts
15.	Vermilion Energy Germany GmbH & Co. KG, Schönefeld	Crude oil and natural gas
16.	Wacker Chemie AG, München	Potash and salts
17.	Wintershall GmbH (today: Wintershall DEA Deutschland GmbH)	Crude oil and natural gas

The recording of government revenues from the extractive sector is difficult in Germany for various reasons. First of all, it should be noted that in Germany only the extraction and minesite royalties are a specific levy for the extractive sector. Moreover, companies in the extractive sector, like companies in other sectors, contribute to tax revenue, in particular in the form of corporation tax and trade tax or, depending on their legal form, income tax. Statistically, the total payments of corporate income tax and trade tax made by the extractive sector are not promptly recorded – they can only be extrapolated from other data.

Furthermore, German tax law has special features that make it difficult to record the tax revenues of the sector as a whole. The most important of these is the fiscal unity, which results in subsidiaries operating in the extractive sector not being recorded as taxable entities themselves, but instead in income taxes being paid on their earnings by a parent company, although the parent company itself is often not active in the extractive sector. At the level of the parent company, however, it is not possible to allocate the tax payments made to the individual companies included in the scope of consolidation (cf. Chapter 11.a.iii.). Further-

more, the recording and allocation of trade tax is also made more difficult by the federal structure of the state system in Germany, as trade tax is levied by the individual municipalities.

A further difficulty lies in the clear classification of the companies that are active in the extractive sector and therefore have to prepare a payment report. This may result in deviations within the scope of recording under commercial law based on the EU Accounting Directive 2013/34/EU of June 26, 2013 and the statistical recording of sector-related government revenues.

Against this background, the production volume, supplemented by the extraction royalties, is the best possible yardstick for the coverage of the sectors.

The following overview shows the coverage of the respective sectors by the group of identified companies and the companies actually participating in the reporting process, with their respective reference values upon which the determination procedure was based:

**Table 9:** Coverage of sectors

Sectors*	Estimated coverage of all identified companies	Estimated coverage of all participating companies	Reference value – Determination – Coverage
Lignite	100%	99.7%	Production volume 2017
Crude oil**	97.0%	97.0%	Production volume 2017
Natural gas	99.2%	99.2%	Production volume 2017
Potash and potash salt products	96.6%	96.6%	usable quantity in 2017
Rock salt	95.7%	No information available***	usable quantity in 2017
Boiled salt	99.9%	9.9%	usable quantity in 2017

\* Against the background of the small-scale nature of the sector, the determination of a degree of coverage of the quarried natural resources sector was dispensed with (cf. Chapter 11.b.ii).

\*\* The remaining 3% of the oil sector has not been included, since it is made up of several smaller companies (see <https://www.bveg.de/Der-BVEG/Publikationen/Jahresberichte>).

\*\*\* Coverage details have been omitted to ensure the protection of competition-relevant data.

**Table 10:** Coverage of extraction royalties

Total revenue from minesite and extraction royalties 2017 (TEUR)	Total of reconciled payments for minesite and extraction royalties 2017 (TEUR)	Coverage by the D-EITI payment reconciliation
€256,498	€255,259	99.52%

The following overview shows the 2017 payments made by the participating companies to government agencies for corporation tax, trade tax, lease payments and payments to improve the infrastructure:

**Table 11:** Overall overview of reported company data

	Corporation tax EUR	Trade tax EUR	Extractive & minesite royalties EUR	Lease payments EUR	Payments into the infrastructure EUR	Totals EUR
1. BEB Erdgas und Erdöl GmbH & Co. KG	– <sup>1</sup>	19,466,796.66	59,647,649.39	–	–	79,114,446.05
2. DEA Deutsche Erdöl AG (today: Wintershall DEA Deutschland GmbH)	4,809,218.00	18,360,862.00	81,897,875.46	–	–	105,067,955.46
3. Dyckerhoff-Gruppe	3,717,798.94	2,463,043.51	–	–	–	6,180,842.45
4. ExxonMobil Central Europe Holding GmbH	43,201,773.00 <sup>2</sup>	32,501,779.00	49,150,919.82	–	–	124,854,471.82
5. Heidelberger Sand und Kies GmbH	784,633.00	150,922.00	–	–	–	935,555.00
6. Holcim (Deutschland) GmbH	158,068.53	860,765.06	–	413,000.00	–	1,431,833.59
7. JTSD-Braunkohlebergbau GmbH / MIBRAG	21,158,523.91	12,201,420.55	–	163,285.96	4,858,000.00	38,381,230.42
8. K+S-Gruppe / esco GmbH & Co. KG	– <sup>1</sup>	1,677,956.98	– <sup>4</sup>	–	–	1,677,956.98
9. K+S-Gruppe / K+S Kali GmbH	– <sup>3</sup>	– <sup>3</sup>	818,421.76	–	–	818,421.76
10. LEAG Lausitzer Energie Bergbau AG	–	–	–	1,208,107.64	5,607,253.01	6,815,360.65
11. Neptune Energy Deutschland GmbH (previously: Engie E&P Holding Germany GmbH)	427,275.00 <sup>2</sup>	682,466.10 <sup>2</sup>	10,068,703.31	–	–	11,178,444.41
12. Quarzwerke GmbH	4,543,000.00	4,765,000.00	–	–	–	9,308,000.00

1 No payments have been made due to the legal form of the company.

2 Payments are made by the parent company.

3 No payment information available due to the existence of a consolidated tax group.

4 Payments have been made, but in total less than €100,000.00.

	Corporation tax EUR	Trade tax EUR	Extractive & minesite royalties EUR	Lease payments EUR	Payments into the infrastructure EUR	Totals EUR
13. RWE-Gruppe / RWE Power AG	– <sup>3</sup>	– <sup>3</sup>	–	–	21,769,595.00	21,769,595.00
14. RWE-Gruppe / Rheinische Baustoffwerke GmbH	– <sup>3</sup>	– <sup>3</sup>	–	–	–	0.00
15. Sibelco Deutschland GmbH	962,614.09	653,355.79	–	–	–	1,615,969.88
16. Südwestdeutsche Salzwerke AG	3,992,919.68	9,593,954.57	–	–	–	13,586,874.25
17. Vermilion Energy Germany GmbH & Co. KG	– <sup>1</sup>	–	3,426,668.62	–	–	3,426,668.62
18. Wacker Chemie AG	– <sup>3</sup>	250,103.98 <sup>4</sup>	222,992.23	–	–	473,096.21
19. Wintershall GmbH (today: Wintershall DEA Deutschland GmbH)	– <sup>3</sup>	– <sup>3</sup>	50,025,640.00	–	–	50,025,640.00
<b>Total amount of reported payments from all companies</b>	<b>83,755,824.15</b>	<b>103,628,426.20</b>	<b>255,258,870.59</b>	<b>1,784,393.60</b>	<b>32,234,848.01</b>	<b>476,662,362.55</b>

1 No payments have been made due to the legal form of the company.

2 Payments are made by the parent company.

3 No payment information available due to the existence of a consolidated tax group.

4 Payments have been made, but in total less than €100,000.00.

The reports on the cash flows of corporation tax and trade tax illustrate the high relevance of consolidated tax groups in Germany. In these cases, if the main activity of the consolidated tax group does not involve the extraction of natural resources, the details of the taxes paid by the parent company can be omitted (cf. footnote 3 table 11). On the other hand, if the consolidated tax group is mainly active in the extractive industry, a report (on a pro rata or complete basis) of the taxes paid by the parent company is required (cf. footnote 2 in table 11, see also Chapter 11.a.iii).

At the request of the MSG, the content and the composition of the reported payments to improve infrastructure were further analysed by the Independent Administrator in cooperation with the reporting companies. Payments are recorded based on statutory regulations (land transfer taxes) and payments based on private legal contracts between companies and public authorities (towns, municipalities and associations). The latter include (inter alia) the reconciliation of additional administrative costs caused by mining

activities or services in connection with the construction and maintenance of local public infrastructures. The published payment reports for 2017 pursuant to §§341q et seq. HGB also show payments of water abstraction fees. Following a decision by the MSG, the two cash flows were not subject to any payment reconciliation, as was the case in the first D-EITI report.

## **ii. Payment reconciliation for corporation tax and minesite and extraction royalties**

Comparisons of the corporation taxes and/or mining and extraction royalties reported by the participating companies for the year 2017 with the corresponding revenues of the government agencies led to the following provisional or final differences:

**Table 12:** Overview of the reconciliation of corporation tax and minesite/extraction royalty payments

	Total payments according to the company EUR	Total payments according to the public authorities EUR	Provisional differences EUR	Provisional differences %	Differences to be explained EUR	Unexplained differences EUR	Unexplained differences %
Corporate income tax	83,755,824.15	76,817,303.76	6,938,520.39	8.3	–6,938,520.39	0,00	
Minesite/extrac- tion royalties	255,258,870.59	246,700,387.04	8,558,483.55	3.4	–8,558,483.55	0,00	
	<b>339,014,694.74</b>	<b>323,517,690.80</b>	<b>15,497,003.94</b>		<b>–15,497,003.94</b>	<b>0.00</b>	

The payments and differences in the cash flow of corporation tax are shown as follows for each company:

**Table 13:** Results of the reconciliation of corporation tax payments

Corporation tax		Amount according to company EUR	Amount according to the govern- ment agencies EUR	Provisional differences EUR	Provisional differences %	Differences to be explained EUR	Unexplained differences EUR	Unexplained differences %
1.	BEB Erdgas und Erdöl GmbH & Co. KG	–		0.00			0.00	
2.	DEA Deutsche Erdöl AG (today: Wintershall DEA Deutschland GmbH)	4,809,218.00	4,667,983.76	141,234.24	2.9	–141,234.24	0.00	
3.	Dyckerhoff-Gruppe	3,717,798.94	2,796,111.00	921,687.94	24.8	–921,687.94	0.00	
4.	ExxonMobil Central Europe Holding GmbH	43,201,773.00	40,949,548.00	2,252,225.00	5.2	–2,252,225.00	0.00	
5.	Heidelberger Sand und Kies GmbH	784,633.00	741,374.00	43,259.00	5.5	–43,259.00	0.00	
6.	Holcim (Deutschland) GmbH	158,068.53	478,164.00	–320,095.47	–202.5	320,095.47	0.00	
7.	JTSD-Braunkohlebergbau GmbH / MIBRAG	21,158,523.91	17,801,387.00	3,357,136.91	15.9	–3,357,136.91	0.00	
8.	K+S-Gruppe / esco GmbH & Co. KG	–		0.00			0.00	
9.	K+S-Gruppe / K+S Kali GmbH	–		0.00			0.00	
10.	LEAG Lausitzer Energie Bergbau AG	–		0.00			0.00	



Corporation tax	Amount according to company EUR	Amount according to the govern- ment agencies EUR	Provisional differences EUR	Provisional differences %	Differences to be explained EUR	Unexplained differences EUR	Unexplained differences %
11. Neptune Energy Deutschland GmbH (previously: Engie E&P Holding Germany GmbH)	427,275.00	405,000.00	22,275.00	5.2	-22,275.00	0.00	
12. Quarzwerke GmbH	4,543,000.00	4,299,120.00	243,880.00	5.4	-243,880.00	0.00	
13. RWE-Gruppe / RWE Power AG	–		0.00			0.00	
14. RWE-Gruppe / Rheinische Baustoffwerke GmbH	–		0.00			0.00	
15. Sibelco Deutschland GmbH	962,614.09	895,361.00	67,253.09	7.0	-67,253.09	0.00	
16. Südwestdeutsche Salzwerke AG	3,992,919.68	3,783,255.00	209,664.68	5.3	-209,664.68	0.00	
17. Vermilion Energy Germany GmbH & Co. KG	–		0.00			0.00	
18. Wacker Chemie AG	–		0.00			0.00	
19. Wintershall GmbH (today: Wintershall DEA Deutschland GmbH)	–		0.00			0.00	
	<b>83,755,824.15</b>	<b>76,817,303.76</b>	<b>6,938,520.39</b>		<b>-6,938,520.39</b>	<b>0.00</b>	

The payments and differences in the cash flow of minesite and extraction royalties are shown as follows for each company:

**Table 14:** Results of the reconciliation of minesite/extraction royalties

Minesite and extraction royalties		Amount according to the company*	Amount according to the govern- ment agencies	Provisional differences	Provisional differences	Differences to be explained	Unexplained differences	Unexplained differences
		EUR	EUR	EUR	%	EUR	EUR	%
1.	BEB Erdgas und Erdöl GmbH & Co. KG	59,647,649.39	59,145,420.12	502,229.27	0.8	-502,229.27	0.00	
2.	DEA Deutsche Erdöl AG (today: Wintershall DEA Deutschland GmbH)	81,897,875.46	77,607,348.85	4,290,526.61	5.2	-4,290,526.61	0.00	
3.	Dyckerhoff-Gruppe	0.00	0.00	0.00		0.00	0.00	
4.	ExxonMobil Central Europe Holding GmbH	49,150,919.82	50,002,767.67	-851,847.85	-1.7	851,847.85	0.00	
5.	Heidelberger Sand und Kies GmbH	0.00	0.00	0.00		0.00	0.00	
6.	Holcim (Deutschland) GmbH	0.00	0.00	0.00		0.00	0.00	
7.	JTSD-Braunkohlebergbau GmbH / MIBRAG	0.00	0.00	0.00		0.00	0.00	
8.	K+S-Gruppe / esco GmbH & Co. KG	0.00	0.00	0.00		0.00	0.00	
9.	K+S-Gruppe / K+S Kali GmbH	818,421.76	818,421.76	0.00	0.0	0.00	0.00	
10.	LEAG Lausitzer Energie Bergbau AG	0.00	0.00	0.00		0.00	0.00	

Minesite and extraction royalties	Amount according to the company* EUR	Amount according to the government agencies EUR	Provisional differences EUR	Provisional differences %	Differences to be explained EUR	Unexplained differences EUR	Unexplained differences %
11. Neptune Energy Deutschland GmbH (formerly: Engie E&P Holding Germany GmbH)	10,068,703.31	9,390,472.72	678,230.59	6.7	-678,230.59	0.00	
12. Quarzwerke GmbH	0.00	0.00	0.00		0.00	0.00	
13. RWE-Gruppe / RWE Power AG	0.00	0.00	0.00		0.00	0.00	
14. RWE-Gruppe / Rheinische Baustoffwerke GmbH	0.00	0.00	0.00		0.00	0.00	
15. Sibelco Deutschland GmbH	0.00	0.00	0.00		0.00	0.00	
16. Südwestdeutsche Salzwerke AG	0.00	0.00	0.00		0.00	0.00	
17. Vermilion Energy Germany GmbH & Co. KG	3,426,668.62	3,064,226.85	362,441.77	10.6	-362,441.77	0.00	
18. Wacker Chemie AG	222,992.23	210,907.23	12,085.00	5.4	-12,085.00	0.00	
19. Wintershall GmbH (today: Wintershall DEA Deutschland GmbH)	50,025,640.00	46,460,821.84	3,564,818.16	7.1	-3,564,818.16	0.00	
	<b>255,258,870.59</b>	<b>246,700,387.04</b>	<b>8,558,483.55</b>		<b>-8,558,483.55</b>	<b>0.00</b>	

\* Payments made in the 'crude oil and natural gas sector' relate to the sector's own production share from the economic exploitation of the respective mining rights.

The payments and differences for minesite/extraction royalties are attributable to the following mining authorities:

**Table 15:** Results of the reconciliation of minesite/extraction royalties by mining authority

Minesite and extraction royalties by mining authority	Amount according to the company EUR	Amount according to the government agencies EUR	Provisional differences EUR	Provisional differences %	Differences to be explained EUR	Unexplained differences EUR	Unexplained differences %
State Office for Mining, Energy and Geology, Hanover (LBEG)	186,224,909.08	180,534,022.54	5,690,886.54	3.1	-5,690,886.54	0.00	
LBEG (State Office for Mining, Energy and Geology) for: Tax authority, Schleswig-Holstein, Kiel	65,081,816.24	62,254,982.14	2,826,834.10	4,3	-2,826,834,10	0,00	
LBEG for: Free Hanseatic City of Hamburg	100,178.48	101,761.18	-1,582.70	-1.6	1,582.70	0.00	
Government of Upper Bavaria, Southern Bavarian Mining Authority, Munich	531,957.47	517,526.84	14,430.63	2.7	-14,430.63	0.00	
State Office for Geology and Mining, Mainz-Hechtenheim	2.278.595.33	2.262.765.35	15.829.98	0.7	-15,829.98	0.00	
Regional Council Darmstadt, Wiesbaden	818,421.76	818,421.76	0.00	0.0	0.00	0.00	
Freiburg State Office for Geology, Raw Materials and Mining	222,992.23	210,907.23	12,085.00	5.4	-12,085.00		
	<b>255,258,870.59</b>	<b>246,700,387.04</b>	<b>8,558,483.55</b>		<b>-8,558,483.55</b>	<b>0.00</b>	

The payments and differences in the cash flow of corporation tax are shown as follows for each company:

**Table 16:** Results of the reconciliation of trade tax payments

Trade tax (> €2,000,000 per government agency)	Amount according to the company EUR	Amount according to the govern- ment agencies EUR	Provisional differences EUR	Provisional differences %	Differences to be explained EUR	Unexplained differences EUR	Unexplained differences %
BEB Erdgas und Erdöl GmbH & Co. KG, Hannover	9,709,212.18	9,820,176.18	-110,964.00	-1.1	110,964.00	0.00	
DEA Deutsche Erdoel AG	12,816,665.00	12,816,660.80	4.20	0.0	-4.20	0.00	
ExxonMobil Production Deutschland GmbH, Hannover	19,343,167.00	18,089,278.98	1,253,888.02	6.5	-1,253,888.02	0.00	
JTSD/MIBRAG	7,015,217.63	6,280,625.74	734,591.89	10.5	-734,591.89	0.00	
Quarzwerte GmbH, Frechen	2,742,000.00	2,634,824.00	107,176.00	3.9	-107,176.00	0.00	
Südwestdeutsche Salzwerte AG	6,684,072.96	6,684,072.96	0.00	0.0	0.00	0.00	
	<b>58,310,334.77</b>	<b>56,325,638.66</b>	<b>1,984,696.11</b>		<b>-1,984,696.11</b>	<b>0.00</b>	

### iii. Payment reconciliation for trade tax

In the context of this second D-EITI report, all trade tax payments reported by the companies which exceeded €2 million per government agency were subjected to a reconciliation procedure. This decision taken by the MSG is based on the special features or challenges associated with the reconciliation of trade tax payments described in Chapter 11.a.iii. Of the total of €103.6 million of trade tax payments reported, €58.3 million (around 56%) were reconciled on the basis of this adapted materiality threshold (Table 16). A total of six companies and 13 different government agencies were involved in this reconciliation of payments. The reconciliation resulted in preliminary differences of around €2 million, which were fully clarified in the course of the subsequent analyses.

### iv. Conclusion on the payment reconciliation

In the course of the reconciliation of the cash flows

- for corporation tax,
- minesite and extraction royalties and
- trade tax,

preliminary differences were calculated which amounted to €17.5 million. These were fully clarified during the course of the work carried out.

# 12

## RECOMMENDATIONS OF THE INDEPENDENT ADMINISTRATOR



## Adjustment of data collection with regard to the cash flows to be reported

The analysis of the previously-published payment reports pursuant to §§341q et seq. HGB has shown that the cash flows (corporate income tax, trade tax, lease payments and payments for infrastructure improvements) recorded in the data reports for the D-EITI to date cover most of the payments to government agencies published by companies in the extractive industry within the framework of the statutory regulations. Nevertheless, in individual cases the published payment reports include further payment flows, such as water abstraction charges, for example, which were not previously part of the data reports for the D-EITI. Adaptation of the data reporting could achieve a broad consistency between the legal payment reports and the reporting scope for the D-EITI.

### Recommendations of the Independent Administrator

- Continuation of the analysis of published (consolidated group) payment reports with regard to the nature and volume of the listed payments to government bodies.
- Adjustment of the payments to be reported for future D-EITI reports in the light of the experiences gained from the (consolidated group) payment reports published to date, with the aim of largely aligning the scope of the cash flows to be reported.

## The future of the payment reconciliation

As expected, the work on payment reconciliation in the context of this second D-EITI report has not led to any definitive differences between the payments reported by the companies and those received by the government agencies. It is to be expected that the procedures for data collection and the subsequent data analysis for the cash flows previously subject to payment reconciliation will increasingly become part of a routine process for companies and government

agencies, with the result that no significant differences from the reconciliation process are expected in the future. This may lead to more stringent questioning of the justification of the payment reconciliation procedure, also with regard to the associated added value for the D-EITI process.

### Recommendation of the Independent Administrator

- Exchange information with the International Secretariat on the possibilities of independently determining the cash flows subject to reconciliation based on experience from completed reconciliation processes and thus, where required, to suspend all material cash flows from reconciliation if and to the extent that there are sufficient indications that reconciliation will not result in material differences.

## Improve the public perception of the work of the D-EITI

The completion of the validation and the associated confirmation of the successful implementation of the requirements of the EITI standard in Germany should be the starting point for further efforts to improve the public perception of the work of the MSG, both at national and international level. The aims and perspectives of the work of D-EITI are particularly important against the background of the current discussion on the acceptance of national natural resources extraction.

### Recommendation of the Independent Administrator

- Continue and expand efforts to improve the public perception of the work of D-EITI, both nationally and internationally.



# ANNEX

## a. Presentation of further EITI requirements

### i. Requirement 4.1b) (revenue flows to be included)

#### 1. The host government's production entitlement (such as oil profit)

Such claims made by government agencies do not exist in Germany, so this requirement does not have to be taken into consideration.

#### 2. State enterprises' production entitlement

State holdings in extractive companies play only a subordinate role in Germany. Of the 49 companies and/or consolidated companies identified, there is only one case in which a government agency is financially involved. The state is also indirectly involved in the RWE AG through its shares in the RWEB GmbH, Dortmund. Various government agencies hold 100% of the RWEB GmbH shares.

As a result, state holdings in extractive companies lead to substantial revenues for the German state. It is not necessary to take these cash flows into account for D-EITI purposes via the information in Chapter 11.a.ii.

#### 3. Dividends

As already mentioned under point 2, state holdings in extractive industries in Germany do not result in any substantial income for the state. therefore these cash flows need not be considered for D-EITI purposes.

#### 4. Bonuses (such as signature, discovery and production bonuses)

Such payments are not levied in Germany, therefore recording them for EITI purposes is unnecessary.

#### 5. All other significant payments and substantial advantages for the government

##### a) Income tax on wages and salaries

This is a form of income tax levied on income from persons who are not self-employed. Payment is made by the company as an employer, but for and on behalf of the employees. As in the case of the legal commercial regulations for the (consolidated company) payment report, this need not be considered for D-EITI purposes.

##### b) Social security contributions

As in the case of income tax on wages and salaries, social security contributions (= employers' contributions to the social security of the employees) are paid by the employer for the employees. Depending on the type of contribution, however, the employer contributes up to half of this social security payment. In essence, these contributions are for pension, health, unemployment and long-term care insurance. However, social security contributions are not a specific tax for the extractive industry – and they are also expressly excluded from reporting in terms of commercial law. For this reason, these contributions are not included in the German EITI report.

##### c) VAT

As a rule, VAT does not affect the net income of companies, it is the end user who must pay this tax. In general, this is an indirect tax, since taxpayers (those obliged to pay) and the economically-burdened (end-users) are not identical. The exchange of services performed by an entrepreneur within the framework of his or her company in Germany is taxed. Since VAT is not a corporation tax, it should not be included in the EITI report.

#### **d) Compensatory payments**

Requirements imposed upon an extractive company to compensate for its interventions in nature and the landscape are an expression of the 'polluter pays' principle. These requirements can also include compensatory payments to government agencies in the form of an 'ultima ratio' if interventions in nature are unavoidable, or if they cannot be compensated or replaced within a reasonable period of time.

For reasons of immateriality, the MSG considers it justifiable to refrain from including compensatory payments for interventions in nature and landscape in the EITI report (cf. also the explanations in Chapter 6.a.).

#### **e) Implementation securities**

Implementation securities are an instrument which (through so-called substitute performance by the authorities) ensures that no additional costs will have to be paid by the general public if an extractive sector company should fail or refuse to implement its obligatory renaturation, safeguarding and rehabilitation measures.

The BBergG expressly provides for optional implementation securities as an official instrument for natural resources extraction projects which are subject to the BBergG. Individual Federal States have introduced similar legislation in their excavation laws (or other subordinate excavation regulations) for the extraction of natural resources which is outside the legal scope of the BBergG. Implementation securities can also be established to ensure the implementation of compensatory and substitution measures for interventions in nature and landscape, pursuant to §17(5) of the Federal Nature Conservation Act (BNatSchG).

In principle, any suitable form of implementation security is permitted. The depositing of cash, however, is not customary in the industry, because the management of such funds is too complex for the competent authorities. The MSG has therefore resolved not to consider implementation securities as cash flows within the framework of the D-EITI process.

#### **ii. Requirement 4.2**

**(Revenues from the sale of the state's share of production or other revenues collected in kind)**

As already mentioned in Section i. (on Requirement 4.1b), state ownership of companies in the extractive industry plays a subordinate role in Germany. Revenues from the sale of the state's share of production are therefore not considered within the context of the D-EITI.

Revenues in kind paid to government agencies by the extractive industry are not known.

#### **iii. Requirement 4.3**

**(Infrastructure provisions and barter arrangements)**

No knowledge exists of agreements that provide for the direct exchange of goods or services against the granting of oil, gas or mining exploration/extraction licenses.

#### **iv. Requirement 4.4**

**(Transport revenues)**

The EITI standard requires the disclosure of state revenues from the transport of oil, gas and mineral resources, if these revenues are included among the main cash inflows in the extractive sector.

In Germany, highly-developed transmission networks are operated for energy (electricity, crude oil and natural gas) and these networks serve to secure the supply of the economy and of private households. The operation of supply networks for electricity and gas is governed by the Electricity and Gas Supply Act (German Energy Act, EnWG). Pursuant to §1(1) EnWG, 'the most secure, cost-effective, consumer-friendly, efficient and environmentally-friendly, grid-bound supply to the general public...' is paramount in this regard. The separation of the activities of transport network operators and companies which actually extract natural gas is ensured in most cases due to relevant unbundling regulations in the EnWG.

In Germany, specific revenue streams for grid-bound supply with electricity and gas and for the use of oil pipelines are not levied by government agencies. The operators of these networks are thus subject to general company taxation.

The use of state land may result in payments for line rights and rights of way. However, pursuant to the Ordinance on Concession Fees, these charges may only be levied for the granting of the right to use public transport routes for the laying and operation of lines which supply electricity and gas directly to ultimate consumers in municipal areas. In contrast, long-distance operators do not supply the ultimate consumers; they deliver from extractive companies or electricity-generating companies (or the national transfer stations) to transfer stations for the distribution network operators in Germany.

In addition, transport companies wholly or partly owned by the state, such as the Deutsche Bahn Group, are only subject to general company taxation. There are no special charges for the transport of natural gas and crude oil and/or mineral resources. The same applies to the collection of truck tolls for the use of motorways and selected federal roads.

#### **v. Requirement 4.5** (Transactions related to state-owned enterprises)

We refer to our explanations in Section i. re Requirement 4.1 (b). Due to the subordinate importance of state ownership in extractive companies, a more detailed analysis of transactions relating to state-owned enterprises appears to be unnecessary.

#### **vi. Requirement 4.6** (Payments to sub-national authorities)

Payments for trade tax (and, where applicable, for leases) go directly to government agencies at the municipal level in the sense of a 'subnational level' (for further explanations regarding trade tax and lease payments, cf. Chapter 4.b.). There are no other significant cash flows from the extractive industry to (in this sense) 'sub-national' agencies.

### **b. Information sheet for the calculation of tax relief pursuant to §10 Electricity Tax Act and §55 Energy Tax Act**

<https://www.detmold.ihk.de/hauptnavigation/beraten-und-informieren/energie/energie-und-strom-steuer-4208848>

# GLOSSARY

## Excavation laws

In Bavaria and North Rhine-Westphalia, the above-ground excavation of non-energetic, ground-based natural resources in the context of dry excavations is determined at state level by the existing excavation laws (AbgrG). For the excavation of solid rock (limestone, basalt, etc.) in quarries where blasting does not occur, the AbgrG applies to sites with an area of up to 10 ha. In the event that this area is exceeded, or if water bodies are formed after completion of the extraction operations, the German Federal Immission Control Act (BImSchG) and/or Water Resources Act (WHG) are applicable. In the other Federal States, this type of natural resources extraction is regulated by the respective state building regulations or by the state-level nature conservation laws.

In general, the AbgrG applies to those raw materials the excavation of which is not directly subject to mining law or the mining authorities. These raw materials include (in particular) gravel, sand, clay, loam, limestone, dolomite and other rocks, bog mud and clays. However, the jurisdiction between AbgrG and mining law can vary from case to case in the case of certain raw materials, such as quartz gravels. The requested authority must always verify its own jurisdiction in each case. The AbgrG also encompasses surface area usage and the subsequent rehabilitation of the area.

## Building Regulations

In Federal States in which legislation does not include an excavation law and the State-level Nature Conservation Law does not apply to the extraction of non-energetic, ground-based natural resources in the context of dry excavations, this type of natural resource extraction falls within the scope of the relevant state building regulations.

Legal limitations also exist: State building regulations apply to the excavation of solid rock (limestone,

basalt, etc.), for example, in quarries with an area of up to 10 hectares (ha) in which no blasting is carried out. In the event that this area is exceeded, or if water bodies are formed after completion of the extraction operations, the German Federal Immission Control Act (BImSchG) or the Water Resources Act (WHG) are applicable.

## Planning approval procedure under mining law

The planning approval procedure under mining law is used for the approval procedure of a general operating plan for projects which require an environmental impact assessment (§§52/2a), in conjunction with 57 a BBergG).

## GDP

The GDP measures the value of goods and services produced domestically (creation of value) within a given period (quarter, year). The Federal Statistical Office calculates the GDP as follows: Production value minus intermediate consumption = the gross value added; plus taxes on products minus subsidies = GDP.

## Gross value added

The gross value added is calculated by deducting intermediate consumption from the production values, so it only includes the value added created during the production process. The gross value added is valued at manufacturing prices, i.e. without the taxes due (product taxes), but including the product subsidies received.

During the transition from gross value added (at manufacturing prices) to GDP, the net taxes (product taxes less product subsidies) are added globally to arrive at an assessment of the GDP at market prices'.

Source: <https://www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/VGR/Glossar/Bruttowertschoepfung.html>

### **Federal Immission Control Act**

The German Federal Immission Control Act (BImSchG) is the most important and practice-relevant law in the field of environmental law. It constitutes the basis for the approval of industrial and commercial installations. In the natural resources extraction industry, quarrying companies must have approval to extract stones and earth. Every quarrying area of 10 hectares or more must undergo a full approval procedure, including public participation and UVP (environmental impact assessment). A more simplified approval procedure is used for quarrying areas of less than 10 hectares.

The sphere of responsibility for the legal immission control approval procedure is fully specified in the Immission Control Acts of the Federal States. The Federal States are tasked with the administrative enforcement of the approval procedure. Each individual state's Environment Ministry – the highest local immission protection authority – usually bears the responsibility for this procedure. Subordinate authorities include regional councils, district authorities and lower-level administrative authorities. Administrative jurisdiction generally lies with the lower-level administrative authorities.

### **Coal and Steel Co-Determination Act (Montan-MitbestG) of 1951 Supplementary Co-Determination Act (MontanMitbestGErgG) of 1956**

Corporate Co-Determination is most extensive in mining<sup>1</sup>(Montan-Mitbestimmung; MontanMitbestG<sup>2</sup>, MontanMitbestGErgG<sup>3</sup>): Here the supervisory boards are composed of equal numbers of employer and employee representatives. The appointment of the labour director, who as an equal member of the management board is responsible for personnel and social matters, is subject to the approval of the majority of the employee representatives on the supervisory board.

### **Water Resources Act**

In compliance with §68(1) Water Resources Act (WHG), the excavation of landowners' natural resources such as gravel, sand, marl, clay, loam, peat and stone in wet extraction operations requires a planning approval procedure. The reason for this is that groundwater is exposed in wet extraction, resulting in above-ground water. The planning approval procedure is implemented by lower-level water authorities.

The procedural steps of the planning approval procedure are governed by the general provisions of §§72 to 78 of the Administrative Procedures Act (VerwVfG). Within the meaning of §68(3), nos. 1 and 2 WHG, the plan may only be established or approved if an impairment of the common good is not to be expected and other requirements of the WHG as well as other public-law provisions are fulfilled.

1 as well as in the 'iron and steel-producing industry'  
2 Montan Mitbestimmungsgesetz (MontanMitbestG) of 1951  
3 Montan-MitbestGErgG of 1956

# FINAL NOTES

<sup>i</sup> The figures on the **production volumes** (Chapter 2.b.) were taken from the following publications: Hard coal and lignite are based on (SDK 2018) 'Coal mining in the energy sector of the Federal Republic of Germany in 2016' (Der Kohlenbergbau in der Energiewirtschaft der Bundesrepublik Deutschland im Jahr 2017). The figures for crude oil and natural gas were taken from (LBEG 2018) 'Crude oil and natural gas in the Federal Republic of Germany 2016' (Erdöl und Erdgas in der Bundesrepublik Deutschland 2017). The figures for potash and potash salt products, special clay, rock salt, boiled salt, industrial brine, china clay, quartz gravel and sand, gravel and sand, crushed natural stone, artificial stone and lime, marl & dolomite stone are based on (BGR 2018 (German Federal Institute for Geosciences and Natural Resources)) 'Deutschland – Raw materials situation 2017'. This is an annual publication, which also includes information about the extraction of natural resources in Germany.

Furthermore, the data on the **value** of the associated production volumes is not included in the official statistics. Data is therefore taken from other publications, such as the annual reports of the associations (with regard to aggregates, especially MIRO 2018) or various publications of the Federal Statistical Office. In detail, the production values of hard coal, lignite, crude oil and natural gas are based on estimates from the 2017 average cross-border prices (BGR 2018). The values for potash and potash salt products, special clays (values according to Destatis), rock salt and industrial brine (values according to Destatis) and china clay (values according to IM 2017 (Industrial Materials)) are also taken from the same publication. The values for the production of quartz sand and gravel, gravel and sand and broken natural stone are taken from BGR 2018 (MIRO 2017). The values for the production of natural stone, limestone, marl and dolomite stone are taken from the data provided by the Federal Statistical Office.

The data was not subjected to any specific verification procedure.

## Hard coal

German hard coal production has been declining steadily for years and production was terminated in a socially-acceptable manner at the end of 2018. 3.7 million tonnes of usable output were extracted in 2017. An approximate value of €337 million for this quantity can be estimated from the average 2017 cross-border prices for power station coal.

## Lignite

At 171.3 million tonnes, lignite extraction remained around the previous year's level. According to the estimate of the BGR, this corresponds to a value of €2,259 million.

## Crude oil

German crude oil production in 2017 was approximately 2.2 million tonnes. As in the case of hard coal, the BGR again used the average 2017 cross-border prices as a basis for estimating the value of crude oil production at €778 million.

## Natural gas

2017 saw 7.9 million m<sup>3</sup> of natural gas (incl. petroleum gas) extracted from sites in nine German Federal States. As in the case of crude oil, the BGR again used the average 2017 cross-border prices as a basis for estimating the value of natural gas production at €1,425 million.

## Potash salt

Two companies in Germany extract potash salt and magnesium salt. The usable extracted output in 2017 amounted to 6.7 million tonnes in the form of potash and potash salt products (BGR 2018). The BGR calculated that the total quantity of these products has a value of roughly €1,726 million.

### Special clay

According to the German mining authorities, 6 million usable tonnes of special clay were extracted in Germany in 2017. The clay in question is high-quality material for the ceramic industry and refractory use. According to the Federal Statistical Office, the BGR calculated the value of this amount at €141 million.

### Rock salt, industrial brine and boiled salt

14.6 million tonnes of rock salt and industrial brine (NaCl content) were extracted in Germany in 2017, according to the German mining authorities. In addition, about 1 million tonnes of evaporated salt were produced, resulting in a total production of 15.6 million tonnes. The BGR calculated the value of that quantity to be €470 million, based on value information from the Federal Statistical Office.

### China clay

China clay or kaolin is used mainly in the paper industry and in the production of fine ceramics. According to the BGR, 1.1 million tonnes of kaolin worth €84 million was extracted.

### Quartz gravel and sand

In 2017, 10.3 million tonnes of quartz gravel and quartz sands were extracted in 2015, valued at €219 million. Among its other uses, the raw material is used as vitreous sand, foundry sand and as a filler in chemical and building chemical products.

### Gravel, sand and broken natural stone

Around 95% of the gravel, sand and broken natural stone extracted today is used in the building and building materials industries [BGR 2018], where they are used in e.g. civil engineering and in the manufacture of concrete. In 2017, 257 million tonnes of gravel and sand were extracted, with a value of €1,686 million, as well as 220 million tonnes of broken natural stone with a value of €1,529 million.

### Ashlar

Quarried natural stone is first extracted in raw blocks and then sawn into slabs of various formats. These slabs are used for e.g. facade cladding or as wall and

floor covering. They are also used as windowsills, steps and gravestones. In 2017, 0.46 million tonnes of this natural resource were extracted, with an estimated value of €39 million.

### Limestone, marlstone and dolomite

56.2 million tonnes of limestone, marlstone and dolomite valued at €822 million were extracted in 2017. Limestone is used in many sectors, including home and road construction and in iron, steel, cement, glass and foodstuffs production.

### SOURCE:

[AGEB 2018] – Energy Balances (AG Energiebilanzen e.V. (2018):

‘Energy consumption in Germany in 2017.’ (Energieverbrauch in Deutschland im Jahr 2017)

[BGR 2018] – Bundesanstalt für Geowissenschaften und Rohstoffe (2018) [Federal Institute for Geosciences and Natural Resources]: ‘Germany – Raw Materials Situation 2017’ (Deutschland – Rohstoffsituation 2017)

[Destatis] – Statistisches Bundesamt (various years): Survey portal. – URL: <https://erhebungsportal.destatis.de/Erhebungsportal> sowie (diff. year b): Producing industries. – URL: <https://www.destatis.de/DE/ZahlenFakten/Wirtschaftsbereiche/IndustrieVerarbeitendesGewerbe/IndustrieVerarbeitendesGewerbe.html>

[IM 2017] – Industrial Materials (2017): IM Price Database

[LBEG 2018] – Landesamt für Bergbau, Energie und Geologie (2018) (State Office for Mining, Energy and Geology): Crude oil and natural gas in the Federal Republic of Germany 2017 (Erdöl und Erdgas in der Bundesrepublik Deutschland 2017)

[MIRO 2018] – Bundesverband Mineralische Rohstoffe e.V. (Federal Association of Mineral Resources) 2018 ‘The German Stone Quarrying Industry. (Die deutsche Gesteinsindustrie) – Report of the Manage-



ment Board 2017/2018' (Bericht der Geschäftsführung 2017/2018)

[SDK 2018] – Statistics of coal economy e.V. (2018) (Statistik der Kohlenwirtschaft e.V. (2018): 'Coal Mining in the Energy Industry of the Federal Republic of Germany 2017.' (Der Kohlenbergbau in der Energiewirtschaft der Bundesrepublik Deutschland 2017)

Production statistics from the Federal Statistical Office and in these calculations cover the sectors 'coal' (GP09-05), 'crude oil and natural gas' (GP09-06), 'ores' (GP09-07) and 'quarried natural resources, other mining' (GP09-08). The data on the exports from 2012 – 2017 was taken from the Genesis Online Database by Destatis. The data for 2017 can be found on the website of the German Federal Office of Statistics. The statements on re-exports of natural gas are from the BGR of 2018.

ii The data was taken from the current national accounts of the Federal Office of Statistics (as of August 2019). The 'Mining and Quarrying' economic sector includes the extraction of naturally-occurring solid mineral resources (coal, salt, ores, quarried natural resources), liquid mineral resources (crude oil) and gaseous mineral resources (natural gas).

In the statistical classification of economic activities (WZ 2008), the 'Mining and quarrying' sector covers the whole of Section B with the following sub-sectors: Coal mining (WZ08-05); crude oil and natural gas extraction (WZ08-06); ore mining (WZ08-07); Quarried natural resources, other mining products (WZ08-08) and the performance of services for mining and for quarrying (WZ08-09). A detailed list of these sub-sectors can be found in the publication 'Classification of Economic Activities' (Klassifikation der Wirtschaftszweige' of the Federal Office of Statistics, pages 175 to 185. It should be noted that section B ('Mining and Quarrying') includes the sub-sector 'Provision of Services for Mining and Quarrying' (WZ08-09). This, however, does not include classical extraction activities.

In addition, there are other companies which extract natural resources; however, these are allocated to a different economic sector due to their main activities and are therefore not included in the following.

### iii Preliminary remark

The tax amounts shown in the table are based on special evaluations of the corporation tax statistics from 2010 – 2012, the trade tax statistics of 2010 and 2014 and the statistics on the partnerships and communities from 2010 – 2012, as well as estimates and updates of the Federal Ministry of Finance.

Only the 'Mining and Quarrying' economic sector was addressed. The 'Mining and Quarrying' sector includes the extraction of the following naturally-occurring mineral resources: solids (such as coal, salt and ores), liquids (crude oil) and gaseous resources (natural gas). A detailed list of these sub-sectors can be found in the publication 'Classification of Economic Activities' (Klassifikation der Wirtschaftszweige) of the Federal Statistical Office, pages 175 to 185.

Since the most recent statistical data relate to 2014, the following years were extrapolated to 2017. The rate of change in gross value added by the economic sector B, 'Mining and Quarrying' as stated in the national accounts was used for the purpose of the update (source: 'VGR – National Accounts – An Overview of Key Facts', page 20 et seq.) (Wichtige Zusammenhänge im Überblick)

The tax amounts reported for the natural resources sector are amounts that had to be paid by the companies for the respective year (so-called assessment year). The statistical time frame is therefore different from that of the total income of the state which is recorded in the year of the inflow (cash year).

The total reported income of the state is taken from the Federal Government's cash statistics (total public budget – ÖGH). The state's total income includes not only income from taxes, but social security contributions, proceeds from the disposal of assets or invest-



ments (government bonds) as well as fees, administrative income and profits from state enterprises. Detailed explanations and definitions of the total public budget can be found on the website of the Federal Statistical Office:

<https://www.destatis.de/EN/Publications/Specialized/SpecializedPublications.html>

### **Corporation tax**

Statistical data from the years 2010 to 2014 was assessed. For the purposes of the assessment, the corporation tax amounts imposed on unlimited and limited corporation taxpayers before the deduction of capital gains tax or the like were taken into account. The update for the years to 2017 was made on the basis of the development of the gross value added of the economic sector B, 'Mining and Quarrying.'

### **Trade tax**

Trade tax in Germany is collected by more than 11,000 municipalities according to individually-determined and thus differing rates. The basis for the calculation of the trade tax is trade income. This is the profit determined pursuant to the income tax law or the corporation tax law. The amount of trade tax may be increased or reduced by additions and reductions as per the German Trade Tax Act. On the basis of the business income, a taxable amount is calculated uniformly throughout Germany and the trade tax to be paid by the company is determined by applying the respective tax factor of the municipality to the taxable amount. Trade tax is levied on corporations, partnerships and natural persons with their commercial income.

Only the taxable amounts determined during the assessment procedure are included in the trade tax statistics. The Federal Statistical Office used the results of a special evaluation of statistics for the years 2010 and 2014 to assign the positive taxable amounts of the companies in question to the relevant tax rates charged by the respective municipalities. This enabled the trade tax to be determined in an approximate manner.

### **Income tax**

Natural persons, as individual entrepreneurs or members of a partnership, can also make profits in the natural resources extractive sector – and are therefore subject to trade and income tax. However, income tax statistics do not include breakdowns by economic activity. This effectively means that these statistics will not be used for this study. The statistics on partnerships, however, are broken down into economic sectors, but they are only used to determine the earned income, which is subject either to corporation tax or income tax imposed on the parties involved (co-entrepreneurs).

Due to the above-mentioned problems, the income tax attributable to the natural resources extractive sector was estimated by means of the following procedures, using the trade tax statistics and the statistics on partnerships and communities:

An approximate profit was determined for the individual entrepreneurs, by means of retroactive calculation, using the positive taxable amounts assessed in the trade tax statistics for this group of persons. The sum of the income of partnerships, which, in the relevant industry, is attributable to natural persons as participants, was assessed from the statistics on partnerships and communities.

An average tax rate of 28.6% was applied to this profit or to this sum of earnings. This average tax rate was calculated using a microsimulation model for persons with commercial incomes who pay income tax. With the trade tax offset against the income tax, the results in the table show the approximate income tax amounts.

### **Solidarity surcharge**

A solidarity surcharge is levied as a supplementary tax to income tax and corporation tax. It generally amounts to 5.5% of the established corporation tax and income tax (see previous explanations).

Income tax and the solidarity surcharge are not part of the D-EITI payment reconciliation.

iv The Federal States' revenues from extraction royalties are made available to the Federal Ministry of Finance (BMF) by the states for purposes related to the national financial equalisation mechanism within the framework of monthly reporting on tax revenues. They are published in the settlements of the financial equalisation of the Federal States on the website of the BMF.

Only few Federal States publish their revenues from minesite royalties in their budgets. A summarised overview of the minesite royalties is not available. Most Federal States publish accumulated minesite and extraction revenues in their individual budgets. The revenue from the 2017 minesite royalties is only available for three Federal States: Bavaria, Brandenburg, and, Lower Saxony.

v The data was taken from the 'Annual Report for Business Operations for 2017' (Jahresbericht für Betriebe 2016) issued by the Federal Statistical Office. This report refers to companies with at least 20 employees. As this statistical data is not the same as the statistical data on employees covered by the mandatory social security scheme, the data in the report does not cover all extractive business operations.

vi The German natural resources export data is based on information on the goods divisions of the goods catalogue from the production statistics of the Federal Statistical Office. These calculations include 'coal' (GP09-05), 'crude oil and natural gas' (GP09-06), 'ores' (GP09-07) and 'quarried natural resources, other mining products' (GP09-08). The data on the exports from 2012 – 2017 was taken from the Genesis Online Database by Destatis on August 14, 2019.

vii Data on the employees was taken from the database of the Federal Employment Agency (Bundesagentur für Arbeit). [https://statistik.arbeitsagentur.de/nr\\_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche\\_Form.html?view=processForm&resourceId=210368&input\\_=&pageLocale=de&topicId=746698&year\\_month=201712&year\\_month.GROUP=1&search=Suchen](https://statistik.arbeitsagentur.de/nr_31966/SiteGlobals/Forms/Rubrikensuche/Rubrikensuche_Form.html?view=processForm&resourceId=210368&input_=&pageLocale=de&topicId=746698&year_month=201712&year_month.GROUP=1&search=Suchen)

[BMWi] – Bundesministerium für Wirtschaft und Energie 2019 (Federal Ministry for Economic Affairs and Energy): 'Commission for Growth, Structural Change and Employment'. URL: [https://www.bmwi.de/Redaktion/DE/Publikationen/Wirtschaft/abschlussbericht-kommission-wachstum-strukturwandel-und-beschaeftigung.pdf?\\_\\_blob=publicationFile&v=4](https://www.bmwi.de/Redaktion/DE/Publikationen/Wirtschaft/abschlussbericht-kommission-wachstum-strukturwandel-und-beschaeftigung.pdf?__blob=publicationFile&v=4)

[Destatis 2018] – Federal Statistical Office (2018): 'Statistical Yearbook Germany and International Affairs' ('Statistisches Jahrbuch Deutschland und Internationales). URL: [https://www.destatis.de/DE/Themen/Querschnitt/Jahrbuch/statistisches-jahrbuch-2018-dl.pdf?\\_\\_blob=publicationFile](https://www.destatis.de/DE/Themen/Querschnitt/Jahrbuch/statistisches-jahrbuch-2018-dl.pdf?__blob=publicationFile)

[Hildebrand 2016] – Hildebrand (2016): 'Sectoral analysis of the raw materials industry' (Branchenanalyse Rohstoffindustrie). Hans-Böckler Foundation. [http://www.boeckler.de/pdf/p\\_study\\_hbs\\_315.pdf](http://www.boeckler.de/pdf/p_study_hbs_315.pdf)  
[www.boeckler.de/pdf/p\\_study\\_hbs\\_315.pdf](http://www.boeckler.de/pdf/p_study_hbs_315.pdf)

viii The data on the amounts of the subsidies was taken from the current subsidies report of the Federal Government. This report is published every two years.

ix The data on primary energy consumption in 2017 was taken from the database of the Working Group on Energy Balances: <https://ag-energiebilanzen.de/10-0-Auswertungstabellen.html>

[AGEE-Stat. 2018] – Working Group on Renewable Energies–Statistics (AGEE-Stat): 'Renewable Energies in Germany 2017' (Erneuerbare Energien in Deutschland 2017). Centre for Solar Energy and Hydrogen Research Baden-Wuerttemberg and Federal Environment Agency. URL: <https://www.umweltbundesamt.de/publikationen/erneuerbare-energien-in-deutschland-2017>

[BMWi 2018] – Bundesministerium für Wirtschaft und Energie (2018) (Federal Ministry for Economic Affairs and Energy): 'Renewable energies in figures – national and international development in 2017'. URL:

[https://d-eiti.de/wp-content/uploads/2020/03/BM-Wi\\_2018\\_Erneuerbare\\_Energien\\_in\\_Zahlen\\_2017.pdf](https://d-eiti.de/wp-content/uploads/2020/03/BM-Wi_2018_Erneuerbare_Energien_in_Zahlen_2017.pdf)

<sup>x</sup> [BBS 2016] – Bundesverband Baustoffe – Steine und Erden e.V. (German Building Materials Association – Quarried natural resources) (2016): ‘The demand for primary and secondary raw materials of the quarried natural resources industry in Germany until 2035’.

[BV Glas] – Federal Association of the German Glass Industry: ‘Glass – a material with many talents’. URL: [https://www.bvglas.de/media/Weitere\\_Veroeffentlichungen/BV\\_Glas\\_Broschuere\\_Glas\\_ein\\_Werkstoff\\_mit\\_vielen\\_Talenten.pdf](https://www.bvglas.de/media/Weitere_Veroeffentlichungen/BV_Glas_Broschuere_Glas_ein_Werkstoff_mit_vielen_Talenten.pdf)

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