D-EITI

Extractive Industries Transparency Initiative

Germany

Extractive Industries Transparency Initiative – Germany

REPORT FOR 2018

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

Ladies and gentlemen,

The year 2020 was a challenging one for all of us. Even after months of fighting the pandemic, we are still far from "business as usual". Therefore, I am all the more pleased that the D-EITI Multi-Stakeholder Group (MSG) has succeeded in organising an interesting 3rd D-EITI report. I especially want to thank all those who have worked so hard to produce this report. I would also like to make special mention of the companies in the extractive sector that have participated in voluntary reporting and, last but not least, the authorities at the federal and state levels, which again played a significant role in implementation this year.

Especially in the current situation, responsible and transparent management of natural resources is of particular importance. In resource-rich countries, the economic contribution of the extractive sector has been gaining additional importance in view of the economic impact of the pandemic. At the same time, the extractive sector is facing new challenges in times of falling commodity prices and a global shift in demand, e.g. due to the energy transition. Germany's phase-out of coal-fired power generation, as outlined in this report, is a good example of these challenges.

The German government's new raw materials strategy also focuses more clearly on aligning the extractive sector with the Sustainable Development Goals (SDGs), which are also intended to minimise the risks of mining for people and the environment. Therefore, it is only logical that the 3rd D-EITI Report, too, particularly emphasises the importance of sustainability for the German extractive sector. With the implementation of the new EITI standard requirement on gender in mining, we are completing this important aspect.

For the D-EITI, it was an important concern from the very beginning to contribute to the further development of the international EITI. Therefore, I very much welcome the fact that the D-EITI has remained true to its goal in this difficult year of 2020 and has not closed its mind to the request of the international EITI Board to participate in a pilot initiative of the EITI to implement and test possible alternatives to payment reconciliation. The new approach to quality assurance offers the possibility of increasing understanding about government's management of the extractive sector and the conduct of financial transactions through systematic analysis and audit without, however, sacrificing transparency and accountability. The analysis and discussion of the results of this pilot at national and international level will be an exciting task for 2021. I look forward to carrying out this process together with all stakeholders.

Signed, Elisabeth Winkelmeier-Becker

Special Representative of the Federal Government for the implementation of EITI in Germany
Parliamentary State Secretary to the Federal Minister for 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. German companies in the extractive and processing industries are aware of their responsibility and the ever-increasing requirements. Raw material extraction in Germany is carried out under the highest environmental, social and safety standards worldwide. Corruption does not exist in the German extractive sector. However, the German extractive industry is actively involved in the Extractive Industries Transparency Initiative (EITI). The validation of Germany as a full member and the two previous reports provide evidence of the fact that: All payment flows in the German extractive sector are correct, and there are no deviations.

Worldwide, more than 50 countries and all major extractive companies are already participating in the initiative, thus contributing to a transparent international extractive industry which is a strong signal. This is why we have always advocated German EITI membership and have played a constructive role in its implementation from the very outset.

For the 3rd report, Germany was selected by the international EITI Board to implement a pilot project. This gives the D-EITI a pioneering role. We are pleased to be able to make such a major contribution to the further development of the EITI. The pilot measure is intended to test an alternative to the current payment reconciliation process. This alternative should work without waiving tax secrecy. A reduced burden for voluntarily participating companies could encourage other resource-rich countries to participate in the EITI, too. The EITI's high standards of data quality and transparency remain unchanged.

With this 3rd report we once again present a comprehensive picture of the German extractive industry. The consideration of the new EITI requirements of 2019 and the implementation of the validation recommendations for Germany were important aspects of the report. We very much appreciate the successful cooperation in a Multi-Stakeholder Group (MSG) with equal representation from government, civil society and the private sector. The constructive exchange in the MSG supports a factual discussion on raw materials policy and raw materials extraction in Germany and is an important contribution to the public debate.

I would like to thank all the companies that have participated in the initiative on a voluntary basis. In doing so, they have once again shown how transparently the German extractive industry operates and what significance it has for the German economy and society. I would also like to thank all those involved in the Multi-Stakeholder Group for their commitment and hard work. I am very much looking forward to continuing the good cooperation we have had.

Matthias Wachter

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

Greeting and remarks from Swantje Fiedler and Florian Zerzawy for the civil society

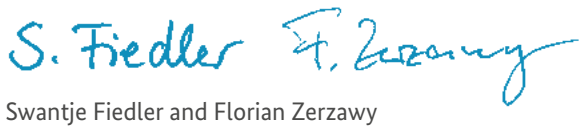
Ladies and gentlemen,

For the third time, a joint report on transparency in the extractive sector is presented by the German government, the private sector and civil society. This report is the result of extensive discussions in the Multi-Stakeholder Group. These exchanges provided us with in-depth insight, and we would like to thank everyone involved for this. As in previous years, the report deliberately refrains from presenting the different perspectives on resource extraction, but provides a fact-based overview of the German extractive sector and of the payments made by the companies involved to government agencies. The report also provides information on current developments in the raw materials sector, in particular on the gradual phase-out of coal-fired power generation and the consequences for opencast lignite mining.

We are very pleased about the fact that the topic of sustainability has been given even more weight at the joint initiative of civil society and the private sector: The previous individual chapters on interventions in nature, renewable energies, recycling, employment and other social aspects are combined in one chapter on "Sustainability in raw material extraction". This combination of related topics helps us to create an interesting focus for the international public.

Also new is a pilot payment reconciliation process implemented at the suggestion of the international EITI Secretariat: The previous D-EITI model of matching payments from extractive industries on a case-by-case basis has been replaced by a procedure that focuses on the systematic analysis of payment systems and safeguards against corruption. The MSG will evaluate the experience made with the pilot and make a decision on how to proceed with payment reconciliation in the future.

The developments at the international level encourage us to continue our efforts towards transparency in environmental aspects of natural resources extraction. The new EITI Standard explicitly mentions for the first time that payment flows related to the environment must be disclosed if they are relevant for understanding the sector. We strongly believe that this requirement makes sense. The Chair of the EITI Board, Helen Clark, also wants the initiative to focus more on the question which consequences the energy transition has on the extraction of fossil fuels and which transformation paths can be identified. We will campaign for Germany to contribute its relevant experience even more and look forward to further cooperation in the Multi-Stakeholder Group.



Swantje Fiedler and Florian Zerzawy

Member and Alternate Member of the Multi-Stakeholder Group
Forum Ökologisch-Soziale Marktwirtschaft e.V. (internationally known as Green Budget Germany)

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LIST OF ABBREVIATIONS

AGG	Allgemeines Gleichbehandlungsgesetz (Equal Treatment Act)
AO	Abgabenordnung (Fiscal code)
APG	Anpassungsgeld (Adaptation payment)
BBergG	Bundesberggesetz (Federal Mining Act)
bbs	Bundesverband Baustoffe – Steine und Erden e.V. (German Building Materials Association – Quarried natural resources)
BilRUG	Bilanzrichtlinie-Umsetzungsgesetz (German Accounting Directive Implementation Act)
GDP	Gross Domestic Product
BMWi	Bundesministerium für Wirtschaft und Energie (Federal Ministry for Economic Affairs and Energy)
BNatSchG	Bundesnaturschutzgesetz (Federal Nature Conservation Act)
CSR	Corporate Social Responsibility
GDR	German Democratic Republic
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)
EIA	Umweltverträglichkeitsprüfung (environmental impact assessment)
EIA-Bergbau	Umweltverträglichkeitsprüfung bergbaulicher Vorhaben (Environmental Impact Assessment of Mining Projects)
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)
FVG	Finanzverwaltungsgesetz (Finance Administraction Act)
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)
WRRL	Wasserrahmenrichtlinie (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 two reports already included information on subsidies, tax subsidies, renewable energies, recycling, and employment and social affairs. The previous special topic of *dealing with impacts on nature*, including the topics of *provisions*, *implementation securities,* and *water*, has become part of the mandatory requirements with the update of the EITI Standard 2019. Besides, for this third report, the chapters *Dealing with interventions in nature and landscape*, *Renewable energies*, *Employment* and *Social affairs* and *Recycling* were combined to form a joint chapter entitled "Sustainability in raw material extraction".

As part of a pilot project, the quality assurance procedure used to ensure financial transparency by disclosing the payments made by extractive companies to government agencies was modified. In the first two reports, quality assurance was carried out in accordance with the EITI standard procedure by reconciling the reported payments of the companies with the corresponding revenues of the government agencies. The disclosure of payments made by extractive companies participating in D-EITI to government agencies remains in place. For the purposes of this report, the reconciliation of these payments with the revenues of the government agencies, the so-called payment reconciliation process, is replaced by a general process analysis of public cash systems. The new approach focusses on the structure and the legal basis, including the internal safeguards and audits.

The pilot project was carried out in close coordination with the international EITI Secretariat and will be evaluated after reporting is completed.

Payment collection and quality assurance were again carried out by an Independent Administrator appointed by the MSG. The participation of the companies was on a voluntary basis.

This third D-EITI report for the reporting year 2018 was prepared by the German MSG in cooperation with the Independent Administrator, the auditing company Warth & Klein Grant Thornton AG Wirtschaftsprüfungsgesellschaft of Düsseldorf.

All the information and data here can also be found online on the D-EITI report portal at www.rohstofftransparenz.de.

Information about the D-EITI process and the Multi-Stakeholder Group of the D-EITI can be found at 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 2018 amounted to 2.1 million tonnes. Proven and potential crude oil reserves in Germany were estimated to be around 29 million tonnes as of January 1, 2019.

Economic importance

In 2018, current domestic oil production amounted to around 2% of Germany's annual consumption. The country's share of global crude oil production amounted to approx. 0.2% in 2018. The value of crude oil produced in 2018 was estimated at €783 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 2018 international comparison of crude oil-producing countries, Germany ranked 58th (1970: 26th). At the end of 2018, 1,642 persons were employed in oil and gas production in Germany.[1]

Extraction

In 2018, as in the previous year, 51 oil fields were in production in Germany. These fields extract oil by means of some 988 production wells in drilling installations (onshore) and production platforms (offshore). In 2018, the oilfields of Schleswig-Holstein and Lower Saxony yielded almost 90% 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 2018.

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 2018.
- In 2018, the Mittelplate/Dieksand oil field in the Wadden Sea contained approx. 17.5 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 develop 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

1 [BfA 2018] For detailed source reference see final note[i].

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 by a steady expansion of the gas infrastructure (from 12 to 20 billion m^3(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 2018, it amounted to around 6.9 billion m^3(Vn) of raw gas, covering only about 6% of domestic natural gas consumption. The safe and probable reserves of natural gas are also declining. These levels amounted to around 54 billion m^3(Vn) at the end of 2018. 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 48th in the comparison of all natural gas-producing countries in 2018. The country's share of global gas production amounted to approx. 0.2% in 2018. 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 2018 amounted to an estimated €1.4 billion. Natural gas accounted for around 11% of the total value of natural resources produced in Germany in 2018. At the end of 2018, 1,501 persons were employed in oil and gas production in Germany.[2]

Extraction

Almost 94% of German natural gas was extracted in Lower Saxony in 2018. Other Federal States (Saxony-Anhalt, Schleswig-Holstein, Thuringia and Bavaria) contributed only marginally to the total production. The natural gas is extracted from 434 production wells 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 fertiliser)), 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.
- 6% of the demand for natural gas in Germany was covered by domestic production in 2018. Approximately 94% of the natural gas was extracted in Lower Saxony.

2 [LBEG 2018] For detailed source reference see final note[i].

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 in 2018, it still needed 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 Federal 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 sociallyacceptable 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 6 on state subsidies and tax concessions.

Economic importance

In 2018, hard coal in Germany covered 10.9% of primary energy consumption and contributed 12.8% to German electricity generation. In 2018, power stations accounted for roughly 56% of the total consumption of hard coal, the steel industry accounted for 42% while other producing industries, the domestic heating sector and small consumers accounted for some 2%. 2.6 million tonnes of German hard coal were extracted in 2018, equivalent to a value of some €247 million. In 2018, the two hard coal mines remaining in Germany (one in Bottrop and one in Ibbenbüren) employed 3,349[3] persons. In view of this development, imports in 2018 covered around 94% of the demand for hard coal and hard coal products (46.6 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. 2.6 million tonnes extracted in 2018, German hard coal covered around 6% of the German requirements.
- Around 94% 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.

3 [BfA 2018] For detailed source reference see final note[i].

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. Lignite is currently mined in 10 active open-cast mining sites. The Rhenish mining region is located in the Lower Rhine Bay in the city triangle of Aachen, Mönchengladbach and Cologne. The Lausitz mining region (formerly also called the mining region East of the river Elbe) extends from the south-east of Brandenburg to the north-east of Saxony. Since German reunification, the Central German mining region has generally been assigned to Saxony-Anhalt as well as to the north-western part of Saxony and the extreme east of Thuringia. Annual production in 2018 amounted to approx. 166.3 million tonnes and has largely remained constant in recent years. The value of the lignite subsidised in Germany in 2018 amounted to €2.2 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 9,152 in 2018.

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 2018, lignite accounted for 11.2% of the primary energy consumption and contributed to 22.6% of electricity generation. The domestic production of lignite covers the country's annual consumption.

Interesting facts

- With production at around 166.3 million tonnes in 2018, lignite accounted for almost 11.2% of primary energy production in Germany.
- Lignite accounted for around 22.6% of gross electricity generation in 2018.
- The Rhenish mining region is the largest lignite mining site in Europe and Germany is the world's largest producer of lignite.
- Germany covers 100% of its lignite requirements from domestic reserves.
- Recultivation and compensation for land required for mining are important issues for the German lignite mining industry.
- Germany will phaseout coal-fired power generation and stop it completely by the end of 2038 at the latest.

v. Salts

History

In addition to the mineral natural resources described in the following section (vii. Other natural resources), 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 100 m-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 2018, the amount produced in Germany was approx. 15.3 million tonnes of rock salt (including industrial brine) and some 6.2 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 2018, after China, the USA and India, and also the fifth largest potash producer with around 7% of the world's total production. In 2018, a total of 8,275 persons were directly employed in potash mining in Germany and a further 2,544 in salt mining.[4]

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 Saxony-Anhalt, and Thuringia). 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.

4 According to the Association of the Potash and Salt Industry (Verband der Kali- und Salzindustrie e. V.) and the Annual Report of Südwestdeutsche Salzwerke A.G. https://www.salzwerke.de/fileadmin/user_upload/salzwerke/dokumente/downloads/Investor_Relations/Geschaeftsberichte/Geschaeftsbericht_2018.pdf

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 site in Germany.

Potash crude salts are mostly extracted by underground mining and to a lesser extent produced from brine. They 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 approx. 560 million tonnes of primary raw materials or uses these materials in production. In 2018, gravel and sands, with around 259 million tonnes, and broken natural stone with some 226 million tonnes were among the most important raw materials in the German extractive industry. In 2018, the gravel, sand and natural stone extraction sector in Germany employed 38,0265[5] people and operated around 2,700 extraction sites.

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, around 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; fly ash). The use of secondary raw materials contributes to the substitution of primary natural sources. The substitution rate is around 15%.

5 [BfA 2018] For detailed source reference see final note[i].

Interesting facts

- Every year, the building materials and quarrying industry extracts roughly 560 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 clay (for coarse and fine ceramics) with production volumes of around 10.7 million tonnes, approx. 3.1 million tonnes (clay for fine ceramics), and 11.3 million tonnes (clay for coarse ceramics) in 2018.

Extraction

The extraction of industrial minerals in Germany is extremely regional in structure, due to natural conditions. While, for example, kaolin is mainly extracted in Bavaria and Saxony and silica in Bavaria, respectively, 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-Anhalt. 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 2018.

Table 1: Extraction of natural resources in Germany in 2018 (quantities)

Natural resource	Quantity (2018)
Hard coal*	2.6 million tonnes[I]
Lignite	166.3 million tonnes[I]
Crude oil	2.1 million tonnes[II]
Natural gas**	6.9 million m^3 [II]
Potash salt	34.54 million tonnes[III]
Potash and potash salt products	6.2 million tonnes[III]
Clays (for fine and coarse ceramics)	14.4 million tonnes[III]
Rock salt and industrial brine	15.2 million tonnes NaCl content[III]
Kaolin	4.9 million tonnes[III]
Quartz gravel and sand	10.7 million tonnes[III]
Gravel and sand	259.0 million tonnes[III]
Broken natural stone	226.0 million tonnes[II]
Ashlar	0.4 million tonnes[III]
Limestone/marlstone/dolomite	54.9 million tonnes[III]

* Useable extracted output
** incl. petroleum gas

I [SDK 2019], (Statistics of the coal industry), for detailed source reference, see final note[ii].
II [LBEG 2019] For detailed source reference see final note[ii].
III [BGR 2019] (State Office for Mining, Energy and Geology), for detailed source reference see final note[ii].

Table 2: Extraction of natural resources in Germany in 2018 (value)

Natural resource	Value (2018) in millions of €
Hard coal*	247[IV]
Lignite	2,218[IV]
Crude oil	783[IV]
Natural gas**	1,402[IV]
Potash salt	No information available[V]
Potash and potash salt products	1,746[IV]
Clays (for fine and coarse ceramics)	141.4[IV]
Rock salt and industrial brine	381[IV]
Kaolin	73[IV]
Quartz gravel and sand	221[IV]
Gravel and sand	1,733[I]
Broken natural stone	1,632[IV]
Ashlar	46[IV]
Limestone/marlstone/dolomite	846[IV]

* Useable extracted output
** Including associated gas

IV [BGR 2019] (State Office for Mining, Energy and Geology), for detailed source reference see final note.[ii]
V 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 (BBergG). In 1982, it replaced the old mining laws of the Federal States and the numerous ancillary mining laws of the Federal Government and the governments of the Federal States. 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 Figure 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 Figure 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 (BImSchG), 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

Bundesministerium für Wirtschaft und Energie

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

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' mineral resources (not under mining law)
Subject-specific subdivision	*Energy resources:* Coal, hydrocarbons (including crude oil and natural gas), geothermal energy *Industrial minerals:* fluorite, graphite, lithium, phosphorus, all salts that are readily soluble in water, sulphur, barite, strontium, zirconium *Metal ores:* e.g. iron, copper, lead, zinc ores, etc. *Also:* All natural resources in the area of the continental shelf and coastal waters (including gravel and natural stones)	*Industrial minerals:* Bentonite and other montmorillonite clays, feldspar, mica, kaolin, diatomaceous earth (diatomite), "pegmatite sand", quartz (quartz sand and gravel) & quartzite (if suitable for refractory products and ferrosilicon production), soapstone, talk and clay (if fireproof and acid-proof). *Quarried natural resources:* basaltic lava (except columnar basalt), roofing slate, trass. *Also:* all privately-owned natural resources, which have been extracted underground (incl. gypsum, natural stone, brick clays etc).	*Quarried natural resources (in opencast mining):* 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 *Also:* peat
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 Conservation 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

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 at the federal and the state levels.

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

<table>
<tr><th>Free-to-mine natural resources</th><th>Privately-owned natural resources</th><th>Landowners' natural resources</th></tr>
<tr><td>Right to mine must be granted by the responsible mining authority</td><td>Proof of ownership of the land, e.g. land leasing contract must be submitted to the mining authority.</td><td>Proof of ownership of the land e.g. land leasing contract must be available.</td></tr>
<tr><td colspan="2">Approval of the operating plan by the mining authority (approval of the main operating plans every two years)
An operation-relevant approval specifies the technical and legal environmental conditions under which natural resources can be explored and extracted.</td><td rowspan="2">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.</td></tr>
<tr><td colspan="2">Supervision by the mining authorities of the Federal States
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).</td></tr>
</table>

i. 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 mine site. The permit is time-limited to a maximum of five 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 mine site. 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 mine site. 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 mine site 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 mine site 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 mine site 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 mine site and extraction royalties	No	No	Decisions made at Federal State level
Time-limited	No	No	Yes (see notes on mining rights)

ii. Approval of an operating plan

Exploration, extraction and benefication 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 7.1 Dealing with interventions in nature and landscape.

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 companies 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 chapter 8 covering payment flows and quality assurance.

iii. 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 (EIA-V Bergbau), an environmental impact assessment (EIA) or a preliminary examination of the individual mining law case is necessary. As a rule, the EIA 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 EIA if they appear on the list of EIA projects subject to EIA under the EIA Act.

If an EIA 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

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

	Compulsory EIA	Compulsory preliminary EIA
Civil engineering		
• Operating parts of a mine that are above ground, from 10 ha upwards	X	
• Surface subsidence from 3 m	X	
• Surface subsidence from 1–3 m		X
Opencast mining		
• Mining area from 25 ha	X	
• Mining area from 10 ha to 25 ha		X
• in nature protection and Natura 2000 areas	X	
• with watercourse development (creation, disposal or substantial redesigning)	X	X
• large-scale groundwater lowering with abstraction or replenishment from 5 million m^3/a	X	
Crude oil and natural gas		
• Production volume from 500 t/d crude oil or from 500,000 m^3/d natural gas	X	
• smaller production volumes		X
• with crushing of rock under hydraulic pressure	X	
• in coastal waters and the continental shelf	X	
Waste dumps		
• from 10 ha	X	

decision, one which is not characterised by planning considerations and discretion. In addition, the planning approval procedure not only binds the decisions of other authorities at the horizontal level, but it also applies to the following operating plans (vertical concentration) as per § 57a(5) BBergG).

In contrast, no planning approval procedure is carried out for operating plan procedures without an EIA. Accordingly, the competence of other authorities to decide on permits, authorisations, approvals etc. remains unaffected in these cases. Therefore, further approvals, permits and authorisations etc. must be obtained from the respective competent authorities to the extent this is necessary for the implementation of a specific extractive project. These may include permits under water law[6], building permits, forest conversion permits, permits under immission control law[7], authorisations under explosives law or the granting of exceptions to prohibitions under nature and landscape law.

6 See glossary regarding the Water Resources Act (WHG), and chapter 7.1 d on the legal framework applicable to water extraction.
7 See glossary on the Federal Immission Control Act (BImSchG).

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 publish 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).

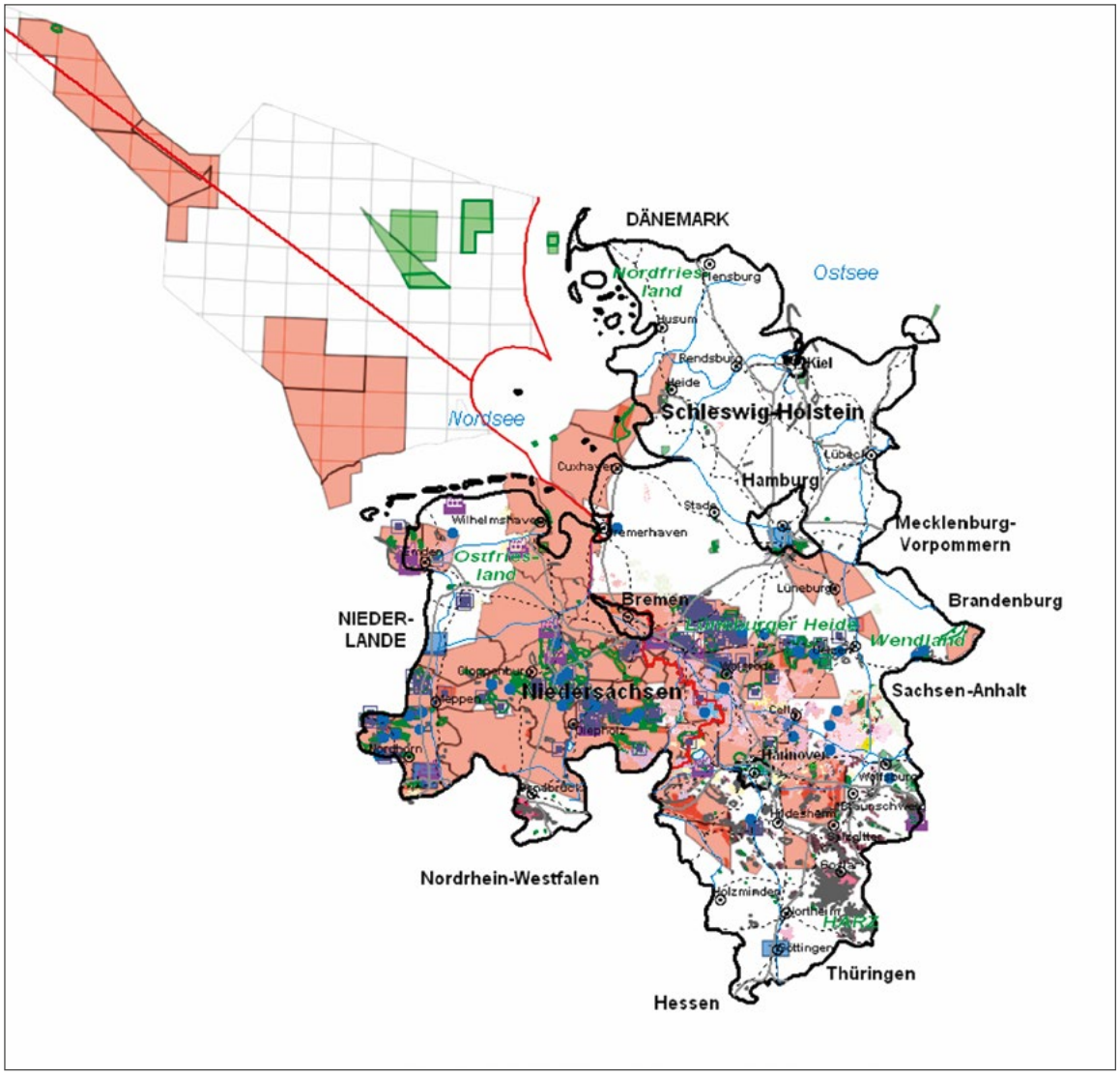
You can find an overview of all mining rights at https://rohstofftransparenz.de/download/#section-Menu_7

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 on the license 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 www.maps.lgrb-bw.de/, Berlin and Brandenburg at http://www.geo.brandenburg.de/lbgr/bergbau and the Saarland at 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 relevant framework is set by the European Union with its Money Laundering Directive, and, most recently, the amending Directive to the 4th EU Money Laundering Directive (RL [EU] 2018/843) which is implemented by the Member States.

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[8] 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.

Enhanced due diligence obligations apply if the beneficial owner is a so-called politically exposed person (PEP). A PeP is defined in § 1(12) GwG as any person who holds or has held a high-ranking important public office at international, European or national level. Also included are persons who hold or have held a public office below the national level but of comparable political importance. PePs include, in particular, ministers, state secretaries, members of parliament, members of the administrative, management and supervisory bodies of state-owned enterprises, and members of management bodies of audit institutions.

In accordance with Article 1 no. 13 of the Amending Directive to the 4th EU Money Laundering Directive (Directive [EU] 2018/843) each EU Member State and the European Commission shall draw up and update a list indicating the functions that are to be considered as important public offices within the meaning of the Directive to facilitate the identification of PePs. In Germany, the Federal Ministry of Finance is responsible for the creation, update and transmission of the list to the European Commission. The European Commission will merge the lists of EU Member States with its own list. The resulting joint list will be published soon.

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. As part of the implementation of the Fourth Money Laundering Directive (EU) 2015/849 of May 20, 2015, a Transparency Register was established on June 26, 2017. The Register contains beneficial owner data in the form of an Internet portal. Thus, on the one hand, the portal contains information on beneficial owners taken from already-existing, publicly-accessible electronic registers (see above). On the other hand, information can also be retrieved in cases where the beneficial owner cannot be derived from other registers so that the identity of the beneficial owners had to be communicated directly to the transparency register. 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.

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.

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

Management of the Transparency Register

The Transparency Register is managed 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 the respective beneficial owner has already been recorded in another register (so-called notification fiction, cf. details in § 20(2) GwG). If a registration is made, the entity keeping the register checks the reported data for conclusiveness (§ 18(3) GWG. However, the content of the reported data is not checked.

The question of whether all necessary entries have been made in the transparency register (which is designed as a catch-all register) cannot be answered in general terms. By July 20, 2020, 119,110 entries had been made. Whether associations and legal entities that are already entered in another register have provided sufficient information on the beneficial owners in those other registers is not automatically checked. However, for the associations subject to the reporting requirement an individual examination is carried out.

Incorrect, incomplete or missing entries are also subject to fines under § 56(1) sentence 1 no. 55 GwG. The competent regulatory authority for imposing fines is the Federal Administrative Office (BVA). In addition, the persons and entities having obligations under money laundering law (e.g. credit institutions, financial services institutions, insurance institutions, real estate agents or lawyers and notaries if they buy or sell real estate or commercial enterprises for their clients) and public authorities must report any discrepancies in the Transparency Register there become aware of pursuant to § 23a GwG. Failure to report a required discrepancy is also subject to a fine (§ 56(1) sentence 1 no. 66 GwG). In the period between the introduction of the obligation to report discrepancies (January 1, 2020) and July 2020 (pro rata-based), obligated parties made a total of 3,104 discrepancy reports.[9] Authorities that are authorised to inspect the Transparency Register for the performance of their duties did not submit any discrepancy reports in the corresponding period.

Final and incontestable decisions on fines are published by the BVA on the internet if the fine exceeds an amount of €200.[10] Most fines are imposed to prosecute administrative offences of non-communication.[11]

Obtaining information from the Transparency Register

The information on the beneficial owners in the Transparency Register is available to government authorities for fulfilling their statutory duties, to those obliged under money laundering law for fulfilling their due diligence obligations under money laundering law and, since January 1, 2020, to the entire public in accordance with the requirements of the amending Directive to the 4th EU Money Laundering Directive (Directive [EU] 2018/843) (§ 23(1) GwG).

The data of the Transparency Register is not available in open data format. If interested parties wish to inspect the Transparency Register, they must register on the website www.transparenzregister.de (one-time registration). The individual registration steps are explained in more detail in the quick guide "Inspection of the Transparency Register for members of the public".

If any of the beneficial owner's interests are worthy of protection, it is still possible to have the inspection of the Transparency Register restricted by the entity keeping the register (registry). For such a restriction, the beneficial owners must provide evidence of the fact that an inspection would expose them to the risk of becoming victims of certain criminal offences (e.g. extortion) (§ 23(2) GwG). By July 20, 2020, 1,598 applications for restriction had been submitted. From 2021 onwards, the registry will compile annual statistics on

9 See the request made to the Federal government by the parliamentary group DIE LINKE.
10 https://www.bva.bund.de/DE/Das-BVA/Aufgaben/T/Transparenzregister/Bussgeldentscheidungen/bussgeldentscheidungen_node.html
11 Request made to the Federal Government by the parliamentary group DIE LINKE.

the number of approved restrictions and the reasons for restrictions, publish them on its website and forward them to the European Commission (cf. § 23(2) last sentence GwG, new version).

To cover administrative expenses, a fee of €1.65 is due for each document inspected (cf. Schedule of Fees of the Special Schedule of Fees of the Federal Ministry of Finance for the Transparency Register of January 8, 2020, Transparency Register Fees Ordinance [TrGebV]). If the Transparency Register refers to one of the other electronic registers (such as the commercial register or the company register) because the information about the beneficial owner is retrieved from one of these registers, only the fees for the inspection of the respective source register are due.

The fees depend on the respective register, but their amount is more or less the same as the fees incurred for the inspection of the Transparency Register.

Law enforcement authorities and the Financial Intelligence Unit (FIU) will be given automated access to all data in the Transparency Register as of January 1, 2021 to effectively combating money laundering, corruption and terrorist financing (cf. § 26a GwG, new version).

Currently, the EU Member States are working together with the EU Commission on the interconnection of the European transparency registers pursuant to Art. 30 et seq. of the Amending Directive to the 4th EU Money Laundering Directive (Directive [EU] 2018/843). Once this connection is established, the transparency registers of all Member States can be accessed via a common European platform ("BORIS"). In this context, the rules concerning the so-called notification fiction (see above) according to § 20(2) GwG will be reviewed.

d. Coal Phase-Out Act

On August 14, 2020, the Act to Reduce and End the Use of Coal for Electricity Generation (Coal Phase-Out Act) came into force.[12] The aim of this Act is to phase out power generation from coal-fired power plants in Germany in a socially acceptable manner to reduce greenhouse gas emissions. The use of coal for power generation will be reduced as steadily as possible and will end at the latest in 2038. At the same time, however, it must be guaranteed that the whole population can be provided with secure, affordable, efficient and climate-friendly electricity. The Coal Phase-Out Act provides for the reduction and termination of hard coal and lignite-based power generation, the continuous review of supply security, the cancellation CO_2 certificates becoming available, an authorisation to compensate electricity consumers for an increase in electricity rates due to the phase-out of coal-based power generation, and an adjustment allowance for older employees in the coal sector (see chapter 6). The target for the expansion of renewable energies is raised to 65 percent in 2030 to make up for the decline in coal-fired power generation. In addition, the promotion of combined heat and power generation will be extended to encourage the adoption of flexible and more climate-friendly power supply options.[13]

As a first step, hard coal-based power generation will be gradually reduced between 2020 and 2027. To this end tenders for hard coal power plants participating in the electricity market will be carried out. In the tender, plant operators will have to specify a bid value at which they are willing to withdraw from burning coal in their plant. By participating in the tender, plant operators can receive appropriate financial compensation for the coal phase-out. Small-scale lignite plants up to 150 megawatts (MW) can also participate

12 https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl120s1795.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl120s1818.pdf%27%5D__1601384424365

13 See core content of the Coal Phase-Out Act https://www.bmwi.de/Redaktion/DE/Downloads/J-L/kerninhalte-kohleausstiegsgesetz-strukturstaerkungsgesetz.pdf?__blob=publicationFile&v=8

in the tenders. This procedure is designed to achieve the targets for 2022 (15 gigawatts (GW) of hard coal and lignite each), 2030 (8 GW of hard coal, 9 GW of lignite) and 2038 (zero GW). The possible maximum price per reduced MW decreases from €165,000/MW in 2020 to €89,000/MW in 2027.

On November 25, 2020, the European Commission granted approval under state aid law concerning the statutory regulations for reducing and ending the generation of electricity from hard coal.[14] To reduce and end lignite-based power generation in Germany, the Coal Phase-Out Act provides for a binding plan for decommissioning lignite-based power plants. Among other things, the Coal Phase-Out Act contains mandatory decommissioning deadlines and regulations on compensation payments for the operators of decommissioned lignite-based power plants. According to these provisions, RWE receives €2.6 billion, LEAG €1.75 billion.[15] The legal regulations are complemented by a public law agreement[16] in which the operators of lignite-based power plants commit to the socially acceptable decommissioning of all power plants. The power plants will be closed down between 2020 and 2038 as reflected in Annex 2 of the Coal-fired Power Generation Termination Act (KVBG). Besides the agreement defines conditions for the use of the compensation payments made to cover the post-mining costs and to secure the mining sites, as well as a comprehensive waiver of legal remedies declared by the operators of the lignite-based power plants. In the Lausitz mining region, the compensation payments are made to special purpose vehicles that were set up as part of precautionary agreements between the lignite-based power plant operators and the states of Brandenburg and Saxony (see chapter 7.1).

Both the regulations covering lignite mining and the coal-fired power plants and the public law agreement still have to be approved by the European Commission under state aid law.

e. Structural Strengthening of Coal Regions Act

The end of coal-fired power generation also means the end of coal extraction in Germany. Whereas hard coal production in Germany already ended on December 31, 2018 (see chapter 6) and the remaining hard coal plants are operated with imported coal, lignite-based power plants are operated exclusively with lignite from domestic production. This production will be reduced in accordance with the decommissioning plan set out in the Coal Phase-Out Act and will end by 2038. The Structural Strengthening of the Coal Regions Act[17] came into force at the same time as the Coal Phase-out Act to mitigate the consequences of the phase-out of coal-fired power generation and to promote economic growth in the regions affected by the coal phase-out. Until 2038, the lignite regions will receive grants of up to €14 billion for particularly significant investments that support structural changes in the affected Federal States and municipalities. In addition, the German government will support the regions through further measures under its own responsibility with up to €26 billion until 2038, for example by expanding research and funding programmes, expanding transport infrastructure projects or relocating existing or creating new federal institutions in the affected regions.

Additional support of up to €1 billion will also be provided to hard coal-fired power plant sites in less developed regions where hard coal has been particularly important for economic development.

14 Following the approval under state aid law, there will be an adjustment to the tendering system in the future, which will affect the year 2027. The last tender round in 2027 is to be omitted to ensure a consistently high level of competition in the tenders.
15 There is no publicly available information on the calculation of the compensation amounts.
16 https://www.bmwi.de/Redaktion/DE/Downloads/M-O/oeffentlich-rechtlicher-vertrag-zur-reduzierung-und-beendigung-der-braunkohleverstromung-entwurf.pdf?__blob=publicationFile&v=4
17 https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl120s1795.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl120s1795.pdf%27%5D__1601384039076

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 mine site 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 extractive 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 Federal States. Depending on the type of tax, it is levied by the financial authorities of the Federal Government, the Federal States or the local authorities. An exception to this rule are mine site and extraction royalties, which are levied by the mining authorities of the Federal 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 Government and the Federal States. Corporation tax is levied by the tax authorities of the Federal States.

ii. Mine site 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 mine site royalty as per § 30 BBergG. Pursuant to § 30(3), first sentence, of the BBergG, this generally amounts to €5 per square kilometre of a mine site 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 Federal States may provide for differing royalty amounts and even exemptions under certain conditions (see § 32(2), BBergG and the table on page 41–48). The expenses incurred for prospecting are set off against the mine site royalties. Mine site royalties must be paid to the Federal State in which the licenced mine site 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 Federal States may stipulate different regulations in their legislation for the calculation of mine site and extraction royalties under certain conditions (see § 32 BBergG and the table on page 41 – 48).

Holders of so-called old rights are exempt from the extraction royalties under § 151(2) no. 2 BBergG (see chapter 3). In practice, this mainly concerns lignite and (until the end of 2018) hard coal extraction as

well as old rights awarded on granite, earth pigments, salt and brine. The operators of these extraction sites had already received unlimited, irrevocable and royalty-free mining rights before the BBergG 1982 came into force, and/or in the new Federal States they had acquired mine property under the old law in the course of privatisation. For this reason, they are not covered by the Federal State regulations on extraction royalties. Saxony and Saxony-Anhalt are excluded from this, because, due to special features under the German Unification Treaty, in these two Federal States new authorisations had to be applied for under the Federal Mining Act, which are subject to extraction royalties. For this reason, exemption clauses were created in the Extraction Royalties Ordinances of both Federal States (parliamentary advisory service of the Brandenburg Parliament, 2008).

Mine site and extraction royalties only apply to free-to-mine natural resources. While mine site royalties are appropriated into the respective Federal State's budget, the revenue from extraction royalties is used for inter-state financial equalisation. Mine site and extraction royalties are levied by the mining authorities of the Federal States.

Table 3: Federal State law regulations on mine site and extraction royalties*

Federal State	Legal basis	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Baden-Wuerttemberg	• Ordinance of the Ministry of the Environment on mine site and extraction royalties (Verordnung des Umweltministeriums über die Feldes- und Förderabgabe) of December 11, 2006 (Baden-Wuerttemberg Legal Gazette [GBl.] p. 395), as last amended by the Ordinance of November 24, 2016 (Legal Gazette p. 618)	• Crude oil, natural gas, rock salt and brine, €20 for each km² or fraction thereof for the first year[1] • Maximum rate crude oil, natural gas: €80 • Maximum rate rock salt and brine: €60	• Assessed at market value – Crude oil: 19% – Rock salt: 5% or 2.5%[5] • Natural gas: 37% of the price obtained[7]	• 100% exemption – Geothermal energy – Brine • Crude oil and natural gas: Site conditioning costs at the levy rate[2] • 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.
Bavaria	• Ordinance on mine site and extraction royalties (Verordnung über Feldes- und Förderabgaben) of December 22, 1998 (Bavarian Legal Gazette [GVBl.] 1998 p. 1050), last amended the Ordinance (VO) of March 26, 2019 (Legal Gazette [GVBl.] page. 98)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €60	• 5% of the market value for oil extracted in the Aitingen area	• 100% exemption – Crude oil with the exception of the Aitingen area – Natural gas with the exception of the Breitbrunn-Eggstätt area
Berlin	• see Brandenburg			

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 Federal 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 Federal 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/m³.

* The specified state-specific levy rates are based on the German Federal guidelines for mine site 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 Federal State regulations on mine site and extraction royalties (where required).

Federal State	Legal basis	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Brandenburg	• Ordinance of December 11, 2015 on mine site and extraction royalties in the Federal State of Brandenburg (Brandenburg Extraction Royalties Ordinance – BbgFördAV) (Brandenburg Legal Gazette [GVBl.] II/15 No. 69)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €60	• Assessed at market value – Crude oil, argillaceous (clayey) rocks: 10% – Gravels and sands: 7% – Peat, including available organic silt and natural stone: 5% – Rock salt and brine: 1% or 0.5%[5] • Natural gas: 10% of the assessed rate[8]	• 100% exemption – Geothermal energy – Natural brine and peat, extracted for balneological purposes or as a carrier for geothermal energy • Crude oil and natural gas: Site conditioning costs at the levy rate[2]
Bremen	• Bremen Ordinance (VO) of May 10, 2012 on mine site and extraction royalties (Bremische Verordnung über die Feldes- und Förderabgabe) (Bremen Legal Gazette [Gesetzesblatt der Freien Hansestadt Bremen], p. 180)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €80	• Natural gas: 36% of the price obtained[7] • Crude oil: 9% of the market value multiplied by the taxable quantity[6] • Sands and gravel sands: 10% of the market value for extraction in coastal waters and continental shelf zones • Brine: 1% or 0.5% of the market value[6]	• 100% exemption – Geothermal energy – Natural brine, extracted for balneological purposes – Sulphur • Crude oil and natural gas: Site conditioning costs at the levy rate[2], and • 75% in the year extraction was started, and in the following five calendar years (in the case of extraction from deposit areas with an average effective permeability below 0.6 millidarcy) – 40% in the case of extraction from almost depleted deposits with an average extraction rate of less than 4,500 m³/h.

** 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 Federal State regulations on mine site 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 Federal 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 Federal 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/m³.
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	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Hamburg	• Ordinance on mine site and extraction royalties (Verordnung über die Feldes- und Förderabgabe) of December 24, 1985 (Hamburg Legal Gazette [HmbGVBl.] p. 389), as last amended by the regulation of April 22, 2014 (HmbGVBl. p. 142)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €80	• Assessed at market value – Crude oil: 7% – Brine: 1% or 0.5%[5] • Natural gas: 37% of the assessed rate[7] multiplied by the taxable volume. Currently exempted from all duties under an annual renewal clause.	• 100% exemption – Geothermal energy – Natural brine, extracted for balneological purposes – Sulphur • Crude oil and natural gas: Site conditioning costs at the levy rate[2]
Hesse	• Ordinance of October 6, 2014, amending the Hessian ordinance on mine site and extraction royalties (Verordnung zur Änderung der Hessischen Verordnung über Feldes- und Förderabgaben) (Hessen Legal Gazette [GVBl.] I p. 232) (for a limited period until December 31, 2019)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €60	• Assessed at market value – Non-ferrous metals and barite: 1% – Rock salt and brine: 1% or 0.5%[5] • Potash, magnesium and boron salts: 1% of the assessed rate[10]	• 100% exemption • Geothermal energy – Natural brine, extracted for balneological purposes • Non-ferrous metals and barite: Extraction 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.

** 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 Federal State regulations on mine site 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 Federal 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 Federal 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/m³.
10 Sum of the products of (1) the average content of potassium oxide (K_2O) and magnesium sulphate ($MgSO_4$) extracted from the crude salts on the licensed site and (2) the amount of €0.75 for potassium oxide (K_2O) and €0.25 for magnesium sulphate ($MgSO_4$) per tonne and percentage point thereof.

Federal State	Legal basis	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Mecklenburg-Western-Pomerania	• Ordinance of April 8, 2014 on mine site and extraction royalties (FeFördAVO MV) (Mecklenburg-Western-Pomerania Legal Gazette [GVOBl.] M-V p. 140)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €80	• Assessed at market value – Crude oil: 21% – Gravels, chalk, limestone, gravel, quartz and special sands and clayey rocks: 10% – Peat/Organic Silt: 5% – Brine: 1% or 0.5%[5] • Natural & petroleum gas: 20% of the assessed rate[8]	• 100% exemption – Geothermal energy – Marine pebbles and sands, collected for coastal protection purposes – Sulphur

** 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 Federal State regulations on mine site and extraction royalties (where required).

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	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Lower Saxony	• Lower Saxony Ordinance on mine site and extraction royalties (Nds. Verordnung über die Feldes- und Förderabgabe] of December 10, 2010 (Lower Saxony Legal Gazette [Nds. GVBl.] p. 564), as last amended by ordinance of 12 June 2018 (Nds. GVBl. p. 129)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €80	• Crude oil: 18% of the market value for crude oil extracted from the Bramberge, Emlichheim, Georgsdorf, Ringe and Rühlermoor Valendis deposits • Natural gas: 30% of the assessed rate[8] multiplied by the taxable volume • Brine: 1% or 0.5%[5]	• 100% exemption – Geothermal energy – Natural brine, extracted for balneological purposes – Sulphur – Natural gas not extracted from the Bramberge, Emlichheim, Georgsdorf, Ringe and Rühlermoor Valendis deposits • Crude oil: Site conditioning costs at the levy rate for the taxable areas[2], and – 50% in the case of extraction using tertiary procedures • Natural gas: site conditioning costs at the levy rate[2], and – 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 – 75% in the year extraction was started, and in the following five calendar years (in the case of extraction from deposit areas with an average effective permeability below 0.6 millidarcy) – 40% in the case of extraction from almost depleted deposits with an average extraction rate of less than 4,500 m³/h.

** 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 Federal State regulations on mine site 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 Federal State ordinance (LVO)
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	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
North Rhine-Westphalia	• Ordinance of May 16, 2018 on mine site and extraction royalties (FFVO)	• Natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €60	• Mine gas 0.15 cents per m³ of methane[12] • Natural gas: 10% of the assessed rate[9, 12 13] • Rock salt and brine: 1% or 0.5%[5] of the market value	• 100% exemption – Geothermal energy – Natural brine, extracted for balneological purposes • Natural and mine gas: Site conditioning costs at the levy rate[3], as well as – 50% on gas, which (1.) is additionally extracted by means of processes for opening up low-permeability deposits, (2.) is extracted from hard coal seams at the surface – 50% for a period of five years from the start of extraction in the case of extraction in areas in which development operations were started by December 31, 2025 – Exemption in whole or in part (official application required), if the extraction averts a danger to public safety or order or, in the case of mine gas, there is evidence of leaks of mine gas to the surface.

** 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 Federal State regulations on mine site 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 Federal 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/m³.
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/m³ for natural gas found in refining plants is possible.

Federal State	Legal basis	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Rhineland-Palatinate	• State ordinance on mine site and extraction royalties (LVO über Feldes- und Förderabgaben) of September 23, 1986 (Rhineland-Palatinate [GVBl.] 1986, p. 271), as last amended by ordinance of December 13, 2016 (GVBl. p. 602)		• Assessed at market value – Crude oil: 12%; for the Römerberg-Speyer und Rülzheim deposits 15% and 7% resp. – 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. – Brine: 1% or 0.5%[5] • Petroleum gas: 10% of the price obtained[7, 12]	• 100% exemption – Natural brine, extracted for balneological purposes – Geothermal energy – Natural gas extracted for direct conversion into electricity • Crude oil and natural gas: Site conditioning costs at the levy rate[4]
Saarland	• Ordinance on mine site and extraction royalties (Verordnung über die Feldes und Förderabgabe) of March 5, 1987 (Saarland Legal Gazette [Amtsblatt], p. 250), last amended by the law of November 7, 2001 (Amtsblatt, p. 2158)		• Natural gas: 10% of the price obtained[7]	• Natural gas: Site conditioning costs at the levy rate[3]

** 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 Federal State regulations on mine site and extraction royalties (where required).

3 Upper limit: The value of the natural gas extracted in the natural gas field, assessed pursuant to the Federal State ordinance (LVO).
4 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.
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 Federal 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/m³.
12 A reduction of the assessed rate by a flat rate for further transport costs is possible.

Federal State	Legal basis	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Saxony	• 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 the ordinance (VO) of June 20, 2012 (Saxon Legal Gazette [Nds. GVBl.] p. 442).		• Assessed at market value – Fluorite – – > €280/t: 1% – – > €320/t: 2% – – > €360/t: 4% – – > €400/t: 10% – Gravels and gravel sands: 8% – Natural stone: 4%	• 100% exemption – Lignite – Geothermal energy – Fluorite < €280/t – Marble – Barite – Brine – Free-to-mine natural resources extracted together with fluorite
Saxony-Anhalt	• Ordinance on mine site and extraction royalties (FörderAVO) of July 15, 2019 (Saxony-Anhalt Legal Gazette [GVBl. LSA], p. 192)	• Natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €100/acre km²	• Assessed at market value – Gravels, sands, quartz and special sands: 8% – Natural stone: 5% – Rock salt and brine: 1% or 0.5%[5] • Stone for the production of ashlar and decorative stones from sandstone: 4% of the assessed rate[11]	• 100% exemption – Lignite – naturally occurring brine used for balneological and tourist purposes

** 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 Federal State regulations on mine site and extraction royalties (where required).

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.
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	Mine site royalties	Extraction royalties**	
			Levy rates	Special regulations
Schleswig-Holstein	• Ordinance on mine site and extraction royalties (Landesverordnung über die Feldes- und Förderabgabe) of December 11, 2012 (Schleswig-Holstein Legal Gazette [GVOBl. Schl.-H.], p. 776), amended by the State Ordinance (VO) of December 3, 2014, GVOBl. Schl.-H., p. 496)	• Crude oil, natural gas, €20 for each km² or fraction thereof for the first year[1] • Maximum rate: €80	• Assessed at market value – 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: Z = 0.0076 * ÖP² – 1.15 * ÖP + 64.5 (Z = interest, ÖP is one thousandth of the market value multiplied by 135), where the minimum extraction interest rate is 21%, with a maximum of 40%. – Brine: 1% or 0.5%[5] • Natural gas: 40% of the assessed rate [8] multiplied by the taxable volume. 18% in the case of extractions from the Deutsche Nordsee A6/B4 and Heide-Mittelplate I authorised deposits	• 100% exemption – Natural brine, extracted for balneological purposes – Geothermal energy • Crude oil and natural gas: Natural gas: site conditioning costs at the levy rate[2]
Thuringia	• Ordinance on mine site and extraction royalties (Thüringer Verordnung über die Feldes- und Förderabgabe) of August 23, 2005, last amended by the ordinance (VO) of November 30, 2015 (Thuringia Legal Gazette [GVBl.], p. 210)		• Assessed at market value – Gypsum and anhydrite: 5% – Gravels and gravel sands: 8% – Natural stone: 5% – Peat/Organic Silt 3% – Ashlar and decorative stones: 4% of the assessed rate[11]	• 100% exemption – Geothermal energy: Prospecting and extraction – Rock salt: Extraction

** 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 Federal State regulations on mine site 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 Federal State ordinance (LVO)
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.
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.

iii. Trade tax

Trade tax is a real or object tax. The assessment of trade tax is carried out in a multi-stage procedure. The municipalities are responsible for collecting 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). To calculate trade tax, the responsible tax office determines the taxable amount, which is 3.5% of the objective earning potential. The responsible municipality sets a uniform tax factor for all the companies in its area of jurisdiction – the tax factor must be at least 200% (§ 16(4), sentence 2 GewStG). The payable trade tax is calculated based on the taxable amount determined by the tax office and the tax factor of the respective municipality.

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 (2020) of the municipalities in Germany is available via the Federal Statistical Office.[18] 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 Government and the Federal State governments as trade tax apportionments. The part of the trade tax remaining with 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 is sufficient. Such contractual arrangements may include

18 https://www.destatis.de/DE/Themen/Staat/Steuern/Steuereinnahmen/Publikationen/Downloads-Realsteuern/aenderung-realsteuerhebesatz-5712301207004.html, retrieved December 16, 2020

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 Federal 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 2018. 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 6).

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 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 6). Like the electricity tax, energy tax is levied by the customs administration, and the revenues flow to the Federal Government. In 2018, energy tax revenues amounted to approx. €40.9 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 6) 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.[19]

19 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 part of the payment flows reported by the companies.

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 cooperation obligations, the privacy of their information must be ensured. This is ensured by the General Data Protection Regulation (GDPR) and tax secrecy provisions (§§ 30 et seq. 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. Since the tax payments made by the companies were reconciled as part of the EITI process for the first and the second D-EITI report, a power of attorney granted by the taxpayer to the Independent Administrator (IA) was necessary to retrieve relevant tax data. For this year's reporting, the D-EITI is testing an alternative model permissible under the EITI Standard to ensure the quality of the payments disclosed by the reporting companies (see chapter 8). Under this model, the exemption from tax secrecy is unnecessary (see also further explanations under d.ii in this chapter).

d. Public reports

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

The Accounting Directive Implementation Law (BilRUG) 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. of the German Commercial Code (HGB) largely correspond to the requirements 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), HBG):

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 relat-

ed 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, certain financial flows of the extractive industries are disclosed via the EITI (see chapter 8). 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 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 8). 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 by default on the mutual disclosure of the payment flows for quality assurance purposes. Therefore, the respective government agency also had to grant an insight into its income from the extractive industry. In this context, one of EITI's main concerns is to make the payment flows generally available in the form of open data, thereby supporting the public debate.

At the request of the EITI Board and the International EITI Secretariat, the D-EITI is participating in a pilot project on the quality assurance of disclosed payments as part of the 3rd D-EITI Report. This pilot project will replace the current EITI model of matching payments from extractive companies with government revenues with an alternative method. This procedure builds on publicly available information on the payments made by extractive companies. In this year's report, the structure, legal framework and safeguards will be comprehensively described and assessed by the Independent Administrator to ensure the quality of these payments. Besides, the report describes the current results of the actual audits of the public coffers to which payments are made at the federal, state and municipal levels.

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 Federal 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, Federal States or Federal Government. In the case of community taxes, the revenues are shared between the Federal Government and the Federal 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 Federal 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 Federal States' share in the revenues of the trade tax through a specific allocation and redistribution mechanism.

A redistribution between the Federal Government and the Federal States is also carried out with regard to the revenue from the extraction royalties. The reve-

nues 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 state entities responsible for the Federal Budget, the Federal State budgets and the municipal budgets decide how the revenues 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 Federal 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-info.de/** web platform. You can also visit the **https://www.offenerhaushalt.de** website for information on other budgets.

5

THE ECONOMIC IMPORTANCE OF THE EXTRACTIVE INDUSTRY IN GERMANY

a. Contribution to the GDP

In 2018, the gross domestic product (GDP) in Germany amounted to €3,344.4 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.[20] The gross value added of the "mining and quarrying" economic sector amounted in 2018 to €3.41 billion, which is equivalent to 0.10% of the GDP (for detailed sources see the final note[iii]).

b. Contribution to government revenue

The extractive 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 mine site and extraction royalties. Added together, these revenues from the extractive industry amounted to around €576 million in 2018. This corresponds to a share of 0.04% of the total income of the Federal German Government. The coverage of this revenue by the reporting procedure is explained in more detail in chapter 8. Other payments are also made by the extractive sector to the Federal 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 7.1), which are not shown in this chapter.

i. Taxes

The sum of the above-mentioned taxes paid by the extractive industry in 2018 amounted to €334 million. This corresponds to 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[iv]). Other payment flows not addressed in the following table are described in chapters 4 and 6.

20 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						
	2012	2013	2014	2015	2016	2017	2018
Corporation tax	173	153	98	135	119	124	132
Trade tax	287	160	201	133	117	123	131
Income tax	59	54	61	62	55	58	61
Solidarity surcharge	13	11	9	11	10	10	11
Totals	**532**	**378**	**369**	**341**	**300**	**314**	**334**
Total income of the State	1,233,394	1,264,668	1,313,906	1,363,098	1,425,594	1,481,714	1,552,924
Proportion of the above-mentioned taxes compared to total revenue	**0.04%**	**0.03%**	**0.03%**	**0.03%**	**0.02%**	**0.02%**	**0.02%**
For information only:							
Updating factor			−6.22%	−5.71%	−11.95%	4.74%	6.34%

For detailed source information see final note [iv].

ii. Extraction and mine site 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.

Table 5: Revenue from extraction royalties paid by the extractive sector in the period 2016 to 2018

Extraction royalties in thousands of €	2016	2017	2018
Federal State			
Baden-Wuerttemberg	128	211	379
Bavaria	1,480	503	602
Berlin	0	0	0
Brandenburg	537	704	777
Bremen	0	0	0
Hamburg	87	90	108
Hesse	463	398	399
Mecklenburg-Western-Pomerania	248	636	633
Lower Saxony	172,076	180,737	153,652
North Rhine-Westphalia	667	683	560
Rhineland-Palatinate	5,192	4,639	6,945
Saarland	33	74	62
Saxony	524	1,728	1,380
Saxony-Anhalt	1,478	1,547	2,375
Schleswig-Holstein	48,140	62,102	72,836
Thuringia	1,454	1,851	1,484
Total extraction royalties	**232,505**	**255,902**	**242,192**
Total income of the State in millions of euros	1,415,506	1,473,847	1,415,506
Proportion	**0.02%**	**0.02%**	**0.02%**

For detailed source information see final note[v].

A total of €242.19 million in extractive sector revenues was levied in Germany in 2018. The front runner was by far the Federal State of Lower Saxony, with more than €153.69 million. Schleswig-Holstein was ranked second with around €67 million, followed by the Rhineland-Palatinate with around €6.8 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 be due to various reasons, e.g. falling world market prices for raw materials or changes in production volumes (for detailed sources, see endnote[v]). The revenues from mine site 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 mine site royalties paid by the extractive sector for the period 2016 to 2018

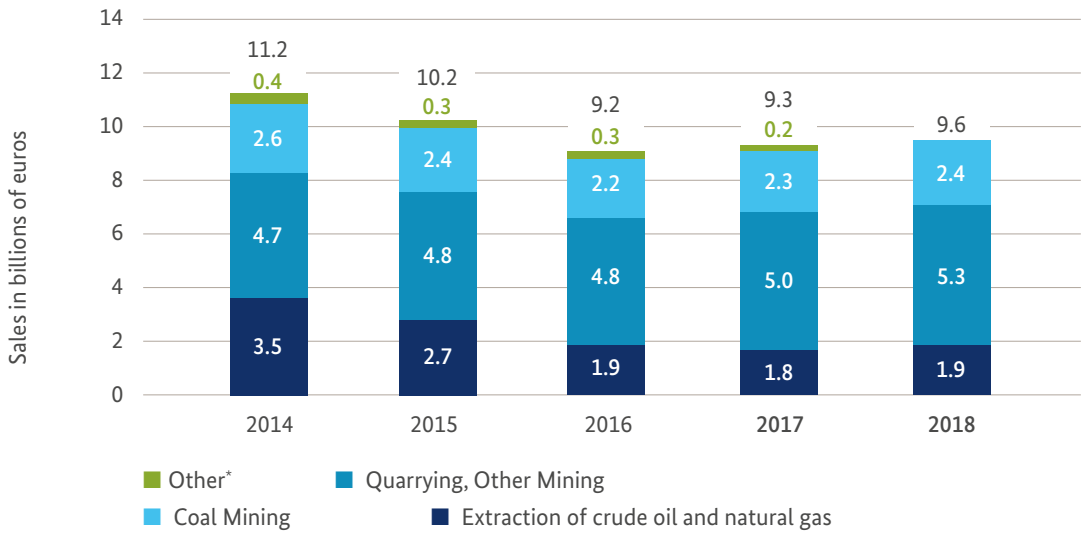
Mine site royalties in thousands of €	2016	2017	2018
Federal State			
Bavaria	17.5	28.2	31.9
Brandenburg	14.5	7.9	60, 1
Lower Saxony	501	560	476.7

For detailed source information see final note[v].

c. Turnover

Mining and quarrying sector companies generated a total turnover of around €9.8 billion in 2018. Around €8.5 billion (about 87%) of this sum was attributable to domestic sales and €1.3 billion (about 13%) to foreign sales.

Graphic 1: Sales in the "Mining and Quarrying sector", 2014 – 2018



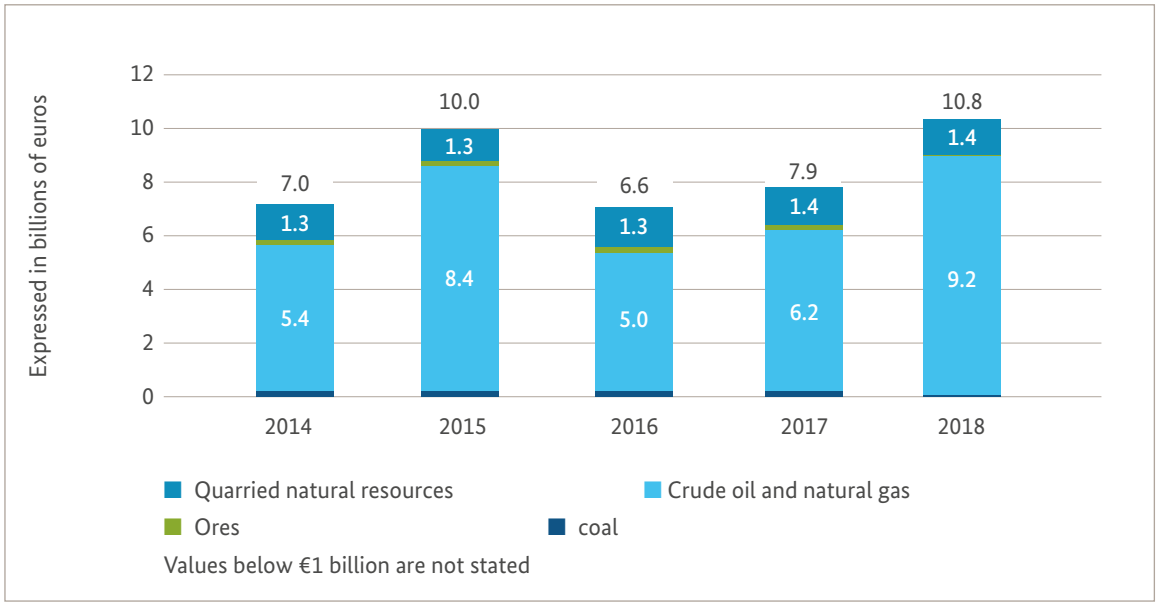
* Provision of services for mining and quarrying (W08-09) and in the subordinate role of ore mining (WZ08-07), related to companies with 20 and more employees.

For detailed source information see final note[vi]. Own presentation.

d. Contribution to export

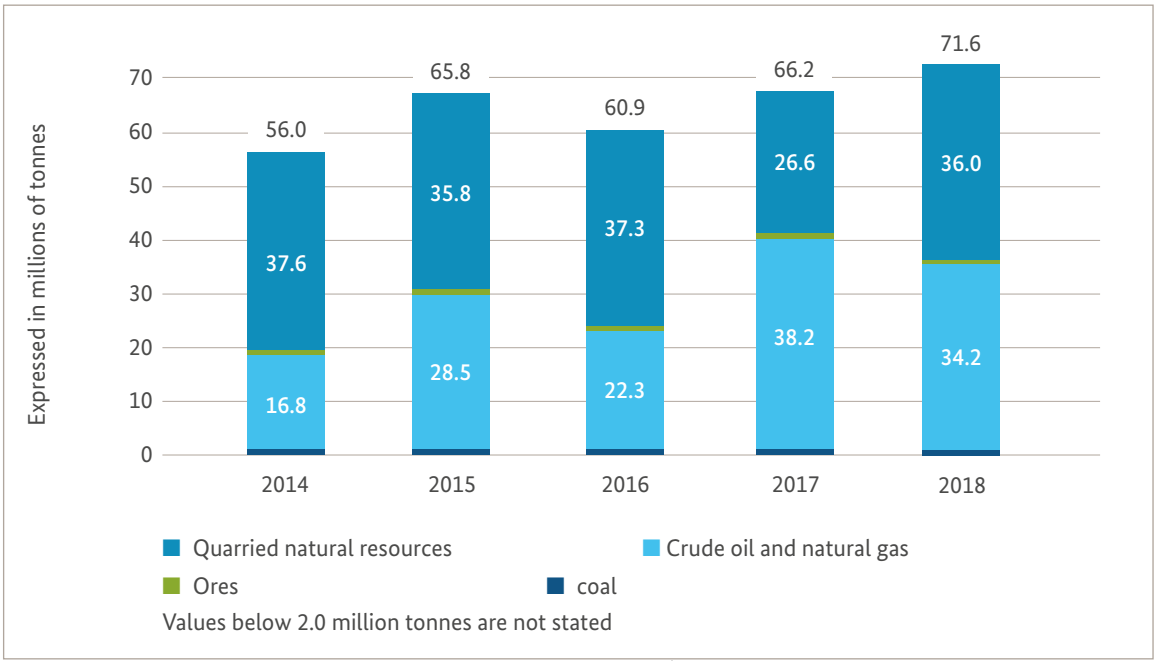
Germany is characterised by a strongly export-oriented and diversified economic structure. In 2018, the country exported goods worth a total of €1,3 trillion. Products of the extractive industries accounted for some €10.9 billion of this amount, equivalent to 0.83% of total exports. The crude oil and natural gas sectors accounted for the largest share of exports at almost €9 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 and Quarrying sector", 2014 – 2018 (value)



For detailed source information see final note[vii]. Own presentation.

Graphic 3: Exports in the "Mining and Quarrying sector", 2014 – 2018 (volume)



For detailed source information see final note[vii]. Own presentation.

6

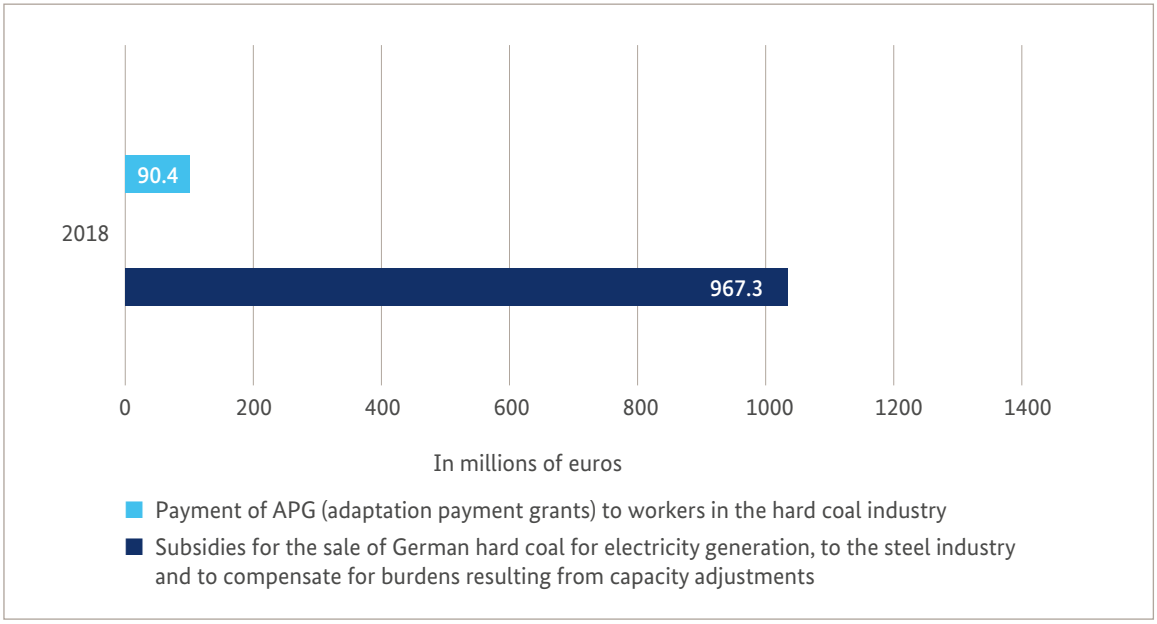
STATE SUBSIDIES AND TAX CONCESSIONS

The payments made by extractive companies to government agencies (see chapter 4) are offset by subsidies and tax benefits granted by the state to support companies. The grants for the hard coal mining industry (see chapter 6.a. and b.) is the only subsidy specifically related to the extractive sector. Until 2018 the hard coal mining industry received subsidies for the sale of hard coal, compensation for the financial burden resulting from capacity adjustments and adaptation payments for socially-acceptable personnel reductions in the sector.

Extractive companies outside the hard coal mining subsector can benefit from further grants that are not specifically designed for the extractive sector (see chapter 6.c.), including concessions for energy and electricity taxes granted to production industry companies (see chapter 6.d.).

There are different definitions of the term subsidies at both national and international level, 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 (grants) of the Federal Government and tax concessions for private companies and economic sectors are considered. Information on subsidies granted 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 4: Subsidies in the German hard coal industry 2018



For detailed source information see final note [viii].Own presentation.

a. Subsidies for the sale of hard coal and closing down mines

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 Federal 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 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 2018, the amount of Federal aid for the sales of hard coal and the shutdown of mines amounted to €967.3 million. The Federal State of North Rhine-Westphalia provided more financial aid. The sales and shutdown aid promised to the hard coal mining industry was degressive. Between 1998 and 2005, Federal subsidies were cut by approx. 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).

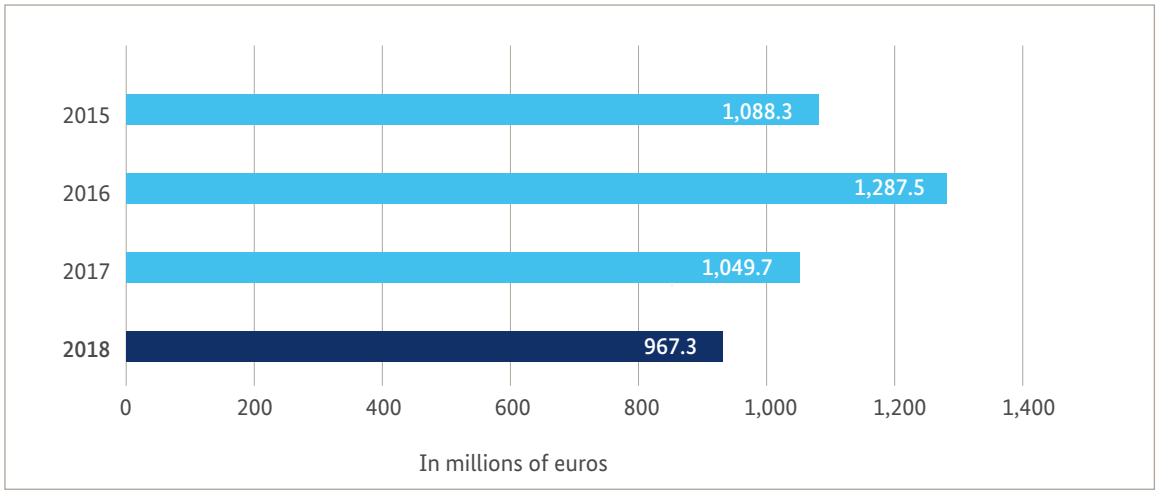
Control measures

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 groundwater 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 5: Subsidies for the sale and closure of German hard coal from 2015 to 2018 (Federal Government amounts)



For detailed source information see final note [viii].Own presentation.

b. Adaptation 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 adaptation payment (APG) as an interim benefit for a maximum of 5 years until their entitlement to pension insurance becomes valid.[21] The adaptation payment reflects the social responsibility of the Federal Government and the hard coal-producing Federal States. In 2018, the Federal Government guaranteed adaptation payments totalling €90.4 million.

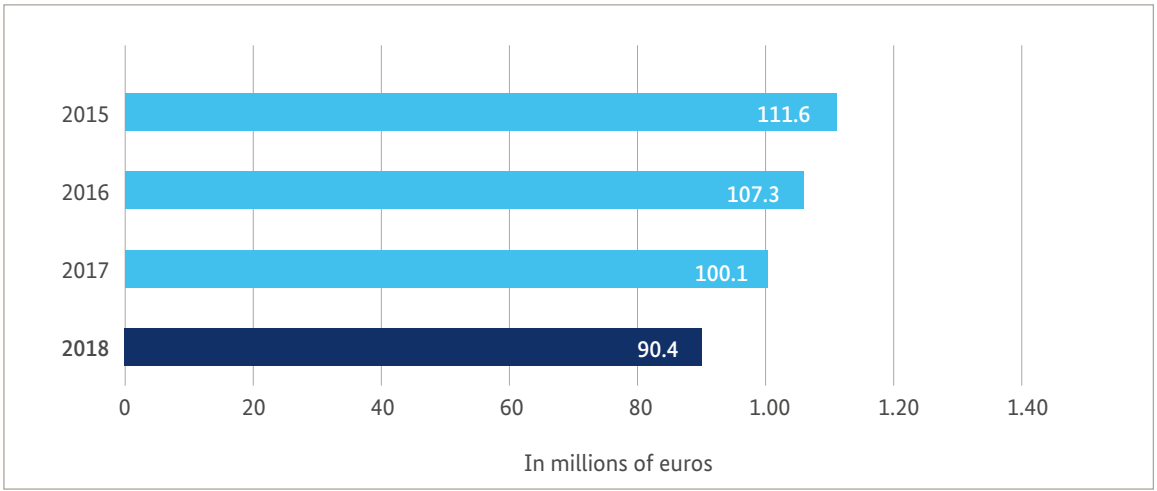
Employees

The number of employees is declining. At the beginning of 2008, 32,803 persons were employed in hard coal mining. By the end of 2018 the number of employees had been reduced to 3,349 employees. The number of persons entitled to adaptation 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 adaptation 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 reviews individual adaptation payment on the basis of random samples within the framework of the Federal Office's annual budget review.

Graphic 6: Adaptation payment 2015 – 2018 (Federal Government amounts)



For detailed source information see final note[viii]. Own presentation.

21 A comparable adaptation payments model is also envisaged to cushion the social consequences of the coal phase-out. For more detailed information on the coal phase-out see chapter 3.

c. Transparency of grants and subsidies

Extractive companies can also receive non-specific, non-extractive public grants if they meet the relevant criteria of the financial support programmes. Financial support can be given in the form of grants, loans or debt service assistance, with the majority of grants today consisting of subsidies. Loans granted directly from the Federal budget have been less important for some time. This is also due to the fact that the Federal Government uses financial institutions for lending, which usually receive an interest subsidy for implementing the programme. The Federal Government's subsidy report provides information on these grants, including their scope and funding objectives. The report does not contain information on the amount of grants paid to individual beneficiaries.

State subsidies for companies are also the subject of the Treaty on the Functioning of the European Union as they can affect competition in the common internal market. Instead of the term subsidy, the EU uses the term state aid and a legal definition that differs from the subsidy concept.[22] State aid is not only understood to mean direct financial grants to companies, debt relief or loans at reduced rates, but can also include guarantees, tax concessions or the provision of land and goods as well as services at special conditions. To guarantee fair competition in Europe, the EU member states have imposed rules on themselves that define under which conditions state aid is permissible and when it is not. In addition, as of July 1, 2016, the Member States of the European Union are obliged to publish information on the granting of state aid on an annual basis. Any state aid above a threshold of €500,000 per company, beneficiary and year has to be published on a Aid website (see chapter 6. D.) including:

The name of the beneficiary, the amount and purpose of the state aid and its legal basis. If companies in the extractive sector receive state aid exceeding the threshold (e.g. in the form of reduced-price loans), the information about the aid is publicly disclosed.

d. 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

22 https://ec.europa.eu/competition/consumers/government_aid_de.html

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. If the benefits in the area of electricity and energy taxation are state aid, the notification and transparency obligations defined by the European Union for state aid apply (see chapter 6. c.).

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 may collect, process, store, transmit and delete data relating to energy and electricity tax concessions. These data are available on the European Commission's state aid website[23].

The extent of the concessions[24] granted to extractive sector companies reporting under EnSTransV is between €12 and €27 million[25] for the general tax concessions pursuant to § 9b StromStG, €25 - €63 million for peak compensation pursuant to § 10 StromStG, €0.5 - €1 million for peak compensation pursuant to § 10 StromStG and €1.5 - €3 million for facilities eligible for tax concession, pursuant to §3 EnergieStG.

23 https://webgate.ec.europa.eu/competition/transparency/public/search
24 only benefits exceeding €500,000 per year, company and reason for the benefit; information given for 2018, accessed on November 24, 2020
25 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.

7

SUSTAINABILITY IN RAW MATERIAL EXTRACTION

As early as 2002, the Federal Government presented the first national sustainability strategy, which has since been updated several times. In the version of 2016, the Federal Government emphasises the responsibility for, among other things, establishing decent working conditions and appropriate sustainable economic growth. Germany is to live up to its "role as one of the most efficient and environmentally friendly economies [...] at home and worldwide".[26] For the raw materials sector, this objective was reconfirmed in the raw materials strategy[27] adopted by the Federal Government in January 2020. Being one of the world's leading technology locations and an export nation, Germany is dependent on a secure supply of raw materials. This goes hand in hand with the responsibility to work for a sustainable, socially acceptable and careful use of natural resources.[28]

The 2030 Agenda, adopted by the United Nations in 2015, defines 17 Sustainable Development Goals (SDGs) for the environment and social and economic development. They serve Germany as a "compass ... for all policy fields"[29] and thus also for the extraction of natural resources.

"Sustainable development" refers to balancing environmental, social and economic challenges as comprehensively as possible along the entire value chains of the many different extractive industries. In this chapter, a number of important contributions in this regard will be discussed; besides reference should be made to various sustainability reports issued by stakeholders from the public, private and civil society sectors.

Chapter 7.1 explains the German legal framework in connection with the management of interventions in nature and landscape. It also contains information on compensation measures and payments, provisions and implementation securities of extractive companies for dismantling/reclaiming former extraction areas as well as on water extraction fees.

Chapter 7.2 describes the status of the provision of renewable energies and the raw material requirements for their expansion.

Chapter 7.3 deals with the situation in the area of employment as well as the legal regulations for the social protection of those employed in the German extractive sector. In the "Diversity and Equal Opportunities" section, the topic of gender equality is addressed. Besides, the importance of co-determination and cooperation between employee representatives and employers is described in the context of the German social partnership. The chapter also reports on the measures taken to lessen the hardships related to job losses resulting from the fact that Federal Government has started to phase out the extraction and use of fossil energy resources for power generation. In the "Corporate Responsibility" section, reference is made, among other things, to private-sector initiatives for more sustainability and cooperation activities with stakeholders from the civil society sector.

Finally, Chapter 7.4 "Recycling" highlights the status of German efforts to use resources efficiently and sparingly. This area offers high innovation potential for Germany, because the country is highly dependent on raw material imports.

26 The Federal Government: German Sustainability Strategy 2016, p. 122.
27 Raw Materials Strategy of the Federal Government, https://www.bmwi.de/Redaktion/DE/Publikationen/Industrie/rohstoffstrategie-der-bundesregierung.pdf?__blob=publicationFile&v=4
28 Raw Materials Strategy of the Federal Government, p. 2.
29 BMZ Extractives and Development Sector Programme: Agenda 2030 Sustainable Development Goals, https://www.bmz.de/rue/de/international/SDG/index.html, p. 1.

7.1

DEALING WITH INTERVENTIONS IN NATURE AND LANDSCAPE

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 or substitution measures and payments are intended to compensate for interventions in nature and landscape and to restore their natural function.

Overall, the land required for securing the supply of raw materials in the medium and long term is estimated at just over 1% of the German territory. According to the Federal Statistical Office, as of the last reporting date, December 31, 2017, approx. 1,519 km², i.e.approx. 0.425% of the land area of Germany was used for the extraction of natural resources. The land equivalent for the amount of natural resources used in 2018 was just over 30 km². In relation to the total area of Germany (357,582 km²), this results in a land requirement of approx. 0.008% of the national area in 2018 (Federal Institute for Geosciences and Natural Resources 2018). This corresponds to a daily area utilisation of an average of 8ha. 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

According to 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 (avoidance obligation). 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 (§ 13 BNatSchG). This general principle and its cascade of legal consequences (first avoidance, then compensatory measures, and as a last resort, compensation payment) cannot be deviated from. In the case of mining measures, the avoidance rule primarily targets a variant that is as environmentally-friendly as possible, because, due to the type of natural resource and technical considerations there are no alternative extraction sites or, due to the economic priority of natural resources extraction, extraction cannot be dispensed with. 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, i.e. 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 federal state to federal state. For example, the concrete assessment of the amount and the use of compensatory payments differs from federal state to federal state.

The Federal Compensation Ordinance (BKompV) specifies the impact regulation under nature conservation law for projects within the jurisdiction of the federal administration. It covers, in particular, projects

in the field of public infrastructure (e. g. power lines, offshore wind farms and waterway projects, in future also federal roads). The BKompV aims to standardise the nature conservation impact regulation across the Federal States and to make it more transparent and effective. The Federal States may make regulations that deviate from the BKompV (Art. 72(3) sentence 3 GG).[30]

Approval practices in the extraction of raw materials

If a company plans to intervene in nature and landscape by extracting raw materials, the nature conservation legislation on impact 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 Federal 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: The impact regulation is generally examined as part of notification or approval procedures under sectoral law, i. e. without an independent administrative procedure. The nature conservation authority shall be involved and shall issue a nature conservation statement. Then, the competent approval authority issues the authorisation taking into account the opinion in "conformity" with the competent nature conservation authority (§ 17(1) BNatSchG). The respective approval authority, which makes the decision on the legal consequences of the intervention, is not bound by the recommendations issued by the nature conservation authority, and may deviate from these recommendation for factual reasons. However, the provisions of special species protection must be complied with irrespective of the impact regulation. 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 in § 1(5) p. 4 BNatSchG). Compensation measures on external sites are necessary, for example, if certain landscape or biotope structures cannot be completely restored, if the time interval between impairment and renaturation is too long, or if special measures are necessary to protect certain species.

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), sentence 4 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.

30 Currently, Baden-Württemberg (§ 15(5) sentence 3 NatSchG BW) and Bavaria (Art. 8(3) sentence 2 BayNatSchG) make use of this possibility.

Figure 7: Overview of compensation directories in the Federal States

Federal State	Publicly available directory	Central directory for the Federal State	Comprehensive information on the intervention area and the compensation type	Weblink	Information on compensatory payments
Baden-Wuerttemberg	Yes	No	Yes	https://www.lubw.baden-wuerttemberg.de/natur-und-landschaft/kompensationsverzeichnis	A list of compensatory payments can be obtained on request from the Nature Conservation Trust Fund (Stiftung Naturschutzfonds).
Bavaria	Yes	Yes	Yes	https://www.lfu.bayern.de/natur/oefka_oeko/oekoflaechenkataster/index.htm	The compensatory payments are administered by the Nature Conservation Fund. Lists of compensatory payments can be requested from district-level administrative authorities.
Berlin	Yes	Yes	No	http://fbinter.stadt-berlin.de/fb/index.jsp	Lists of compensatory payments can be requested from regional-level administrative authorities.
Brandenburg	No	Yes	No	Under development	A list of of compensatory payments can be requested from the Ministry of Agriculture, Environment and Climate Protection.
Bremen	Yes	Yes	Yes	https://www.bauumwelt.bremen.de/umwelt/natur/gis_dienste___geodaten-48536	A list of compensatory payments can be requested from the Senator for Climate Protection, Environment, Mobility, Urban Development and Housing.
Hamburg	Yes	Yes	Yes	https://geoportal-hamburg.de/geoportal/geo-online	The total amount of the compensatory payments is publicly accessible via the annual balance sheet of the Special Fund for Nature Conservation and Landscape Management.

Federal State	Publicly available directory	Central directory for the Federal State	Comprehensive information on the intervention area and the compensation type	Weblink	Information on compensatory payments
Hesse	Yes	Yes	Yes	http://natureg.hessen.de/mapapps/resources/apps/natureg/index.html?lang=de	Compensatory payments cannot be viewed by the public.
Mecklenburg-Western-Pomerania	Yes	Yes	Yes	https://www.kompensationsflaechen-mv.de/wiki/index.php/Hauptseite https://www.umweltkarten.mv-regierung.de/atlas/script/index.php	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 https://cuxland-gis.landkreis-cuxhaven.de/internet/kompensationsflaechen	Compensatory payments are not publicly available.
North Rhine-Westphalia	Planned	No	Yes	e. g. https://www.duesseldorf.de/stadtgruen/landschafts-und-naturschutz/eingriffsregelung/ersatzgeld.html	The list of compensatory payments is published on the internet. Information (also on the use of compensatory payments) can be found on the website of the responsible districts and independent cities.
Rhineland-Palatinate	Yes	Yes	Yes	http://www.naturschutz.rlp.de/?q=kartendienst	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 (www.geoportal.saarland.de).
Saxony	No	Yes	No	https://www.natur.sachsen.de/okokonto-kompensationsflachenkataster-8111.html	Lists of compensatory payments can be requested from district-level administrative authorities.

Federal State	Publicly available directory	Central directory 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	http://ekis.geolock.de/	Compensatory payments cannot be viewed by the public.
Schleswig-Holstein	Yes	No	No	https://www.lksh.de/landwirtschaft/umwelt-und-gewaesserschutz/oekokonto/	A list of compensatory payments can be requested from the Ministry of Energy, Agriculture, the Environment, Nature and Digitalization.
Thuringia	No	Yes	Yes	–	Compensation payments are to be made to the Thuringia Foundation of Nature Conversation (SNT). The lists reflecting the compensation payments are not publicly available. So far there have been no compensation payments from mining projects.

Own presentation, as of: September 2020).

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 Environment Agency 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 to compensate for later interventions either in whole or in part. Polluters such as extractive 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 websites 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). The following information on the nature conservation compensatory measures of the counties can be viewed there:

- 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 Federal State of Baden-Wuerttemberg. Measures taken since April 2011 have been listed.

Example of the assessment of compensatory payments in North-Rhine-Westphalia (NRW)[31]

According to § 15(6) BNatSchG, the polluter must make a compensation payment as a last resort if a permitted encroachment on nature cannot be avoided, compensated or replaced within a reasonable period of time. The compensatory payment is based on the average costs of the non-feasible compensation measures, including the average costs incurred for their planning and maintenance, as well as the provision of areas including personnel and other administrative costs. If these average costs cannot be ascertained, the compensatory payment is based on the duration and severity of the intervention, taking into account the advantages resulting from the intervention to the polluter (§ 15(6), sentence 1 et seq., BNatSchG).

31 The described procedure applies throughout Germany.

The setting of compensatory payments 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 nature conservation authority at the same administrative level (§ 33(1) LNatSchG NRW).

The recipient of the compensatory payment is the district or the city in which the intervention is carried out; the compensatory payment is to be used for nature conservation and landscape management measures (Article 31 (4) LNatSchG NRW). 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 for a specific purpose (§ 31(4) LNatschG NRW).

Examples of the assessments of compensatory payments are the open-cast gravel mines in the open-cast mining zones in the run-up to the lignite mining projects. In three of the open-cast mines, an ecologically-valuable rehabilitation under nature conservation law was not indicated because open-cast lignite mining would use the area directly after the gravel or sand extraction operations. For these cases, the local sub-authority for landscapes developed a simplified procedure designed to assess an appropriate amount to be paid as compensatory payment. A total of €265,767.90 in compensatory payments was assessed for the three projects mentioned above.

For a further open-cast gravel pit, it was determined that a compensatory payment has to be made as part of a small-scale expansion plan, if the intended recultivation cannot be implemented. However, the receiver of the payment, the sub-authority for nature conservation, would have to use the amount of €21,900 to implement another equivalent compensatory measure.

Between 2011 and 2015, not more than approx. €300,000 in compensatory payments were assessed by the North-Rhine Westphalia mining authorities. Between 2015 to 2019, the importance of compensation payments in procedures under mining law has decreased considerably to a total amount of less than €100,000.

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 completely 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 must 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 environmental and nature conservation associations with strong membership, the mining, chemicals, energy and construction-agri-environment industrial trade unions, and economic associations at federal and state level.

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 provisions to be created is based on the amount necessary to meet the financial obligations according to reasonable commercial judgement. Future cost increases must be taken into account when making this assessment. 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. Long-term provisions with a residual term of more than one year are discounted at an interest rate determined by the Deutsche Bundesbank under a statutory order and published monthly.

Provisions are shown on the liabilities side of the balance sheet in the annual financial statements of the extractive sector companies. They are audited by auditors as part of the audit of the financial statements. In matters of tax law, the adequacy of provisions is reviewed by the tax authorities.

Provisions made by companies which must publish their annual financial statements are shown transparently at http://www.bundesanzeiger.de. The duty of disclosure according to § 325 HGB applies in principle to all corporations and all commercial partnerships without a natural person as personally liable shareholder (e.g. companies in the legal form of a GmbH & Co. KG).

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 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 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.

A special case is the special-purpose companies planned for the Lausitz lignite mining area, which were set up in the course of the precautionary agreements 2018/2019 to secure the rehabilitation of the mining sites and possible aftercare obligations between the opencast mine operator LEAG and the Federal States of Brandenburg and Saxony. The mine operator provides these special purpose entities with earmarked special assets. A base amount will be used for this, which is to be increased on an annual basis depending on the current profits of the company. In the event of corporate insolvency or relocation of the company abroad, the special assets are to be pledged to the respective Federal States. The compensatory payments made as part of the coal phase-out (see Chapter 3) are paid directly to the special purpose entities.

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 extractive sector are published by the relevant statistical authorities of the individual Federal States.[32] An overview is shown in Graphic 7.

The “Mining and Quarrying” sector abstracted a total of 1,466 million m³ of water in 2016 (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 2016.[33] Depending on the regional importance of the extractive sector – particularly coal mining – the proportion is higher in some Federal States than in others (up to 30% in individual cases).

32 Source: Federal Statistical Office, National Environmental Accounting (Umweltökonomische Gesamtrechnung) https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Umwelt/UGR/rohstoffe-materialfluesse-wasser/_inhalt.html#sprg380232

33 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
Water withdrawals by industry and private households amounted to around 29.6 billion m³ in 2016, see https://www.destatis.de/DE/Themen/Querschnitt/Jahrbuch/jb-umwelt.pdf?__blob=publicationFile

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.

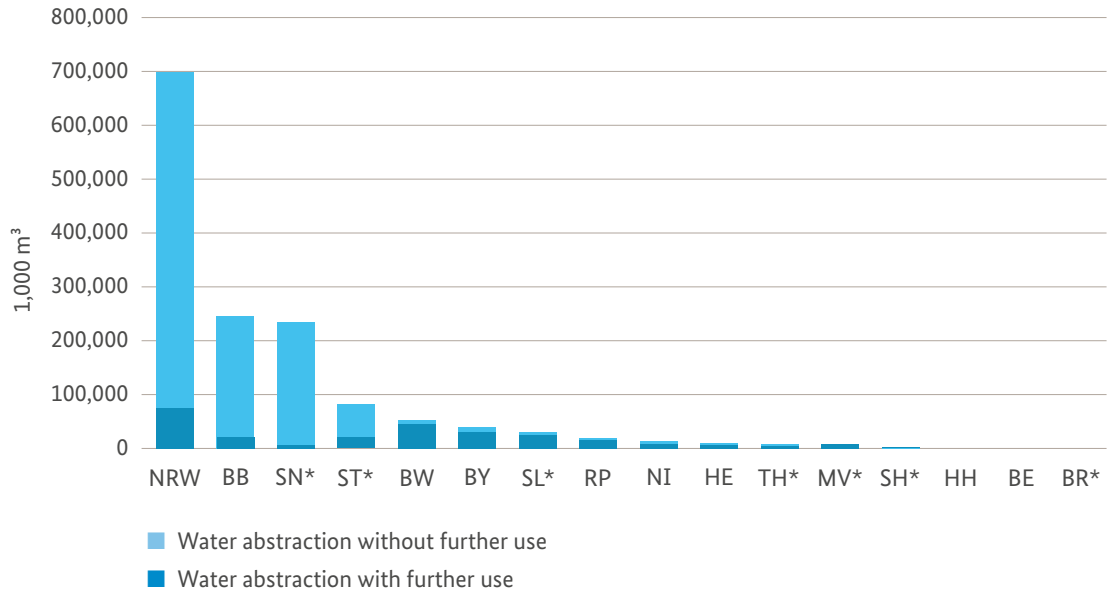
In the underground mining of potash and rock salt, raw salt is usually extracted by means of drilling and blasting. However, salt can also be extracted in a brine plant, where fresh water is introduced into soluble (salt) rock by means of a borehole, resulting in the creation of chambers filled with 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 sump and mine water is treated in compliance with the permit conditions, purified, re-infiltrated, reused (if necessary), e.g. to maintain wetland biotopes, or discharged into surface water without further use.

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 7: Water extraction in the natural resources sector by Federal State in 2016 (in thousands of m^3)



Source: Statistical offices of the Federal States, own representation.

* Notes: Saxony-Anhalt, Mecklenburg-Western Pomerania and Schleswig-Holstein: no data on unused water: "Numerical value unknown or to be kept secret"; Saxony: No information on total use, only 2 of 3 partial values of water use are known: "Total single use" (5,534) & "Total multiple use" (364). There is no information on the third sub-value "total cycle use". The same applies to the information on the unused amount of water: No information on "Delivery of unused water to third parties", there is only information on "Unused discharged water" (234,385). No data for 2016 for Bavaria, Thuringia, Saarland and Bremen. Therefore, the 2013 date is reflected here.

Legal framework for water abstraction

The Water Resources Act (Wasserhaushaltsgesetz), which came into force in 1960, stipulates that water may only be extracted from groundwater and surface waters if there is a permit regulating this use in a manner that is specific in terms of type and extent. 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.[34] 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 also determine the amount of water abstraction charges, if such charges are levied by the Federal States.

Structuring of water abstraction fees

The structuring of fees for water abstraction is carried out by the Federal States that receive these fees. This is why water abstraction fees levied in Germany differ widely in 13 of the 16 Federal States, the three exceptions being Hesse, Bavaria and Thuringia. The total revenue in the 2018 budgetary plans of the Federal 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.[35]

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).[36]

In most Federal 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/m³ 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 Federal States, the fees for groundwater abstraction can range from 5 to 31 cents/m³.[37]

34 In its ruling of September 11, 2014 (docket ref. C-525/12), the European Court of Justice (ECJ) confirmed that with these federal and Federal 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.

35 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

36 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

37 German Federal Environment Agency (2017): Table of water abstraction fees in the natural resources sector in the German Federal States, https://www.umweltbundesamt.de/sites/default/files/medien/2466/dokumente/tabelle_wasserentnahmeentgelte_im_rohstoffsektor_uba_neu.docx

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.

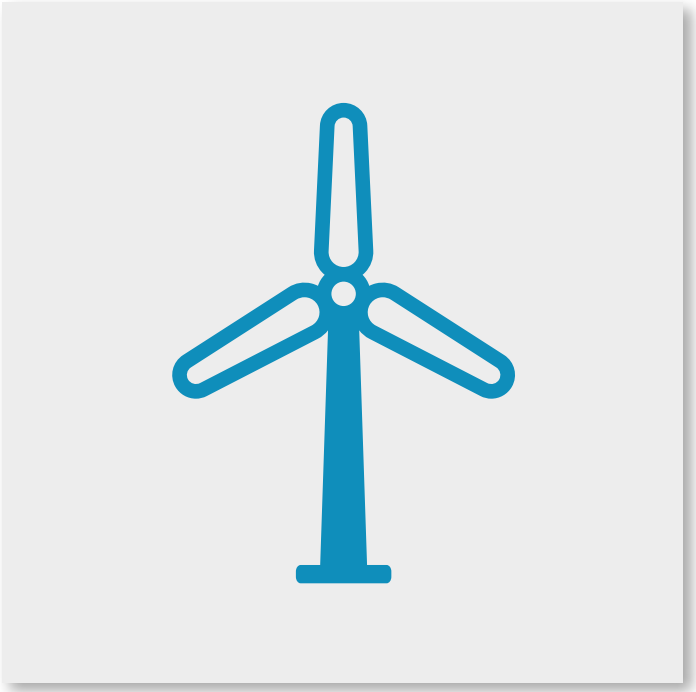
The various fee levy rates, exemptions and discount rules are published in the individual State Water Acts and regulations. The German Federal Environment Agency provides an overview of the relevant fee levy rates in the extractive sector.[38] However, a publicly-accessible source of information on the amount of revenue from water abstraction fees paid by the natural resources sector does not exist.

Water abstraction fees represent a payment flow between companies that extract natural resources and the German State. Due in part to the different payment rates in the Federal States, most payments are below the materiality threshold agreed in the D-EITI, which is why they are not disclosed as payment flows in the D-EITI report. 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 8).

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

7.2

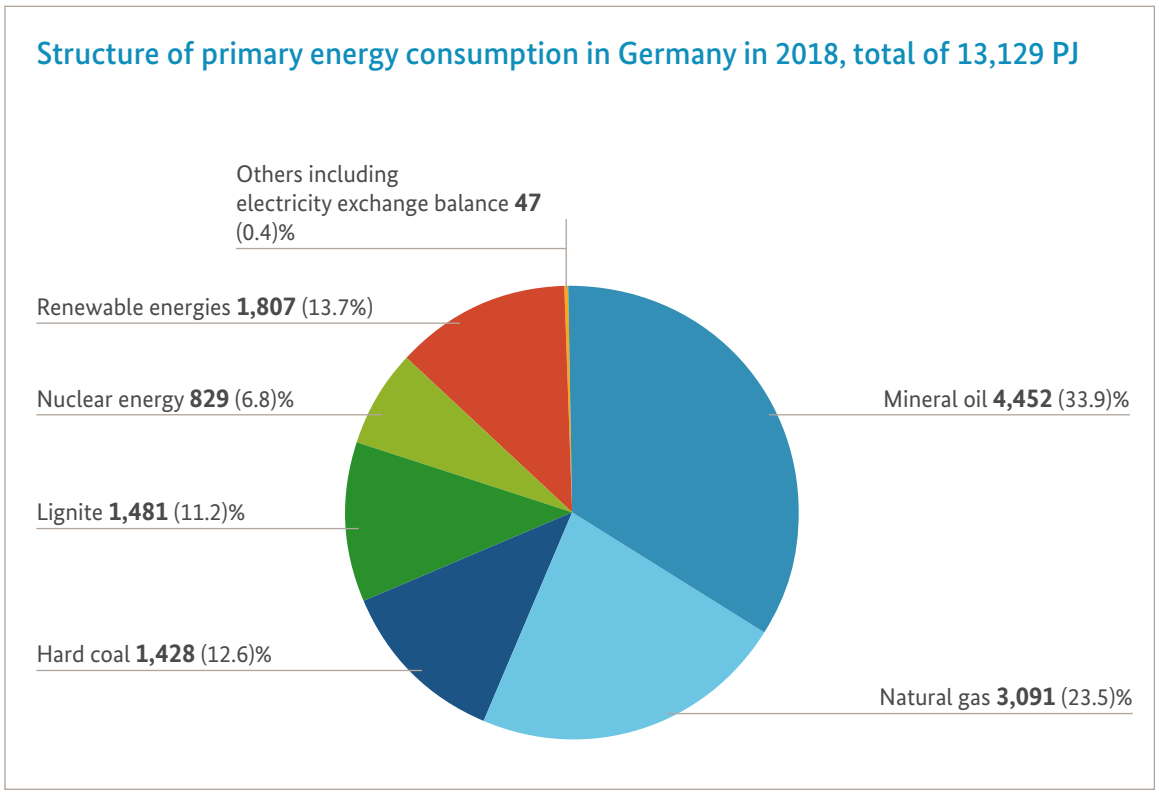
RENEWABLE ENERGIES



a. Renewable Energies in Germany

Renewable energies[39] make a large and growing contribution to Germany's energy supply. In 2018, the share of renewable energies amounted to 13.7% of the total primary energy consumption.

Graphic 8: Structure of the primary energy consumption in Germany in 2018



Source: Working Group on Energy Balances (Arbeitsgemeinschaft Energiebilanzen) – March 2020. For detailed source information see final note[ix].

The contribution to the electricity sector is particularly high; more than 37.8% of the gross electricity consumption is covered by renewable sources (more than 224,600 GWh). The German government intends to increase the share of renewable energies in the electricity supply to 65% by 2030 and nearly decarbonise the energy supply by 2050 to reduce greenhouse gas emissions. In 2018, around 84% of the German GHG emissions (712 Mt CO_2 equivalents) resulted from the combustion of fossil fuels. Currently, fossil-fuelled power plants are needed alongside renewables to meet the energy demand in Germany. Renewable energy technologies require steel, cement or petrochemical raw materials as shown by the following example: 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

39 Source of the figures stated in section 7.2a of the report: BMWi (2018) (Federal Ministry for Economic Affairs and Energy): "Renewable energies in figures – national and international development in 2018". https://www.erneuerbare-energien.de/EE/Redaktion/DE/Downloads/Berichte/erneuerbare-energien-in-zahlen-2018.html

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

In 2018, investments in renewable energies amounted to €13.5 billion, while the operation of the existing plants generated €16.8 billion in sales. The expansion of renewable energies can affect employment by increasing demand for the energies' related goods and services. In 2018, the renewable energy sector provided employment for more than 340,000 people in total. The focus was on renewable energies in power generation. The expansion of renewable energies in the power sector is financed by feed-in tariffs exceeding the electricity price on the stock exchange for the benefit of the operators of renewable energy plants. 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 extractive 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 2018, 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 accounted for more than 18.5% of German electricity consumption in 2018. Wind turbines have been built on various closed mine sites 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 2018 alone, wind energy turbines were installed with a capacity of around 2,200 MW on land and roughly 1,000 MW at sea. Wind turbines with a total capacity of around 59,000 MW were operating in Germany by the end of 2018. They produced almost 110,000 GWh of electricity, one sixth of which was generated by wind turbines at sea. The Federal Government is planning to have an offshore wind power of 20,000 MW and an onshore wind power of between 67,000 and 71,000 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 8,400 MW; electricity generation in 2018 amounted to more than 49,000 GWh (8.2% of the total electricity consumption and 21.8% 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 59% (2018) 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 45,300 MW of

installed capacity in Germany at the end of 2018, and around 2,900 MW of power were added in that year. Electricity generation from photovoltaics continues to rise steadily as a result, attaining approx. 45,800 GWh in 2018. Photovoltaics thus accounted for 7.7% of the total electricity consumption and contributed 20.5% 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 18,000 GWh in 2018.

Renewable energy sources are also increasingly being used in the heating sector. In 2018, a total of 171,000 GWh was produced by renewable heat sources. The most important renewable energy sources for heat generation are biogenic solids with 115,500 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 of approx. 13,000 GWh in 2018. 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 a small but indispensable part of a meaningful energy mix. The importance of near-surface geothermal energy or environmental heat for heating is constantly increasing. Solar thermal energy also contributed to the supply of heat with around 8,900 GWh.

In the transport sector, biomass can reduce CO_2 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_2 emissions. In 2018, renewable energies accounted for 5.7% 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 2018, 53.6% 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, conventional 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.

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

As part of the preparation of the second D-EITI report, the MSG engaged the Prognos Institute for the preparation of an analysis of the impact of renewable energies on future natural resource requirements and the associated socio-economic implications. The Prognos Institute 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/2021/01/Raw-material-requirements-in-the-field-of-renewable-energies-executive-summary.pdf.[40]

40 On 3 September 2020, the European Commission published a report with a similar question and with a view to the demand for critical raw materials for the entire European Union. This report also takes a stand on the renewable energy sector, among other things. The report can be found here https://ec.europa.eu/docsroom/documents/42881

However, the study did not deal with the question to which extent 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 Federal Institute for Geosciences and Natural Resources (BGR) reports:

BGR (2019): "Germany – Raw Materials Situation 2018"[41]
BGR (2017): "Domestic mineral resources – indispensable for Germany!"[42]

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.

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.[43] 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 photovoltaic (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.

41 https://www.bgr.bund.de/DE/Themen/Min_rohstoffe/Downloads/rohsit-2018.html?nn=1542132
42 https://www.bgr.bund.de/DE/Themen/Min_rohstoffe/Downloads/studie_mineralische_rohstoffe_2017.pdf?__blob=publicationFile&v=
43 Please refer to: https://www.netzentwicklungsplan.de/de/netzentwicklungsplaene/netzentwicklungsplan-2030-2019

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 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 people 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, Mecklenburg-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. The gross value added in 2018 was about 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 about 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 decreasing 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
Download pdf Version

7.3

EMPLOYMENT AND SOCIAL AFFAIRS

a. Employment in the extractive sector

The extractive industry offers good industrial jobs in a variety of different occupations and professions. At the end of 2018 almost 66,000 persons[44] were employed in the extractive industry. This corresponds to around 0.2% of all employees in Germany who are subject to social insurance contributions. At around 57%, 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 19%.

Compared to the 2016 reporting period, the sector employed about 4,400 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, 2018			No. of apprentices among these employees		
	Total	Men	Women	Total	Men	Women
Mining and quarrying in total; including:	**66,285**	**57,583**	**8,207**	*		
Coal mining (lignite and hard coal)	12,501	10,982	1,519	566	502	64
Extraction of crude oil and natural gas	3,143	2,464	679	112	90	22
Ore mining	824	743	81	*	*	*
Quarried natural resources, other mining products	38,026	33,158	4,868	1,330	1,162	168
Provision of Services for Mining	11,791	10,236	1,555	278	234	44

Source: Federal Employment Agency 2019. For detailed source information see footnote 44.

* 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.

44 Federal Employment Agency, Employment by economic sector (WZ 2008) – Germany, West/East and States (quarterly figures) – December 2019 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[45] further jobs in upstream and downstream economic sectors. The employment effect of natural resources extraction in Germany thus totals around 155,000[46] persons.

b. 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 extractive 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.). Above this level of protection and within the framework of their collective bargaining autonomy guaranteed by § 9(3) of the German Basic Law, the social partners are free to regulate working conditions independently for the particular company or the respective sector.

Statutory social insurance provides protection against life risks such as unemployment, illness, need for care, accidents and occupational diseases, as well as cover for old age. Employees subject to social insurance are covered by social insurance; self-employed workers are partially included in this form of protection. Social insurance benefits are mainly financed by equal contributions from employees and employers. One exception to this, however, is legal accident insurance, which is financed exclusively by the employer. Tax revenue is also used for financing in some segments.

The insurance providers thus formed are self-governing and guarantee the participation of the social partners.

c. The role and cooperation of the social partners

i. 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[47] (Montan Co-Determination; Montan-MitbestG [Coal and Steel Co-Determination Act[48]] Montan-MitbestGErgG [Supplementary Co-Determination Act][49]): 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). However, there are two major differences compared to co-determination in the coal and steel industries: In the event of a tied vote, the chairperson of the supervisory board, who is usually the share-

45 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
46 Hillebrand, Elmar (2016): Sector Analysis in the Natural Resources Industry (Branchenanalyse Rohstoffindustrie), published by the Hans-Böckler Stiftung, page 52. at: www.boeckler.de/pdf/p_study_hbs_315.pdf
47 as well as in the "iron and steel-producing industry".
48 Coal and Steel Co-Determination Act (MontanMitbestG) of 1951.
49 Montan-MitbestGErgG of 1956.

holder, has the casting vote. This double voting right of the chairperson de facto invalidates the formal parity between workers and employers. Besides, the labour director can be appointed against the votes of the employee representatives on the supervisory board. For companies with 500 to 2,000 employees, the 1/3 participation of employee representatives on the supervisory board applies (DrittelbG[50]).

Company co-determinationis 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 the works council work are 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.

ii. 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 entering into an individual agreement that refers to the respective collective agreement. Many companies that are not bound by collective bargaining agreements also orient themselves on existing collective agreements. In 2014,[51] 30% of the extractive sector companies[52] 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.

d. Training

The demanding activities of the extractive industry require well-trained specialist personnel. More than 70% of the employees have a recognised vocational qualification[53] and another 10%+ have an academic qualification,[54] 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 at 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,[55] there were 2,300 trainees

50 One-third participation Act of 2004
51 https://www.destatis.de/DE/Themen/Arbeit/Verdienste/Tarifverdienste-Tarifbindung/Tabellen/tarifberbindung-betriebe.html
52 Section B of the WZ 2008
53 "Recognised vocational qualification" is the sum of "with recognised vocational training" and "master craftsman/technician/equivalent technical college degree".
54 "Academic degree" is the sum of "Bachelor", "Diploma/Magister/Master/State Examination" and "Doctorate".
55 Federal Employment Agency, Employment by economic sector (WZ 2008) – Germany, West/East and States (quarterly figures) – December 2018 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

among the employees of the extractive industry. This corresponds to 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 below 1% to 7.4% (2018) because the importance of training occupations varies and the proportion of semi-skilled workers varies accordingly.

e. Earnings 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 industry were €4,081 per month in 2018, with an additional €464 per month in special payments.[56] This means that average monthly earnings in the extractive industry are at least 1% higher than the average in the manufacturing sector and at least 6% higher than the average earnings of full-time employees[57] 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 €4,315, which amounts to 92.6% of the male employees' earnings (€4,662) and is thus above the average ratio of 83% in the manufacturing industry as a whole.

f. 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 2018, the proportion of women among employees covered by social insurance in the sector was 13.1%. The proportion of foreign employees was 6.2% of the total staff.[58]

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

56 Federal Statistical Office, technical series [Fachserie] 16, series [Reihe] March 2, 2019, p. 6 (Mining and quarrying industry).
57 Federal Statistical Office, Fachserie 16 Reihe 2.3 2018, p. 6.
58 Federal Employment Agency, Employment by economic sector (WZ 2008) – Germany, West/East and States (quarterly figures) – December 2018 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

in the extractive industry has traditionally been characterised by male-dominated technical training occupations and courses of study.

At 63.3%, 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 28.5%. 7.2% of the employees were in the under 25 group, while 1% were over 65.[59]

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"*, [60] both in working life and in civil law.

g. 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 at the latest, in addition to the cessation of hard coal production in 2018. After the reunification of Germany in 1990, considerable changes in lignite mining took place in Eastern Germany, and the number of employees in the regions concerned was dramatically reduced in in the early 1990s.[61] The German Government set up, amongst others, the Commission on Growth, Structural Change and Employment,[62] which had the task to develop proposals for shaping the structural change resulting from the energy and climate policies and the decision to phase out coal mining. 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.

Climate policy requirements, security of energy supply, and competitiveness were the subjects of the Commission's comprehensive dialogue. The decisions on the use of coal for the generation of heat and power was confirmed by the German Parliament and the Bundesrat in July 2020 and resulted in the Act on the Reduction and Termination of Coal-fired Power Generation (Coal-fired Power Generation Termination Act, KVBG). This act was a social compromise.

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

Opencast lignite mining has an impact on the economic, ecological and social structure of the communities directly affected by it and the communities on the edge of the opencast mines in the coalfields. The "polluter pays" (or "user pays") principle applies to the use of infrastructures and property. The relocation and resettlement of villages must be arranged, carried out and paid for by the mining companies. Since the beginning of German lignite mining in the early 1920s, 120,000 people have been resettled.[63] Even today, villages are being resettled to make room for opencast mining. The owners of the affected land are compensated by the mining companies for the resettlement. The same applies to municipal property so that municipal facilities are rebuilt from scratch in agree-

59 Data without ore mining, statistics of the Federal Employment Agency tables, employees by economic sector (WZ 2008).
60 § 1 AGG (cf. https://www.gesetze-im-internet.de/agg/)
61 https://www.umweltbundesamt.de/sites/default/files/medien/3521/publikationen/2018-07-25_climate-change_18-2018_beschaeftigte-braunkohleindustrie.pdf
62 https://www.bmwi.de/Redaktion/DE/Publikationen/Wirtschaft/abschlussbericht-kommission-wachstum-strukturwandel-und-beschaeftigung.html
63 Final Report of the Commission for Growth, Structural Change and Employment

ment with the municipalities concerned. In rare cases, people can be expropriated against a compensatory payment under mining law (Art. 14(3) GG in conjunction with § 84 et seq. BBergG).

The compensatory payment amount is determined under private law between the parties directly affected. Only in the rare case of a necessary expropriation or cession of land, the compensatory payment amount is determined by the competent authority after a property valuation has been carried out by an expert. The amount of the compensatory payment is subject to judicial review. The expansion and adjustment of opencast mines depends on the agreements made for the termination of lignite mining. In this context, new infrastructure projects may be dispensed with.

The lignite mining regions[64] are being supported by the Coal Mining Regions Structural Strengthening Act,[65] that came into force on 14 August 2020. The new law offers the regions affected by the phase-out opportunities to remain on the path of economic success and to compensate the loss of employment caused by the termination of lignite mining (see also chapter 3). The law provides financial support in the amount of up to €40 billion by 2038, in particular for public investments by the Federal States and municipalities, but also for measures of the Federal Government, such as transport, broadband networks, real laboratories or the development of research facilities. The Federal Government has also set itself the goal of creating up to 5,000 jobs in federal authorities and other federal institutions in the coal regions.

Furthermore, the new, non-investment-oriented funding programme "STARK"[66] is intended to support the economic, ecological and social transformation of the coal regions in a sustainable way. The programme can support personnel and operating costs of SMEs in particular, but only a small amount of investment.

To cushion the social consequences of the coal phase-out, the Federal Government has also introduced adaptation payments in line with the recommendations of the Structural Change, Growth, and Employment Commission. The adaptation payments gives older employees the opportunity to go into early retirement.

h. 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 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.

In line with the coalition agreement for the 19th legislative period, the Federal Government is currently preparing a law regarding the human rights due diligence of companies in their supply chains.

64 Lausitz mining region (Federal States: Brandenburg/Saxony), Central German mining region (Saxony/Saxony-Anhalt/Thuringia), Rhenish mining region (North Rhine-Westphalia), Helmstedt mining region (Lower Saxony)

65 https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl120s1795.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl120s1795.pdf%27%5D__1601384039076

66 STARK stands for "Stärkung der Transformationsdynamik und Aufbruch in den Regionen und an den Kohlekraftwerkstandorten" (Strengthening the transformation dynamics and development of coal mining regions).

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 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 (in force since 7 May 20220) 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. In 2004, for example, the Mining, Chemical and Energy Industrial Trade Union and the Construction, Agricultural and Environmental Industrial Trade Union, together with the Federal Association of Companies from the Quarried Natural Resources Sector and the Nature and Biodiversity Conservation Union of Germany (NABU), drew up a joint declaration on the sustainable use of natural resources.[67] In addition to extracting natural resources in a way that is as environmentally friendly as possible and strengthening biodiversity and resource efficiency, the declaration also addresses the high importance of employee qualification. 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.[68]

67 https://www.baustoffindustrie.de/fileadmin/user_upload/bbs/Dateien/gem-rohstoff-erklaerung.pdf
68 https://www.zement-verbindet-nachhaltig.de/

7.4

RECYCLING

a. 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[69] from waste or residues are highly important, not only for humans and the environment, but 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.

b. 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 reutilisation, 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.

c. Waste volume and waste recovery

In 2018, the gross amount of waste generated was 417.2 million tonnes and the net amount 362.3 million tonnes (without double counting). With a volume of 228.1 million tonnes, building and demolition waste accounts for slightly more than half of the total volume (approx. 55%). The volume of municipal waste, secondary waste (from waste treatment plants) and other waste, which comes mainly from production and industry, amounts to between 50.2 and 55 million tonnes (for each of the three types), well below the above volume. Around 28.8 million tonnes of waste was generated from the extraction and processing of natural resources. 338.5 million tonnes of waste were recovered in 2018, of which 290.5 million tonnes were recycled and 48.0 million tonnes were used for energy generation.[70] The recovery rate for all waste types has risen steadily over the last ten years from 74.3% (2006) to 81% (2018), while the volume of waste has increased at the same time.[71] The recovery rate is the

69 Glossary, DNR: https://www.dnr.de/rohstoffpolitik-20/glossar/grundbegriffe/primaer-und-sekundaerrohstoffe/, accessed on 15 July 2019.
70 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.
71 Destatis, Waste balance 2018, as of 2020.

proportion (input) of collected waste that is fed into a material or energy recovery process.

A comprehensive network of 15,800[72] pre-treatment, treatment, sorting and processing plants has been established in Germany for the recycling and material recovery of waste. This network includes soil treatment plants, plants for the processing of building and demolition waste, and sorting and dismantling plants where chemical-physical, biological and mechanical treatment processes are carried out.

d. Examples of recycling and usage rates[73]

The recycling rate for steel was approx. 95% in 2016.[74] Around 18.6 million tonnes of steel scrap were used in steel production in 2018. This corresponds to a usage rate of 43.8%.[75] In 2018, around 2.53 million tonnes of non-ferrous metals (e. g. copper, aluminium, zinc, bronze, lead, brass) were produced. Approx. 1.33 million tonnes of this amount were secondary metals, which corresponds to a share of 52.5%.[76]

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.[77] In 2018, the usage rate was 59%. The recycling rate for copper is about 45%. In copper production 41% of recycled copper[78] 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.
- The recycling rate for glass collection is also almost 100%.[79] However, this only applies to appropriately sorted glass. Today, every glass packaging consists of up to 60% recycled glass; for green glass the share is even at a usage rate of 90%.[80] 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,[81] 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.

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 of building and demolition waste generated (2016), 192.6 million tonnes or 89.8 % was recycled.[82] Through the processing of mineral building waste, 72.2 million tonnes of recycled building materials

72 Status report of the German recycling industry 2018 (Statusbericht der deutschen Kreislaufwirtschaft 2018).
73 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).
74 Fraunhofer Overview (Fraunhofer Umsicht): Technical, economic, ecological and social factors of steel scrap, (Technische, ökonomische, ökologische und gesellschaftliche Faktoren von Stahlschrott), November 3, 2016).
75 Steel scrap balances of the bvse and BDSV.
76 Metal Trade Association (Wirtschaftsvereinigung Metalle) – Metal Statistics 2018 (Metallstatistik 2018).
77 General Association of the Aluminium Industry.
78 Status Report of the German Recycling Industry.
79 Destatis, Waste balance 2018, as of 2020.
80 Federal Association of the German Glass Industry.
81 Amendment of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal on May 5, 2019.
82 Recycling management, building & mineral construction waste – Monitoring 2016. (Kreislaufwirtschaft Bau, Mineralische Bauabfälle – Monitoring 2016).

were produced. 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, Overall, it now provides at least 15% of the raw materials needed in Germany.[83] This saves raw material imports worth €10 billion per year.[84] The recycling industry also makes a significant contribution 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.[85] The substitution of primary raw materials with secondary raw materials is also associated with significant savings in energy consumption.[86]

e. 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 that 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 technologies, the extraction of which can be problematic from a ecological and human rights perspective.[87] These resources 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 and applicable since 2019 is fulfilled.[88] This is to be achieved through specified requirements for the management of these old devices. The obligation for wholesalers with a shop area of 400 m² 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.

83 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).
84 Recycling in Germany – Wuppertal Institute study (Recycling in Deutschland – Studie Wuppertal Institut).
85 Status report of the German recycling industry 2018 (Statusbericht der deutschen Kreislaufwirtschaft 2018).
86 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" (Stoffstromorientierte Ermittlung des Beitrags der Sekundärrohstoffwirtschaft zur Schonung von Primärrohstoffen und Steigerung der Ressourcenproduktivität), April 2019.
87 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.
88 In 2018, Germany's collection rate was 43.1%. On average, more than 1 million tonnes p.a. of old (waste) electrical and electronic equipment are not collected in Germany or are collected improperly. https://www.umweltbundesamt.de/presse/pressemitteilungen/elektroschrott-deutschland-verfehlt-eu-sammelquote

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.[89]

89 For detailed source references see final note [x].

8

DISCLOSED PAYMENT FLOWS AND QUALITY ASSURANCE

a. Which payment flows are reported?

i. Selection of sectors

The EITI Standard requires that all significant payment flows of a country's extractive sector are considered. In various meetings, the MSG discussed which extractive sectors should be included in the third German EITI report. In detail, it was decided to consider the following sectors:

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

Hard coal mining ended in Germany at the end of 2018. Therefore, as in the previous report, this sector is not included (cf. the general explanations on hard coal mining in Germany and on state financial aid for the hard coal sector in chapter 2.a.iii. and in chapter 6, respectively).

ii. Selection of companies

The EITI Standard does not provide direct guidance on the process of selecting companies to be included in the report. Like the selection of sectors to be included, the selection of companies should be based on the EITI Initiative's goal of making a state's revenues from the extractive industry transparent and thus disclosing all significant payment flows between companies and government agencies. According to EITI requirement 4.1b) payments and receipts are deemed to be material if their omission or misstatement could materially affect the completeness of the EITI report.

Regarding the selection of companies, the MSG has decided to follow the requirements of the EU Accounting Directive 2013/34/EU of 26 June 2013. The goals and payment flows specified by the EITI Initiative largely correspond to the content of the EU Accounting Directive. In the recitals in paragraph 44 and paragraph 45, the EU Accounting Directive explicitly refers to the fact that

- the new provisions are intended to help governments implement the EITI principles and criteria; and
- payments should be disclosed that are comparable to those under EITI.

This EU Directive has been transposed into German law through the BilRUG. Companies in the extractive industries are required to prepare (consolidated) payment reports according to §§341q et seq. German Commercial Code (HGB) if they meet certain criteria regarding their registered place of business, legal form, size, and activity (cf. the explanations given in chapter 4.d.).

In various meetings, the MSG agreed to develop the content of the D-EITI process further in accordance with the new provisions of §§ 341q et seq. HGB. In particular, the new provisions refer to:

- criteria for identifying companies eligible for reporting,
- the relevant reporting period,
- the determination of materiality thresholds for the payment flows to be reported.

By using the provisions of the HGB as a basis, the MSG intends to create suitable conditions for the broadest possible participation of companies and avoid any double burdens for participating companies that could result from differences between the statutory provisions on (consolidated) payment reporting and the reporting requirements for EITI purposes (cf. also chapter 4.d.ii.).

Accordingly, the criteria for "large" companies pursuant to §267(3) HGB were used as a basis for identifying the companies eligible for reporting in a

first step. Companies eligible for reporting must meet at least two of the following three criteria for classification as a "large" company on at least two consecutive reporting dates:

- Balance sheet total more than €20 million
- Revenue of more than €40 million
- More than 250 employees on average per year

Regarding the question of whether an "activity" in the extractive industries exists, reference was made to Regulation 1893/2006/EC of 20 December 2006, which provides details on the statistical classification of economic activities. Section B of Annex I to this Regulation is divided into Divisions 05 to 08 as follows:

Table 8: Statistical classification of the relevant economic activities

Division	EA 2008 Code	EA 2008 – Designation (n.e.c. = not elsewhere specified)	ISIC Rev. 4
	B	SECTION B – MINING AND QUARRYING	
05		**Mining of coal and lignite**	
	05.1	Mining of hard coal	
	05.10	Mining of hard coal	0510
	05.2	Mining of lignite	
	05.20	Mining of lignite	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	Mining of iron ores	
	07.10	Mining of iron ores	0710
	07.2	Mining of non-ferrous metal ores	

Division	EA 2008 Code	EA 2008 – Designation (n.e.c. = not elsewhere specified)	ISIC Rev. 4
	07.21	Mining of uranium and thorium ores	0721
	07.21.0	Mining of uranium and thorium ores	
	07.29	Mining of other non-ferrous metal ores	0729
08		**Quarried natural resources, other mining products**	
	08.1	Quarrying of stone, sand, and clay	
	08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk, and slate	0810
	08.12	Operation of gravel and sand pits; mining of clays and kaolin	0810
	08.9	Mining and quarrying n.e.c.	
	08.91	Mining of chemical and fertiliser minerals	0891
	08.92	Extraction of peat	0892
	08.93	Extraction of salt	0893
	08.99	Other mining and quarrying n.e.c	0899

To identify companies eligible for reporting, companies assigned to one of the divisions 05 to 08 are considered as "active" in the extractive industry. In addition to the legal obligation to prepare payment reports for "large" companies, there is also an obligation for parent companies to prepare consolidated payment reports if at least one subsidiary is active in the extractive industry. The size of this "active" subsidiary is irrelevant, so that even group companies that are not deemed to be "large" companies can cause their "large" parent company to be under a reporting obligation (so-called "corporate infection theory").

The corporate infection theory was also considered for the identification of companies in the extractive industries, so that the group of companies under a reporting obligation is enlarged accordingly. As a result, the selection of companies eligible for reporting was made through a combination of the size and activity criteria (cf. also the explanations in chapter 8.b.ii.).

Besides the size of the companies and their economic classification, the MSG has chosen the market coverage by a company as a criterion for the selection of the companies eligible for reporting.

There are significant differences between the various segments of the extractive sector in Germany in terms of the number of companies and people working in it. The coal mining and the crude oil and gas extraction sectors, for example, are dominated by a few large companies while quarried natural resources sector is characterised by a structural mix of a 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 thus cannot be identified by the criteria for identifying companies eligible for EITI reporting (cf. also the explanations in chapter 8.b.iii.).

The requirements 2.6, 4.5 and 6.2 of the EITI Standard are related to shares in extractive companies held by the government.

For Germany, one extractive company with a government majority shareholding was identified – Südwestdeutsche Salzwerke AG. According to the 2018 Annual Report, the city of Heilbronn holds 46.6% of the voting rights and the Federal State of Baden-Wuerttemberg holds 45% of the voting rights in this company (see 2018 Annual Report, pp. 128 and 129). The dividend paid in 2018 for the previous financial year amounted to €16,812,000.00, corresponding to €1.60 per share (see Annual Report 2018, p. 93). The share capital amounts to €27,000,000.00 and is divided into 10,507,500 no-par shares.

The 2019 annual report is available at https://www.salzwerke.de/de/investor-relations/financialreports/annualreports.html

There are no quasi-fiscal revenues, as under requirement 6.2 of the EITI Standard.

In the MSG's opinion, the requirements 2.6, 4.5 and 6.2 of the EITI Standard are adequately addressed by the above explanations.

iii. Selection of payment flows

Payment flows of the extractive industries are to be considered according to the EITI Standard if they are regarded as significant for a complete overview of corporate payments and government revenues. The following payment flows are recorded for the purposes of the third German EITI report (cf. also the explanations in chapter 4.b.).

Taxes

Corporation tax

In Germany, corporation tax is the most important income tax for corporations. It is not a specific tax for companies in the extractive sector, but covers all corporations operating or having their principal place of business in Germany. The basis of assessment for corporation tax is the taxable income, which is derived from the net income for the year under commercial law, considering several tax modifications. If a company is not only active in the extractive sector but also in other sectors of the economy, it may be difficult to clearly draw the line between the share of corporation tax attributable to activities in the extractive sector, because corporation tax is calculated based on the total taxable income (cf. also chapter 4.b.i.).

For this reason, corporation tax is classified as a non-project-related payment in the payment reports to be prepared in accordance with commercial law. An allocation of these payments to activities within and outside the extractive sector can be made by the companies at their discretion if an appropriate allocation can be reliably made using suitable allocation standards. This commercial law approach is used for the purposes of EITI reporting.

Trade tax

Furthermore, commercial companies operating in Germany are subject to trade tax. The municipalities in which the respective company has permanent establishments are entitled to levy trade tax. A permanent establishment can extend over the

territory of several municipalities. Accordingly, the recipients of trade tax payments are the individual municipalities and not, for example, the Federal Government or the Federal States. The trade tax reflects the federal structure of Germany (cf. also chapter 4.b.iii.).

Further information on the recording of tax payments (including certain parent-subsidiary constellations and special features of fiscal unity relationships) are provided below for a better understanding of the reported payments of corporation tax and trade tax. During data evaluation, it became apparent that both aspects are highly relevant for the classification and assessment of the reported tax payments.

Special features regarding the recording of tax payments in certain parent-subsidiary constellations

In contrast to many other legal systems, partnerships such as the "GmbH & Co. KG" type have traditionally played a major role in Germany, especially in the medium-sized enterprises economy. These partnerships are subject to trade tax, but not to corporation tax. The latter is only charged at the shareholder level but only if the shareholder is a corporation. In this respect, a special feature of German tax law must be considered: business partnerships are not tax subjects for income tax purposes, but the income generated in the company is subject to taxation at the level of the shareholders together any other income generated by them from other sources.

This special feature of German tax law may be relevant for the recording of corporate and trade tax payments for the EITI report, if the reporting company is a corporation (parent) with a subsidiary in the legal form of a partnership. The below examples are provided to illustrate this in more detail. In each example, it is assumed that a company operating in the extractive sector voluntarily participates in the data collection carried out for the EITI Report.

If both the parent corporation and the subsidiary partnership operate in the extractive sector, all relevant tax payments (trade tax payments made by the subsidiary and the parent corporation as well as corporation tax payments made by the parent company) are recorded in the EITI report. If, however, the subsidiary or the parent corporation does not operate in the extractive sector, it may happen that not all or too many tax payments to government agencies are recorded. For example, if the parent corporation operates in the extractive sector but the subsidiary partnership does not, the corporation tax payments reported by the parent company also include the results of the subsidiary. From a commercial law perspective, in this case, there is the possibility (but not the obligation) to apportion corporation tax payments between the activities carried out in the extractive sector and those carried out outside the extractive sector. Conversely, if the subsidiary partnership operates in the extractive sector, but the parent corporation does not, only the subsidiary is taken into account for data collection purposes. As a result, only the trade tax payments of the subsidiary, (but not the corporation tax paid by the parent company but attributable to the results of the subsidiary) are considered for data collection purposes.

The cause for this particularity is the German tax system. The MSG has decided to follow the tax law approach described above also for EITI purposes.

Special features regarding the recording of tax payments in fiscal unity relationships

German tax law has selective special regulations for the treatment of corporate groups in trade tax and corporation tax. Under certain conditions, a so-called fiscal unity relationship may exist. In these constellations, the controlled companies, which are themselves corporations, generally do not make any tax payments. Rather the taxation of the results of all companies included in the tax group is carried out exclusively by the controlling company. The controlling company pays taxes on its own income and the income of the controlled companies, which may not result exclusively from activities related to the extraction of natural resources.

Therefore, a differentiation is made (as explained below) for the purposes of the (consolidated) payment report under commercial law:

- If, in accordance with §341 lit. r no. 1 HGB, the tax group primarily operates in the extractive industry, the total amount of taxes paid by the tax group parent company can be reported. There is no obligation to allocate tax payments to activities within or outside the scope of §341 lit. r no. 1 HGB.
- If, however, the tax group is not primarily active in the extractive industry in accordance with §341 lit. r no. 1 HGB, the tax payments of the tax group parent company can be divided on a voluntary basis. Otherwise, the tax payments made by the controlling company are not disclosed.

The results of the payments survey show that, from a practical point of view, tax groups are highly relevant for the taxation of corporate groups. As a result, in various cases the companies participating in EITI reporting do not disclose the taxes paid by the controlling company (cf. the remarks on the payments made in chapter 8.c.).

The MSG has also decided to follow the commercial law perspective for EITI purposes regarding the recording of tax payments made by tax groups.

Mine site and extraction royalties levied under the Federal Mining Act

In Germany, mine site and extraction royalties (§§30, 31 BBergG) are levied on so-called free-to-mine natural resources under the Federal Mining Act as a specific levy for companies operating in the extractive sector (for further details see chapter 4.b.ii.).

The MSG has decided to include mine site and extraction royalties as payment flows in the EITI report.

Lease payments

Apart from the mine site and extraction royalties, no other taxes are levied in Germany for the exploration and extraction of free-to-mine natural resources. However, lease payments to government agencies in connection with the extraction of free-to-mine natural resources, especially in the quarried natural resources sector, may be incurred. This is the case when government agencies are the owners of the land where the mine site lies and conclude private-law agreements on the extraction of natural resources with extractive companies. Such contractual arrangements may include fixed payments or payments that depend on the quantity extracted, or a combination of both variants.

The recipients of lease payments are the government agencies that have concluded contractual arrangements with the company (e.g., cities and municipalities, forestry offices, state domain or moorland administration offices). For example, payments to the city of Kerpen for the extraction of gravel were reported for the 2018 reporting year by a company in the quarried extractive sector.

The content and number of agreements are not centrally documented (cf. chapter 4.b.iv.). Unlike the individual tax offices in the case of corporation tax, the individual government agencies that have concluded lease agreements cannot be addressed via a central organisational unit. As with trade tax, this leads to quality assurance problems.

It is not possible to predict in advance to which and to how many government agencies lease payments will be made. This information can only be provided by the companies participating in EITI reporting as part of the data collection process.

Therefore, lease payments made by companies to government agencies are included in data collection, as in the second German EITI report, but are not subject to separate quality assurance. Like in the first and second D-EITI reports, the total amount of lease

payments, which are generally collected via the municipalities' treasuries, plays only a minor role in the 2018 reporting year compared to the total amount of reported payments. The amount of the reported lease payments of €2 million and their contents are comparable to the reporting years 2016 and 2017.

Payments for the improvement of infrastructure

This payment flow corresponds to the legal regulation of the (consolidated) payment report under § 341r no. 3 lit. g HGB. The data on these payments were collected for the first time when the second German EITI report was created, and the data reported by the participating companies were supplemented in this respect. The reported payments include measures carried out by enterprises for renaturation purposes, payments to support municipal investments or educational institutions or for the creation or maintenance of public infrastructure. As in the second D-EITI report, the reported payments for the 2018 reporting year are exclusively attributable to companies from the lignite extraction sector, thus it does not represent a cross-sectoral payment flow.

At the request of the MSG, the Independent Administrator analysed the content and composition of the reported payments in more detail as part of the first two D-EITI reports and presented the results to the MSG. They show a high heterogeneity of the recorded payments because of the variety of measures taken in connection with the compensation of impacts from the respective extraction company. Information on the recipients of the payments and the payment purpose can be found to some extent in the payment reports of the companies.

iv. Definition of the project concept

The EITI Standard generally requires reporting at project level (EITI requirement 4.7). The MSG has decided to implement the content and scope of the project concept by analogous application of §341r no. 5 HGB. Accordingly, payments to government agencies must generally be disclosed per project if the reporting entity operated more than one project during the reporting period. The term "project" is specified and defined in § 341r no. 5 HGB as several related operational activities that give rise to payment obligations to a government agency and are based on a contract, licence, lease, concession, or similar legal agreement.

For the payment flows "corporation tax" and "trade tax", no project-related reporting is thus generally provided for, because these payment flows are based on a legal regulation and not on a legal agreement provided for in § 341r no. 5 HGB.

For the payment flow "mine site and extraction royalties", it is sufficient to specify the extraction area/area under permit during the data collection process to make sure that the project in question can be identified. Regarding any lease payments and payments for infrastructure improvements, the data collection templates provide for an allocation of payments to projects per government agency.

v. Materiality of payments

The regulations under commercial law on the preparation of (corporate) payment reports stipulate that the companies concerned must report payments made in a reporting year in an amount of €100,000.00 or more per government agency (cf. § 341t (4) HGB). A government agency to which an amount less than €100,000.00 was paid in the reporting period does not need to be disclosed.

The MSG has decided to adopt these regulations for the third D-EITI report. If payments were made that did not reach the amount of €100,000.00 per government agency in the reporting year 2018, the reporting entity must indicate in the template that payments were made but does not have to specify the payment amounts.

b. Quality assurance procedure

i. Description of the quality assurance concept

The MSG must ensure both the quality of the information on payments made by companies to the government agencies and the quality of the information on the corresponding revenues of the government agencies. This is a key requirement of the EITI Standard. In the first two D-EITI reports, the MSG relied on information provided by both the extractive companies and the government agencies to make sure that the information disclosed is complete and correct. This so-called EITI standard procedure further provides for an individual reconciliation by an Independent Administrator of the payments reported by the companies with the corresponding revenues reported by the government agencies.

For this report, the MSG has adopted an alternative approach to quality assurance which is based on the EITI Standard and has been agreed with the EITI International Secretariat.[90] The new approach is based on an analysis carried out by the Independent Administrator of the processes and controls used in particular by the relevant government agencies to ensure the quality of the assessment and collection (i.e., the receipt of payments) of the payment flows relevant to D-EITI. The entirety of established processes and controls is deemed to be an internal control system used to support proper assessment and collection of the respective payments. For further details, please refer to chapters 8.b.ix. to 8.b.xiii.

ii. Nature and scope of the Independent Administrator's work

The Independent Administrator's work was investigative in nature according to the International Standard on Related Services (ISRS) 4400, Engagements to Perform Agreed-upon Procedures.

The investigative procedures performed by the Independent Administrator do not constitute an audit or review of the payment flows reported by the companies in accordance with professional standards recognised in Germany or internationally. Therefore, the Independent Administrator does not express an overall judgement (neither with reasonable nor with limited certainty) in relation to the reported payment flows. The Independent Administrator has not carried out any investigative actions of its own to verify the accuracy, completeness, and reliability of the payment data, including those reported by the participating companies or government agencies. Furthermore, the investigative actions were not aimed at uncovering errors or violations on the part of the participating companies or government agencies.

iii. Identification of the companies

To identify the companies relevant for the third D-EITI report, the Independent Administrator first used a database analysis[91] to select all companies whose principal extractive activity is assigned to the lignite, potash/salt, oil/natural gas, and quarried natural resources subsectors. The classification criterion here was the allocation of the companies to Divisions 05 to 08 in accordance with Regulation 1893/2006/EC of 20 December 2006 (cf. chapter 8.a.ii.). In a second step, these companies were filtered according to the size criteria specified by the HGB for "large" companies.

This provisional group of identified companies was manually completed by the Independent Administrator to include corporate groups for which a so-called corporate infection by "active" subsidiaries could be considered (for details see chapter 8.a.ii.). As in the first and second D-EITI reports, the following aspects must be considered:

90 For information on the concept of the alternative approach (that has been piloted) and its evaluation by the MSG, see https://d-eiti.de/en/mediathek-dokumente/

91 Orbis Europe database provided by Bureau van Dijk (www.bvdinfo.com), retrieved on 20 October 2020

- companies whose activities focus on the storage (e.g., construction and operation of cavern storage facilities for the storage of natural gas) of natural resources underground are not considered although they are assigned to Divisions 05 to 08, because their focus is not on the extraction of natural resources;
- All companies initially recorded in Division 07 (Mining of metal ores) do not actively mine natural resources in Germany and are therefore not considered.

Due to the legal requirements (cf. §§ 341 q et seq. HGB) and the resulting interpretation options, it is not possible to make sure that all companies required to report payments under HGB are identified and included in this third D-EITI report. Nevertheless, based on the payment reports for 2018 that have been published in the meantime, it can be said that the companies identified using the methodology described above correspond quite predominantly to the companies that have published a payment report to date.

The selection criteria defined by the MSG achieved a high level of coverage for the lignite, oil and natural gas, potash, and salts/industrial brine sectors (cf. chapter 8.c.). These natural resources are exclusively free-to-mine, and these sectors contain comparatively few but relatively large corporate entities. In contrast, the quarried natural resources sector is characterised by an extremely high number of corporate units with many plants or extraction sites.

The Federal Association of Building Materials – Stone and Earth (Bundesverband Baustoffe – Steine und Erden e.V., bbs) estimates that, due to the small-scale nature of the sector, the 25 largest suppliers of quarried natural resources only account for about 1.6% of the total number of companies in the sector and about 22% of the total number of extraction sites. One can also assume that there are several companies or corporate groups among the 25 largest suppliers that do not meet the size criteria explained in chapter 8.a.ii. so that the selection criteria decided by the MSG do not apply to them. Due to the high number of small and medium-sized enterprises that are not covered, the coverage of the quarried natural resources sector remains significantly behind the coverage of the other sectors.

iv. Identification of government agencies

The total number of government units generating revenues from the extractive industries in Germany is directly derived from the payment flows defined for this third D-EITI report. Due to the federal structure of the administration in Germany, it is not possible to centrally record the relevant payment flows. In detail, the following government agencies receive payments from the extractive sector:

- Corporation tax: the competent tax offices at the companies' registered offices
- Mine site and extraction royalties: the competent mining authorities of the Federal States in which the mine site covered by the permit/approval is located
- Trade tax: the municipalities in whose territory the tax-relevant permanent establishments of the extractive companies are located
- Lease payments and payments for infrastructure improvements: government agencies at the Federal State or municipal level, depending on the type of payment

v. Dealing with tax secrecy

EITI reporting includes tax data, namely payment flows relating to corporation tax and trade tax, which are subject to tax secrecy pursuant to §§ 30 et seq. AO (cf. the explanations in chapter 4.c.). During the preparation of the EITI report, the payment flows reported by companies to government agencies were processed and disclosed. This use of tax-relevant data is only permitted with the expressed consent of the taxable person, i.e., the respective company (§ 30(4) no. 3 AO). The data collection templates ensure that this consent is obtained from each individual company for the purpose of publishing the data as part of EITI reporting.

vi. Measures to secure confidential data

All project-related communication via e-mail and all other project-related data were stored in a Germany-based data centre certified according to ISO 27001 and ISO 9001. To this end, a specific platform was made available through which the companies could upload project-related data (multiple times if necessary). However, for security reasons, the data could not be changed after an upload. It was ensured that no company had access to the data of other participants. The German EITI Secretariat in Berlin was in charge of the administration of data exchange and data storage as well as the e-mail service.

vii. Templates and instructions for data collection

The Independent Administrator developed an Excel-based template for collecting the relevant data from companies in accordance with the decisions made by the MSG regarding the content of the D-EITI reporting process. In addition to the templates for data collection, the Independent Administrator prepared "Notes on data collection in the context of the German EITI process". These notes are intended to provide practical guidance and assistance to companies for understanding and using the data collection templates.

viii. Quality of the data provided by companies

In Germany, there are comprehensive laws and regulations regarding

- • accounting,
- • the disclosure of company data, and
- • audit obligations

which are designed depending on the size, legal form, and activity of the respective company. Corporations and partnerships with limited liability within the meaning of §264 a HGB must prepare annual financial statements with notes and, if applicable, a management report at the end of each financial year. The duty to audit financial statements is regulated, among other things, in the German Commercial Code (§§ 316 et seq. HGB) and in the Act on the Accounting of Certain Enterprises and Corporate Groups (PublG) (§6 PublG). A statutory audit obligation pursuant to the German Commercial Code exists for, among other "medium-sized or "large" corporations and limited liability partnerships. To be grouped into one of these size categories two of the three criteria of § 267 HGB must be fulfilled in each period.

The statutory audit must include at least the annual financial statements (balance sheet, profit and loss account and notes) as well as the management report and the accounting records. The auditor must determine whether the financial statements comply with the underlying accounting principles and, if applicable, with other legal foundations such as the articles of association or the memorandum and articles of association (legality/regularity audit). Furthermore, the auditor must determine whether the respective financial statements together with the associated management report provide a suitable understanding of the company's position, and whether the management report suitably describes the opportunities and risks of future development. The result of the audit is summarised in the so-called auditor's report (cf. § 322 HGB). In the case of statutory audits, the auditor's report must be disclosed together with the annual financial statements and the management report pursuant to § 325 HGB by electronic submission to the Federal Gazette (Bundesanzeiger) so that it is available to the public.[92] In exceptional cases, the shareholders may refrain from disclosure, provided that consolidated financial statements are disclosed in which the respective company is included, and certain payment guarantees are given. However, these

92 The financial statements of all companies participating in EITI reporting are available on the portal of the Federal Gazette. https://www.bundesanzeiger.de/pub/de/start?0

cases can also be transparently tracked via the electronic Federal Gazette.

In contrast to the annual financial statements, the (consolidated) payment reports pursuant to §§ 341q et seq. HGB have not been subject to a statutory audit requirement so far. However, within the scope of their duties according to § 321(1) or (2) HGB, auditors must report in the audit report if they find during their audit work that no (consolidated) payment report has been prepared or disclosed despite the existence of a legal obligation to do so. However, unlike the auditor's report, the audit report is generally not available to the public but is addressed exclusively to the board of the audited company.

In the performance of their respective duties, the legal representatives as well as those responsible for corporate monitoring are usually supported by an internal audit department. Even though there is no explicit legal obligation in Germany to establish such a process-independent function, having an internal audit department is in line with the principles of good corporate governance (cf. German Corporate Governance Code). This is especially true for companies that are part of large, complex, or internationally operating groups. At the same time, legal representatives increasingly use these organisational structures to set up effective compliance management systems that are not only designed to comply with legal regulations but also to observe the ethical rules of the company or group. As a rule, these systems also include external contact persons appointed by the company or group to whom whistle-blowers can report possible violations of legal regulations or ethical rules.

ix. Quality of government revenue data

The data on the payments made by the companies for the current reporting year are the basis for the revenue disclosed by the government agencies that received the payments.

In the two previous D-EITI reports, the revenues of the government agencies were collected and directly reconciled with the payment data reported by the companies. This payment reconciliation did not result in any discrepancies worth mentioning (test of details or case-by-case approach). Based on these findings, this third German EITI report deviates from the previous approach and analyses the processes and controls, or control mechanisms set up by government agencies to ensure that the respective payment flows are properly collected and paid (system-based approach). The term "proper(ly)" means, with regard to the objective of EITI, among other things,

- that sufficient processes or procedures are in place at the level of the respective government agency to ensure that payments are made in accordance with applicable laws and regulations and in a timely manner;
- that processes and controls are in place to ensure full and timely resolution of any discrepancies between the amounts claimed by the government agencies and those paid by the companies;
- that sufficient controls are in place at the level of higher government agencies; and
- that a review of the controls by independent audit bodies is ensured.

The entirety of established processes, procedures and controls is deemed to be an internal control system used to support proper assessment and collection of the respective payments. In Germany, this system is fundamentally based on an interplay of legal foundations (e.g., civil service law, criminal law, administrative regulations), the structure and organisation of the respective government agencies (e.g., via rules of procedure, the creation of business distribution plans, separated functions, and/or the dual control principle), and an additional monitoring of processes and controls (e.g., via internal audit units and other independent audit bodies).

The analysis of the processes and controls established by the government agencies necessarily covers other official entities involved in the processes carried out by the audited government agencies and the relevant legal framework. Subchapter cc takes a closer look at

the structure of the relevant government agencies. A comprehensive description can be found in the publication "The German Tax Administration 2018" (Die Steuerverwaltung in Deutschland Ausgabe 2018), available at the website of the Federal Ministry of Finance (www.bundesfinanzministerium.de). Annex c also contains schematic overviews of the organisational structure and the processes and controls used for investigations regarding corporation tax and mine site and extraction royalties.

The Independent Administrator has obtained an understanding of the processes and controls in place based on MSG's documents and discussions with representatives of the MSG and the relevant authorities. These findings were compared with, among other things, the requirements of the US framework Committee of Sponsoring Organisations of the Treadway Commission ("COSO"). This framework concept has been widely disseminated worldwide. Its basic principles are reflected, for example, in the Standards for Internal Control in the Federal Government of the United States Government Accountability Office, so they can also be applied to government agencies. At the same time, this framework concept is the methodological basis for the Auditing Standard 261, "Identification and assessment of risks of error and Auditor's Responses to the Assessed Risks of Error" issued by the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW)), which is currently applied in Germany for statutory audits of financial statements.

According to COSO, the components of an internal control system include the control environment, risk assessments, control activities, information & communication, and measures to monitor the internal control system. These components were applied by the IA to the relevant payment flows of corporation tax and mine site and extraction royalties.

In addition, the findings from the previous payment reconciliations for the first and second D-EITI reports were included in the analysis and assessment of the IA as a case-by-case confirmation of the effectiveness of the processes and controls put in place. Therefore, the systems-based approach in the context of this third German EITI Report and the previous findings from the payment reconciliation complement each other. Together, they are the basis of the assessment carried out by the IA.

The IA considers the concept of the pilot (consisting of an assessment of the processes and controls established by the relevant government agencies for the proper collection of payments) to be well suited to meet the requirements of the EITI Standard for reliable disclosure of payments from the extractive industries. Therefore, the IA believes that the piloted concept can be used as an alternative procedure to the previous approach that consisted of individual case audits with comprehensive reconciliation of all material payment flows of a reporting year.

The nature and scope of the work of the Independent Administrator under the payment reconciliation pilot for the third D-EITI report are described in a comprehensive work report. The following subsections summarise the most important work and findings for the payment flows arising from corporation tax as well as mine site and extraction royalties.

Trade tax payments are not considered separately below, because the processes for assessing trade tax are largely the responsibility of the tax offices. Therefore, the findings from the analysis of the corporation tax payment flow can be transferred to the assessment of trade tax. The uniform base amount of trade tax issued by the tax offices is the so-called basic assessment notice for the subsequent determination of the actual amount of trade tax by the respective municipality. The municipalities determine the amount of the trade tax liability by applying an individual assessment rate to the uniform base amount of trade tax. Therefore, the amount of trade tax can vary from municipality to municipality depending on the applied assessment rate.

The collection of trade tax is entirely the responsibility of the far more than 10,000 municipalities, so that processes and controls in this respect differ in content. These differences are due, amongst others, to differences in the size and structure of the respective municipal administration. Meaningful generalised statements on the organisation of payment processes in the municipalities can not be made due to the heterogeneity of municipal self-administration.

aa. Control environment

According to COSO, the control environment basically comprises the attitude, awareness, and actions of those responsible for monitoring and those with management functions regarding the internal control system and its importance within the respective government agency. The control environment shapes the basic attitude of an organisation by influencing the awareness of employees. The term "awareness" can be defined as a commitment to act with integrity and in accordance with ethical values.

The control environment of the government agencies relevant here is equally characterised by a strict hierarchy, as provided for in the Financial Administration Act (FVG) (cf. link in footnote) for financial authorities.[93] The organisation of the mining authorities is the responsibility of the respective Federal State – the Federal Mining Act does not contain any more detailed provisions in this regard.

Within the relevant government agencies, the respective organisational structure is clearly regulated by rules of procedure (e.g., the rules of procedure for the tax offices, cf. link in footnote), business distribution plans, job descriptions and administrative instructions. While the responsibilities of the respective job holder within the assigned administrative processes are derived from the internal job descriptions or business distribution plans, supervisory duties, and powers of instruction of the respective superiors are derived from the rules of procedure and administrative instructions. Within the administrative organisation, special attention is paid to the stringent adherence to the dual control principle within the administrative processes and to the organisational separation of assessment and collection processes, i.e., the assertion of payment claims by the relevant government agencies and the collection of payments due from those obliged to pay.

In addition, the control environment of the relevant government agencies is significantly shaped by German civil service law.[94] The German civil service law is a separate area of law that regulates the special rights and duties of civil servants. On the one hand, German civil servants are under a duty of strict impartiality and loyalty to the German Basic Law in the exercise of their activities and they are excluded from the right to strike. On the other hand, they have a right to lifelong employment with appropriate remuneration and pensions within the framework of defined careers in the public sector. Besides, in the selection of candidates to fill vacant posts, the relevant government agencies may solely consider the suitability, ability, and professional performance of the candidates. The duty of loyalty, the duty of obedience, the duty to serve, and other duties of civil servants are derived from these principles.

Breaches by civil servants of the duties arising from their employment relationship are subject to disciplinary law, a sub-area of civil service law that regulates how to proceed in the event of possible breaches of duty and what consequences may result for the respective civil servant if guilt is established. In addition to breaches of duty in the professional area of responsibility, breaches of duty may also result from conduct outside the relevant government agency, insofar as these are likely to affect the trust of

93 A comprehensive presentation of the German tax administration, which also shows the differences between the federal states, can be found here: Die Steuerverwaltung in Deutschland (BMF 2018)

94 In some cases, the competent agencies also hire employees who are not subject to civil service law and covered by collective bargaining agreements. However, these employees are also committed to the common good and must also perform their services objectively, neutrally and in accordance with the law. However, at least one civil servant is always involved in decision-making processes.

citizens in a way that is significant for the relevant government agency or the reputation of the civil service.

Due to their special legal position, civil servants are obliged to behave with integrity, including compliance with or implementation of laws and regulations, and to act in accordance with the ethical values derived from civil service law, including compliance with the law and the constitution. This includes the explicit release from the confidentiality obligation pursuant to § 37(2) no. 3 BeamtStG, if a civil servant reports to the competent supreme authority or agency a suspicion regarding a case of corruption (§§ 331 through to 337 StGB) that is substantiated by facts.

In addition to the regulations governing the civil service, several other regulations exist in Germany to ensure the integrity of public administration. For the area of corruption prevention, in particular the Guideline on the Prevention of Corruption in the Federal Administration (Richtlinie zur Korruptionsprävention in der Bundesverwaltung) which contains essential measures of a prevention strategy such as e.g.

- identifying areas of work that are particularly vulnerable to corruption,
- introducing the multiple control principle and
- appointing a contact person

as well as developing a code of conduct for employees and a guide for supervisors and the management of government agencies. Supplementary recommendations on the prevention of corruption in the federal administration serve to support the implementation of this guideline. At the Federal State level, there are also various legal regulations and administrative provisions to prevent unlawful and unfair influences on administrative action (cf. for example the Anti-Corruption Act of 16 December 2004 for North-Rhine Westphalia).

bb. Risk assessments

The risk assessment process is the identification and evaluation of risks regarding the achievement of the objectives of the respective process. At the level of the relevant government agencies, a distinction must be made between risks in the assessment procedure and risks in the collection procedure.

Assessment procedure
The **mine site and extraction royalties** are based on self-assessment by the parties that must pay the royalties, i.e., the extractive companies or payers. The payable amount is first determined by the payer based on the relevant laws and regulations, and then communicated to the respective government agency.

This self-assessment procedure can involve risks of error on the part of the payer, which can include clerical or input errors when entering the data in the self-assessment form, an unintentional misinterpretation of relevant laws and regulations, and/or a deliberate disregard of laws and regulations. Accordingly, the relevant government agencies have extensive audit rights to make sure that the information prepared and submitted by the payers is correct and complete.

In contrast, there is no self-assessment for the determination of the payable income tax amount (**corporation tax/trade tax**). Taxable companies are subject to a legal obligation to file income tax returns, which, because of time-based taxation, must generally be filed annually. Subsequently, the competent tax authority checks the information submitted by the respective taxable company. Once the relevant tax office has approved the income tax return submitted, they send the income tax assessment including the payable amount to the taxable company. A review of the tax returns can take place downstream during tax audits (see section cc).

Collection procedure
Risks in connection with the assessment process must be distinguished from risks in the payment collection process. Such risks could exist, if, for instance, staff

responsible for assessment is also involved in the collection process. Risk management relies on a strict separation of functions within the relevant government agency between those responsible for the assessment and those responsible for the collection of payable amounts. Besides any risks existing are mitigated by the fact that the payers can only make payments by bank transfer, i.e., cash payments are excluded. The separation of functions ensures that

- those responsible for assessment tasks do not have access to the (bank) accounts of the relevant government agency to which the payers must pay the assessed amount by bank transfer, and
- each case is processed by at least two persons.

Dealing with deviations between payable and paid amounts

Any discrepancies between the assessed payable amount and the amount received are clarified by the respective collection unit.

In the case of underpayments of corporation tax, a reminder is automatically issued or collected by the enforcement unit (a separate department of the collection unit) in accordance with the applicable laws and regulations. Overpayments are kept by the collection agency on a custody account and offset against possible other outstanding claims against the taxpayer in connection with other taxes or periods. Only after netting, any remaining difference will be refunded to the taxpayer.

Similar processes have been established in the collection process for mine site and extraction royalties. However, due to the significantly smaller number of companies that must pay these royalties, no automated reminders are sent; instead, any late payments are handled on a case-by-case basis.

cc. Information and communication

The "information and communication" component of an internal control system consists of procedures and measures used by the respective government agency to generate, obtain, process and forward to the competent internal unit within its organisation the relevant (payment) information in a suitable and timely manner. The information and communication procedures used for the assessment and collection process are described below for the payment of corporation tax and mine site/extraction royalties.

Corporation tax

Corporation tax returns are regularly transmitted electronically to the competent assessment tax office by means of a programme interface. Whether the tax office is responsible for the assessment process or not depends on the district in which the place of management or the registered place of business of the enterprise is located.

The organisation of a tax office as a whole and the rights and duties of the individual units within the tax office are defined in decrees on the rules of procedure of the tax offices (called FAGO). The decrees are issued by the supreme tax authorities and are identical for all Federal States. The FAGO defines the principles of organisation of the tax offices pursuant to the Financial Administration Act (FVG) and is available to the interested public.

In most cases, the case workers at the assessment office are not only responsible for checking the information in the corporation tax return, but also for the final signing of corporation tax assessments. In the case of companies exceeding certain size thresholds (e.g., annual turnover, annual profit) or classified as legally complex cases by the system or those in charge at the tax office, the corporation tax assessment notice is finally signed by the head of the assessment office or by an employee of the quality assurance unit located in the same assessment office. The corporation tax assessment is approved electronically. If the tax assessment must be signed by the superior the case worker cannot release the tax assessment notice electronically on his own authority. This is usually the responsibility of the head of the unit who finally approves the assessment notices.

To ensure that taxes are correctly paid, companies may be subject to an additional tax audit beyond the audit of the corporation tax return. These audits are carried out at the respective company's place of business by a department that is separate from the assessment office in terms of personnel and organisation. Depending on the size of the enterprise, these audits are carried out at random, based on a proposal by the assessment office or as follow-up audit. Large companies and corporate groups are generally subject to follow-up audits. The tax audit office is thus the "extended arm" of the assessment office for auditing the companies at their place of business. The involvement of the auditors and their heads of department (who are not identical with the heads of department of the assessment offices) is an example of how the "multiple eyes principle" in the assessment procedure works.

As soon as a corporation tax assessment notice has been released by the assessment office, the payable or refundable amount is debited in the responsible collection office through electronic data exchange. It is only after this release that the collection office is included in the overall process. Due to the centralisation of the treasuries, the assessment area and the payment area are often not only separated within a tax office, but the payment area is outsourced to a so-called payment processing unit. Depending on whether the tax administration of the respective Federal State is characterised by a two-tier or a three-tier structure, the payment function can be assigned either to the regional tax directorate or to the Ministry of Finance of the Federal State. As a result of this, the case workers from both areas usually do not know each other personally.

Mine site and extraction royalties

The calculation, determination and collection of mine site and extraction royalties is generally governed by the Federal Mining Act (BBergG) and the extraction royalty ordinances of the Federal State (cf. 4 b ii) in conjunction with the relevant provisions of the Fiscal Code (AO). If mining rights date from the time before the current Federal Mining Act of 1982 came into force ("old rights"), no mine site and extraction royalties need to be paid (cf. the explanations in chapter 3, section b.).

In Germany, the State Office for Mining, Energy and Geology (LBEG), headquartered in Hanover, is responsible for by far the largest share of revenue resulting from mine site and extraction royalties (95% for the reporting year 2017). Consequently the LBEG was used for the analysis of processes and controls. The LBEG is subject to the supervision of the Lower Saxony Ministry of Economic Affairs, Employment, Transport and Digitalisation.

The LBEG units responsible for assessing the mine site and extraction royalties cannot be compared to the assessment tax offices in terms of their staffing and organisational structure which is also due to the manageable number of companies subject to royalties[95] and the self-assessment procedure. The LBEG has one case worker, two external auditors and one head of unit who assess the mine site and extraction royalties of companies in Lower Saxony, Schleswig-Holstein, Hamburg, and Bremen.

Like corporation tax, the organisational arrangements provide for a strict separation between case handling (assessment/collection) and payment processing. Being an organisational unit of the Lower Saxony Ministry of Finance, the Chief Cashier's Office of the State of Lower Saxony (Landeshauptkasse Niedersachsen) is responsible for the technical processing of payment flows for the Federal State of Lower Saxony, using the budget execution system as part of the budget management system. The Chief Cashier's Office is not responsible for the substantive clarification of facts in connection with the mine site and extraction royalties. Accordingly, the Chief Cashier's Office is not involved in the clarification of facts.

95 The BVEG Annual Report 2018 contains an overview of the oil and gas producing companies in Lower Saxony, Hamburg and Schleswig-Holstein that are subject to royalties. https://www.bveg.de/content/download/11711/134387/file/BVEG%20Statistischer%20Bericht%202018.pdf

The companies liable to pay extraction royalties do a self-assessment to enter the data required for the assessment of the extraction royalty amount via a web client system called VAS (Veranlagungssystem Feldes- und Förderabgabe [Extraction Royalty Assessment System]). In VAS, all master data relevant to accounting are managed for each company (e.g., any benefit items) and the royalty amount is calculated by the system from the data provided by the companies. The mine site royalties are not processed in VAS but in the electronic file system of the LBEG. The case handling department at the head office in Clausthal-Zellerfeld is responsible for the correct and complete determination of the mine site and extraction royalties ("debiting function"). The multiple eyes principle is ensured by the fact that the head of the unit must co-sign the assessment notice. The case handling department issues the assessment notices to the companies and prepares cash orders, which are transmitted to the LBEG headquarters in Hanover via the electronic file system for checking and approval.

After checking and approval, the cash orders are registered in the budget execution system and any differences between incoming payments and debit positions are clarified.

In accordance with the nature of self-assessment, the verification of the information provided by the companies during external audits is a central element of the royalty assessment process carried out by the LBEG. According to the information provided, the external audits do not cover all self-assessments due to the lack of personnel. Rather, priorities for external audits are defined.

dd. Monitoring the internal control systems of relevant government agencies

The monitoring of controls by the (administrative) unit includes all organisational and procedural measures used to assess the effectiveness of the internal control system over time. It must be ensured that the controls always exist and are actually carried out. For both the corporation tax and the mine site and extraction royalties, the implementation of the monitoring function is ensured, among other things, through internal audit units. The reports of these internal audit units are not public (just like the reports created by internal audit units of companies or the audit report of an auditor) and are addressed to those responsible in the government agencies.

Corporation tax

For corporation tax, the regional tax directorates or the Ministries of Finance of the Federal States carry out controls in the form of business audits on an annual basis. These audits cover both assessment and payment processes. During these controls, cases are selected to be checked for the regularity of processing.

In addition, at the level of the Ministries of Finance of the Federal State, a separate internal audit unit is usually set up – this unit reports directly to the management of the authority. The work of the internal audit units in the Federal State of Hesse, for example, is based, among other things, on the "Recommendations on Standards for Internal Auditing in the Administration of the Federal State of Hesse". These standards provide a uniform and interdepartmental working and legal basis for the work of the internal audit departments. They are based on the auditing standards of the German Institute for Internal Auditing (DIIR, Deutsches Institut für Interne Revision e.V.) and the "Recommendations of the Federal Ministry of the Interior for Internal Audits". The internal audit units perform independent auditing and control functions by examining administrative decisions for deviations and irregularities and providing suggestions for their elimination and future avoidance, thus supporting the efficiency and effectiveness of the public administration.

The internal audit units prepare audit reports on their work, which is generally submitted to the management of the audited organisational unit for approval. The audited organisational unit receives a copy of this report. The internal audit unit submits a written report on its activities to its management at least

once a year. Audit-related reporting during the year remains unaffected.

Pursuant to §19 FVG, the Federal Ministry of Finance may cooperate in external audits of the state tax authorities via the Federal Central Tax Office (so called federal tax audit). In a federal tax audit, the Federal Ministry of Finance is informed, among other things, of tax developments that may be of significance for legislative measures or administrative regulations.

Mine site and extraction royalties

The monitoring of the processes relevant to D-EITI in connection with the collection of mine site and extraction royalties is carried out by the internal audit unit at the level of the Ministry of Finance of Lower Saxony. The internal audit unit is responsible, among other things, for monitoring the procedures and controls within the Chief Cashier's Office of the State of Lower Saxony that is responsible for the processing the payments of mine site and extraction royalties.

In addition, control activities are important with regard to the current financial management of the respective Federal State budgets. In Lower Saxony, for example, the receipts are assigned to the corresponding budget title within the budget execution system so that the administrative unit responsible for the budget can compare the planned income with the actual income. In line with the importance of the mine site and extraction royalties for the respective budget, it is also possible to compare the planned income generated through mine site and extraction royalties with the amounts received across periods. This comparison ultimately allows the interested public to exercise control via the usual processes of political participation. According to the findings of the IA, the mine site and extraction royalties are currently shown separately in the publicly available budgets of Lower Saxony, Schleswig-Holstein, Rhineland-Palatinate, and Bavaria.

ee. Monitoring of controls by independent audit bodies

The administrative units relevant for D-EITI are subject to audit by municipal audit bodies (e.g., the municipal audit office of North-Rhine Westphalia [Gemeindeprüfungsanstalt NRW]), the individual states' courts of audit and the Federal Court of Audit (Bundesrechnungshof) (hereinafter referred to as audit bodies).

Due to the federal structure of Germany, there are independent audit bodies at both federal and state level to control the budget management. The competence of the Federal Court of Audit is limited to the financial conduct of the Federal Government.[96] The Federal Court of Audit has neither a right of supervision nor a right to issue instructions to the audit offices of the Federal States. The audit bodies are independent supreme authorities of the Federal Government and the Federal States. Their tasks, position and powers are based on the German Basic Law (Art. 114 GG) or the constitutions of the Federal States and specified in the budget regulations of the Federal Government and the Federal States.

At the level of the local authorities (municipalities and local government associations), the audit bodies can also assume the task of external financial control (so-called "supra-local audit"), depending on the Federal State. The internal control of the local governments ("local audit") is carried out by (municipal) audit offices.

The following principles apply as a standard for the audit of state and municipal budget and financial management:

- Regularity of law enforcement and administrative decisions, and
- Efficiency and economy in budget and financial management

96 https://www.bundesrechnungshof.de/de/bundesrechnungshof

The principle of regularity requires, amongst others, correct accounting (proper calculation, justification of entries and booking) of the individual invoice amounts. The competent audit office is free to decide on the content, scope and frequency of the audit procedures.

The audit results are made known to the bodies concerned in the form of audit reports. The audit office may communicate the audit result to bodies other than the audited bodies if it considers this necessary for special reasons. Selected audit results are nevertheless summarised in annual reports that are available to the public.[97] In reviewing the publicly available reports of the Federal Court of Audit and the State Courts of Audit of Hamburg, Hesse, Lower Saxony and Schleswig-Holstein for the 2018 reporting period, the IA did not identify any specific statements on the payment flows in question during the period under review.

The German audit bodies support the implementation of the International Standards of Supreme Audit Institutions (ISSAI) developed through the International Association of Supreme Audit Institutions (INTOSAI).

On July 1, 2016, the President of the Federal Court of Audit was appointed as a member of the United Nations Board of Auditors for six years.[98] This means that Germany is responsible for auditing nine international organisations.[99] All audits are conducted in accordance with INTOSAI standards.[100]

The audit bodies of the Federal States also engage in international exchange and regularly discuss current standards and the audit methods applied by them in the European Organisation of Supreme Audit Institutions (EURORAI). All this shows that high audit standards are consistently applied at both national and sub-national levels.

c. Data collection

i. Participating companies and sector coverage

Out of 49 companies or corporate groups identified by the Independent Administrator in accordance with the requirements of the MSG, a total of 17 companies or corporate groups participated in the reporting process for this EITI Report.

It should be noted that the identification of the companies or corporate groups was based on an estimate as to which companies and corporate groups are likely to be subject to the statutory provisions (cf. for details chapter 8.b.ii.). Following the expiry of the deadlines for the publication of payment reports for the period from January 1, 2018 to December 31, 2018 and the experience gained from the publication of payment reports for the 2016 and 2017 periods, it has become apparent that the number of payment reports published is lower than the number of companies or corporate groups that have been identified . Therefore, any assessment or evaluation of the number of companies or corporate groups participating in EITI reporting must consider the payment reports actually published. Since a large part of the lignite, natural gas, oil, potash, and salt sectors are covered in this EITI report in terms of production volume and the reported mine site and extraction royalties, the participation rate achieved can be assessed as positive.

All payment reports submitted by companies pursuant to §§341 q et seq. HGB are publicly available through the Federal Gazette.[101] During the preparation of the first D-EITI report, the MSG, at the suggestion of civil society, thought about naming the identified companies that did not participate in the reporting for the first D-EITI report or for the supplementary report.

97 https://www.bundesrechnungshof.de/de/veroeffentlichungen/bemerkungen-jahresberichte
98 https://www.bundesrechnungshof.de/de/bundesrechnungshof
99 https://www.bundesrechnungshof.de/de/veroeffentlichungen/bemerkungen-jahresberichte
100 http://www.un.org/en/auditors/panel/
101 https://www.bundesanzeiger.de/; enter the term “Zahlungsberichte” (“payment reports”) under “Suchen” (“Search”).

In view of the public availability of the payment reports and the legal concerns raised by the German Government against naming these companies, the MSG has maintained its policy pursued for the first and second D-EITI report and has refrained from naming the companies that did not participate in this third D-EITI. From the Federal Government's point of view the following legal concerns speak against naming non-participating companies in the report:

On the one hand, data privacy law applies in cases where the company name allows the identification of a specific natural person (e.g., if the company name is the name of a sole businessman and includes further details such as the registered place of business of the company). This is the case for at least two companies that have not reported under D-EITI, so that naming must be waived for reasons of data privacy.

On the other hand, there are concerned that the publication of the company names in the D-EITI report without a sufficient legal basis could interfere with the fundamental right of companies to freely exercise their activity (Art. 12 GG). Besides, there is no legal obligation to mention the names of the companies.

One of the interests protected by Article 12 GG is free entrepreneurial activity for making a profit. Any publication of the company names in the D-EITI report would interfere with the protected interest and would be seen as a government measure to control the activities of private enterprises. The publication of the names of the non-participating companies would put pressure on them and force them to agree to the reconciliation of payments made by them. This problem is exacerbated by the fact that the data to be transmitted by the companies (payment flows such as corporation tax, mine site and extraction royalties, in some cases trade tax) are trade, business and tax secrets.

The naming of the companies would also not be legally justifiable in view of the decisions of the Federal Constitutional Court in the so-called glycol case[102] or the scientology[103] case. In these cases, the Federal Constitutional Court has ruled that the Federal Government can fulfil its warning and information obligations even without having an appropriate legal basis, especially if, as in the glycol case, there are consumer interests worth protecting so that a warning is indicated (consumer health). However, a comparable interest does not exist for companies that do not participate in D-EITI reporting.

The following overview shows the participating companies or corporate groups participating in the third D-EITI report across the different sectors:

102 Federal Constitutional Court (BVerfG), decision of the First Senate of June 26, 2002-1 BvR 558/91 – marginal nos. (1–79), http://www.bverfg.de/e/rs20020626_1bvr055891.html
103 Federal Constitutional Court (BVerfG), decision of the Second Senate of August 16, 2002-1 BvR 1241/97 – marginal nos. (1–25), http://www.bverfg.de/e/ rk20020816_1bvr124197.html

Figure 8: Participating companies or corporate groups per sector

		Sector
1.	BEB Erdgas und Erdöl GmbH & Co. KG, Hannover	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	Potash and salts
	K+S Kali GmbH, Kassel	Potash and salts
9.	Lausitz Energie Bergbau AG, Cottbus	Lignite
10.	Neptune Energy Deutschland GmbH, Lingen (Ems)	Crude oil and natural gas
11.	Quarzwerke GmbH, Frechen	Quarried natural resources
12.	RWE – Gruppe	
	Rheinische Baustoffwerke GmbH, Bergheim	Quarried natural resources
	RWE Power AG, Essen	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

Recording government revenues from the extractive sector is difficult in Germany for various reasons. One reason is that the mine site and the extraction royalties are the only levies specific to the extractive sector in Germany. Besides, the extractive companies (just like companies in other sectors, too) pay taxes, especially corporation tax, and trade tax or, depending on their legal form, income tax. Corporation and trade tax payments made by the extractive sector are not recorded timely in any statistics. Rather, the share of the extractive sector in tax revenue can only be extrapolated from other data.

Furthermore, there are special features in German tax law that make it difficult to record the taxes paid by the sector. Among these special features are tax groups consisting of a parent company with activities outside the extractive sector and a subsidiary operating in the extractive sector. In these cases, any taxes to be paid by the extractive subsidiary are paid by the parent and not by the subsidiary. At the level of the parent company, the tax payments made cannot be allocated to the individual companies included in the scope of consolidation (cf. chapter 8.a.iii.). Furthermore, the federal structure of the German state complicates the recording and allocation of trade tax, as trade tax is levied by the municipalities.

Besides, it is difficult to clearly classify companies that operate in the extractive sector and are under an obligation to file a payment report. The classification according to commercial law based on the EU Accounting Directive 2013/34/EU of June 26, 2013 may be different from the sector classification used for government revenue statistics.

Therefore, the best possible sector coverage is achieved by using the extraction volume and the extraction royalties paid as metrics.

The following sector coverage overview reflects the identified companies, and the companies participating in the reporting process, including the respective reference values on which the identification was based:

Table 9: Sector coverage

Sectors*	Estimated coverage of all identified companies	Estimated coverage of all participating companies	Reference value – Determination-Coverage
Lignite	100,0%	99,5%	Production volume 2018
Crude oil**	96,3%	96,3%	Production volume 2018
Natural gas	99,1%	99,1%	Production volume 2018
Potash and potash salt products	97,2%	97,2%	usable quantity in 2018
Rock salt	95,9%	No information available***	usable quantity in 2018
Boiled salt	99,7%	99,7%	usable quantity in 2018

* 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 8.b.iii).

** The remaining shares of the oil sector have not been included, since it is made up of several smaller companies (see https://www.bveg.de/Der-BVEG/Pubikationen/Jahresberichte).

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

Table 10: Coverage of the mine site and extraction royalties

Total revenue from mine site and extraction royalties 2018	Total reported payments for mine site and extraction royalties 2018	Coverage by the D-EITI process
242.761.105,46 €	241.967.347,25 €	99,67%

The following overview shows the payments made in 2018 by the participating companies to government agencies including corporation tax, trade tax, mine site and extraction royalties as well as lease payments and payments for infrastructure improvements:

Table 11: Total overview of data reported by the companies

		Corporation tax EUR	Trade tax EUR	Extractive & mine site royalties EUR	Lease payments EUR	Payments into the infrastructure EUR	Totals EUR
1.	BEB Erdgas und Erdöl GmbH & Co. KG	– [1]	13.456.118,17	51.519.859,44	–	–	64.975.977,61
2.	DEA Deutsche Erdöl AG (today: Wintershall DEA Deutschland GmbH)	23.890.388,28	2.093.605,63	83.949.560,31	–	–	109.933.554,22
3.	Dyckerhoff-Gruppe	2.044.628,00	1.411.150,00	–	–	–	3.455.778,00
4.	ExxonMobil Central Europe Holding GmbH	135.008.100,00 [2]	126.094.720,00	34.238.687,42	–	–	295.341.507,42
5.	Heidelberger Sand und Kies GmbH	367.188,00	314.029,00	–	–	–	681.217,00
6.	Holcim (Deutschland) GmbH	362.028,00	537.145,00	–	463.329,04	–	1.362.502,04
7.	JTSD-Braunkohlebergbau GmbH / MIBRAG	13.023.384,85	10.884.004,46	–	–	–	23.907.389,31
8.	K+S-Gruppe / esco Gmbh & Co. KG	– [1]	6.632.810,00	104.358,00	–	–	6.737.168,00
9.	K+S-Gruppe / K+S Kali GmbH	– [2]	– [2]	969.669,00	–	–	969.669,00
10.	LEAG Lausitzer Energie Bergbau AG	–	–	–	1.225.570,32	13.752.536,64	14.978.106,96
11.	Neptune Energy Deutschland GmbH (formerly: Engie E&P Holding Germany GmbH)	– [2]	– [2]	12.653.244,93	–	–	12.653.244,93
12.	Quarzwerke GmbH	4.471.000,00	6.035.000,00	–	–	–	10.506.000,00

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.

		Corporation tax EUR	Trade tax EUR	Extractive & mine site royalties EUR	Lease payments EUR	Payments into the infrastructure EUR	Totals EUR
13.	RWE-Gruppe / RWE Power AG	– [2]	– [2]	–	–	30.138.837,00	30.138.837,00
14.	RWE-Gruppe / Rheinische Baustoffwerke GmbH	– [2]	– [2]	–	312.173,34	–	312.173,34
15.	Sibelco Deutschland GmbH	763.356,0	673.518,00	–	–	–	1.436.874,00
16.	Südwestdeutsche Salzwerke AG	4.264.750,00	3.513.160,00	–	–	–	7.777.910,00
17.	Vermilion Energy Germany GmbH & Co. KG	– [1]	–	3.466.852,46	–	–	3.466.852,46
18.	Wacker Chemie AG	–	327.830,36	378.573,69	–	–	706.404,05
19.	Wintershall GmbH (today: Wintershall DEA Deutschland GmbH)	– [2]	– [2]	54.686.542,00	–	–	54.686.542,00
	Total amount of reported payments from all companies	**184.194.823,13**	**171.973.090,62**	**241.967.347,25**	**2.001.072,70**	**43.891.373,64**	**644.027.707,34**

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.

The corporate and trade tax payments reported show the high relevance of tax groups in Germany. If the focus of a tax group is outside the extraction of natural resources, the taxes paid by the tax group parent does not have to be reported (cf. footnote 3 in Table 11). If, however, the tax group mainly operates in the extractive sector, the taxes paid by the tax group parent are reported (proportionally or in full) (cf. footnote 2 in Table 11, cf. also chapter 8.a.iii.).

At the request of the MSG, the content and composition of the reported payments for infrastructure improvements were further analysed by the Independent Administrator in cooperation with the reporting companies. The IA included both payments based on statutory regulations (such as real estate transfer taxes) and payments based on private-law contracts between companies and government agencies (cities, municipalities, and local government associations). The latter include, among other things, compensation for additional administrative expenses due to mining activities or services in connection with the construction and maintenance of local public infrastructure. The payment reports published pursuant to §§ 341q et seq. HGB for 2018 also show payments of water withdrawal charges.

Table 12: Data reporting on the mine site and extraction royalties paid to government agencies

Mine site and extraction royalties	Amount according to companies EUR
State Office for Mining, Energy and Geology, Hanover (LBEG)	162,188,116.53
LBEG for: Tax authority, Schleswig Holstein, Kiel	73,937,156.43
LBEG for: Free Hanseatic City of Hamburg	116,839.32
Government of Upper Bavaria, Southern Bavarian Mining Authority, Munich	730,836.03
State Office for Geology and Mining, Mainz-Hechtsheim	3,440,644.60
State Office for Geology and Mining Saxony- Anhalt, Halle	104,358.00
Regional Government Arnsberg, Arnsberg	101,153.65
Regional Council Darmstadt, Wiesbaden	969,669.00
State Office for Geology, Raw Materials and Mining, Regional Council Freiburg	378,573.69
Total amount	**241,967,347.25**

9

RECOMMENDATIONS OF THE INDEPENDENT ADMINISTRATOR

Notes on the payment reconciliation pilot and alternatives to the previous standard procedure

The payment reconciliation pilot implemented for this third D-EITI report is a new approach to ensuring the reported payment flows' quality. Unlike the previous standard procedure of a comprehensive reconciliation of the companies' payment flows, the pilot is based on a system analysis of the processes and controls set up for proper collection of payments by government agencies. The previous payment reconciliation results from the first and second D-EITI reports are explicitly included in our assessment. Therefore, this assessment is based on a combination of the current system analysis and the positive results from the payment reconciliation processes.

In the pilot's approach, we see a clear added value in terms of content, both for the MSG and for the interested public, compared to the previous procedure of reconciling the payment flows made or received. The knowledge gained provides more in-depth insight into the existing structures used to ensure the correctness of the assessment and the collection of relevant payment flows and can serve the MSG in the future as a basis for further considerations on how to deal with the system-based approach to quality assurance.

The previous standard procedure of a (comprehensive) reconciliation of payments made or received was based methodologically on certain assumptions. The first assumption was that payment flows between companies and government agencies involve a risk of material misstatements. The second assumption was that the internal control systems of relevant government agencies were either non-existing or not sufficiently developed. Accordingly, the quality assurance of payment flows required in section 4.9 a of the EITI Standard has been ensured, so far, following internationally recognised auditing standards by a direct reconciliation of payments made with payments received by the government agencies. However, according to the international auditing standards, risks assumed by the standard setter in connection with the processing of payment flows can be justifiably rebutted in exceptional individual cases (cf. International Standard on Auditing No. 240 "The auditor's responsibility to consider fraud in an audit of financial statements" paragraph 47 and the amended version of the German Auditing Standard 210 "On the detection of irregularities in the course of the audit," paragraph 39, of the Institute of Public Auditors in Germany [Institut der Wirtschaftsprüfer in Deutschland e.V.]).

Based on the findings in this third D-EITI report on the existing processes and controls in place for proper collection by the government agencies, and taking into account the positive payment reconciliation results to date from the first and second D-EITI reports, we recommend to the MSG, in view of any future quality assurance of the data provided by reporting entities, to provide an assessment as to whether the MSG considers the presumption included in the EITI standard that there is a risk of material misstatement of relevant payment flows to be rebutted for Germany (option 1). If the MSG came to this conclusion, the previous procedure of reconciling the payment flows made or received could be replaced by an assessment carried out by the MSG or an IA regarding the plausibility of the payment flows reported by the companies. In this case, reconciling payment flows made or received would only be necessary if (and to the extent) individual payment flows would not be considered plausible by the MSG or the IA.

If, however, the MSG believes that the conditions for rebutting the presumed risk of material misstatements of payments are still not met, we recommend combining a system-based analysis with a sample-based reconciliation of payment flows reported by participating companies for future D-EITI reports (option 2). Based on the positive findings of the system-based analyses carried out during this third D-EITI report, the IA believes that the quality of the payment flows can be ensured without compromising quality using sample-based payment reconciliation so that not all participating companies or all payment flows would have to be included in the periodic payment reconcili-

ation. This is an efficient and economical approach to limit the number of companies or payment flows to be included and complies with international auditing standards.

In the IA's opinion, both options can also be implemented in other EITI member countries if the respective prerequisite is met. A prerequisite for implementing these options is that the respective government agencies have implemented an effective system of processes and controls. If this prerequisite is not or not sufficiently fulfilled, the presumed risk of material misstatement regarding payment flows cannot be rebutted, in our opinion, and a merely sample-based reconciliation of the reported payment flows would not be sufficient.

Concerning the reporting of data, we recommend that companies included in the payment reconciliation shall be given sufficiently time to submit the data and power of attorney regarding tax matters. Data could be reported flexibly at any time during the calendar year to be independent of the IA's appointment, and the reconciliation of payment flows.

This means that the starting point for both option 1 and option 2 is a follow-up of the processes and controls as part of the annual EITI reporting to identify relevant changes in the processes and controls and to ensure previous information is still up to date. In case of significant changes in the relevant processes or controls of the relevant government agencies, the MSG (under option 1) or the IA (under option 2) would need to reassess the conclusions regarding the quality assurance option to be chosen. If it turns out – contrary to the expectations for Germany, and contrary to the results of the pilot – that the systems are not (or no longer) effective, the previous standard procedure of a comprehensive reconciliation of payment flows would remain as the only viable option for the quality assurance (option 3).

If the MSG assumes that there is a risk, sample-based payment reconciliation for instance every two years would not be suitable for option 2 because any conclusion on the quality of the payment flows can only be drawn for the respective assessment period so that no conclusions could be made for any periods not assessed and would not be in compliance with international auditing standards. Furthermore, according to international and national auditing standards, it would not be acceptable to exclusively rely on processes and controls without any sample-based reconciliation of payment flows if the MSG still believed that there is a risk regarding the relevant payment flows. According to paragraph 83 of the Auditing Standard 261, "Identification and assessment of risks of error and Auditor's Responses to the Assessed Risks of Error" issued by the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer in Deutschland e.V.), the auditor may not base his or her audit opinion solely on the results of the assessment of the internal control system.

Nevertheless, the information generated from the pilot may allow the MSG to identify possible other risks or gain further insights into individual aspects of processes and controls described in this report. According to the IA's assessment, the MSG and the relevant government authorities must, however, first agree whether there are any legal possibilities to gain further insights and (if so) agree on their specific content and scope.

ANNEX

a. Presentation of further EITI requirements

i. Requirement 4.1 c) (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. National state-owned company 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 no substantial revenues for the German government.

3. Dividends
As already mentioned under point 2, public holdings in extractive industries in Germany do not result in any substantial income for the government. 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 D-EITI purposes is unnecessary.

5. All other significant payments and material benefit to 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 German 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 7.1.).

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 Federal Mining Act (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 4.1 c), 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 (Transportation 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. on Requirement 4.1 c). 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.

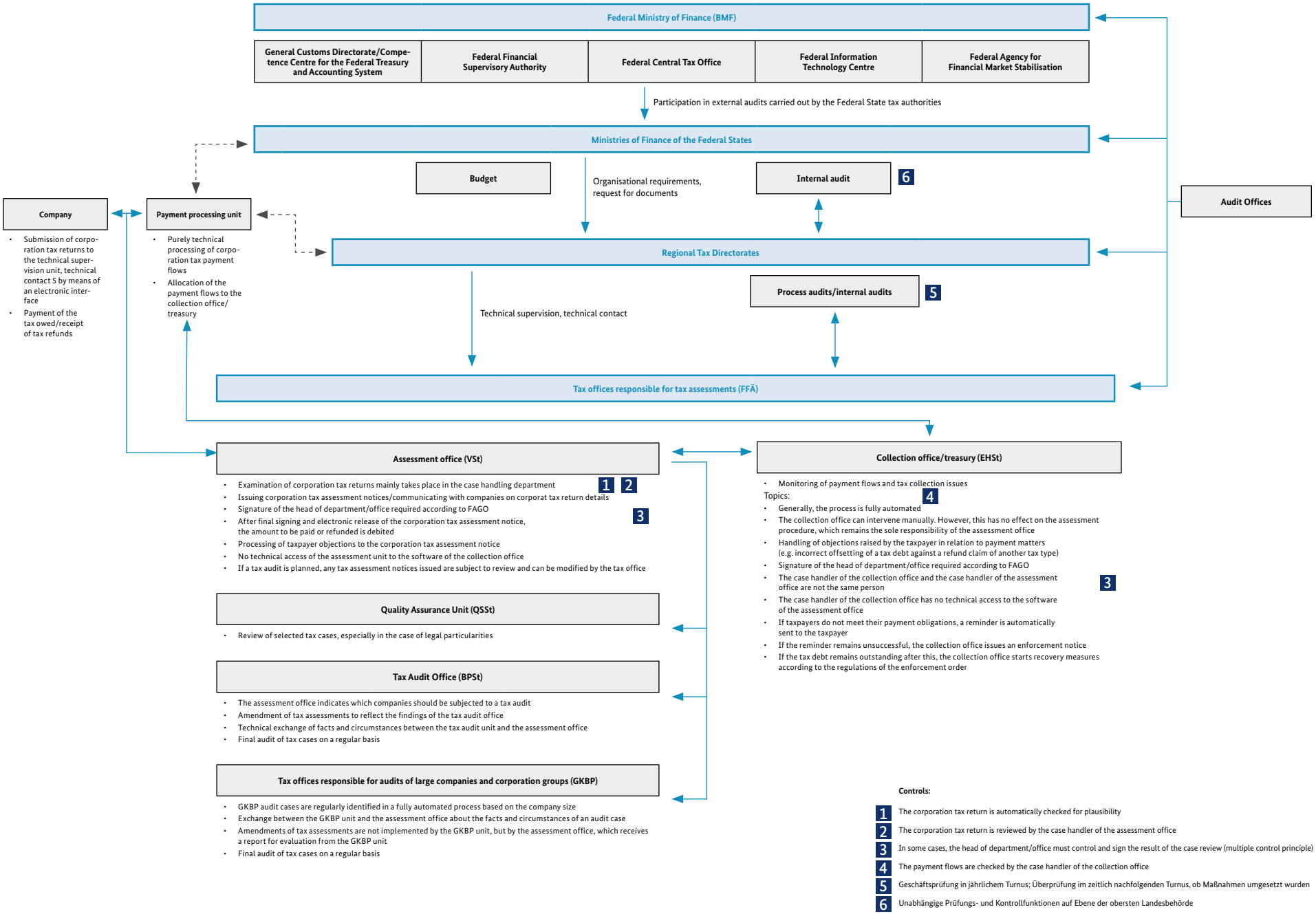
vi. Requirement 4.6 (Subnational payments)

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-stromsteuer-4208848

c. i. Schematic overview of the organisational structure with relevant processes and controls for corporation tax



- Submission of corporation tax returns to the technical supervision unit, technical contact 5 by means of an electronic interface
- Payment of the tax owed/receipt of tax refunds

- Purely technical processing of corporation tax payment flows
- Allocation of the payment flows to the collection office/treasury

- Examination of corporation tax returns mainly takes place in the case handling department 1 2
- Issuing corporation tax assessment notices/communicating with companies on corporat tax return details
- Signature of the head of department/office required according to FAGO 3
- After final signing and electronic release of the corporation tax assessment notice, the amount to be paid or refunded is debited
- Processing of taxpayer objections to the corporation tax assessment notice
- No technical access of the assessment unit to the software of the collection office
- If a tax audit is planned, any tax assessment notices issued are subject to review and can be modified by the tax office

- Monitoring of payment flows and tax collection issues

Topics: 4

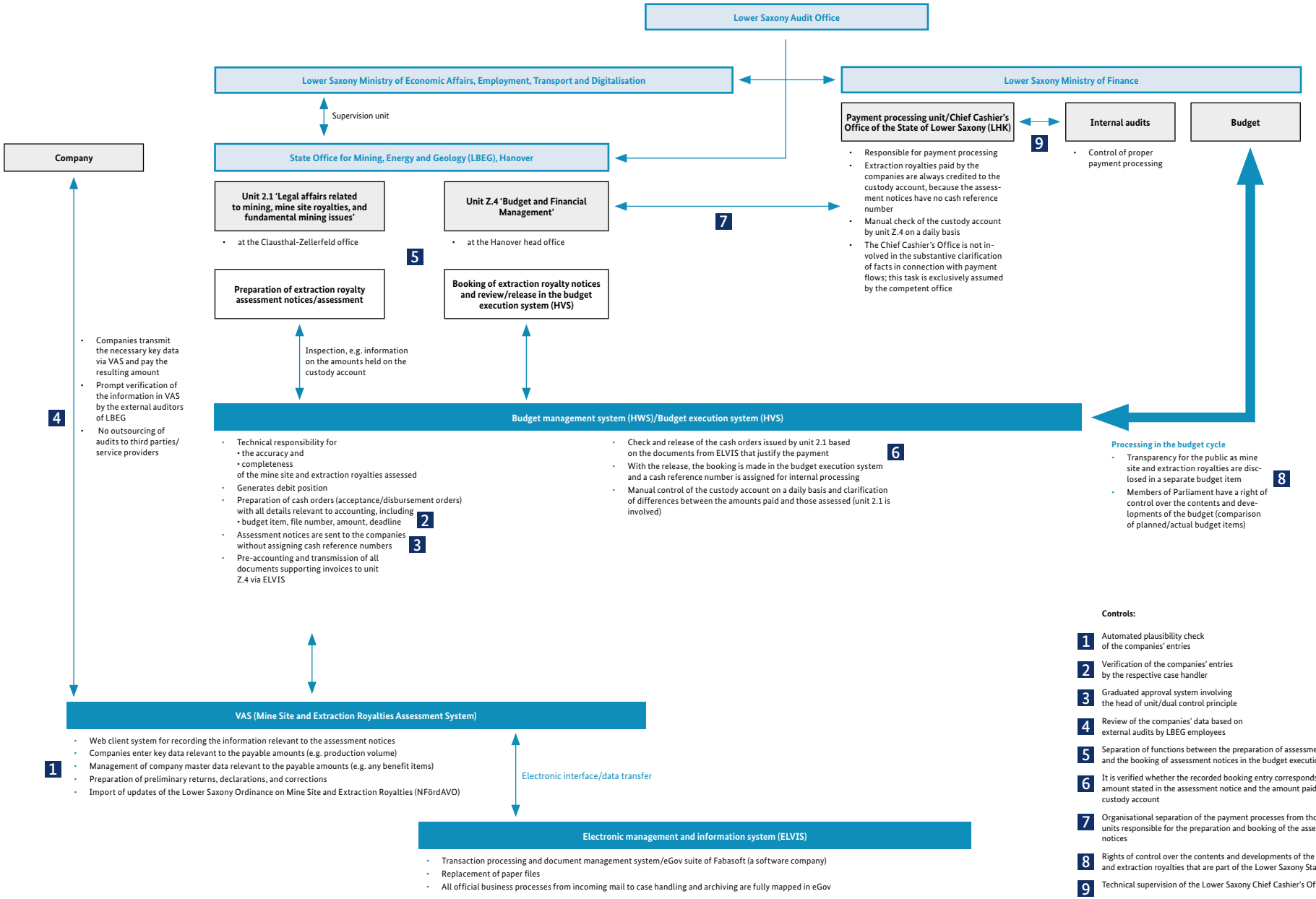
- Generally, the process is fully automated
- The collection office can intervene manually. However, this has no effect on the assessment procedure, which remains the sole responsibility of the assessment office
- Handling of objections raised by the taxpayer in relation to payment matters (e.g. incorrect offsetting of a tax debt against a refund claim of another tax type)
- Signature of the head of department/office required according to FAGO
- The case handler of the collection office and the case handler of the assessment office are not the same person 3
- The case handler of the collection office has no technical access to the software of the assessment office
- If taxpayers do not meet their payment obligations, a reminder is automatically sent to the taxpayer
- If the reminder remains unsuccessful, the collection office issues an enforcement notice
- If the tax debt remains outstanding after this, the collection office starts recovery measures according to the regulations of the enforcement order

- Review of selected tax cases, especially in the case of legal particularities

- The assessment office indicates which companies should be subjected to a tax audit
- Amendment of tax assessments to reflect the findings of the tax audit office
- Technical exchange of facts and circumstances between the tax audit unit and the assessment office
- Final audit of tax cases on a regular basis

- GKBP audit cases are regularly identified in a fully automated process based on the company size
- Exchange between the GKBP unit and the assessment office about the facts and circumstances of an audit case
- Amendments of tax assessments are not implemented by the GKBP unit, but by the assessment office, which receives a report for evaluation from the GKBP unit
- Final audit of tax cases on a regular basis

c. ii. Schematic overview of the organisational structure with relevant processes and controls for mine site and extraction royalties



- Responsible for payment processing
- Extraction royalties paid by the companies are always credited to the custody account, because the assessment notices have no cash reference number
- Manual check of the custody account by unit Z.4 on a daily basis
- The Chief Cashier's Office is not involved in the substantive clarification of facts in connection with payment flows; this task is exclusively assumed by the competent office

- Control of proper payment processing

- Companies transmit the necessary key data via VAS and pay the resulting amount
- Prompt verification of the information in VAS by the external auditors of LBEG
- No outsourcing of audits to third parties/ service providers

- Technical responsibility for
  - the accuracy and
  - completeness

  of the mine site and extraction royalties assessed
- Generates debit position
- Preparation of cash orders (acceptance/disbursement orders) with all details relevant to accounting, including
  - budget item, file number, amount, deadline
- Assessment notices are sent to the companies without assigning cash reference numbers
- Pre-accounting and transmission of all documents supporting invoices to unit Z.4 via ELVIS

- Check and release of the cash orders issued by unit 2.1 based on the documents from ELVIS that justify the payment
- With the release, the booking is made in the budget execution system and a cash reference number is assigned for internal processing
- Manual control of the custody account on a daily basis and clarification of differences between the amounts paid and those assessed (unit 2.1 is involved)

- Transparency for the public as mine site and extraction royalties are disclosed in a separate budget item
- Members of Parliament have a right of control over the contents and developments of the budget (comparison of planned/actual budget items)

- Web client system for recording the information relevant to the assessment notices
- Companies enter key data relevant to the payable amounts (e.g. production volume)
- Management of company master data relevant to the payable amounts (e.g. any benefit items)
- Preparation of preliminary returns, declarations, and corrections
- Import of updates of the Lower Saxony Ordinance on Mine Site and Extraction Royalties (NFördAVO)

- Transaction processing and document management system/eGov suite of Fabasoft (a software company)
- Replacement of paper files
- All official business processes from incoming mail to case handling and archiving are fully mapped in eGov

Controls:

1. Automated plausibility check of the companies' entries
2. Verification of the companies' entries by the respective case handler
3. Graduated approval system involving the head of unit/dual control principle
4. Review of the companies' data based on external audits by LBEG employees
5. Separation of functions between the preparation of assessment notices and the booking of assessment notices in the budget execution system
6. It is verified whether the recorded booking entry corresponds to the amount stated in the assessment notice and the amount paid to the custody account
7. Organisational separation of the payment processes from those offices/ units responsible for the preparation and booking of the assessment notices
8. Rights of control over the contents and developments of the mine site and extraction royalties that are part of the Lower Saxony State budget
9. Technical supervision of the Lower Saxony Chief Cashier's Office

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, for certain raw materials, such as quartz gravels, the jurisdiction between AbgrG and mining law can vary from case to case. 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.

There are also legal demarcations: State building regulations apply to the excavation of solid rock (limestone, basalt, etc.) 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.

Approval by the European Commission under state aid law
In principle, the Treaty on the Functioning of the European Union (TFEU) provides for a ban on state aid. However, this prohibition does not apply without exception. State aid that is compatible with the internal market can be authorised by the European Commission. For example, support measures in the field of regional promotion, energy and environmental policy or in the field of research, development and innovation may be considered compatible with the internal market under certain conditions.

Member States have decided that state aid control is the exclusive competence of the European Commission ("guardian of the Treaties"). Thus, the European Commission has the right to exercise competition supervision even in policy areas where it has no substantive competence (for example, taxation or employment policy). Therefore, all planned state aid-relevant measures must be notified or even formally notified to and approved by the European Commission. Source: BMWi – State aid control policy (Beihilfenkontrollpolitik)

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 (EIA) (§ 52(2) lit. a item i., in conjunction with § 57a BBergG).

Employment impact
Employment impact means that a sector or an investment has an influence on the number of jobs. Direct (employment) effects such as the creation of jobs in the extractive sector are included as well as indirect (employment) effects, such as the creation of jobs upstream or downstream stages of the value chain, including manufacturers of intermediate products for raw material extraction or similar.

Lignite mining areas
Lignite mining areas are certain geographically delimited districts that are subordinate to a mining authority. The lignite mining areas in Germany covered by the Coal Mining Regions Structural Strengthening Act are: the Lausitz mining region (Federal States: Brandenburg/Saxony), the Central German mining region (Saxony/Saxony-Anhalt/Thuringia), the Rhenish mining region (North Rhine-Westphalia), the Helmstedt mining region (Lower Saxony)

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. Source: https://www.destatis.de/DE/Themen/Wirtschaft/Volkswirtschaftliche-Gesamtrechnungen-Inlandsprodukt/Methoden/bip.html

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 extractive industry, quarrying companies must have approval to extract stones and earth. Every extraction site of 10 hectares or more must undergo a full approval procedure, including public participation and environmental impact assessment (EIA). 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. The respective 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.

CO_2 certificates
In environmental law, a certificate is a vested right to emit a certain amount of a pollutant in a certain period of time. CO_2 certificates are tradable on the energy exchanges, so that the market puts a price label to the right to emit CO_2. By issuing fewer and fewer certifi-

cates, companies are to be given an incentive to invest in climate-friendly technologies. In 2013, an EU-wide emission cap and uniform allocation rules have been introduced across the EU. The majority of emission certificates are no longer issued free of charge, but are put up for auction. The emission cap will decrease by 1.74% per year until 2020. More than 90% of the proceeds from the auctions go into climate protection projects.

D-EITI report

The EITI Standard provides for an annual reporting obligation for EITI countries. This EITI report comprises two main parts:

- The context report provides an overview of the way how the national extractive sector works, and answers questions such as: Which natural resources and which quantities are extracted? What are the legal framework conditions? What revenue does the state generate? How many raw materials are exported? What contribution does the extractive sector make to the national economy?

- In the second part of the report, an Independent Administrator reconciles the main payments from extractive companies with the corresponding revenues from government agencies. To this end, the companies disclose their payments and the competent tax authorities their receipts.

At the end of 2019, the MSG published the second D-EITI report. In addition to the two main sections, this also contains special topics: compensatory measures for the impact on nature, provisions and security deposits as well as water extraction for raw material extraction and renewable energies were important special topics of the first D-EITI report (2018). They go beyond the international EITI Standard and thus increase the relevance of EITI in Germany. In the second report, the innovative topics were expanded to include employment and social affairs and recycling. Due to a pilot project carried out by the D-EITI, the third D-EITI report (2020) contains a chapter on the payment flows disclosed by the companies including alternative quality assurance of these payments instead of the payment reconciliation (see chapter 8).

Electrical and Electronic Equipment Act – ElektroG

The Act on the Placing on the Market, the Taking Back and the Environmentally Sound Disposal of Electrical and Electronic Equipment (Electrical and Electronic Equipment Act – ElektroG), which came into force in October 2015, transposes the European Union Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE Directive) into German law. The ElektroG sets three targets for the collection and recycling of WEEE:

- In the period from 2016 to 2018, at least 45% of the averaged total weight of EEE put on the market in the three previous years had to be collected (minimum collection rate). This quota includes not only WEEE from private households (business to customer; b2c equipment), but also from commercial sources (business to business; b2b equipment) such as companies and public authorities (so-called "sources other than private households"). A minimum collection rate of 65% will apply from 2019.

- A portion of 75 to 85% of the mass of WEEE collected each year is to be recycled, depending on the appliance category (recovery rates). Recovery includes preparation for reuse, recycling and recovery (including energy recovery).

- A portion of 55 to 80% of the mass of WEEE collected each year is to be prepared for reuse or recycling, depending on the appliance category (quotas for preparation for reuse + recycling).

According to Art. 11(2) of the WEEE Directive (valid since August 15, 2015) the reference quantity for the recovery and recycling quotas is the total collection quantity per appliance category, whereas in the years

before, the so-called reuse of whole appliances was not included in the reference quantity. Source: https://www.umweltbundesamt.de/daten/ressourcen-abfall/verwertung-entsorgung-ausgewaehlter-abfallarten/elektro-elektronikaltgeraete#sammlung-und-verwertung-von-elektro-und-elektronikaltgeraten-drei-kennzahlen-zahlen

A five-pillar welfare and social security system
In Germany, social insurance is a mixed form of insurance (financed by contributions), provision (compensation according to social aspects) and welfare (benefits for rehabilitation). The German social security system consists of five pillars: (1.) Health insurance; (2.) Accident insurance; (3.) Pension insurance; (4.) Unemployment insurance; (5.) Nursing care insurance.

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[1] (Montan co-determination; MontanMitbestG[2], MontanMitbestGErgG[3]): 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.

Multi-Stakeholder Group (MSG)
Stakeholders from government, business and civil society are represented in the D-EITI Multi-Stakeholder Group (MSG). They are appointed by the Federal Government for a period of at least two years. The task of the MSG is to steer and monitor the implementation of D-EITI. This includes, among other things, the definition of reporting content and the regular preparation and acceptance of work plans and progress reports on the implementation of the D-EITI. The members of the German MSG can be found on the D-EITI website.

Primary and secondary raw materials
Apart from their extraction, primary raw materials are unprocessed natural resources (for example virgin wood fibres for paper production obtained from felled trees) while secondary raw materials are obtained through recycling (such as wood fibres from waste paper). Due to limited natural resources, it is inevitable to reduce the consumption of primary raw materials. One option is the substitution of primary raw materials with secondary raw materials.

Depending on their nature, the technical process and the effort required, some raw materials can be recycled as secondary raw materials more often than others. In the process, the reduction in size and separation of different components (e.g. in the case of composite materials) can require considerable amounts of energy. Under certain circumstances, the extraction of primary raw materials may be economically more favourable than recycling. The recycling rate may be increased through new or improved recycling processes and recycling-friendly products. In addition, tax incentives, for example by taxing primary raw materials, can increase the share of recycled raw materials.

Recycling and usage rates
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).
See also “Electrical and Electronic Equipment Act – ElektroG”.

1 As well as in the “iron and steel-producing industry”
2 Coal and Steel Co-Determination Act (MontanMitbestG) of 1951
3 Supplementary Co-Determination Act (Montan-MitbestGErgG) of 1956

Collection rate
See "Electrical and Electronic Equipment Act – ElektroG".

Social partnership
The so-called social partnership plays a prominent role in Germany. Employers and employees, employers' associations and trade unions work together at various levels with the aim of resolving conflicts of interest through a policy of consensus – for example, at the workplace level, where workers are involved in the solution of workplace issues through their elected works councils. At the company level, workers are represented on supervisory bodies above a certain size of the company. In addition, the social partners are constantly working together at various regional levels, at the federal level, but also in Europe by developing joint positions, initiatives, actions or social dialogues. They address people's fundamental questions and participate in debates on values and systems.

Material and energy recovery
Pursuant to § 3(25) KrWG, material recovery (recycling) means any recycling process used to make products, materials or substances from waste that serve either the original purpose of the waste material or other purposes. Material recovery 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.

Subsidies
There are different definitions of the term subsidies at both national and international level, and several methodological approaches are used to tackle the topic. In accordance with the definition of the subsidy report of the Federal Government, subsidies of the Federal Government for private enterprises and economic sectors (i. e. financial aid as cash benefits as well as tax concessions as special tax exemptions) that are directly relevant to the budget are categorised as subsidies for the purposes of this report. 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).

Independent Administrator
For the annual D-EITI report, an Independent Administrator (IA) reconciles the main payments from extractive companies with the corresponding revenues from government agencies. To this end, the companies disclose their payments and the competent tax authorities disclose their receipts.

The contract for the preparation of the payment reconciliation will be put out to tender under public procurement law. Thus, the Independent Administrator can change from year to year. The Independent Administrator has two main tasks: On the one hand, he is responsible for compiling the figures of the companies and government agencies concerned and analysing any discrepancies. These discrepancies and their root causes are presented by the Independent Administrator in the EITI Report. On the other hand, he supports the MSG in clarifying technical issues. For the third D-EITI report (2020), the Independent Administrator conducted a pilot project on payment reconciliation on behalf of the MSG.

Groups of companies
A group of companies is defined as the totality of legally independent companies that belong together because of certain common features (e.g. because they are under the same management or control).

Companies that cooperate in a contractually linked entity are referred to as a group of companies.

Recovery rate
The recovery rate includes both the recovery of energy and the recovery of materials while the recycling rate excludes energy recovery.
See also "Electrical and Electronic Equipment Act – ElektroG"

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 or 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.

FINAL NOTES

[i] The data on **employment figures** (chapter 2.a.) may differ depending on the source. Differences are mostly due to a different allocation of statistical units.

In the employment statistics of the Federal Employment Agency (BfA), the economic activities of companies are presented in a differentiated manner based on the Classification of Economic Activities 2008 (WZ 2008). The main activity, i.e. the activity that makes the largest contribution to the total value added of this unit, is decisive for the allocation of a business to an economic sector. Businesses for which an activity in the above-mentioned economic sectors is only a secondary activity are consequently not included in the BfA data listed, because these businesses are assigned to a different economic sector according to their main activity.

In contrast, data that use a functional view of the economic activity look at all enterprises/businesses that are active in that field, regardless of whether it is their main activity. As a result, there may be deviating numbers of employees in the statistics.

SOURCES per natural resource category:

Crude oil

[BfA 2018 - Federal Employment Agency (2018): Employees by economic sector (WZ2008) – URL: https://statistik.arbeitsagentur.de/Statistikdaten/Detail/201812/iiia6/beschaeftigung-sozbe-wz-heft/wz-heft-d-0-201812-xlsx.xlsx?__blob=publicationFile&v=1

In comparison, the annual statistical report of the German Natural Gas, Crude Oil and Geoenergy Association (Bundesverband Erdgas, Erdöl und Geoenergie e.V.) reflects a total number of employees in the natural gas and crude oil sector of 8,291; BVEG 2018 – URL: https://www.bveg.de/Der-BVEG/Publikationen/Jahresberichte

Natural gas

[BfA 2018 – Federal Employment Agency (2018): Employees by economic sector (WZ2008) – URL: https://statistik.arbeitsagentur.de/Statistikdaten/Detail/201812/iiia6/beschaeftigung-sozbe-wz-heft/wz-heft-d-0-201812-xlsx.xlsx?__blob=publicationFile&v=1

In comparison, the annual statistical report of the German Natural Gas, Crude Oil and Geoenergy Association reflects a total number of employees in the natural gas and crude oil sector of 8,291; BVEG 2018 – URL: https://www.bveg.de/Der-BVEG/Publikationen/Jahresberichte

Hard coal

[BfA 2018 – Federal Employment Agency (2018): Employees by economic sector (WZ2008) – URL: https://statistik.arbeitsagentur.de/Statistikdaten/Detail/201812/iiia6/beschaeftigung-sozbe-wz-heft/wz-heft-d-0-201812-xlsx.xlsx?__blob=publicationFile&v=1

These 2018 coal industry statistics, by comparison, report a total employment figure of 4,125 for the hard coal sector; URL https://kohlenstatistik.de/wp-content/uploads/2019/10/Kohlenwirt_Silberheft_final.pdf (p. 18/19). These statistics reflect the number of employees including those in qualification and retraining measures as well as in short-time transfer work.

Lignite

[BfA 2018 – Federal Employment Agency (2018): Employees by economic sector (WZ2008) – URL: https://statistik.arbeitsagentur.de/Statistikdaten/Detail/201812/iiia6/beschaeftigung-sozbe-wz-heft/wz-heft-d-0-201812-xlsx.xlsx?__blob=publicationFile&v=1

An alternative source from the coal industry gives higher employment figures of 15,872 according to the above explanations. These figures also include employees in lignite-fired power plants. URL: https://braunkohle.de/wp-content/uploads/2018/10/WoM-Maa%C3%9Fen_Schiffer_320.pdf

Salts
The figures were provided by the Association of the Potash and Salt Industry (vks).

Quarried natural resources
Different employment figures can be found in the literature. The employment figure given by the Federal Employment Agency was chosen because it comes closest to the definition of the quarried natural resources sector in the D-EITI report ("Natural stone, gravel, sand, clay and kaolin and other mining/quarrying n.e.c.").

The statistics of the Federal Association of Mineral Resources (Bundesverband Mineralische Rohstoffe e.V.) aggregate differently and report 22,270 employees in the category "gravel and sand works and natural stone extraction sites" for 2018. – URL: https://www.bv-miro.org/wp-content/uploads/miro_geschaefts-bericht_2018_2019.pdf

[ii] The figures on the **production volumes** (chapter 2.b.) were taken from the following publications: Hard coal and lignite are based on (SDK 2019) "Coal mining in the energy sector of the Federal Republic of Germany in 2018' (Der Kohlenbergbau in der Energiewirtschaft der Bundesrepublik Deutschland im Jahr 2018). The figures for crude oil and natural gas were taken from (LBEG 2019) "Crude oil and natural gas in the Federal Republic of Germany 2018' (Erdöl und Erdgas in der Bundesrepublik Deutschland 2018). The figures for potash and potash salt products, special clay, rock salt, boiled salt, industrial brine, kaolin, quartz gravel and sand, gravel and sand, crushed natural stone, artificial stone and lime, marl & dolomite stone are based on (BGR 2019 (German Federal Institute for Geosciences and Natural Resources)) "Deutschland – Raw materials situation 2018". 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 2019) 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 2018 average cross-border prices (BGR 2019). The values for potash and potash salt products, special clays (values according to Destatis), rock salt and industrial brine (values according to Destatis) and kaolin (values according to IM 2018 (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 2019]. 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 had been declining steadily for years and production was terminated in a socially-acceptable manner at the end of 2018.
2.6 million tonnes of usable output were extracted in 2018. An approximate value of €247 million for this quantity can be estimated from the average 2018 cross-border prices for power station coal.

Lignite
At 166.3 million tonnes, lignite extraction remained around the previous year's level. According to the estimate of the BGR, this corresponds to a value of €2,218 million.

Crude oil
German crude oil production in 2018 was approx. 2.1 million tonnes. As in the case of hard coal, the BGR again used the average 2018 cross-border prices as a basis for estimating the value of crude oil production at €783 million.

Natural gas
2018 saw 6.9 million m^3 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 2018 cross-border prices as a basis for estimating the value of natural gas production at €1,402 million.

Potash salt
Two companies in Germany extract potash salt and magnesium salt. The usable extracted output in 2018 amounted to 6.2 million tonnes in the form of potash and potash salt products (BGR 2019). The BGR calculated that the total quantity of these products has a value of roughly €1,746 million.

Clay
In 2018, around 14.48 million tonnes of usable clay (fine and coarse ceramic clay) were extracted in Germany. The clay in question is high-quality material for the ceramic industry, refractory clays as well as brick clays. According to the Federal Statistical Office, the BGR calculated the value of this amount at €141.4 million.

Rock salt, industrial brine and boiled salt
15.2 million tonnes of rock salt and industrial brine (NaCl content) were extracted in Germany in 2018. The BGR calculated the value of that quantity to be €381 million, based on value information from the Federal Statistical Office.

Kaolin
Kaolin or china clay is used mainly in the paper industry and in the production of fine ceramics. According to the BGR, 1.0 million tonnes of kaolin worth €73 million was extracted in 2018.

Quartz gravel and sand
10.7 million tonnes of quartz gravel and quartz sands were extracted in 2018, valued at €221 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 2019], where they are used in e.g. civil engineering and in the manufacture of concrete. In 2018, 259 million tonnes of gravel and sand were extracted, with a value of €1,733 million, as well as 226 million tonnes of broken natural stone with a value of €1,632 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. façade cladding or as wall and floor covering. They are also used as windowsills, steps and gravestones. In 2018, 0.45 million tonnes of this natural resource were extracted, with an estimated value of €46 million (source: BGR).

Limestone, marlstone and dolomite
54.9 million tonnes of limestone, marlstone and dolomite valued at €846 million were extracted in 2018 (source: BGR). Limestone is used in many sectors, including home and road construction and in iron, steel, cement, glass and foodstuffs production.

SOURCES:

[AGEB 2020] – Energy Balances WG (AG Energiebilanzen e.V. (2020):
"Energy consumption in Germany in 2019." (Energieverbrauch in Deutschland im Jahr 2017)
URL: https://ag-energiebilanzen.de/index.php?article_id=29&fileName=ageb_jahresbericht2019_20200325_dt.pdf

[BGR 2019] – Federal Institute for Geosciences and Natural Resources (Bundesanstalt für Geowissen-

schaften und Rohstoffe) (2019): “Germany – Raw Materials Situation 2018” (Deutschland – Rohstoffsituation 2018)

[BGR 2020] – Federal Institute for Geosciences and Natural Resources (Bundesanstalt für Geowissenschaften und Rohstoffe) (2020): BGR Energy Study 2019 – Data and developments in German and global energy supply (BGR-Energiestudie 2019 – Daten und Entwicklungen der deutschen und globalen Energieversorgung) (23). – 200 S.; Hannover. – URL: https://www.bgr.bund.de/DE/Themen/Energie/Downloads/energiestudie_2019.pdf?__blob=publicationFile&v=3

[Destatis] – Statistisches Bundesamt (various years): Survey portal. – URL: https://erhebungsportal.estatistik.de/Erhebungsportal and (various years): Producing industries (Produzierendes Gewerbe). – URL: https://www.destatis.de/DE/ZahlenFakten/Wirtschaftsbereiche/IndustrieVerarbeitendesGewerbe/IndustrieVerarbeitendesGewerbe.html

[IM 2018] – Industrial Materials (2018): IM Price Database

[LBEG 2019] – State Office for Mining, Energy and Geology (Landesamt für Bergbau, Energie und Geologie) (2019): Crude oil and natural gas in the Federal Republic of Germany (Erdöl und Erdgas in der Bundesrepublik Deutschland) – URL: https://www.lbeg.niedersachsen.de/download/144280/Erdoel_und_Erdgas_in_der_Bundesrepublik_Deutschland_2018.pdf

[MIRO 2019] – Federal Association of Mineral Resources (Bundesverband Mineralische Rohstoffe e.V.) 2018: “The German Stone Quarrying Industry. (Die deutsche Gesteinsindustrie) – Report of the Management Board 2018/2019” (Bericht der Geschäftsführung 2018/2019)

[SDK 2019] – Statistics of coal economy e.V. (2019) (Statistik der Kohlenwirtschaft e.V. (2019): “Coal Mining in the Energy Industry of the Federal Republic of Germany 2018.” (Der Kohlenbergbau in der Energiewirtschaft der Bundesrepublik Deutschland 2018) – URL: https://kohlenstatistik.de/wp-content/uploads/2019/10/Kohlenwirt_Silberheft_final.pdf

[iii] The data (chapter 5.a.) was taken from the current national accounts of the Federal Statistical Office (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 Statistical Office, 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.

[iv] **Preliminary remark**

The tax amounts shown in the table (chapter 5.b.i.) are based on special evaluations of the corporation tax statistics from 2010 – 2015, the trade tax statistics of 2010 and 2015 and the statistics on the partnerships and communities from 2010 – 2012 and 2014 – 2015 as well as estimates and updates of the Federal Ministry of Finance.

Only the “Mining and Quarrying” sector was analysed. 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 2015, the following years were extrapolated to 2018. 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: "National Accounts – An Overview of Key Facts" [VGR – Wichtige Zusammenhänge im Überblick], page 20 et seq.)

The tax amounts reported for the extractive 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 data was taken from the current national accounts of the Federal Statistical Office (as of August 2019). The state's total income includes not only income from taxes, but social security contributions, proceeds from the disposal of assets or investments (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/DE/Themen/Staat/Oeffentliche-Finanzen/fachbegriffe-finanz-personalstatistiken-pdf.pdf?__blob=publicationFile

Corporation tax

Statistical data from the years 2010 to 2015 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 2018 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. The trade income is the basis to determine a tax assessment amount in a nationwide uniform procedure. If the commercial enterprise has permanent establishments in several municipalities, the taxable amount is apportioned to the individual permanent establishment municipalities. The trade tax to be paid by the commercial enterprise is determined by applying the respective assessment rate of the municipality to the tax assessment amount or apportionment share. 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 2015 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 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 sub-

ject 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 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 solidarity surcharge are not part of the 2018 report.

[v] "The Federal States" revenues from extraction royalties (chapter 5.b.ii.) are made available to the Federal Ministry of Finance (BMF) by the Federal States for purposes related to the national financial equalisation mechanism as part of the monthly report 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 mine site royalties in their budgets. A summarised overview of the mine site royalties is not available. Most Federal States publish accumulated mine site and extraction revenues in their individual budgets. The revenue from the 2018 mine site royalties is only available for three Federal States: Bavaria, Brandenburg, and, Lower Saxony.

[vi] The data was taken from the "Annual Report for Business Operations for 2018" (Jahresbericht für Betriebe 2018) 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.

[vii] The German natural resources export data (chapter 5.d.) 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 – 2018 was taken from the Genesis Online Database by Destatis on July 22, 2020.

[viii] The data on the amount of subsidies (chapter 6) were taken from the 27th subsidy report of the Federal Government.
https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/2020-03-01-Subventionsbericht.pdf

[ix] The data on primary energy consumption in 2018 (chapter 7.2.a.) was taken from the database of the Working Group on Energy Balances: https://ag-energiebilanzen.de/10-0-Auswertungstabellen.html

BMWi (2018) (Federal Ministry for Economic Affairs and Energy): "Renewable energies in figures – national and international development in 2018".

(https://www.erneuerbare-energien.de/EE/Redaktion/DE/Downloads/Berichte/erneuerbare-energien-in-zahlen-2018.html)

SOURCES chapter 7.4:

[x] [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" (Die Nachfrage nach Primär- und Sekundärrohstoffen der Steine-und-Erden-Industrie bis 2035 in Deutschland).

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