EPH

Sustainability Report

2021

Year in review

EBITDA[1]

€ 2.3 billion

REVENUES

€ 18.9 billion*

CASH CONVERSION[2]

62.2 %

PAID IN INCOME TAXES

€ 416 million*

TOTAL EPH FOUNDATION CONTRIBUTION

€ 1 million

EPCG FOUNDATION PLANNED HELP FOR UKRAINIAN PEOPLE

€ 2 million

CO_2 EMISSIONS INTENSITY DECREASE COMPARED TO 2015

38 %

YEAR-ON-YEAR INCREASE IN POWER PRODUCTION FROM RENEWABLE SOURCES

8 %

YEAR-ON-YEAR INCREASE IN HEAT PRODUCTION FROM RENEWABLE SOURCES

20 %

NET POWER PRODUCTION FROM RENEWABLE SOURCES

3,959 GWh

NET HEAT PRODUCTION FROM RENEWABLE SOURCES

207 GWh

1 The presented EBITDA is defined as profit from operations plus depreciation and amortisation and is further netted for eventual impact of negative goodwill.
2 Cash conversion = (EBITDA – CAPEX – Tax paid)/EBITDA

* This data has received limited assurance from the independent auditing firm KPMG.

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Foreword

1 **Foreword**

Foreword by the CEO

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Laying a pathway to Energy Transition and Affordable Energy

EPH's focus on reducing GHG emissions

EPH's decarbonisation roadmap

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Foreword by the CEO

I am pleased to introduce you to the 2021 sustainability report of Energetický a průmyslový holding, a.s. (EPH).

The unprecedented challenges posed by the COVID19 pandemic combined with turbulent situation in the commodities market at the dawn of the war constantly reminded us of our key mission – to ensure stable and reliable supply of power, gas and heat to the energy systems of countries, regions, communities, businesses and individual customers. Throughout EPH's history, we have never failed on this mission and the same holds true for the year 2021. The unjustifiable Russian aggression and overall unpredictability of Russia's course of action have put back into spotlight the elementary principles that may have been sidelined or suppressed over the last few years or even decades in many European countries – namely that the security of energy supply only comes with diversification and with utilizing or, at least having an option to utilize, domestic primary energy sources rather than optimistically relying on sources provided by other countries. All that, to the maximum reasonable extent, on a sustainable and environmentally friendly basis. At EPH, we keep all these principles in focus. We strive to deliver on our key mission without compromising the sustainability goals collectively pursued by all EU countries and without giving up our ambition of being one of the European leaders in terms of carbon footprint reduction, achieving carbon neutrality of the EPH Group by 2050.

We are well aware of our responsibility for others. The uncertainties of the present have put strong emphasis on the social dimension of our business – on the trust that our customers and the customers of our customers place in our ability to deliver under any conditions and still on reasonable terms. On the trust that our employees place in our ability to manage the Group on a sustainable, long-term basis. And on the trust that our creditors place in our ability to always meet all our obligations duly and in time, even under the most challenging market conditions. While it is not within our power to influence the market prices of commodities or any of the key factors that actually drive them, we can structure our business so as to prioritize stability of supply, long-term sustainability of our activities and predictability of our course of action

for all stakeholders. It is in our DNA to look far and build on trust and long-term partnership, preferring long-term success for us and our stakeholders before individual short-term profits. More than ever in the past 30 years, the times to come will require social cohesion and mutual support between all key players on the European continent to overcome the unprecedented threats we are facing. The energy business has a pivotal role in this process, we are one of the key players on the European energy market, and we will deliver.

Transition from coal to zero or low carbon technologies can be socially sustainable. Our responsibility to deliver goes hand in hand with continuing energy transition of our businesses. We have committed to replace coal as source of power and heat by 2030 on all markets we operate in (with the exception of Germany, where we are proceeding in line with the *Kohleausstiegsgesetz*, the national legislation defining the path of winding down and ending coal-fired power generation by 2038 at the latest). We closed down coal fueled powerplants Deuben, Buschhaus, Provence 5 and two blocks of the Jänschwalde powerplant. The hard coal and oil units of the Northern Irish Kilroot plant will be replaced by state-of-the-art OCGT and other complementary technologies in 2023. We strive to refurbish our lignite-based combined heat and power plants in the Czech Republic by 2028 (first steps in that direction

By 2030 our CO_2 emissions will be down by 60% as compared to the emissions produced by our power fleet as of mid-2021.

were already made during 2021), and we have also announced and commenced investments into state-of-the-art hydrogen-ready CCGTs in Tavazzano and Ostiglia (both in Italy) and OCGTs in Tynagh (Ireland) and Leipheim (Germany) providing flexible power backing for local wind and solar parks. The EPH Group has already invested or committed to invest in the years to come over €2.4 billion to support Europe on its path to both carbon neutrality and energy sovereignty. Our new-built projects of controllable generation assets with low carbon emission footprint create new opportunities for energy workers, providing further testimony to our conviction that environmentally responsible, reliable, and affordable energy supply shall go hand-in-hand with social justice and job continuity.

By 2050, we will be carbon neutral. By 2030 our CO_2 emissions will be down by 60% as compared to the emissions produced by our power fleet as of mid-2021. On top of the accelerating transition from coal through conversion of existing plants into low-carbon units, we are also constantly on the lookout for implementing opportunities in the renewable segment. These efforts are primarily concentrated in EP New Energies, a subsidiary specialized on developing large-scale renewable projects, often realized on former mining sites in Germany. Since its establishment in 2019, EP New Energies already built up a massive development pipeline of more than 3 GW of onshore wind energy projects, ground-mounted photovoltaics (PV), rooftop PV and floating PV projects.

Hydrogen solutions – our priority for the future. Sustainable energy generation from renewable sources will need flexible power generation capacities and efficient, large scale storage solutions. This role could be satisfied in the first transition period by natural gas, which will be, when affordable and implementable, replaced by hydrogen and eventually other green gases. All our new gas fired power projects are built with best available hydrogen capability, and we are convinced that our strategically located gas transmission, distribution, and storage networks combined with strong technical expertise on one hand and our leading position and know-how in the domain of power generation on the other predestine us as a European leader able to present holistic and highly competitive hydrogen solutions with EU-wide importance.

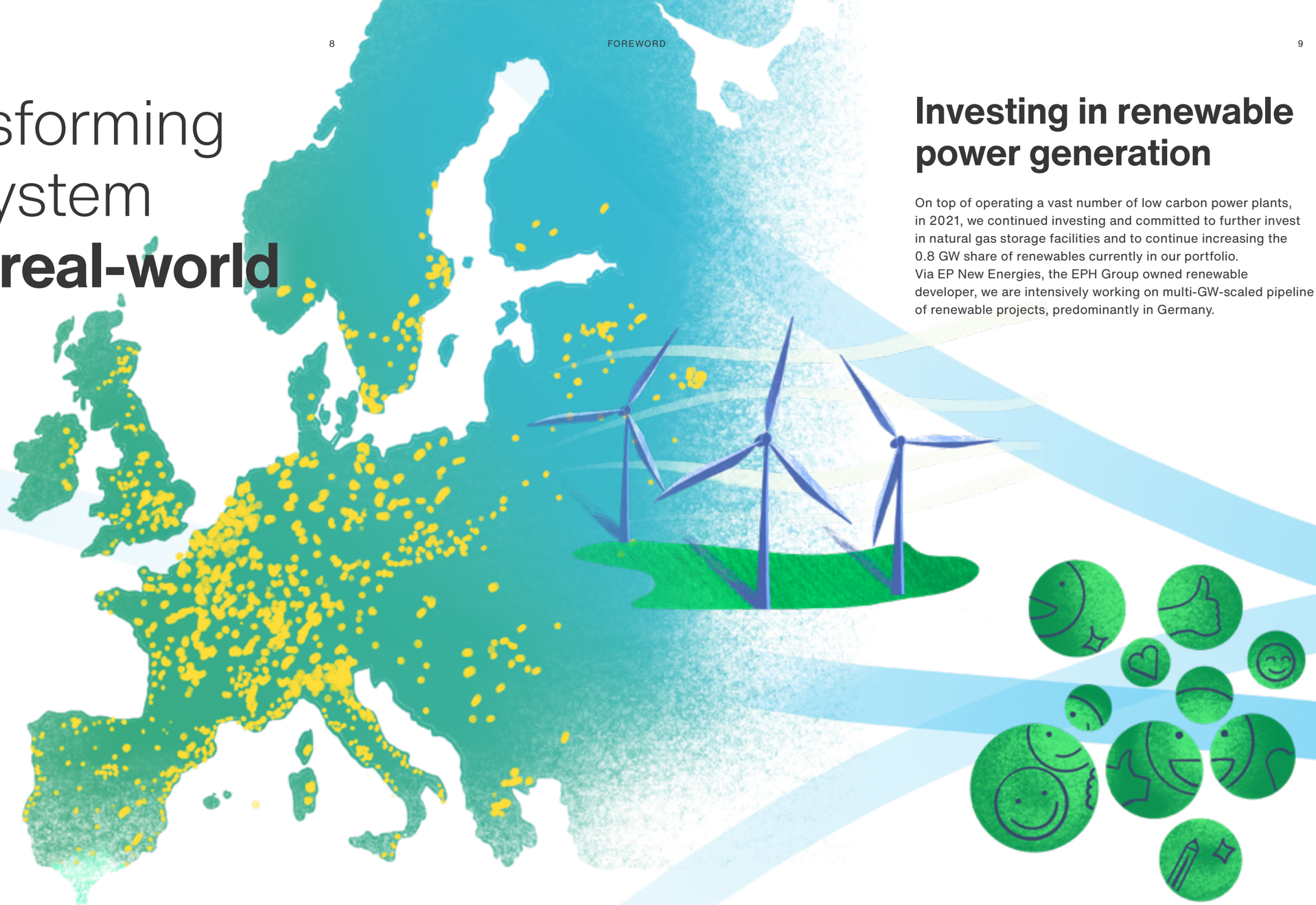
Let me take this opportunity to express my sincere gratitude to all our employees, partners and other stakeholders who make our mission possible. With courage, fairness, and soundness, I am sure we will succeed even in the most difficult times which Europe faced since the fall of the Iron Curtain and will deliver also in the years to come.

Sincerely,

Daniel Křetínský

Chairman of the Board of Directors and CEO

Actively transforming the energy system **and bringing real-world solutions**



Taking a genuine approach to our responsibility within the energy system requires applicable solutions. At EPH, we are committed to tackling both global challenges and satisfying our stakeholders' needs. We believe it is their sustainable fulfilment that creates a solid foundation for any structural change.

We take initiative in transforming the energy system. We accomplish this through our active decarbonisation strategy, investment in renewable power generation, and strengthening the security of European energy infrastructure and supplies.

By thoughtfully transforming and developing the infrastructure that the Group owns throughout Europe, we aim to enrich the local regions, people and environment; we give these properties, and future ones, further function and meaning.

Figure 1: Value chain infographic.

Investing in renewable power generation

On top of operating a vast number of low carbon power plants, in 2021, we continued investing and committed to further invest in natural gas storage facilities and to continue increasing the 0.8 GW share of renewables currently in our portfolio.
Via EP New Energies, the EPH Group owned renewable developer, we are intensively working on multi-GW-scaled pipeline of renewable projects, predominantly in Germany.

10,564
Number of employees

63 registered | **0** fatal
Number of H&S incidents

17 million
Hours worked by our employees

It's our employees, who create the value

For over 10 years, we have been offering stable conditions to our talents, which spans eleven countries. We have also remained committed to ensuring their health and safety, as well as supporting their personal and professional development. We appreciate our mutual dependencies – as our employees rely on EPH future sustainable development, however, no innovation is possible without their top talents.

Laying a pathway to Energy Transition and Affordable Energy

64.2 TWh
Gas storage capacity

2.3 thsnd. km
Natural gas corridor length

41.6 bcm
Gas transmitted

59.2 TWh
Gas distributed

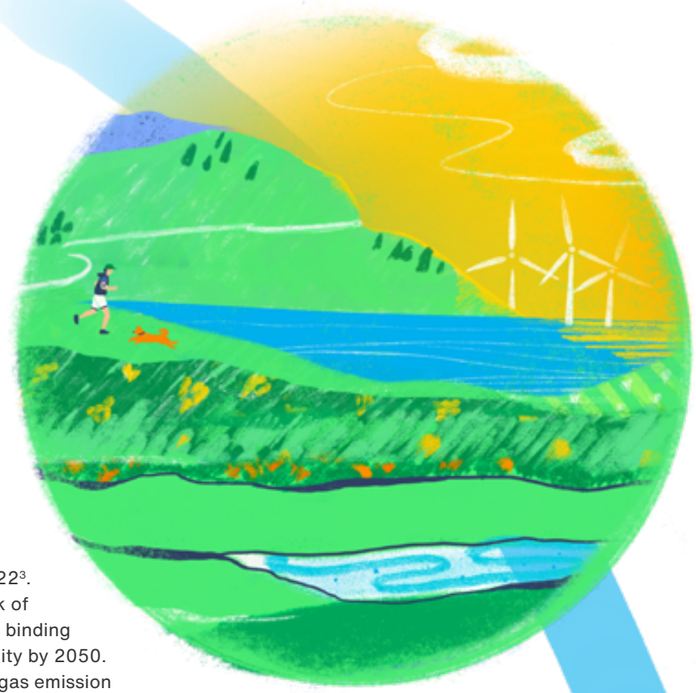
Gas for Europe

With a rapid increase in demand, but a decrease in domestic production, the eustream corridor has played a crucial role in supplying Europe with natural gas. As coal and nuclear sources are gradually phased out, meeting the basic needs of developed societies will require natural gas in the near to medium term before renewable gases such as hydrogen are deployed on a more significant scale. Our infrastructure is very well positioned to secure potential transit, storage, and distribution of hydrogen, which we expect to play a key role in storing energy from intermittent renewable sources.

The year 2021 was still affected by the COVID-19 pandemic. In combination with the turbulent situation on the energy markets during the past months, the 2021 proved to be exceptionally challenging, confirming the resilience of our business model. Combining power generation within the EP Power Europe group and gas transmission, distribution and storage and power distribution within the EP Infrastructure group, and conservative financial management of the whole Group, we have shown that our customers and business partners can count on us even in the most difficult times.

3 Source: Global Climate Change – Carbon Dioxide, Earth Science Communications Team at NASA's Jet Propulsion Laboratory, California Institute of Technology (climate.nasa.gov/vital-signs/carbon-dioxide/)
4 60% reduction by the end of 2030 compared to the status of our fleet as of August 2021.

Figure 2: Value chain infographic.



Carbon dioxide concentration in atmosphere continues to grow in an unsettling steady way, reaching 417 ppm as of March 2022[3]. The EU has – within the framework of European Green Deal – set itself a binding target of achieving climate neutrality by 2050. This requires current greenhouse gas emission levels to drop substantially in the next decades. As an intermediate step towards climate neutrality, the EU has raised its 2030 climate ambition, committing to cutting emissions by at least 55% by 2030. European Green Deal aims to transform the EU into a modern, resource-efficient and competitive economy, ensuring that (i) no net emissions of greenhouse gases by 2050, (ii) economic growth decoupled from resource use and (iii) no person and no place left behind.

EPH endorses and supports these targets and strives to actively contribute to achieving them. EPH aims to achieve net-zero carbon footprint before 2050. We are significantly reducing the carbon footprint of energy production having a goal of 60% reduction already by 2030[4], in deployment of renewable power generation and energy storage solutions, and, also, in providing much needed security of supply by backing up massively deployed intermittent renewable generation with our power generation capacity which we continuously improve to even more flexible. We also provide natural gas transmission, distribution, supply and storage services, vital for any customers using natural gas as a relatively low-carbon energy source and for securing the supply in moments when renewable sources are not able to cover the demand for electricity or heat.

The recent developments shown how fragile the situation is if Europe depends on irreplaceable imports from a single territory that becomes unstable or even hostile. The energy crisis reminds us of the importance of relying on domestic primary energies and resources and on proper strategic diversification of imports of the part that cannot be supplied domestically – aspects that have been in recent history considered not urgent as world seemed stable and good-will based cooperation taken largely for granted. The energy crisis that negatively impacts European industry and households, driving an inflation wave, also shows the importance of strategic reserves, both in terms of storage where possible and of reserve production capacity where any reasonable storage is not possible. EPH is proud that provides a significant gas storage, cutting edge electricity storage as well as flexible and reliable power generation capacity.

Securing a reliable and affordable energy supply

The flexibility of natural gas makes it an ideal partner for renewables while transitioning to a low-carbon future. We massively invest in better interconnections within the European natural gas market to further strengthen the infrastructure while increasing production efficiency by implementing state-of-the-art technologies. Moreover, we enhance the energy security of Central Europe by operating its most extensive, modern underground gas storage facilities, and we keep ourselves busy looking into innovative ways of storing power. The latest events in Ukraine further highlighted the importance of robust and flexible infrastructure for security of supplies.

42,871 GWh
Total energy production

11,131 MWe
Total installed capacity in electricity

3,095 MWth
Thermal capacity of boilers at heating plants

2,456 thsnd.
Number of connection points

853 thsnd.
Power and gas supply customers

Powering households

Essential physiological needs and access to basic services are non-negotiable foundations for any thriving society. We provide households and institutions with reliable gas, electricity and heat, while minimising our environmental impact through cogeneration. Coherently with the goal of “no person and no place left behind” it is our legal and moral obligation to provide access to basic services to vulnerable and disadvantaged groups.

Connecting business partners

When it comes to transporting goods and material, we are constantly increasing the share of rail transport, as it is known to release the least amount of GHGs, as well as being the most fuel-efficient freight system. We offer premium services and complex logistic solutions, including professional railway employee training.

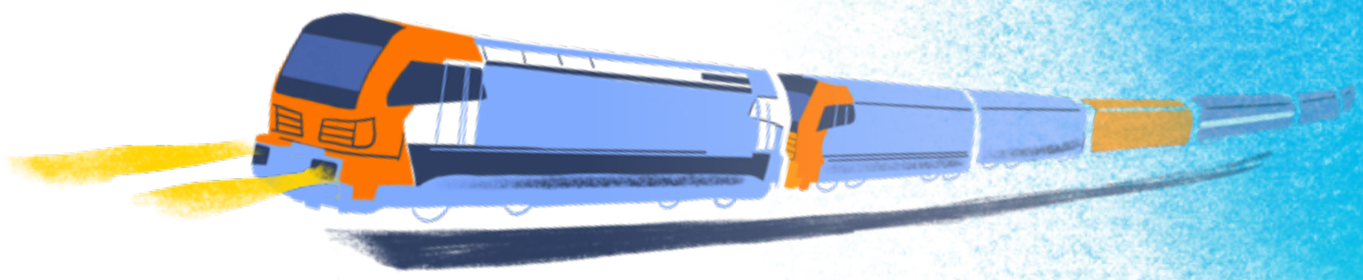


Figure 3: Value chain infographic.

EPH’s focus on reducing GHG emissions

The Group acknowledges the serious threat posed by human-induced climate change and is ready to play a major role in the energy transition, while ensuring continuity and affordability of the supply of basic commodities.

Despite near-term challenges posed by the military invasion of Ukraine for energy security in Europe, we are convinced that the energy system development will continue to be driven by long-term EU decarbonization goals.

EPH’s primary GHG emissions

Both CH_4 and CO_2 are produced through natural and human-related activities, making them the most common greenhouse gases and contributors to human-induced global warming.

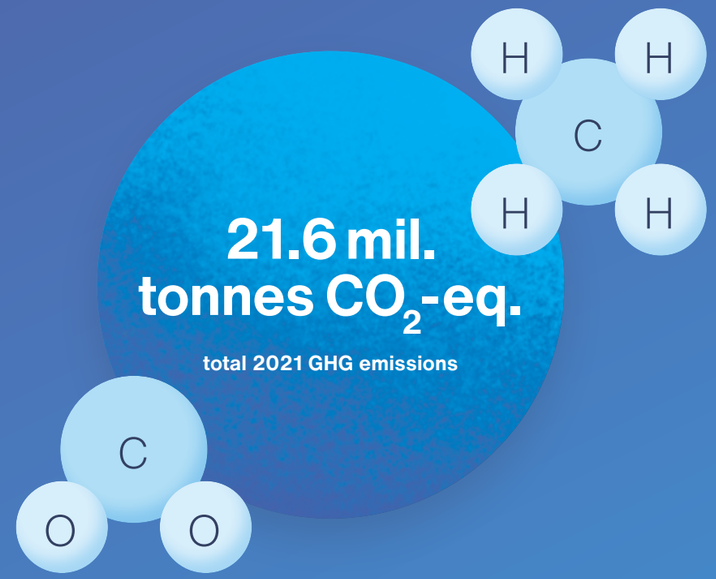
In 2021, **EPH’s GHG emissions mainly consisted of CO_2**, where methane only made up 1% of the total GHG CO_2-eq. emissions.

Methane (CH_4)[5]

CH_4 is predominantly emitted within our main business segments related to gas infrastructure (transmission, distribution and storage).

Carbon dioxide (CO_2)

CO_2 is predominantly emitted within our generation and mining, and heat infrastructure segments.



REDUCTION ACTIVITIES

Heat infrastructure & generation and mining

Within these business segments, EPH aims to implement concrete projects that will guide the Group in achieving carbon neutrality by 2050. These projects focus on **decommissioning the Group’s assets**, while keeping in mind the importance of controllable electricity production for society and economies.

Information about these projects and our commitments can be found in the “Decarbonisation roadmap” section of this Report.

Gas infrastructure

Within these business segments, EPH has been focusing its efforts on **proactively following developments and best practices** with regards to detecting, reporting and managing methane emissions. The Group’s progress within these reductions can be partly attributed to our **close cooperation with** and **participation in a number of associations** that further support this topic specifically within the energy industry.

Information about methane and the Group’s initiatives can be found in the “EPIF’s focus on methane” section of EPIF’s 2021 Sustainability Report.

5 Methane: For reporting and inventory purposes, we use 100-year time horizon global warming potentials (GWP) relative to CO_2 of 28. This value is recommended by the Intergovernmental Panel on Climate Change (IPCC) – the United Nations body for assessing the science related to climate change.

Commitments

Carbon neutrality
by 2050

Reduce CO_2 emissions by 60% by 2030

We have created a clear and resilient transition roadmap for our assets, thereby guiding generating plants existing within our fleet as of August 2021, when the target was set, to a 60% reduction in CO_2 emissions compared to our 2020 levels[6]. The roadmap is illustrated on the following page.

Zero coal as a primary source of generation by 2030 outside of Germany, and in line with the Coal Phase-out Act (Kohleausstiegsgesetz) in Germany, as approved by the German government

EPH has established a clear plan to undergo transformation process with its lignite and hard coal power plants outside of Germany until 2030 and in Germany by 2038 (while 2035 is set as a target year for fully consolidated companies, plants operated by our equity participations are scheduled to operate until 2038), and in line with deadlines dictated by the Coal Phase-out Act. It should be also noted that our non-consolidated German operations are predominantly using domestic natural resources as the source of the primary energy, hence contributing in a substantial way to energy independence of Germany and to supporting the ever growing yet intermittent renewable generation. Some of these power plants will be converted to zero or low-emission fuels, like gas or biomass, depending on the specific conditions of each site.

Create a Green Finance Framework for use, where applicable, within EPH Capital Structure Strategy

Once developed, the EPH Green Finance Framework shall serve as a basis for the financing of any future eligible project, in line with the ICMA Green Bond and LMA Green Loan Guidelines.

Become a European frontrunner in the transition to a hydrogen future

EPH believes that storage of energy in the form of green gases represents an important link to accelerate deployment of intermittent renewable power sources. Therefore, the Group has embarked on several projects to ensure that its midstream and downstream infrastructure is ready for large-scale transit, distribution and storage of hydrogen. In addition, we are evaluating and participating in several projects relating to hydrogen production and subsequently using hydrogen as a fuel in power generation.

6 For the purposes of target setting, CO_2 emissions from entities disposed of in 2020 were excluded from the 2020 emissions, thereby creating a comparable basis. The target also does not include emissions of entities acquired after 2020.

EPH's decarbonisation roadmap

EPH's roadmap serves as guide for reaching our decarbonisation goals of 60% CO_2 emission reduction by 2030 and carbon neutrality by 2050, where the Group's projects focus on the decommissioning and conversion of individual plants.[7]

EPH is committed to continually working towards finding and implementing real solutions, rather than merely offloading our emissions, so that we can continue to provide affordable services.[8, 9]

Conversion and decommissioning plans

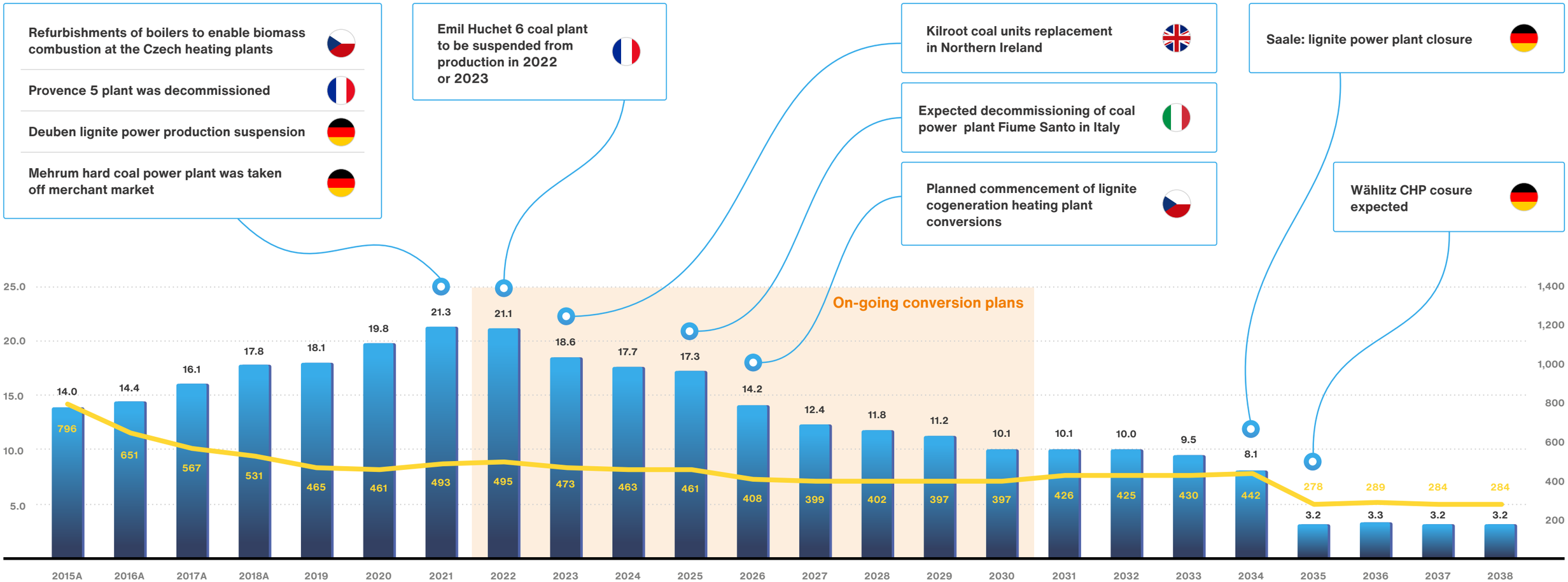


Figure 4: Decarbonisation strategy infographic.

7 Reduction of CO_2 emissions by 60% from generating plants within our fleet as of August 2021 by 2030.

8 Emission projections and future intensities are only indicative and are solely based on management estimates with respect to the Group's activities (decommissioning and conversion of individual plants). This forward-looking information is subject to future management decisions, market developments, as well as other unpredictable risks and events.

9 Potential new builds are not included in the projected figures. However, EPH expects to develop renewable sources in line with its long-term goal of carbon neutrality by 2050.

Conversion and decommissioning plans: a closer look at EPPE

MIBRAG:
lignite mining and power generation

Deuben power plant was decommissioned in 2021 based on a successful coal phase-out auction in Germany. Development plans for the subsequent use of this site are being further evolved in cooperation with regional stakeholders. Wahlitz, MIBRAG's second lignite power plant is expected to be in operation until 2035. Wahlitz is projected to deliver 240 GWh of electricity annually, along with 650 TJ of heat in efficient cogeneration mode.

Mehrum:
hard coal power plant

Mehrum power plant was taken off merchant market in December 2021 after a successful auction for decommissioning. Mehrum is still kept operational as per request of the German transmission system operator for network stability purposes until further decision.

EP Kilroot:
coal power plant

Kilroot power plant is expected to be decommissioned in 2023, ahead of the coal phase-out set for 2024/2025 by the UK government. Current power production from coal is driven by a capacity contract to ensure grid stability. The closed coal capacity (dual boilers combusting coal and oil) is planned to be replaced by two highly efficient and flexible Siemens OCGTs with a combined capacity of approximately 700 MW. A substantial portion is already supported by secured capacity contracts (591 MW) with the remaining capacity to be tendered.

Saale:
lignite power plant

We are planning to end the operations of German powerplant Schkopau in 2034. This is in line with the current German government coal phase out plan.

GazelEnergie:
coal power plants

Provence 5 was decommissioned in 2021 following an agreement with trade unions, which is one year ahead of the official 2022 French coal phase-out, while Emile Huchet 6 will be also decommissioned.

EP Produzione:
coal power plant

Due to the shortage of power generation capacities in Sardinia, **Fiume Santo is operating in a must-run mode until 2024**. The Italian government announced the coal phase-out deadline for 2025, which we fully support in relation to Fiume Santo. Subsequent development plans for this site are being considered.

Conversion and decommissioning plans: a closer look at EPIF

Czech Republic: 2021 lignite cogeneration heating plant conversions

In 2021, United Energy completed refurbishment of an existing lignite boiler. The project allows for 100% biomass combustion within the boiler.

In 2021, Elektrárny Opatovice commenced the process of gradual decommissioning two out of six lignite boilers.

In 2021, Plzeňská teplárenská completed refurbishment of an existing boiler. The share of biomass co-combusted, along with lignite, has a capacity of up to 80% within the boiler.

Czech Republic: future planned lignite cogeneration heating plant conversions

In 2026, United Energy plans to commission a medium CCGT unit, which will complement the existing biomass boiler (came into operation in 2021).

Discussions on the development of a waste incinerator plant are ongoing with local authorities.

In Elektrárny Opatovice, we strive to replace the remaining lignite units with several CCGT units by 2028 if feasible.

Discussions on the development of a waste incinerator plant are ongoing with local authorities.

By 2028, we aim to install CCGT units at both plants in **Plzeňská teplárenská**, complementing the existing biomass unit and waste incinerator plant.

EPH's Approach to Sustainability

This is the seventh annual Sustainability Report published by EPH. While the Group continues to align itself with the United Nations 2030 Agenda for Sustainable Development, we are also committed to our decarbonisation and overall GHG emission targets, which aim to guide EPH to achieving carbon neutrality by 2050.

The aim of this Report is to highlight and address the environmental, social, and governance aspects of our operations. It was written in accordance with the Global Reporting Initiative standards[10], while aligning with the United Nations Sustainable development goals and the 2030 Agenda. Data and case studies from our operations can also be found in the Sustainability Reports of our subsidiary, the EPIF Group, who have been reporting annually since 2018. This Report allows EPH to provide detailed information regarding our business strategy, operations, and commitments.

We plan to issue our next Sustainability Report for 2022 in 2023.

10 GRI Standards: Core option (2016 edition).

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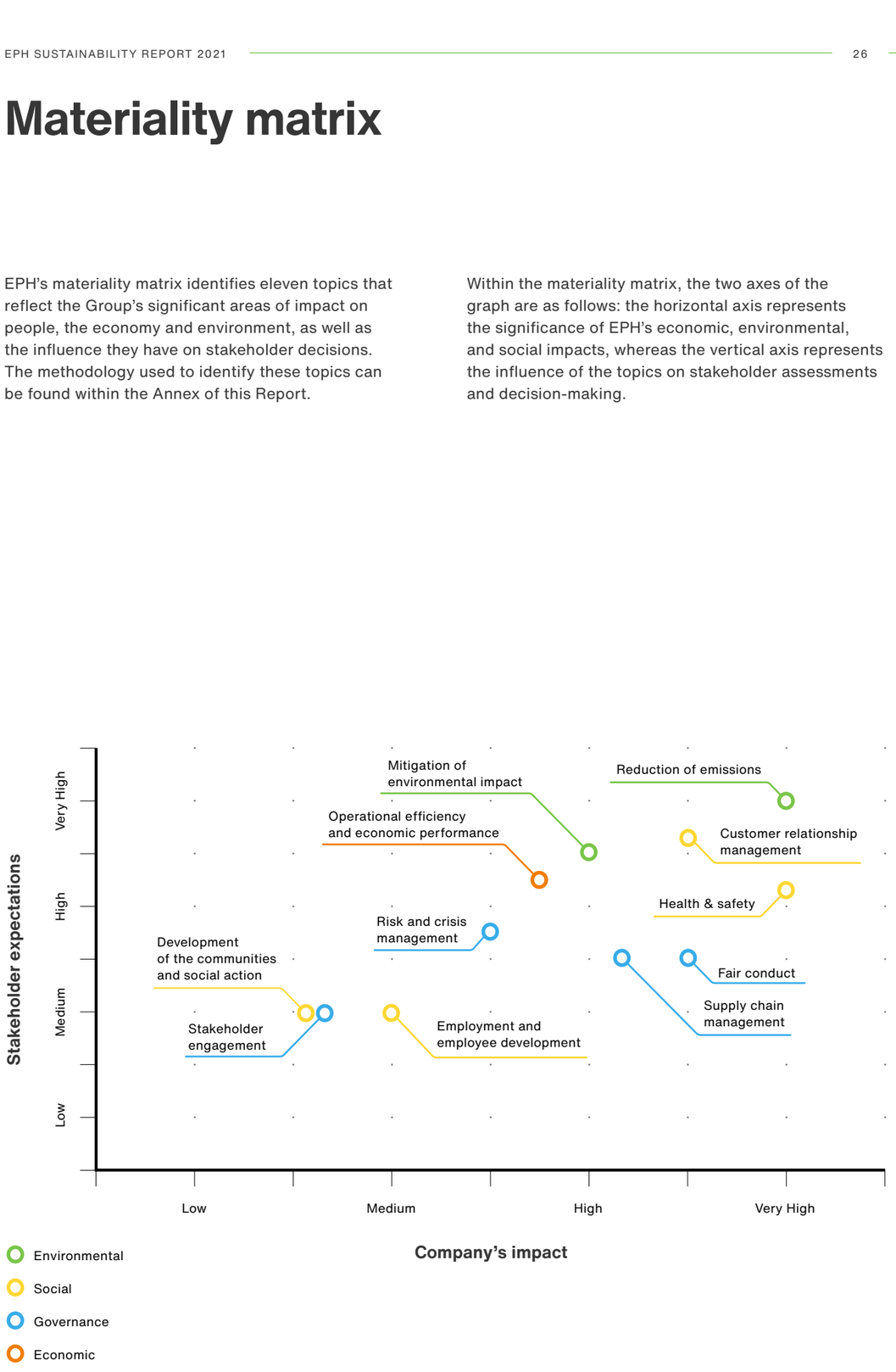
Materiality matrix

EPH's materiality matrix identifies eleven topics that reflect the Group's significant areas of impact on people, the economy and environment, as well as the influence they have on stakeholder decisions. The methodology used to identify these topics can be found within the Annex of this Report.

Within the materiality matrix, the two axes of the graph are as follows: the horizontal axis represents the significance of EPH's economic, environmental, and social impacts, whereas the vertical axis represents the influence of the topics on stakeholder assessments and decision-making.



ESG ratings

The EPH Group understands that addressing environmental, social and governance matters is vital in being able to achieve overall sound operations. Our commitment to continuously improving within the areas of ESG has consisted of some key activities, including the approval and implementation of Group wide ESG-related policies, publicly disclosing and committing to a decarbonisation strategy. In 2021, this was reflected in a strong ESG rating received from Sustainalytics.

Additionally, within the EPH Group, EPIF obtained its first ever ESG rating from Sustainalytics in 2019, which was most recently updated in 2021 (for 2020). In 2020, EPIF became the first company in Central Europe with a publicly disclosed ESG rating report from S&P Global, which was also updated in 2021. The Group's current ESG ratings are highlighted in the table below.

Agency	Group	ESG rating
SUSTAINALYTICS	EPH	NEGL (0–10) · LOW (10–20) · MED (20–30) ▼ · HIGH (30–40) · SEVERE (40+) 22.0 (medium risk) a lower score indicates better management of risks; at the time of receiving our score, we held the 15th position[11] from all companies within the multi-utilities sector
SUSTAINALYTICS	EP Infrastructure	NEGL (0–10) · LOW (10–20) ▼ · MED (20–30) · HIGH (30–40) · SEVERE (40+) 20.0 (low risk) a lower score indicates better management of risks; at the time of receiving our score, we held the 6th position[11] out of 62 companies within the multi-utilities sector
S&P Global	EP Infrastructure	66/100 a higher score indicates better ESG performance

Table 1: Current ESG ratings.

11 Represents position at the time of the rating issuance.

Sustainable development goals

As part of EPH's sustainability commitment, we report on our alignment with the United Nations Sustainable development goals and the 2030 Agenda. Working across all ESG fields, we strive to contribute to their timely fulfilment. We focus our efforts on strict regulatory compliance, modernisation of our facilities, and robust monitoring. With the help of renowned ESG rating agencies, we will continue to identify every opportunity to further improve our performance.

To fully support our commitment to the 2030 Agenda, we approved our decarbonisation strategy goals, which include reducing CO_2 emissions from generating plants existing within our fleet as of August 2021 by 60% by 2030 compared with 2020 levels. We aim to achieve carbon neutrality by 2050, in line with the official 2050 EU climate-neutrality objective. These long-term goals are supported by medium-term goals and more specific targets listed in the section "EPH's decarbonisation roadmap." These goals are fully in line with the EPIF's goals to reduce CO_2 emissions by 60% from existing generating plants by 2030 and to achieve carbon neutrality by 2040.

At the core of the 2030 Agenda for Sustainable Development are 17 Sustainable development goals (SDGs) that represent a set of globally agreed-upon targets. These targets address the environmental, social, and economic challenges that we face today, and will continue to face in the future.

Because of EPH's energy focus, we have identified several SDGs that are of high relevance to our business and its operations, and to which we believe we could significantly contribute to achieving.

SUSTAINABLE DEVELOPMENT GOALS

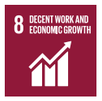
SDGs of high relevance

Ensure access to affordable, reliable, sustainable and modern energy for all

EPH actively promotes the transition to a new energy model that is more sustainable and inclusive for the energy and utilities sector. The Group puts significant effort into building renewable energy facilities as well as accelerating our transition to less emission-intensive sources of energy (e.g. biomass and natural gas) through the decommissioning and conversion of our assets.

Ensure sustainable consumption and production patterns

When providing services, EPH thinks long-term, which is why we aim to promote energy efficiency. It is imperative to ensure quality pipelines and other parts of our distribution and transmission systems. We proudly employ people who are committed to contributing to the conservation of the environment by maintaining the highest level of infrastructure efficiency. We are also dedicated to raising customer awareness on responsible energy consumption and savings.



Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all

As a major energy provider, EPH contributes significantly to economic growth and fair employment. We pride ourselves on being able to create jobs for individuals and provide energy to families, companies, and other entities, all of which are crucial for a well-functioning society. Through our services, we promote sustainable and inclusive development and support socioeconomic progress.

Take urgent action to combat climate change and its impacts

At EPH, we are strongly committed to focusing our efforts on climate action. This is evident, for example, in our gradual shift to a less emission-intensive energy mix and our aim to reach carbon neutrality by 2050. We are also committed to continuously gathering data and pursuing strategies that have the potential to mitigate the impacts of climate change.

Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

One of EPH's major societal contributions is its operation of reliable, safe, and high-quality energy infrastructure. Notably, EPH continues to be a key driver of innovation for sustainable industrialisation among its competitors. Our recent efforts include increased digitalisation of activities and services and enhanced transparency. Furthermore, we invest in innovative solutions such as hydrogen, enabling future energy systems. We believe hydrogen is more than a low carbon product because it links different energy sectors and thus increases flexibility and resilience of our economies.

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels

At EPH, ethics is at the core of our values. It is important for us to have moral principles at the forefront of all our work, so that we can continuously create inclusive opportunities. We do this, for example, by ensuring trust through inclusive governance, fostering collaborative relationships and addressing social conflict.

EPH and its Business

EPH is a leading energy company headquartered in Prague, Czech Republic, that operates in multiple European countries.

EPH is a vertically integrated energy company covering the complete value chain in the energy sector, including more than 50 companies operating in electricity and heat production from renewable and conventional sources, electricity and heat distribution, electricity and gas trading and their supply to final customers, gas transmission, gas storage, lignite extraction, and logistics. The Group is an important regional player in the gas industry, operating critical midstream and downstream gas infrastructure. EPH is one of the 5 largest industrial groups based in the Czech Republic in terms of EBITDA.

1 Foreword

2 EPH's Approach to Sustainability

3 EPH and its Business

Timeline

EPH Group structure, geographical presence and business overview

EPIF, EPPE and EPLI Group overviews

Equity participations

Operational efficiency and economic performance

4 Environment

5 Governance

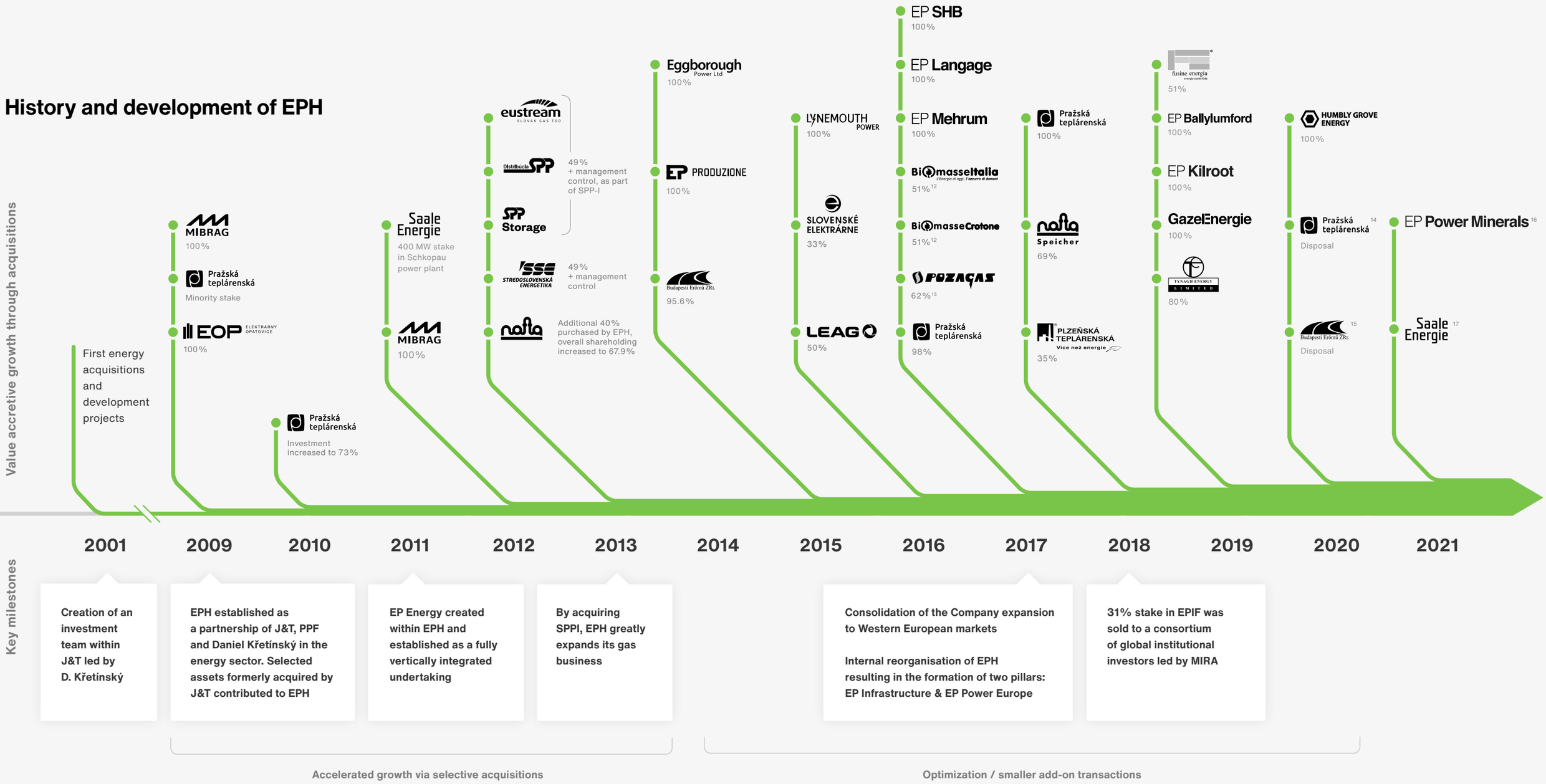
6 Social

7 Assurance

8 Annex

Timeline

History and development of EPH



Formation of EPH

The core of the current EPH management team began to take shape in 2001 headed by Daniel Křetínský. Shortly after its formation, the team began to focus on corporate investments in the energy business and changed its approach from being a financial investor to being a strategic investor. The formal foundation of EPH took place in 2009, when its original shareholder (J&T) contributed certain assets and cash to the Company in order for EPH to become a platform for strategic investments in the energy and ancillary industries, headed by Daniel Křetínský who at that time had a 20% stake in EPH.

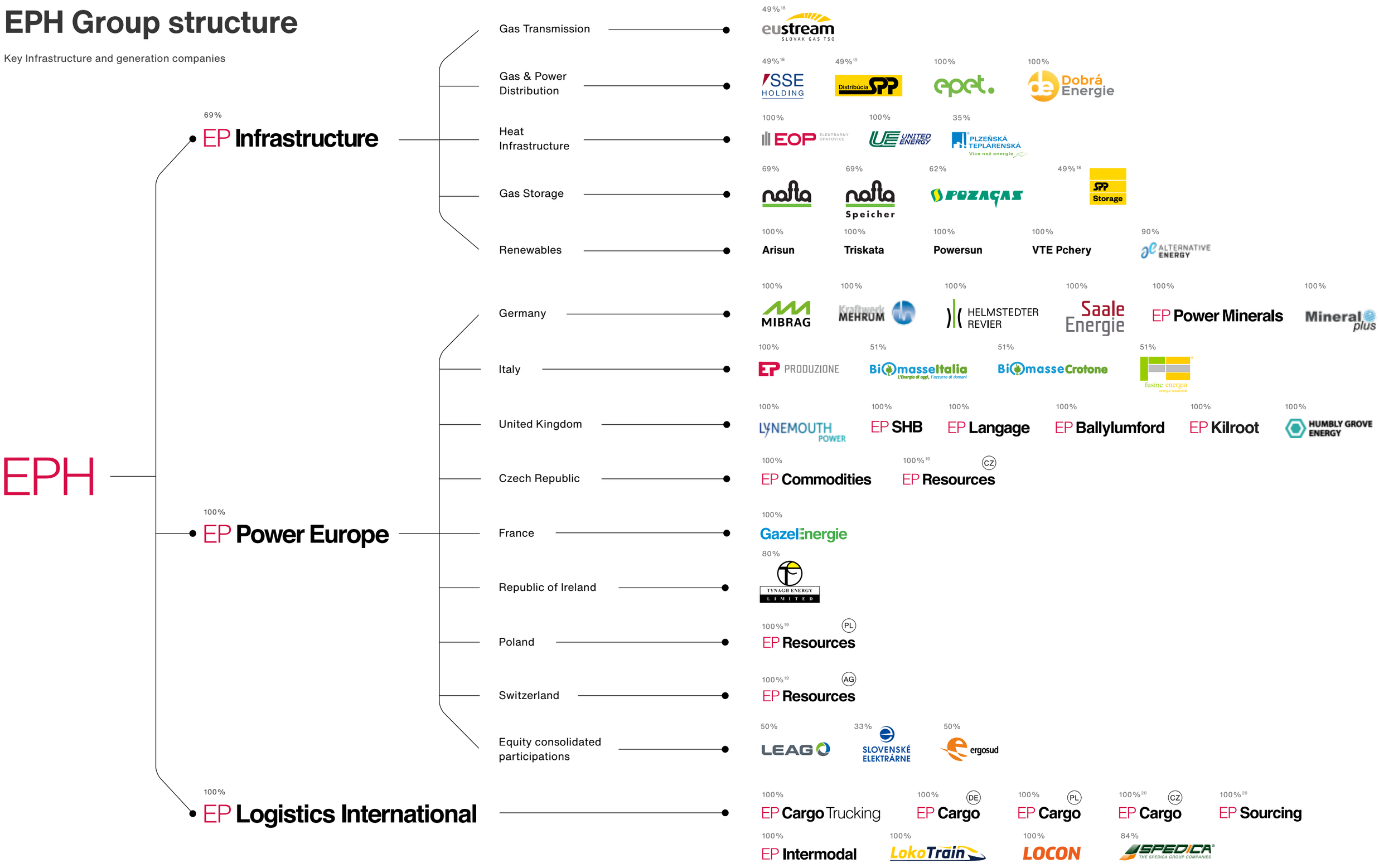
Figure 5: EPH's timeline of development.

* The timeline excludes our logistics Group, EPLI. There is a dedicated section describing the Group further in the report.

12 49% share of Biomasse Italia, Biomasse Crotone and Fusine was sold to LEAG in July 2019.
13 EPIF's effective shareholding.
14 Disposal of Pražská teplárenská in November 2020.
15 Disposal of BERT in December 2020.
16 Acquisition of EP Power Minerals GmbH in May 2021, previously STEAG Power Minerals GmbH. This includes the acquisition of a subsidiary MINERALplus GmbH.
17 Acquisition of the remaining approx. 58% share in the Schkopau power plant to become the sole owner in October 2021.

EPH Group structure

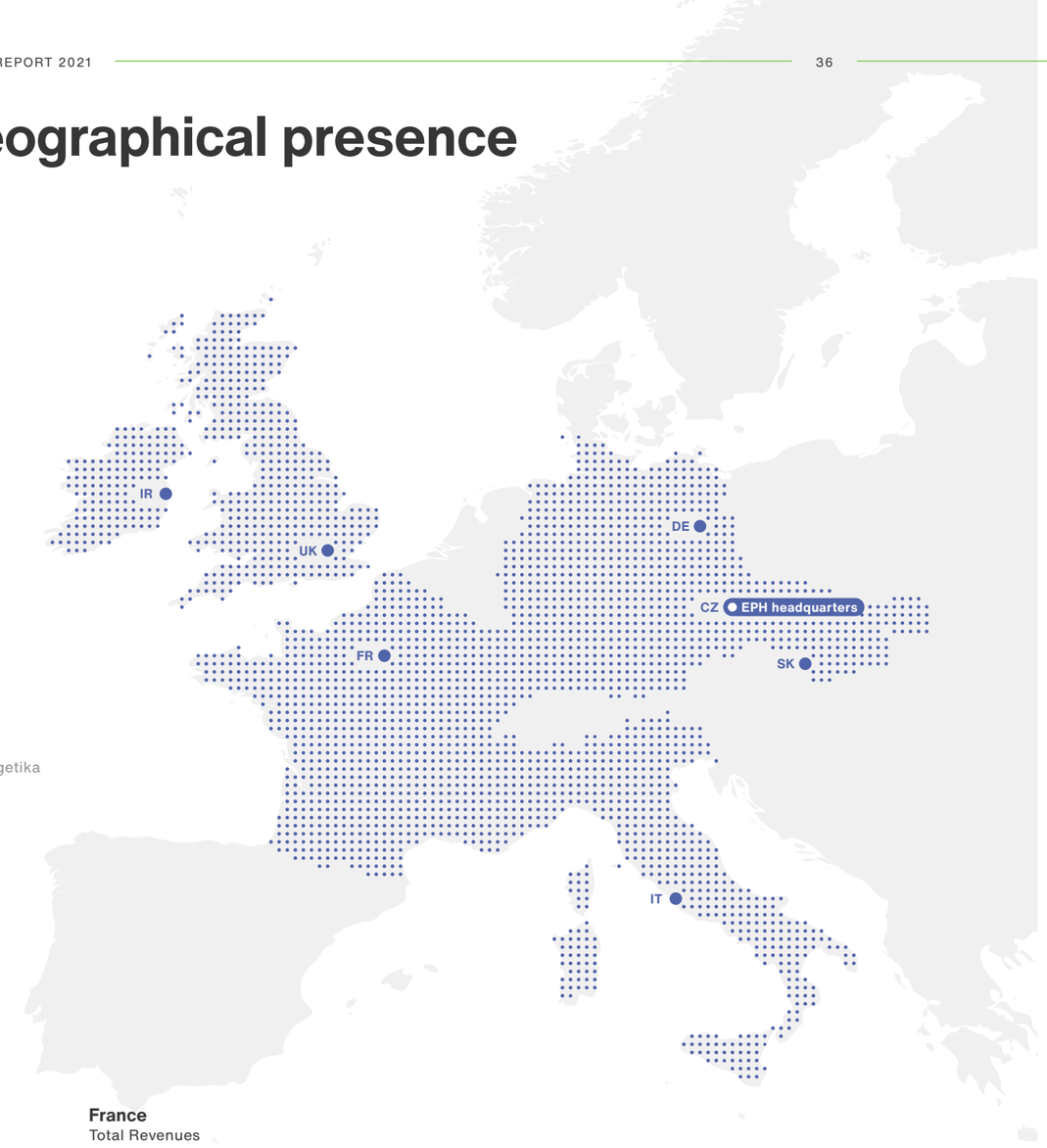
Key Infrastructure and generation companies



18 49% including management control.
19 EP Resources CZ, PL and AG, which fell under the EPLI Group in 2020, have been under the management of the EPPE Group since January 2021, as represented in the EPH Group structure.

20 EP Cargo and EP Sourcing, which fall under the EPIF Group, are categorised as Logistics, representing the management overview.

Our geographical presence



United Kingdom
Total Revenues
€ 3.06 bn

EPH Companies:
Lynemouth Power
Eggborough Power
EP SHB
EP Langage
EP Ballylumford
EP Killroot

Slovakia
Total Revenues
€ 1.87 bn

EPH Companies:
eustream
SPP - distribúcia
Stredoslovenská Energetika
Nafta

Italy
Total Revenues
€ 2.43 bn

EPH Companies:
EP Produzione
Fusine Energia
Biomasse Crotone
Biomasse Italia

Germany
Total Revenues
€ 3.62 bn

EPH Companies:
MIBRAG
Saale Energie
Kraftwerk Mehrum
Helmstedter Revier
EP New Energies
EP Power Minerals
MINERALplus

France
Total Revenues
€ 0.94 bn

EPH Companies:
Gazel Energie

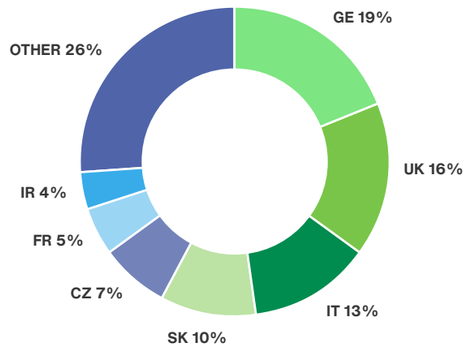
Republic of Ireland
Total Revenues
€ 0.84 bn

EPH Companies:
Tynagh Energy

Czech Republic
Total Revenues
€ 1.25 bn

EPH Companies:
Elektrárny Opatovice
United Energy
Plzeňská energetika
SPP Storage

Other revenues
Total Revenues
€ 4.92 bn



€ 18.93 bn*
Total revenues in 2021

Note: Fully consolidate core companies are listed here as at 2021.
SE, LEAG and Ergosud are not included as they are equity consolidated only.
* This data has received limited assurance from the independent auditing firm KPMG.

Business segments overview

Gas Transmission

Overview

This business segment is operated through eustream, which is the owner and operator of one of the major European gas pipelines and is the only gas transmission system operator in Slovakia. The transmission network of eustream is part of the Central Corridor, which is one of the largest and most important piped gas import routes in Europe.

Highlights

We focus on the continual modernisation and upgrade of our infrastructure, thereby reducing environmental impacts.

Our subsidiary operates one of the largest corridors for gas suppliers to Central, Western and Southern Europe.

We are prepared to play a key role in the hydrogen energy transformation.

eustream SLOVAK GAS TSO

Gas & Power Distribution

Overview

This business segment consists of the following divisions: gas distribution, power distribution, and their supply. SPP - distribúcia and Stredoslovenská distribučná are the natural gas and power distributors for the Group respectively. The supply of power and natural gas to end-consumers is conducted through EP Energy Trading and Dobrá Energie, with supply throughout the Czech Republic and Slovakia, and Stredoslovenská energetika Group, with supply throughout Slovakia.

Highlights

We focus on traditional distribution services that reflect modern trends.

Our subsidiaries are industry leaders:

1. SSE, through its subsidiary SSD, is the second largest regional electricity distribution company and a major supplier of electricity and gas to end consumers in Slovakia.
2. SPPD is the leader in Slovak natural gas distribution.
3. EPET and Dobrá Energie are important suppliers of electricity, natural gas, and related services in the Czech Republic and Slovakia.

SSE HOLDING
Distribúcia SPP
epet.
Dobrá Energie

Heat Infrastructure

Overview

This business segment focuses on supply and generation facilities relating to heat. Notably, the Group owns and operates heat cogeneration plants including adjacent district heating networks in the Czech Republic. The Group has also become an important power producer and key provider of ancillary services in the Czech Republic, with significant contribution to the transmission network's stability.

Highlights

Our subsidiaries are significant heat distributors and producers in the Czech Republic.

1. Notably, we are the largest heat and power producer in western Bohemia of the Czech Republic.

We keep prices affordable for all our customers.

Our subsidiaries are involved in major modernisation investment projects that will lead to higher production efficiency and reduced environmental impacts from our operations.

Gas Storage

Overview

This business segment consists of subsidiaries that store natural gas under long-term contracts in underground storage (UGS) facilities.
The Group has become a key player of natural gas storage in the Czech Republic, Slovakia and Austria, with significant share in the German market.

Highlights

We operate the largest gas storage capacities in Central Europe.

We focus on optimising our processes by investing in operational security, modernising storage technology, enhancing automation and utilising our collected information.

Our subsidiaries are industry leaders:

1. Nafta and Pozagas represent the largest storage system operators in Slovakia.
2. Nafta is a leading company in the exploration and production of hydrocarbons.

Renewables

Overview

EPH is active in generating energy from renewable sources and investing in projects to further expand this segment of business. The Group owns a portfolio of primarily biomass-fired plants, wind farms and photovoltaics.

Highlights

EPH operates three modern woodchip biomass power plants, two in Calabria and one in Sondrino, Italy, with a total installed capacity of 80 MW and one operating PV plant with a capacity of 1.24 MW. The plants produce about 600 GWh of power annually.

Our subsidiaries are industry leaders:

1. Lynemouth Power underwent a major conversion programme that converted the former coal-fired power station to 100% biomass power generation, powering approximately 450,000 homes.
2. Gazel Energie has a generation portfolio of: (i) six operating onshore wind farms, which represent 82 MW of net installed capacity located in Northern France, and (ii) 2 solar parks in Brigadel and Le Lauzet (South-Eastern France) with a combined net installed capacity of 11 MW.

EP Power Europe

EP Infrastructure

Generation and Mining

Overview

Our generation segment is primarily represented by investments in assets that generate electricity in condensation mode and are located in active or soon to be active capacity markets. Our mining segment is represented by subsidiaries extracting lignite from surface mines in Germany.

Highlights

Our subsidiaries are industry leaders:

1. The penetration of renewable energy in the UK will increase the need for fast and flexible generation. EPUKI and its gas plants are ready to cooperate on ensuring grid stability.
2. Through its assets, EP Produzione is one of the most important players in Italy with regards to electricity generation.
3. Gazel Energie is a significant energy producer and supplier of gas and electricity in France. Through their CO_2 emission reductions, they play an important role in France's decarbonisation strategy.
4. Tynagh Energy is the only steam power plant on the Irish market to reliably supply large amounts of electricity to customers.

EP Power Europe

HUMBLY GROVE ENERGY
KraftWerk MEHRUM
TYNAGH ENERGY LIMITED
Saale Energie
EP Kilroot
EP Ballylumford
EP PRODUZIONE
EP Power Minerals
EP Commodities
EP Langage
EP SHB
Mineral plus
GazelEnergie
HELMSTEDTER REVIER
MIBRAG

EP Logistics International

Overview

This business segment consists of subsidiaries whose core services support the Group's operations, primarily with regards to their transportation needs. This range of activities includes, but is not limited to, rail freight, freight forwarding, and railway training and staffing.

Highlights

EPLI employs over 600 people, operates 79 of its own locomotives and 2,000 railway wagons.

Our subsidiaries are industry leaders:

1. EP Cargo, through its national and international rail services, moved around 3.5 million tonnes of material in 2021.
2. EP Cargo Trucking CZ has over 100 of its own vehicles that are active in the Czech Republic, Slovakia, Poland, Germany and Austria.
3. Locon keeps around 40 locomotives and hundreds of freight wagons permanently on standby for construction logistics and freight transport. Locon also tests, maintains and repairs its locomotives and wagons in its own workshop.

SPEDICA THE SPEDICA GROUP COMPANIES
EP Intermodal
EP Cargo Invest
LOCON
EP Cargo (DE)
EP Cargo (PL)
LokoTrain
EP Cargo Trucking (CZ)
EP Cargo Trucking (SK)
EP Cargo Trucking (PL)

EPIF Group overview

EP Infrastructure (EPIF) is a leading European entity with large and diverse infrastructure asset base focused on gas transmission, gas and power distribution, heat infrastructure, and gas storage. The Group's principal operations are located in the Czech Republic, Slovakia and Germany. Measured by EBITDA, the EPIF Group is among the five largest industrial groups based in the Czech Republic. Notably, in 2021, there were no significant acquisitions made by the Group. However, at the end of 2020, the Group disposed of Pražská teplárenská and Budapesti Erömü, two of the Group's heat infrastructure entities. As a result, in 2021, this mainly influenced the Group's environmental indicators, as is further highlighted within this Report.

Significantly, in 2021, EPIF further focused on its development of internal policies and governance, which is elaborated upon in the *ESG governance at EPH* section of this Report. The policies can also be accessed from the EPIF Group website.

EPIF 2021
Key operations indicators

Net installed capacity – power
968 MW

Thermal capacity of boilers
3,015 MW

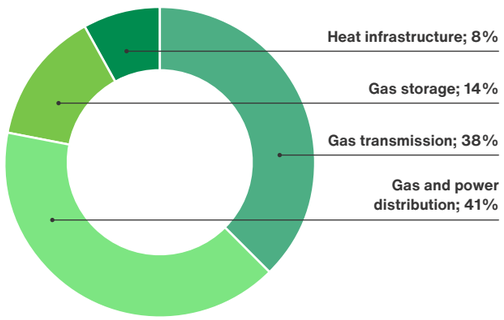
Net production – power
2,568 GWh

Net production – heat
2,726 GWh

Total net energy production
5,295 GWh

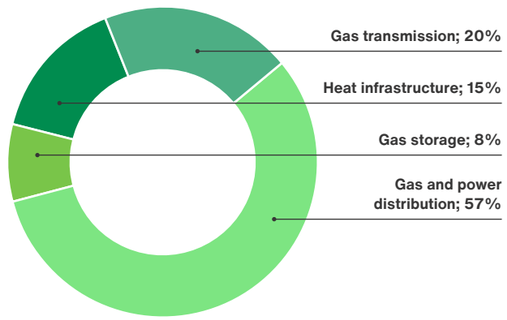
EBITDA and revenues[21]

2021 Adjusted EBITDA: EPIF



€ 1.3 billion
Total Adjusted EBITDA in 2021

2021 Revenues: EPIF



€ 2.8 billion
Total revenues in 2021

Graph 1: EPIF's financial indicators.

21 Amounts after IC eliminations.

2021 Highlights

Gas and electricity distribution

Monopoly gas distributor in Slovakia and sole power distributor in the region of central Slovakia.

Gas transmission

Operates the longest gas transmission route in Europe.

Heating infrastructure

Major operator of district heating infrastructure in the Czech Republic.

Gas storage

Market leader in gas storage in the region covering the Czech Republic, Slovakia, and Austria.

EPPE Group overview

EP Power Europe (EPPE) is a unique energy utility, focusing mainly on power generation from renewable and conventional sources. The company is also active in coal mining and commodity trading. EPPE operates in eight European markets: Germany, Italy, Switzerland, the United Kingdom, the Republic of Ireland, the Czech Republic, France, and Slovakia.

EPPE operates a balanced portfolio of power plants using primarily natural gas, coal, and biomass and other renewables. Through strategic gradual terminations of mining activities and coal-related operations, as well as massive investments in low-emission and green alternatives, EPPE aims to actively transform the energy system.

In 2021, EPPE implemented internal policies developed under the EPH Group. This is further elaborated upon in the *ESG governance at EPH* section of this Report. Additionally, the policies can be accessed from the EPPE website.

EPPE 2021
Key operations indicators

Net installed capacity – power
10,163 MW

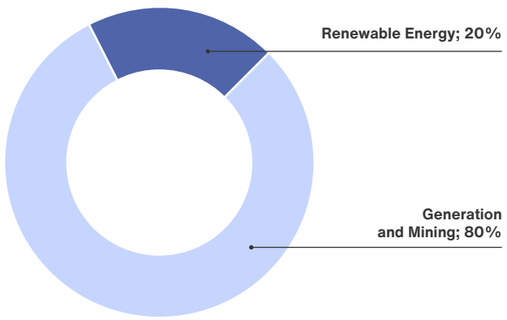
Net production – power
37,278 GWh

Net production – heat
298 GWh

Total net energy production
37,576 GWh

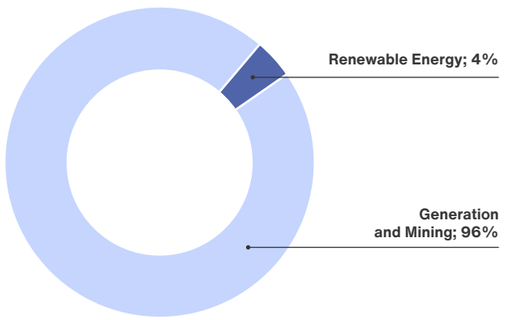
EBITDA and revenues[22]

2021 EBITDA: EPPE



€ 977 million
Total EBITDA in 2021

2021 Revenues: EPPE



€ 16 billion
Total revenues in 2021

Graph 2: EPPE's financial indicators.

22 Amounts after IC eliminations. When calculating indicators, we use EBITDA without considering intercompany transactions.

2021 Highlights

737 MW
We have a total of 737 MW of installed power capacities in renewable energy sources across our various regions of business, with more investments planned.

We operate **the only CCGT plant**
on the Irish market and highly efficient CCGTs with leading positions in the UK merit order.

We are aligned with the German **Energiewende efforts** and are fulfilling our role in the program.

We operate **modern biomass** plants in Italy that use biomass from wood chips and agro-food residuals.

We have a clear **decarbonisation plan** for our hard coal units, making us a decarbonisation leader in France.

We focus on **sustainable power generation,**
which is highlighted by the establishment of EP New Energies, EPH's renewable energy developer.

EPLI Group overview

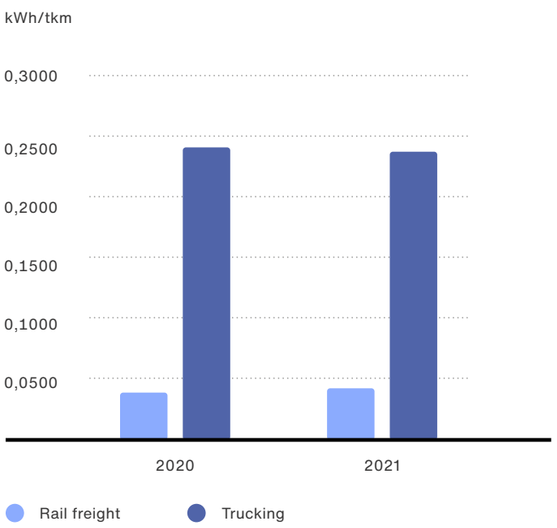
EP Logistics International (EPLI) was created around EPH's subsidiaries, handling the logistics associated with our business partners' transport needs. Nowadays, our business portfolio is mainly created by third parties (in terms of revenues). Our business focuses on rail, road, and intermodal transport. We additionally provide staffing and employee training, related to railway work, within our services. Overall, EPLI focuses on providing premium logistical services and solutions. Since its inception, EPLI has achieved steady and dynamic growth. To date, it has transformed into a profitable company with a well-established reputation.

EPLI's geographical coverage is bordering with Baltic, North Sea, Rhineland, Black and Adriatic Sea. The Group made no major acquisitions in 2021. At the beginning of 2022, EPLI implemented internal policies developed under the EPH Group. This is further elaborated upon in the *ESG governance at the EPH* section of this Report. Additionally, the policies can be accessed from the EPPE website.

In 2021, the EPLI Group experienced a 1% decrease in transport efficiency of rail segment compared to the previous year. Due to the COVID-19 pandemic, the production and export of Chinese goods was significantly limited compared to previous years. As a result, maritime transport was not utilised (missing goods or containers) and maritime transport collapsed on the Far East – Europe route. Prices of overseas container shipping has jumped sevenfold in some cases. Of course, this situation also affected the efficiency of rail transport, where railway companies were not able to use the maximum possible container transport capacity. Transport efficiency of Trucking segment remained almost unchanged compared to 2020.

In 2022, EPLI will issue its first stand-alone sustainability report for 2021[23].

Transport efficiency



Graph 3: Transport efficiency.

23 Further explained in "Restatements of information" within the Annex of this Report.
24 2016 was the start of data collection for this indicator.

2021 Highlights

2,000 railway wagons

EPLI operates 79 locomotives with more than 2,000 railway wagons.

600 people

EPLI employs over 600 people, with zero road fatalities of drivers or third parties since 2016[24].

0 fines

Since 2016[24], we have experienced

Vision

EPLI's goal is to become trusted European leader in logistics with interconneted professionals, hardware and service.

Equity participations

Slovenské elektrárne

Shareholder Structure

EPH completed the first phase of the acquisition of Slovenské elektrárne, the largest power generator in the Slovak Republic, on 28 July 2016. Slovenské elektrárne ("SE") had two shareholders as of 31 December 2021, with the majority shareholder being Slovak Power Holding B.V. ("SPH"), owning a 66% share in the company's registered capital. 50% of the registered capital was owned by EP Slovakia B.V. (a subsidiary of the EPH Group) and the remaining 50% was owned by Enel Produzione S.p.A. (a subsidiary of the Enel Group). The company's minority shareholder was the Slovak Republic, with a 33% share in the registered capital, represented by the Ministry of Economy of the Slovak Republic.

The Enel Group is a leading multinational energy company and a prominent integrated player in the global electricity and gas markets. The Enel Group is present in 31 countries across five continents, operating more than 83 GW of installed capacity and having an electricity and gas transmission grid of 21 million kilometres. With 65 million end customers, Enel has the largest customer base compared to other European competitors and is one of the leaders in the European energy market in terms of installed capacity and EBITDA.

Portfolio of Slovenské elektrárne

The portfolio of SE represents the critical energy infrastructure in Slovakia and in the Central European region, which also includes the Czech Republic, Hungary and Poland. It accounts for most of the installed capacity and generated power in Slovakia and represents 8% of installed capacity and 7% of generated electricity in this region. EPPE plays a key role in the region given its stakes in the power generation and supply in the Czech Republic and power generation, power and gas distribution and supply in Slovakia.

As of 2021, Slovenské elektrárne owned and operated a power plant portfolio with 3.9 GW of net installed capacity. This installed capacity consists of 1.9 GW of nuclear power plants, 1.6 GW of hydroelectric plants, 0.3 GW of coal power plants and 0.1 GW other sources. These power plants together generated almost 19.1 TWh, which accounted for approximately 65% of the electricity generation in Slovakia in 2021[25].

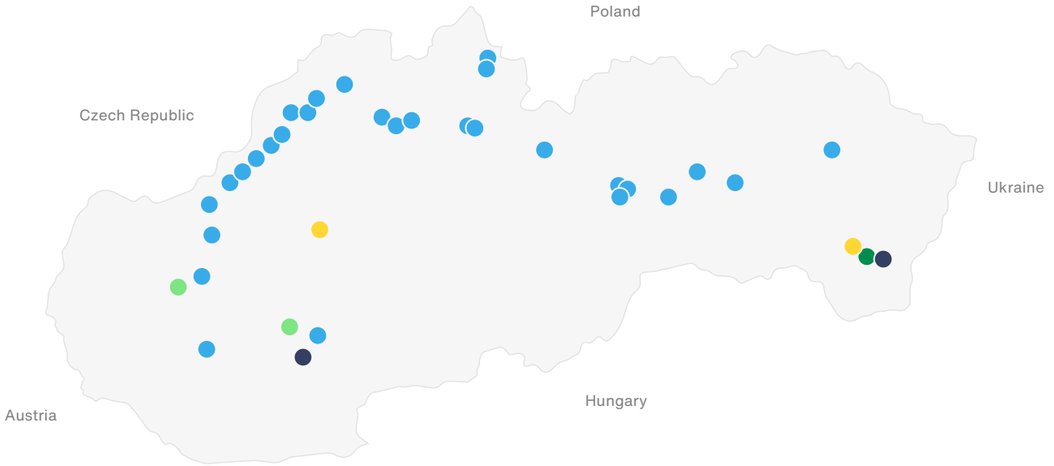
The SE remains fully committed to sustaining its investment plan for the upcoming years 2020–2024, focusing on the completion of Units 3 and 4 of the Mochovce Nuclear Power Plant. The vast majority of SEs' investments was directed at the construction of Units 3 and 4 in Mochovce.

Role of the assets in the Slovak energy market

In 2021, SE supplied 94% of its electricity without GHG emissions, thus proving the importance of its nuclear and hydroelectric assets for an environmentally-friendly and sustainable future.

The nuclear power plants of SE operate in a baseload mode, guaranteeing the stability of the electricity supply. They are complemented by a group of flexible run-of-river and pump storage hydroelectric power plants providing ancillary services for the grid. By contrast, lignite technologies are perceived as part of the transitional period in the upcoming years (the end of domestic lignite combustion in Slovakia is expected in 2023).

The SE portfolio represents critical and indispensable energy infrastructure in Slovakia.



31×	Hydroelectric power plants	1,590 MW
2×	Nuclear power plants	1,867 MW
2×	Thermal power plants	384 MW
2×	Solar power plants	2 MW
1×	Biomass	30 MW

Figure 6: Portfolio of Slovenské elektrárne.

25 Measured on gross electricity production.

Case Study
Operational efficiency

Slovenské elektrárne has been increasing the efficiency of its two Mochovce units by better utilising the heat produced in their reactors. This increases the electrical output without increasing the costs associated with nuclear fuel, personnel and maintenance (obsolete equipment is replaced with more efficient models rather than undergoing extensive repair and maintenance). In 2020 and 2021, the electrical output from unit 2 and unit 1 in Mochovce plant increased from 470 MWe to 505 MWe. This was a result of modernising the power plant's turbines, both block transformers and other equipment in the power plant's secondary circuits.

505 MWe

In 2020 and 2021, the electrical output from unit 2 and unit 1 in Mochovce plant increased from 470 MWe to 505 MWe.

The transition of the Vojany Power Plant from hard coal to the solid recovered fuel

In EVO there is an ongoing project to replace coal with significantly cheaper fuel, preferably from domestic sources. Operational tests for the change of the EVO fuel base from hard coal to solid recovered fuel – (SRF) began in 2019 year. In 2019 year, 5 tests were carried out for co-incineration of SRF in a ratio of gradually up to 50% SRF.

In 2020 and 2021 years, operational tests continued with 100% SRF. The EVO B5 unit reliably operated with 100% SRF (SRF pellets and free SRF) and biomass. At the same time, it was able to provide ancillary services.

In 2021 year, the necessary modifications for the operation of 95% SRF and 5% biomass plant were implemented. However, there was a delay in the execution of the work and at the same time the required parameters were not met.

In February 2022, the necessary adjustments were made with the new supplier. Full operation with SRF, enabling savings of 40–50% of CO_2 emissions compared to hard coal is planned in Q2 2022.

Long-term concept of EVO transformation

Development projects

1. Photovoltaics 1st stage 17 MWe, realization in 2024–2026 period
2. Photovoltaics 2nd stage 60 Mwe, realization in 2025–2028 period
3. Hydrogen production by electrolysis up to 20 MW, electricity from RES

It is a set of projects managed as intentions into the Slovakia's recovery and resilience plan and Just Transformation Fund.

Ecologization

1. Elimination of environmental risk
2. Recultivation of ash deposit and stabilizer deposit

It is a set of projects managed as intentions into the Just Transformation Fund.

Brown industrial park EVO

The subject of the project is a change of use and regeneration of the EVO power plant area and infrastructure and the creation of a brown industrial park, including the renovation and demolition of selected buildings, road modifications and network reloading.

The advantage of the EVO complex is the existing infrastructure, narrow- and wide-gauge railway connections, natural gas connection, water supply from the Laborec River, the possibility of outputting 110 kV, 220 KV or 400 kV. The disadvantage is the absence of a highway.

The business value of the brownfield's plan is based on maximizing the appreciation of property – especially land, buildings and infrastructure. This can be achieved in particular by selling or renting property.

The project is managed as an intention to the Just Transformation Fund. The SE seeks to obtain the maximum available co-financing from the Funds.

Case Study
Radioactive waste management

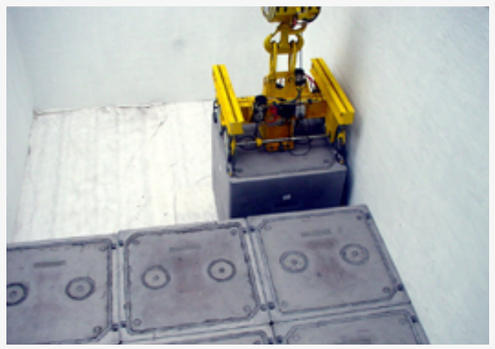
Policy commitment to responsibly managing radioactive waste (RAW or radwaste)

SE radwaste strategy and responsibility is in compliance with the Slovak National strategy and Atomic Law. As supervisor, the Nuclear Regulatory Authority (UJD SR) inspects that NPP exhibit safe and reliable operations.

SE, as a holder of the license for operation of nuclear installations performance, is obligated to ensure safe operations; the protection of workers and public from radiation is of top priority. Before terminating an NPP operation, the license holder is obligated to dispose of all RAW produced during operations.

Radioactive waste National strategy objectives:

1. **Low Level RAW** are combusted, compacted, solidified or fixed in a suitable matrix (by licensed technologies).
2. Fixed matrices are cemented to the Fibre Concrete Containers.
3. The final disposal of the fulfilled Fibre Concrete Containers occurs at the National RAW Repository.
4. **Very Low Level RAW** are disposed of in bags in separate premises of the National RAW Repository.
5. Temporary storage of **Intermediate Level RAW and High Level RAW** is completed by the operator (producer) in an integral storage facility.
6. The final solution of High Level Waste disposal – deep geological repository, should be in line with EC recommendations.
7. Basic principle of “polluter pays” is applied.



Picture 1: Fixed matrix being cemented to the Fibre Concrete Container.

Managerial or board level responsibility for radioactive waste management

There are “Limits and Conditions (Technical Specification) for Radioactive Waste Management,” as defined and approved by UJD SR for all activities during RAW management.

The nuclear installation director is responsible for overall nuclear safety in the process of RAW management. The shift supervisor is directly responsible for managing operations and their nuclear safety, as well as safety during RAW management.

Minimisation of radioactive waste generation

Since 2006, the Minimisation RAW generation project has been in effect, as the common project team is managed by the overhead operation department. Minimisation presents a continuous and long-term process of project changes, procedural changes, technical improvements and organisational measures aimed to increase process efficiency and performance.

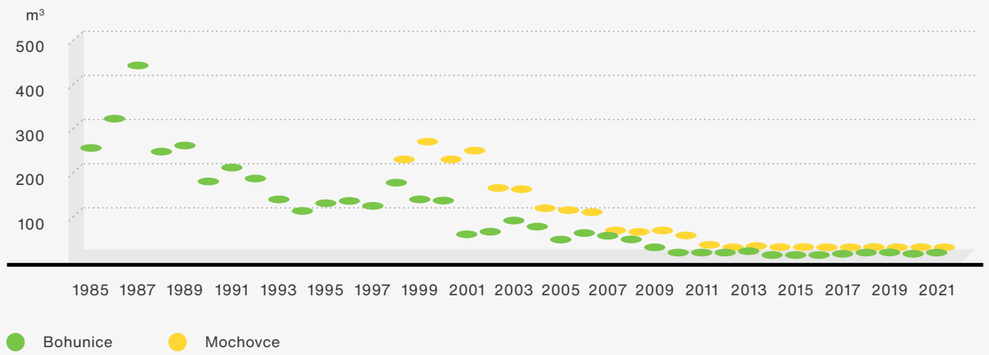
With regards to the regular IAEA international benchmarking project for radwaste management in NPP of VVER type, Bohunice and Mochovce NPP units have achieved the best results in radwaste production.

Operating guidelines, standards or procedures for radioactive waste management

“Plan for RAW management in EBO/EMO,” approved by UJD, is the basic document for the whole process control including handling and storage.

When handling RAW, safety culture principles are applied throughout all activities in NPP. To prevent human error from staff, a system that implements the rules for performance of work at NPP equipment is based on specific permits. To decrease the probability of mistakes made by staff by manipulations, a wide surveillance programme system is used.

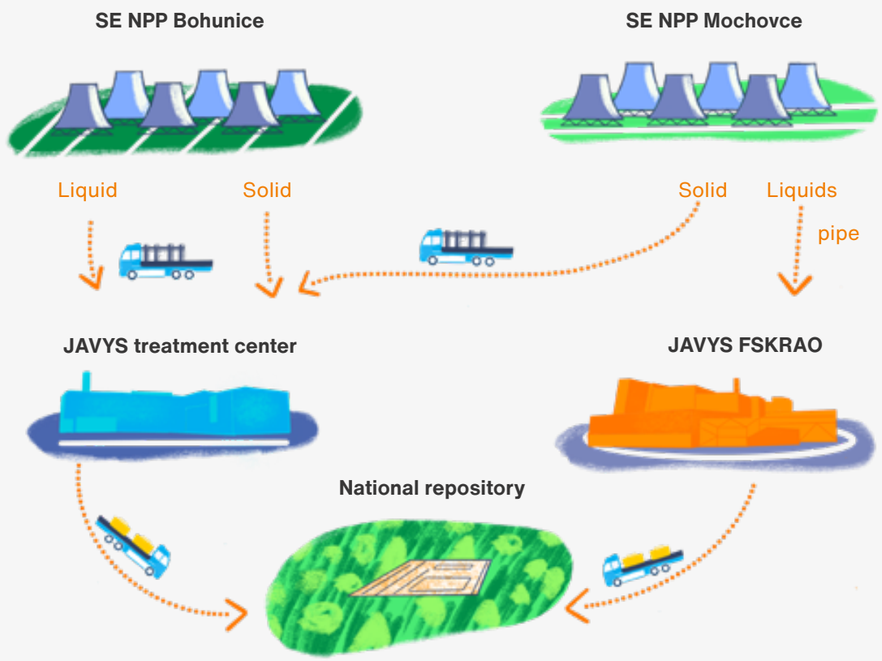
Radwaste concentrate generation minimization since commissioning



Graph 4: Minimisation of radwaste generation since Bohunice and Mochovce NPP commissioning.

Case Study
Radioactive waste management

Radwaste treatment chain



FSKRAO: final processing of liquid radioactive waste

Picture 2: Radwaste treatment chain.

The basic methods applied in the RAW management system in NPP are volume reduction, removal of radionuclides and change of composition (e.g. pressing, evaporation, ion exchange, filtration, and decontamination).

Basic categories of RAW produced in NPP operation:

Liquid radwaste

1. Concentrates (collected radioactive water, treated at an evaporator and stored in storage tanks)
2. Sorbents (used filter cartridges for cleaning radioactive water and stored in storage tanks)

Solid radwaste

1. Combustible
2. Compactible
3. Cemented
4. Metal
5. Air-conditioned filters

Main activities relating to radwaste management (treatment and handling) in NPP:

1. Radwaste generation planning.
2. Collection, measurement, registration, separation and decontamination.
3. Pre-processing or pre-treatment (low-pressing, waste water concentration at evaporator).
4. Temporary storage.
5. Transport for final treatment at the state company JAVYS.
6. Implementation of measures for minimisation of production RAW, reporting.

After meeting legislative criteria, the release of materials from NPP to the environment occurs when non-contaminated or low contaminated materials are released in an organised fashion.

Operating guidelines, standards or procedures for radioactive waste storage

Generated solid RAW after classification, measurement and registration are packed in bags and barrels. The barrels with RAW are stored in shielded concrete pits that assure radiation protection of workers during storage.

Generated liquid RAW are gathered in collected tanks, then they are thickened at an evaporator with the aim of volume reduction. Such thickened liquid RAW are then stored in storage tanks located in shielded concrete rooms.

RAW storing in the plant is only temporary (short-term). According to Act No. 541/2004 Coll. on Peaceful Use of Nuclear Energy, as amended, the operator is obliged "...to hand over radioactive waste, not later than 12 months from their origination to a legal entity determined for their further management...".

Operating guidelines, standards or procedures for radioactive waste disposal

All RAW from NPP are treated in a RAW Treatment Facility (owned by state company JAVYS). Concrete containers are the final form suitable for the National Repository of radioactive waste. SE, as a NPP operator, has no license for RAW storage in the National Repository. The only license holder in the Slovak Republic who has the license and duty for the final RAW storage in the National RAW Repository, as well as for the National RAW Repository administration, is JAVYS.

Training of employees on radioactive waste management

Workers are professionally prepared to work in NPP. Training performed in specialised centres and facilities, both externally and internally, and are supervised by UJD SR.

The basic professional preparation of workers performing activities with RAW consists of:

1. Theoretical preparation to acquire fundamental knowledge of NPP focused on the primary circuit.
2. Internships in NI to acquire a spatial orientation in structures and technological systems.
3. On-the-job training and professional preparation to train particular work activities related to RAW management.
4. Oral and written tests before a test committee to verify the acquired knowledge and skills.

Incident investigation and corrective action

SE's vision is to achieve excellent operational performance of our power plants, meaning safe, reliable, failure-free and efficient operations.

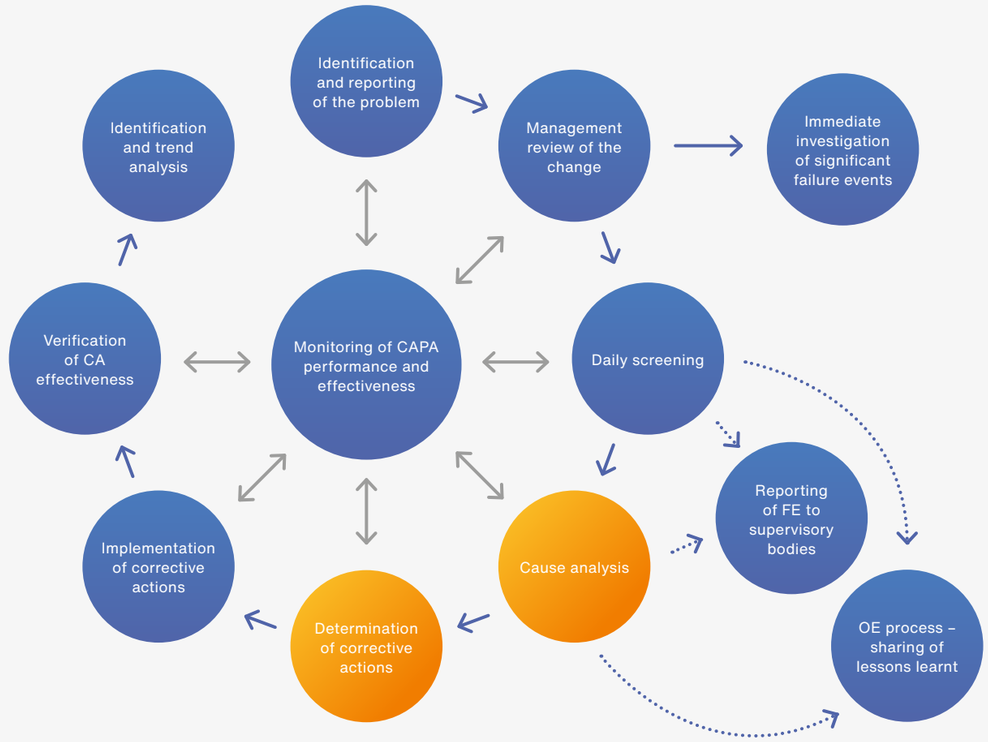
The following tools and systems are implemented to assure systematic, complex and sustainable nuclear safety, and continuous improvement:

1. Corrective and Prevention System (CAPA)
2. Self-Assessment and Benchmarking
3. Operating Experience Utilisation
4. Human Factor Reliability
5. Safety Culture

Error prevention tools are applied in EBO and EMO NPPs to prevent failure events (FE) or to minimise severity of the events, such as task preview, job-site review, pre-job briefing, self-checking, independent verification, three-way communication, phonetic alphabet, identification of steps and flagging.

For identification, reporting, analysis, identification of causes and registration of failure events, an effective system in compliance with UJD SR requirements and international experience from the sphere of NI operation feedback is applied.

The figure below highlights the whole process from identification of the problem, or the failure event, to review, root cause analysis, and acceptance of corrective actions.



Picture 3: Incident investigation and corrective action.

Lausitz Energie Verwaltungsgesellschaft (LEAG)

On 30 September 2016, a Consortium of EPPE and PPF Investments (the “Consortium”) completed the acquisition of German mining and generation assets in Saxony and Brandenburg from Vattenfall. Following the acquisition, EPPE now owns a 50 % stake in the holding entity Lausitz Energie Verwaltungs GmbH, which is the majority owner of the two key operating subsidiaries – Lausitz Energie Bergbau AG (former Vattenfall Europe Mining AG) and Lausitz Energie Kraftwerke AG (former Vattenfall Europe Generation AG), all together rebranded to LEAG. The portfolio comprises electricity and heat production, mining and refining. In addition, there are the services of the subsidiaries of Lausitz Energie Bergbau AG, among them Transport- und Speditionsgesellschaft Schwarze Pumpe mbH (TSS GmbH) as full-service provider for logistics, material and warehouse management, and the planning and engineering service company GMB GmbH.

LEAG’s power plants provide a stable and reliable supply of electricity and heat, with the crucial task of reacting flexibly to the fluctuating feed-in of wind and solar power and ensuring grid stability. As such, these assets represent a significant part of the flexible and dependable capacity in Germany, especially in times of the energy transition (“Energiewende”). At the same time, LEAG has taken into account the political and economic boundary conditions and revised its long-term mining and power plant operation concept dating back to 2007. The revised concept, published in March 2017, entailed a significant reduction in long-term mining volumes, especially affecting the Jänschwalde and Nochten sites. In 2019/2020, this concept was again severely affected by the politically accelerated German coal phase-out. Accordingly, LEAG adapted its concept again in early 2021, renouncing the utilization of Section II of the Welzow-Süd opencast mine, reducing the scope of the Reichwalde opencast mine, but also confirming the necessity of the Mühlrose section of the opencast mine Nochten.

As the largest electricity producing company in eastern Germany, LEAG is driving the development from being a mining and power plant operator to becoming a versatile energy, infrastructure and service company. It is expanding its own generation portfolio with future-oriented technologies and solutions contributing to the further transformation of the energy system. This includes the expansion of renewable energies on recultivated mining areas, but also the development of electricity storage capacities in batteries, grid-serving gas-fired capacities, the domestic hydrogen sector and partnerships with local municipalities.

Both socially and economically, the energy sector is of vital importance for the development of the mining regions. About 7,400 people work in LEAG’s opencast mines, power plants, administrative offices and service sectors. Additionally, a large number of jobs are created indirectly. Based on the interrelations with the wholesale, consumer and capital goods industry as well as other purchasing power effects, it can be assumed that for every direct job in the lignite industry, there is one more indirect or induced job directly in the district and one more outside the narrower geographical boundaries[26]. Since the energy and lignite industry is an important employer and reliable business partner for many suppliers and subcontractors, its sustainable transformation also plays a key role in the region’s long-term structural development.

LEAG’s operations include opencast mines in Jänschwalde, Welzow-Süd, Nochten and Reichwalde as well as the three large lignite power plant sites Jänschwalde, Schwarze Pumpe and Boxberg and one block in Lippendorf, together representing an installed capacity of 8 GW.

> “In 2021, the company has initiated permitting processes for 600 MW of renewables and commissioned one of Europe’s largest battery facilities with 53 MWh storage capacity. Based on the first year of successful operation further and larger batteries are planned.

26 Source: Commission for Growth, Structural Change and Employment final report, p. 52.

Role of the assets in the German energy market

Today's electricity supply in Germany is based on a mix of conventional and an increasing part of renewable energy sources. Conventional energy sources are lignite, hard coal, natural gas, oil and nuclear power. Today, these cover slightly more than half of Germany's electricity consumption. The renewable energies are primarily wind power, photovoltaic, biomass and hydro power. While renewables and lignite are domestic energy resources in Germany, the remaining fossil energy resources (hard coal, oil and gas) and uranium for nuclear power plants, are mainly imported.

In order to meet the political target of 80 % renewable energy by 2030 and a climate-neutral energy supply in Germany by 2045, a massive expansion of renewable energies is required, while also avoiding any shortcuts in security of supply. The condition for a stable electricity system is that the amount of electricity produced and consumed must be in continuous balance. Due to the fluctuating feed-in of wind and solar, resulting in a comparatively small proportion of around 10 % installed capacity that can be regarded as assured capacity, sufficient reliable large scale back-up capacities, electricity storage systems and cross-sector energy solutions based on hydrogen are required, which have yet to be developed, financed and built. In the meantime, the existing conventional capacities safeguard this transformation of the electricity system. Also, lignite-fired power plants, which in the past primarily provided constant baseload generation, react highly flexibly to the natural variation in wind intensity and solar radiation. With the phase-out of nuclear power by 2022 and coal by 2038, gas-fired power plants will remain as the only conventional bridging technology to fill supply gaps and stabilize the grid, so their importance is likely to grow.

Given the dynamic growth of renewable energies, and their legally granted priority dispatch, the balancing tasks of conventional power plants are increasingly complex.

Coal phase out in Germany

Following the decision of the Constitutional Court on Germany´s 2019 Climate Protection Act, the regulation was not only revised for the period after 2030, but also on the mid-term, culminating in an increase in CO_2 reduction to 65 % by 2030 compared to 1990. By 2045, Germany aims to be largely climate neutral. The law contains annual reduction targets for the industry, building, mobility and agricultural sectors for the period until 2030. The energy sector is expected to contribute the lion's share of the 2030 target, reducing its overall CO_2 amount to 108 million tonnes in 2030 compared to 280 million tonnes in 2020. The politically accelerated phase-out of coal power production is the key instrument to achieve this target.

As early as in the summer of 2018, the Federal Government set up the "Commission for Growth, Structural Transformation and Employment" with representatives from various economic and societal groups to make recommendations for the phase-out with the necessary economic and social support for the German coal regions. In January 2019, the Commission presented its final report, recommending a gradual reduction and an end of coal-fired electricity generation by the end of 2038 at the latest. At the same time, the Commission made proposals to support sustainable structural development in the regions affected.

Based on the Commission's report, the Federal Government has passed a law to end coal power production, including an annual phase-out plan for all lignite power plants and compensatory payments. The law, which entered into force in August 2020, is accompanied by a contract under public law between the German Federal Government and the lignite plant operators including LEAG, which includes detailed regulation of the decommissioning and the compensatory payments. The compensation is intended to enable the lignite plant operators to cope with the far-reaching structural intervention of the accelerated coal phase-out in their businesses and safeguard their recultivation liabilities including additional expenses for the necessary planning and operational adjustments and the social coverage of the phase-out for the employees. The appropriateness of the compensatory payments is currently being examined by the EU Commission in a state aid procedure.

According to the coal phase-out law the exit scenario for the Lusatian mining region is as follows: The 500 MW lignite power plant units Jänschwalde A-D and Boxberg N/P operated by LEAG are to be phased out between end of 2025 and 2029, as regards Jänschwalde A/B using the "prolongated decommissioning mechanism", comparable to the former "security stand-by mechanisms". The Schwarze Pumpe power plant and the two most modern units at the Boxberg power plant, units Q and R, are to follow by the end of 2038. The Lippendorf power plant in Saxony is scheduled for closure at the end of 2035. In 2026, 2029 and 2032 it will be checked whether units that are still in operation after 2030 can be decommissioned three years earlier. LEAG will nevertheless support this agreement by taking responsibility for its employees simultaneously.

Consequently, the Eastern German lignite sector once again contributes largely to the German CO_2 reduction targets. The gradual reduction of lignite power plant capacities will lead to a further rapid reduction in CO_2 emissions in this business area. To date, the closure of old power plants, modernisation and new construction in the eastern German power plant portfolio of LEAG and its predecessor companies has already achieved a CO_2 reduction of around 60 percent compared with 1990 (status 2020). By 2030, the reduction will be around 75 percent. In 2038, when the last power plant units are shut down, no more lignite will be mined and used to generate electricity.

After Federal Elections in September 2021, the new ruling coalition announced to further accelerate the coal phase-out "ideally by 2030", thus going beyond the legal status. In order to assess the feasibility of this political intend, the Federal Government has also announced to reschedule the 2026 review of the electricity system by the end of 2022.

In Germany, lignite is taking on an important role along the legally defined coal phase-out path for the transition to renewable energies and a sustainable and at the same time secure power supply. For the energy region of Lusatia, today's mining and energy industry serves both as a basis and starting point for long-term structural development with new value chains. LEAG considers itself as part of this development, transforming the company from a mining and power plant operator into a multifaceted energy, infrastructure and service provider.

Sustainability initiatives of LEAG

Large scale opencast mining has a significant impact on the landscape. Therefore, LEAG puts special emphasis on initiatives to minimise the impact and to recultivate the sites in a high-quality way to fulfil the requirements of future users and the ecology of the land. The recultivation processes focus on the restoration of forest, agricultural land and nature reserves in order to maintain biodiversity. This presents a unique opportunity for large-scale forest reconstruction. Such tasks can normally be achieved only by successive generations of forestry activity. Since the mid-1990s, more than 30 million trees have been planted on Lusatian mine sites. One recultivation focus in 2021 was the creation of forest areas in the Brandenburg opencast mines with around 89.4 hectares and in the Saxon opencast mines with 82.8 hectares of other use in the priority area for nature conservation. With 7,500 hectares in total LEAG is one of the biggest owners of forest land in Saxony and Lusatia.

About 10 % of the post-mining landscape areas are being reserved and prepared for agricultural use. LEAG transfers the land to the subsequent users only when the soil can be guaranteed to sustain crops and can be used for earning a living. Until then, the company and its contractors, mostly regional farmers, develop the land, supported by scientific monitoring. Since 2020, the cultivation of new crops such as hemp, lavender or pepper has also been tested. They are to be processed in Lusatia, too. In addition, at the edge of Reichwalde opencast mine LEAG created another one-hectare test field of Giant Reed Grass (Miscanthus) in cooperation with Technical Service Kuehn GmbH Goeda within the European Miscomar+ project.

Groundwater withdrawal is inevitable in the case of opencast mining. About 6 to 7 m^3 of water have to be pumped out to obtain one tonne of lignite. By constructing sealing walls wherever technologically and geologically possible the water withdrawal and its effect on the surrounding landscape is minimised. By reusing a significant amount of the pumped water for operating the power plants the total ecological impact is reduced and the electricity production is secured even in dry periods. About 70 % of the groundwater is fed back into the regional rivers Spree and Neiße, mostly after being treated in one of LEAG's seven water treatment plants.

In the post-mining landscape lakes will have a share of about 25 %. In the past years LEAG laid the foundation to develop the former opencast mine Cottbus-Nord into the lake Cottbuser Ostsee. Flooding started in April 2019 and the process should be finalized in the mid-2020s. In the post-mining landscape of the Nochten opencast mine, the more than 200-hectare Hermannsdorfer Lake has been flooded since 2018. It is part of a 16 square kilometre recultivation area reserved solely for nature conservation. With the "New Jeseritzen", a moor initial founded on peat from the opencast mine forefield is being developed in the direct vicinity of the lake.

So far, about 2,570 hectares of agricultural land have been created on former mining dumps. The post-mining landscape of the opencast mines Welzow-Süd and Jänschwalde offers particularly favourable conditions for agricultural areas.

Responsibility and future actions

Through other activities in Germany and elsewhere the Consortium, and particularly EPH, has proven that it is well positioned to fulfill all technical, legal and financial responsibilities related to the acquired assets. LEAG takes over all regulatory obligations related to the operations, including provisions for recultivation. Further models to guarantee the fulfilment of post-mining obligations, so-called "Precautionary agreements", have been concluded by Lausitz Energie Bergbau AG with the responsible mining authorities in Saxony and Brandenburg.

On this basis, two precautionary companies have been established in which – in addition to LEAG's statutory provisions – a special fund is being built up to provide further financial security for the restoration of the landscape after mining. The compensation payments by the Federal Republic of Germany for the accelerated coal phase-out are also to flow into these precautionary companies. To create value, the funds contributed can be invested exclusively outside lignite mining and lignite-based power generation, for example in renewable energies.

> "The Consortium and EPH fully respect the long-term targets of the "Energiewende" set by the government and are committed to operating their portfolio to support these targets, gradually reducing the climate footprint, within the framework of the Coal phase-out law of 2020.

The Lusatia lignite mining region

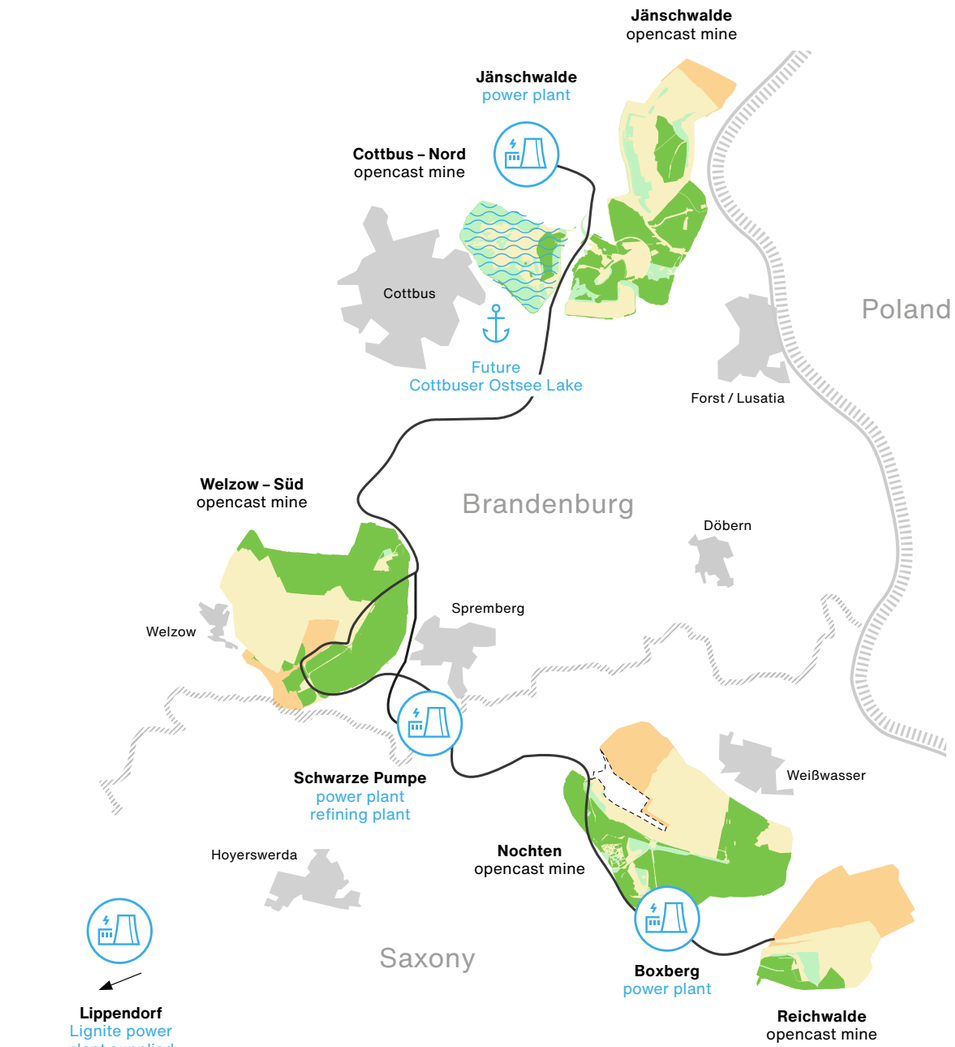


Figure 7: Lusatia mining region.

Progress on reclamation in 2021

Land creation and regeneration total (ha)	272
Agricultural	31
Forest	172
Other uses for nature protection	69

Table 2: Reclamation data 2021.

Case Study
LEAG's BigBattery Lausitz Storage Project

Electricity drives our economy and forms the basis of our society. The "Energiewende" confronts the system with major challenges: Electricity from renewable sources is low-emission, but it is not continuously available. LEAG is embarking on new paths and has built a battery storage facility with a utilisation capacity of 53 MWh at the Schwarze Pumpe power plant industrial site.

BigBattery Lausitz combines modern power plant infrastructure with storage technology in a completely new order of magnitude. In this constellation the storage facility is one of the largest of its kind in Europe. Being based on lithium-ion technology, it makes power generation more flexible, helps to protect the power grid from fluctuations and thus supports the system integration of renewable resources.

The BigBattery was built adjacent to the Schwarze Pumpe power plant. 13 containers house the lithium-ion batteries in an area of 110 by 62 metres. There are also 13 converter containers, a unit transformer and medium and low voltage switchgear. They are the key features of the storage site. Equally significant are the battery and energy management systems as well as the internal control, protection and fire alarm technologies. The battery storage facility is connected to the grid at the high voltage level (110 kilovolts). This also provides the connection to the extra-high voltage grid on site.

The symbolic ground-breaking ceremony for the BigBattery was held in July 2019. After completion of the construction work and assembly of all 8,840 battery modules, commissioning began in March 2020. This was followed by trial operations. The BigBattery went into continuous operation at the end of 2020.

The investment in the BigBattery Lausitz amounted to approximately EUR 25 million. The main contractor for the construction was the Czech energy company EGEM, in cooperation with regional service providers from Lusatia. The project was funded by the Federal State of Brandenburg.

Picture 4: BigBattery Lausitz storage project.

Case Study

A Lake in Sight – the Cottbuser Ostsee will be the Largest Post-mining Lake in Germany

The Cottbus-Nord opencast mine restoration works are under way in order to convert the former mine into the Cottbuser Ostsee. The lake will expand recreational opportunities in the Cottbus region, create new nature conservation areas and offer sufficient space for another project that is set to set standards: Germany's largest floating PV plant to date

From a mine to Cottbuser Ostsee lake

The Cottbus-Nord opencast mine, together with the neighbouring Jänschwalde opencast mine, supplied the Jänschwalde power plant with lignite for over three decades. Preliminary preparations for opening up the opencast mine began in the mid-1970s. The first coal train entered the power plant on 8 April 1981, the last one on 23 December 2015.

Mining activities in Cottbus-Nord opencast mine ended according to plan with the depletion of its approved lignite reserves. It was the first opencast mine in the Lusatian mining district to close after 1990. With the decommissioning of mining and conveyor complexes the site entered a new phase of post-mining landscape restoration. A 1,900-hectare lake is being created just a few kilometers from the center of the city of Cottbus and is expected to be completely filled by the mid-2020s. The most recent inland water body addition to the Lusatian Lakelands will be the largest lake in the Federal State of Brandenburg and Germany's largest pit lake. After the completion of flooding, the lake is primarily intended to serve as a leisure and holiday destination, while the eastern shores are reserved for wildlife and nature. In addition, a floating PV plant of up to 18 hectares in size is planned, which will create another visible signal of the transformation of an energy region.

Parameters of Cottbuser Ostsee:

Future water level between
61.8 and 63.5 m
above sea level

Target water level
62.5 m
above sea level

Final lake volume
126 million m³

Shore length
26 km

Removing and dismantling the large-scale equipment

infrastructure of the opencast mine and all large-scale equipment were dismantled, scrapped or disassembled for resale immediately after the end of lignite mining. The dismantling of the railway facilities alone comprised 30,000 tonnes of track ballast, 18,000 sleepers, 26 points, 11 kilometres of tracks and four bridges. The overburden conveyor bridge with its bridge excavators and two bucket chain excavators formerly used in the pit were scrapped.

Lake basin created and banks secured

Between 2016 and 2018 around 140 earth-moving machines were in use at the Cottbuser Ostsee lake construction site to move a total of 20 million cubic metres of earth. The soil removal ensures a water depth of the lake of not less than two metres. The excavated earth masses were used to fill the former coal railway exit and to shape the future Bärenbrücker Bay.

Bank profiling took place in the south, west and north of the lake. In the east, the shore zones and offshore islands created with soils deposited using large-scale opencast mining equipment were stabilised by vibrocompaction measures in order to create a safe post-mining landscape. Between 2012 and 2019, a total of 46 million cubic metres of soil were compacted.

Infrastructure ready for flooding

About 80 % of the lake is filled with water from the Spree River, the remaining 20 % is groundwater. The water from the Spree River comes via the Hammergraben at the Lakoma Weir. For this purpose, a new diversion dam was built on the watercourse and an inlet structure on the lake's embankment. The two buildings are connected by an underground pipeline. A fish screen on the diversion dam meets the ecological requirements for fish protection.

Flooding started in April 2019. Filling of the lake is steered over the flooding management system of the Lusatian Lakelands. The extraction of water from the Spree River is only carried out if there is sufficient water in the river after primarily ensuring the interests of the people living along the Spree River and the protection of flora and fauna. Due to the dry weather, only a few periods could be used for flooding so far. Nevertheless, the end of flooding will still be possible by the mid-2020s. The flooding plan is based on various weather situations with different amounts of precipitation, including dry periods, too.

An outlet structure will integrate the Cottbuser Ostsee lake into the regional water network via the ditch Schwarzer Graben. The preparations for the construction of the steerable structure will begin in 2022. A fish ladder with several basins will ensure ecological continuity for aquatic life.

Picture 5: View of the northern area of the Cottbuser Ostsee lake with the inlet structure in May 2021. First, the deeper border cuts of the former opencast mine are filled by the water. Later, the water will cover the large inner dump area, too.

Good quality lake water

It has been calculated that the quality of the lake water will be sufficient due to rapid flooding and the high proportion of water from the Spree River and no additional improvement measures will be needed. The pH value is estimated to be 7.5 to 8.

After the end of the flooding the groundwater inflow and precipitation will help to compensate for evaporation losses on an annual average according to calculations. Thereby the geographical location of the lake in the Baruth glacial valley below the Lusatian border wall is an advantage.

Communal projects

The number of ideas developed to expand the tourist infrastructure of the lake are an indicator of the great interest the people from the surrounding areas are showing. They are planning ports or water sports facilities, getting involved in the cycle path network around the lake or are already thinking about guidelines for the navigability. The first of these ideas is already becoming reality: In the autumn of 2019, the piling wall to secure the banks of the future city port of Cottbus was completed. Construction work on the Teichland marina will begin in 2022.

Picture 6: The future city port of Cottbus will be built at the Merzdorfer Turm. From a height of 30 metres, visitors have an impressive view showing the dimensions of the overall “Cottbuser Ostsee” project.

Picture 7: Construction site Cottbuser Ostsee: To stabilise the ground for later anchoring the planned floating PV system, a lance is lowered into the soil, which compacts the deposited sands by vibration. Backfilling with new soil is carried out from above.

Oasis for nature protection

The future east banks of the Cottbuser Ostsee lake will be characterized by diverse features, islands and shallow waters. There is considerable potential for developing a wide variety of habitats and making it a suitable nature conservation area.

Floating PV on Cottbuser Ostsee lake

While the people of Cottbus and their guests rest and tank up with new energy by relaxing on or near the lake, Germany’s largest floating PV system to date will harness solar energy on the surface of the water. This is what joint plans by LEAG and EP New Energies envisage. With the size of the future Cottbuser Ostsee it is possible to plan the photovoltaics project with the greatest possible distance to all lakeshores used for tourism, outside of planned shipping routes and by-passable from all sides. The 18 hectares floating solar park can produce up to 21 MWp while covering less than one percent of the lake’s surface. Thus, the project is suitable for contributing to the expansion of renewables and for Lusatia as a model region for energy transition and structural change. At the same time, a high-potential PV segment will be developed directly on site. Parallel to the approval process, LEAG 2021 has begun to prepare the lakebed for anchoring the PV plant. These advance preparations allow the work to be carried out on dry land before the flooding water reaches the construction area.

Case Study
Cooperation for renewable energy

2021 LEAG and EP New Energies initiated approval procedures for 500 MW of photovoltaics and 100 MW of wind on former Lusatian mining sites. Two projects at the same time are setting landmarks for photovoltaics in Germany: the Bohrau Energy Park, currently one of the largest inland solar parks, and the largest floating PV plant to date on the Cottbuser Ostsee lake, which is currently being flooded.

With the German phase-out of coal-fired power generation by the end of 2038 at the latest, mining regions like Lusatia now face a transformation. Based on their traditional strengths, new ideas and investments, they will be able to continue to develop into versatile energy regions. LEAG regards itself as part of this structural development. The company is one of the largest landowners in Lusatia – therefore there is significant potential especially for the land-intensive expansion of electricity generation from renewable energies. It is part of the transformation process that LEAG is driving forward.

In close cooperation with EP New Energies, the EPH Group's centre of excellence for renewable energies which was founded in 2019, LEAG is working to expand capacity. EPNE pools know-how for the development and construction of PV and onshore wind plants. LEAG is providing its expertise as a major energy producer and marketeer in Germany. The 2030 project pipeline, which the partners are working on together, currently comprises around 1,500 MW of PV and around 1,000 MW of wind

Solar park "Altes Kraftwerk" Zschornewitz

EPNE has already been particularly successful with its first participation in an innovation tender by the Federal Network Agency for plants under the Renewable Energies Act (EEG). The young company was awarded the contract for the Zschornewitz solar park in Saxony-Anhalt. The innovation tenders of the Federal Network Agency promote plants that increase competition and create more grid and system efficiency.

4.5 MW

The PV park will have an installed capacity of 4.5 MW.

4.6 mil kWh

With a production of about 4.6 million kWh per year, in purely mathematical terms, it can thus supply around 1,150 four-person households with green electricity.

The site of the planned solar park in Zschornewitz has a rather interesting history. This was the site of one of the oldest power plants in Germany, which went into operation in 1915. The power plant was decommissioned in 1992, and now electricity is being produced again in Zschornewitz– this time CO_2-free. Construction began in February 2021, the commissioning took place in July – half a year earlier than originally planned. The PV park has an installed capacity of 4.5 MW. With a production of about 4.6 million kWh per year, in purely mathematical terms, it can thus supply around 1,150 four-person households with green electricity.

Roof top PV plants with KI-integration

Further projects already realised include two rooftop PV plants at LEAG's Lübbenau and Cottbus sites. An intelligent swarmBOX from the Dresden-based start-up "Die Energiekoppler", with which LEAG is cooperating, is being used for generation and consumption analysis. The smart box optimises the marketable power. This is made available to the market via the LEAG energy cubes, LEAG's virtual power plants – an energy service that LEAG also offers to other plant operators throughout Germany. The innovative approach is to network small plants and adapt them in such a way that they make an economic contribution to stabilising the decentralised energy system and thus the energy transition.

Picture 8: 12.2 GWh were produced at LEAG's renewable sites in 2021. The company's first solar park with 10 MW capacity went into operation in 2019.

Picture 9, 10: 456 solar modules on the roof of the LEAG headquarters in Cottbus were installed and commissioned in 2020.

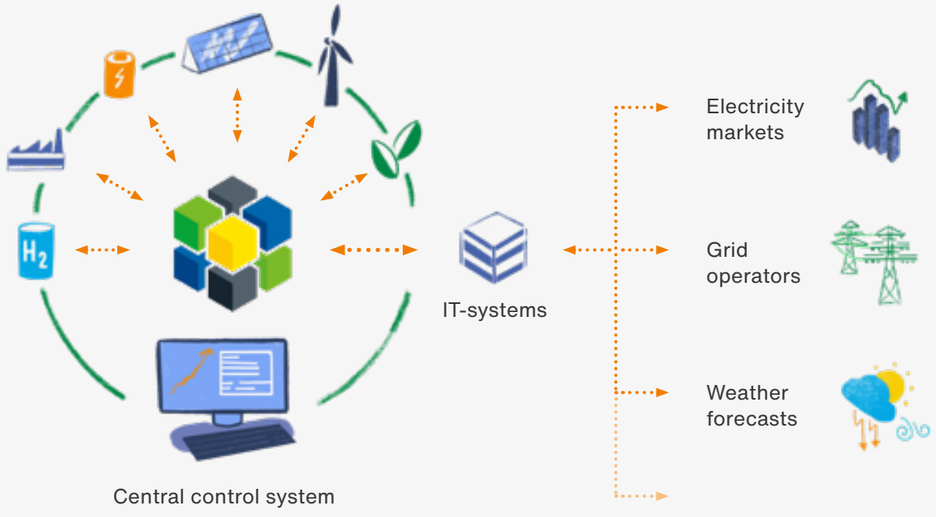
Picture 11: Small box, big effect. With the help of artificial intelligence, generation, self-consumption and marketing of electricity are optimised.

Case Study
Energy networks in bits and bytes

Power generators, storage facilities and consumers from all sectors have the opportunity to be part of innovative energy solutions that are in demand on the market and thus achieve more together. Digitalisation makes it possible for decentralised individual plants to interact systematically on the market. This is the basic principle of a virtual power plant.

The virtual network (pool) is created via a common central control system. The operation of each individual plant is monitored, planned and, if necessary, remotely controlled online – second-by-second, demand-driven and flexible. As part of a virtual power plant, energy assets can take on additional tasks in the electricity markets that would not have been economically attractive or technically feasible on their own.

Like the squares of a Rubik's cube, the individual plants in the virtual network are placed in the right strategic position to best respond to the demands of the energy markets. The right combination will result in the optimal performance, flexibility and economic success for all involved. It is therefore not surprising that LEAG has bundled its energy services based on virtual power plants under the branding "LEAG energy cubes".



Picture 12: Energy network.

LEAG energy cubes for innovative energy solutions

The LEAG energy cubes are particularly active in the direct marketing of electricity from wind and PV plants and also offer operational management and performance optimisation for the energy assets at their respective locations. They also market what is now Germany's largest battery portfolio. The customers' batteries are pooled and placed on the balancing energy market. In the event of unforeseeable fluctuations, they serve as a safety buffer for the power grid to restore the necessary balance between generation and consumption.

The provision of balancing energy is planned via the virtual power plant and each battery contributes according to its current capacity. In this way, smaller units can also participate in serving larger balancing energy calls from the transmission system operator. The required security backup is provided from the pools of the virtual power plant and no longer by each battery storage unit on its own. This increases the marketable balancing energy. In addition, the effort for the plant operators is reduced, as communication with the grid operator and compliance with legal and regulatory requirements can be secured via the virtual power plant.

Flexibility management as a buffer for the power grid

In view of the changes in the energy market, more and more potential of decentralised flexibility is now being reassessed. Emergency generators, heat pumps as well as ventilation, air conditioning and chillers in industry can make a valuable contribution to security of supply. From flexible energy management for industrial and commercial customers to green self-supply or comprehensive networking of generators and consumers in smart sites, neighbourhoods and cities – the future holds a wide range of potential applications for virtual power plants.

Picture 13: The LEAG energy cubes stand for the efficient, strategic networking of energy plants and innovative energy solutions.

Case Study

LEAG to build grid-serving gas-fired power plant in southern Germany

As the largest electricity producer in eastern Germany, LEAG's focus to date has been primarily on this region. However, there is also some activity in this field in the south of Germany. LEAG is currently building the Leipheim gas-fired power plant near Ulm, on behalf of the transmission grid operator Amprion. A 300 MW power plant exclusively to serve to ensure grid stability and thus uninterrupted power supply.

With Thyrow and Ahrensfelde, two gas-fired plants already in operation near Berlin, LEAG has gained experience in operating grid-serving facilities during the past years. Now there is more development following this path. In February 2021, LEAG acquired 100 percent of the shares in Gaskraftwerk Leipheim GmbH & Co. KG, thus also assuming responsibility for a secure energy supply in the south of Germany.

Safety buffer for the power grid

The Leipheim power plant is being built together with Siemens Energy and Amprion. The project is to erect a special network-technical equipment ("besonderes netztechnisches Betriebsmittel", short bnBm) in accordance with Section 11 of the German Energy Industry Act (EnWG). Such special grid-related resources are to be built wherever the safety and reliability of the electricity supply system requires it. This is the case in the transmission system operator Amprion's area of responsibility in southern Germany, due to the imminent decommissioning of nuclear power plants like, for example, Gundremmingen – located not far away from Leipheim.

After the planned commissioning in 2023, a performance period of ten years is envisaged. A call-up of the Leipheim power plant is only permitted by the transmission system operator Amprion. It will not participate in the regular electricity market.

The project has already received the immission control permit and the planning approval decisions for the gas and power lines. The foundation stone was laid in September 2021. Siemens Energy could start erecting the plant as early as summer 2022 and will also be responsible for on-site operation and maintenance. However, project management is carried out from LEAG's homebase Lusatia, where the Leipheim plant will be integrated into the control system of Schwarze Pumpe power plant and monitored from there.

The gas power plant Leipheim is part of a total of 1,200 megawatts of capacity for special grid-related resources, which was put out to tender across Europe by the transmission system operators Amprion, TenneT and TransnetBW between 2018 and 2020. The tenders covered four regions in southern Germany, for each of which 300 megawatts of capacity were awarded. They will be built at Irschingen (TennT/Uniper), Marbach (TransnetBW/EnBW), Biblis (Amprion/RWE) and Leipheim (Amprion/LEAG).

Great flexibility and low emission

There are several advantages with gas turbine power plants. They can be deployed extremely quickly and are particularly suitable for covering short-term grid bottlenecks caused, for example, by irregular feed-in of wind and solar power or the failure of grid resources. Voltage drops, which could threaten grid stability can be very well compensated for by the flexibility of plants like Leipheim.

Technically, in the combustion chamber of the gas turbine, natural gas is mixed with compressed air, ignited and then combustion takes place. The high-pressure combustion gases drive the turbine. It provides the necessary rotary motion to generate electricity in the generator. The state-of-the-art turbine burns the natural gas in an optimal way and uses the energy efficiently. As a result, emissions are kept comparatively low.

With the phase-out of nuclear power by 2022 and coal by 2038, gas-fired power plants will remain as the only conventional bridging technology for the energy transition, to fill supply gaps and stabilise the grid.

Their importance will therefore foreseeably increase until the expansion of renewables in combination with the expansion of electricity grids, electricity storage capacities and hydrogen-based solutions are able to ensure security of supply and grid stability, too.

Next step: hybrid site concepts

Gas-fired power plants not only create the necessary buffer for supply security during the energy transition. By gradually switching the fuel to hydrogen and combinations with renewables, electrolysis and storage technologies for electricity and heat, hybrid energy sites with steadily declining emissions can be developed. LEAG is already working on future-oriented ideas and power plant concepts for its existing energy sites such as Jänschwalde, where an innovative storage power plant is planned to combine the mentioned technologies. The overriding objective remains to contribute to a fully integrated renewable energy system, as well as to structural development and value creation in the surrounding area.

Picture 14: Leipheim power plant.

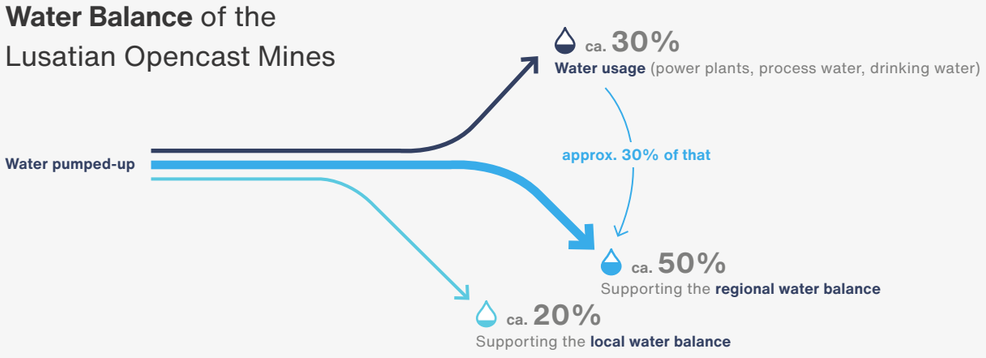
Case Study
Responsible water management

LEAG has been operating an elaborate water management system for many years in close coordination with the federal states of Brandenburg and Saxony, the relevant authorities and associations. Responsible and sustainable use of the valuable resource of water is one of the company's key objectives.

Safe opencast mining operations require the lowering of groundwater to below the lignite seam. This lowering of the groundwater level only takes place to the extent required by geotechnical safety. In 2021 the water withdrawal in LEAG's opencast mines amounted to around 341 million cubic metres. Around 70 percent of this was fed back into the regional and local water balance. In particular, the feed of pumped up groundwater benefits the water supply of the Spree River and, to a lesser extent, the Neiße River. The remaining 30 percent of the groundwater from the opencast mines LEAG uses in its lignite-fired power plants for steam generation and as cooling water.

Sealing wall technology from Lusatia

In order to keep the so-called groundwater depression cone of opencast mines as small as possible, underground sealing walls made of clay are constructed. These limit the lowering of groundwater as far as possible to the opencast mine area and prevent neighbouring areas from being drained. LEAG currently operates sealing wall construction sites at the Welzow-Süd and Reichwalde opencast mines. Further sealing walls are in place at the Jänschwalde opencast mine and at the former Cottbus-Nord opencast mine, which is now being developed to Cottbuser Ostsee lake.



Picture 15: Water balance of Lusatian opencast mines.

Groundwater extraction and treatment

Groundwater is pumped from the opencast mines via filter wells. About 20 per cent of the lifted water is of such good quality that it can be returned to the regional water system without further treatment. The majority of the pumped water is fed into one of the seven mine water treatment plants (GWBA). In the GWBAs, the groundwater is treated to produce ecological compensation water. In the process, iron is removed and the pH value is adjusted to a neutral range. Every year, up to 15,000 tonnes of iron are separated in this way. With an iron concentration of less than 2 mg/l on average, the treated eco-water is returned to the water system. It not only serves to protect and preserve the waters influenced by mining, but also to a great extent supports the area's water balance and enables user-oriented management of the Spree River all the way to Berlin. The importance of this support becomes particularly clear in times of drought. In dry summers, for example, up to 70 per cent of the water in the Spreewald Biosphere Reserve comes from mining.

With the implementation of the Coal phase-out law and the associated closure of the four active opencast mines in Lusatia, the quantities of water discharged will continuously decrease over the next years. However, for reasons of geotechnical safety, water must continue to be pumped up in the area of the future banks of the post-mining lakes as part of the final recultivation. Some of this water can therefore still be released into the regional water balance in the coming years. The other part is available as process water and as compensatory water for water-dependent biotopes or for the flooding of the post-mining lakes.

Picture 16: To construct an underground sealing wall, the digging tool cuts through the soil layers. It creates a one-meter wide slot. This slot is filled with a clay-water mixture. Due to the hydraulic overpressure in the slot the water molecules to pass outward leave a clay filter crust over at the side walls of the slot, ensuring a water-impenetrable barrier. Finally, the slot is backfilled with soil and the surface is greened.

Picture 17: Sealing wall construction in Proschim, Brandenburg.

Picture 18: Groundwater treatment.

Biotope support at the Jänschwalde opencast mine

Water-dependent biotopes in the vicinity of the Jänschwalde opencast mine include fauna-flora-habitat (FFH) areas which, although mainly affected by climate impacts, could also be affected by the operation of the Jänschwalde opencast mine. LEAG protects these areas with water management measures such as water supply lines to moors, meadows and lakes, as well as woodland removal from the moors and forest conversion in the forests adjacent to the wetlands.

Outlook: Water balance in Lusatia

The regulation of the regional water balance in Lusatia after more than 100 years of mining will take decades. Only many years after the end of all mining activity will it be possible for the region to have a largely self-regulating water cycle once again. However, with projects such as the reconstruction of natural spring areas on former opencast mining sites, the renaturation of the Spree floodplain near Cottbus in Brandenburg and the Weißer Schöps River in Saxony, and the protection of the FFH areas north of the Jänschwalde opencast mine, LEAG is already making efforts in its area of responsibility to ensure that Lusatia retains what its Sorbian name promises: marshy, wet meadows.

Picture 19: Water supply in the so-called “Weißes Lauch” in July 2021.

Picture 20: The water level in the Pastlingsee lake has been kept stable via a water supply line since 2015.

Use of process water for power generation

Water is of fundamental importance in the process of generating electricity from lignite. The lignite-fired power plants need it for generating steam and cooling purpose. Most of this water needed comes from the opencast mine dewatering system instead of nearby rivers. In 2020, the water used by the Jänschwalde, Schwarze Pumpe and Boxberg power plants amounted to around 97 million cubic metres, of which around 30 million cubic metres were returned to the regional water balance after use in the power plant. Before the water is used, it is cleaned in the mine water treatment plants and specially processed for its use in the power plant. To keep the power plant’s water requirements low, process water is used several times. Technological wastewater is purified and returned to the general water cycle without any qualitative adverse effects.

Approximately 3.6 million cubic metres of pumped up and treated water was made available to third parties as process water and around 1.7 million cubic metres was treated to use as drinking water for regional drinking water associations in 2020 by LEAG.

Another use for process water

At the Jänschwalde power plant, not far from the ponds area “Peitzer Teiche”, a further use has been found for the process water. During autumn and winter, the cooling tower water is used to breed carp. The Peitzer Edelfisch Handelsgesellschaft mbH keep fish in special carp rearing tanks over winter and, thanks to the residual heat of the power plant water, they develop much better during this time than would otherwise be the case during the cold season. With the warmer season, the fish are transferred to the neighbouring ponds.

30 mil. m^3

30 million cubic metres were returned to the regional water balance after use in the power plant.

1.7 mil. m^3

Around 1.7 million cubic metres was treated to use as drinking water for regional drinking water associations in 2020 by LEAG.

Case Study
Waste becomes energy at EVA Jänschwalde

The energy recovery plant EVA Jänschwalde (Energie- und Verwertungsanlage, short EVA) is a plant for the utilisation of refuse derived fuels (RDF). In modern thermal treatment, it serves the safe and environmentally sound disposal of waste residues that cannot be further recycled. In the combustion process, energy is generated for use in efficient combined heat and power generation (CHP). EVA Jänschwalde contributes to Germany's energy transition, helping to reduce greenhouse gas emissions and to preserve an industrial site.

EVA Jänschwalde is a joint project of the energy company LEAG and the environmental and recycling specialist Veolia. For the first time they are jointly launching a RDF plant via EVA Jänschwalde GmbH & Co. KG, in which each partner holds a 50 percent stake. LEAG contributes its plant engineering and energy management expertise to the joint venture. It will also be responsible for sales of the plant's energy products. Veolia will source and produce the majority of the refuse derived fuels for the plant on the basis of its extensive expertise in waste collection and RDF processing management. For this purpose, Veolia already operates several RDF processing plants in the eastern German region.

Both – LEAG and Veolia – pursue sustainable solutions to conserve primary resources, strengthen the circular economy and to support the energy transition. With the state-of-the-art energy recovery technology at EVA Jänschwalde, both partners want to contribute to reliable, environmentally friendly and resource-saving waste disposal for cities, municipalities and companies. They want to provide CO_2-reduced energy in the form of electricity, district heating and process steam and thus also underpin the Jänschwalde site with its infrastructure and competencies for the structural development in the coal phase-out region of Lusatia. The approval process for the Jänschwalde RDF plant in accordance with the German Federal Immission Control Act, including environmental impact assessment and public participation, is scheduled to be completed in 2022.

Picture 21: Overview on input and output of EVA Jänschwalde.

waste prevention

reuse

recycling

other utilisation
esp. renergy recovery, backfilling

waste disposal
landfills

Picture 22: There is a five-level hierarchy for dealing with waste throughout the EU. It also forms the basis for the Closed Substance Cycle Waste Management Act in Germany. Avoidance comes first, followed by reuse and recycling. Energy recovery comes in fourth before waste disposal completes the hierarchy in fifth place.

Circular economy and CO_2-reduced energy

Safe and environmentally sound waste disposal is one of the key requirements for modern societies. EVA Jänschwalde is an essential part of the 4th level of the waste hierarchy and thus ensures the environmentally sound treatment of waste fractions that cannot be recycled, while providing energy as an additional value. As such it helps to prevent landfill disposal of untreated waste (prohibited in Germany since 2005), reducing therewith greenhouse gas emissions from landfills, especially methane which is about 20 times more harmful to the climate than carbon dioxide.

The non-hazardous RDF utilised at EVA Jänschwalde is produced from municipal and commercial waste in a multi-stage pre-treatment and waste sorting process. This process includes the extraction of usable waste fractions for recycling and the removal of interfering (e.g. minerals) or harmful substances (e.g. batteries). In other words, EVA Jänschwalde will be supplied with RDF produced out of waste sorting residues that cannot be recycled more efficiently and more environmentally friendly in another recycling path. About 50 percent of the RDF for energy recovery is made up of biogenic components. This biogenic content is converted into renewable energy in a climate-neutral way. In this respect, EVA Jänschwalde supports the energy transition (“Energiewende”) not only by creating an alternative to co-combustion in lignite-fired power plants, but also with a CO_2-reduced contribution to the energy supply.

Replacement of thermal utilisation in lignite plants

LEAG’s lignite-fired power plants have been playing an important role in energy recovery since the 2000s. At the four power plant sites, up to 1 million tonnes of capacity is available for the co-combustion of waste from the region and the surroundings. Thermal utilisation is mainly of extensively processed secondary fuels and sewage sludge. In accordance with existing permits, the materials are added to the lignite stream and burnt together with the lignite in the power plant boiler. With the German phase-out of coal-fired power generation, this way of thermal utilisation will also cease to exist in the foreseeable future. A recent study concludes that without further expansion, there will be a shortage of thermal waste treatment capacities by 2040 (source: Prognos, Prof. Martin Faulstich, TU Dortmund University, 2020).

EVA Jänschwalde will be able to process similar quantities of RDF as have been used so far in co-combustion of the lignite-fired power plant Jänschwalde. Therefore, it contributes to securing necessary thermal processing capacities in the long term, which are independent of lignite-fired power generation and the associated CO_2 emissions. There are several municipal and commercial waste processing plants in the vicinity of EVA Jänschwalde – including Veolia’s RDF production plants – that rely on thermal treatment capacities or already deliver to the Jänschwalde lignite-fired power plant’s co-combustion. Thus, EVA Jänschwalde also avoids longer waste transport routes and therefore reduces associated waste logistics and traffic emissions.

Environmentally sound operation

Pollutants contained in the flue gas of EVA Jänschwalde are reduced to a minimum by means of a multi-stage flue gas cleaning system, which prevents them from being released into the atmosphere. Due to the chosen technology, the plant will be prepared to meet high environmental protection standards in both, thermal waste treatment and energy recovery as well as emission control. The operation of two independent incineration and flue-gas treatment lines further increases the reliability and safety of thermal waste treatment in Jänschwalde.

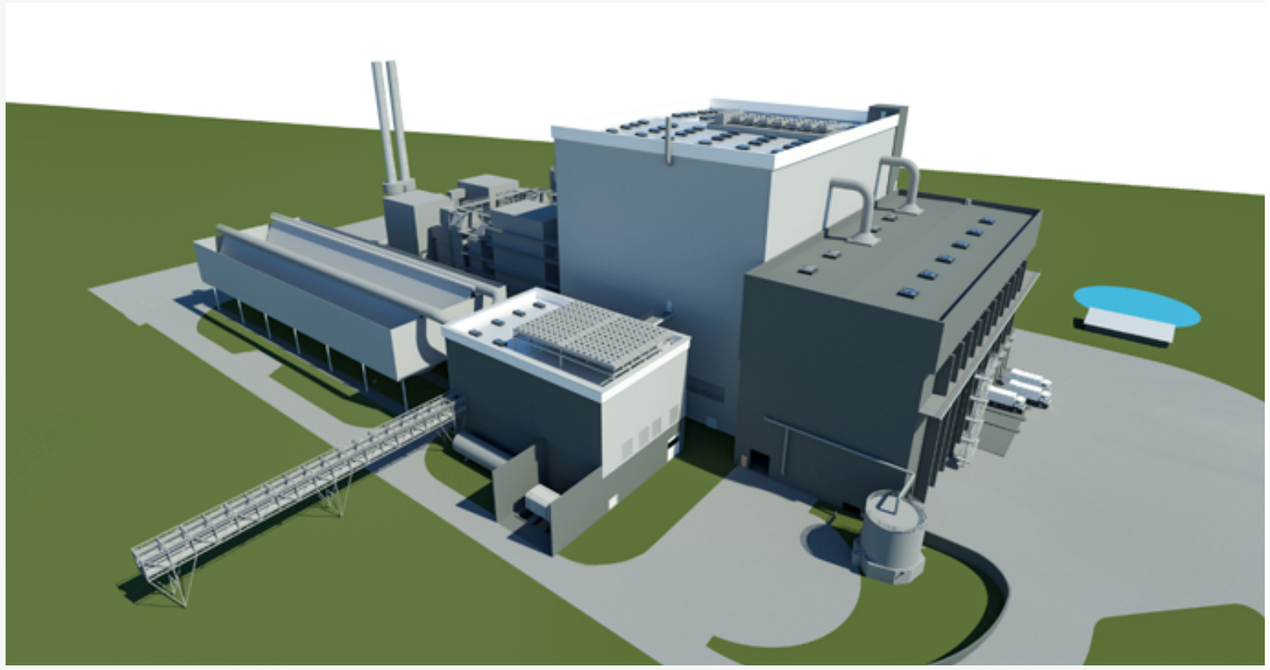
The basis for the permissible emission limit values of the EVA Jänschwalde energy recovery plant is the 17th Federal Immission Control Ordinance (17. BImSchV). In addition, changes foreseeable today as a result of the “Best Available Techniques for Waste Incineration” (BREF WI) have already been taken into account in the planning. With BREF WI the state of the best available technology is determined in an elaborated, Europe-wide coordination process. The emission values derived from this are among the most stringent and best-controlled requirements in emissions legislation, both nationally and internationally. In this way, EVA Jänschwalde is creating state-of-the-art capacities that meet high environmental standards safely and reliably.

Site development

Feeding into local district heating networks will become more important as lignite-fired power plants are decommissioned. For the cities of Cottbus and Peitz, which currently obtain district heating from the Jänschwalde lignite-fired power plant, EVA Jänschwalde can provide a reliable and sustainable heat supply in the long-term without the use of fossil fuels.

With its energy output, EVA Jänschwalde will also establish a long-term supply option for the Jänschwalde industrial area. In addition, the new plant will help to preserve existing infrastructures. Thus, the performance of the site as a whole can be maintained and improved, supporting therewith the settlement of industrial enterprises in Jänschwalde. Preserving and developing this area as a designated industrial and commercial park is also more efficient, resource-saving and environmentally friendly than developing a new site and creating new infrastructures (greenfield approach).

Finally, projects like EVA Jänschwalde also mean that decades of expertise in the energy sector that characterise the Lusatia region will be passed on to the next generation. This will be achieved by the creation of 52 new jobs at the plant and contracts with regional businesses in the field of maintenance and repair services. Here, too, the region has a high level of expertise and a robust structure of valuable specialised companies to be preserved and socially supported for the future. EVA Jänschwalde will contribute to this, together with other LEAG projects to transform the region’s linear fossil energy industry into a more diverse one, underpinned by renewable energies and flanking technologies both supporting the energy transition.



Picture 23: 3D visualisation of the planned EVA Jänschwalde RDF plant; north-south extension circa 300 metres, east-west circa 160 metres. The boiler house and chimney are 57 and 62 meters high. This makes the EVA Jänschwalde significantly smaller than today’s lignite-fired power plant.

Operational efficiency and economic performance

We provide reliable and affordable energy services that are delivered with efficiency and safety in mind.

EPH works to ensure that all of the Group's subsidiaries operate in an efficient and failure-free manner. This is important throughout our Group, as our operations directly impact surrounding environments and communities.

Our operational activities are not only driven by our policies and principals, but also by our responsibility to adhere to national energy legislation and local operational regulations, which provide us with further efficiency guidance.

Our contribution to the SDGs:

EPH strives to provide services that are not only affordable and clean, but that also bring real value and opportunity to people and their communities. We do this through our commitment to providing equal work opportunities, and supporting economic growth, sustainable development, and industry innovation.

Business performance

Our 2021 operational results proved that EPH continues to be an industry leader. The reliability of our Group's performance has allowed us to continue to steadily grow our business through our customers.

Operations overview

When discussing our operational data, the following business segments are included in the Group's analysis: gas transmission, gas and power distribution, gas storage, heat infrastructure, generation and mining, renewables, and others, including logistics.

Energy consumption and efficiency

EPH is focused on continually improving its operational efficiency across the Group and takes various approaches towards advancing its efforts, such as through modernising **existing equipment and effectively utilising innovative technologies**.

Our focus on hydrogen

Our ongoing projects aim to enable hydrogen readiness both midstream and downstream. This will facilitate the transition away from coal and provide security of supply, which goes hand in hand with our goal to achieve carbon neutrality by 2050.

Renewable energy

We are aware of the significant decarbonisation role renewables have in our industry. That is why we are focused on further utilising renewables within our business operations.

2021 Highlights

€155 mil.

In 2021, we spent over €150 million on new projects development – Kilroot and Tavazzano sites.

€86 mil.

In 2021, the total capital expenditures in our Gas and Power Distribution services exceeded EUR 80 million.

43%

In 2021, EPH achieved an energy generation efficiency of 43%, which is aligned with our 2015 to 2021 average.

8%

In 2021, EPH continued to increase power and heat production from rehewable sources, by 8% and 20% respectively.

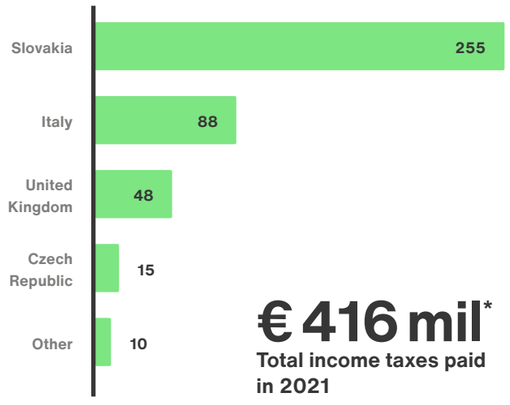
EPH seeks to take an active role in transforming the energy system with real solutions for transition towards

sustainable power generation

EPH's 2021 Business performance

For the year ending in December 2021, the EPH Group recorded total consolidated revenues and an EBITDA of EUR 18,931 million* and EUR 2,264 million[27] respectively. EBITDA is defined as profit from operations plus depreciation and amortisation, and is further netted for eventual impact of negative goodwill. Apart from this, the EBITDA calculation does not include any further adjustments. It is an important indicator to track because not only does it provide information on our operational profitability, but unlike revenues, standardised EBITDA can also allow for greater data analysis amongst peers and competitors.

2021 Taxes paid:
country share [EUR million]

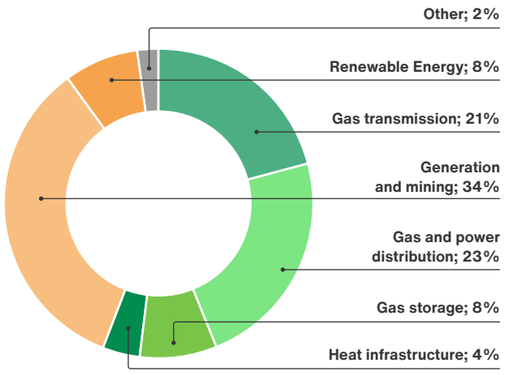


€ 416 mil*
Total income taxes paid in 2021

Graph 5: Tax paid.

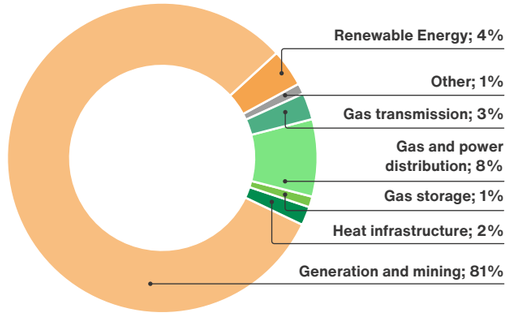
EBITDA and revenues[28]

2021 EBITDA:
business segment share



€ 2.3 billion
Total Adjusted EBITDA in 2021

2021 Revenues:
business segment share



€ 18.9 billion*
Total revenues in 2021

Graph 6: EPH's 2021 business results.

* This data has received limited assurance from the independent auditing firm KPMG.

27 Amounts after IC eliminations. When calculating indicators, we use EBITDA without considering intercompany transactions.
28 Charts do not include holding entities and intersegment-eliminations, but rather focus on the main areas of business.

Transmission, storage and distribution: closer look

Power, gas and heating systems are essential for a country's economic and social development, as well as for facilitating and enriching people's daily lives in the modern world. As a result, the primary goal of the Group is to provide access to these energy systems, and other basic services, to the communities in which we operate. We make it our responsibility to guarantee a continuous and safe energy supply through our business as a transmission system operator, distributor, and storage facilitator.

EPH, in coordination with its partners, continuously works to develop and improve distribution and transmission infrastructure, and overall networks, as this not only ensures the quality of supply but also its reliable and efficient delivery. This continual improvement is represented in our management of distribution networks, thereby reducing the number of leaks, and increasing network security. Additionally, the continued renovations and reconstruction being implemented to the backbone of our electricity distribution network ensures our continued traditional distribution services that reflect today's modern trends.

EPH's gas storage facilities serve as a supporting element; they compensate for fluctuations in the transmission network and, at the same time, serve as an effective tool in supporting trading on the gas market. During low consumption seasons, the storage facilities are used to store natural gas supplied from abroad, and before high consumption seasons, the storage facilities are adequately topped to ensure to meet demand. Overall, EPH works to ensure that there is a supply of natural gas in storage, to continually meet network and market demand. Gas storage is not only important to meet the fluctuations in demand, but it is also important in the case of unexpected emergency situations. In Slovakia, the storage capacity operated by Nafta represents more than half of Slovakia's annual natural gas consumption. The proximity of Nafta's storage facilities to the important gas hub Baumgarten also contributes to the continent's energy security.

Pipeline protection and risk evaluation

In EPH we take protection and safety operation of our pipelines very seriously. For this reason, we provide an overview of our activities in Nafta and eustream.

Nafta's policies

Nafta has implemented a policy and a chain of processes connected to the evaluation of integrity risks of the gas pipelines. The risk analysis sorts the parts of the pipelines per their threat level and based on that derives frequency of periodical checks. The analytical process assesses over 25 data categories per each pipeline segment. These categories include, for instance, type of isolation, soil, repairs and types of materials used, ground resistance, local pressure, or amount of ground on top of the pipe. Even low-risk segments are checked on foot at least every month. High-risk segments are checked every week to detect possible issues.

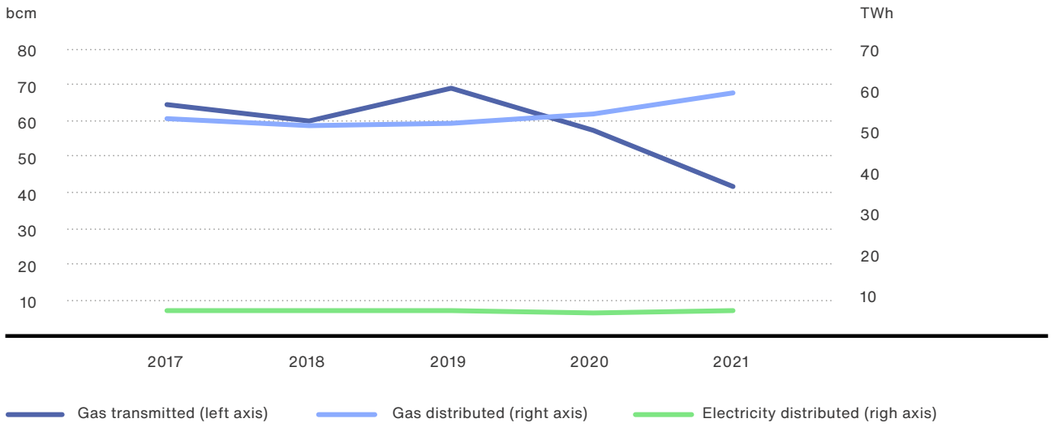
Eustream's policies

Eustream has a similar approach, where a set of policies exist that govern the protection, risk analysis, and periodicity of the pipeline check-ins. In general, risk analyses consist of evaluating data points regarding the age of the pipe, the type of isolation, aggressivity (toxicity) of the surrounding ground, or the number of repairs on a particular section.

Tensometric policy	This policy governs the usage and process of analysing the pressure on steel pipes.
Internal check-in	This policy governs the usage of a machine that goes internally through the pipe, so called pigging, where it can assess any possible defects inside of the pipe.
Aerial check-in	The transmission pipeline is also frequently checked by a helicopter to minimise any potential risk by third parties.

Table 3: Examples of policies related to the protection of the pipes.

Gas and power distributed



Graph 7: Distribution and transmission.

In 2015 to 2021, gas transmission, and gas and power distribution saw average volumes of 58.3 bcm, 52.7 TWh and 6.1 TWh respectively. Both gas and power distribution networks in Slovakia distributed higher volumes compared to 2020 as the economic activity recovered after the COVID-19 related slowdown in 2020. In addition, household gas demand was higher as people worked from home more frequently. On the other hand, the volume of gas transmitted declined as a result of lower overall flows from Russia to Europe in the second half of 2021 as well as lower flows in the reverse direction from Slovakia to Ukraine. Gas storage facilities in Ukraine were relatively full due to previous years' accumulation, limiting incentive to ship gas from Slovakia.

Electricity distribution losses

As one of the key electricity distributors in Slovakia, through our subsidiary Stredoslovenská distribučná ("SSD"), the EPIF Group is conscious of the indirect environmental impact of technical losses caused by network inefficiencies, as these need to be covered by additional electricity generation. SSD purchases electricity to cover losses from renewable generation sources, while ensuring that they are aligned with Slovak legislation. Furthermore, SSD launched several initiatives to reduce their technical losses. As an example, they identified existing inefficient transformers and replaced them with modern transformers or installed smart metering systems to enable better voltage management. As a result, their combined average loss rate saw a reduction from 6.1% in 2016 to 5.5% in 2021. The losses reported by SSD have been well below the limits set by the regulator for each voltage level.

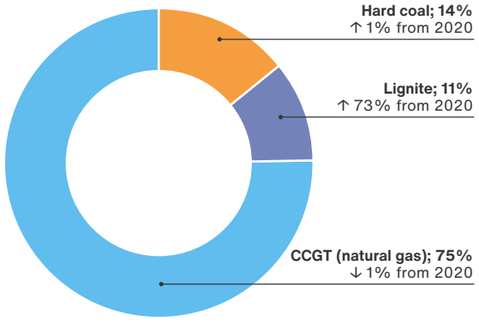
SSD		2017	2018	2019	2020	2021
ELECTRICITY INFLOWS	GWh	7,935	7,751	7,758	7,542	7,991
LOSSES	GWh	429	425	414	421	442
LOSSES IN %	%	5.4%	5.5%	5.3%	5.6%	5.5%

Table 4: Distribution losses.

Power and heat production from conventional sources: closer look

In 2021, EPH experienced a 4% increase in its power production from conventional sources when compared to the last year. EPH's overall energy production also did not significantly fluctuate. Overall, in 2021, EPH's coal consumption for overall net energy production increased by 21% compared to last year. However, this was attributed to the shock to the energy market that occurred within the year caused primarily by lower availability of natural gas in Europe, resulting in high gas price and improving the position of coal and lignite plants on the merit order.

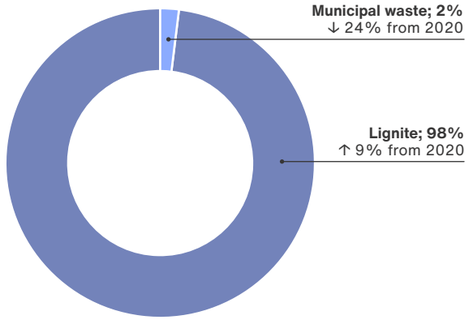
Conventional power production 2021:
energy source share



35,887 GWh
Total net power production from conventional sources

Graph 8: Power production by energy source.

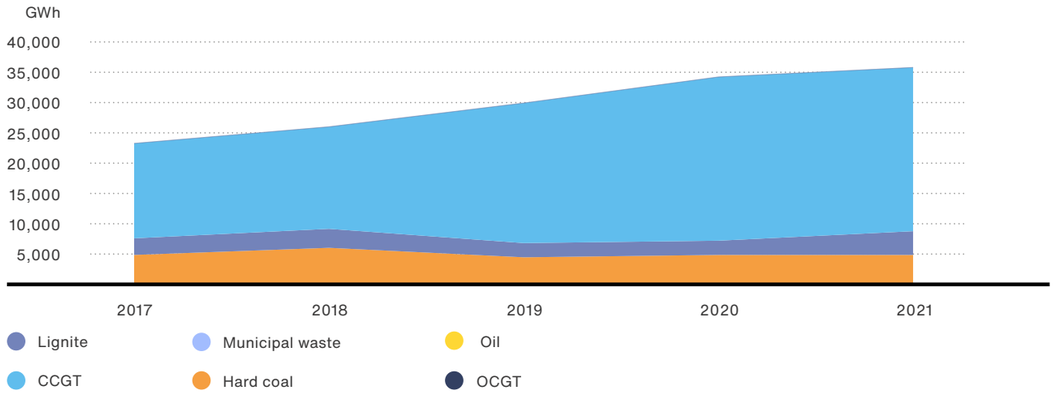
Conventional heat production 2021:
energy source share



2,817 GWh
Total net heat production from conventional sources

Graph 9: Heat production by energy source.

Net power production: conventional sources

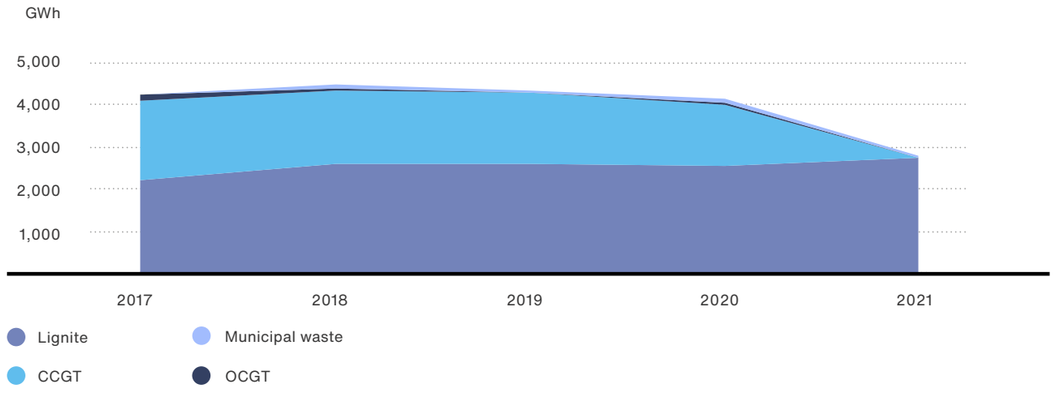


39,846 GWh
Total net power production

35,887 GWh
Conventional sources

Graph 10: Net power production.

Net heat production: conventional sources



3,025 GWh
Total net heat production

2,817 GWh
Conventional sources

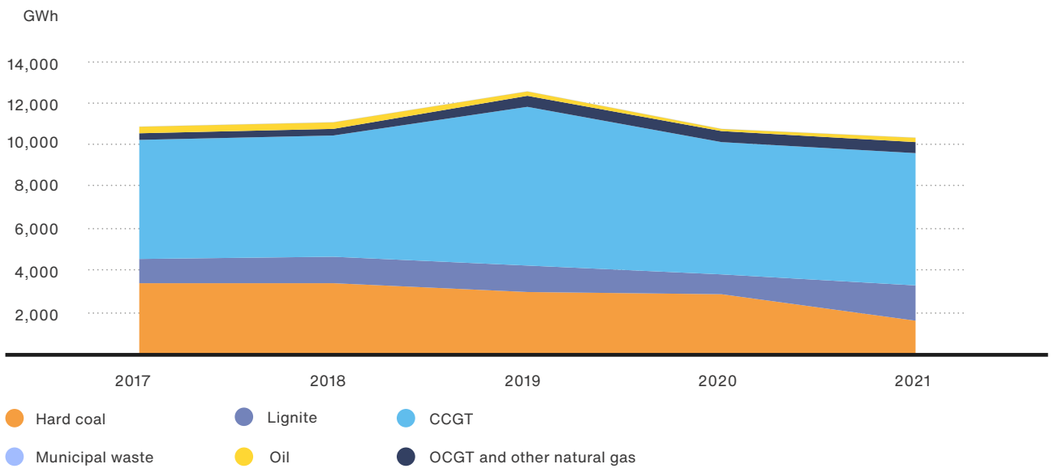
Graph 11: Net heat production trend.

Installed capacity of power and heat from conventional sources

In comparison to last year, we saw a minor decrease in the Group's installed power capacity and minor decrease in heat capacity for conventional sources, by 4% and 8% respectively. With regards to EPH's installed power capacities, we saw a 45% decrease in hard coal capacities when compared to last year. This was mainly driven by the closure of our hard coal plants Provance 5, located in France, and Mehrum, located in Germany. Additionally, in 2021, we saw an 86% increase in installed lignite power capacities mainly due to our increased ownership share in Schkopau power plant which was completed following a historical agreement with the seller.

Overall, EPH expects that the installed capacities for hard coal and lignite will significantly decrease over the coming years. This is reflected in the Group's decarbonisation roadmap as we aim to decommission our coal power plants and convert existing lignite-fired units to lower emission intensive ones. These decommissioning projects can be seen across our Group, such as in Germany, France, Italy, and the UK. For example, in France, Gazel Energie closed its Provence 5 operations in 2021 and Emile Huchet 6 will be also decommissioned 2022 or 2023. EP Kilroot will be decommissioning its power plant in 2023. Additionally, the MIBRAG's Deuben power plant was decommissioned in 2021. Mehrum plant was commercially shut down in December but upon a request with the German network regulator now runs in limited amount in order to secure the grid stability.

Net installed power capacity: conventional sources

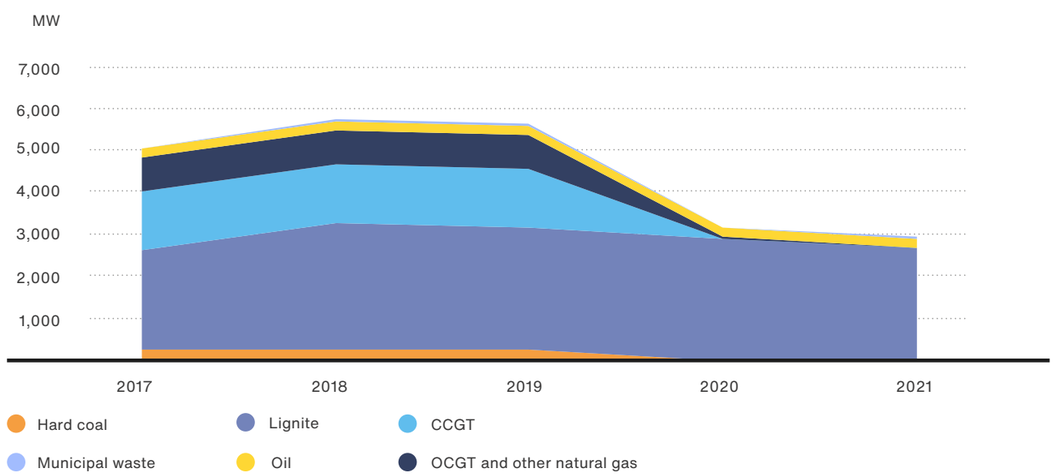


11,131 MW
Total net installed power capacity

10,329 MW
Conventional sources

Graph 12: Net installed power capacity.

Net installed heat capacity: conventional sources



3,095 MW
Total net installed heat capacity

2,959 MW
Conventional sources

Graph 13: Net installed heat capacity.

Renewable energy: closer look

EPH seeks to take an active role in the transition towards a sustainable energy system. This is demonstrated through the various investments we have made throughout our years of operation, such as introducing biomass in 2018 into our heat production, or through our current and future investments, such as the Kilroot Energy Park, with its first phase ready in 2023. Even though the majority of EPH's assets are categorised under the traditional energy segment, we are aware of the important role this area plays and will play in our decarbonisation strategy. Therefore, EPH will continue its efforts in increasing the portfolio of our renewable energy sources.

Our renewable activities in EPPE and EPIF

EPH holds its renewable capacities in EPIF and EPPE, each with their own focus and strategy. EPIF focuses on smaller power capacities and heat production from biomass cogeneration, while EPPE focuses on continually increasing its larger power capacities, especially through wind and biomass sources. EPPE additionally holds more investments in technologies which are vital to support deployment of renewable sources, such as battery storage.

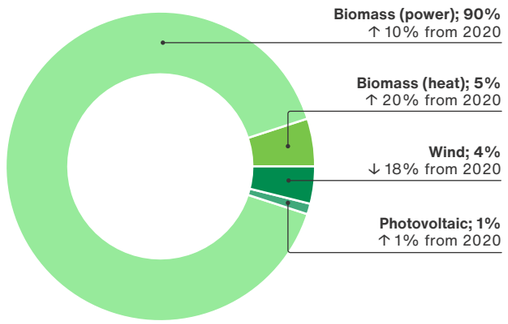
Production and installed capacities from renewable sources

In 2021, EPH saw an 8% and 20% increase in power and heat production from renewable sources when compared to last year, with an overall 8% increase in total energy production from renewable sources. EPH saw the largest increase in its power production from biomass, which increased by 10%. We experienced an overall decrease in power production especially from wind power plants by 18%, which was a result of unfavourable weather conditions. Overall, EPH's installed capacities in renewable sources slightly increased when compared to last year, however, we expect our capacities and overall production to increase with our upcoming projects. These projects include the Kilroot Energy Park in Northern Ireland (first phase expected to be done by 2023), our transition of open-cast mines in Germany into onshore wind farms (construction starting in 2023), MIBRAG's photovoltaic projects (operations assumed from the second quarter 2022) and wind projects (operations are expected to start in 2024), and our overall shift towards the increased use of biomass.

Net installed capacities – electricity	EPH [MW]	EPIF [MW]	EPPE [MW]
Wind	95	6	89
Photovoltaic	28	15	13
Hydro	5	3	2
Biomass	661	37	624
Other	13	3	10
Total	**801**	**64**	**737**

Table 5: Installed capacity of renewables.

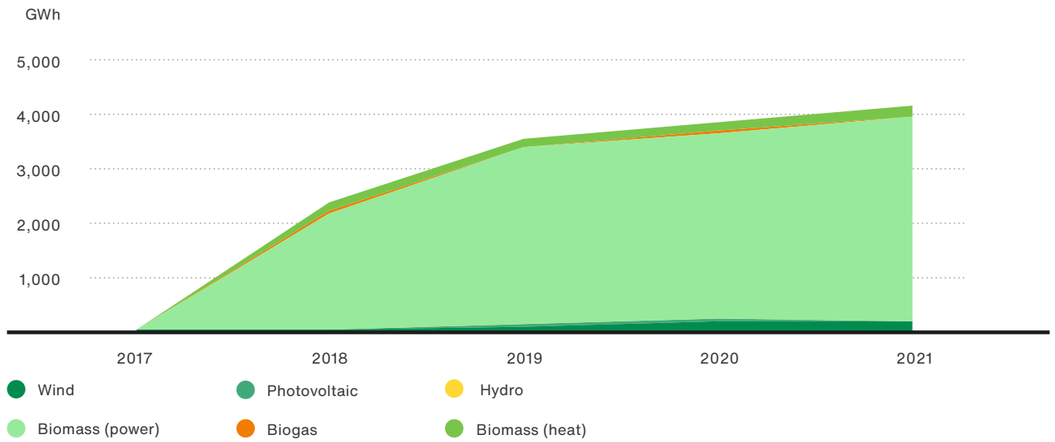
Power and heat production 2021: renewable source share



4,167 GWh
Total net production

Graph 14: 2021 share of power and heat production from renewable sources.

Net power and heat production: renewable sources



39,846 GWh
Total net power production

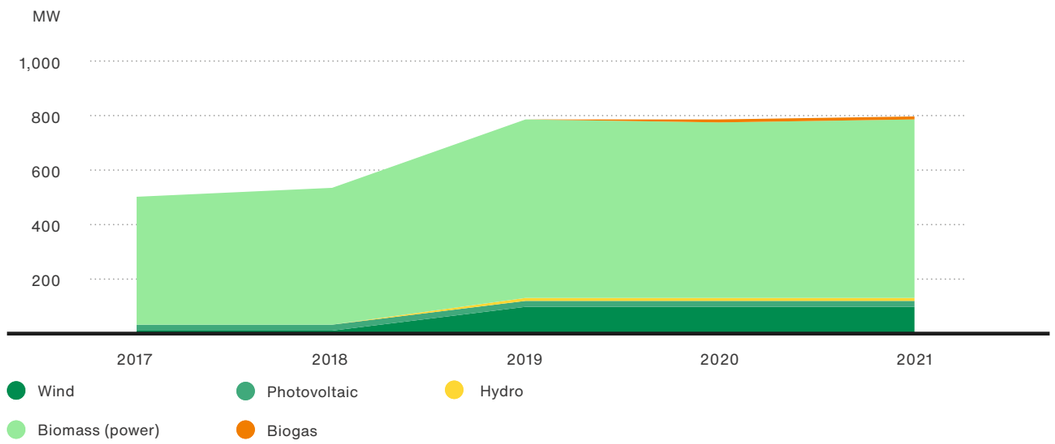
3,959 GWh
Renewable sources for power production

3,025 GWh
Total net heat production

207 GWh
Renewable sources for heat production

Graph 15: Net power and heat production from renewable sources.

Net installed power and heat capacity: renewable sources



11,131 MW
Total net installed power capacity

801 MW
Renewable sources for installed power capacity

3,095 MW
Total net installed heat capacity

136 MW
Renewable sources for installed heat capacity

Graph 16: Installed capacity renewables.

Energy consumption and efficiency: closer look

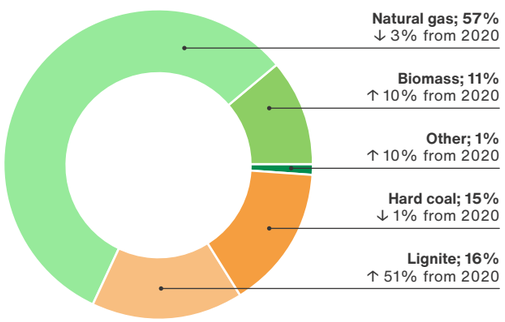
In 2021, EPH's total energy consumption increased by 5% compared to last year, which corresponds to the overall increase in energy production. From 2015 to 2021, we saw an average of 31,826 GWh of energy produced and 73,443 GWh of fuel consumed. EPH experienced a slightly lower energy efficiency output of 43% in 2021, which was driven by the disposal of our highly efficient cogeneration plants in Budapest in December 2020, as well as higher condensation production at the end of 2021 in response to abnormally high energy prices. At EPH, we also strive to modernise our existing units and equipment, and make good use of innovative technologies, while decommissioning anything obsolete.

When further analysing our fuel consumption in 2021, we saw the largest increase in coal and biomass, at 21% and 10% respectively, with a natural gas consumption decrease by 3% when compared to last year. The rise in coal consumption is mainly driven by Schkopau power plant, which, in 2021, is consolidated for the first time. In 2021, 57% of EPH's fuel share consisted of natural gas, which has consistently made up the majority of the Group's fuel share since 2016.

Overall, with our conversion investments (lignite-fired units to gas-fired units) and further use of CCGT units, EPH expects to continue to see an increase in natural gas and biomass consumption, and a decrease in lignite consumption. EPH plans to rebuild the Kilroot source from hard coal and oil to gas, which is expected to be up and running at the latest in 2023. Additionally, EPH plans to phase out Gazel Energie's last coal plant during 2022. Overall, EPH acknowledges the increased use of lignite and has concrete plans in place to decrease the consumption of both lignite and hard coal.

The commitment to improving energy efficiency across our operations not only helps us align the Group with the European climate protection targets adopted under the Paris Agreement at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 21), but it also makes good business sense. Improving efficiency allows us to decrease our combustion fuel costs, which is one of our main cost drivers, and reduce our GHG emissions for each unit of energy. Additionally, this also helps to reduce the amount of emission allowances that our installations need to buy.

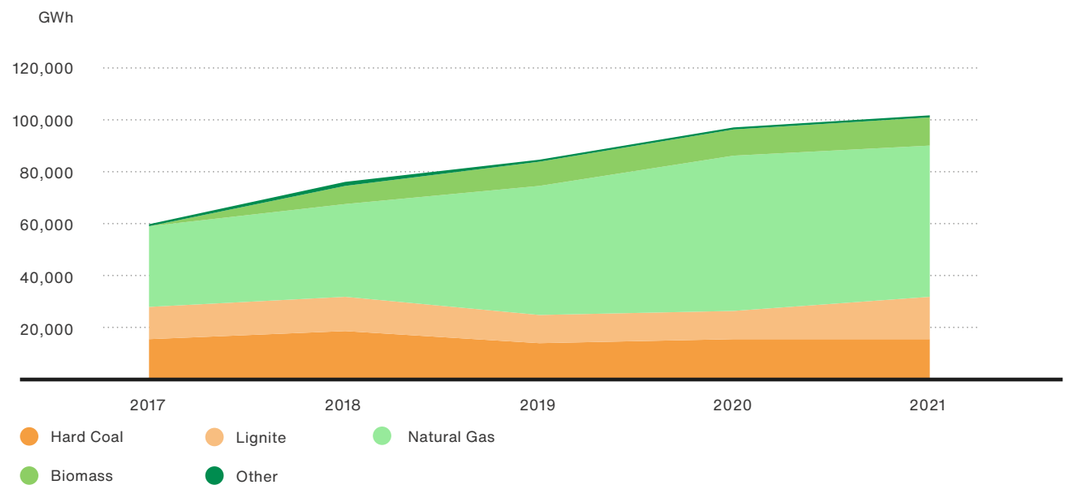
Energy consumption 2021: fuel share



102 thsnd. GWh
Total energy consumption

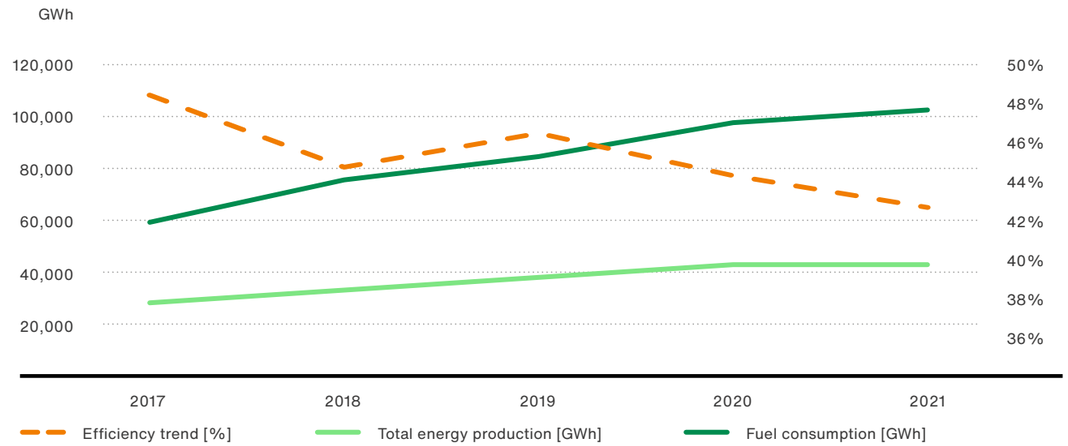
Graph 17: Energy consumption by fuel share.

Energy consumption



Graph 18: Total energy consumption.

Energy efficiency[29]



42,871 GWh
Total energy production

43%
Energy efficiency

Graph 19: Energy efficiency.

29 Only includes generating companies.

Case Study
Supporting the transition of the energy system

As a forward-looking company, EPH's long-term strategy is to support the transition of the energy system through all off its business segments. Asf highlighted by the following case studies, to successfully achieve this transition, EPH must diversify its approaches across the Group through a number of different and innovative projects.

EP Kilroot:
Energy Park in Northern Ireland

The Kilroot Energy Park will deliver new flexible gas generation that will complement the current high-quality level of renewable energy in Northern Ireland's electricity system. This aligns with the strategic ambitions of the Northern Ireland system, which aims to generate almost 70% of its electricity from renewable resources by 2030. Additionally, other various renewable energy solutions are being explored for the development of the Kilroot Energy Park including solar, battery storage, hydrogen and a multi-fuel Combine Heat and Power (CHP) facility. The Energy Park will also provide additional opportunities for investment and employment in data centres, or similar third-party businesses, with high energy demands close to the generation source.

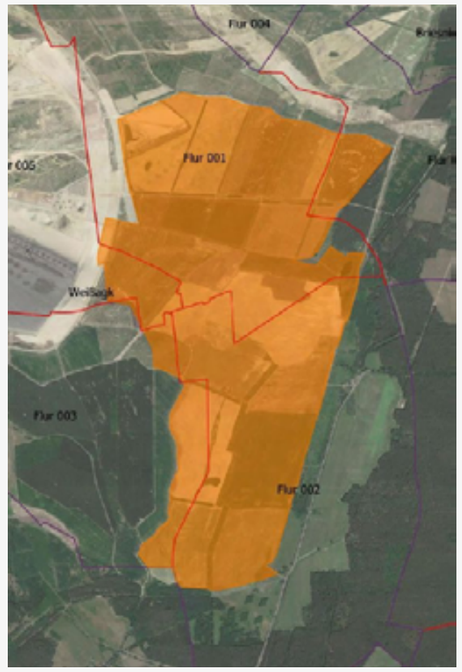
Altogether, these proposals could produce over 750 MW of installed capacity in lower carbon and renewable energy, to power up to 75,000 homes and represent an investment of up to £600 million into the site. It will also have the potential to provide over 200 quality jobs during the project's construction phase and over 150 full time jobs during operational periods. The first phase of this project is expected to be ready in 2023.

Picture 24: Conceptual layout of Kilroot Energy Park, representing the project's potential to contribute to the decarbonisation of the Northern Ireland power sector.

MIBRAG and EP New Energies:
photovoltaic projects in Germany

In the spring of 2022, MIBRAG plans to open a photovoltaic park in Zeitz, district of Theißen, dedicated to electricity generation for its own use, pending type A certification of the Group's power grid. For the certification, the entire MIBRAG power grid must also be certified. However, in 2021, the construction of the plant, the grid connection, the infrastructure and the integration into MIBRAG's own power grid was completed. Overall, this plant will reduce MIBRAG's external purchase of electricity from the public grid, powering the company's own opencast mines and administrative locations.

In 2024, EP New Energies is planning to open the Energiepark Bohrau, a ground-mounted solar plant in the Spree-Neiße district of Forst. This would be Germany's largest, with an output equivalent to the annual consumption of 114,000 households.



	Theißen Lawn MIBRAG Opening in 2022	**Energiepark Bohrau** EP New Energies Opening in 2024
Area (hectares)	1.1	400
Capacity (MW)	0.902	400
Annual generation (MWh)	925	400,000
Additional details	The Theißen Lawn system will power MIBRAG's own electric grid.	The Energiepark Bohrau will produce enough electricity annually to power 114,000 households.

Table 6: Information relating to the current and planned photovoltaic power plants under MIBRAG and EPNE .

Picture 25: MIBRAG Theißen Lawn photovoltaic park.

GazelEnergie:
developing new decarbonisation industries in France

GazelEnergie's ambition is to transform and rehabilitate existing coal sites into platforms for producing green energies. Local territory pacts signed by GazelEnergie with state and local authorities, "Pactes de Territoire," designate sites affected by the coal exit for the development of decarbonised industries.

In 2020, GazelEnergie highlighted the following projects that are aimed at developing decarbonised industries at the Provence and Saint-Avold sites:

Provence site
December 2020

1. Sustainably structuring the local biomass sector and the development of a sawmill.
2. Heat recovery systems from biomass powerplant in Provence to address the urban heat network in renewable heat.
3. Hydrogen and bio-fuel production with electrolysis.
4. Engineering studies have been launched for the H2 project (hydrogen-focused project).

Saint-Avold site
January 2020

1. Heat production from new biomass powerplant to decarbonise local industries.
2. Hydrogen production to decarbonise local mobilities and industries.
3. Battery storage.

Circular economy will be implemented as much as possible through processes such as ash treatment, heat recovery, and using waste to optimise biomass supply. By repurposing existing brownfields, these efforts uphold the French government's "France Relance" plan that supports the Government's decarbonisation strategy. In effect, GazelEnergie aims to create eco-platforms on the sites that will generate new jobs and develop green industries.

The following highlight initiatives at GazelEnergie aimed at supporting the Government's decarbonisation strategy:

Focus on biomass	Future projects at Provence 4B will focus on biomass. Projects will include a biomass local supply chain (including the implementation of a sawmill) and heat recovery from stack. Engineering studies have already been completed for the sawmill project.	In the summer of 2021, after a few weeks of partly running operations at the biomass power plant Provence 4B (230 full-load hours), operations were stopped due to strikes on site.
Renewable assets	Documents have been submitted to repower GazelEnergie's wind farms in Lehaucourt, Ambon and Muzillac. Financial studies have been conducted to identify if photovoltaic farms can be used to address sites Lucy and Hornaing.	In 2021, the Environmental Authority responded positively to repowering Ambon and Muzillac. In 2022, work is scheduled to begin at Lehaucourt.

EP New Energies:
wind projects in Germany

EP New Energies (EPNE), an EPH Group owned renewables developer, and GE Renewable Energy (GE) signed a 300 MW onshore wind purchase agreement in Germany, amounting to 50 wind turbines, each with 6 MW of installed capacity. These turbines are some of the most modern turbine technologies on the market, where the 6.0-164 turbines are a complement to GE's well-established Cypress platform. With a hub height of 167 meters and a rotor diameter of 164 meter, they drive an impressive six megawatts generator, efficiently using the wind resource while being environmentally friendly. For comparison, the Statue of Liberty has a height of 93m, making these turbines almost double the height of this national monument. This purchase will help EPNE develop its first wind farm projects, which aim to transform former German open-cast mining areas with onshore wind farms; the approval procedures started in 2021, with first phases of construction in 2023.

Wind farms are becoming a more appealing and attractive source of renewable energy, due to several facts surrounding this option, most interestingly they include that:

1. the operational lifetime of an onshore wind turbine is 20–25 years;
2. 85–90% of a dismantled wind turbine can be recycled today, creating an active circular economy market in Europe[30];
3. the "energy payback period" for an onshore wind farm is approximately 3 to 7 months (time required to restore the energy that was utilised for production), therefore, depending on design, a wind turbine can provide 40 to 70 times more energy over its entire lifetime than what was spent on their production, use and disposal[31].

30 WindEurope (2022). What happens when wind turbines get old? New Industry Guidance Document for dismantling and decommissioning. https://windeurope.org/newsroom/press-releases/what-happens-when-wind-turbines-get-old-new-industry-guidance-document-for-dismantling-and-decommissioning/

31 Agentur für Erneuerbare Energien (2022). FAQ Windenergie. https://www.unendlich-viel-energie.de/themen/faq/faq-windenergie/faq-windenergie2#:~:text=Eine%20Windturbine%20an%20Land%20braucht,Monaten%20f%C3%BCr%20die%20energetische%20Amortisation.&text=Eine%20Windkraftanlage%20kann%20w%C3%A4hrend%20ihrer,Nutzung%20und%20Entsorgung%20aufgewandt%20wurde

EP Produzione:
future of energy in Italy

The Italian Integrated National Energy and Climate Plan (PNIEC) confirms the aim of phasing out coal in Italy by 2025. Based on the 2021 Adequacy Report, for a successful and safe phase out in Sardinia, at least 500 MW of new programmable capacity, a new gas generation capacity, and two cables of 500 MW to connect Sicily and Sardinia will be required. This is crucial for guaranteeing the security of supply in Northern Sardinia and ensuring gas costs in Sardinia are in line with the rest of Italy. To publicly emphasise interest in developing gas in Sardinia, Fiume Santo submitted an application in December 2021 for an environmental impact assessment of the construction of a new gas plant with two almost equivalent power modules, representing an investment of approximately EUR 400 million.

EP Produzione has also evaluated other possible post-2025 solutions for the future of units 3 and 4 of Fiume Santo power plant and believes a mix of technologies will be needed to satisfy the needs of the Sardinian electricity system without coal as a thermoelectric fuel. These possible solutions include, for example, a new solar park, a battery energy storage system, production of electricity from biomass, possibly in combination with gas, or construction of a gas-powered combined cycle (CCGT) or open cycle (OCGT) plant. Fiume Santo therefore also presented an EUR 10 million update of a photovoltaic park in with another 10 megawatts and launched the authorisation process for a possible investment of approximately EUR 100 million in a 100 megawatt electrochemical battery storage system. These investments would make the park one of Italy's largest.

The company has already initiated discussions with the Authorities related to the abovementioned possible post-2025 solutions, while at the same time investigating the related technical aspects linked, above all, to the conversion of the Fiume Santo unit to biomass (including, for example, a study of the changes to be made to the boiler and reachable efficiency). However, in order to carry out the investment as a whole, a remuneration system that supports the combustion of biomass in a large plant or the reduction of the plant size is required.

EP Produzione is supporting the energy transition through the development of additional capacity projects:

1. A new 800 MW CCGT unit at Tavazzano and Montanaso (LO) power plant, for a total investment of about EUR 380 million.
2. A new CCGT unit with a capacity of approximately 900 MW at Ostiglia (MN) power plant, for a total investment of about EUR 400 million.
3. A new 10–17 MW PV plant at Fiume Santo power plant.
4. 4 new OCGT units totalling 220 MW at Trapani power plant, for a total investment of about EUR 120 million.

Case Study
Hydrogen's role in the transition of the energy system

Hydrogen adoption is widely recognized as an important step towards a low-carbon economy and may be considered the front runner among renewable and low-emission gases. This fuel of the future could serve as an effective medium for the transportation and storage of renewable energy.

EPH's gas storage facilities: ensuring energy supply stability

New legislation in Germany (within the frame of the "Energiewende") intends to **phase out nuclear (until 2022) and coal-fired power plants (until 2038)**, currently representing approximately 1/5 of the total installed electricity generation capacity[32].

Near future challenges:

1. Significant reduction of nuclear and coal-fired power plants will lead to an increase of both the volume of consumed gas, and its volatility on the electricity and gas markets. This will drive demand for additional services to balance out this network.
2. The share of renewables (mainly photovoltaics and wind) will increase in the primary energy mix, meaning that there will be a significant increase of the share of intermittent sources of energy.

Our role: Securing supplies.

These trends will naturally lead to an increased demand for gas storage. EPIF gas storage facilities (6 underground sites, with an overall capacity of 62 TWh) and EPPE gas storage facility (with a capacity of almost 3 TWh) provide very cost-effective, flexible and reliable energy storage. Inherently, we will be supporting the development of renewable energy sources, leading to an affordable energy mix in the coming decades.

Nafta: hydrogen storage innovation project

Nafta has already participated in several projects focused on storage innovations. Because of its experience in this field, Nafta has been able to commence internal projects focused on assessing the impact of various concentrations of hydrogen on gas storage facilities (reservoirs, as well as related technology). Nafta is working on the assessment of hydrogen impact (2% vol. – share in the mix) on its infrastructure (reservoirs, wells and surface technology).

Nafta is a partner in the H2-Infrastructure (H2-I) project, which is a joint project with eustream, SPP-D and Nafta, who have all applied for IPCEI (Important Project of Common European Interest) status.

Nafta's focus on the project is divided into 3 main phases:

Phase 1	Phase 2	Phase 3
Selecting suitable reservoirs for storing hydrogen in Slovakia. This will be based on laboratory research of core samples. Additionally, the maximum allowable hydrogen concentration will be defined.	Building, designing and operating plant technology.	Evaluating project result.

The project is scheduled to start in 2022 and finish in 2029; however, this is dependent on access to public funding.

32 Power plant list; Bundesnetzagentur; accessed on 17 April 2022; source: https://www.bundesnetzagentur.de/EN/Areas/Energy/Companies/SecurityOfSupply/GeneratingCapacity/PowerPlantList/start.html

Eustream: preparing technology for the use of hydrogen

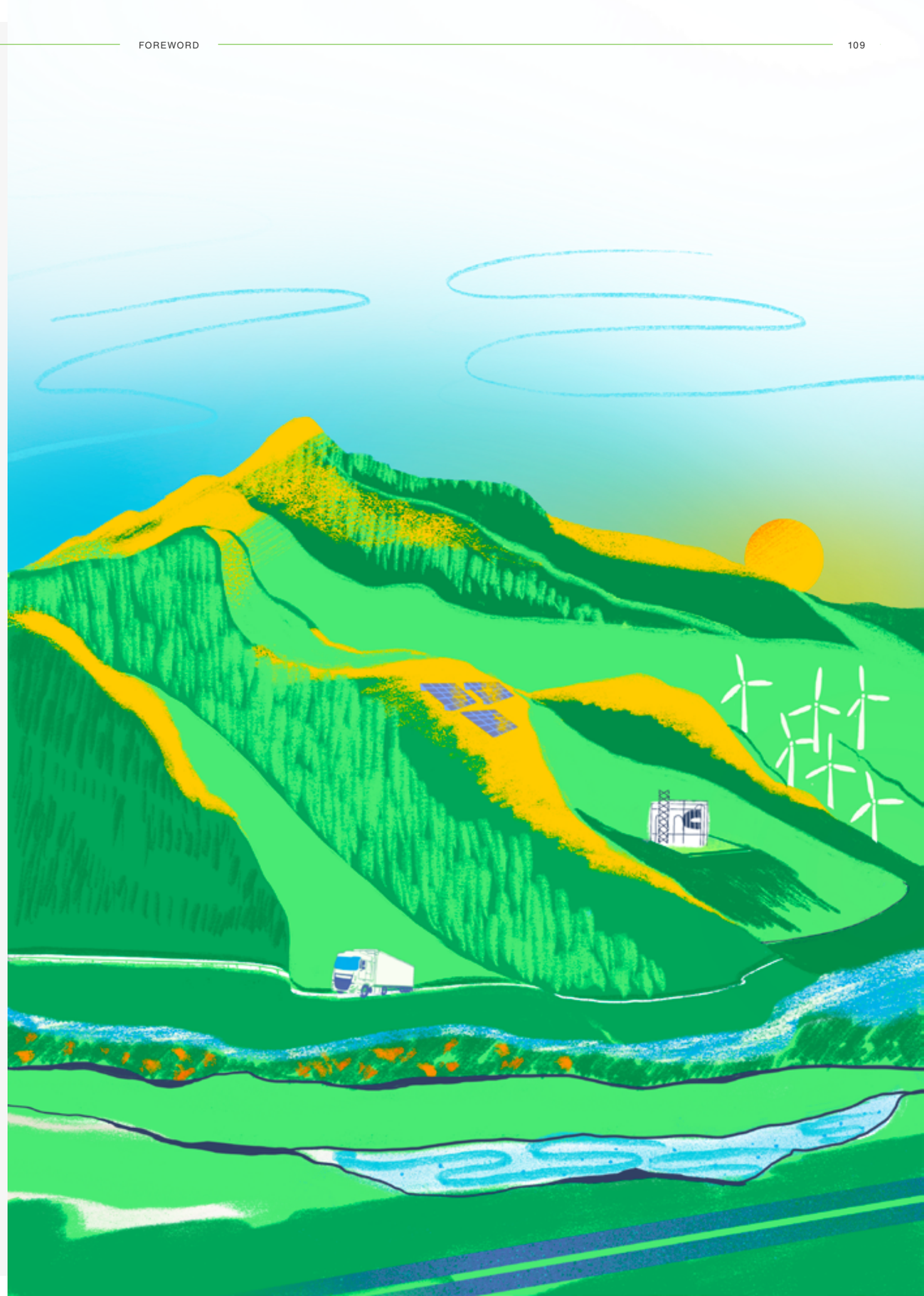
Eustream works on technological readiness for hydrogen in the gas mix within the transmission system. By the end of 2023, eustream will be able to blend up to 5% of hydrogen. In the near future, Slovakia will be ready from a technological standpoint to transport approximately more than 2 bcm of hydrogen per year, putting us in a position that will allow us to accommodate the expected gradual increase in the supply and demand of hydrogen. The pilot project for green hydrogen production will be also launched at the Veľké Kapušany compressor station, the green energy produced will be used to drive compressors.

SPP-D: hydrogen blending (H2Pilot project)

SPP-D is in a position to significantly contribute to the reduction of our society's environmental footprint by combining natural gas with hydrogen, bio-methane or synthetic gas. Based on own tests performed by SPP-D and numerous studies and trials carried out abroad, SPP-D believes that the transported gas can contain up to 20% hydrogen without having to make major modifications to the existing gas grid. Blending 20% of hydrogen into the natural gas stream will eventually reduce the carbon footprint of consumption by 7%, given the lower calorific value of hydrogen.

The H2Pilot project is currently in its final phase, where in 2022, SPP-D will perform hydrogen blending tests on an isolated part of its distribution network. Within this pilot project, SPP-D will supply gas to 300 household connection points with hydrogen blending levels up to 10%[33]. Success of the H2Pilot project could serve as a best practice example for accelerating the hydrogen transformation within the Slovakian distribution network.

33 SPP-D (2022). H2Pilot. https://www.spp-distribucia.sk/spravy/novinky/spp-distribucia-spusta-pilotny-projekt-testovania-distribucie-vodiku-pre-vykurovanie-domacnosti/



Case Study
Biomass' role in the transition of the energy system

Biomass is a renewable source of energy, and its combustion offers an economical alternative to fossil fuels. Biomass is widely accessible, and it can be used also in cogeneration units to produce both heat and power. In comparison to other renewable sources, it is a stable source of energy since power plants can create large stocks of pellets and provide constant output to the grid.

MIBRAG: wood driers for biomass combustion

The latest innovation planned for the ongoing project EMIR (German abbreviation for "transformation of MIBRAG in the local region") is a gas motor-based CHP plant at Profen Village. The very flexible, low-emission power plant will have an electrical capacity of 15 MW and will be connected to MIBRAG's own 30 kV grid. After the decommissioning of the Deuben power plant, the new plant will be needed in order to meet MIBRAG's future internal demand for electricity, along with Wählitz power plant, and further solar plants and wind turbines currently in the planning and design phase.

Using exhaust heat from the planned CHP, a new 32 meter-long wood dryer will dry chips of natural wood from forest districts of the 3 surrounding federal states, as well as landscaping wood. Among other applications, the woodchips will be used for co-burning at the Wählitz power plant, where they could substitute up to 31 thousand tonnes of raw lignite and significantly reduce CO_2 emissions. This project represents the first step towards a potential fuel switch at Wählitz power plant and creates the basis for further development of a climate-neutral industrial site at Profen. The dryer is planned to be taken into operation in the second half of 2022 and it will first be operated on the basis of heat supplied by the district heating system.

Picture 27: MIBRAG wood drier and engineering design.

Plzeňská teplárenská: co-combustion of biomass in existing boiler

We invested a total of EUR 4.8 million to refurbish the K6 fluid boiler at Plzeňská teplárenská. This successfully increased the share of biomass that can be combusted in this boiler to 80%, with the potential for a future transition to burning 100% biomass. This substantially limits the need for lignite as an energy source, decreasing the consumption of coal by 95,000 tonnes per year and the production of CO_2 by 108,000 tonnes per year.

This investment covered a new unloading station (fuel and biomass storage), internal and external fuel transport, new inputs into the combustion chamber of the boiler, and optimisation of the combustion process based on emissions.

To achieve a decrease in supply chain emissions, Plzeňská teplárenská is gradually increasing the share of rail transport on which it relies. This is especially important as the newly retrofitted boiler requires additional biomass, increasing the demand for the transportation of material.

In 2021, approximately 18% of the total volume of purchased biomass was transported by rail. In 2022, this should increase to approximately 30% of the total volume. Due to the increased demand for transportation, we took into consideration the methods for biomass transportation in the tenders for our biomass suppliers.

United Energy: refurbishment of existing boiler to complete biomass combustion

At our North Bohemian heating plant, one of the existing lignite boilers was refurbished to enable 100% biomass combustion. The boiler was put into operation in the course of summer 2021 and saved up to 50,000 tonnes of CO_2 emissions by the end of the year by switching from coal to biomass as a main source of fuel.

Some minor design modifications are currently underway to ensure better fuel path control that enables more fluent biomass transport directly to the boiler. It is planned to save up to 150,000 tonnes of CO_2 and 80 tonnes of SO_2 emission in 2022.

Environment

EPH is committed to conducting its business activities in an environmentally safe and responsible manner. Our aim is to continually monitor, identify and address any negative impacts our business may pose on the environment.

EPH understands the importance of managing our environmental risks, as the long-term success of our Group depends on the responsible and efficient use of our natural resources. We are aware that historically our business sector has been labelled as an energy-intensive industry with high carbon emissions. Therefore, we believe it is important to provide a comprehensive overview of our operations and how we aim to focus our efforts on changing the industry standards.

1 Foreword

2 EPH's Approach to Sustainability

3 EPH and its Business

4 Environment

Reduction of emissions

Mitigation of environmental impact

5 Governance

6 Social

7 Assurance

8 Annex

Reduction of emissions

EPH recognises that we have an important role to play in reducing emissions within our industry. We have focused our efforts on internal policies, programmes and energy efficiency within the operations of our Group.

EPH continues to understand the extent to which climate change threatens the wellbeing of people and the environment. The reality of climate change and its impacts has been the leading driver in increasing the intensity of our efforts through reduced emissions and increased operational efficiencies across the Group. Overall, EPH continues to put a strong emphasis on internal policies and programs that aim to address the Group's GHG emission reductions.

The Group follows the global trends relating to climate change, noting that there has been increasing focus on methane emissions and their reduction strategies. Notably, at the 2021 United Nations Climate Change Conference (COP26), over 80 countries committed to reduce methane emissions by 30% by 2030. EPH follows these global trends, as well as those specific to the industry, so as to be able to effectively continue to support our management of methane emissions and related reduction projects.

Our contribution to the SDGs:

EPH is committed to continually learning about the consequences of climate change, especially when it relates to harmful emissions. We believe it is important to work together to reverse the climate crisis, as it not only affects our well – being, but also that of our planet.

Climate change and common goals

We recognise the urgency to address climate change and as a result, commit the Group to participating in the joint efforts of lowering global temperatures through our decarbonisation strategy.

GHG emissions management

We aim to fully understand the direct and indirect impact that our business has through GHG emissions. Through our continual monitoring and modernising of our operations, EPH aims to align the Group with the European decarbonisation goals and GHG emission reduction targets.

Carbon intensity and efficiency

We continually monitor the carbon intensity of our generation assets. Our focus has been on optimising our operational processes, thereby improving the efficiency of our Group's business segments.

Other air pollutants

We carefully monitor the air pollutants associated with our operations and are committed to decreasing these emissions. Our management approach focuses on the continual improvement, modernisation and optimisation of our business processes.

2021 Highlights

We continue to focus on GHG reduction projects.

GHG emission intensity

-38 %

From 2015 to 2021, EPH improved its total GHG emission intensity by 38%.

SO_2 emissions

-70 %

Since 2015, EPH has decreased its emissions from SO_2 and dust by 70% and 56% respectively, while increasing the power production volumes. In 2021, SO_2 total emissions and SO_2 emission intensity dropped by 9% and 11% respectively compared to last year.

methane emissions

-16 %

Since 2017, EPH decreased its methane emissions by 16%.

Climate change and common goals

The annual United Nations Conference on Climate Change brings focus to the international urgency in having a global commitment that addresses climate change. Notably, in 2015, the Paris Agreement, adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 21), jointly committed participating parties to lowering the global temperature increase to well below 2 degrees Celsius, compared to the pre-industrial levels.

The EPH Group welcomes the Paris Agreement and fully supports its goal and as of 2021, we announced long-term ESG targets aimed at reinforcing our ongoing decarbonisation efforts. We **aim to achieve carbon neutrality by 2050**, in line with the official 2050 EU climate-neutrality objective. As laid out in the "EPH's focus on reducing GHG emissions" section of this Report, we support our long-term goal by medium-term and more specific targets:

1. Reduce CO_2 emissions by 60% from generating plants within our fleet as of August 2021 by 2030
2. Zero coal as a primary source of generation by 2030 outside of Germany and in Germany in line with the Coal Phase-out Act (Kohleausstiegsgesetz) as approved by the German government
3. Become a European frontrunner in the transition to a hydrogen future
4. Create a Green Finance Framework for use, where applicable, within EPH Capital Structure Strategy

We believe that the transition process needs to happen gradually, so as to minimise unnecessary risks that would hinder economic development or cause other unpredictable problems that could impact society as a whole (e.g. a long black-out period).

GHG emissions

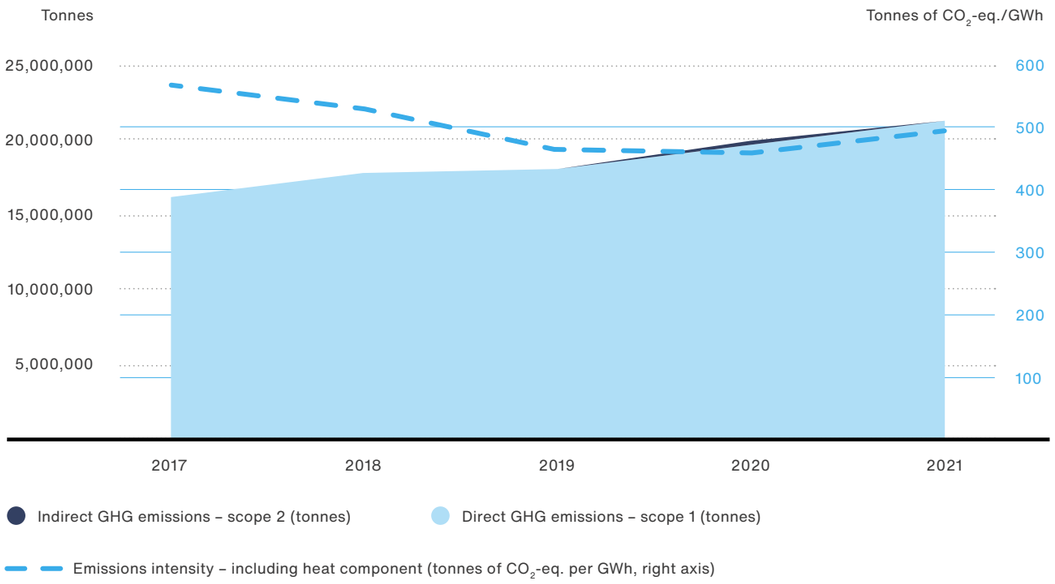
EPH recognises that across its business segments, we emit greenhouse gases[34] (GHG) and other air emissions. As a result, EPH is committed to tracking and reducing its emissions as outlined in our decarbonisation roadmap. This will align us with the targets set out by the European decarbonisation goals and GHG emission targets, as well as overall reduce our carbon footprint. These goals are highlighted within our internal documents, such as our *Environmental Policy*, and through the modernisation of our operations for achieving greater efficiency.

EPH's 2021 direct (Scope 1) emissions saw a slight increase of 8% when compared to last year. The Group was granted, and then additionally procured, 1% and 99% of these Scope 1 emissions respectively. We also saw a decrease in our indirect (Scope 2) emissions by 39%, which we have only been measuring since 2018. The direct (Scope 1) emission intensity increased by 7% due to full consolidation of Schkopau lignite power plant from September 2021, disposal of certain CCGT units with generally lower emissions, and also increased generation from coal, following the overall trend in Europe in the second half of the year when coal-fired units were more favorably positioned in the merit order than gas-fired plants. EPH remains committed to addressing the intensities from its direct and indirect emissions through its various modernisation and conversion programmes, as highlighted in the "GHG emission reduction programmes" section of this Report.

Due to our scope, EPH has variable impact within its business segments on the environment. Some EPH companies have a relatively small impact on the environment, resource usage and GHG emissions, as they primarily function as an intermediary. Overall, companies with direct energy production are responsible for the biggest share of our GHG emissions, which is why the following section takes a closer look into the environmental impacts and management from the EPIF and EPPE Groups.

34 GHGs are those currently defined by the United Nations Framework Convention on Climate Change and the Kyoto Protocol; they include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and fluorinated gases. However, in our calculations of total emissions and emission intensity we consider only carbon dioxide as it is the most significant.

Direct and indirect GHG emissions[35]



21.6 mil. tonnes
Total direct emissions

65.2 thsnd. tonnes
Total indirect emissions

216.6 thsnd. tonnes
Total granted emission allowances

21.1 mil. tonnes
Total procured emission allowances

493 tonnes of CO_2-eq./GWh
Direct emission intensity, including heat component

1 tonnes of CO_2-eq./GWh
Indirect emission intensity, including heat component

Graph 20: Direct and indirect emissions, and emission intensity.

35 Emission intensity only includes generating companies. Also, note that indirect emissions are significantly lower than direct emissions, thus visually unrecognizable in the graph.

EP Infrastructure: closer look

In 2021, GHG emissions from EPIF accounted for 16% of the total EPH's total emissions, where notably, 95% of EPIF's emissions come from its heat infrastructure business segment. Compared to last year, EPIF saw an 8% reduction in its emissions, with an increase of 29% in its emission intensity. EPIF expected such an increase, as it disposed of BERT at the end of 2020, which consisted of CCGT units that have lower emission intensity in general.

Overall, EPIF is an environmentally responsible operator, as we are committed to continually seeking opportunities in which we can further decrease our GHG footprint. The key investment projects in 2021 included refurbishments of boilers at our heating plants in Plzeň and Komořany, enabling partial or full biomass combustion within these boilers which were formerly predominantly lignite based. By 2030, all remaining lignite units will be converted to a balanced mix of CCGT units, biomass units and potentiall waste incinerator plants, all in line with EPIF commitment to abandon coal as a primary energy source by 2030.

EP Power Europe: closer look

In 2021, GHG emissions from EPPE accounted for 84% of EPH's total emissions, where notably, over 99% of EPPE's emissions came from the generation and mining business segment. This highlights the importance of EPPE's future strategies and management of the Group's emissions. Compared to last year, EPPE saw a 12% increase in its emissions, and a 4% emission intensity increase. These increases are mainly caused by the fact that from 2021 we are fully consolidating Schkopau, a lignite power plant.

EPPE's high share of emissions in EPH corresponds with the EPPE's size regarding carbon intensive assets. Furthermore, EPPE's carbon intensity is affected by the lack of viable alternative technologies in some areas that we operate and the time that is required to decommission the carbon intensive assets. As a matter of fact, overall, EPH has only acquired hard coal or lignite-fuelled power plants in markets that are or will physically be unable to secure stable power supplies from alternative sources or with the aim of closing these and converting them into another fuel source when possible. This, for example, is the case in Sardinia, where due to a shortage of power generation capacities, they will operate in a must run mode until Italy's planned coal phase-out in 2025. This demonstrates that at EPPE, we are fully committed to fulfilling European and local emission targets, however, we are also prepared to take on a role that is not so highly viewed, to provide basic services to all of the communities and regions in which we operate. To accompany these assets, we have several low or zero-carbon ones. To put it into perspective, EPPE makes up more that 92% of the installed electricity capacities in renewables within the EPH Group.

Case Study

GHG emission reduction programmes

Current and future projects that will help to reduce our GHG emissions

EP Kilroot: decommissioning coal-fired units

EPH acquired EP Kilroot in June 2019. It is primarily a coal-fired power station, but it also has four distillate fired OCGT units and a battery storage facility. Overall, it plays a critical role in providing a secure and stable power supply to Northern Ireland due to the limited interconnection between the Republic of Ireland and the United Kingdom.

In compliance with the Grid Code obligations, EP Kilroot served a closure notice for its coal-fired units in 2020, thereby confirming its intention to cease all coal operations by the end of September 2023. This was ahead of the UK Government's commitment to phase out coal powered electricity generation by 2025. The coal-fired generation capacity will be replaced by the first phase of the Kilroot Energy Park, which will include a modern gas turbine peaking plant to support the electricity grid in periods of low wind or very high demand. Subsequently, the closure of the coal-fired units will significantly reduce emissions from the system, as highlighted in the table below.

Emission	Average annual reduction
CO_2	over 1 mil. tonnes
NO_x	1.1 thsnd. tonnes
SO_x	1.0 thsnd. tonnes

Table 7: Significant emission reductions.

Picture 28: EP Kilroot power station.

Case Study
MIBRAG: decommissioning of Deuben power plant

After 85 years in operation, December 2021 marked the end of the Deuben power plant. The complex began operations as an integrated CHP system with a power plant, briquette factory, and carbonisation plant in 1936. A total of about 8,300 MWh of electricity were generated by the plant during its first year of operation. MIBRAG decided to pursue the early closure of the plant for economic reasons and in response to the coal phase-out resolution passed in 2020.

At the end of its operating life, the power plant had five steam boilers and an installed capacity of 300 MWt. The dust plant was made up of four tubular dryers, a roller mill and four dust silos; the power and dust plant were supplied with lignite from the Profen mine.

MIBRAG received official notice from the Federal Grid Agency in April 2021 that its bid to decommission Deuben power plant was successful, offering MIBRAG the opportunity to shut it down in a socially responsible manner. Closure of Deuben power plant will save about 494 thousand tonnes of CO_2 in 2022.

Picture 29: Deuben power plant.

Case Study
GazelEnergie: decomissioning power plants

In December 2019, and in accordance with the November 2019 Energy and Climate Act which aimed to close the country's coal power plants by April 2022, the French Government decreed a new carbon emissions cap of 550 g of CO_2/KWh. GazelEnergie consequently launched a social plan in September 2020, "plan de sauvegarde de l'emploi," for responsibly closing the Saint-Avold coal power plants, Provence 5 and Emile Huchet 6. The plan offers employees impacted by the closures state-financed social measures, such as 12 to18 months of paid reclassification leave and training to help them secure new employment.

Provence 5 power plant closed at the end of April 2021, while Emile Huchet 6 will be also decommissioned in 2022 or 2023. After the closure of the power plants, the site of Saint-Avold will be prepared for dismantling with the help of environmental studies through the "Plan de Gestion." Additionally, new projects will be developed in accordance with local territory pacts, "Pacte de Territoire." Fauna and flora studies have been launched to prepare the projects for their development.

GazelEnergie is also committed to decommissioning the closed Lucy and Hornaing power plants, for which environmental studies have already been completed and an asbestos removal action plan has been defined. In 2021, the company's efforts focused on the Lucy site.

Case Study
EP Cargo – Driving home the benefits of rail transport

In 2021, EP Cargo ran a number of projects involving the rail transport of construction waste and debris and other materials that are often moved by truck rather than train. Despite being less flexible than truck transport, rail transport has greater fuel and emissions efficiency, which combined with EP Cargo's loading and unloading expertise, makes it an excellent option for clients seeking a tailor made service for transportation of specific types of materials. As a result, customers chose rail transport and hundreds of trucks were kept off the roads, leading to comparatively lower carbon emissions, fuel use and noise pollution, as well as cost savings:

1 Energy gypsum

In 2021, EP Cargo transported 24 thousand tons of energy gypsum, a power station by-product, by rail from the Industrial site Opatovice in the Czech Republic to the Netherlands, where it was used in a construction materials factory. In this particular project, one train carried the capacity of 60 trucks, leading to relative savings of 7,700 litres of diesel fuel. Moreover, by being able to relocate this valuable material in a more efficient way, it was prevented from being disposed of in a special landfill.

2 Biomass

In 2021, EP Cargo trains transported 48,000 tonnes of wood chips to the Plzeňská teplárenská (Pilsen heating plant) from various places in the Czech Republic. Wood chips combusted by Plzeňská teplárenská represent a renewable, efficient, locally sourced form of biomass. In this project, one train could carry the equivalent of six trucks, meaning that a total of 2,166 trucks were not used in 2021 for the transport of this material. EP Cargo also enables an efficient use of resources by unloading chips from the same wagons and in the same way as coal.

3 Wood waste

Starting in July 2021, EP Cargo began rail transport of 1–2 trains per month of wood waste collected by German recycling companies, which is brought to a factory in Zvolen, Slovakia for processing into boards and subsequently furniture. EP Cargo's rail expertise and capabilities enabled the client to transport a particular material on a specific route at the quality and price ratio that was needed, which could not have been achieved by truck transport. One train carried the equivalent of 33 trucks, saving 673 tonnes of CO_2 emissions per month.

4 Building materials, waste and construction debris

In 2021, EPLI established the BauLogistics centre, which focuses solely on railway transport of special fractions of building materials, waste shipments, and construction debris – which are not normally transported by rail – to and from railway construction sites. In total, the newly created centre saved 843 tonnes of CO_2 in 2021. In 2022, this number is expected to more than double as EP Cargo plans to continue to grow in this segment.

> "In 2021 we kept 8,923 trucks off the road, which resulted in savings of 3,149 tonnes of CO_2.

Project	Total distance [km]	Total transport [tonnes]	Number of trucks kept off the road	Number of trains used	Emissions trucks [t CO_2]	Emissions rail [t CO_2]	Emission savings [t CO_2]
Energy Gypsum	2,000	24,000	960	16	1,913	162	**-1,751**
Biomass	400	48,000	2,166	361	863	730	**-133**
Wood Waste	2,200	18,000	594	18	863	122	**-741**
Building Materials	55	31,500	1,050	30	58	8	**-50**
Waste Shipments	220	110,000	3,670	85	801	95	**-706**
Construction debris	210	14,500	483	15	103	16	**-87**

Table 8: 2021 savings of road space and CO_2 emissions from transporting by rail vs. truck.

Case Study
LOCON's Innovative Approach to Last Mile Rail

In 2021, LOCON was able to convince both new and existing customers regarding the sustainability of rail cargo transport. Some of these customers had previously used trucks to transport goods from their plants. Due to LOCON's innovative strategy – encompassed by our last mile rail technology and loading/unloading expertise – it was possible to shift these transports to rail and to develop a concept tailored precisely to customer needs. As a result, the customers benefited from both a more efficient workforce and higher CO_2 savings.

Rail technology for the last-mile

LOCON uses a series 187 Bombardier TRAXX F160 AC3 (LMD) electric locomotive that offers the option of last-mile diesel. This makes it possible for LOCON to use the locomotive as a shunting locomotive without an available traction power line in the final port and thus offers increased flexibility and efficiency.

Offering a full and tailored service

LOCON has developed a tailored approach to meeting its client's needs with professional personnel and expertise. On its Nauen-Hamburg route, it provides not only the wagon fleet, wagon inspector and shunting team, but is also responsible for loading and unloading the wagon fleet using two modern reach stackers, allowing its customers the highest degree of flexibility. In 2022, the customers on this route decided to continue their cooperation with LOCON, confirming the high quality and added value of this service.

Cutting emissions and keeping trucks off the road

With projects like these, LOCON actively contributes to significant savings in space, capacity and CO_2 on German roads. On our Minden-Hamburg route, we used 266 train trips to transport 22,370 twenty-foot equivalent (or TEU, a standardised unit of cargo capacity) of cargo, which would have required 11,185 trips by truck – a 42 fold difference. On our Nauen-Hamburg route, we used 224 train trips to transport 17,000 TEU of cargo, which would have required 8,500 trips by truck. As a result of the switch to rail on these routes, we saved 2,112 and 3,020 tonnes of CO_2, respectively.

Route	TEU [unit of cargo capacity]	Route distance [km]	Number of trips by train	Number of trucks kept off the road	CO_2 savings [tonnes] per year compared to road transport
Minden-Hamburg	22,370	260	266	11,185	**-2,112**
Nauen-Hamburg	17,000	500	224	8,500	**-3,020**

Table 9: 2021 CO_2 Savings with Rail transport vs. equivalent TEU transport by Road.

Case Study
Conversion projects at Plzeňská teplárenská

Teplárna project

The aim of the project is to replace the existing coal fired technology with **a combined cycle power plant** consisting of a new gas turbine and HRSG as well as of the existing steam turbine TG2 and boiler K6 which will be modernized to burn 100% biomass.

The project also includes **decommissioning of the existing coal technology**, which will no longer be used and the relocation of relevant pipelines and selected auxiliary equipment.

Installed equipment might consist of the following (parameters indicative):

57 MWe
gas turbine

70 MWe
steam turbine

140 MWt
combined cycle

2 × 40 MWt
gas boilers

Energetika project

Within this project, the replacement of existing coal technology with a new combined cycle power plant of typical 2+1 multi-shaft configuration is being considered. Furthermore, this project phase also includes the installation of a new gas hot water boiler with power output of 60 MWt

In parallel with the new technology, the existing gas boiler, with an output of 18 MWt, will be used to cover thermal peaks of heat supply. At the same time the three existing engine units with a total output of 21 MWe will remain installed and will be preferentially used to provide grid-balancing services.

Installed equipment might consist of the following (parameters indicative):

3 × 30 MWe
combined cycle

21 MWe
engine units

62 MWt
combined cycle

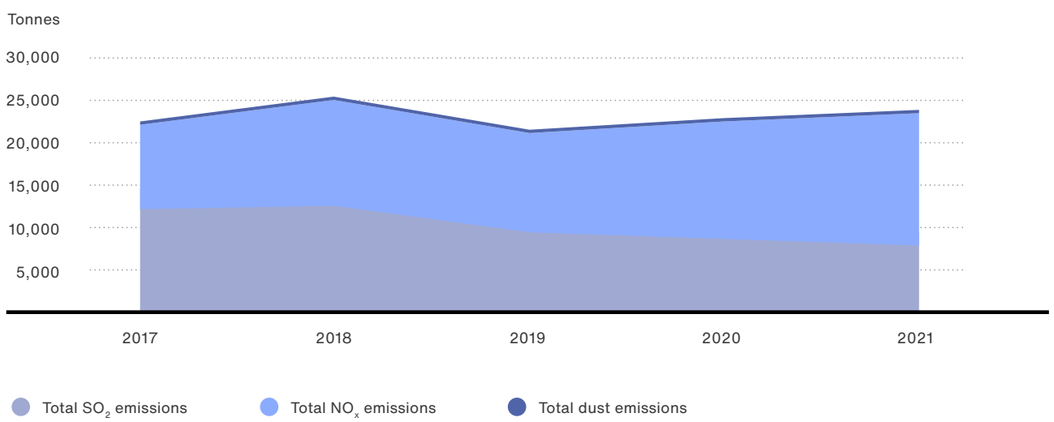
78 MWt
gas boilers

Other air pollutants

The most significant atmospheric pollutants associated with our activities are sulphur dioxide (SO_2), nitrogen oxides (NO_x) and dust. Overall, EPH saw a slight increase in these emissions, by 2% when compared to last year. This increase is mainly linked to higher production from coal in Germany (including effect of Schkopau consolidation), France and in the UK. Even though there was a slight increase in these emissions within the Group, overall, since 2015, EPH has managed to decrease these emissions by 43%. A specific breakdown and management approach to these specific emissions is highlighted in the following table.

Moreover, the following other air emission intensities measured in tonnes per 1 GWh of energy produced were recorded: 11% decrease in SO_2 intensity, 7% increase in NO_x intensity, and 3% increase in dust intensity in 2021 compared to 2020. However, compared to 2015, EPH experienced 88% improvement in SO_2 intensity, 60% NO_x intensity and 82% dust intensity.

EPH's total air emissions



7,803 tonnes
Total SO_2 emissions

15,679 tonnes
Total NO_x emissions

345 tonnes
Total dust emissions

Graph 21: Air emissions.

Emission source	% 2015–2021 change	% 2020–2021 change	EPH's management approach
SO_2 emissions	70 % ↓	9 % ↓	The combustion of sulphurous coal is the primary source of our SO_2 emissions. EPH addresses its SO_2 emissions through the improved desulphurisation of our equipment. We are also focusing our efforts on increasing the proportion of natural gas in our energy mix.
NO_x emissions	3 % ↑	9 % ↑	Nitrogen oxide (NO_x) is mainly generated by the combustion of nitrogen contained in the air at high temperatures. EPH addresses these emissions through the continued monitoring and analyses of stacks in our large power plants. We ensure the same type of commitment to stacks in our small plants, but on a more periodic basis, as we also rely on statistical parameters for analyses.
Dust emissions	56 % ↓	4 % ↑	Dust particles are primarily emitted through our coal-fired power plants. EPH manages these emissions through highly sophisticated filters.

Table 10: Air emissions management approach.

Case Study
Other air emission programmes
Targeting the reduction of other air emissions

EP Produzione:
complying with best available technologies at Fiume Santo

Following the provisions of current legislation, the Fiume Santo plant must comply with best available technologies (BAT). This was established by the decision (EU) 2017/1442 of the EU Commission of July 2017 in accordance with the provisions of Directive 2010/75/EU of European Parliament and the Council for large combustion plants. By law, plant BAT compliance projects must be authorised by the Competent Authority and implemented by plant operators within 4 years of BAT publication, which for Fiume Santo should have been August 2021. However, the plant obtained an extension of the deadline, where the timeline for the works was accordingly set for May to September 2021 for Unit 4 and November 2021 to March 2022 for Unit 3.

At Fiume Santo, the implementations required to comply with BAT will reach an investment of approximately EUR 17 million and will consist of:

1. Replacing boiler burners;
2. Increasing the volume of the catalyst within the $DeNO_x$ process;
3. Optimising existing blowers for the $DeNO_x$ process;
4. Revamping electrostatic precipitators;
5. Other minor interventions in $DeSO_x$.

The table below highlights the air emission improvements that would result after the implementation of BAT at the Fiume Santo power plant.

Emission	Current monthly average [mg/Nm³]	New daily average [mg/Nm³]	New annual average [mg/Nm³]
SO_2	200	130	120
NO_x	200	150	140
Dust	20	14	10

Table 11: Air emission improvements at Fiume Santo as a result of implementing BAT.

Picture 30: Fiume Santo.

Mitigation of environmental impact

EPH continually monitors its impact on the natural environment and targets its efforts accordingly. Within the core of our business, we focus on reducing the discharge of water pollutants, disposing of our waste responsibly, thoroughly cleaning any of our contaminated sites, and supporting the biodiversity surrounding our operations.

EPH works to understand the direct and indirect impact that its activities have on the natural environment surrounding its business operations. This is important, as the majority of our impacts can be proactively addressed and managed.

Our environmental focus is not only guided by relevant legislation and regulations, but also by our internal policies. Notably, the Environmental Policy (introduced in 2020 and updated in 2021), Biodiversity Policy and the Asset Integrity Management Policy (introduced in 2021). We believe it is important to go beyond the local and national requirements, as this allows us to look past the standard thresholds and truly understand the potential our Group has in mitigating its environmental impact.

Our contribution to the SDGs:

EPH works to promote and protect the environment through sustainable production patterns. Overall, our aim is to protect and restore our surrounding environment, rather than hinder its existence.

Water

We view water efficiency as a top priority across all our operations, as we understand the increasing concern for water scarcity. Our aim is to continually find processes and systems by which we can consume less water, while reliably meeting our demand. Most notably, we ensure to discharge water at the same or better quality compared to when it was withdrawn.

Effluents and waste

The main principle underlying our approach to waste management can be summarised as ‘avoidance, recovery and disposal’. Where we work to avoid excessive waste creation, recover waste with further purpose, and responsibly dispose of any remaining waste, with a focus on recycling when possible.

Biodiversity and reclamation

EPH focuses on protecting local ecosystems and biodiversity surrounding our operations by monitoring and addressing the impacts of our activities. Our aim is to actively engage in projects that support and restore our surrounding environment, especially the areas impacted by mining activities.

Environmental management and monitoring

Our environmental management system is strategically developed to ensure that all our entities across the Group protect the environment by proactively identifying potential risks and meeting legal requirements. EPH is committed to maintaining standards equal to those at international levels.

2021 **Highlights**

total waste production

-44 %

In 2021, EPH decreased its total waste production by 44% compared to 2020.

hazardous waste recycled

74 %

In 2021, EPH recycled 74% of its produced hazardous waste.

recultivation

242 ha

Since 2018, we recultivated 242 hectares of land, out of which almost 48% accounted for forest reclamation.

LIFE Award

EPH understands the importance of promoting biodiversity programmes and initiatives within the Group. In 2021, this effort was recognised by the LIFE Award, where SSD supported the implementation of a project focused on installation of protective elements on power lines to divert birds from potentially fatal contact.

Water

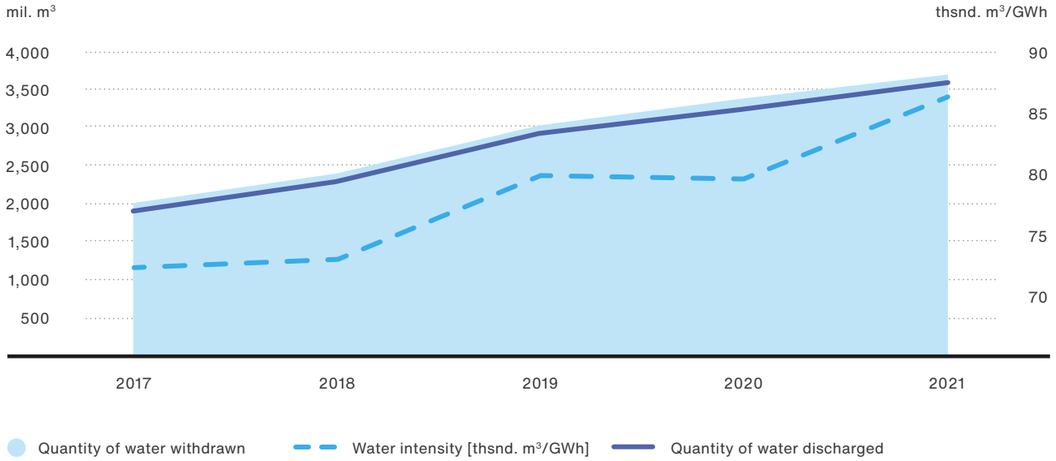
EPH understands the crucial role that access to clean water plays in our environment and society, be it on the global or local scale. Therefore, we have recognised that there is significant importance in protecting aquatic habitats and other ecosystems throughout our operations. For EPH, water is extremely important to our energy production, heat distribution and coal mining activities.

Ultimately, the efficient use of water is a top priority for all EPH's operations. Our aim is to optimise our water consumption throughout our business, as we recognise that climate change will continue to pose a serious threat to water scarcity.

The majority of water that EPH withdraws is from surface water, with minimal amounts sourced from groundwater and municipalities. For example, water is used in the cooling process during energy generation. At EPPE, surface and underground water are also withdrawn at MIBRAG's opencast mines. Notably, through the water purification programmes at MIBRAG, water is extensively recovered and released into neighbouring water systems.

Compared to last year, in 2021, EPH's water withdrawal and discharge saw an increase of 10% and 12% respectively. Also, our water intensity increased by 8% due to energy production from water more intensive sources.

Water withdrawal and discharge



3,696 mil. m³
Total water withdrawn

86 thsnd. m³/GWh
Water intensity

3,600 mil. m³
Total water discharged

12 GWh/mil. m³
Water efficiency

Graph 22: Water withdrawal and discharge.

Our water management

At EPH, we have focused on several methods to help in our water footprint reduction efforts. These efforts include a more intensive use of pumped water from open-cast mines and collected rainwater, and further recovering, reusing, and recycling processed water from our operations. Additionally, we have focused our efforts on internal wastewater treatment and continuous monitoring of the process, as we have found that this eliminates any potential for water contamination.

In 2021, we began analysing and assessing the water-related risks of our operations[36], where areas with high risk were identified through the Water exploitation index plus (WEI+) for river basin districts. According to the European Environment Agency, the WEI+ aims to illustrate the threat posed for renewable freshwater sources of a defined territory (country, river basin, sub-basin etc.) during a specified period (e.g. seasonal, annual), as a result of water use for supporting human-related activities. Water stressed freshwater sources are identified by WEI+ values above 20%, where values above 40% indicate severe and unsustainable scenarios.

In 2021, according to WEI+, 97.3% of EPH's operations (based on water withdrawal) are located in areas with no or very low water stress or it is utilising seawater. More than 50% of our total water withdrawal is from the sea (Fiume Santo, Ballylumford, Kilroot and Lynemouth). The remaining 2.2% of these operations (namely mining) are located in Germany, where water in the Saale sub-basin has been identified as a water-stressed area. You can find more information about water treatment in our mines in the following section of case studies.

Overall, at EPH, we ensure that we provide verifiable compliance with the statutory threshold values, as this ensures that we not only adhere to the local standards in which we operate, but that we also avoid any potential for negative impacts on our surrounding communities and natural habitats. Furthermore, we are dedicated to monitoring our most water intensive facilities, as it relates to water withdrawal, and their proximity to water-stressed areas, as highlighted by the table below.

Identification of water-stressed areas with regards to our water withdrawal[37]

Country	Water source	Water withdrawal and WEI+	Plant type	Risk
Italy	Seawater	579 mil. m³	Coal	N/A
	Surface water (rivers)	441 mil. m³ in 3.89 WEI+ region, 553 mil. m³ in 6.65 WEI+ region	Gas (CCGT/OCGT)	No or very low
	Total analysed	1,573 mil. m³	Mix	No or very low
UK	Seawater	1,426 mil. m³	Mix (CCGT, biomass, coal)	N/A
	Surface water (rivers)	561 mil. m³ in 5.85 WEI+ region	CCGT	No or very low
	Total analysed	1,987 mil. m³	Mix	No or very low
Germany	Groundwater, surface water	82 mil. m³ in 52.22 WEI+ region	Lignite mines and power station	Severe
Czech Republic	Surface water (rivers)	36 mil. m³ in 0.45 WEI+ region	Lignite	No or very low
	Water withdrawal analysed	**3,678 mil. m³ ***		
	Total water withdrawal	**3,696 mil. m³**		
	% Analysed	**99.5%**		

* Groundwater/surface water 1,673 mil. m³ vs seawater 2,005 mil. m³.

Table 12: Identification of water-stressed areas with regards to our water withdrawal.

36 99.5% of water withdrawal covered by the analysis, whereas remainng 0.5% is representing 17 mil. m3 withdrawn by tens of companies, thus considered imaterial.

37 The Water Explotation Index is provided by the European Environment Agency (EEA). The data for the index was collected from 1990–2015 and is made available at: https://www.eea.europa.eu/data-and-maps/indicators/use-of-freshwater-resources-3/assessment-4.

Case Study
Water efficiency programmes
Approach to water management

Tynagh Energy: water-use reduction and wastewater management

Tynagh operates a CCGT power plant on part of the old mine site at Derryfrench, Loughrea, Co. Galway. The plant has a nominal output capacity of 400 megawatts and generates electricity for export to the national grid. The plant normally operates using natural gas as fuel, with gasoil as a backup fuel in the event of gas supply failure, under which the Large Combustion Plant Directive (2001/80/EC) applies.

Tynagh holds an Integrated Pollution Prevention and Control Licence (IPPCL) overseen by the Environmental Protection Agency (EPA). EPA inspectors have previously commended the 'high level of environmental management on site' due to full compliance with water discharge limits and no non-compliances with the sites environmental permit for a number of years. Tynagh has also been fully ISO14001 certified by the national Irish Standards authority for several years. To further improve environmental awareness and wastewater management, the company provides site-specific training refresher, including one on wastewater compliance, to all site team members annually.

Because water-use reduction and wastewater management are key aspects of the site's Annual Environmental Improvement strategy, Tynagh creates a water-use reduction plan each year. Tynagh power plant discharges into the Shannon region fisheries area and fully complies with the strict limits in its discharge licence. Process emission to water consists mainly of water treatment plant effluent which discharges to the flooded open pit after settlement. Every single discharge is tested in the site lab, and continuous 24/7 monitoring ensures the quality of all process and surface wastewater discharges. This includes weekly internal and external certified analysis of surface water and process wastewater. Additionally, groundwater samples are tested from three wells every six months with no non-compliances or issues for many years. Tynagh measures raw water use on an on-going basis and reports it as a monthly KPI. Water use is also reported to EPA in its annual environmental reports. The above-mentioned activities are performed on site by a full-time designated water technician. The company also established a water-use reduction team that searches for opportunities to reduce water consumption by optimising processes and executing water reduction projects and plant improvements. An example of such projects includes the repair and replacement of HRSG boiler valves, which resulted in the reduction of water use from 6.3 m^3/hr in 2019 to 2.8 m^3/hr in 2021. In addition, our operations team reports any leaks for repair or attention on a daily basis using the site maintenance management system.

Plzeňská teplárenská: further utilisation of discarded concentrated water

Both heating plants operated by PLTEP fully rely on circular cooling through cooling towers, where water is sourced from the Mže River. Offtake is only required to compensate for the loss of water through evaporation within the circular cooling system and is therefore limited. The key measure to reducing offtake of surface water is further utilisation of discarded concentrated water from the circular system, as a cooling medium in other technological processes, rather than direct disposal. Concentrated water that is disposed of is cleaned and discharged back into the river, where there is constant control and appropriate parameterisation of the processes associated with the treatment and use of water.

MIBRAG: water treatment plants

Water is a key resource at MIBRAG, however while it is a crucial element of all environmental cycles, it is also scarce, therefore it must be handled with care.

Nearly 100 million m^3 of groundwater and surface water must be pumped out of MIBRAG's two large open pit mines, which extract approximately 15 million tonnes of lignite in the south of Leipzig in Saxony, Germany. The dewatering of the open pits is a key aspect of safe, proper, and economically sound operation. In the dewatering process, the water is processed in treatment plants before returning to the natural water cycles of the main rivers and lakes in the surrounding of the two mines.

Because the water from the aquifers in these areas has high volumes of solubled ions and low pH values, sophisticated water treatment on high flow rates for continuous water discharge is necessary. MIBRAG built two modern water treatment plants near the mines, whose designs differ according to the specific local conditions, the chemical characteristics of the mine water, and the functional steps needed to treat it. Both plants successfully raise the pH of the mine water to 7 and oxygen level up to saturated conditions reliably. The water treatment plants focus on increasing the water pH value from approximately 3.5 up to 7, and decreasing the concentration of iron from an initial range of 20 to 50 mg/L down to a constant below 1.5 mg/L.

Picture 31: Construction of the Profen water treatment plant.

Picture 32: Schleenhain water treatment plant.

	Schleenhain mine plant in operation since 2010	**Profen mine** plant in operation since 2017
Water throughput (m^3/min)	**60**	**120**
Iron elimination efficiency	**99.95%**	**99.95%**
Capital expenditure For water treatment to further meet the needs of the ecological system, as it relates to the water cycle.	**EUR 18 million**	**EUR 27 million**

Table 13: Water treatment plant details at MIBRAG's Schleenhain and Profen mine sites.

EP Produzione: new water treatment technologies

EP Produzione makes investments to minimise the environmental risks associated with its operations and to protect natural resources like water in the territories in which it operates. The company constantly monitors water quality. At the Livorno Ferraris plant, both the biological system and the water purification process have been improved to minimise the environmental impact. The Scandale plant completed a project for the ultrafiltration of water, optimising the management of sludge production. In addition, optimising the withdrawal of water destined for the plant reduced the average consumption of water. At EP Produzione's most recent CCGT plant located in Italy, water is cooled via an Air-Cooled Condenser (ACC), which avoids intake and discharge of warmer water to the environment.

New water treatment technologies have also been installed at the Ostiglia and Tavazzano power plants, whose demineralisation systems were both replaced in 2021; no injuries occurred during the installations. The new technology brings environmental benefits in terms of reduced use of chemicals and improved quality of discharges into nearby bodies of water; Tavazzano discharges to the artificial Muzza canal and Ostiglia to the Po River. It substantially reduces the use of hydrochloric acid (HCl) and lime (NaOH), which previously formed the basis of the demineralisation process, by an expected range of 102–103 times, based on first estimates from Ostiglia.

The adopted technology is a reverse osmosis system combined with an ultrafiltration and electro-deionisation system. After clarification, the raw water is treated in an ultrafiltration process to remove suspended solids. The processed water is then demineralised by a system consisting of reverse osmosis membranes. The permeate continues the treatment process, while the concentrate is sent for subsequent treatment at the wastewater plant. The CO_2 remaining in the water after osmosis is removed with vacuum degassing membranes, after which a finishing membrane electrode ioniser demineralises it.

Picture 33: New water treatment technologies at EP Produzione's Ostiglia and Tavazzano power plants.

Effluents and waste

In 2021, EPH decreased its total waste production by 44% compared to last year, where non-hazardous and hazardous waste saw a decrease of 39% and 88% respectively.

The significant decrease in hazardous waste production is a result of the current preparation stage of EP Kilroot project, that focuses on highly flexible gas generation alongside a range of renewable energy sources. As part of the demolition works, significant volume of hazardous waste was produced in 2020. Notably, in 2021, EPH recycled 74% of its hazardous waste.

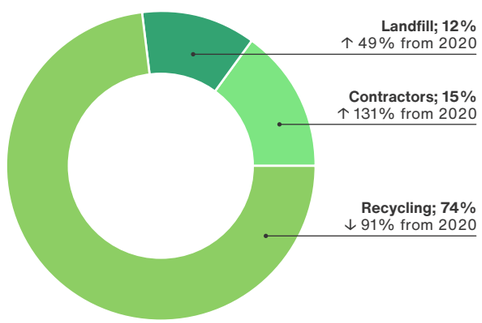
The significant decrease in our total non-hazardous waste production was a result of the reduction of waste production from MIBRAG's activities primarily related to production of overburden from mining. In 2021, MIBRAG alone contributed to the EPH's waste reduction with 89%.

Our waste management

EPH aims to generate the least amount of waste as possible, while further investing in decommissioning and conversion strategies. As a result, we have been focusing our efforts on the recovery of our waste and appropriately reusing or disposing of it based on its composition. It should be noted that we do not disclose by-products as part of our generated waste because the majority of our by-products have a lifecycle beyond our operations.

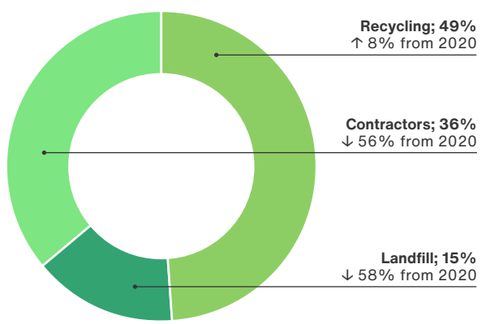
Overall, EPH saw a 49% waste intensity decrease from generating companies in 2021 when compared to last year. Through the above-mentioned methods, EPH aims to decrease its waste intensity, as further depicted by the selected case studies within this Report. In addition to our waste disposal through recycling and use of the landfill, EPH also disposes of its waste through third parties and suppliers (e.g. construction services), where we are limited in tracking the final destination or further use of waste, marked as "contractors" in the graphs below. However, through our binding contracts, we ensure that suppliers always follow the Group's best practices relating to waste disposal. This is further highlighted within the SPP-D case study within the "Waste management programmes" section of this Report. Overall, EPH always tries to opt for the most appropriate means of waste disposal.

Total disposed hazardous waste



5.1 thsnd. tonnes
Hazardous waste, ↓ 88%

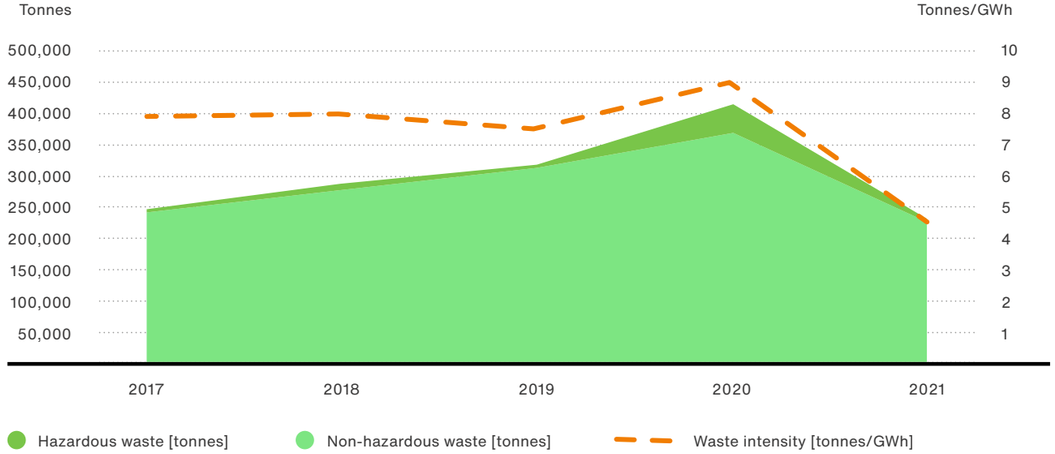
Total disposed non-hazardous waste



227.4 thsnd. tonnes
Non-hazardous waste, ↓ 39%

Graph 23: Waste disposal by type.

Total waste production and intensity[38]



232.3 thsnd. tonnes
Total produced waste

5.1 thsnd. tonnes
Hazardous waste

226.0 thsnd. tonnes
Non-hazardous waste

4.6 tonnes/GWh
Waste intensity

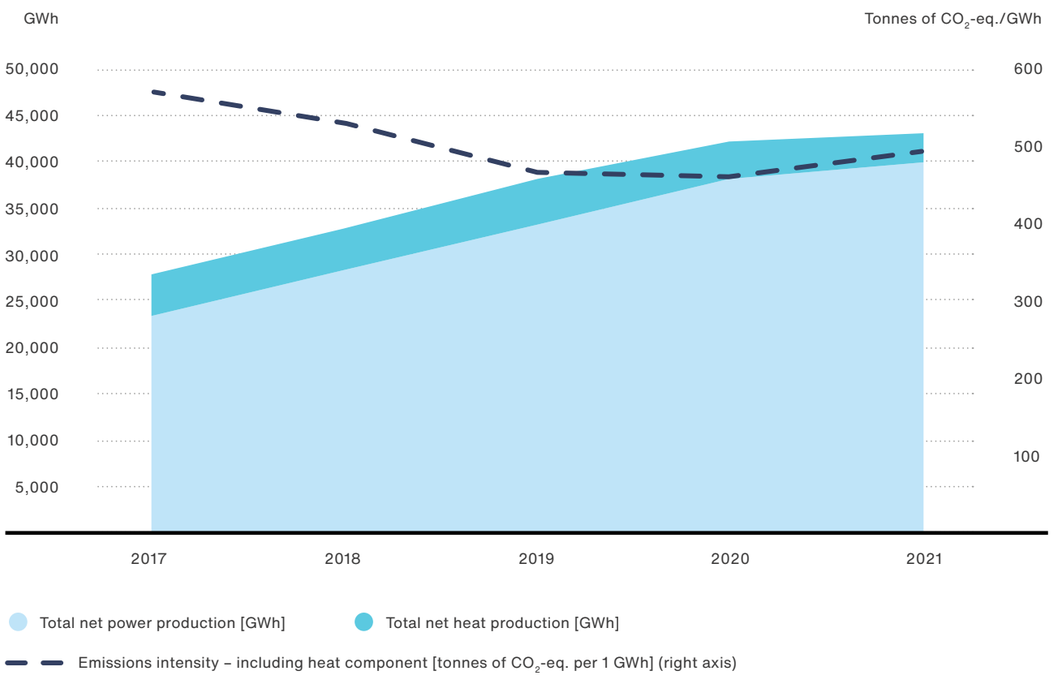
Graph 24: Waste production and intensity.

38 Waste intensity only includes generating companies.

Carbon intensity and efficiency

Due to their improved energy efficiency, cogeneration plants, those that simultaneously produce power and heat, are widely supported by the European Commission. EPH has focused on centralised cogeneration systems within the EPIF Group because we understand the significant environmental advantage that they provide over regular systems, which is notably accomplished without compromising our ability to meet customer demands. Additionally, EPH has overall focused on increasing its production of energy from less emission intensive sources, such as renewables and natural gas, and aims to continue to follow this trend with its decommissioning and conversion strategies.

Total net production and emission intensity[39]



Graph 25: Emission intensity of the production.

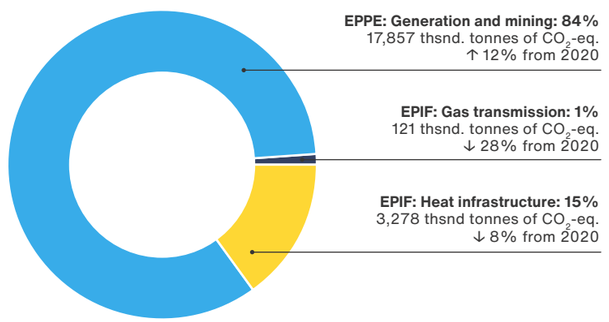
39,846 GWh
Total net power production

3,025 GWh
Total net heat production

493 tonnes of CO_2-eq./GWh
Emission intensity

39 Emission intensity only includes generating companies.

EPH CO_2-eq. emissions 2021:
business segment share



Graph 26: CO_2 emissions by main business segments.

21 million
Total CO_2-eq. emissions

In 2021, EPH saw the largest emission outputs from its generation and mining and heat infrastructure segments, which contributed to 99% of EPH's overall emissions, but notably only make up 38% of the Group's total EBITDA. Compared to last year, EPH saw a minimal increase of 8% in the amount of CO_2-eq. emissions produced by the Group. Overall, emissions from EPH's remaining business segments are negligible, however, it is interesting to note that gas transmission saw a significant decrease in its CO_2-eq. emissions compared to last year, by 28%. This is a result of lower volumes and different patterns of gas flows which required less gas combusted in the compressor stations. In heat infrastructure segment the total emissions were reduced by 8% compared to last year mainly as a result the disposals of BERT and PT.

Overall, in 2021, carbon intensity rose by 7%, while energy production increased by 1% compared to last year. More specifically, EPH saw a 3% and 27% increase in the carbon intensity from its power and heat production respectively. This decrease in emission efficiency is linked to the higher production at our coal plants, reflecting the overall trend in Europe as coal-fired units were better positioned in the merit order than gas-fired plants.

Case Study

Waste management programmes

Approach to waste management and other reduction initiatives

Plzeňská teplárenská: metal separation

At Plzeňská teplárenská, we invest in metal separation, having increased the volume of separated iron from slag by 20% compared to 2020. This investment also supports the continual research for being able to separate non-ferrous metal in the future (e.g. copper and aluminium).

The proposed ferromagnetic materials separation occurs in two stages. The first stage separates the coarse metal waste and in the second stage, the remaining slag passes through a permanent magnet, where finer metal particles are separated.

Elektrárny Opatovice & United Energy: ZEVO project

At our heating plants in Opatovice nad Labem and Komořany, we are preparing for the development of projects that will replace the current coal fuel base with other sources. One of the planned alternatives is to partially replace coal with waste as the energy required for power and heat production.

In connection with the European Union's so-called circular economy package, the Czech legislation has adopted changes in waste management led by the new Waste Act No. 541/2020 Coll. Going forward, waste will be recycled and up to 25% of the remaining waste will be used as a renewable energy source.

Project timeline – ZEVO at Elektrárny Opatovice

Preparation phase	2022–2028	2029
Project feasibility study preparation, including determination of capacity and waste balances in the region. Negotiations with representatives of towns and municipalities in the region as waste generators. Assessment of the project with regard to the dispositional and technological location of the equipment in the EOP area.	Submission of the application for financial support from the Modernization Fund and Preparation for the Environmental Impact Assessment (EIA). Expecting approval. Getting ready for the implementation phase.	New waste management conditions applicable for the Czech Republic. Implementation and commissioning

SPP-distribúcia: waste management measures

As a large contributor of waste produced by the EPH Group (12% in 2021), SPP-D implements measures to not only reduce its waste, but to also maximise the share of waste that gets reused or recycled. The waste is mainly linked to the extension and modernisation of the gas distribution network, and it primarily consists of stone and soil. As we further develop our network, thereby work to ensure a reliable supply for all, construction waste will be unavoidable. Therefore, we concentrate our efforts on maximising the reusing and recycling of waste. As the majority of our construction waste is disposed of by our suppliers, who provide the construction services to our network, we include a binding condition in our supplier contracts. It emphasises a supplier's duty to always follow the Group's waste disposal hierarchy and, whenever feasible, to first dispose of waste through methods of reusing and recycling over landfilling.

A successful certification audit in December 2021 confirmed that SPP-distribúcia met the requirements of ISO 9001, ISO 14001, and ISO 45001 standards.

EP SHB: energy from waste

The South Humber Bank Energy Centre (SHBEC) will consume ca 640 thousand tonnes of waste a year to deliver 80 MWe output energy from waste plant adjacent to the South Humber Bank CCGT. Approximately 50% of the electrical output will be from renewable sources and the remaining 50% will be from waste that would have otherwise been landfilled.

The project has obtained all required consent and the final investment decision is expected to take place in late 2022. Construction will take approximately 3 years, with the plant commencing operation in late 2025. The total investment will be approximately £300 million and once in operation, the plant will create about 80 full time jobs.

Picture 34: The expected layout of the South Humber Bank Energy Centre.

By-products

At EPH, by-products are an inevitable part of our business operations, which is why we availably sell them for further commercial use. This allows us to reduce the by-product waste that we would have otherwise sent to the landfill. Furthermore, it allows us to provide an option for purchasing these products outside of their direct extraction. This not only eases the process for our stakeholders, but it provides them with further value. We have found that the majority of our by-products are sought out by the construction industry, but ultimately, they can be used by various other business segments. As an example, gypsum can be used as a fertilizer, but it can also be used as a retarder in cement. Overall, EPH saw an increase of 26% in its by-product generation from operations when compared to last year. This was a result of the increased share of lignite within the Group's fuel mix. In 2021, the total production of by-products was 2.1 million tonnes, of which 51% was ash.

Utilisation of secondary energy products

Our heat and power generation assets generate fly ash, slag, and gypsum from the combustion of coal as secondary energy products, which are further used towards reclamation and the adjustment of terrains, or it is sold particularly for construction purposes. This is a common practice amongst our companies in the Heat Infra and Generation and Mining segments.

Our companies ensure that all secondary energy products are certified before they continue to explore other options for their use. As mentioned above, by-products are sold for further use, however, they do not always get completely bought out. However, the trend is positive, and a higher portion of fly ash mixture is sold than stored.

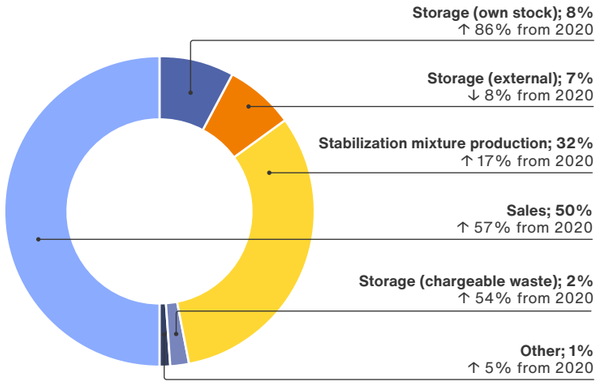
By-product	Utilisation
Ash	used mainly by construction companies for production of concrete, cement or bricks. Utilization of coal ash in the construction industry saves the primary materials which would be used instead (limestone, clay, sand). The major customers sourcing ash from our companies include concrete plants and cement plants. The ash from pure biomass combustion is also used by farmers as a fertilizer. In the Czech Republic and Slovakia has our fly ash the ČSN-EN-450 standard, which indicates the fineness of fly ash grain size and is considered one of the best.
Slag	primarily used for production of bricks and underlayment of roads. Slag is used as a substitute for gravel which would have to be extracted instead, it also serves as road grit for winter maintenance. Key customers comprise of brick plants and road construction companies.
Gypsum	used to produce plasterboards and aerated concrete blocks or as a gypsum agricultural fertilizer (reduces gypsum volumes which need to be mined). It is also an integral part in the production of cement, where it is used as a setting stabiliser. It can also be used to produce anhydrite screeds.

Table 14: By-product uses.

By-product management

EPH's by-products are all subject to regular certification and third-party authorisation. This is important in ensuring that our by-products do not contain dangerous elements, such as heavy metals. As a result, we have historically complied with the market requirements relating to the sale of our by-products.

By-products 2021: total means of disposal



2.4 mil. tonnes
Total means of disposal

Graph 27: 2021 share of by-products by disposal.

Case Study

By-product programmes

Approach to further utilising by-products from our operational activities

EPH in the United Kingdom:

Gale Common extraction project

The Gale Common Ash Extraction project is to extract up to 1 million tonnes per year of pulverised fuel ash (PFA) from the landfill site that was used by both Eggborough and Ferrybridge coal-fired power stations for nearly 50 years. In total, the site holds 50 million tonnes of PFA, making it the largest in the UK, of which 25 million tonnes is available for extraction. If all of the accessible PFA is used in cementitious applications, it will result in approximately 20 million tonnes of carbon savings for the cement industry.

The project is currently at the consenting stage. Assuming approval is obtained, extraction will commence towards the end of 2022 and will create approximately 40 full time jobs. Gale Common is EPPE's ash disposal site located in North Yorkshire, UK. This site has historically accepted waste ash from the now closed Eggborough and Ferrybridge 'C' coal-fired power stations. This ash, known as pulverised fuel ash can be used to replace primary aggregates, such as sand and clay, and reduce the carbon footprint of construction materials.

Gazel Energie:

Ashes from coal and biomass plants

Gazel Energie's subsidiary Surschiste, developed its activities on the evaluation of ashes produced from its coal and biomass power plants for public works companies. In 2021, Surschiste succeeded in valuating 262,000 tonnes.

Considered to be inert or not dangerous, the ashes are used to replace products that consume large amounts of energy and emissions, or to replace natural products from quarries. In addition, the exploitation of the deposits and therefore the massive destocking contributes to the reconquest of the sites. Given their lightness and their density in place, they also allow savings in transport. Finally, bringing durability to the structures, they often lead to a general saving over time.

Biodiversity and reclamation

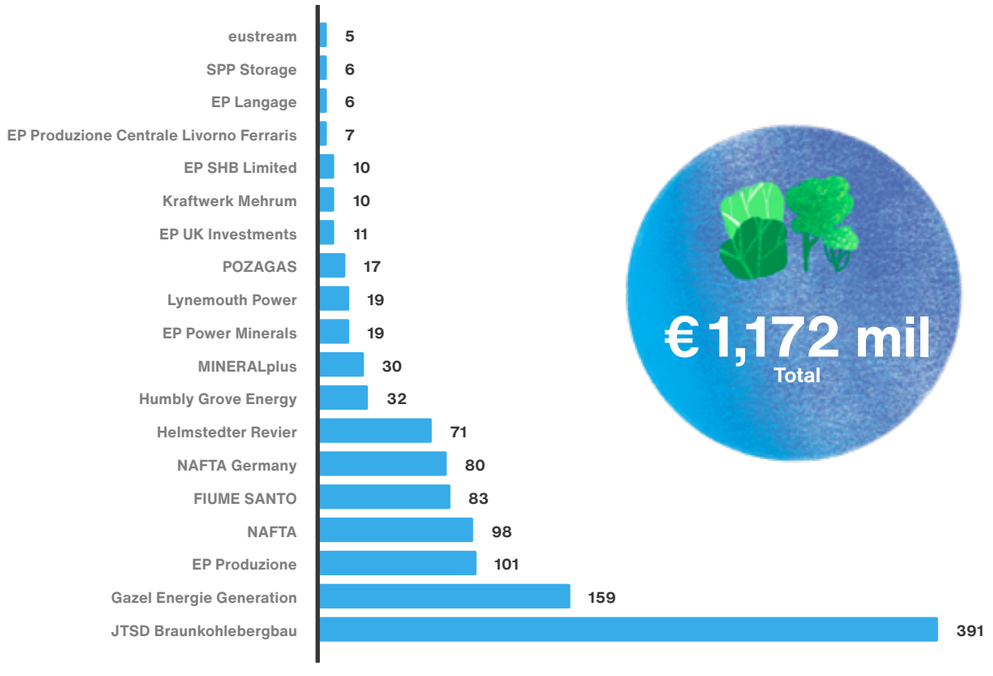
EPH is well aware of the importance of protecting biodiversity, as we understand the value of ecosystems and the environmental benefits that they provide. Therefore, the direct and indirect impact of our activities on local ecosystems and biodiversity is monitored and evaluated. This process is complemented by expert consultations, allowing us to proactively identify and address the potential risks we pose. In addition to minimising our negative impacts on biodiversity, EPH aims to actively support and protect ecosystems and endangered species. These commitments are highlighted in EPH's *Environmental Policy* and newly implemented *Biodiversity policy*.

EPH considers reclamation at all stages of its operations, from mining and drilling to a power plant's decommissioning, we ensure to restore sites to their original state. As a result, EPH created specific reclamation measures that are applied across the Group; all entities must have updated plans and contingencies for site closures and other rehabilitation activities.

Activities within the Group's reclamation process might potentially include:

1. restoration and reclamation of affected areas, incl. soil preparation and treatment for subsequent agricultural and forest use;
2. dismantling and removing structures;
3. dismantling operating facilities;
4. closing plant and waste sites.

Within the Group, reclamation or restoration primarily affects the following entities, who created provisions in respective amounts [EUR million]:



Graph 28: Reclamation provisions in 2021.[40]

40 Entities with provisions below EUR 5 mil threshold were omitted.

Last year, we only presented long-term provisions, however, we find it more accurate to present both short-term and long-term provisions as a way of providing more comprehensive information to our readers.

Case Study
Biodiversity programmes
Protecting biodiversity

SSE & SSD: actively partaking in various biodiversity initiatives

As an unofficial partner of the LIFE Energy project, SSD took part in the installation of 154 pieces of diverters throughout the protected bird area of Poiplie, spanning a length of 5 kilometres. In 2021, the LIFE Energy project won the LIFE Award within the nature protection project category, where the awards recognise projects that are innovative and inspirational in life.

In cooperation with the State Nature Conservation of the Slovak Republic, SSD regularly takes part in activities that help assess and prevent serious bird injuries that often occur along distribution networks. As a result, we installed protective and diverting elements to reduce exposure to high-voltage power lines. Additionally, in cooperation with both the nature conservation and municipal authorities, SSD was able to relocate stork nests within our distribution network to areas within southern Slovakia.

In 2021, as part of Earth Day, SSE employees had the opportunity to take part in several activities, including open discussions on climate change. Additionally, during the health and safety week at SSE, employees could actively participate in online lectures focused on environmental topics, some of which were hosted by various external conservational experts.

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Plzeňská teplárenská: supporting local fauna

Supporting the bee population

Plzeňská teplárenská has taken a proactive role in supporting the rapid and continually declining bee population. The company placed beehives on the roof of the ZEVO Plzeň incinerator as a way of creating an environment in which the bees are able to thrive, and as a result boost their surrounding ecosystems.

Supporting the nesting of peregrine falcons

The rare and endangered peregrine falcon was regularly spotted on the company's complexes (Bory and Doubravka). Because this species only has about 60 pairs of falcons that nest in the Czech Republic, Plzeňská teplárenská decided it was important to cooperate with the Nature Conservation of Pilsen to ensure that the falcons could successfully and safely nest on the company's complexes. As a result of this cooperation, nesting boxes were placed on both complexes and are continually monitored to-date using digital photography.

In 2021, the company found that a young peregrine falcon could not yet leave the nest on the Doubravka complex, as it was unable to learn how to fly in the abnormally colder month of May. In order to ensure the falcon's well-being, Plzeňská teplárenská postponed all repairs and inspections on the complex until the bird was able to leave the nest.

EP Produzione: removing coal from the seabed

In June 2020, EP Produzione's Fiume Santo power station completed the removal of coal from the seabed near its unloading jetty. The complex endeavour began in April 2017 when the coal was discovered following an inspection of the submarine concrete structures of the jetty. The presence of the coal probably dates back to the early years of coal operations at the plant. Current procedures minimise the risk of coal falling into the sea while ships unload. The finding was immediately communicated to environmental authorities and local authorities in order to properly manage the findings. After several meetings with all competent bodies and authorities involved, it was decided that the coal would be removed and the area checked for contamination. The power plant was not authorized to reutilise and burn the recovered coal. Given the seabed depth of 18 meters and the impossibility of performing removal activities when the docking station was in operation, the intervention was complicated. To work under favourable weather conditions and optimise the availability of the jetty for coal unloading operations, the **removal was carried out in the following phases**:

In all, about 500 m^3 of coal was recovered. The environmental analysis and characterisations confirmed that the presence of coal did not contaminate the seabed, water or aquatic fauna. Local stakeholders and media appreciated the company's commitment to solving a problem that had caused apprehension in the local community, which could have damaged the image of the power plant.

Picture 35: Removal of coal from the seabed near EP Produzione's unloading jetty (Fiume Santo power station).

Phase 1 May 2020	Phase 2 October 2020	Phase 3 June 2021	Closing meeting November 2021
Extraction began using a submergible pump operated remotely from the jetty. This method proved to be inadequate due to the unevenness of the seabed.	Extraction continued only using divers.	Divers completed the extraction activities.	Environmental Authority approved the results of the environmental analysis and characterisation of seabed.

MIBRAG and EP New Energies: supporting local flora and fauna

Stewardship of the natural environment is central to the process of designing any EPH site. In addition to understanding the needs of local wildlife, we consider various local vegetation objectives and agricultural uses in order to develop measures that comply with local legislation, such as those relating to the Nature Conservation Act (BNatSchG) in Germany when examining the photovoltaic projects in the table below related to MIBRAG and EP New Energies. The measures taken at these photovoltaic parks provides an example of the care given to supporting biodiversity around all of the Group's and external sites (in the case of EP New Energies).

Picture 36: Area for the planned Energiepark Bohrau.

Site[41]	Measures taken for flora	Measures taken for fauna
Altes Kraftwerk EP New Energies	Planting 82 linden, sweet chestnut and mountain ash trees.	Designating permanent open land beside project areas to avoid habitat loss for house martins, bats, nesting birds and other animal species. Designing landscape so that it respects the hunting needs of swallows.
Theißen Lawn MIBRAG	Planting a 140 m hedge structure. Planting 5 trees to replace those that fell on site.	Creating 4 sand lizard habitats.
Energiepark Bohrau EP New Energies	Embedding existing groups of trees into the planned layout. Coordinating the site's planting objectives with local agricultural uses.	Coordinating with local hunting tenants to avoid existing big game corridors when positioning fences.

Table 15: Measures taken by EP New Energies and MIBRAG, as it relates to supporting their surrounding biodiversity.

41 Not all sites mentioned in this table are owned by EPH Group. Namely EP New Energies realizes projects also outside of the Group.

Environmental management and monitoring

At EPH, environmental management is governed by our Environmental policy, Biodiversity policy and our principles.

Certifications and standards depend on the scope of each business segment; however, ISO 14001 is the main certification used across the Group. As an example, the trading and supply companies EPET and EP Sourcing have no physical operations, therefore they do not require any environmental certifications. Overall, in 2021, 81% of EPH's EBITDA were covered by ISO 14001[42].

In 2021, all entities in the Group were fully compliant with current legislation and regulations in their respective countries of operation. Additionally, compliance with all licensing regulations was ensured across our operations. Our entities also comply with our energy management systems and energy audits.

42 Coverage calculation is based on EBITDA which provides more adequate measure of financial contribution of individual companies as compared to revenues which are distorted by significant turnover from trading and supply activities. In 2021, companies covered by ISO 14001 comprised 40% of EPH consolidated revenues.

Key certifications overview

Certification standards	EPIF Group companies	EPPE Group companies	EPLI Group companies
ISO 14001 Environment	eustream, nafta, Distribúcia SPP, Fozaçaş, SSE Holding, EOP, Plzeňská teplárenská	Tynagh Energy Limited, EP Ballylumford, EP Produzione, Lynemouth Power, Gazel Energie, Biomasse Italia, Biomasse Crotone, Fusine Energia, Mineral Plus, EP Langage, Saale Energie, EP SHB, EP Kilroot, EP Power Minerals	
ISO 50001 Energy management	eustream	MIBRAG, Mineral Plus, Lynemouth Power, Saale Energie, EP Power Minerals	
ISO 9001 Quality management	eustream, epet., nafta, SSE Holding, Fozaçaş, Distribúcia SPP, Plzeňská teplárenská	Tynagh Energy Limited, Mineral Plus, Gazel Energie, Biomasse Italia, Biomasse Crotone, EP Power Minerals	LOCON, Spedica, EP Cargo Trucking[43]
OHSAS 18001/ ISO 45001[44] Health & safety	eustream, EOP, nafta, SSE Holding, Distribúcia SPP, Fozaçaş	Tynagh Energy Limited, MIBRAG, EP Produzione, Fusine Energia, Lynemouth Power, Gazel Energie, Biomasse Italia, Biomasse Crotone, EP Ballylumford, EP Langage, EP Kilroot	

43 EP Cargo Trucking represents both CZ and SK branches.

44 Despite not currently having the ISO 45001 certification, Plzeňská teplárenská defended the prestigious "Safe Enterprise" designation, which is guaranteed by the State Labor Inspection Office. Under this program, the company is under close supervision of occupational safety inspectors.

Governance

Our well-established corporate policies and governance bring greater focus to ESG matters and prove the commitment of the EPH Group.

Governance is a crucial pillar for corporate sustainability. By developing business principles that are aligned with our long-term strategy and supported by our internal policies, we are able to effortlessly transpose our everyday business activities with our long-term strategy. In 2020 and 2021, EPH introduced sustainability-related corporate policies and centralised ESG matters at the Group level.

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3 EPH and its Business

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Corporate governance structure and key people

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Corporate governance structure

EPH management

The governance of EPH and its sub-holdings is based on a two-tier management structure consisting of the Board of Directors and the Supervisory Board. The Board of Directors represents the EPH Group in all matters and is responsible for its day-to-day business management, while the Supervisory Board is responsible for the supervision of the EPH Group's activities and of the Board of Directors in its management of EPH and in such matters as defined by the Czech Corporations Act and the Articles of Association. Under the Czech Corporations Act, the Supervisory Board may not make management decisions. However, certain matters, defined below, are subject to the approval of the Supervisory Board. The EPH Group has a Risk Committee, Investment Committee and Compliance Committee.

To emphasise risk management within EPH, the Group has created a centralised Risk Management role, which supervises all activities within the portfolio of EPH from a Group risk perspective.

To supervise the ESG agenda more efficiently, EPH has centralised the responsibilities at the subsidiary-level by establishing the EPIF and EPPE Health, Safety and Environmental Committees.

EPH shareholder structure

At the end of 2020, EP Corporate Group (EPCG) became an umbrella company owning all strategic shareholdings of Daniel Křetínský and his top management team, including EPH.

The current EPH shares of top management in the Group are divided by a 10.7% share in EPCG; the remaining 89.3% share remains in Daniel Křetínský's ownership. The EPCG Board of Directors continues to be represented by the current EPH Board of Directors.

EPH Board of Directors

- **Daniel Křetínský**
  Chairman of the Board of Directors
- **Pavel Horský**
  Member of the Board of Directors
- **Marek Spurný**
  Member of the Board of Directors
- **Jan Špringl**
  Member of the Board of Directors

EPH Supervisory Board

- **Petr Sekanina**
  Chairman
  of the Supervisory Board
- **Tereza Štefunková**
  Member
  of the Supervisory Board
- **Martin Fedor**
  Member
  of the Supervisory Board

EPPE Board of Directors

- **Daniel Křetínský**
  Chairman
  of the Board of Directors
- **Tomáš David**
  Vice Chairman
  of the Board of Directors
- **Jiří Feist**
  Member
  of the Board of Directors
- **Pavel Horský**
  Vice Chairman
  of the Board of Directors
- **Filip Bělák**
  Member
  of the Board of Directors
- **Tomáš Novotný**
  Member
  of the Board of Directors
- **Marek Spurný**
  Vice Chairman
  of the Board of Directors
- **Leif Timmermann**
  Member
  of the Board of Directors
- **Miroslav Haško**
  Member
  of the Board of Directors
- **Jan Špringl**
  Vice Chairman
  of the Board of Directors
- **Miroslav Haško**
  Member
  of the Board of Directors

EPPE Supervisory Board

- **Ivan Jakabovič**
  Member
  of the Supervisory Board
- **Martin Fedor**
  Member
  of the Supervisory Board
- **Miloš Badida**
  Member
  of the Supervisory Board

EPIF Board of Directors

- **Daniel Křetínský**
  Chairman
  of the Board of Directors
- **William David George Price**
  Member
  of the Board of Directors
- **Pavel Horský**
  Member
  of the Board of Directors
- **Gary Mazzotti**
  Vice-chairman of the Board
  of Directors (independent Director)
- **Milan Jalový**
  Member
  of the Board of Directors
- **Marek Spurný**
  Member
  of the Board of Directors
- **Stéphane Brimont**
  Vice-chairman
  of the Board of Directors

EPIF Supervisory Board

- **Jan Špringl**
  Chairman
  of the Supervisory Board
- **Jan Stříteský**
  Member
  of the Supervisory Board
- **Petr Sekanina**
  Member
  of the Supervisory Board
- **Martin Gebauer**
  Vice-chairman
  of the Supervisory Board
- **Rosa Maria Villalobos Rodriguez**
  Member of the Supervisory Board
- **Jiří Feist**
  Member
  of the Supervisory Board

Figure 8: Governance.

Governance

EPH Board of Directors

The Board of Directors has four members, where the Chairman of the Board of Directors serves simultaneously as the Group CEO. The Board of Directors is the EPH Group's statutory body, which directs operations and acts on behalf of the Group.

EPPE Board of Directors

Has eleven members. Daniel Křetínský is the Chairman of the Board of Directors and Jan Špring is a vice-chairman of the Board of Directors.

Directs operations and represents EPPE in all matters related to daily business management.

EPIF Board of Directors

Has seven members.

Directs operations and acts on its behalf, represents EPIF in all matters related to daily business management.

Approves EPIF's sustainability commitment, top ESG challenges and annual sustainability reports.

Approves sustainability policies, corporate strategy and monitors progress to achieving targets.

EPPE Supervisory Board

Has three members elected by the General Meeting of Shareholders.

Responsible for revising the activities of the Group and of the Board of Directors in its management of the Group.

Has the power to inquire into all documents concerning financial matters and reviews year-end financial statements, including profit allocation proposals.

EPIF Supervisory Board

Has six members elected by the General Meeting of Shareholders.

Responsible for revising the activities of the Group and of the Board of Directors in its management of the Group.

Has the power to inquire into all documents concerning financial matters and reviews year-end financial statements, including profit allocation proposals.

Health, Safety and Environmental Committee (EPPE level)

Health, Safety and Environmental Committee (EPIF level)

EPH Supervisory Board

The Supervisory Board of EPH has three members elected by the General Meeting of Shareholders.

Responsible for revising the activities of the Group and of the Board of Directors in its management of the Group, as well as resolving matters defined in the Czech Corporations Act and the Articles of Association.

Has the power to inquire into all documents concerned with the activities of companies within the EPH Group, including inquiries into their financial matters, review of the year-end financial statements, including profit allocation proposals.

Compliance Committee (EPH level)

Focuses on ensuring compliance with new legislation, especially GDPR and the Market Abuse Regulation.

Reviews existing Group policies and identifies new areas that should be covered by policies (tax governance policy, discussing how to further advance whistleblower protection on the Group level, etc.).

Addresses issues of non-compliance reported by the Group's operational companies and provides support regarding these incidents.

Risk Committee (EPH level)

The Committee helps to develop a culture of enterprise risk management, integrate risk management into the organisation's goals and create a corporate culture in which people at all levels manage risks rather than reflexively avoid or heedlessly take them.

Investment Committee (EPH level)

Oversees and monitors the role over local (subsidiary level) investment committees, who are assessing material investments.

Figure 8: Governance (continued).

Key people

Daniel Křetínský

Chairman of the Board of Directors and Chief Executive Officer at EPH

Chairman of the Board at EP Infrastructure

Chairman of the Board of Directors at EP Power Europe

Mr. Křetínský´s professional career has been closely connected with Energetický a průmyslový holding, a.s. (EPH). He is the majority shareholder, Chairman of the Board of Directors (executive position) and CEO of the company. At EPH, Mr. Křetínský is responsible for strategy, key human resource issues and negotiation processes, including top M&A transactions. He represents the companies in several statutory and supervisory boards.

Mr. Křetínský also holds a majority stake in Vesa Equity Investment. Vesa's portfolio includes stakes in J. Sainsbury, Royal Mail, PostNL, French retailer Casino and U.S. retailer Foot Locker, among others. EP Global Commerce, also under Mr. Křetínský's leadership, is the largest shareholder in German wholesaler Metro AG.

Mr. Křetínský is also Chairman of the Board of Directors at Czech Media Invest a.s., a holding company that focuses on acquisitions and management of media assets in Central and Western Europe. He is a significant shareholder and Chairman of the Board of the football club AC Sparta Prague and holds a stake in the English club West Ham United F.C.

Until 2009, Mr. Křetínský worked for Czechoslovak investment group J&T (a former shareholder of EPH) which he joined in 1999 as a lawyer and soon took over responsibility for projects in asset management and became head lawyer of the corporate finance department. In 2003 Mr. Křetínský became a partner of J&T Group responsible for the corporate finance department in the Czech Republic and the energy sector in general.

Mr. Křetínský earned a bachelor's degree in political science from the Faculty of Philosophy of Masaryk University in Brno in 1997. He graduated in 1998 from the Faculty of Law of Masaryk University, where he also obtained a doctorate in 1999. Mr. Křetínský participated in several study programs and training courses abroad, including one semester at the Faculty of Law of the Université de Bourgogne in Dijon, France.

Jan Špringl

Member of the Board of Directors of EPH

Chairman of the Supervisory Board at EP Infrastructure

Vice Chairman of the Board of Directors and Chief Executive Officer at EP Power Europe

Mr. Špringl is Vice Chairman of the Board of Directors of EP Energy and is also Chairman of the Board of Directors of Nafta. Prior to joining the company, Mr. Špringl served in various management and supervisory board positions at other affiliated companies.

Mr. Špringl holds a master's degree from the Faculty of Business Administration of the University of Economics in Prague.

Marek Spurný

Member of the Board of Directors and Chief Legal Counsel at EPH

Member of the Board of Directors at EP Infrastructure

Vice Chairman of the Board of Directors at EP Power Europe

Mr. Spurný has been working for EPH and its legal predecessors since 2004. With a legal background, he holds the position of Chief Legal Counsel of the Group, making him mainly responsible for transaction execution, negotiations and implementation of merger and acquisition transactions, restructurings, and legal support in general. Within EP Energy, he also chairs the Compliance Committee. On the parent holding level, Mr. Spurný holds several positions in the corporate bodies of the Group companies (member of the Board of Directors of EPH, EP Energy, member of Supervisory Board of EPIF, as well as the subsidiaries of the Group, including EPIF subsidiaries). Before joining the Group, Mr. Spurný worked for five years for the Czech Securities Commission, the former capital markets regulatory authority in the Czech Republic.

Mr. Spurný holds a law degree from Palacky University in Olomouc.

Pavel Horský

Member of the Board of Directors and Chief Financial Officer at EPH

Member of the Board of Directors at EP Infrastructure

Vice Chairman of the Board of Directors at EP Power Europe

Mr. Horský has been working for EPH Group since 2009. He holds the position of Chief Financial Officer of the Group, with main responsibilities in the areas of financing, treasury, tax, risk management and co-ordination, and management of Group companies. Mr. Horský is also a member of the Management Boards of parent company Energetický a průmyslový holding, a.s., EP Infrastructure, a.s. and EP Power Europe, a.s. as well several subsidiaries of the Group. Prior to joining EPH, Mr. Horský held a position in market risks advisory at RBS. Mr. Horský is a member of the Board of Directors of the English football club West Ham United.

Mr. Horský holds a master's degree in mathematics and physics from Masaryk University in Brno.

Fair conduct

We have built our business on moral principles and values, and we continue to ensure that they are effectively promoted throughout the Group. It is imperative that we unify our business approach across the Group, which is why we support this with a shared culture, internal policies and strong governance.

EPH's approach to fair conduct encompasses the implementation of strong principles and values, transparency throughout our business activities, and compliance with local laws and regulations. We reinforce this approach with preventive mechanisms, internal governance and policies.

We embed these high standards of business behaviour in the day-to-day activities of all our employees, as they create the foundation on which the Group's performance and reputation are built. We have found this to be key in successfully implementing fair conduct throughout the Group.

Our contribution to the SDGs:

EPH works to enhance its commitment to ethics through various mechanisms, such as effective governance, specialised committees and internal policies. Our aim is to promote strong institutions throughout our Group by means of inclusivity, accountability and justice.

Compliance

We always ensure that we act in accordance with the local legislation under which we operate and readily cooperate with regulators. We believe it is important to go beyond mere compliance, so we have created and largely implemented internal Group policies that ensure responsible business and activities throughout EPH.

Principles and business ethics

We are committed to upholding the highest standards of business ethics throughout the Group as set out by our principles. We take our commitment very seriously, as it ensures not only good business practices but also good relationships with all our stakeholders.

ESG governance

In 2020 and 2021, the EPH Board approved a set of Group policies, which were largely implemented in 2021. We ensure compliance with these policies through various committees, specifically by our HSE Committee. The implementation is ultimately overseen by the ESG Officer, Gary Mazzotti.

Lobbying and political engagement

We ensure that our funding is transparently managed, that it does not support any illegal or unethical activities, and that it is aligned with our sustainability commitments. We consider ourselves responsible investors, as we do not support political parties, neither directly nor through the funding of other Groups' activities. We also actively participate in discussions with governments and organisations regarding the development of proposed legislation and regulations that affect our business.

Investigations, litigation and sanctions

To our knowledge, all companies are fully compliant with the current legislation and regulations in their respective countries of operation. Currently, there are no open material cases of investigation, litigation, or sanction. For further details, please refer to the EPH Annual report 2021.

2021 **Highlights**

At EPH, we ensure compliance with all licensing regulations across our Group's operations. As a result of our commitment to oversee our subsidiaries' legal requirements, none of our subsidiaries faced any major incidents or material fines in 2021.

As we continue to further develop our sustainability commitment, in 2021, EPH managed to largely implement the new set of policies that were introduced in 2020 and 2021.

- **Assets integrity management policy**
- **Whistle-blower policy**
- **Biodiversity policy**
- **IT Cybersecurity policy**
- **Diversity policy**

Our principles and business ethics

EPH is committed to its behavioural standards, which bring practical value to our day-to-day business. These standards set employee expectations, which are reflected in the performance and reputation of the Group and ensure that we maintain good relationships with all our stakeholders.

EPH maintains high ethical standards throughout its operations and supply chain, and we do not tolerate corruption or inappropriate behaviour; breaches could cause serious reputational damage for the Group. We perform regular bribery and corruption risk assessments, which are overseen by the Compliance Committee, and we adjust our internal processes accordingly. Adjustments may relate to bookkeeping guidelines, supplier approval procedures and monitoring systems, and whistleblower programmes. We ensure that principles embedded in our policies are regularly shared with employees across the Group

These commitments and standards were approved in 2020, with updates and additional policies largely implemented at the Group level throughout 2021.

Most of our subsidiaries already uphold these standards individually. They all have their own Codes of Conduct in place, which have been translated into their local languages. The new *ESG Master Policy* and *EPH Code of Conduct* are not designed to replace these, but rather to bring general concepts to the Group level, to present them in English, and to make them available on one convenient and accessible platform.

The Group is committed to conducting business activities in a transparent and operationally excellent manner. To continue developing and improving our internal and external interactions, we commit to following our principles, which are the foundation on which we build relationships with our partners, employees and society.

Environment

- Environmental protection
- Climate change mitigation
- Quality standards and certifications
- Sustainable operations and products
- Efficient use of resources
- Environmental education

Society

- Value creation
- Respecting human rights
- Economic and social development
- Access to basic services
- Stakeholder dialogue
- Sustainable development principles
- Equal opportunities
- Transparent communication and accountability
- Health and safety

Governance

- Promoting ethics
- Economic sustainability
- Risk management
- Progress on goals and commitments
- Responsible finance
- Responsible funding
- Regulatory compliance
- Efficient management

Figure 9: EPH ESG principles.

ESG governance

In 2020, the EPH Board approved a comprehensive set of Group-wide policies, namely the *ESG Master Policy*, *Code of Conduct*, *Environmental Policy*, *Operational Policy* and *Procurement Policy*. After their official approval, all subsidiaries had six months to fully implement the policies, subject to their local legislation.

In EPPE, the same scope of polices were approved in 2021 by the Board of Directors.[45]

In 2021, the existing policies were updated, while the EPH Board approved additional policies, which were created over the course of 2020, namely the *Asset integrity management policy*, *IT Cybersecurity policy*, *KYC Directive*, *Whistleblower policy*, *Diversity policy* and *Biodiversity policy*. In 2021, all policies were largely implemented throughout the Group.

To highlight the importance of ESG topics and to show our commitment, Gary Mazzotti, member of the EPPE Board of Directors, and EPIF CEO and Vice Chairman of the Board of Directors, took on the role as ESG Officer, allocating responsibility to sustainability and the Group's ESG-related agenda.

The EPIF and EPPE HSE Committees, and ESG Officer supervise compliance with our values and principles laid out in all EPH policies.

At EPPE, the HSE Committee was established in 2021 by the Board of Directors, who elected the following members:

- **Leif Timmermann (Chair)**
- **Gary Mazzotti**
- **Filip Bělák**
- **Alan Beeston**
- **Giorgio Chizzolini**

45 EP Logistics and some other companies remain uncovered, as they have their own internal documents.

	Policy description
ESG Master Policy	The document sets out a comprehensive policy framework and basic guidelines for the EPH Group as well as defining the core principles for sustainability related policies within the EPH Group and its subsidiaries. Specific policies described below act as add-ins to this Master policy.
Environmental Policy	The policy describes basic principles we follow in terms of the climate change and carbon footprint reduction, protection of biodiversity, Environmental Management System, environmental impacts of the product portfolio, customer efficiency, regulatory compliance, renewable and clean energy promotion, resource and energy efficiency, waste management and end cycle management.
Biodiversity Policy	Protecting biodiversity in the areas where the EPH Group operates is among the top goals of the EPH Group. The purpose of the policy is to provide a comprehensive and consistent framework of commitments and underlying principles in the area of biodiversity.
Operational Policy	The policy covers the basic principles we follow in matters of the access to basic services, health and safety management, environmentally safe operation of facilities, social impacts of our products, innovation and modernisation, emergency management, stakeholder engagement and responsible marketing.
Procurement Policy	The policy is focused especially on the monitoring of our supply chain and encouraging that our suppliers, as well as our customers, are compliant with local regulations and with our internal policies related to human rights, employees, and environmental matters.
IT Cyber security Policy	The EPH Group companies follow as minimum the key group cybersecurity principles (security governance, access control management, malware protection, network security, cyber resilience, ICS, remote workplace, etc.) and are responsible for a selection and implementation of specific security measures to meet these principles.
Code of Conduct	The EPH Group Code of Conduct contains standards of behavior to be upheld by all employees and is designed to ensure good relationships with all stakeholders.
Tax Governance Policy	The purpose of the policy is to ensure compliance with tax rules in various countries and territories in which the Group operates, prevention and reduction of significant tax risks and strengthening of the relationships with tax authorities.
Equality, diversity and inclusion Policy	The purpose of this policy is to provide equality, fairness and respect for all in our employment and to oppose and avoid all forms of unlawful discrimination.
Whistleblower Policy	The purpose of this policy is to provide EPH employees with the means of reporting compliance concerns and compliance violations without fear of retaliation or retribution
Asset integrity management Policy	The policy outlines the principles and practices that govern decisions on asset management at EPH to ensure that EPH responsibly manages asset integrity risks across all facilities that we design, construct or operate.
Anti-corruption and anti-bribery Policy	Acceptance of gifts and donations including charitable donations is regulated. Receipt or payment of bribes including facilitation payments is strictly prohibited.
Anti-money laundering Policy	The so called four-eyes principle is applicable for business transactions, and cash payments above a predefined cash limit.
Sanctions Policy	We do not establish or maintain business relations with persons, entities or countries that are subject to economic or financial sanctions, trade embargoes or other restrictive measures imposed by the European Union, the United Nations, the United States of America, or the United Kingdom.
Anti-trust Policy	All employees and directors are obliged to observe anti-trust laws and are aware of serious consequences that any infringement of anti-trust laws may have.

Figure 10: EPH ESG policies.

Supply chain management

We continuously reflect on our long-term targets so that we may create and maintain meaningful partnerships within our supply chain. We have determined that regular monitoring and close management of our end-to-end processes will only benefit our business value.

EPH's procurement goals consider the social and environmental aspects of our individual subsidiaries and how decisions at a Group level can affect their business practices.

The procurement function is centralised and managed by **EPH Group Procurement**, whose key role is to develop and apply best practices across the supply chain of the entire Group. Their aim is to minimise the total cost of ownership of external purchases within our individual subsidiaries, thereby facilitating strategic procurement.

Our contribution to the SDGs:

EPH promotes sustainable and inclusive economic growth while ensuring access to basic services. We accomplish this by managing the equality, justice and ethical conduct of our Group's supply chain, thereby creating inclusive institutions.

Procurement practices

In 2020, we introduced, approved and implemented an extended *Procurement Policy* in an effort to improve our previous policies and processes, as we understand the risk associated with a mismanaged supply chain.

To ensure full alignment with our business approaches, we thoroughly screen all our potential suppliers. Screening includes our commitments to laws and regulations, ethical business conduct, human rights and working conditions, health and safety, and environmental protection.

In 2021, EPH implemented a *KYC Directive*, which provides acceptance guidelines for all business partners, including suppliers.

2021 **Highlights**

In 2021, EPH implemented a Group wide KYC Directive, which outlines the process by which business partners' identity and suitability are verified and validated. The aim is to mitigate financial and reputational risk, as well as ensure regulatory compliance.

Key tenders from across the EPH Group are publicly disclosed on the EPH web page, which has led to increased supplier participation and transparency.

What do we expect from our suppliers?

In 2021, there were no significant changes to EPH's supply chain. Additionally, there were no reported environmental incidents this year.

Case Study
LOCON proving to be Supplier of Choice

Professional and responsible approach

Thanks to its professional and ethical approach, certified management of waste and transparent record keeping, our German subsidiary LOCON has become a supplier of choice for a number of railway infrastructure projects in Germany. Certification by the German Waste Management Association for Transport and Environment (Entsorgergemeinschaft Transport und Umwelt e.V.) is a sign of our awareness and an important prerequisite for the professional implementation of construction site transport.

Long-term Partnership with DB Netz

For several years, LOCON has been a reliable framework contract partner of DB Netz AG (a subsidiary of Deutsche Bahn operating the majority of the German railway system) and is therefore one of a small group of selected railway companies that are exclusively commissioned with the supply and disposal of railway construction sites. Our traction vehicles and railway carriages are used throughout Germany for DB Netz AG. In 2021, this long-term contract was extended for the coming years.

Excellent customer relationships

We cooperate in a network with selected partner companies in order to fully optimise capacity utilisation and bundle traffic and keep an eye on our principle of sustainable resource planning. Thanks to this we have excellent customer relationships with all players and it is possible to implement the entire transport chain across all trades – including loading and unloading within the construction sites – with the same locomotive and wagon. In most cases, this means that no intermediate storage or handling of building materials is necessary, which, in addition to the high level of cost-effectiveness and efficiency, also means considerable savings in resources, energy and storage space.

Specific 2021 achievements included:

1. On the basis of its waste disposal certification and provision of complete documentation and electronic verification, LOCON was commissioned as the sole logistics service provider for a railway modernisation project between Leipzig and Dresden in Germany. LOCON designed a sophisticated supply and disposal concept, implementing numerous locomotives and railway wagons. The aim of higher speeds of up to 200 km/h and thus shorter travel times, additional capacity for passenger trains and the instalment of electronic interlocking technology was achieved.

2. LOCON played a key role in the renovations of the high-speed line from Berlin to Hamburg in Germany. It planned the construction and operational processes, as well as provided all the necessary work with its locomotives, shunting personnel, railway wagons and a logistician to coordinate the construction site to ensure smooth supply and disposal of the construction site. 400,000 metres of rails, 15,000 sleepers and 30,000 tons of ballast, as well as 24 switches were exchanged. The aim to again enable travel with the ICE train on this route at a top speed of 230 kilometres per hour was achieved.

Picture 37: Railway illustration.

Risk and crisis management

Strong mechanisms for evaluating risks and coordinating an effective response help to enhance the resilience of business activities and communities, and create a foundation for sustainable development. Effective risk and crisis management practices are expected by the Group's investors, as well as local communities and municipalities.

EPH takes risks associated with its operations very seriously. Apart from our activities in reducing environmental impacts and subsequent risks, we analyse and mitigate financial, operational and strategic risks.

Our contribution to the SDGs:

Enhancing the resilience of business activities and communities, and creating a standard for sustainable development through strong risk evaluation and response mechanisms.

Response to the military invasion of Ukraine

In February 2022, following the military invasion of Ukraine, EPIF Group promptly implemented measures to support the EPIF's liquidity position. EPIF also continuously assessed all sanctions imposed on Russian Federation to ensure compliance while conducting transactions with our counterparties.

Risk Committee

The Committee helps to develop a culture of enterprise risk management, integrate risk management into the organisation's goals and create a corporate culture in which people at all levels manage risks rather than reflexively avoid or heedlessly take them.

Financial risks

The most important types of financial risks to which the Group is exposed are credit risk, liquidity risk, interest rate risk, commodity price risk, foreign exchange risk and concentration risk. To minimise its exposure, the Group concludes derivatives contracts to mitigate or manage the risks associated with individual transactions and overall exposures, using instruments available on the market.

Operational risks

Operational risk is the risk of loss arising from fraud, unauthorised activities, error, omission, inefficiency or system failure. It arises from all activities and is faced by all business organisations. Operational risk also includes legal risk.

Strategic risks

The Group's business is exposed to various risks arising from political, economic and social developments in countries where it operates. We monitor and evaluate risks associated with employees and customers and do our best to ensure ongoing competitiveness.

Climate change related risks

We identified two types of climate related risks: physical and transitional risk. Physical risk arises from extreme weather events, which may lead to infrastructure damage and supply interruptions. Transitional risk poses a threat of increasing operating costs of not being ready to transition to a new energy system.

2021 Highlights

strategies

Senior management at EPH analyse the possible risks posed to the Group and our business through various lenses. The aim is to proactively consider and address possible scenarios before their realisation, allowing for the preparation of contingency strategies and plans.

information

We understand it is our obligation to provide information to our stakeholders regarding the safety risks of our power plants and industrial sites, emergency plans, gas safety of network operations, and electrical safety.

group culture

EPH's, EPIF's and EPPE's Committees work to develop a Group culture in which all the risks we face are fully integrated into the management of our business. The goal is to ensure that we manage risks rather than avoid them.

Figure 11: Risk matrix.

Financial risks

Management approach to risk mitigation

Credit risk
The primary exposure to credit risk arises from conducting business with unreliable counterparts.

- The Group has established a *Credit policy*.
- Each new customer requesting products/services over a certain limit (which is based on the size and nature of the business) is analysed individually for creditworthiness.
- The Group uses credit databases for analysis of creditworthiness of new customers, who are also subject to Risk Committee approval.

Liquidity risk
Lack of liquid financial resources poses great risk on everyday activities of the Group, including the ability to pay suppliers and employees.

- The Group's management focuses on methods used by financial institutions, i.e. diversification of sources of funds.
- This diversification makes the Group flexible and limits our dependency on one financing source.
- Various methods of managing liquidity risk are used by individual companies in the Group.

Commodity risk
The Group's primary exposure to commodity price risk arises from the nature of its physical assets, namely power plants.

- In the case of favourable power prices, the Group manages the natural commodity risk connected with its electricity generation by selling the power it expects to produce in the power plants and in ancillary services on an up to two-year forward basis.
- In the case of low power prices, instead of entering into forward contracts, the Group uses the flexibility of its own power generating capacities to react to current power prices. It aims to achieve a more favourable average selling price.

Operational risks

Management approach to risk mitigation

Failures, breakdowns, outages and natural disasters
Delays or interruptions in our supply can increase capital expenditures, negatively impact the Group's business and reputation, or cause significant harm to the environment.

- Predictive maintenance processes are in place, allowing us to proactively identify and respond to vulnerable areas of our networks.
- In the case of a network breakdown, we have emergency plans in place to ensure the continuity of supplies.
- We ensure that our key infrastructure is adequately insured.

Cyber risk and system failure
As part of our critical infrastructure, information systems must have proper security measures in place that are aligned with regulation, while maintaining the highest degree of industry standards.

- The Group's cyber security is adopted with regular reviews of risks and selection of corresponding measures for the most effective protection.
- The Group's companies follow the requirements of several information security standards and frameworks, as well as laws, e.g. the GDPR (General Data Protection Regulation) or EU NIS Regulations (Network and Information Systems Regulations 2018).
- EPH's security of 'critical infrastructure assets' is managed according to relevant legislation and regulation. This prevents damage or destruction caused by natural disasters or threats posed by terrorism and criminal activities that may result in nationwide consequences.

Regulatory risk
Apart from the regulated tariffs, risks also arise from changes in European energy legislation, which affects the scope and market price of the European Emission Allowance and Green Deal package.

- Trusted and open relationships with regulatory bodies.
- Active participation in dialogues with regulators regarding tariff structure.
- Geographic focus on countries with stable and established regulatory regimes.

Table 16: Risk management overview.

Strategic risks	Management approach to risk mitigation
Socio-economic and political risk The Group's business is exposed to political, economic and social developments in Slovakia, the Czech Republic, Central and Eastern Europe regions, and elsewhere.	▪ Open dialogue with local communities and authorities, with timely communication of our business intentions.
Concentration risk A large part of our gas transmission, gas and power distribution, and gas storage revenues are concentrated on a small number of customers.	▪ Strict control of counterparty credit risk. ▪ We have a *Know Your Customer ("KYC") Directive* in place to ensure that all potential business partners are thoroughly checked prior to committing to a business relationship or transaction.
Reputational risk Reputational damage may arise from miscommunication, lack of communication or low transparency with stakeholders.	▪ We only present information about our business that is based on facts, and we do so in a clear and reliable manner. ▪ We constantly monitor public media so that we may warn our stakeholders in a timely manner about any false information related to EPH and the Group that was released. ▪ We promote a responsible marketing approach, making all information regarding our business, such as our services and their possible risks, available and factual.
Competition risk Many of the markets in which the Group's business operates are increasingly competitive and as such, the Group is exposed to the risk of not being able to compete effectively on an ongoing basis.	▪ We focus on transmission, distribution and storage of key commodities where the existing infrastructure cannot be easily replicated by competitors. ▪ Within the power generation business, we primarily operate conventional power plants which are vital for stability of local grids and not easily replaceable. At the same time, we transition towards renewable generation sources to be on track with development of European energy mix. ▪ Within the heat infrastructure segment of our business, we keep prices of heat affordable to attract and retain customers. At the same time, we emphasise environmental benefits of district heating compared to decentralised local boilers.
Employment related risk The Group's ability to maintain its competitive position and to implement its business strategy is largely dependent on its ability to attract and retain qualified personnel, such as managers and senior executives.	▪ Regular dialogue with employees and union representatives (84% of our employees are covered by collective bargaining agreements). ▪ We delegate main responsibilities across multiple executives to reduce the amount of risk managed by one position. ▪ Engagement with schools, universities and talent recruitment programmes at our subsidiaries and with our union representatives.

Table 16: Risk management overview (continue).

Climate change related risks	Management approach to risk mitigation
Physical risks More frequent and extreme weather events are a risk as they can damage our infrastructure assets and lead to interruptions in the supply of vital commodities. In some of our operating regions, the offtake of cooling water may be reduced, which could affect our heat and power generation capacities.	▪ Guided by our *Asset Integrity Policy*, we ensure that the decisions we make consider all life-cycle stages of our assets, recognizing the interconnectedness of the systems. ▪ Our short-term investment decisions are always based on the rigorous analysis of long-term projections of investment needs. ▪ We have established predictive maintenance processes to identify points in our network where maintenance should be preferentially performed. ▪ We adequately insure key infrastructure. ▪ We continuously monitor the water offtake at our individual sites and consult with local water authorities. ▪ We continuously implement measures to reduce our water offtake and limit our reliance on flow-based cooling.
Transition risks Substitution of lower emission alternatives for existing products and technologies. Rising operating costs due to pricing pressures on emission allowances.	▪ We aim to focus pilot projects on testing the compatibility of our infrastructure with green gases (gas transmission, distribution and storage) to support integration of new renewable capacities. ▪ Regular update and public announcements relating to our plant conversion plans.

Table 16: Risk management overview (continue).

Social

We recognise the value in all of our relationships, with great emphasis on those which we hold with our employees, customers and communities. Our social goal is to continue to build strong relationships so that we may achieve not only transformational energy development, but lasting sustainable development as a whole.

The Group focuses on protecting its employees' rights by maintaining a good standing relationship with its trade and labour unions. Additionally, we work to respect our employees' human rights through the implementation of non-discriminatory guidelines. EPH commits itself to creating a work environment that is not only friendly but also safe, and which promotes the well-being of our employees. This is achieved through the quality of our health and safety management. We also make sure to play an active role in supporting and developing the communities in which we operate by providing access to basic services and by creating and implementing impactful social initiatives.

1 Foreword

2 EPH's Approach to Sustainability

3 EPH and its Business

4 Environment

5 Governance

6 Social

Health & safety

Employment and employee development

Customer relationship management

Development of communities and social action

7 Assurance

8 Annex

Health & safety

We make the health and safety of our stakeholders top priority by constantly learning, sharing and improving our approach to embedding a “health and safety first” culture throughout the Group.

EPH understands that safety can only be achieved if well-being is firstly addressed. That is why we have strong commitments for both the well-being and safety of our stakeholders, which include providing training, and ensuring that regular improvements are made to our governance and internal policies.

We continuously work to improve and monitor the health and safety mechanisms within our Group, as we understand the risk associated with their mismanagement. As a result, we are highly focused on identifying, mitigating and preventing such risks.

Our contribution to the SDGs:

EPH ensures that the health, safety and well-being of not just our employees, but all of our stakeholders, is at the core of all of our business activities.

Health & safety management

We have implemented high standards for the health and safety management of our stakeholders, and we constantly seek to improve our attention to wellness and level of safety within the Group. We also understand the possible risks associated with mismanagement, such as those arising from poorly managed equipment or avoidable human errors.

We continuously work to improve our management of H&S. Our largest focus within EPH subsidiaries’ operations remains on our plants, as they pose a greater risk to our stakeholders’ health and safety.

We ensure that our employees are provided with the training required to meet the expectations of our H&S policies and governance. We strive to implement management that is complemented by appropriate measures and guidance.

Health & safety certifications

The Group is compliant with the certification standards and legislative requirements for health and safety within the countries in which we operate. These requirements may differ among the Group’s entities, but our commitment to meet best practices and legal expectations is consistent throughout.

We ensure that our employees are properly informed about the laws and regulations relating to the H&S of their business activities. This ensures compliance with legal requirements, even though they vary across the entities of our Group.

Overall, we are committed to creating and maintaining healthy and safe working conditions that go beyond mere regulation.

2021 Highlights

OHSAS 18001/ ISO 45001 certifications highlight the health and safety management systems in place within the Group. In 2021, 75% of EPH’s employees were covered by these certifications.[46]

2021: Employees covered by OHSAS 18001/ISO 45001

7,961 total employees covered
10,564 total FTEs
75% covered employees

8% increase of total covered employees from 2020

EPH works to continuously uphold a safe working environment for our stakeholders. This is accomplished by ensuring all personnel have a clear understanding of the Group’s policies and undergo the internal trainings related to occupational health and safety.

2021	Employees	Contractors
Total worked hours	**17 mil.** 5% decrease from 2020	**3 mil.** 35% increase from 2020
Registered injuries	**63** 5% increase from 2020	**26** 44% increase from 2020
Fatal injuries	**0** no change from 2020	**0** non change from 2020
Injury freq. rate	**3.71** 0.35 point increase from 2020	**9.19** 0.58 point increase from 2020

Figure 12: Injuries overview.

46 This does not mean that the rest of our employees work in unsafe and unhealthy environments. In reality, this certification is simply irrelevant to some of our entities with no or very limited physical operations.

Health and safety management

We are committed to maintaining a "**zero harm**" environment throughout all our business activities. Because of the extensive scope of our Group, this is not an easy feat, but we strive to ensure a safe environment for all our stakeholders and in all aspects of our business. EPH also strives continuously to educate contractors on H&S issues and ensures their compliance with any relevant regulations and our own Group standards when working on our premises.

The health of our employees is as important to us as their safety. That is why we are committed to implementing policies that foster healthy environments, promoting well-being throughout our Group, and at some of our entities, even offering medical examinations.

These commitments are embedded within our Code of Conduct, thereby further aligning us with our ultimate H&S goals. We also continue to support our entities, such as by reinforcing strong governance, enacting effective H&S protocols, sharing best practices, and eliminating unsafe and unhealthy work behaviour.

At EPH, we pride ourselves on the fact that our top priority is the health and safety of our employees. In 2021, we recorded no fatal injuries.

Regrettably, in April 2022, a fatal injury occurred at SSE involving own employee who was hit by an electric shock during maintenance works at the distribution network. Investigation into causes of the incident has not yet been completed.

8 Pillars of health & safety management

Commitment from top management	At EPH, reporting on H&S issues is taken very seriously; top management is actively involved in H&S issues and ensures that they are carefully considered in every decision-making process. This level of commitment is expected from all of our entities. Additionally, semi-annual and annual reports on H&S are presented directly to the Board of Directors.
H&S integration into our remuneration system	We integrate H&S into our incentive schemes, such as within our employee performance assessments. We believe that this invites greater insights from employees on approaches for maintaining a safe and healthy working environment. It also allows us to identify any gaps in our H&S training and policies.
Prevention	As a Group, we aim not only to reduce the incidence of accidents, but also to prevent them from ever occurring. As a result, several of our entities focus their preventive approaches on keeping detailed records of all accidents and "near-misses" and defining the remedial actions taken to prevent similar reoccurrences. We also focus on reducing near-misses and incidents through monitoring and analysis, which help prevent severe or even fatal accidents.
Risk control and reduction	Our H&S management requires regular on-site risk assessments and inspections. Work-related risk assessments, including those performed by contractors and subcontractors, are a common practice at our subsidiaries. Most of our operations also receive third party safety inspections of the H&S of projects and technological processes involved.
Focus on behaviour	Studies show that 80–90% of accidents are caused by human error[47]. At the same time, changing unsafe behaviours is one of the most difficult challenges a company faces when trying to achieve a goal of "zero harm." Behaviour Based Safety (BBS) can reinforce corrective action that an organisation's management can take to address unsafe work behaviour.
Training and communication	The EPH Group recognises that H&S training and communication are important channels for distributing relevant knowledge, awareness and expectations amongst our employees and contractors. The Group provides general training programmes on employee safety; periodic retraining is also facilitated. When selecting or assessing potential suppliers, the Group also considers their approaches and attitudes toward safety issues.
Emergency response and fire protection procedures	The Group's entities have dedicated fire protection and emergency response plans. We work to continuously improve our preparation for these situations, such as through regular drills and training sessions. As an example, the HSEQ departments at eustream and Nafta regularly perform controlled emergency drills in collaboration with the dispatch department and fire safety brigades.
Health protection	EPH's subsidiaries have various initiatives that aim to promote the health and well-being of its employees while at work. Most of our subsidiaries regularly provide medical examinations for their employees.

Table 17: Pillars of health and safety management within the Group.

47 Heinrich, H.W., Peterson, D. and Roos, N. (1980) Industrial Accident Prevention. 5th Edition, McGraw Hill, New York.

Case Study
Health and safety programmes
Protecting our people

EP Produzione: healthy eating for employees and contractors

In a series of four webinars entitled “Giovedì gnocchi – La salute vien mangiando!” EP Produzione offered employees and contractors the opportunity to acquire new competences related to healthy eating at both work and at home. With the help of a nutritional expert, participants received an introduction to nutrition and its role in human health, as well as suggestions for preparing balanced meals, recipes to enjoy during quick breaks (that did not include junk food), sustainable grocery shopping and label reading. The training was organised in partnership with AIFOS (Association of Italian Occupational Safety Trainers) and reached more than 200 participants from all EP Produzione sites. This training was organised to support the “Health and Wellbeing” trainings that started in 2020 at EP Produzione, with a cycle of webinars on “HACCP, food safety and nutrition” for canteen and general service contract managers on site.

This initiative supported objective no.3 of EP Produzione’s HSE Improvement Plan 2019–2021, “Promoting the attention to health-related issues fostering safety and environmental care,” as well as the UN Sustainable Development Goal no.3, “Good Health and Well-being: ensure healthy lives and promote well-being for all at all ages.”

Across EP Produzione, the easily recognisable hashtag “#abbicura,” meaning “#takecare,” has been communicated alongside the company’s HSE initiatives. This motto has been implemented in an effort to emphasise company-wide awareness to applying safety at work and into everything that the company does, respect for the environment, and giving the utmost importance to the health and well-being of those who work with the company, as well as those within surrounding communities.

EPH's response to the COVID-19 pandemic

In 2021, the Group continued to implement safety measures for those working on our premises, with the aim of effectively reducing the risk of exposure to the virus. We make it a priority to implement safety measures that not only protect our personnel, but that make the processes as convenient as possible.

Promoted social distancing

Whenever possible, we promoted **remote work**, such as videoconferencing and working from home. We understood that this was not always practical, which is why we tried to accommodate our workplaces as much as possible. For example, critical employees worked in **smaller teams** in order to reduce their exposure to other employees.

We encouraged our employees to **avoid non-essential business travel**, both domestic and foreign. Companies with direct relationships with end consumers **developed online applications** and offered other options to help customers reduce their physical contact.

Ensured on-site safety

Protective equipment was provided to staff whose on-site presence was deemed essential. We abided by **strict sanitary regimes**, including mandatory use of face masks and thorough disinfection of working areas. We actively promoted testing for our employees and followed all local **testing** regulations. We also ensured that we adhered to **Public Health Authority recommendations**.

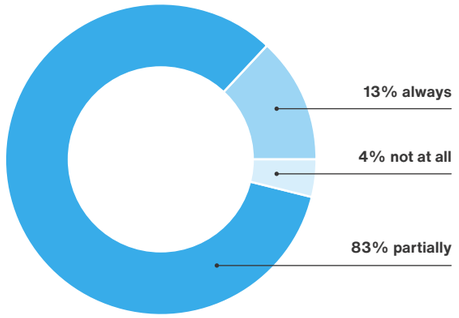
The Group actively monitored the developments of the pandemic, ensuring that we continually aligned our internal and external practices accordingly.

EPLI at full speed even during the COVID pandemic

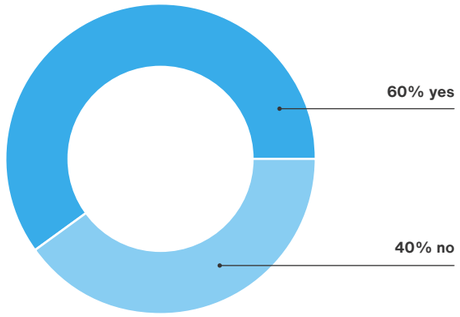
Given EPLI's international freight transport business, the Group's services are systemically important. Therefore, key employees such as train drivers, shunting attendants and wagon inspectors were expected to continue working despite the COVID-19 pandemic. However, this could only be guaranteed if the administrative tasks of the commercial employees continued to be fulfilled. Ensuring continuous functioning of the control centre in particular was considered vital; if COVID-19 were to spread among employees, the constant monitoring and processing of trains could not be guaranteed.

For the health and safety of employees, the EPLI's board decided that the majority of its commercial workforce should work from home, despite initial concerns that home office would negatively affect the quality and reliability of our transport. As we now look back, we can proudly confirm that no train has stood still and we managed to maintain our operations at the same level. Furthermore, a survey of EPLI employees showed that the majority of them saw home office as a benefit. For this reason, EPLI will continue to enable its employees to work from home in the future.

Future work in the home office



Has your quality of life increased by working in the home office?



Graph 29: Internal questionnaire on home office in EPLI group.[48]

48 Left graph: 83% partially, 13% always, 4% not at all; number of participants = 24. Right graph: 60% yes, 40% no; number of participants = 24.

Employment and employee development

EPH believes that diversity within our talent makes our work stronger. We recognise that our people are at the core of what we do. We encourage openness and honesty amongst our employees, so that we may understand how to best support them in reaching their full potential within the Group.

At EPH, we approach employment practices and procedures with inclusion and equal opportunity in mind. It is important that we hire the best talent, but also the right talent, regardless of personal differences and backgrounds.

We understand that a healthy work environment is essential for the development of talent, increased productivity and the overall sustainable growth of human capital. That is why we work hard to create an environment in which our employees feel supported in their ongoing professional growth and development.

Our contribution to the SDGs:

EPH commits to inclusive and fair employment, coupled with unparalleled learning opportunities for all. We ensure our employment decisions and behaviour towards employees is fair and just across the entire Group.

Our employees

We believe that effective management of employees is essential to the successful operation of our Group. EPH promotes meaningful employee engagement at an entity level and ensures that it is adequately supported by corporate policies. This is important for maintaining the same high standard of business behaviour that we expect across our Group.

As a result, EPH's human resources are decentralised at an entity level. This is essential, as our operations differ quite substantially, especially when it comes to location, size and the needs of our talent.

Training and development

We are aware of the ever-growing competition for top talent across the markets in which we operate. It is therefore important that EPH focus on creating and maintaining an attractive working environment in which all our employees can develop and grow, in the most appropriate roles, across the organisation.

EPH recognises that its employees are the Group's top asset, and as a result, we place great emphasis on their development. Due to the extensive scope of our Group, EPH uses a decentralised approach to human resources. Within this section, we highlight the experiences, processes and activities of some of our major subsidiaries. Our hope is to highlight the importance of our most precious asset – our people.

2021 Highlights

support

327 persons

EPH does not discriminate within its employment process, and as a result, we proudly employ 327 persons with various disabilities. We commit to fully understanding their working needs so that we may provide the most appropriate support for their day-to-day activities.

CBA

84 %

84% of EPH employees are covered by various collective bargaining agreements.

professionals

10,564

In 2021, EPH employed 10,564 professionals across 10 countries, 6% of whom held positions in top or middle management.

training

215 thsnd. hours

In 2021, EPH provided its employees with 215 thsnd. hours of training.

EPH employment and employee standards

In 2021, EPH further committed to upholding fair employment and treatment of its employees through the implementation of the Equality, Diversity and Inclusion Policy. Its implementation throughout the entire Group was completed in 2021.

We offer equal and fair employment and ensure to treat all of our employees with respect and inclusion. Our commitments are highlighted in our *Code of Conduct* and *Equality, Diversity and Inclusion Policy*, and echo the expectations set out by the International Labour Organization's *Declaration on Fundamental Principles and Rights at Work*. These commitments include avoiding unlawful discrimination based on age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, colour, nationality, ethnic or national origin, religion or belief, sex and sexual orientation.

In addition to our internal policies, EPH aligns itself with relevant labour codes and legal regulations in its employment processes. This ensures that we promote employment, and recruit and treat talent on the sole basis of their qualifications, thereby avoiding discrimination of any kind. Our employment practices and procedures are reviewed at least once a year and updated to include any internal changes or those imposed by new legislation.

As committed as we are to equal employment in our talent, we still see a disproportionate number of women to men in our Group. This is currently the norm in energy-focused fields. In this particular industry, most positions are typically occupied by men, especially within management. This is further represented in the rates experienced by our peers[49], with roughly 25% and 20% of women in non-executive, and top and middle management respectively. In 2021, this was represented by a 19% and 16% breakdown within EPH, with an overall ratio of 4:1 of men to women within the Group. At EPH, we continually encourage our female employees to take on leadership roles while supporting their personal and professional growth.

Headcount by country

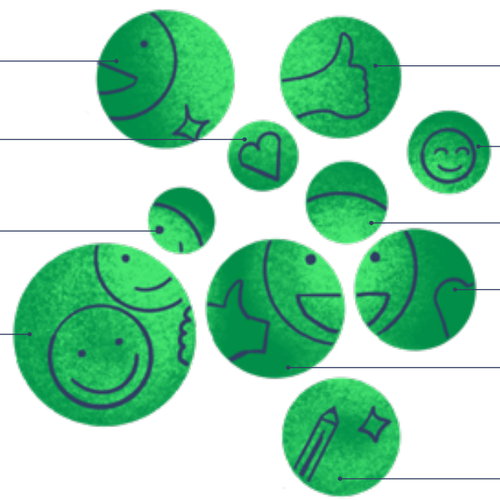


Figure 13: Headcount by country.

49 Based on the analysis of 5 main comparable energy groups in Europe (based on 2020 report analysis).

Employee data by gender

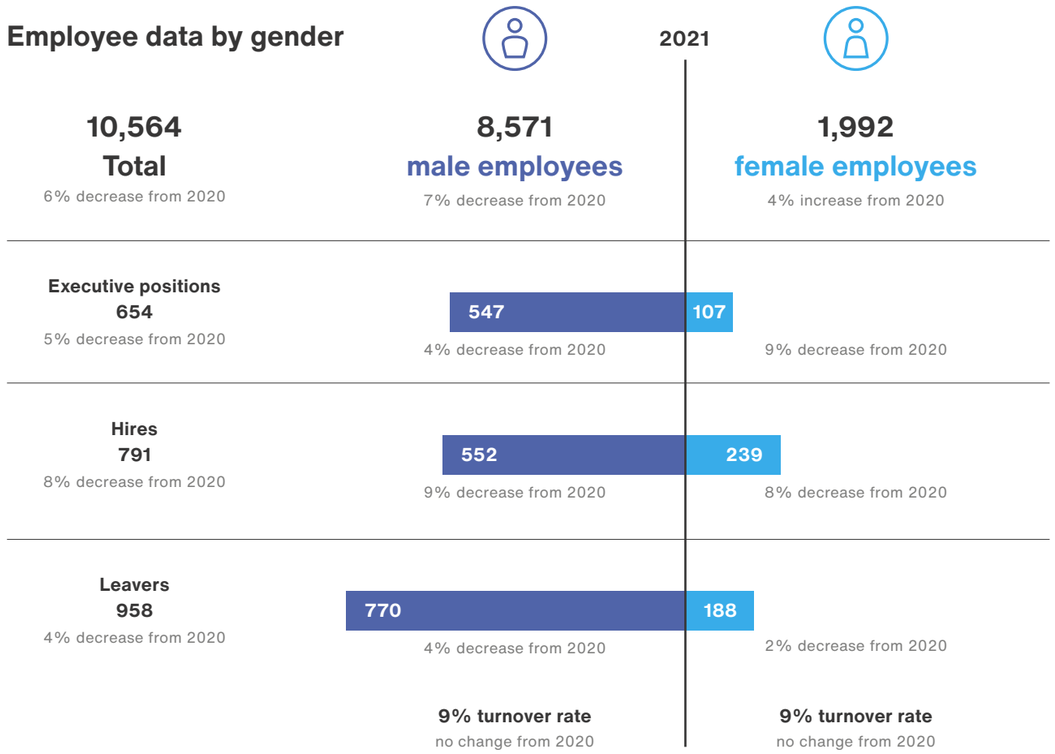


Figure 14: Employee data by sex.

2021 Total employees by age group

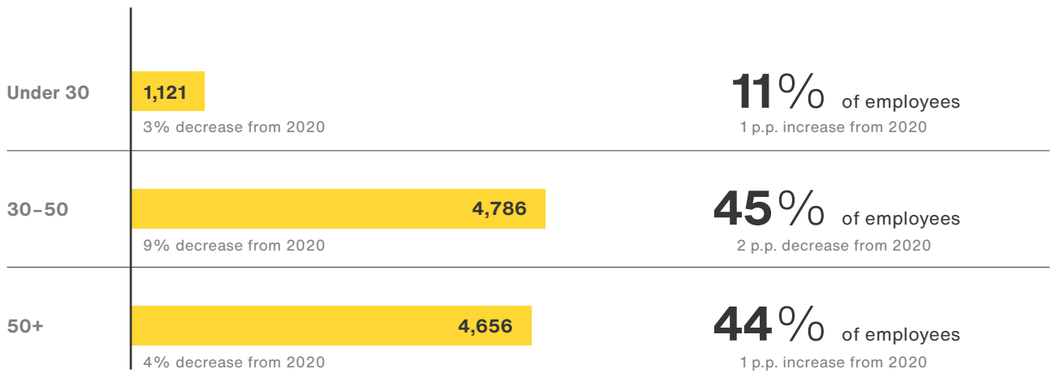


Figure 15: Employee data by age groups.

Case Study
Employee retention programmes
Accommodating to expected job losses

MIBRAG: focusing on our employees' futures post operations

In its final phase of operation, MIBRAG's historical Deuben power plant employed a total of 135 employees, where 2,000 personnel worked during peak times. To accommodate for these job losses, MIBRAG was granted access to APG (adjustment allowance) for Deuben employees 58 and 63 years of age, while all younger employees of the site were offered alternative jobs with the company.

Employee development

At EPH, we also support freedom of association throughout the Group. This is not only for compliance with European and national regulations, but because we see value in allowing employees to coordinate and negotiate with their employers. The Group respects its employees' rights to participate and engage with trade unions and we do not tolerate any type of retaliation or hostile action towards employees who choose to do so.

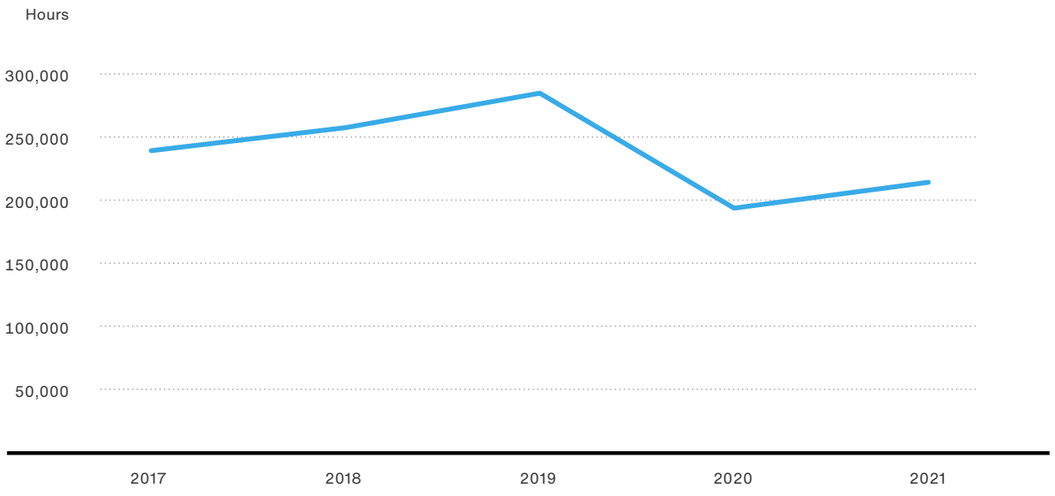
We are committed to providing the right tools and environment for our employees to grow and develop professionally. In an effort to better understand the strengths of our employees, we perform regular work assessments and evaluations. This not only allows us to improve the allocation of talent within the Group, but it allows us to understand where our employees could benefit from further support.

In 2021, we saw a slight increase of 11% in the total amount of employee training hours when compared to last year. This increasing trend can be attributed to the easing up of COVID-19 restrictions. Even though the majority of our training sessions were transferred to online platforms during the pandemic, the majority of the technical trainings could not be provided without physical attendance.

215 thsnd. hours
of employee training
↑ 11% from 2020

20.3
training hrs. / employee
↑ 18% from 2020

Total employee training



Graph 30: Employee training hours.

Case Study
Employee and employment programmes
Attracting talent

Stredoslovenská distribučná (SSE subsidiary): focusing on employee development

In 2021, we continued to support the professional development of our employees through internal trainings, including:

1. Vocational training focused on safe work procedures for employees working with electrical equipment or within maintenance, such as electricians, maintenance technicians and foreman.
2. Training focused on working under electricity voltage for employees that operate or perform maintenance of electrical equipment or those involved in construction assembly activities.
3. Online GDPR training “News in GDPR” which was designed for employees who work with personnel data.
4. E-learning training on cyber security for employees working on assigned personal laptops or desktop computers.

LOCON AG: focusing on employee satisfaction

The company operates in the field of construction logistics throughout Germany. When providing our services, we always keep our employees in mind, as qualified and motivated staff are the most important assets of a successful company. Our personnel management focuses on enabling our employees achieve the maximum balance between work and personal life. Therefore, our employees, and their families, also receive high bonuses when asked to work in difficult conditions.

SPP - Distribúcia: Gas Academy and Young Gas Worker programmes

At SPP-D, programmes are not only aimed at further advancing our talent through our Gas Academy, but they are also focused on attracting and providing professional energy experience to students through our Young Gas Worker programme.

The Young Gas Worker programme is designed to prepare students for positions within maintenance and measurement (assembly part of our services). In September 2021, 5 new students from two secondary schools in Trnava and Levice started their internships, where successful students will be offered jobs within these roles. The programme will be evaluated in May 2022.

The new Gas Academy programme, approved in November 2019, will soon begin training specialists, project managers, and those in lower management to be able to fill technical roles within SPP-D. For employees seeking to advance to management and technical positions, newly recruited staff, and recently promoted managers and technicians, the Gas Academy will provide an opportunity to develop both hard and soft management skills. The programme runs over the course of 12 to 18 months and focuses on teambuilding, mentoring, and rotations. Two training groups are set to begin in March 2022, consisting of 17 internal employees who have passed an internal selection process and have been approved by the company’s management as well as newly hired participants (maximum 24 programme participants, divided into two training groups).

EP Produzione: employee cybersecurity training

With widespread use of smart working within companies and increasingly sophisticated cyberattack techniques, many companies face the risk of human error leading to a system-wide cyberattack. In February 2021, EP Produzione launched a multi-year cyber security training programme that provides employees and collaborators with the necessary tools to avoid becoming victims of online cyberattacks. To make the programme more effective and engaging, EP Produzione collaborated with the Cyber Guru company to develop an innovative gamified version of the training course. As a result, the course was transposed into a healthy competition amongst colleagues, where the creation of a tournament evolved called the “EP Cyber Cup.” Overall, the training aims to increase awareness, perception of danger and readiness to react in the face of risks in the digital sphere.

As training participants complete the 12 topic-based learning modules (one for each month), which include topics related to phishing, privacy, and web browsing, they earn points while competing in the virtual championship both individually and in office-wide teams. To encourage participation, several prize-giving ceremonies are held throughout the course for the players with the highest scores. The tournament, “EP Cyber Cup,” attracted high engagement in the training course, with a reach of more than 86 % of the 533 employees involved in the programme.

The training course is complemented by the “Cyber Guru Channel,” which periodically releases videos of real-life situations that help viewers understand possible cyber threats to individuals and organisations.

The training will continue to take place on the Cyber Guru Awareness platform until 2023.

Customer relationship management

We understand our leading role in the supply and distribution of power, gas and heat. We work hard to ensure that we reliably meet customer demand with quality products and services.

EPH not only ensures compliance with regulations, but we aim to go beyond the imposed standards. We do this by taking the time to understand our customers' demands and provide affordable access to basic services accordingly.

The Group is committed to regularly implementing and improving our products and services. Our goal is to offer a viable option for all.

Our contribution to the SDGs:

EPH strives to ensure affordable access to modern energy, uphold sustainable consumption patterns and promote inclusive societies. This is accomplished through our continuous interactions with customers.

Customer and product approach

Energy is essential for a country's economic and social development, as well as for facilitating and enriching people's daily lives in the modern world. We focus on using new technologies and implementing projects that will help provide access to basic services to the communities in which we operate. In compliance with state regulations, we always offer our customers reasonable prices. In Slovakia, we offer better prices to vulnerable and disadvantaged customers due to the country's regulations.

Communication

Though most companies in the Group already had an Ethics Manual or Code of Conduct, we implemented the EPH Group Code of Conduct, in 2020 and 2021, superseding local policies. It outlines Group-level expectations for ethical and transparent business conduct with our customers.

We have created clear and easily accessible communication channels for our customers because we place great importance on providing exceptional service.

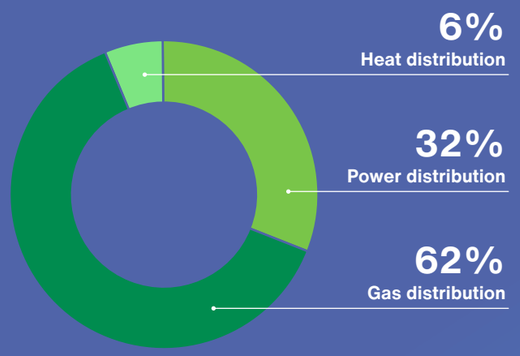
Access to basic services and responsible marketing

As operators of key infrastructure for transmission, storage and distribution of gas, and distribution of electricity and heat, we are aware of our duty to ensure reliable supply of basic commodities. Most particularly in our distribution segments, through which we deliver to more than 2 million end consumers.

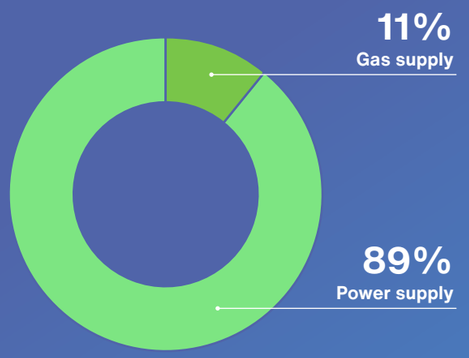
Through our subsidiaries EP Energy Trading and Stredoslovenská energetika, we supply electricity and gas to more than 700 thousand customers in Slovakia and the Czech Republic. We strongly refuse to engage in any aggressive sales techniques to enhance customer retention or acquire new customers.

2021 Highlights

2021 scope of our customer relationships



Graph 31: Connection points in power, gas and heat distribution.



Graph 32: Customer accounts in power and gas supply.

2,456 thsnd.
Total connection points

853 thsnd.
Total customer accounts (supply)

Our customer service is not exclusively limited to the supply or distribution of our commodities (gas, power and heat). We understand that it is equally important to provide sustainable products along with energy savings in order to achieve EPH's decarbonisation goals.

Customer programmes are an effective way for the Group to strengthen its ties with surrounding communities. The positive response to these programmes reinforces EPH's commitments to their further development and implementation.

Case Study

Energy supply programmes

Ensuring a stable energy supply for our customers

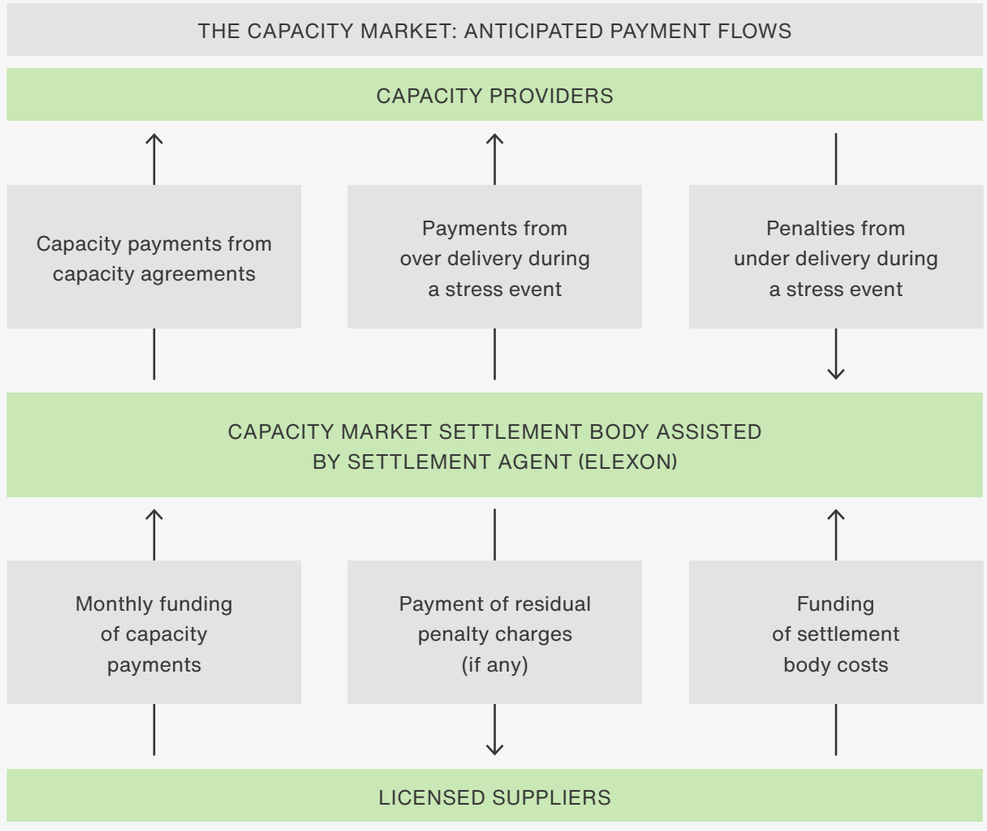
EPH operations in the United Kingdom and Ireland: Capacity Market and asset participation

As part of the UK Government's Electricity Market Reform package, the Capacity Market was introduced. Its purpose is to ensure the security of electricity supply in Great Britain by providing a payment for reliable sources of generation alongside electricity market revenues. Historically, there has been a capacity surplus in the system, so capacity contracts have not been required. However, as older electricity generation facilities close, in particular coal and nuclear stations, more focus is put onto renewables, making it more important to secure sufficient capacity to cover winter peak demands. EP SHB and EP Langage have participated in the Capacity Market every year since its launch in 2017 and contribute to around 4% of the overall capacity requirement. With flexible CCGT assets, the participation of both EP SHB and EP Langage is becoming increasingly important, as flexible generation plays a crucial role in balancing the supply of power from large-scale renewables with variable outputs.

Picture 38: Langage power plant in the United Kingdom.

In the all-Ireland electricity market, the Capacity Market plays an important role in ensuring the security of supply in an increasingly renewable energy landscape. The Irish market differs from the UK, as it has greater balance with its higher proportion of renewable generation, as well as some significant transmission constraints due to location. As a result, the Capacity Market in Ireland focuses on the ability to respond to system-wide stress events and ongoing local constraints. In Northern Ireland, EP Kilroot and EP Ballylumford make up approximately 55% of the installed dispatchable generation capacity. This means that without Capacity Market contracts, which ensure the economic viability of assets, there would be a significant issue with the security of supply. Although Tynagh Energy makes up a much lower proportion of the overall installed capacity, it is also vital to securing supplies due to its key location.

The Capacity Market pays providers to ensure that there is adequate generation during system stress events. Providers who do not deliver sufficient supply at these times are subject to penalties, as shown in the figure below. Tynagh and the large EP Northern Ireland units were available for all 7 system price events in 2021. This was particularly important in the Irish system because two high merit units were unavailable for 9 months.



Picture 39: Flow of payments for penalties experienced by providers who do not deliver sufficient supply during system stress events.

Case Study

Customer energy efficiency programmes

Working to reduce and optimise energy consumption for our customers

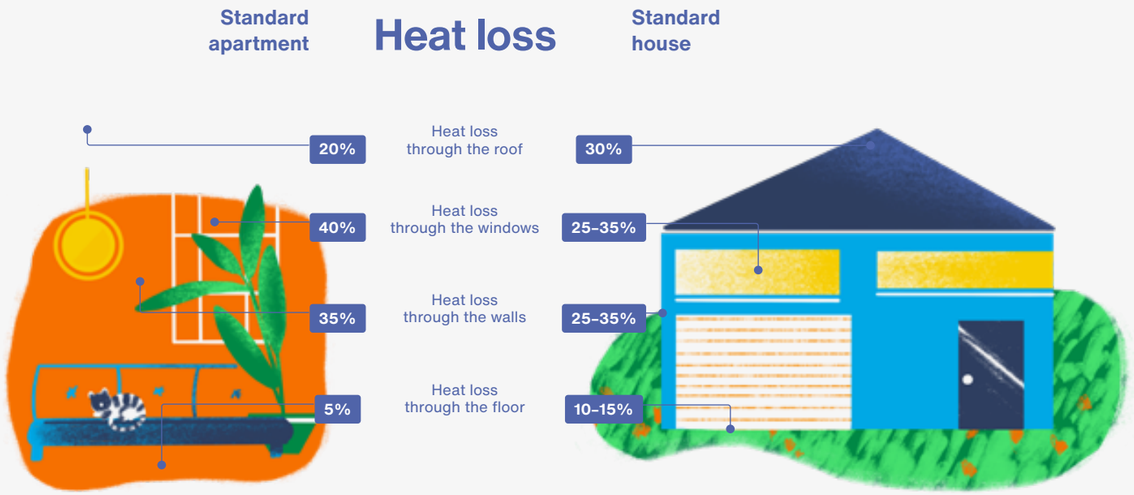
Stredoslovenská energetika:
online customer communication

At Stredoslovenská energetika, we are dedicated to building our online communication through our *Hints and Tips* webpage. This page is dedicated to providing our customers and communities with energy efficiency and energy-related advice.

On our webpage, customers receive practical advice on how to quickly and effectively reduce energy consumption within their homes. They also have the opportunity to learn about other household energy tips, such as the most affordable rates for their homes, how much their electrical appliances consume and the difference between modern LEDs and classical incandescent bulbs.

Our online programme is enriched with SEO content series. They include various article topics, such as the advantages and disadvantages of electrical and gas hobs in Slovakian homes or methods on how to responsibly prepare for the heating season. Overall, we find that our customers show greater interest in renewable sources, along with tips on how to further reduce electricity and gas consumption.

Overall, Stredoslovenská energetika is committed to further educating households in Slovakia about the path to practical and easy to achieve energy efficiency.



Picture 40: Heat loss infographic for Stredoslovenská energetika.

Plzeňská teplárenská:
monitoring services

At Plzeňská teplárenská, we continuously work on extending the portfolio of services we offer our customers.

We currently provide a monitoring service that collects data relating to energy consumption; it also serves as an alert system in the case of energy failures or accidents. This service allows customers to optimise their energy consumption and reduce energy costs.

As an example, this service is available in several buildings in the Pilsen region. In 2021, energy consumption monitoring devices were installed in two more kindergartens in the city of Pilsen. The project “Monitoring of energy consumption in kindergartens” was awarded the Crystal Chimney prize by the Association for District Heating of the Czech Republic in 2019 during the District Heating and Energy Days.

awarded

The project “Monitoring of energy consumption in kindergartens” was awarded the Crystal Chimney prize by the Association for District Heating of the Czech Republic in 2019 during the District Heating and Energy Days.

Development of communities and social action

We recognise the opportunities associated with inclusive and strong community partnerships. Not only do they provide a platform on which we can support each other's growth, but it also aligns us in our efforts to achieving sustainable development.

EPH is proactive in its community partnership efforts. Through our EPH Foundation, we promote initiatives, such as grant and community partnership programmes.

It is important for us to be a valued member of the communities in which we operate. That is why we continuously seek to create and implement initiatives where we believe we can actively help communities grow and ultimately thrive.

Our contribution to the SDGs:

EPH works to support community development through social action and partnerships. These partnerships are important in being able to contribute to, and ultimately achieving, sustainable development.

Community development programmes and initiatives

As a key stakeholder, we believe it is important to support and develop the communities in which we operate. Because children are our future, we put greater emphasis on investing in resources that work towards educating our youth, especially with regards to energy efficiency.

EPH Foundation

The EPH Foundation is the main facilitator of all the Group's community activities, such as those relating to the support of local charities, social initiatives and community development programmes.

Response to 2022 global events

The Group has taken an active role in assisting Ukrainian refugees, as well as those remaining within the territory of Ukraine during the 2022 Russian invasion.

In Slovakia, the EPH Foundation concentrated its efforts on providing humanitarian aid to those in Slovakia and within the territory of Ukraine. This was mainly in the form of supplies, such as sleeping bags and food.

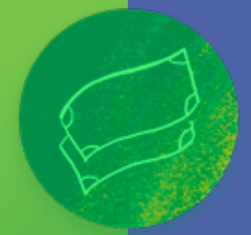
In the Czech Republic, the EPH Corporate Group concentrated its efforts on refugees registered within the country, mainly by assisting with housing and professional requalification for them to be able to enter the country's labour market. EPCG allocated EUR 2 million to these efforts, with continued support through a Czech non-profit organisation, once selected by the Group.

Overall, EPH employees continue to contribute funds collected by EPCG to be able to increase the amount of assistance provided to Ukraine.

2021 Highlights

In 2021, the EPH Foundation allocated over EUR 1 million and supported over 180 projects categorised as grant and partnership programmes, where:

Grant programmes



€ 666 thsnd.
contributed to projects

Supported over
140 projects

Partnership programmes

€ 361 thsnd.
contributed to projects

Supported over
40 projects

In an effort to combat the spread of COVID-19, the EPH Group, together with J&T, donated protective and medical equipment to the Czech Republic and Slovakia in the amount of EUR 8 million.

EPH Foundation

EPIF is the founder and primary benefactor of the EPH Foundation, established at the parent company level, which mainly distributes funds amongst grant and partnership programmes.

Grant programmes allow the Group to allocate funds to projects within specific areas of focus..

Through our partnerships, we support public benefit projects in 6 key areas: education and innovation, culture, health and sport, disadvantaged groups, environment, and regional development. Additionally, our partnerships focus on innovation, having a nationwide reach and creating lasting impacts in people's lives.

The Foundation was established mainly to support projects related to:

1. Development and protection of spiritual and cultural values
2. Realisation and protection of human rights or other humanitarian goals
3. Protection and creation of the environment
4. Preservation of natural values
5. Health protection
6. Protection of children's and youth's rights
7. Development of science, education and sports
8. Implementation of individually targeted humanitarian aid for an individual or group of persons who have found themselves in danger of death or in need of urgent assistance in the event of a natural disaster

Nadácia EPH

Grant programmes

In 2021, the majority of the programme's contributions were allocated to the programs titled "Municipality," "Oporný bod" and "Podpora jednotlivcov" where approximately:

EUR 266 thsnd.
was contributed to "Municipality"

EUR 150 thsnd.
was contributed to "Oporný bod"

EUR 110 thsnd.
was contributed to local charities in Slovakia

Partner	Project	Activities and project goals	Contribution
APPA Association that assists individuals with disabilities	Improving health through rehabilitation	Our support helps financially disadvantaged families afford rehabilitation at selected centres, as well as medical devices required to help with treatment.	€ 60,000
DOM Božieho milosrdenstva, n.o. Hospice for senior citizens	Supporting the facility financially	The facility, with a capacity for 53 seniors, provides the necessary social services and care that occupants require to live healthy lives.	€ 4,000
Municipality of Gajary	Alley cropping	The project aims to protect the environment and improve the quality of life for citizens by extending the green infrastructure by developing two areas for alley cropping within the municipality of Gajary.	€ 30,000
City of Brezno	Constructing a playground for kindergarteners	The project created a play zone for children from 2–6 years of age and further improved the quality of the facilities in which the children practiced physical activity.	€ 10,000

Table 18: Additional information on a few selected grant programme projects in 2021.

Partnership programmes

In 2021, the majority of contribution was allocated to individual partnership projects and the J&T Foundation, where approximately:

EUR 185 thsnd.
was contributed to individual partnership projects

EUR 170 thsnd.
was contributed to the J&T Foundation

Partner	Project	Activities and project goals	Contribution
Zdravie pre Záhorie n.o. Healthcare centre	Improving the healthcare provided to ischaemic stroke patients	Introducing new medical methods to improve the diagnostic process provided to ischaemic stroke patients, thereby helping to provide more effective treatment.	**€ 15,000**
Kolégium Antona Neuwirtha College in Slovakia	Preparing undergraduate students for their future professional endeavours	Providing a programme in which students learn to think critically and apply practical skills within their academics. This is supported by experienced lecturers and seminars based on western practices.	**€ 20,000**
HARMONY, n.o. Rehabilitation centre	Providing new methods of treatment to children with cerebral palsy and musculoskeletal disorders	Providing robotically assisted locomotor (activity-based therapy to help improve walking), assisted, and upper limb therapy, in combination with other dynamic therapy. This project has proven to help patients with varying degrees of disability improve their functionality.	**€ 30,000**
PHYSIO CANIS, o.z. Therapy centre	Providing physiotherapy and animo therapy (animal assisted) for children with cerebral palsy	Integrating animo therapy into rehabilitation programmes at the Žilina outpatient centre, with a focus on children with neurological diseases in combination with other diseases.	**€ 30,000**
Drahuška a my... o.z. Social centre	Providing employment and supporting the future development of young orphans	Employing young orphans in Drahuškova and providing them with support to help with their future development. This was, for example, accomplished through helping them further explore their personal interests.	**€ 20,000**

Table 19: Additional information on a few selected partnership programme projects in 2021.

EP Corporate Group Foundation

The EP Corporate Group (EPCG) Foundation was established to help individuals in difficult life situations and is one of the few foundations in the Czech Republic that primarily provides financial assistance to families with children under the age of 18 who have lost a substantial part of their income due to the death of one of their parents. Another goal of the foundation is to support seniors in need. The EPCG Foundation assumes it will start fully operating from July 2022.

The Foundation's mission is to accompany seniors through a comfortable old age without existential problems, with a roof over their heads, and without fear for their future. The Foundation wants to help those who find themselves in a difficult life situation and do not know how to get out of it. The Foundation also wants to offer a helping hand to those families who have lost a family member and need not only financial help but above all hope for a better life.

Advocacy is another pillar of support. The Foundation is dedicated to advocating for the interests and rights of civil society in terms of long-standing and unresolved issues and proposing systemic changes, especially in the social sphere. These changes will have a positive impact on grieving families and seniors in need. The Foundation also assists EP Corporate Group employees in extremely difficult and unexpected life situations through the Board of Trustees Fund. The Fund is also open for civil society emergencies, such as recent assistance to war refugees from Ukraine.

The EPCG Foundation aims to distribute help in the amount of € 10 million annually, this amount should be reached during the following years.

Concrete help

On April 6, the EP Corporate Group Foundation launched a closed grant call for 5 selected non-governmental non-profit organizations that provide direct care to refugees. The call will be open for these organizations until the end of June to submit applications for a financial grant to support affordable housing and facilitate refugees' entry into the labour market. € 1.2 million was released for this assistance. The Board of the EPCG Foundation will decide on the selection of non-profit organizations and the amount of the contribution provided during September. For the time being, the foundation retains the remaining part of the allocated financial assistance to Ukraine in the amount of another € 813 thousand for projects or activities that may occur after the end of the conflict in Ukraine. Thus, the total assistance in connection with the war in Ukraine can reach up to € 2 million.

The Foundation also undertook to help the group's staff that accommodate refugees to cover part of the accommodation costs and also offered the staff the opportunity to apply for a stay allowance. 7 employees applied for financial assistance and the Board of the EPCG Foundation approved support for these employees and accommodated people fleeing the war for € 15 thousand.

At the end of March, AC Sparta brought in a group of 33 Ukrainian children and 8 mothers, and NF AC Sparta completely provided accommodation, eating, medical care, school attendance for children, and their football and leisure activities. However, the accommodation costs were beyond the financial possibilities of the AC Sparta Foundation, which is why the EPCG Foundation provided a financial contribution based on an application of € 48 thousand.

EP Properties also took part in helping the refugees, which at an admirable time renovated and fully equipped the premises in Holešovice, Prague, and offered them to Ukrainian families for a minimum rent, for which the EPCG Foundation provides financial support. Applicants for financial assistance could also apply for basic living needs (e.g., purchase of food, medicine, personal care items, and reimbursement of health care). So far, aid for € 22 thousand has been approved.

On top of that, our internal collection to help Ukrainian refugees reached a fantastic amount of € 85 thousand. We approach the donated funds very responsibly and we continue to pay for accommodation and financial assistance to the neediest Ukrainian families.

Case Study
Community programmes and initiatives
Supporting the regions in which we work

Elektrárny Opatovice: supporting long-term partnerships

EOP is involved in several long-term partnerships, including those with regional universities, hospitals and the non-profit sector. Annually, EOP contributes CZK 400 thousand to education, making investments in scholarship programs and information systems within university libraries. Within the regional health care system, the company contributed CZK 1 million to help with the annual modernisation of equipment. With the non-profit sector, EOP has provided their decommissioned infrastructure (heating substations) to an organisation that focuses on helping those with mental disabilities. The space is used as a café and workshop, where their products, for example, have been provided to medical staff to help boost morale during the pandemic. As a result of EOP's support, this organisation allows for the employment and social support of individuals with disabilities.

CZK 400 thsnd.

Annually, EOP contributes CZK 400 thousand to education.

CZK 1 million

Within the regional health care system, the company contributed CZK 1 million to help with the annual modernisation of equipment.

EP Produzione: "Energy and Sport" sponsorship

Since 2015, EP Produzione has been a Gold Sponsor of Dinamo Banco di Sardegna, the Sardinian basketball team based in Sassari, which plays in both the Italian National League (Lega Basket serie A, or LBA) and the Basketball Champions League (BCL) for the 2021 to 2022 season. This sponsorship represents the Group's presence in Sardinia and its attention to the local realities of Sardinian communities. We are proud to confirm that the "Energy and Sport" partnership between EP Produzione and Dinamo, which demonstrate our shared values of team spirit, talent and determination, will continue onto the 2023 to 2024 season.

Picture 41: The Sardinian basketball team sponsored by EP Produzione.

Biomasse Italia: supporting community development

Since 2007, Biomasse Italia has been embodying its commitment to actively and directly contribute to the sustainable development of local communities, which is executed in accordance with the company's industrial, environmental and social responsibility objectives, and own system of principles and values. Integrated projects focused on environment, play and culture were developed in collaboration with local authorities under the programme titled "We care." This programme aims to benefit children, seniors, and young people in the labour market from the province of Crotone, mainly in the Municipality of Strongoli.

Biomasse Italia is proud to support the community through its sponsorship under the "We care" programme, which in 2021 included the festivities for the local patron saint's day, Christmas decorations, implementation of safety measures at a torrent, and accessible sheltered walkways for people with disabilities to enjoy the beach in summertime. The Company's sponsorship also helped the municipality complete its renovation of Piazza Magna Grecia in Strongoli Marina, an important place for local families and youth as well as the numerous tourists who visit in the summer.

However, the most important contribution from Biomasse Italia continues to be the royalties paid every year to the local municipality, which is based on the quantity of produced electricity. In 2021, Biomasse Italia paid about EUR 182 thousand, which will help authorities cover increased expenses and allow for investments into projects that will benefit the local community.

Picture 42: Redevelopment and implementation of safety measures at the basin of a torrent.

Picture 43: Revamping works of Piazza Magna Grecia in Strongoli Marina.

Community development programmes and initiatives

Public waste-to-energy plant tours

At Plzeňská teplárenská, we organise regular excursions for schools and the general public. These excursions are accompanied by educational programmes (additionally made available in English).

The educational programme is aimed at highlighting **waste as an important secondary source for heat and power production**, with a potential to save primary non-renewable sources.

Educating our youth on energy efficiency

The SSE education programme has established itself as one of Slovakia's most influential energy-related educational activities. The energy efficiency education contest, which is further raising awareness among young professionals about energy efficiency, reaches an average of **100 schools a yea**r. We have found that this has increased the interest in sustainable energy practices among thousands of young students in Slovakia.

Green City of Pilsen

The project "Green city" aims to improve the quality of life for Pilsen residents. Particular goals of the project are to have **clean air, clean water, green transport, responsible and environmentally friendly waste management, and a greener city centre**.

This intention united **7 entities**: the city of Pilsen, Pilsen region, company Plzeňské městské dopravní podniky a.s., company Vodárna Plzeň, a.s., company **Plzeňská teplárenská, a.s.**, company Škoda Transportion, a.s., and company Plzeňský Prazdroj, a. s. All of these entities strive to minimise their impact on the environment, while supporting environmental protection.

The ambition of the association is not only to open up the discussion about this topic, but to also expand the association with other entities that could further help **implement the measures for meeting the Green City goals**.

Figure 16: Community programmes and initiatives infographic.

Assurance

1 Foreword

2 EPH's Approach to Sustainability

3 EPH and its Business

4 Environment

5 Governance

6 Social

7 Assurance

8 Annex

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Agreed-Upon Procedures Report

Board of Directors
Energetický a průmyslový holding, a.s.
Pařížská 130/26, 110 00
IC: 02 413 507
Prague 1

Purpose of this Agreed-Upon Procedures Report and Restriction on Use and Distribution

Based on the engagement letter dated 25 February 2022 we have been engaged to perform agreed upon procedures relating to below defined indicators included in the Energetický a průmyslový holding, a.s. group sustainability report for the year 2021 (hereinafter "the Report") to assist Board of Directors in indicators testing. Our engagement with Energetický a průmyslový holding, a.s. (hereinafter "the Company", or in aggregate with its subsidiaries referred as "the Group") was conducted in accordance with the International Standards on Related Services applicable to agreed-upon procedures engagements ISRS 4400.

Our procedures were limited in nature and scope to those defined by you as those are most fitting to your current information needs, and as such may not necessarily identify all significant matters relating to the Company or detect any errors or deviations from the norm in the supporting materials.

Our report is solely for the purpose set forth in the first paragraph of this report. Our report is not to be used for any other purpose or to be distributed to any other parties except for inclusion in the sustainability report for the year 2021 of the Company. This report relates only to Specified Indicators defined above and does not extend to any financial statements of the Company.

Responsibilities of the Engaging Party

The Company has acknowledged that the agreed-upon procedures are appropriate for the purpose of the engagement.

The Company is responsible for the subject matter on which the agreed-upon procedures are performed.

The sufficiency of the procedures is solely the responsibility of the Company Consequently, we make no representation regarding the sufficiency of the procedures either for the purpose for which our report is being prepared or for any other purpose.

Responsibility for the sufficiency of the performed procedures rests exclusively with the recipients of this report The procedures that we have carried out are designed to satisfy the Company's information needs.

Practitioner's Responsibilities and Professional Ethics and Quality Control

Our engagement to apply agreed-upon procedures has been performed in accordance with the International Standard on Related Services (ISRS) 4400 – Engagements to Perform Agreed-Upon Procedures Regarding Financial Information as well as with the Code of Ethics for Professional Accountants issued the International Ethics Standards Board for Accountants.

Because the above procedures do not constitute either an audit or a review made in accordance with International Standards on Auditing or International Standards on Review Engagements, we do not express any assurance on financial statements of the Company.

Had we performed additional procedures or had we performed an audit or review of the Company's statutory financial statements in accordance with International Standards on Auditing or International Standards on Review Engagements, other matters might have come to our attention that would have been reported to you.

Procedures and Findings

Procedures:

We understand that you required us to carry out the procedures on below specified indicators for Czech Republic and Slovakia or at group combined basis (further "Specified Indicators"):

- Total Energy consumption based on GRI standard 302-1, on page 257 of the Report,
- Total Quantity of water withdrawal based on GRI standard 303-1, on page 274 of the Report,
- Total Quantity of water discharged based on GRI standard 306-1, on page 275 of the Report,
- Total Registered injuries – Employees based on GRI standard 403-2 on page 288 of the Report.

Our procedures are defined as follows:

1. Recalculation of Specified Indicators as included in Group support source data file (test of mathematical accuracy of the data collected from individual entities and summarized in the Report).
2. Comparison of the methodology used for calculating the Specified Indicators presented in the Report to relevant guidance of GRI Standards: Core option as defined for such indicators including the GRI reporting limitations stated in the Report on page 227.
3. On sample basis, defined at minimum one company from Czech Republic, Slovakia and Great Britain, compare that data provided by individual companies of the Group were properly transferred to the Group support source data file and compare the values reported by the companies to the underlying documentation.

4. For entities based in the Czech Republic except for those covered under procedure 3. (hereinafter "other CZ entities") compare that data provided by these companies were properly transferred to the Group support source data file.

5. For economic and financial data that consist of Total Sales and Income tax paid as of 31 December 2021 and for the year then ended as presented on the pages 1, 36 and 88 in the Report, marked with ("*") (hereinafter "Selected Financial data") reconcile to the Company`s consolidated financial statements as of 31 December 2021 that form part of the Company`s 2021 Annual Report.

Findings:

1. We recalculated data for the Specified Indicators. Calculation was provided to us by the Company in the form of Group support source data file. We recalculated amounts included in the file and then traced the amounts of Specified Indicators from Group support source data file to respected pages of the Report.

   We did not note any differences.

2. We compared the methodology used by the Group for calculation of Specified Indicators to relevant paragraph of GRI Standards: Core option methodology including the limitations disclosed in the Report on page 227. The Group methodology is defined in the calculation questionnaire. Calculation questionnaire is provided to all companies of the Group.

   The methodology used by the Group for calculation of Specified Indicators, as included in the calculation questionnaire, is in line with the definitions of GRI Standards No. 302 -1, 303 – 1, 306 -1, 403 – 2, Core option including disclosed limitations in the Report on page 227.

3. Based on the table "EPH reporting scope entities" included in the Report on the pages no. 227, 228 and 229 and minimum scope requirement as described above, the following entities were selected for the testing: Eustream, a.s. (Slovakia), Elektrárny Opatovice, a.s. (Czech Republic), Plzeňská teplárenská a.s. (Czech Republic) and Lynemouth (Great Britain) hereinafter "the Entities ".

   We compared data reported by the Entities to the Group in respect of Specified Indicators to the Group support source data file. We did not note any differences.

   We compared data relevant to Specified Indicators as reported in questionnaires prepared by the Entities to the relevant supporting documentation available at the Entities. Relevant supporting documentation included protocols or minutes from measuring signed by relevant persons responsible for the measuring, invoices from energy or water supplier, details from HR system and reports from internal systems.

   We did not note any differences.

4. For other CZ entities we compared data reported by each individual entity to the Group with respect to Specified Indicators to the Group support source data file.

   We did not note any differences.

5. We reconciled Selected Financial data presented in the Report to Company`s consolidated financial statements as of 31 December 2021, as included in the 2021 Annual report, with no difference noted expect effect of rounding, if applicable.

Prague, 16 June 2022

KPMG Česká republika, s.r.o.

Annex

1 Foreword

2 EPH's Approach to Sustainability

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Abbreviations

AA1000	Accountability Stakeholder Engagement Standards
BAT	Best Available Technologies
BBS	Behaviour Based Safety
BERT	Budapesti Erőmű Zrt.
CCGT	Combined Cycle Gas Turbine
CE	Central Europe: represents a region of the Czech Republic, Slovakia and Austria
CH_4	Methane
CHP	Cogeneration
CO_2	Carbon dioxide
COP 21	Paris Climate Conference
CS	Compressor station
CZK	Czech koruna
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EBO	Bohunice nuclear power plant
EC	European Commission
EEA	European Environment Agency
EIA	Environmental Impact Assessment
EMIR	European Market Infrastructure Regulation
EMS	Environmental Management System
EMAS	EU Eco-Management and Audit Scheme
EMO	Mochovce nuclear power plant
EOP	Elektrárny Opatovice a.s.
EPC	EP Commodities a.s.
EPC	EP Cargo a.s.
EPCG	EP Corporate Group
EPCI	EP Cargo Invest a.s.
EPCP	EP Cargo Polska S.A.
EPET	EP Energy Trading a.s.
EPH	Energetický a průmyslový holding, a.s. (Parent company)
EPIF	EP Infrastructure a.s.
EPLI	EP Logistics International a.s.
EPNE	EP New Energies
EPNEI	EP New Energy Itali
EPP	EP Produzione S.p.A.
EPPE	EP Power Europe a.s.
EPUKI	EP UK Investments
ENO	Nováky lignite power plant
EVO	Vojany coal power plant
ESG	Environment Social Governance
EU	European Union
EUR	Euro currency
FCL	Full Container Load
FSA	Feed Safety Assurance
GBP	British pound sterling
GDPR	General Data Protection Regulation
GHG	Greenhouse gases are those currently required by the United Nations Framework Convention on Climate Change and the Kyoto Protocol. These GHGs are currently: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3)
GRI	Global Reporting Initiative
H&S	Health and safety
HAACP	Hazard Analysis and Critical Control Points
HFCs	Hydrofluorocarbons
HR	Human resources
HSEQ	Health, Safety, Environment, and Quality
HRSG	Heat Recovery Steam Generator
IAEA	International Atomic Energy Agency
IFRS	International Financial Reporting Standards
IPCC	Intergovernmental Panel on Climate Change
IPCEI	Important Projects of Common European Interest
ISRS 4400	International Standard on Related Services, Engagements to Perform Agreed-Upon Procedures Regarding Financial Information
ISO 9001	
ISO 14001	Certification of Environmental management system
JAVYS	Jadrová a vyraďovacia spoločnosť, a. s.
J&T	J&T Finance Group SE
KPI	Key Performance Indicator
KYC	“Know your customer” is the process of a business, identifying and verifying the identity of its customers
kWp	Kilowatt-peak
LCL	Less Container Load
LEAG	Lausitz Energie Bergbau AG and Lausitz Energie Kraftwerke AG
LPL	Lynemouth Power Limited
M&A	Mergers and acquisitions
MAR	Market Abuse Regulation
MIBRAG	Mitteldeutsche Braunkohlengesellschaft mbH
MIFID	Markets in Financial Instruments Directive
MIRA	Macquarie Infrastructure and Real Assets
N_2O	Nitrous oxide
NAFTA	NAFTA a.s.
NF_3	Nitrogen trifluoride
NG	Natural gas
NGOs	Non-governmental organisations
NI	Nuclear Institute
NO_x	Nitrogen oxide emissions
NPP	Nuclear power plant
OCGT	Open-cycle gas turbine
O&M	Operation & Maintenance
OHSAS 18001	Occupational Health and Safety Management Systems (superseded by ISO 45001)
P2P	Peer-to-peer
PFCs	Perfluorocarbons
PLTEP	Plzeňská teplárenská a.s.
PV	Photovoltaic
RADWASTE	Radioactive waste
RAW	Radioactive waste
REMIT	Wholesale Energy Market Integrity and Transparency
RES	Renewable Energy Sources
SAF	Solid alternative fuel
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SDGs	Sustainable development goals
SF_6	Sulphur hexafluoride
SHBEC	South Humber Bank Energy Centre
SNCR	Selective non-catalytic reduction
SO_2	Sulphur dioxide
SPH	Slovak Power Holding BV
SPP	Slovenský plynárenský priemysel, a.s.
SPP-D	SPP - distribúcia, a.s.
SSE	Stredoslovenská energetika, a.s.
SSE-D	Stredoslovenská energetika – Distribúcia, a.s. (before renaming to SSD)
SSD	Stredoslovenská distribučná, a.s.
TSO	Transmission System Operator
UCF	Unit capability factor
UE	United Energy a.s.
UJD	Úrad jadrového dozoru Slovenskej republiky
UK	United Kingdom
UGS	Underground gas storage
VVER	Water-water energetic reactor
WEI	Water exploitation index plus

Units

#	number
%	percentage
p.p.	percentage point
bcm	billion cubic meters
CO_2-eq.	carbon dioxide equivalent
GWh	gigawatt-hour
k	thousand
km	kilometer
m	million
mcm	cubic meter
mil. tonnes	million tonnes
MW	megawatt
MWe	megawatt electrical
MWh	megawatt hour
MWt	megawatt thermal
PJ	petajoule
TJ	terajoule
tkm	tonne-kilometre
TWh	terawatt hour

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Restatements of information

1. In 2021, we expanded the scope of EPLI. Previously, EPH's sustainability reports only included EPLI companies that were deemed material from EPH's point of view. In 2021 however, all EPLI companies with physical operations were included. It should be noted that the relevant data was updated retrospectively only for the year 2020.

2. In 2020, we presented long-term provisions alone, however, we find it more accurate to present both short-term and long-term provisions. We believe that this provides more comprehensive information to our readers.

3. Scope 1 GHG emissions reported in previous sustainability reports (2015–2020) did not include direct methane emissions. In this Report, we have included methane emissions for the first time and adjusted data retrospectively from 2017.

Methodology notes

Supporting information related to the 2021 reporting process

Reporting process

EPH reports on operational data and information that has been collected throughout the 2021 calendar year (same as the fiscal year). Comparative analyses are performed using data from previous calendar years.

Financial and non-financial information is presented within this Report. The information acquired follows the logic of IFRS consolidated financial statements. Therefore, a company acquired on June 30th will be included in the financial performance data that is presented in the period from 1st July to 31st December.

The Report content includes all of our operations in the Czech Republic, Slovakia, Germany, the United Kingdom, Italy, France, Ireland, Poland and Switzerland. For more information on our countries of operation and legal entities, please refer to the "EPH and its business" section of this Report.

Changes in reporting

Last year, our reporting strategy was to place most of our supporting data into the Annex. This allowed us to condense the narrative for our readers, without compromising the information we wanted to convey. Additionally, we incorporated more infographics and relevant case studies to further engage our readers and aid in the comprehension of the information presented within the Report.

This year, we focused on further condensing the Report for our readers by removing graphs with repetitive information (historical data is represented within the 'Data tables' section of the Annex).

Further information regarding our reporting process can be found in the graphic below.

Figure 17: Reporting process.

Reporting standards

This Report has been prepared in accordance with the GRI Standards[50]: Core option. It was created with **GRI's principles for content and quality** in mind. Further information regarding our materiality and stakeholder engagement approach can be found in the following sections of the Annex.

Principles for report content

	Stakeholder inclusiveness	Sustainability context	Materiality	Completeness
EPH Group approach	Mapping stakeholders at a local and global level. Assessing stakeholder relevance and engagement. Analysing stakeholder concerns and expectations.	Analysing sustainability frameworks at a global, European and country level. Studying trends in the utility and energy sector, and benchmarking with peers and competitors. Defining future risks and challenges at a local and global level.	Identifying material topics and defining the approach to creating our materiality matrix. Analysing the material topics at all major entities in the scope of our operations.	Conducting a detailed analysis of the data provided by all major entities under management control. Including information on newly acquired companies.

Principles for report quality

	Balance	Comparability & Accuracy	Timeliness	Clarity & Reliability
EPH Group approach	Identifying the strengths and weaknesses of our operations based on 2021 assessments and long-term goals.	For the majority of indicators, identifying 2017–2021 trends. As well as providing comments on changes made to the scope of the report and any further restatements. Conducting an internal quantitative analysis of identified material topics.	Issuing the 2021 Sustainability Report around the same time as the 2021 Annual Report.	Confirming the accuracy of collected data with entities that closely interact with stakeholders. Engaging with external assurance providers.

Figure 18: GRI principles for report content and quality.

50 GRI Standards 2016 edition.

Report boundaries

The Report boundaries are based on operational control and are applied to all GRI Indicators except GRI 200 Economic and GRI 400 Social data. To align the financial data within this Report and the EPH 2021 Annual Report, the data was reported using financial control. As a result, EPH collected consolidated data from all controlled entities that were deemed material for the purposes of this Report. The list of entities covered by this Report can be found in in the table below.

This Report focuses on topics that are most material to our business and stakeholders. These topics are addressed in different sections of this Report, with supporting information in the GRI Content Index, which can be found in the Annex. Further detail on our stakeholder analysis and engagement approaches are provided in the "Stakeholder engagement" section of the Annex.

Organisational boundaries

The table below identifies all entities within EPH's portfolio that were deemed material for this Report. For a complete list of entities, please refer to our 2021 consolidated Annual Report. The information acquired follows the logic of IFRS consolidated financial statements. Therefore, a company acquired on 30th June will be included in the financial performance data that is presented in the period from 1st July to 31st December.

EPH Core	Subholding	Country	Ownership Share	Financial Control	Operational Control
Gas storage					
NAFTA a.s.	EPIF	SK	69.0%	Yes	Yes
NAFTA Speicher GmbH & Co. KG	EPIF	DE	69.0%	Yes	Yes
POZAGAS a. s.*	EPIF	SK	62.0%	Yes	Yes
SPP Storage, s.r.o.	EPIF	CZ	49.0%	Yes	Yes
Gas transmission					
eustream, a.s.	EPIF	SK	49.0%	Yes	Yes
Gas and Power Distribution					
EP Energy Trading, a.s.	EPIF	CZ	100.0%	Yes	Yes
SPP - distribúcia, a.s.	EPIF	SK	49.0%	Yes	Yes
Stredoslovenská energetika a.s.	EPIF	SK	49.0%	Yes	Yes
Dobrá Energie, s.r.o.	EPIF	CZ	100.0%	Yes	Yes

Table 20: EPH reporting scope entities.

EPH Core	Subholding	Country	Ownership Share	Financial Control	Operational Control
Heat Infra					
Elektrárny Opatovice, a.s.	EPIF	CZ	100.0%	Yes	Yes
Plzeňská teplárenská a.s.	EPIF	CZ	35.0%	Yes	Yes
United Energy, a.s.	EPIF	CZ	100.0%	Yes	Yes
Renewables					
Alternative Energy, s.r.o.	EPIF	SK	90.0%	Yes	Yes
ARISUN, s.r.o.	EPIF	SK	100.0%	Yes	Yes
POWERSUN a.s.	EPIF	CZ	100.0%	Yes	Yes
Triskata, s.r.o.	EPIF	SK	100.0%	Yes	Yes
VTE Pchery, s.r.o.	EPIF	CZ	100.0%	Yes	Yes
Biomasse Crotone SpA	EPPE	IT	51.0%	Yes	Yes
Biomasse Italia SpA	EPPE	IT	51.0%	Yes	Yes
Fusine Energia S.r.l.	EPPE	IT	51.0%	Yes	Yes
Lynemouth Power Limited	EPPE	UK	100.0%	Yes	Yes

Table 20: EPH reporting scope entities (continue).

EPH Core	Subholding	Country	Ownership Share	Financial Control	Operational Control
Generation and Mining					
Eggborough Power Ltd[51]	EPPE	UK	100.0%	Yes	Yes
EP Ballylumford Limited	EPPE	UK	100.0%	Yes	Yes
EP Commodities, a.s.	EPPE	CZ	100.0%	Yes	Yes
Gazel Energie	EPPE	FR	100.0%	Yes	Yes
EP Kilroot Limited	EPPE	UK	100.0%	Yes	Yes
EP Langage Limited	EPPE	UK	100.0%	Yes	Yes
EP Power Minerals GmbH	EPPE	DE	100.0%	Yes	Yes
MINERALplus GmbH	EPPE	DE	100.0%	Yes	Yes
EP Produzione S.p.A.	EPPE	IT	100.0%	Yes	Yes
EP SHB Limited	EPPE	UK	100.0%	Yes	Yes
Helmstedter Revier GmbH	EPPE	DE	100.0%	Yes	Yes
Humbly Grove Energy Limited	EPPE	UK	100.0%	Yes	Yes
Kraftwerk Mehrum GmbH	EPPE	DE	100.0%	Yes	Yes
Mitteldeutsche Braunkohlengesellschaft mbH	EPPE	DE	100.0%	Yes	Yes
Saale Energie GmbH	EPPE	DE	100.0%	Yes	Yes
Tynagh Energy Limited	EPPE	IR	80.0%	Yes	Yes
EP Resources CZ[52]	EPPE	CZ	100.0%	Yes	Yes
EP Resources PL S.A.	EPPE	PL	100.0%	Yes	Yes
EP Resources AG	EPPE	CH	100.0%	Yes	Yes

Table 20: EPH reporting scope entities (continue).

51 Closed operations in 2019, but still sell by-products.
52 Previously operated under the name EP Coal Trading a.s.

Logistics Core	Subholding	Country	Ownership Share	Financial Control	Operational Control	Joint Control
		Heat Infra				
EP Cargo a.s.	EPIF	CZ	100.0%	Yes	Yes	
EP Sourcing a.s.	EPIF	CZ	100.0%	Yes	Yes	
		Other				
LokoTrain s.r.o.	EPLI	CZ	65.0%	Yes	Yes	
LOCON Logistik & Consulting AG	EPLI	DE	100.0%	Yes	Yes	
EP Cargo Deutschland GmbH	EPLI	DE	100.0%	Yes	Yes	
EP Cargo Polska S.A.	EPLI	PL	100.0%	Yes	Yes	
EP Intermodal a.s. (AVE SR Východ a.s.)	EPLI	CZ	100.0%	Yes	Yes	
SPEDICA GROUP COMPANIES, s.r.o.	EPLI	CZ	83.6%	Yes	Yes	
EP Cargo Trucking CZ s.r.o.[53]	EPH	CZ	100.0%	Yes	Yes	
EP Cargo Trucking PL Sp. z o.o.	EPLI	CZ	100.0%	Yes	Yes	
EP Cargo Trucking SK s.r.o.	EPLI	CZ	100.0%	Yes	Yes	

Note: EPH Core and Logistics Core include material companies consolidated according to IFRS and for which consolidated sustainability indicators are reported.

Table 20: EPH reporting scope entities (continue).

53 Previously operated under the name EOP & HOKA s.r.o.

Share participations	Subholding	Country	Ownership Share	Financial Control	Operational Control	Joint Control
		Generation and Mining				
Ergosud S.p.A.	EPPE	IT	50.0%	No	No	Yes
Lausitz Energie Kraftwerke AG	EPPE	DE	50.0%	No	No	Yes
Lausitz Energie Bergbau AG	EPPE	DE	50.0%	No	No	Yes
		Other				
Slovenské elektrárne, a.s.	EPPE	SK	33.0%	No	No	Yes

Note: Sustainability information on share participations is reported in a separate chapter. The company Slovenské elektrárne remains, for now, legally out of the EPPE scope. Nevertheless, from the management perspective and also in this Report, these assets are included within EPPE, but its KPIs are reported separately in the section Share participations as it relates to an equity consolidated group.

Table 20: EPH reporting scope entities (continue).

Operational boundaries

For subsidiaries, we set the boundary as the core business operations relating to environmental indicators. This means that we excluded some data from administrative and other non-core facilities, such as electricity for administrative buildings, as we deemed these immaterial. In some circumstances, this information was included, as it could not be separated from underlying data. Additionally, boundaries for environmental indicators are restricted to the physical locations of core operations. Therefore, we excluded data from facilities not located in the physical location of their main operation and whose environmental impact was not deemed material compared to the impact of the main operation.

For our future reporting, we will consider these issues as an area in which we can improve our approach.

Assurance

External assurance was obtained for the material information included in this Report. Additionally, financial information regarding our energy consumption, water withdrawal and discharge, and injury data relating to our facilities located in the Czech Republic, Slovakia and the United Kingdom were assured by an independent auditor in accordance with the ISRS 4400 (Agreed-Upon Procedures Engagements). Supplementary assurance statements can be found in the Annex of this Report.

Materiality matrix

In 2021, EPH reviewed the materiality topics and matrix presented within this Report to ensure that it continues to encompass our impact on people, the economy, and environment, as well as the expectations of our stakeholders. The Group's impacts were mapped based on a deep analysis of external and internal factors, which included analyses at a global, European and country level. Additionally, trends in the utility and energy sector were studied and our performance was benchmarked against our peers and competitors. EPH also worked to identify future risks and challenges, as further highlighted in the "Governance" section of this Report. Influence on stakeholder assessments and decision-making was mapped through our stakeholder engagement, as highlighted within the "Stakeholder engagement" section of the Annex.

Stakeholder engagement

EPH considers open and transparent stakeholder dialogue to be an important part of the Group's business activities, as it ensures that we fully understand and effectively address stakeholder concerns.

We are committed to continuously monitoring our stakeholders throughout the year and we ensure to regularly engage with them through a range of channels, as summarised in the table below. The stakeholder analysis performed by EPH on the Group level is based on input from local stakeholders. In consultation with relevant companies and Group subsidiaries, the main expectations and concerns raised by local stakeholders have been identified.

Stakeholder group	Description	Means of communication	Main expectations
Investors and lenders	These stakeholders are predominantly banks, bond holders and financial institutions whose capital is crucial for EPH's successful development. Their interest in EPH's sustainability performance is demonstrated at both the EPH level and local level, depending on their involvement in financing within the Group.	▪ Investor relations ▪ Annual reports ▪ Presentations	▪ Transparent communication (financial and non-financial reporting) ▪ Risk management ▪ Environmental management
Customers	These stakeholders are very important for EPH's business, as their decisions determine the Group's success.	▪ Customer service ▪ Satisfaction surveys ▪ EPH website	▪ Efficient heat, gas and power distribution ▪ Secure business supply
Suppliers and contractors	These stakeholders can have both a local and global reach (social and economic performance), which can affect EPH at the Group or subsidiary level. This holds especially true for contractors who are engaged in centralised processes (e.g. large tenders, IT procurement and pipeline work).	▪ Technical briefings ▪ EPIF website ▪ Informative training	▪ Procurement requirements (environmental and social) ▪ Fair and transparent procurement practices
Labour and trade unions	These stakeholders have a relatively moderate interest in the economic and environmental performance of EPH's entities. They have a greater interest in EPH's social performance, both at a local and global level. Strategies that EPH defines for its labour relations (e.g. employment), involve all entities, therefore they are expressed at the Group level.	▪ Dedicated meetings	▪ Open dialogue and collaboration ▪ Policies relating to human resources ▪ Legislative compliance
Local communities and municipalities	These stakeholders have varying interests in EPH's sustainability activities based on their origins. EPH often interacts with these stakeholders during local consultation, as their concerns tend to be legislation-based (e.g. building permits and EIA). The location of these stakeholders determines the level of their interest in EPH's sustainability activities.	▪ Focus groups ▪ Consultations with opinion makers	▪ Transparency with regards to business activities and their impacts ▪ Local community involvement (active participation) ▪ Crisis risk management
Media	These stakeholders are active at both a local and global level (particularly in the Czech Republic, where EPH is headquartered).	▪ Press releases ▪ Press conferences ▪ EPH website	▪ Information transparency ▪ Quick inquiry responses
NGOs	These stakeholders are predominantly Environmental NGOs, therefore is significant emphasis on environmental activities at both a local and global level. These stakeholders provide valuable information regarding the concerns and expectations of the general public.	▪ Brochures ▪ Bulletins ▪ Conferences	▪ Accountability and transparency ▪ Safety and security of facilities ▪ Environmental management ▪ Reduction of emissions ▪ Fair business practices
Competitors	These stakeholders are concerned with EPH's economic performance and business environment. Their interest depends on their size and business focus.	▪ Conferences ▪ Sharing of best practices	▪ Compliance and anti-competitive behaviour ▪ Fair business practices ▪ Exchange of best practices
Government and regulators	These stakeholders consist of various national and transnational institutions, making their interest in EPH's sustainability commitments quite broad. Therefore, both policy decisions and social change strongly influence EPH's business activities. For example, local groups are concerned with the performance of individual EPH entities, while European institutions are concerned with EPH's business from a transverse perspective.	▪ Letters to institutions ▪ Direct meetings ▪ Annual reports	▪ Access to services (continuity of supply) ▪ Regulatory compliance ▪ Transparency and independence
Employees	These stakeholders are engaged in day-to-day business activities. Employees are essential to the operations and growth of our business.	▪ Internal communication ▪ Training	▪ Safe and stable work environment ▪ Equal opportunity ▪ Work-life balance ▪ Professional development ▪ Freedom of association

Table 21: Stakeholder engagement overview.

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GRI 102 General disclosures 2016

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102-50	Reporting period	1. 1. 2021–31. 12. 2021	–
102-51	Date of most recent report	Colophone	318
102-52	Reporting cycle	8 Annex: Mathodology notes	225
102-53	Contact point for questions regarding the report	sustainability@epholding.cz	–
102-54	Claims of reporting in accordance with the GRI Standards	2 EPH's Approach to Sustainability	24
102-55	GRI content index	GRI Content Index	234–240
102-56	External Assurance	7 Assurance	214–217

GRI 300 Environment Standards 2016

Energy

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	4 Environment: Environmental management and monitoring	152–153
103-3	Evaluation of the management approach	5 Governance	154
302-1	Energy consumption	3 EPH and its Buisness: Energy consumption and efficiency	98–109

Water and Effluents

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
103-2	The management approach and its components	8 Annex: Materiality matrix	231
		4 Environment: Mitigation of environmental impact	130–131
103-3	Evaluation of the management approach	4 Environment: Environmental management and monitoring	152–153
303-1	Quantity of water withdrawn	4 Environment: Water	132–133

Emissions

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	4 Environment: Reduction of emissions	114–117
103-3	Evaluation of the management approach	4 Environment: Environmental management and monitoring	152–153
305-1	Direct GHG Emissions	4 Environment: Reduction of emissions	114–125
305-4	Emissions intensity – electricity only + Emissions intensity – including heat component	4 Environment: Reduction of emissions	114–125
		4 Environment: Carbon intensity and efficiency	140–141
305-7	Emissions	4 Environment: Other air pollutants	126–129

Effluents and waste

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	4 Environment: Mitigation of environmental impact	130–131
103-3	Evaluation of the management approach	4 Environment: Environmental management and monitoring	152–153
306-1	Quantity of water discharged	4 Environment: Water	132–137
306-2	Waste produced/Byproducts production	4 Environment: Effluents and waste	138–143
		4 Environment: By-products	144–146

Environmental compliance

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	5 Governance: Fair conduct	162
103-3	Evaluation of the management approach	5 Gevernance: Fair Conduct	162–163
307-1	Environmental fines	5 Governance: Fair conduct	162

GRI 400 Social Standards 2016

Employment

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	6 Social: Employment and employee development	188–89
103-3	Evaluation of the management approach	6 Social: EPH employment and employee standards	190–192
401-1	New hires and employee turnover	6 Social: EPH employment and employee standards	190–192

Occupational health and safety

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	6 Social: Health and safety management	183–187
103-3	Evaluation of the management approach	5 Governance: Fair conduct	162
403-2	Employee on the job injuries, contractors on the job injuries	6 Social: Health & safety	181–182

Training and education

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	6 Social: Employee development	193–195
103-3	Evaluation of the management approach	6 Social: Employment and employee development	162
404-1	Training	6 Social: Employee development	193–195

Marketing and labeling

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	6 Social: Customer relationship management	196–201
103-3	Evaluation of the management approach	6 Social: Customer relationship management	196–201
417-2	Incidents of non-compliance concerning product and service information and labeling	5 Governance: Fair conduct	162

Socioeconomic compliance

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	5 Governance: Fair conduct	162
103-3	Evaluation of the management approach	5 Governance: ESG governance	166–67
419-1	Other significant fines	5 Governance: Fair conduct	162

GRI 200 Economic Standards 2016

Economic performance

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	Annual report reference	EPH Annual report 2021
103-3	Evaluation of the management approach	3 EPH and its Business: Operational efficiency and economic performance	86–87
201-1	Direct economic value generated and distributed	Annual report reference	EPH Annual report 2021
201-3	Defined planned obligations and other retirement plans	Annual report reference	EPH Annual report 2021

Anti-corruption

GRI Standard	Description	Section of the Report	Reference page
103-1	Explanation of the material topic and its Boundary	2 EPH's Approach to Sustainability: Materiality matrix	26
		8 Annex: Materiality matrix	231
103-2	The management approach and its components	5 Governance: ESG Governance	166–167
103-3	Evaluation of the management approach	5 Government: Our principles and business ethics	164–165
205-2	Communication and training about anticorruption policies and procedures	5 Governance: ESG Governance	166–167

Performance indicators

Data reported for the whole year or from date of acquisition of particular plant excluding share participations. For more information please refer to section Organisational boundaries, pages 227–230.

EPH and its business

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Electricity – Total**								
EU1	**EP Infrastructure**								
	Czech Republic	MW	900	900	1,031	1,031	868	–	0%
	Slovakia	MW	68	68	68	67	67	0	0%
	Hungary	MW	–	–	396	396	396	–	
	Total – EP Infrastructure	**MW**	**968**	968	**1,495**	**1,494**	**1,331**	**0**	**0%**
	EP Power Europe								
	France	MW	837	1 432	2 262	–	–	(595)	(42%)
	Germany	MW	938	795	1,147	1,147	1,147	143	18%
	UK	MW	4,014	4,025	4,025	4,637	4,625	(11)	0%
	Ireland	MW	384	384	384	–	–	–	0%
	Italy	MW	3 989	3 989	3 989	4 284	4 284	0	0%
	Total – EP Power Europe	**MW**	**10,163**	**10,626**	**11,807**	**10,067**	**10,056**	**(463)**	**(4%)**
	Total – EPH	**MW**	**11,131**	**11,594**	**13,302**	**11,561**	**11,387**	**(463)**	**(4%)**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Electricity – Conventional sources**								
EU1	**EP Infrastructure**								
	Czech Republic	MW	854	878	1,008	1,008	859	(24)	(3%)
	Slovakia	MW	50	50	50	50	50	–	0%
	Hungary	MW	–	–	396	396	396	–	
	Total – EP Infrastructure	**MW**	**904**	**928**	**1,454**	**1,454**	**1,305**	**(24)**	**(3%)**
	EP Power Europe								
	France	MW	595	1,190	2,018	–	–	(595)	(50%)
	Germany	MW	931	788	1,140	1,140	1,140	143	18%
	UK	MW	3,609	3,608	3,608	4,230	4,230	1	0%
	Ireland	MW	384	384	384	–	–	–	0%
	Italy	MW	3,907	3,907	3,907	4,207	4,207	0	0%
	Total – EP Power Europe	**MW**	**9,426**	**9,877**	**11,057**	**9,577**	**9,577**	**(451)**	**(5%)**
	Total – EPH	**MW**	**10,329**	**10,804**	**12,511**	**11,031**	**10,881**	**(475)**	**(4%)**

Note: UK excludes Eggborough power plant (1,960 MW) from 2019 as it was decommissioned in 2018. This site was sold in February 2019.

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Electricity – Renewable sources**								
EU1	**EP Infrastructure**								
	Czech Republic	MW	47	23	23	23	9	24	106%
	Slovakia	MW	18	18	18	17	17	0	0%
	Total – EP Infrastructure	**MW**	**64**	**40**	**40**	**40**	**26**	**24**	**59%**
	EP Power Europe								
	France	MW	242	242	244	–	–	–	–
	Germany	MW	7	7	7	7	7	–	–
	UK	MW	405	417	417	407	395	(12)	(3%)
	Italy	MW	83	83	83	77	77	(0)	(0%)
	Total – EP Power Europe	**MW**	**737**	**749**	**751**	**491**	**479**	**(12)**	**(2%)**
	Total – EPH	**MW**	**801**	**789**	**791**	**531**	**506**	**12**	**2%**

Note: Lynemouth biomass conversion project was in progress from 2016. Production from biomass started in 2018.

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Heat**								
EU1	**EP Infrastructure**								
	Czech Republic	MW	3,015	3,085	4,136	4,223	3,519	(70)	(2%)
	Hungary	MW	–	–	1,401	1,401	1,401	–	
	Total – EP Infrastructure	**MW**	**3,015**	**3,085**	**5,537**	**5,624**	**4,920**	**(70)**	**(2%)**
	EP Power Europe								
	Germany	MW	80	156	156	156	156	(76)	(49%)
	Total – EP Power Europe	**MW**	**80**	**156**	**156**	**156**	**156**	**(76)**	**(49%)**
	Total – EPH	**MW**	**3,095**	**3,241**	**5,693**	**5,780**	**5,076**	**(146)**	**(5%)**

EPH and its business

For the year ended 31 December 2021

Fuel

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Electricity – Total**								
EU1	**EP Infrastructure**								
	Conventional sources	MW	904	928	1,454	1,454	1,305	(24)	(3%)
	Renewable sources	MW	64	40	40	40	26	24	59%
	Total – EP Infrastructure	**MW**	**968**	**968**	**1,495**	**1,494**	**1,331**	**0**	**0%**
	EP Power Europe								
	Conventional sources	MW	9,426	9,877	11,057	9,577	9,577	(451)	(5%)
	Renewable sources	MW	737	749	751	491	479	(12)	(2%)
	Total – EP Power Europe	**MW**	**10,163**	**10,626**	**11,807**	**10,067**	**10,056**	**(463)**	**(4%)**
	Total – EPH	**MW**	**11,131**	**11,594**	**13,302**	**11,561**	**11,387**	**(463)**	**(4%)**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Electricity – Conventional sources**								
EU1	**EP Infrastructure**								
	Hard coal	MW	–	–	110	110	110	–	
	Lignite	MW	824	848	848	848	707	(24)	(3%)
	CCGT	MW	–	–	396	396	396	–	
	OCGT and other NG	MW	50	50	71	71	71	–	0%
	Oil	MW	20	20	20	20	21	–	0%
	Other	MW	11	11	11	11	–	–	0%
	Total – EP Infrastructure	**MW**	**904**	**928**	**1,454**	**1,454**	**1,305**	**(24)**	**(3%)**
	EP Power Europe								
	Hard coal	MW	1,544	2,829	2,829	3,249	3,249	(1,285)	(45%)
	Lignite	MW	931	98	450	450	450	833	850%
	CCGT	MW	6,303	6,303	7,131	5,352	5,352	–	0%
	OCGT and other NG	MW	471	471	470	213	213	0	0%
	Oil	MW	164	164	164	300	300	0	0%
	Other	MW	13	13	13	13	13	–	0%
	Total – EP Power Europe	**MW**	**9,426**	**9,877**	**11,057**	**9,577**	**9,577**	**(451)**	**(5%)**
	Total – EPH	**MW**	**10,329**	**10,804**	**12,511**	**11,031**	**10,881**	**(475)**	**(4%)**

Note: Hard coal in EPPE excludes Eggborough power plant (1.960 MW) from 2019 as it was decommissioned in 2018. This site was sold in February 2019.
Note: Change in oil capacity in EPPE in 2019 is connected to EP Produzione, where the capacity is not suitable for operation, so it is newly exceluded.

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Electricity – Renewable sources**								
EU1	**EP Infrastructure**								
	Wind	MW	6	6	6	6	6	–	0%
	Photovoltaic	MW	15	15	15	15	15	0	0%
	Hydro	MW	3	3	3	3	3	(0)	(3%)
	Biomass	MW	37	14	14	14	–	24	177%
	Other	MW	3	3	3	3	3	0	6%
	Total – EP Infrastructure	**MW**	**64**	**40**	**40**	**40**	**26**	**24**	**59%**
	EP Power Europe								
	Wind	MW	89	89	90	7	7	–	0%
	Photovoltaic	MW	13	13	13	2	2	–	0%
	Hydro	MW	2	2	2	2	2	–	0%
	Biomass	MW	624	636	636	480	468	(12)	(2%)
	Other	MW	10	10	10	–	–	–	0%
	Total – EP Power Europe	**MW**	**737**	**749**	**751**	**491**	**479**	**(12)**	**(2%)**
	Total – EPH	**MW**	**801**	**789**	**791**	**531**	**506**	**12**	**2%**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net installed capacity – Heat**								
EU1	**EP Infrastructure**								
	Hard coal	MW	–	–	242	242	242	–	
	Lignite	MW	2,600	2,767	2,767	2,872	2,239	(167)	(6%)
	CCGT	MW	–	–	1,401	1,401	1,401	–	
	OCGT and other NG	MW	18	18	822	804	804	–	0%
	Oil	MW	229	229	234	234	234	–	0%
	Biomass	MW	136	39	39	39	–	97	252%
	Other	MW	32	32	32	32	–	–	0%
	Total – EP Infrastructure	**MW**	**3,015**	**3,085**	**5,537**	**5,624**	**4,920**	**(70)**	**(2%)**
	EP Power Europe								
	Lignite	MW	80	156	156	156	156	(76)	(49%)
	Total – EP Power Europe	**MW**	**80**	**156**	**156**	**156**	**156**	**(76)**	**(49%)**
	Total – EPH	**MW**	**3,095**	**3,241**	**5,693**	**5,780**	**5,076**	**(146)**	**(5%)**

EPH and its business

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU1	**Net power production – Total**								
EU1	**EP Infrastructure**								
	Czech Republic	TWh	2.53	2.00	1.92	2.63	2.35	0.53	26%
	Slovakia	TWh	0.03	0.03	0.03	0.03	0.03	0.00	7%
	Hungary	TWh	–	1.30	1.40	1.23	1.32	(1.30)	(100%)
	Total – EP Infrastructure	**TWh**	**2.57**	**3.34**	**3.35**	**3.89**	**3.70**	**(0.77)**	**(23%)**
	EP Power Europe								
	France	TWh	0.81	1.70	2.37	–	–	(0.89)	(52%)
	Germany	TWh	2.54	1.34	1.36	3.21	1.01	1.19	89%
	UK	TWh	15.16	15.08	11.03	7.87	3.71	0.08	1%
	Ireland	TWh	1.93	1.70	0.32	–	–	0.24	14%
	Italy	TWh	16.84	14.91	14.98	13.31	15.03	1.93	13%
	Total – EP Power Europe	**TWh**	**37.28**	**34.72**	**30.06**	**24.39**	**19.76**	**2.56**	**7%**
	Total – EPH	**TWh**	**39.85**	**38.06**	**33.41**	**28.28**	**23.45**	**1.79**	**5%**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Net power production – Conventional sources**								
EU2	**EP Infrastructure**								
	Czech Republic	TWh	2.28	1.83	1.77	2.45	2.34	0.45	25%
	Slovakia	TWh	0.00	0.00	0.00	0.00	0.00	0.00	328%
	Hungary	TWh	–	1.30	1.40	1.23	1.32	(1.30)	(100%)
	Total – EP Infrastructure	**TWh**	**2.28**	**3.13**	**3.17**	**3.68**	**3.66**	**(0.85)**	**(27%)**
	EP Power Europe								
	France	TWh	0.62	1.51	2.22	–	–	(0.89)	(59%)
	Germany	TWh	2.52	1.33	1.35	3.20	1.00	1.20	90%
	UK	TWh	12.33	12.45	8.59	6.48	3.71	(0.12)	(1%)
	Ireland	TWh	1.93	1.70	0.32	–	–	0.24	14%
	Italy	TWh	16.21	14.28	14.38	12.72	15.03	1.93	13%
	Total – EP Power Europe	**TWh**	**33.61**	**31.26**	**26.86**	**22.40**	**19.73**	**2.35**	**8%**
	Total – EPH	**TWh**	**35.89**	**34.39**	**30.02**	**26.08**	**23.39**	**1.50**	**4%**

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Net power production – Renewable sources**								
EU2	**EP Infrastructure**								
	Czech Republic	GWh	256	174	155	176	11	82	47%
	Slovakia	GWh	32	31	30	28	29	2	5%
	Total – EP Infrastructure	**GWh**	**288**	**205**	**184**	**204**	**40**	**83**	**41%**
	EP Power Europe								
	France	GWh	198	194	150	–	–	4	2%
	Germany	GWh	12	14	14	12	15	(2)	(11%)
	UK	GWh	2,829	2,627	2,441	1,391	–	202	8%
	Italy	GWh	632	627	598	590	6	4	1%
	Total – EP Power Europe	**GWh**	**3,671**	**3,462**	**3,203**	**1,993**	**21**	**208**	**6%**
	Total – EPH	**GWh**	**3,959**	**3,668**	**3,388**	**2,198**	**61**	**292**	**8%**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Net heat production**								
EU2	**EP Infrastructure**								
	Czech Republic	TWh	2.7	2.6	2.6	2.6	2.0	0.2	6%
	Hungary	TWh	–	1.5	1.7	1.7	1.9	(1.5)	(100%)
	Total – EP Infrastructure	**TWh**	**2.7**	**4.0**	**4.3**	**4.3**	**3.9**	**(1.3)**	**(33%)**
	EP Power Europe								
	Germany	TWh	0.3	0.3	0.3	0.3	0.4	0.0	9%
	Total – EP Power Europe	**TWh**	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.0**	**9%**
	Total – EPH	**TWh**	**3.0**	**4.3**	**4.5**	**4.6**	**4.3**	**(1.3)**	**(30%)**

Fuel

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Net power production – Total**								
EU2	**EP Infrastructure**								
	Conventional sources	TWh	2.3	3.1	3.2	3.7	3.7	(0.9)	(27%)
	Renewable sources	TWh	0.3	0.2	0.2	0.2	0.0	0.1	41%
	Total – EP Infrastructure	**TWh**	**2.6**	**3.3**	**3.4**	**3.9**	**3.7**	**(0.8)**	**(23%)**
	EP Power Europe								
	Conventional sources	TWh	33.6	31.3	26.9	22.4	19.7	2.3	8%
	Renewable sources	TWh	3.7	3.5	3.2	2.0	0.0	0.2	6%
	Total – EP Power Europe	**TWh**	**37.3**	**34.7**	**30.1**	**24.4**	**19.8**	**2.6**	**7%**
	Total – EPH	**TWh**	**39.8**	**38.1**	**33.4**	**28.3**	**23.5**	**1.8**	**5%**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Net power production – Conventional sources**								
EU2	**EP Infrastructure**								
	Lignite	TWh	2.23	1.78	1.72	2.42	2.34	0.45	25%
	CCGT	TWh	–	1.30	1.40	1.23	1.32	(1.30)	(100%)
	OCGT and other NG	TWh	0.00	0.00	0.00	0.00	0.00	0.00	328%
	Oil	TWh	–	–	(0.00)	(0.00)	(0.00)	–	
	Other	TWh	0.05	0.05	0.04	0.03	–	0.00	4%
	Total – EP Infrastructure	**TWh**	**2.28**	**3.13**	**3.17**	**3.68**	**3.66**	**(0.85)**	**(27%)**
	EP Power Europe								
	Hard coal	TWh	5.10	5.03	4.65	6.28	4.92	0.07	1%
	Lignite	TWh	1.55	0.41	0.59	0.59	0.67	1.14	280%
	CCGT	TWh	26.75	25.68	21.57	15.51	13.91	1.07	4%
	OCGT and other NG	TWh	0.18	0.14	0.05	0.02	0.23	0.05	35%
	Oil	TWh	0.02	0.01	0.01	–	–	0.01	136%
	Other	TWh	0.00	0.00	0.00	0.00	0.00	0.00	28%
	Total – EP Power Europe	**TWh**	**33.61**	**31.26**	**26.86**	**22.40**	**19.73**	**2.35**	**8%**
	Total – EPH	**TWh**	**35.89**	**34.39**	**30.02**	**26.08**	**23.39**	**1.50**	**4%**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Net power production – Renewable sources**								
EU2	**EP Infrastructure**								
	Wind	GWh	5	8	9	7	7	(3)	(35%)
	Photovoltaic	GWh	17	17	16	17	17	0	1%
	Hydro	GWh	6	7	6	5	5	(1)	(8%)
	Biomass	GWh	247	162	142	166	–	85	52%
	Other	GWh	13	11	10	10	10	2	18%
	Total – EP Infrastructure	**GWh**	**288**	**205**	**184**	**204**	**40**	**83**	**41%**
	EP Power Europe								
	Wind	GWh	160	192	92	12	15	(33)	(17%)
	Photovoltaic	GWh	19	19	11	3	2	0	2%
	Hydro	GWh	4	4	2	2	4	–	0%
	Biomass	GWh	3,488	3,248	3,099	1,976	–	241	7%
	Total – EP Power Europe	**GWh**	**3,671**	**3,462**	**3,203**	**1,993**	**21**	**208**	**6%**
	Total – EPH	**GWh**	**3,959**	**3,668**	**3,388**	**2,198**	**61**	**292**	**8%**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Net heat production**								
EU2	**EP Infrastructure**								
	Lignite	TWh	2.46	2.26	2.33	2.30	1.88	0.20	9%
	CCGT	TWh	–	1.48	1.68	1.72	1.87	(1.48)	(100%)
	OCGT and other NG	TWh	0.00	0.06	0.04	0.08	0.15	(0.06)	(99%)
	Oil	TWh	0.00	0.00	0.00	0.00	0.00	(0.00)	(67%)
	Biomass	TWh	0.21	0.17	0.17	0.16	–	0.03	20%
	Other	TWh	0.06	0.08	0.05	0.06	–	(0.02)	(24%)
	Total – EP Infrastructure	**TWh**	**2.73**	**4.05**	**4.27**	**4.33**	**3.91**	**(1.32)**	**(33%)**
	EP Power Europe								
	Lignite	TWh	0.30	0.27	0.27	0.31	0.35	0.02	9%
	Oil	TWh	0.00	0.00	0.00	0.00	0.00	0.00	26%
	Total – EP Power Europe	**TWh**	**0.30**	**0.27**	**0.27**	**0.31**	**0.35**	**0.03**	**9%**
	Total – EPH	**TWh**	**3.02**	**4.32**	**4.54**	**4.64**	**4.26**	**(1.29)**	**(30%)**

EPH and its business

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
EU2	**Total net energy production**								
EU2	**EP Infrastructure**								
	Czech Republic	TWh	5.3	4.6	4.5	5.2	4.4	0.7	15%
	Slovakia	TWh	0.0	0.0	0.0	0.0	0.0	0.0	7%
	Hungary	TWh	–	2.8	3.1	2.9	3.2	(2.8)	(100%)
	Total – EP Infrastructure	**TWh**	**5.3**	**7.4**	**7.6**	**8.2**	**7.6**	**(2.1)**	**(28%)**
	EP Power Europe								
	France	TWh	0.8	1.7	2.4	–	–	(0.9)	(52%)
	Germany	TWh	2.8	1.6	1.6	3.5	1.4	1.2	76%
	UK	TWh	15.2	15.1	11.0	7.9	3.7	0.1	1%
	Ireland	TWh	1.9	1.7	0.3	–	–	0.2	14%
	Italy	TWh	16.8	14.9	15.0	13.3	15.0	1.9	13%
	Total – EP Power Europe	**TWh**	**37.6**	**35.0**	**30.3**	**24.7**	**20.1**	**2.6**	**7%**
	Total – EPH	**TWh**	**42.9**	**42.4**	**37.9**	**32.9**	**27.7**	**0.5**	**1%**

Note: Includes electric energy and heat production.

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-9	**Heat supplied**								
102-7	**EP Infrastructure**								
	Czech Republic	PJ	8.4	13.9	16.5	16.5	15.2	(5.5)	(40%)
	Hungary	PJ	–	5.6	6.0	6.2	6.7	(5.6)	(100%)
	Total – EP Infrastructure	**PJ**	**8.4**	**19.4**	**22.5**	**22.7**	**21.9**	**(11.1)**	**(57%)**
	EP Power Europe								
	Germany	PJ	0.4	0.4	0.4	0.4	0.4	0.0	12%
	Total – EP Power Europe	**PJ**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.0**	**12%**
	Total – EPH	**PJ**	**8.8**	**19.8**	**22.9**	**23.1**	**22.3**	**(11.0)**	**(56%)**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-9	**Number of connection points**								
	Gas distribution								
	Residential	#	1,451,567	1,450,070	1,445,885	1,442,984	1,438,423	1,497	0%
	Industrial	#	699	707	717	715	705	(8)	(1%)
	Commercial & Institutional	#	79,838	79,731	79,290	79,189	78,891	107	0%
	Total	**#**	**1,532,104**	**1,530,508**	**1,525,892**	**1,522,888**	**1,518,019**	**1,596**	**0%**
	Power distribution								
	Residential	#	681,749	674,885	669,224	663,641	658,327	6,864	1%
	Mid-size	#	86,208	5,255	5,287	5,337	5,347	80,953	1,540%
	Large	#	5,220	85,602	85,604	85,128	85,018	(80,382)	(94%)
	Total	**#**	**773,177**	**765,742**	**760,115**	**754,106**	**748,692**	**7,435**	**1%**
	Heat distribution								
	Total	**#**	**151,015**	**150,179**	**383,800**	**381,300**	**333,800**	**836**	**1%**
	Total number of connection points	**#**	**2,456,296**	**2,446,429**	**2,669,807**	**2,658,294**	**2,600,511**	**9,867**	**0%**

EPH and its business

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-9	**Number of customer accounts – Supply**								
	Electricity supply								
	Residential	#	672,288	564,885	555,689	555,831	563,260	107,403	19%
	Mid-size	#	63,486	86,926	54,265	53,667	53,369	(23,440)	(27%)
	Large	#	22,565	25,150	24,442	22,637	23,591	(2,585)	(10%)
	Total electricity	**#**	**758,339**	**676,961**	**634,396**	**632,135**	**640,220**	**81,378**	**12%**
	Gas supply								
	Residential	#	88,492	55,149	22,075	13,546	9,898	33,343	60%
	Mid-size	#	5,200	7,661	2,713	2,312	1,977	(2,461)	(32%)
	Large	#	629	878	212	226	265	(249)	(28%)
	Total gas	**#**	**94,321**	**63,688**	**25,000**	**16,084**	**12,140**	**30,633**	**48%**
	Total number of customer accounts	**#**	**852,660**	**740,649**	**659,396**	**648,219**	**652,360**	**112,011**	**15%**

EPH and its business

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN3	**Energy consumption**								
302-1	**EP Infrastructure**								
	Czech Republic	PJ	42.7 (*)	36.0 (*)	35.2 (*)	44.5 (*)	38.7 (*)	6.7	19%
	Slovakia	PJ	3.5 (*)	4.2 (*)	9.0 (*)	6.5 (*)	7.1	(0.7)	(18%)
	Germany	PJ	0.5	0.2	0.3	–	–	0.3	129%
	Hungary	PJ	–	13.0	14.3 (*)	12.9 (*)	14.1	(13.0)	(100%)
	Total – EP Infrastructure	**PJ**	**46.6**	**53.3**	**58.7**	**63.9**	**59.9**	**(6.7)**	**(13%)**
	EP Power Europe								
	France	PJ	6.3	10.2	15.3	–	–	(3.9)	(38%)
	Germany	PJ	31.9	17.2	18.0	35.2	14.2	14.7	85%
	UK	PJ	129.0 (*)	127.9 (*)	90.8 (*)	66.1	30.7	1.2	1%
	Ireland	PJ	15.1	13.4	2.3	–	–	1.7	13%
	Italy	PJ	137.3	127.1	118.2	106.6	108.4	10.3	8%
	Total – EP Power Europe	**PJ**	**319.7**	**295.8**	**244.6**	**207.9**	**153.4**	**23.9**	**8%**
	EP Logistics international								
	Czech Republic	PJ	0.2	0.1	0.0	0.0	0.0	0.0	17%
	Germany	PJ	0.2	0.2	0.1	–	–	0.0	17%
	Total – EP Logistics International	**PJ**	**0.4**	**0.3**	**0.1**	**0.0**	**0.0**	**0.1**	**18%**
	Other companies within the Group								
	Czech Republic	PJ	–	–	0.1	0.1	0.1	–	
	Poland	PJ	–	–	0.0	0.0	0.0	–	
	Total – Other companies within the Group	**PJ**	**–**	**–**	**0.1**	**0.1**	**0.1**	**–**	
	Total – EPH	**PJ**	**366.7**	**349.4**	**303.5**	**271.9**	**213.4**	**17.2**	**4.94%**

(*) This data has received limited assurance from the independent auditing firm KPMG. Scope in 2021: CZ: 2 companies, SK: 1 company.
(*) This data has received limited assurance from the independent auditing firm EY (2018 and previous years) and KPMG (2019-2021). Scope in 2021: CZ: 2 companies, SK: 1 company, UK: 1 company

Environment / Climate change and energy

For the year ended 31 December 2021

Fuel

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN3	**Energy consumption**								
302-1	**EP Infrastructure**								
	Hard Coal	PJ	–	–	–	2.4	6.0	–	
	Lignite	PJ	37.3	31.7	31.2	37.7	31.5	5.5	17%
	Natural Gas	PJ	3.8	17.6	23.9	20.0	22.1	(13.8)	(78%)
	Oil	PJ	0.0	0.0	0.0	0.0	0.2	(0.0)	(5%)
	Diesel	PJ	0.0	0.0	0.0	0.0	0.0	(0.0)	(13%)
	Purchased Electricity	PJ	0.3	0.2	0.2	0.1	0.1	0.2	118%
	Biomass	PJ	4.1	2.8	2.4	2.7	–	1.3	49%
	Other	PJ	1.0	1.0	1.0	0.9	0.0	(0.0)	(1%)
	Total – EP Infrastructure	**PJ**	**46.6**	**53.3**	**58.7**	**63.9**	**59.9**	**(6.7)**	**(13%)**
	EP Power Europe								
	Hard Coal	PJ	55.3	55.7	49.5	64.6	50.9	(0.4)	(1%)
	Lignite	PJ	21.8	7.4	9.7	9.6	10.6	14.5	197%
	Natural Gas	PJ	204.4	197.0	152.0	109.6	91.2	7.4	4%
	Oil	PJ	0.5	0.3	0.3	0.5	0.1	0.2	77%
	Diesel	PJ	0.6	0.4	0.4	2.0	0.2	0.2	45%
	Purchased Electricity	PJ	0.3	0.6	0.3	0.5	0.2	(0.3)	(49%)
	Purchased Heat	PJ	0.0	0.0	0.0	0.0	0.0	(0.0)	(31%)
	Biomass	PJ	36.6	34.3	32.3	21.2	0.2	2.3	7%
	Other	PJ	0.0	–	0.1	0.0	0.0	0.0	
	Total – EP Power Europe	**PJ**	**319.7**	**295.8**	**244.6**	**207.9**	**153.4**	**23.9**	**8%**
	EP Logistics international								
	Diesel	PJ	0.3	0.2	0.1	0.0	0.0	0.0	21%
	Purchased Electricity	PJ	0.1	0.1	0.1	0.0	0.0	0.0	5%
	Other	PJ	0.0	0.0	0.0	0.0	0.0	0.0	18%
	Total – EP Logistics International	**PJ**	**0.4**	**0.3**	**0.1**	**0.0**	**0.0**	**0.1**	**16%**
	Other companies within the Group								
	Diesel	PJ	–	–	0.1	0.1	0.1	–	
	Other	PJ	–	–	0.0	0.0	0.0	–	
	Total – Other companies within the Group	**PJ**	**–**	**–**	**0.1**	**0.1**	**0.1**	**–**	
	Total – EPH	**PJ**	**366.7**	**349.4**	**303.5**	**271.9**	**213.4**	**17.2**	**5%**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN15	**GHG direct emissions**								
305-1	**EP Infrastructure**								
	CO_2 emissions	mil. tonnes CO_2 eq.	3.5	3.8	4.1	4.8	4.7	(0)	(8%)
	Methane emissions	mil. tonnes CO_2 eq.	0.3	0.4	0.3	0.3	0.3	(0.1)	(0,2)
	Total – EP Infrastructure	**mil. tonnes CO_2 eq.**	**3.7**	**4.1**	**4.4**	**5.1**	**5.0**	**(0.4)**	**(0,1)**
	EP Power Europe								
	CO_2 emissions	mil. tonnes CO_2 eq.	17.9	16.0	14.0	13.0	11.4	2	12%
	Methane emissions	mil. tonnes CO_2 eq.	–	–	–	–	–	–	
	Total – EP Power Europe	**mil. tonnes CO_2 eq.**	**17.9**	**16.0**	**14.0**	**13.0**	**11.4**	**1.9**	**12%**
	EP Logistics international								
	CO_2 emissions	mil. tonnes CO_2 eq.	0.0	–	–	–	–	0.0	–
	Methane emissions	mil. tonnes CO_2 eq.	–	–	–	–	–		
	Total – EP Logistics International	**mil. tonnes CO_2 eq.**	**0.0**	**–**	**–**	**–**	**–**	**0.0**	
	EPH								
	CO_2 emissions	mil. tonnes CO_2 eq.	21.3	19.8	18.1	17.8	16.1	1.6	8%
	Methane emissions	mil. tonnes CO_2 eq.	0.3	0.4	0.3	0.3	0.3	(0.1)	(25%)
	Total – EPH	**mil. tonnes CO_2 eq.**	**21.6**	**20.1**	**18.4**	**18.1**	**16.4**	**1.5**	**7%**

Environment / Air emissions

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN15	**Natural gas emissions**								
305-1	**EP Infrastructure**								
	Gas emissions – fugitive	thsnd. m³	11,402	15,387	11,472	12,141	13,421	(3,985)	(26%)
	Gas emissions – venting	thsnd. m³	3,592	4,473	4,155	3,955	4,469	(882)	(20%)
	Gas emissions – flaring	thsnd. m³	26	4	3	4	3	22	596%
	Gas emissions – incomplete combustion	thsnd. m³	106	101	159	130	152	5	5%
	Gas emissions – other	thsnd. m³	–	–	–	–	–	–	
	Total – EP Infrastructure	**thsnd. m³**	**15,126**	**19,965**	**15,789**	**16,230**	**18,045**	**(4,840)**	**(24%)**
	EP Power Europe								
	Total – EP Power Europe	**thsnd. m³**	**–**	**–**	**–**	**–**	**–**	**–**	
	Total – EPH	**thsnd. m³**	**15,126**	**19,965**	**15,789**	**16,230**	**18,045**	**(4,840)**	**(24%)**

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN15	**Methane emissions**								
305-1	**EP Infrastructure**								
	Gas transmission	tonnes	2,574	3,108	2,494	2,343	3,243	(534)	(17%)
	Gas distribution	tonnes	6,819	9,497	7,208	7,477	7,797	(2,678)	(28%)
	Gas storage	tonnes	581	612	763	954	904	(31)	(5%)
	Total – EP Infrastructure	**tonnes**	**9,974**	**13,217**	**10,465**	**10,773**	**11,944**	**(3,243)**	**(25%)**
	EP Power Europe								
	Gas storage	tonnes	–	–	–	–	–	–	
	Total – EP Power Europe	**tonnes**	**–**	**–**	**–**	**–**	**–**	**–**	
	Total – EPH	**tonnes**	**9,974**	**13,217**	**10,465**	**10,773**	**11,944**	**(3,243)**	**(25%)**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN15	**Methane emissions as CO_2 equivalent**								
305-1	**EP Infrastructure**								
	Gas transmission	tonnes CO_2 eq.	72,072	87,031	69,831	65,605	90,807	(14,959)	(17%)
	Gas distribution	tonnes CO_2 eq.	190,935	265,910	201,826	209,344	218,303	(74,975)	(28%)
	Gas storage	tonnes CO_2 eq.	16,269	17,141	21,355	26,698	25,311	(872)	(5%)
	Total – EP Infrastructure	**tonnes CO_2 eq.**	**279,276**	**370,082**	**293,012**	**301,647**	**334,421**	**(90,806)**	**(25%)**
	EP Power Europe								
	Gas storage	tonnes CO_2 eq.	–	–	–	–	–	–	
	Total – EP Power Europe	**tonnes CO_2 eq.**	**–**	**–**	**–**	**–**	**–**	**–**	
	Total – EPH	**tonnes CO_2 eq.**	**279,276**	**370,082**	**293,012**	**301,647**	**334,421**	**(90,806)**	**(25%)**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN15	**Direct CO_2 Emissions (Scope 1) by segment**								
305-1	**EP Infrastructure**								
	Gas transmission	mil. tonnes CO_2 eq.	0.12	0.17	0.40	0.30	0.32	(0.05)	(28%)
	Gas and power distribution	mil. tonnes CO_2 eq.	0.00	0.00	0.00	0.00	0.00	0.00	46%
	Gas storage	mil. tonnes CO_2 eq.	0.06	0.04	0.06	0.04	0.04	0.02	54%
	Heat Infrastructure	mil. tonnes CO_2 eq.	3.28	3.54	3.61	4.47	4.29	(0.27)	(8%)
	Total – EP Infrastructure	**mil. tonnes CO_2 eq.**	**3.46**	**3.75**	**4.07**	**4.80**	**4.65**	**(0.29)**	**(8%)**
	EP Power Europe								
	Generation and mining	mil. tonnes CO_2 eq.	17.86	16.00	14.00	12.98	11.41	1.86	12%
	Renewables	mil. tonnes CO_2 eq.	0.01	0.01	0.01	0.04	0.00	(0.00)	(15%)
	Total – EP Power Europe	**mil. tonnes CO_2 eq.**	**17.87**	**16.01**	**14.02**	**13.03**	**11.41**	**1.85**	**12%**
	EP Logistics international								
	Trucking	mil. tonnes CO_2 eq.	0.01	–	–	–	–	0.01	–
	Total – EP Logistics International	**mil. tonnes CO_2 eq.**	**0.01**	**–**	**–**	**–**	**–**	**0.01**	**–**
	Total – EPH	**mil. tonnes CO_2 eq.**	**21.34**	**19.76**	**18.09**	**17.83**	**16.07**	**1.57**	**8%**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN15	**Direct CO_2 Emissions (Scope 1)**								
305-1	**EP Infrastructure**								
	Czech Republic	mil. tonnes CO_2 eq.	3.3	2.8	2.8	3.7	3.5	0.5	16%
	Slovakia	mil. tonnes CO_2 eq.	0.2	0.2	0.4	0.3	0.4	(0.0)	(22%)
	Germany	mil. tonnes CO_2 eq.	0.0	0.0	0.0	–	–	0.0	187%
	Hungary	mil. tonnes CO_2 eq.	–	0.7	0.8	0.7	0.8	(0.7)	(100%)
	Total – EP Infrastructure	**mil. tonnes CO_2 eq.**	**3.5**	**3.8**	**4.1**	**4.8**	**4.7**	**(0.3)**	**(8%)**
	EP Power Europe								
	France	mil. tonnes CO_2 eq.	0.5	0.6	0.8	–	–	(0.1)	(15%)
	Germany	mil. tonnes CO_2 eq.	3.2	1.6	1.8	3.3	1.4	1.6	99%
	UK	mil. tonnes CO_2 eq.	5.7	5.7	3.7	2.9	2.0	0.0	1%
	Ireland	mil. tonnes CO_2 eq.	0.8	0.7	0.1	–	–	0.1	14%
	Italy	mil. tonnes CO_2 eq.	7.6	7.4	7.6	6.8	7.9	0.2	3%
	Total – EP Power Europe	**mil. tonnes CO_2 eq.**	**17.9**	**16.0**	**14.0**	**13.0**	**11.4**	**1.9**	**12%**
	EP Logistics international								
	Czech Republic	mil. tonnes CO_2 eq.	**0.0**	–	–	–	–	0.0	
	Slovakia	mil. tonnes CO_2 eq.	0.0	–	–	–	–	0.0	
	Poland	mil. tonnes CO_2 eq.	0.0	–	–	–	–	0.0	
	Total – EP Logistics International	**mil. tonnes CO_2 eq.**	**0.0**	**–**	**–**	**–**	**–**	**0.0**	
	Total – EPH	**mil. tonnes CO_2 eq.**	**21.3**	**19.8**	**18.1**	**17.8**	**16.1**	**1.6**	**8%**

Environment / Air emissions

For the year ended 31 December 2020

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN15	**Procured and granted emissions consumed**								
305-1	**EP Infrastructure**								
	Procured allowances consumed	mil. tonnes CO_2 eq.	3.3	3.3	3.0	3.2	2.8	(0.0)	0%
	Granted allowances consumed	mil. tonnes CO_2 eq.	0.2	0.5	1.1	1.6	1.9	(0.3)	(58%)
	Total – EP Infrastructure	**mil. tonnes CO_2 eq.**	**3.5**	**3.8**	**4.1**	**4.8**	**4.7**	**(0.3)**	**(8%)**
	EP Power Europe								
	Procured allowances consumed	mil. tonnes CO_2 eq.	17.9	16.0	14.0	13.0	11.4	1.9	12%
	Granted allowances consumed	mil. tonnes CO_2 eq.	0.0	0.0	0.0	0.0	0.0	(0.0)	(41%)
	Total – EP Power Europe	**mil. tonnes CO_2 eq.**	**17.9**	**16.0**	**14.0**	**13.0**	**11.4**	**1.9**	**12%**
	Total – EPH	**mil. tonnes CO_2 eq.**	**21.3**	**19.8**	**18.1**	**17.8**	**16.1**	**1.6**	**8%**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN18	**CO_2 Emissions intensity – Including heat component**								
	EP Infrastructure								
	Czech Republic	tonnes CO_2 eq./GWh	623	617	625	714	797	6	1%
	Slovakia	tonnes CO_2 eq./GWh	17	5	8	9	26	11	206%
	Hungary	tonnes CO_2 eq./GWh	–	260	258	247	250	–	(100%)
	Total – EP Infrastructure	**tonnes CO_2 eq./GWh**	**619**	**480**	**474**	**544**	**564**	**139**	**29%**
	EP Power Europe								
	France	tonnes CO_2 eq./GWh	643	361	352	–	–	282	78%
	Germany	tonnes CO_2 eq./GWh	1,137	1,004	1,076	949	1,045	133	13%
	UK	tonnes CO_2 eq./GWh	379	379	339	368	551	0	0%
	Ireland	tonnes CO_2 eq./GWh	400	398	392	–	–	2	0%
	Italy	tonnes CO_2 eq./GWh	451	496	505	510	529	(44)	(9%)
	Total – EP Power Europe	**tonnes CO_2 eq./GWh**	**475**	**457**	**462**	**527**	**568**	**18**	**4%**
	Total – EPH	**tonnes CO_2 eq./GWh**	**493**	**461**	**465**	**531**	**567**	**32**	**7%**

Note: Calculation of emissions intensity excludes emissions from non-energy producing companies.

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN3	**Indirect CO_2 Emissions (Scope 2)**								
305-2	**EP Infrastructure**								
	Czech Republic	tonnes CO_2 eq.	8,698	32,960	24,726	28,540		(24,262)	(74%)
	Slovakia	tonnes CO_2 eq.	6,837	5,719	6,193	6,187		1,119	20%
	Germany	tonnes CO_2 eq.	2,216	2,651	1,354	–		(435)	(16%)
	Hungary	tonnes CO_2 eq.	–	2,751	3,026	5,149		(2,751)	(100%)
	Total – EP Infrastructure	**tonnes CO_2 eq.**	**17,751**	**44,080**	**35,299**	**39,876**	**–**	**(26,329)**	**(60%)**
	EP Power Europe								
	Germany	tonnes CO_2 eq.	14,391	21,925	22,405	19,274		(7,534)	(34%)
	UK	tonnes CO_2 eq.	11,213	12,600	17,692	11,249		(1,387)	(11%)
	Ireland	tonnes CO_2 eq.	913	1,508	390	–		(596)	(40%)
	Italy	tonnes CO_2 eq.	487	1,808	1,569	2,390		(1,321)	(73%)
	Total – EP Power Europe	**tonnes CO_2 eq.**	**27,004**	**37,841**	**42,056**	**32,913**	**–**	**(10,838)**	**(29%)**
	EP Logistics international								
	Czech Republic	tonnes CO_2 eq.	2,663	3,284	–	–	–	(621)	(19%)
	Germany	tonnes CO_2 eq.	17,796	21,578	–	–	–	(3 782)	(18%)
	Total – EP Logistics International	**tonnes CO_2 eq.**	**20,460**	**24, 863**	**–**	**–**	**–**	**(4 404)**	**(18%)**
	Total – EPH	**tonnes CO_2 eq.**	**65,215**	**106,785**	**77,355**	**72,789**	**–**	**(41,570)**	**(39%)**

Environment / Air emissions

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN18	**GHG Emissions intensity in respect of total sales (Scope 1 + Scope 2)**								
	EP Infrastructure	tonnes CO_2 eq./EURm	1,247	1,188	1,182	1,570	1,499	59	5%
	EP Power Europe	tonnes CO_2 eq./EURm	1,119	3,116	2,753	3,290	4,006	(1,997)	(64%)
	EP Logistics international	tonnes CO_2 eq./EURm	156						
	EPH	tonnes CO_2 eq./EURm	1,130	2,319	2,117	2,532	2,675	(1,188)	(51%)

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN21	**Total SO_2 emissions**								
305-7	**EP Infrastructure**								
	Czech Republic	thsnd. tonnes	3.3	4.6	5.3	7.8	7.7	(1.4)	(29%)
	Slovakia	thsnd. tonnes	0.0	0.0	0.0	0.0	0.0	(0.0)	0%
	Hungary	thsnd. tonnes	–	–	0.0	0.0	–	–	
	Total – EP Infrastructure	**thsnd. tonnes**	**3.3**	**4.6**	**5.3**	**7.8**	**7.7**	**(1.4)**	**(29%)**
	EP Power Europe								
	France	thsnd. tonnes	0.3	0.1	0.1	–	–	0.2	359%
	Germany	thsnd. tonnes	2.1	1.2	1.6	2.6	1.4	0.9	80%
	UK	thsnd. tonnes	1.1	1.1	0.5	0.7	1.3	(0.0)	(2%)
	Ireland	thsnd. tonnes	0.0	0.0	0.0	–	–	(0.0)	(21%)
	Italy	thsnd. tonnes	1.1	1.6	1.8	1.5	1.8	(0.6)	(35%)
	Total – EP Power Europe	**thsnd. tonnes**	**4.5**	**4.0**	**4.0**	**4.8**	**4.5**	**0.5**	**14%**
	Total – EPH	**thsnd. tonnes**	**7.8**	**8.6**	**9.4**	**12.6**	**12.1**	**(0.8)**	**(9%)**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN21	**Total NO_x emissions**								
305-7	**EP Infrastructure**								
	Czech Republic	thsnd. tonnes	3.1	2.7	3.0	3.8	3.4	0.4	17%
	Slovakia	thsnd. tonnes	0.2	0.2	0.4	0.3	0.3	(0.0)	(5%)
	Hungary	thsnd. tonnes	–	0.4	0.4	0.4	0.5	(0.4)	(100%)
	Total – EP Infrastructure	**thsnd. tonnes**	**3.3**	**3.2**	**3.8**	**4.5**	**4.2**	**0.0**	**1%**
	EP Power Europe								
	France	thsnd. tonnes	0.5	0.2	0.3	–	–	0.3	182%
	Germany	thsnd. tonnes	1.9	1.0	1.2	2.3	1.0	0.9	86%
	UK	thsnd. tonnes	5.0	5.1	2.3	2.4	1.6	(0.1)	(1%)
	Ireland	thsnd. tonnes	0.5	0.4	0.1	–	–	0.1	39%
	Italy	thsnd. tonnes	3.8	4.0	4.2	3.1	3.1	(0.2)	(4%)
	Total – EP Power Europe	**thsnd. tonnes**	**11.8**	**10.7**	**8.0**	**7.9**	**5.6**	**1.1**	**10%**
	EP Logistics international								
	Czech Republic	thsnd. tonnes	0.1	0.1	–	–	–	0.0	6%
	Germany	thsnd. tonnes	0.5	0.4	–	–	–	0.1	17%
	Total – EP Logistics International	**thsnd. tonnes**	**0.6**	**0.5**	**–**	**–**	**–**	**0.1**	**16%**
	Total – EPH	**thsnd. tonnes**	**15.7**	**14.4**	**11.8**	**12.3**	**9.8**	**1.2**	**9%**

Environment / Air emissions

For the year ended 31 December 2021

Type

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN21	**Total dust emissions**								
305-7	**EP Infrastructure**								
	Czech Republic	thsnd. tonnes	0.1	0.1	0.1	0.2	0.3	(0.0)	(5%)
	Slovakia	thsnd. tonnes	0.0	0.0	0.0	0.0	0.0	(0.0)	(11%)
	Hungary	thsnd. tonnes	–	–	0.0	–	0.0	–	
	Total – EP Infrastructure	**thsnd. tonnes**	**0.1**	**0.1**	**0.1**	**0.2**	**0.3**	**(0.0)**	**(5%)**
	EP Power Europe								
	France	thsnd. tonnes	0.0	0.0	0.0	–	–	0.0	456%
	Germany	thsnd. tonnes	0.0	0.0	0.0	0.0	0.0	0.0	164%
	UK	thsnd. tonnes	0.1	0.1	0.0	0.1	0.2	(0.0)	(17%)
	Italy	thsnd. tonnes	0.1	0.1	0.1	0.1	0.1	0.0	0%
	Total – EP Power Europe	**thsnd. tonnes**	**0.2**	**0.2**	**0.1**	**0.2**	**0.3**	**0.0**	**9%**
	Total – EPH	**thsnd. tonnes**	**0.3**	**0.3**	**0.3**	**0.5**	**0.6**	**0.0**	**4%**

Environment / Air emissions

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN21	**SO_2 emissions intensity**								
305-7	**EP Infrastructure**								
	Czech Republic	tonnes/ GWh	0.62	1.02	1.19	1.50	1.75	(0.4)	(39%)
	Slovakia	tonnes/ GWh	0.09	0.10	0.01	0.01	0.01	(0.0)	(6%)
	Hungary	tonnes/ GWh	–	–	0.00	0.00	–	–	
	Total – EP Infrastructure	**tonnes/ GWh**	**0.62**	**0.63**	**0.70**	**0.95**	**1.01**	**(0.0)**	**(2%)**
	EP Power Europe								
	France	tonnes/ GWh	0.32	0.03	0.04	–	–	0.3	859%
	Germany	tonnes/ GWh	0.75	0.73	0.96	0.75	1.01	0.0	2%
	UK	tonnes/ GWh	0.07	0.07	0.05	0.09	0.36	(0.0)	(2%)
	Ireland	tonnes/ GWh	0.01	0.02	0.01	–	–	(0.0)	(30%)
	Italy	tonnes/ GWh	0.06	0.11	0.12	0.11	0.12	(0.0)	(42%)
	Total – EP Power Europe – Usage	**tonnes/ GWh**	**0.12**	**0.11**	**0.13**	**0.19**	**0.22**	**0.0**	**6%**
	Total – EPH – Usage	**tonnes/ GWh**	**0.18**	**0.20**	**0.25**	**0.38**	**0.44**	**(0.0)**	**(11%)**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN21	**NO_x emissions intensity**								
305-7	EP Infrastructure								
	Czech Republic	tonnes/ GWh	0.59	0.58	0.66	0.71	0.78	0.0	2%
	Slovakia	tonnes/ GWh	0.40	0.44	0.57	0.61	0.56	(0.0)	(10%)
	Hungary	tonnes/ GWh	–	0.14	0.14	0.15	0.15	(0.1)	(100%)
	Total – EP Infrastructure	**tonnes/ GWh**	**0.59**	**0.41**	**0.45**	**0.51**	**0.52**	**0.2**	**42%**
	EP Power Europe								
	France	tonnes/ GWh	0.60	0.10	0.11	–	–	0.5	490%
	Germany	tonnes/ GWh	0.67	0.64	0.75	0.66	0.70	0.0	6%
	UK	tonnes/ GWh	0.33	0.34	0.21	0.30	0.43	(0.0)	(2%)
	Ireland	tonnes/ GWh	0.27	0.22	0.19	–	–	0.0	22%
	Italy	tonnes/ GWh	0.23	0.27	0.28	0.24	0.20	(0.0)	(15%)
	Total – EP Power Europe	**tonnes/ GWh**	**0.31**	**0.31**	**0.26**	**0.32**	**0.28**	**0.0**	**3%**
	Total – EPH – Usage	**tonnes/ GWh**	**0.35**	**0.34**	**0.30**	**0.37**	**0.34**	**0.0**	**3%**

Environment / Air emissions

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN21	**Dust emissions intensity**								
305-7	EP Infrastructure								
	Czech Republic	tonnes/ GWh	0.02	0.02	0.03	0.04	0.06	(0.00)	(17%)
	Slovakia	tonnes/ GWh	0.02	0.02	0.02	0.02	0.02	0.00	0%
	Hungary	tonnes/ GWh	–	–	0.00	–	0.00	–	
	Total – EP Infrastructure	**tonnes/ GWh**	**0.02**	**0.01**	**0.02**	**0.03**	**0.03**	**0.00**	**33%**
	EP Power Europe								
	France	tonnes/ GWh	0.02	0.00	0.00	–	–	0.0	1,061%
	Germany	tonnes/ GWh	0.01	0.01	0.01	0.01	0.01	0.00	50%
	UK	tonnes/ GWh	0.01	0.01	0.00	0.01	0.04	(0.00)	(18%)
	Italy	tonnes/ GWh	0.01	0.01	0.01	0.01	0.01	(0.00)	(11%)
	Total – EP Power Europe	**tonnes/ GWh**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**2%**
	Total – EPH	**tonnes/ GWh**	**0.01**	**0.01**	**0.01**	**0.01**	**0.02**	**0.00**	**3%**

Note: Calculation of emissions intensity excludes emissions from non-energy producing companies.

Environment / Water

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN8	**Quantity of water withdrawn**								
303-1	**EP Infrastructure**								
	Czech Republic	million m³	41 (*)	31 (*)	53 (*)	73 (*)	127	10	33%
	Slovakia	million m³	0 (*)	0 (*)	0 (*)	0	0	0	28%
	Germany	million m³	0	0	0	–	–	(0)	(29%)
	Hungary	million m³	–	13	14 (*)	10	15	(13)	(100%)
	Total – EP Infrastructure	**million m³**	41	44	67	83	142	(3)	(6%)
	EP Power Europe								
	France	million m³	2	–	3	–	–	2	
	Germany	million m³	91	93	94	100	101	(1)	(1%)
	UK	million m³	1,987 (*)	1,616 (*)	1,410 (*)	878	258	372	23%
	Ireland	million m³	1	1	0	–	–	(1)	(50%)
	Italy	million m³	1,574	1,616	1,452	1,341	1,504	(42)	(3%)
	Total – EP Power Europe	**million m³**	**3,655**	**3,325**	**2,959**	**2,319**	**1,863**	**329**	**10%**
	Total – EPH	**million m³**	**3,696**	**3,369**	**3,026**	**2,402**	**2,005**	**327**	**10%**

(*) This data has received limited assurance from the independent auditing firm KPMG. Scope in 2021: CZ: 2 companies, SK: 1 company.
(*) This data has received limited assurance from the independent auditing firm EY (2018) and KPMG (2019-2021). Scope in 2021: CZ: 2 companies, SK: 1 company, UK: 1 company.

Environment / Water

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN22	**Quantity of water discharged**								
306-1	**EP Infrastructure**								
	Czech Republic	million m³	34 (*)	24 (*)	46 (*)	65 (*)	122	10	43%
	Slovakia	million m³	0 (*)	0 (*)	0 (*)	0	0	(0)	(30%)
	Germany	million m³	0	0	0	–	–	0	198%
	Hungary	million m³	–	13	14 (*)	10	14	(13)	(100%)
	Total – EP Infrastructure	**million m³**	**34**	**37**	**60**	**75**	**137**	**(3)**	**(7%)**
	EP Power Europe								
	France	million m³	–	–	2.0	–	–	–	
	Germany	million m³	6	5	2	3	1	0	7%
	UK	million m³	1,987 (*)	1,570 (*)	1,410 (*)	877	252	417	27%
	Ireland	million m³	1	1	0	–	–	0	17%
	Italy	million m³	1,572	1,612	1,445	1,341	1,505	(40)	(2%)
	Total – EP Power Europe	**million m³**	**3,566**	**3,189**	**2,859**	**2,220**	**1,758**	**377**	**12%**
	Total – EPH	**million m³**	**3,600**	**3,226**	**2,919**	**2,295**	**1,895**	**374**	**12%**

(*) This data has received limited assurance from the independent auditing firm KPMG. Scope in 2021: CZ: 2 companies, SK: 1 company.
(*) This data has received limited assurance from the independent auditing firm EY (2018) and KPMG (2019-2021). Scope in 2021: CZ: 2 companies, SK: 1 company, UK: 1 company.

Environment / Water

For the year ended 31 December 2021

Type

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN8	**Quantity of water withdrawn**								
303-1	**EP Infrastructure**								
	Surface water	million m³	41	43	66	82	140	(2)	(5%)
	Ground water	million m³	0	0	0	0	0	0	7%
	Municipal water supplies or other water utilities	million m³	0	0	1	1	1	(0)	(43%)
	Other	million m³	–	0	1	1	1	(0)	(100%)
	Total – EP Infrastructure	**million m³**	41	44	67	83	142	(3)	(6%)
	EP Power Europe								
	Surface water	million m³	3,594	3,256	2,891	2,260	1,799	339	10%
	Ground water	million m³	58	67	66	58	63	(9)	(13%)
	Municipal water supplies or other water utilities	million m³	2	3	2	1	1	(1)	(28%)
	Other	million m³	0	0	0	0	–	(0)	(84%)
	Total – EP Power Europe	**million m³**	**3,655**	**3,325**	**2,959**	**2,319**	**1,863**	**329**	**10%**
	Total – EPH	**million m³**	**3,696**	**3,369**	**3,026**	**2,402**	**2,005**	**327**	**10%**

Environment / Water

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN8	**Cooling Water**								
303-1	**EP Infrastructure**								
	Cooling water – withdrawal	million m³	39	41	64	80	139	(2)	(6%)
	Cooling water – discharge	million m³	32	34	57	72	133	(2)	(6%)
	Total – EP Infrastructure – Usage	**million m³**	**7**	**7**	**7**	**8**	**6**	**(0)**	**(3%)**
	EP Power Europe								
	Cooling water – withdrawal	million m³	3,567	3,186	2,857	2,225	1,763	381	12%
	Cooling water – discharge	million m³	3,562	3,181	2,853	2,217	1,757	381	12%
	Total – EP Power Europe – Usage	**million m³**	**5**	**5**	**4**	**8**	**6**	**0**	**11%**
	Total – EPH – Usage	**million m³**	**12**	**11**	**11**	**16**	**12**	**0**	**2%**

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN8	**Water intensity in respect of energy produced (all segments)**								
303-1	EP Infrastructure	thsnd. m³/ GWh	7.7	5.9	8.8	10.1	18.7	2	31%
	EP Power Europe	thsnd. m³/ GWh	97.3	95.0	97.6	93.9	92.7	2	2%
	EPH	thsnd. m³/ GWh	86.2	79.5	79.7	73.0	72.3	7	8%

Environment / Water

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN8	**Water intensity in respect of energy produced (generation companies only)**								
303-1	EP Infrastructure	thsnd. m^3/ GWh	7.69	5.89	8.80	10.14	18.67	1.80	31%
	EP Power Europe	thsnd. m^3/ GWh	97.27	95.03	97.57	93.85	92.65	2.23	2%
	EPH	thsnd. m^3/ GWh	86.20	79.50	79.75	72.96	72.34	6.70	8%

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN8	**Water intensity in respect of revenues**								
303-1	EP Infrastructure	thsnd. m^3/ EURm	14.62	13.64	19.30	27.01	45.77	0.99	7%
	EP Power Europe	thsnd. m^3/ EURm	228.49	645.60	579.56	584.19	653.86	(417.11)	(65%)
	EPH	thsnd. m^3/ EURm	195.22	393.12	352.59	339.65	333.87	(197.90)	(50%)

Environment / Effluents and waste

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Byproducts – Total production**								
306-2	**EP Infrastructure**								
	Czech Republic	thsnd. tonnes	1,288	1,084	1,119	1,488	1,496	205	19%
	Hungary	thsnd. tonnes	–	0	0	0	0	(0)	(100%)
	Total – EP Infrastructure	**thsnd. tonnes**	**1,288**	**1,084**	**1,119**	**1,488**	**1,497**	**204**	**19%**
	EP Power Europe								
	France	thsnd. tonnes	262	252	50	–	–	11	4%
	Germany	thsnd. tonnes	386	172	204	319	210	214	124%
	UK	thsnd. tonnes	77	65	43	55	70	12	19%
	Italy	thsnd. tonnes	122	117	144	136	144	5	4%
	Total – EP Power Europe	**thsnd. tonnes**	**848**	**606**	**441**	**509**	**424**	**241**	**40%**
	Total – EPH	**thsnd. tonnes**	**2,136**	**1,690**	**1,560**	**1,998**	**1,920**	**446**	**26%**

Environment / Effluents and waste

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Waste other than byproducts – Total production**								
306-2	**EP Infrastructure**								
	Czech Republic	thsnd. tonnes	2	3	2	3	2	(1)	(28%)
	Slovakia	thsnd. tonnes	45	44	42	36	40	1	3%
	Germany	thsnd. tonnes	2	1	1	–	–	1	277%
	Hungary	thsnd. tonnes	–	0	0	0	0	(0)	(100%)
	Total – EP Infrastructure	**thsnd. tonnes**	**48**	**47**	**44**	**39**	**43**	**2**	**3%**
	EP Power Europe								
	France	thsnd. tonnes	2	1	1	–	–	1	66%
	Germany	thsnd. tonnes	91	251	240	217	198	(160)	(64%)
	UK	thsnd. tonnes	59	84	4	3	4	(25)	(30%)
	Ireland	thsnd. tonnes	0	0	0	–	–	(0)	(11%)
	Italy	thsnd. tonnes	32	31	28	27	2	2	5%
	Total – EP Power Europe	**thsnd. tonnes**	**184**	**367**	**272**	**246**	**204**	**(183)**	**(50%)**
	Total – EPH	**thsnd. tonnes**	**232**	**414**	**316**	**285**	**247**	**(182)**	**(44%)**

Environment / Effluents and waste

For the year ended 31 December 2021

Type

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Byproducts – Total production**								
306-2	**EP Infrastructure**								
	Additised granulate	thsnd. tonnes	326	238	215	332	479	88	37%
	Ash	thsnd. tonnes	522	481	489	564	487	40	8%
	Slag	thsnd. tonnes	185	150	161	224	188	35	24%
	Gypsum	thsnd. tonnes	163	119	139	172	155	44	37%
	Additional material – hydrated lime	thsnd. tonnes	9	10	15	28	23	(1)	(12%)
	Additional material – water	thsnd. tonnes	74	84	97	168	165	(10)	(12%)
	Other own production	thsnd. tonnes	2	2	2	2	–	0	29%
	Other additional material – please specify	thsnd. tonnes	7	–	–	–	–	7	
	Total – EP Infrastructure	**thsnd. tonnes**	**1,288**	**1,084**	**1,119**	**1,488**	**1,497**	**204**	**19%**
	EP Power Europe								
	Ash	thsnd. tonnes	569	477	287	301	257	92	19%
	Slag	thsnd. tonnes	59	40	57	57	55	19	49%
	Gypsum	thsnd. tonnes	218	87	96	151	112	131	150%
	Other own production	thsnd. tonnes	2	3	1	–	–	(1)	(29%)
	Total – EP Power Europe	**thsnd. tonnes**	**848**	**606**	**441**	**509**	**424**	**241**	**40%**
	Total – EPH	**thsnd. tonnes**	**2,136**	**1,690**	**1,560**	**1,998**	**1,920**	**446**	**26%**

Environment / Effluents and waste

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Byproducts – Total means of disposal**								
	EP Infrastructure								
	Sales	thsnd. tonnes	318	268	169	128	136	49	18%
	Storage – own stock	thsnd. tonnes	145	109	157	209	149	36	33%
	Storage – external	thsnd. tonnes	176	193	211	214	82	(16)	(8%)
	Stabilizate production	thsnd. tonnes	627	509	578	930	1 127	118	23%
	Storage – chargeable waste	thsnd. tonnes	23	5	3	7	2	18	388%
	Total – EP Infrastructure	**thsnd. tonnes**	**1,288**	**1,084**	**1,119**	**1,488**	**1,497**	**204**	**19%**
	EP Power Europe								
	Sales	thsnd. tonnes	904	511	202	263	164	393	77%
	Storage – own stock	thsnd. tonnes	59	1	35	37	27	58	7,582%
	Storage – external	thsnd. tonnes	0	0	1	1	1	(0)	(49%)
	Stabilizate production	thsnd. tonnes	142	150	201	189	216	(8)	(5%)
	Storage – chargeable waste	thsnd. tonnes	25	27	22	(7)	3	(1)	(4%)
	Other	thsnd. tonnes	14	14	14	17	17	1	5%
	Total – EP Power Europe	**thsnd. tonnes**	**1,145**	**702**	**476**	**500**	**427**	**443**	**63%**
	Total – EPH	**thsnd. tonnes**	**2,433**	**1,785**	**1,595**	**1,988**	**1,924**	**648**	**36%**

Environment / Effluents and waste

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Waste other than byproducts – Total production**								
306-2	**EP Infrastructure**								
	Non-hazardous waste	thsnd. tonnes	47.3	45.9	42.8	36.7	41.1	1.4	3%
	Hazardous waste	thsnd. tonnes	1.1	0.9	1.7	1.8	1.7	0.3	30%
	Total – EP Infrastructure	**thsnd. tonnes**	**48.4**	**46.8**	**44.5**	**38.5**	**42.7**	**1.6**	**3%**
	EP Power Europe								
	Non-hazardous waste	thsnd. tonnes	180.0	324.1	269.5	241.2	200.5	(144.1)	(44%)
	Hazardous waste	thsnd. tonnes	3.9	43.1	2.4	5.2	3.8	(39.1)	(91%)
	Total – EP Power Europe	**thsnd. tonnes**	**183.9**	**367.2**	**271.9**	**246.4**	**204.4**	**(183.3)**	**(50%)**
	Total – EPH	**thsnd. tonnes**	**232.3**	**413.9**	**316.3**	**284.9**	**247.1**	**(181.7)**	**(44%)**

Environment / Effluents and waste

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Waste other than by products – Non-hazardous – Disposal**								
306-2	**EP Infrastructure**								
	Recycling	thsnd. tonnes	21.8	17.7	19.1	14.5	6.2	4.1	23%
	Landfill	thsnd. tonnes	3.0	2.8	3.9	4.2	3.1	0.2	8%
	Other	thsnd. tonnes	22.4	25.4	19.8	18.0	31.8	(3.0)	(12%)
	Total – EP Infrastructure	**thsnd. tonnes**	**47.3**	**45.9**	**42.8**	**36.7**	**41.1**	**1.4**	**3%**
	EP Power Europe								
	Recycling	thsnd. tonnes	90.7	85.6	110.9	80.6	54.2	5.2	6%
	Landfill	thsnd. tonnes	31.5	80.3	33.5	23.1	1.5	(48.8)	(61%)
	Other	thsnd. tonnes	57.9	158.1	125.0	142.5	144.8	(100.2)	(63%)
	Total – EP Power Europe	**thsnd. tonnes**	**180.2**	**324.0**	**269.4**	**246.2**	**200.5**	**(143.9)**	**(44%)**
	Total – EPH	**thsnd. tonnes**	**227.4**	**369.9**	**312.2**	**282.9**	**241.6**	**(142.5)**	**(39%)**

Environment / Effluents and waste

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Waste other than by products – Hazardous – Disposal**								
306-2	**EP Infrastructure**								
	Recycling	thsnd. tonnes	0.3	0.4	0.3	0.2	0.7	(0.1)	(23%)
	Landfill	thsnd. tonnes	0.2	0.2	1.1	1.4	0.5	0.0	0%
	Other	thsnd. tonnes	0.6	0.3	0.3	0.3	0.4	0.4	130%
	Total – EP Infrastructure	**thsnd. tonnes**	**1.1**	**0.9**	**1.7**	**1.8**	**1.7**	**0.3**	**30%**
	EP Power Europe								
	Recycling	thsnd. tonnes	3.4	42.7	2.1	5.0	2.1	(39.3)	(92%)
	Landfill	thsnd. tonnes	0.4	0.2	0.2	0.2	1.7	0.2	103%
	Other	thsnd. tonnes	0.1	0.1	0.0	–	–	0.1	138%
	Total – EP Power Europe	**thsnd. tonnes**	**4.0**	**43.0**	**2.3**	**5.2**	**3.8**	**(39.0)**	**(91%)**
	Total – EPH	**thsnd. tonnes**	**5.1**	**43.9**	**4.0**	**7.0**	**5.4**	**(38.8)**	**(88%)**

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
G4-EN23	**Waste intensity in respect of revenues**								
306-2									
	EP Infrastructure	tonnes per EURm	17.4	14.6	12.8	12.5	13.8	2.7	19%
	EP Power Europe	tonnes per EURm	11.3	62.9	52.8	62.0	70.4	(51.6)	(82%)
	EPH	tonnes per EURm	12.3	48.3	36.9	40.3	41.1	(36.0)	(75%)

Environment / Effluents and waste

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GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
	Fines								
	EP Infrastructure								
307-1	Environmental Fines	EURm	0.0	0.0	0.0	0.0	0.0	(0.0)	(98%)
417-2	Use of Products/ Services Fines	EURm	–	–	–	–	–	–	
419-1	Other Significant Fines	EURm	0.0	0.1	–	–	–	(0.1)	(67%)
	Total – EP Infrastructure	**EURm**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**(0.1)**	**(67%)**
	EP Power Europe								
307-1	Environmental Fines	EURm	–	–	0.0	–	–	–	
417-2	Use of Products/ Services Fines	EURm	0.0	–	–	–	–	(0.0)	
419-1	Other Significant Fines	EURm	0.4	0.0	–	–	–	0.3	2,367%
	Total – EP Power Europe	**EURm**	**0.4**	**0.0**	**0.0**	**–**	**–**	**0.3**	**2,357%**
	Total – EPH	**EURm**	**0.4**	**0.1**	**0.0**	**0.0**	**0.0**	**0.2**	**181%**

Social / Occupational health and safety

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
403-2	**Fatal injuries – Employees**								
G4-LA6	**EP Infrastructure**								
	Czech Republic	#	–	–	–	–	–	–	
	Slovakia	#	–	–	–	1	–	–	
	Germany	#	–	–	–	–	–	–	
	Hungary	#	–	–	–	–	–	–	
	Netherlands	#	–	–	–	–	–	–	
	Total – EP Infrastructure	**#**	**–**	**–**	**–**	**1**	**–**	**–**	
	EP Power Europe								
	Czech Republic	#	–	–	–	–	–	–	
	France	#	–	–	–	–	–	–	
	Germany	#	–	–	–	–	–	–	
	UK	#	–	–	–	–	–	–	
	Ireland	#	–	–	–	–	–	–	
	Italy	#	–	–	–	–	–	–	
	Switzerland	#	–	–	–	–	–	–	
	Total – EP Power Europe	**#**	**–**	**–**	**–**	**–**	**–**	**–**	
	Other companies within the Group								
	Czech Republic	#	–	–	–	–	–	–	
	Poland	#	–	–	–	–	–	–	
	Slovakia	#	–	–	–	–	–	–	
	Hungary	#	–	–	–	–	–	–	
	Germany	#	–	–	–	–	–	–	
	UK	#	–	–	–	–	–	–	
	Italy	#	–	–	–	–	–	–	
	Netherlands	#	–	–	–	–	–	–	
	Total – other comapnies	**#**	**–**	**–**	**–**	**–**	**–**	**–**	
	Total – EPH	**#**	**–**	**–**	**–**	**–**	**1**	**–**	

Social / Occupational health and safety

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
403-2	**Registered injuries – Employees**								
G4-LA6	**EP Infrastructure**								
	Czech Republic	#	13 (*)	11 (*)	16 (*)	11 (*)	12	2	18%
	Slovakia	#	14 (*)	19 (*)	20 (*)	13	15	(5)	(26%)
	Hungary	#	–	–	1 (*)	3	2	–	
	Total – EP Infrastructure	**#**	**27**	**30**	**37**	**27**	**29**	**(3)**	**(10%)**
	EP Power Europe								
	France	#	5	11	2	–	–	(6)	(55%)
	Germany	#	18	12	15	27	28	6	50%
	UK	#	1 (*)	2 (*)	2 (*)	–	–	(1)	(50%)
	Italy	#	2	–	–	3	1	2	
	Total – EP Power Europe	**#**	**26**	**25**	**19**	**30**	**29**	**1**	**4%**
	Other companies within the Group								
	Czech Republic	#	4 (*)	5 (*)	6 (*)	6 (*)	6.0	(1)	(20%)
	Poland	#	–	–	–	1.0	–	–	
	Germany	#	6.0	–	1.0	–	–	6	
	Total – other comapnies	**#**	**10**	**5**	**7**	**7**	**6**	**5**	**100%**
	Total – EPH	**#**	**63**	**60**	**63**	**64**	**64**	**3**	**5%**

Note: Registered injury – in order to be able to report standardised injury data from across all our operations, for the purpose of this Sustainability Report, all injuries that resulted in at least 3 lost working days have been reported. This is a stricter definition than many companies use for their respective national reporting.
(*) This data has received limited assurance from the independent auditing firm KPMG. Scope in 2021: CZ: 2 companies, SK: 1 company.
(*) This data has received limited assurance from the independent auditing firm EY (2018) and KPMG (2019-2021). Scope in 2021: CZ: 2 companies, SK: 1 company, UK: 1 company.

Social / Occupational health and safety

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
403-2	**Worked hours – Employees**								
G4-LA6	**EP Infrastructure**								
	Czech Republic	mil. hours	2.6	3.3	3.4	3.7	3.2	(0.7)	(21%)
	Slovakia	mil. hours	7.0	6.9	6.9	6.8	6.9	0.0	1%
	Germany	mil. hours	0.1	0.1	0.1	0.1	–	0.0	9%
	Hungary	mil. hours	–	0.3	0.4	0.4	0.4	(0.3)	(100%)
	Netherlands	mil. hours	–	–	0.0	0.0	0.0	–	
	Total – EP Infrastructure	**mil. hours**	**9.6**	**10.6**	**10.7**	**11.0**	**10.4**	**(1.0)**	**(9%)**
	EP Power Europe								
	Czech Republic	mil. hours	0.2	0.2	0.2	0.1	0.1	0.0	13%
	France	mil. hours	0.8	0.6	0.3	–	–	0.2	25%
	Germany	mil. hours	3.2	3.3	3.8	3.7	4.3	(0.2)	(6%)
	UK	mil. hours	1.0	1.0	0.9	0.8	0.7	0.1	5%
	Ireland	mil. hours	0.0	0.0	0.0	–	–	0.0	30%
	Italy	mil. hours	1.0	1.0	1.0	0.9	0.5	0.0	2%
	Switzerland	mil. hours	0.0	–	0.0	–	–	0.0	
	Total – EP Power Europe	**mil. hours**	**6.3**	**6.2**	**6.2**	**5.5**	**5.5**	**0.1**	**2%**
	Other companies within the Group								
	Czech Republic	mil. hours	0.7	0.8	0.8	0.7	0.5	(0.1)	(13%)
	Poland	mil. hours	0.1	0.2	0.3	0.2	0.2	(0.2)	(75%)
	Slovakia	mil. hours	0.0	0.0	0.0	0.0	0.0	0.0	165%
	Germany	mil. hours	0.3	0.1	0.1	0.0	0.0	0.2	349%
	Total – other comapnies	**mil. hours**	**1.0**	**1.0**	**1.2**	**1.0**	**0.7**	**0.0**	**0%**
	Total – EPH	**mil. hours**	**17.0**	**17.8**	**18.1**	**17.4**	**16.7**	**(0.9)**	**(5%)**

Social / Occupational health and safety

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
403-2	**Worked hours – Contractors**								
G4-LA6	**EP Infrastructure**								
	Czech Republic	mil. hours	0.0	0.0	0.0	0.0	0.0	(0.0)	(1%)
	Slovakia	mil. hours	–	–	–	–	–	–	
	Germany	mil. hours	–	–	–	–	–	–	
	Hungary	mil. hours	–	–	–	–	–	–	
	Netherlands	mil. hours	–	–	–	–	–	–	
	Total – EP Infrastructure	**mil. hours**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**(0.0)**	**(1%)**
	EP Power Europe								
	Czech Republic	mil. hours	0.0	0.0	0.0	0.0	0.0	0.0	128%
	France	mil. hours	0.4	0.3	0.5	–	–	0.1	46%
	Germany	mil. hours	0.0	–	–	–	–	0.0	
	UK	mil. hours	0.3	0.6	0.7	1.4	3.4	(0.3)	(43%)
	Ireland	mil. hours	–	0.1	–	–	–	(0.1)	(100%)
	Italy	mil. hours	1.4	1.1	1.1	1.2	0.4	0.3	29%
	Switzerland	mil. hours	–	–	0.0	–	–	–	
	Total – EP Power Europe	**mil. hours**	**2.2**	**2.1**	**2.4**	**2.7**	**3.8**	**0.1**	**5%**
	Other companies within the Group								
	Czech Republic	mil. hours	0.0	0.0	0.0	0.0	0.0	0.0	89%
	Poland	mil. hours	0.0	–	0.0	0.0	0.0	0.0	
	Slovakia	mil. hours	–	–	–	–	–	–	
	Hungary	mil. hours	–	–	–	–	–	–	
	Germany	mil. hours	0.6	–	0.0	–	–	0.6	
	UK	mil. hours	–	–	–	–	–	–	
	Italy	mil. hours	–	–	–	–	–	–	
	Netherlands	mil. hours	–	–	–	–	–	–	
	Total – other comapnies	**mil. hours**	**0.6**	**0.0**	**0.1**	**0.0**	**0.0**	**0.6**	**10,331%**
	Total – EPH	**mil. hours**	**2.8**	**2.1**	**2.4**	**2.7**	**3.8**	**0.7**	**35%**

Social / Occupational health and safety

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
403-2	**Injury Frequency Rate – Employees**								
G4-LA6	**EP Infrastructure**								
	Czech Republic	index	5.0	3.4	4.8	3.0	3.7	1.7	50%
	Slovakia		2.0	2.7	2.9	1.9	2.2	(0.7)	(27%)
	Hungary	index	–	–	2.7	8.3	5.1	–	
	Total – EP Infrastructure	**index**	**2.8**	**2.8**	**3.5**	**2.5**	**2.9**	**(0.0)**	**(1%)**
	EP Power Europe								
	France	index	6.2	17.2	6.3	–	–	(10.9)	(64%)
	Germany	index	5.7	3.6	4.0	7.3	6.6	2.1	59%
	UK	index	1.0	2.0	2.1	–	–	(1.1)	(52%)
	Italy	index	2.0	–	–	3.2	2.1	2.0	
	Total – EP Power Europe	**index**	**4.1**	**4.1**	**3.1**	**5.5**	**5.2**	**0.1**	**2%**
	Other companies within the Group								
	Czech Republic	index	6.1	6.6	7.1	8.2	12.4	(0.5)	(8%)
	Poland	index	–	–	–	4.0	–	–	
	Germany	index	19.9	–	9.8	–	–	19.9	
	Total – other comapnies	**index**	**9.6**	**4.8**	**5.7**	**7.1**	**8.2**	**4.8**	**100%**
	Total – EPH	**index**	**3.7**	**3.4**	**3.5**	**3.7**	**3.9**	**0.3**	**10%**

Note: Injury frequency rate reported on per 1 million hours worked basis.

Social / Occupational health and safety

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
403-2	**Fatal injuries – Contractors**								
G4-LA6	**EP Infrastructure**								
	Czech Republic	#	–	–	–	–	–	–	
	Slovakia	#	–	–	1	–	–	–	
	Germany	#	–	–	–	–	–	–	
	Hungary	#	–	–	–	–	–	–	
	Netherlands	#	–	–	–	–	–	–	
	Total – EP Infrastructure	**#**	**–**	**–**	**1**	**–**	**–**	**–**	
	EP Power Europe								
	Czech Republic	#	–	–	–	–	–	–	
	France	#	–	–	–	–	–	–	
	Germany	#	–	–	–	–	–	–	
	UK	#	–	–	–	–	–	–	
	Ireland	#	–	–	–	–	–	–	
	Italy	#	–	–	–	–	–	–	
	Switzerland	#	–	–	–	–	–	–	
	Total – EP Power Europe	**#**	**–**	**–**	**–**	**–**	**–**	**–**	
	Other companies within the Group								
	Czech Republic	#	–	–	–	–	–	–	
	Poland	#	–	–	–	–	–	–	
	Slovakia	#	–	–	–	–	–	–	
	Hungary	#	–	–	–	–	–	–	
	Germany	#	–	–	–	–	–	–	
	UK	#	–	–	–	–	–	–	
	Italy	#	–	–	–	–	–	–	
	Netherlands	#	–	–	–	–	–	–	
	Total – other companies	**#**	**–**	**–**	**–**	**–**	**–**	**–**	
	Total – EPH	**#**	**–**	**–**	**1**	**–**	**–**	**–**	

Social / Occupational health and safety

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
403-2	**Registered injuries – Contractors**								
G4-LA6	**EP Infrastructure**								
	Czech Republic	#	1	–	–	–	1	1	
	Slovakia	#	2	1	–	1	–	1	100%
	Germany	#	–	–	–	–	–	–	
	Hungary	#	–	–	–	–	–	–	
	Netherlands	#	–	–	–	–	–	–	
	Total – EP Infrastructure	**#**	**3**	**1**	**–**	**1**	**1**	**2**	**200%**
	EP Power Europe								
	Czech Republic	#	–	–	–	–	–	–	
	France	#	13	5	2	–	–	8	160%
	Germany	#	5	9	5	4	5	(4)	(44%)
	UK	#	4	–	2	2	8	4	
	Ireland	#	–	–	–	–	–	–	
	Italy	#	1	3	1	11	1	(2)	(67%)
	Switzerland	#	–	–	–	–	–	–	
	Total – EP Power Europe	**#**	**23**	**17**	**10**	**17**	**15**	**6**	**35%**
	Other companies within the Group								
	Czech Republic	#	–	–	–	–	–	–	
	Poland	#	–	–	–	–	–	–	
	Slovakia	#	–	–	–	–	–	–	
	Hungary	#	–	–	–	–	–	–	
	Germany	#	–	–	–	–	–	–	
	UK	#	–	–	–	–	–	–	
	Italy	#	–	–	–	–	–	–	
	Netherlands	#	–	–	–	–	–	–	
	Total – other comapnies	**#**	**–**	**–**	**–**	**–**	**–**	**–**	
	Total – EPH	**#**	**26**	**18**	**10**	**18**	**16**	**8**	**44%**

Social / Employment

For the year ended 31 December 2021

Country

GRI/EUSS	KPI	Unit	Total	Male	Female
102-7	**Headcount (FTE)**				
G4-9	**EP Infrastructure**				
	Czech Republic	FTE	1,459	1,168	291
	Slovakia	FTE	4,289	3,406	883
	Germany	FTE	61	54	7
	Hungary	FTE	–	–	–
	Netherlands	FTE	2	1	1
	Total – EP Infrastructure	**FTE**	**5,811**	**4,629**	**1 182**
	EP Power Europe				
	Czech Republic	FTE	124	101	24
	France	FTE	413	304	109
	Germany	FTE	2,403	2,037	366
	UK	FTE	528	466	62
	Ireland	FTE	9	5	4
	Italy	FTE	581	507	74
	Switzerland	FTE	19	14	5
	Total – EP Power Europe	**FTE**	**4,077**	**3,433**	**643**
	Other companies within the Group				
	Czech Republic	FTE	470	346	123
	Poland	FTE	30	16	14
	Slovakia	FTE	18	15	3
	Germany	FTE	158	131	27
	Total – other comapnies	**FTE**	**676**	**509**	**167**
	Total – EPH	**FTE**	**10,564**	**8,571**	**1,992**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
102-7	**Males – members of top and middle management**								
G4-9	**EP Infrastructure**								
	Czech Republic	FTE	51	59	66	69	66	(8)	(14%)
	Slovakia	FTE	326	331	358	345	361	(5)	(1%)
	Germany	FTE	1	1	1	1	–	–	0%
	Hungary	FTE	–	5	5	5	6	(5)	(100%)
	Netherlands	FTE	1	1	1	1	–	–	0%
	Total – EP Infrastructure	**FTE**	**379**	**398**	**431**	**421**	**433**	**(19)**	**(5%)**
	EP Power Europe								
	Czech Republic	FTE	17	16	16	13	18	1	7%
	France	FTE	8	17	4	–	–	(9)	(53%)
	Germany	FTE	38	26	25	27	21	12	48%
	UK	FTE	22	30	21	20	14	(8)	(25%)
	Ireland	FTE	2	4	3	–	–	(2)	(50%)
	Italy	FTE	27	23	28	26	19	4	16%
	Switzerland	FTE	2	6	1	–	–	(4)	(67%)
	Total – EP Power Europe	**FTE**	**116**	**122**	**98**	**86**	**71**	**(5)**	**(4%)**
	Other companies within the Group								
	Czech Republic	FTE	33	38	34	28	26	(5)	(13%)
	Poland	FTE	4	9	10	12	9	(5)	(56%)
	Slovakia	FTE	3	1	1	1	1	2	200%
	Germany	FTE	11	4	3	1	1	7	175%
	Total – other comapnies	**FTE**	**51**	**52**	**48**	**42**	**36**	**(1)**	**(2%)**
	Total – EPH	**FTE**	**547**	**572**	**578**	**549**	**541**	**(25)**	**(4%)**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
102-7	**Females – members of top and middle management**								
G4-9	**EP Infrastructure**								
	Czech Republic	FTE	21	18	13	18	15	3	16%
	Slovakia	FTE	59	62	62	62	61	(2)	(4%)
	Germany	FTE	–	–	–	–	–	–	
	Hungary	FTE	–	1	1	1	1	(1)	(100%)
	Netherlands	FTE	1	1	1	1	1	–	0%
	Total – EP Infrastructure	**FTE**	**81**	**82**	**77**	**82**	**78**	**(1)**	**(1%)**
	EP Power Europe								
	Czech Republic	FTE	2	2	2	2	2	–	0%
	France	FTE	2	5	2	–	–	(3)	(58%)
	Germany	FTE	3	3	3	3	2	–	0%
	UK	FTE	3	4	4	5	3	(1)	(25%)
	Ireland	FTE	1	1	1	–	–	–	0%
	Italy	FTE	5	8	3	4	3	(3)	(38%)
	Switzerland	FTE	–	1	–	–	–	(1)	(100%)
	Total – EP Power Europe	**FTE**	**16**	**24**	**15**	**13**	**10**	**(8)**	**(34%)**
	Other companies within the Group								
	Czech Republic	FTE	7	9	6	5	8	(2)	(19%)
	Poland	FTE	–	2	2	1	1	(2)	(100%)
	Germany	FTE	3	2	1	–	–	1	50%
	Total – other comapnies	**FTE**	**10**	**13**	**9**	**6**	**9**	**(3)**	**(21%)**
	Total – EPH	**FTE**	**107**	**118**	**100**	**101**	**96**	**(11)**	**(9%)**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
102-7	**Male employees**								
G4-9	**EP Infrastructure**								
	Czech Republic	FTE	1,168	1,530	1,595	1,713	1,506	(362)	(24%)
	Slovakia	FTE	3,406	3,402	3,353	3,352	3,385	4	0%
	Germany	FTE	54	51	51	52	–	3	6%
	Hungary	FTE	–	173	173	168	168	(173)	(100%)
	Netherlands	FTE	1	1	1	1	–	–	0%
	Total – EP Infrastructure	**FTE**	**4,629**	**5,158**	**5,173**	**5,286**	**5,059**	**(529)**	**(10%)**
	EP Power Europe								
	Czech Republic	FTE	101	84	71	59	54	16	19%
	France	FTE	304	404	406	–	–	(100)	(25%)
	Germany	FTE	2,037	2,053	2,164	2,225	2,070	(17)	(1%)
	UK	FTE	466	477	450	381	379	(11)	(2%)
	Ireland	FTE	5	8	8	–	–	(3)	(38%)
	Italy	FTE	507	482	514	498	439	25	5%
	Switzerland	FTE	14	6	3	–	–	8	133%
	Total – EP Power Europe	**FTE**	**3,433**	**3,515**	**3,616**	**3,162**	**2,942**	**(81)**	**(2%)**
	Other companies within the Group								
	Czech Republic	FTE	346	292	342	295	272	55	19%
	Poland	FTE	16	98	122	125	112	(82)	(83%)
	Slovakia	FTE	15	6	4	3	1	9	150%
	Germany	FTE	131	129	129	2	2	2	2%
	Total – other comapnies	**FTE**	**509**	**525**	**597**	**425**	**386**	**(16)**	**(3%)**
	Total – EPH	**FTE**	**8,571**	**9,197**	**9,386**	**8,873**	**8,387**	**(626)**	**(7%)**

Social / Training

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
102-7	**Female employees**								
G4-9	**EP Infrastructure**								
	Czech Republic	FTE	291	359	386	397	377	(68)	(19%)
	Slovakia	FTE	883	870	856	847	832	13	2%
	Germany	FTE	7	7	7	8	–	(0)	(2%)
	Hungary	FTE	–	34	35	35	42	(34)	(100%)
	Netherlands	FTE	1	1	1	1	1	–	0%
	Total – EP Infrastructure	**FTE**	**1,182**	**1,271**	**1,285**	**1,288**	**1,252**	**(89)**	**(7%)**
	EP Power Europe								
	Czech Republic	FTE	24	23	17	13	11	0	1%
	France	FTE	109	113	112	–	–	(4)	(4%)
	Germany	FTE	366	336	352	366	365	30	9%
	UK	FTE	62	62	55	41	35	–	0%
	Ireland	FTE	4	3	3	–	–	1	33%
	Italy	FTE	74	99	68	68	64	(25)	(26%)
	Switzerland	FTE	5	3	1	–	–	2	67%
	Total – EP Power Europe	**FTE**	**643**	**639**	**609**	**489**	**475**	**4**	**1%**
	Other companies within the Group								
	Czech Republic	FTE	123	115	117	94	105	9	7%
	Poland	FTE	14	26	31	27	17	(12)	(46%)
	Slovakia	FTE	3	1	1	1	–	2	200%
	Germany	FTE	27	32	25	3	2	(5)	(16%)
	Total – other comapnies	**FTE**	**167**	**174**	**173**	**125**	**124**	**(6)**	**(4%)**
	Total – EPH	**FTE**	**1,992**	**2,084**	**2,068**	**1,901**	**1,850**	**(91)**	**(4%)**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
102-41	**Employees covered by OHSAS 18001 / ISO 45001**								
G4-11	**EP Infrastructure**								
	Czech Republic	FTE	423	861	963	1,079	1,141	(438)	(51%)
	Slovakia	FTE	4,273	2,946	2,903	2,894	2,284	1,327	45%
	Total – EP Infrastructure	**FTE**	**4,696**	**3,807**	**3,866**	**3,973**	**3,425**	**889**	**23%**
	Covered in % of total headcount	*FTE*	*81%*	*59%*	*60%*	*60%*	*54%*	*0%*	*36%*
	EP Power Europe								
	France	FTE	413	451	518	–	–	(38)	(9%)
	Germany	FTE	1,927	2,179	2,284	2,355	2,263	(252)	(12%)
	UK	FTE	345	355	371	315	389	(10)	(3%)
	Italy	FTE	581	581	582	566	503	0	0%
	Total – EP Power Europe	**FTE**	**3,265**	**3,566**	**3,755**	**3,237**	**3,155**	**(300)**	**(8%)**
	Covered in % of total headcount	*FTE*	*80%*	*86%*	*89%*	*89%*	*92%*	**(0%)**	**(7%)**
	Total – EPH	**FTE**	**7,961**	**7,373**	**7,621**	**7,209**	**6,580**	**589**	**8%**
	Covered in % of total headcount	*FTE*	*75%*	*65%*	*67%*	*67%*	*64%*		

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
102-41	**Employees with collective bargining agreements**								
G4-11	**EP Infrastructure**								
	Czech Republic	FTE	1,200	1,672	1,783	1,919	1,641	(472)	(28%)
	Slovakia	FTE	4,236	4,220	4,158	4,137	4,184	16	0%
	Germany	FTE	54	51	52	–	–	3	5%
	Hungary	FTE	–	206	207	204	210	(206)	(100%)
	Total – EP Infrastructure	**FTE**	**5,489**	**6,148**	**6,200**	**6,260**	**6,034**	**(659)**	**(11%)**
	Covered in % of total headcount	*FTE*	*94%*	*96%*	*96%*	*95%*	*96%*	*(0%)*	*(1%)*
	EP Power Europe								
	France	FTE	413	450	518	–	–	(37)	(8%)
	Germany	FTE	2,077	2,229	2,356	2,445	2,280	(152)	(7%)
	UK	FTE	343	353	365	252	249	(10)	(3%)
	Italy	FTE	581	581	582	566	503	–	0%
	Total – EP Power Europe	**FTE**	**3,413**	**3,613**	**3,821**	**3,263**	**3,032**	**(200)**	**(6%)**
	Covered in % of total headcount	*FTE*	*84%*	*87%*	*90%*	*89%*	*89%*	*(0%)*	*(4%)*
	Other companies within the Group								
	Czech Republic	FTE	18	106	22	25	20	(88)	(83%)
	Poland	FTE	–	91	119	120	27	(91)	(100%)
	Total – other comapnies	**FTE**	**18**	**197**	**141**	**145**	**47**	**(179)**	**(91%)**
	Covered in % of total headcount	*FTE*	*3%*	*28%*	*18%*	*26%*	*9%*	*(0%)*	*(91%)*
	Total – EPH	**FTE**	**8,920**	**9,958**	**10,161**	**9,668**	**9,113**	**(1,038)**	**(10%)**
	Covered in % of total headcount	*FTE*	*84%*	*88%*	*89%*	*90%*	*89%*		

Restatement: In 2021, when preparing 2020 data we found mistake retrospectively, in 2017. In particular, by 98 less employees were covered by OHSAS 180001 in 2017 (145 previsously reported vs 47 corrected).

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
401-1	**Number of new hires – Total**								
	EP Infrastructure								
	Czech Republic	FTE	112	193	198	206	230	(81)	(42%)
	Slovakia	FTE	235	263	327	295	175	(28)	(11%)
	Germany	FTE	9	5	4	5	–	4	84%
	Hungary	FTE	–	7	24	15	12	(7)	(100%)
	Netherlands	FTE	–	–	–	2	1	–	
	Total – EP Infrastructure	**FTE**	**356**	**468**	**553**	**523**	**418**	**(112)**	**(24%)**
	EP Power Europe								
	Czech Republic	FTE	20	38	31	17	55	(18)	(47%)
	France	FTE	68	67	6	–	–	1	1%
	Germany	FTE	94	71	133	240	146	23	33%
	UK	FTE	66	27	41	61	44	39	144%
	Ireland	FTE	5	2	–	–	–	3	150%
	Italy	FTE	18	34	18	18	12	(16)	(47%)
	Switzerland	FTE	12	6	4	–	–	6	100%
	Total – EP Power Europe	**FTE**	**283**	**245**	**233**	**336**	**257**	**38**	**16%**
	Other companies within the Group								
	Czech Republic	FTE	94	97	130	104	112	(3)	(3%)
	Poland	FTE	11	13	101	142	81	(2)	(15%)
	Slovakia	FTE	13	3	2	3	1	10	333%
	Germany	FTE	33	37	8	1	2	(4)	(11%)
	Total – other comapnies	**FTE**	**151**	**150**	**241**	**250**	**196**	**1**	**1%**
	Total – EPH	**FTE**	**791**	**863**	**1,027**	**1,109**	**871**	**(72)**	**(8%)**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
401-1	**Number of leavers – Total**								
	EP Infrastructure								
	Czech Republic	FTE	131	165	204	331	263	(34)	(21%)
	Slovakia	FTE	263	184	276	286	247	79	43%
	Germany	FTE	7	2	5	–	–	5	260%
	Hungary	FTE	–	18	12	13	61	(18)	(100%)
	Netherlands	FTE	–	–	–	1	–	–	
	Total – EP Infrastructure	**FTE**	**401**	**369**	**497**	**631**	**571**	**32**	**9%**
	EP Power Europe								
	Czech Republic	FTE	9	8	21	4	7	1	13%
	France	FTE	88	94	41	–	–	(6)	(6%)
	Germany	FTE	263	317	219	182	191	(54)	(17%)
	UK	FTE	56	29	52	219	29	27	91%
	Ireland	FTE	8	2	–	–	–	6	300%
	Italy	FTE	23	34	21	20	8	(11)	(32%)
	Switzerland	FTE	5	1	–	–	–	4	400%
	Total – EP Power Europe	**FTE**	**451**	**485**	**354**	**425**	**236**	**(34)**	**(7%)**
	Other companies within the Group								
	Czech Republic	FTE	62	81	130	103	79	(19)	(23%)
	Poland	FTE	12	41	101	140	39	(29)	(70%)
	Slovakia	FTE	2	1	1	–	–	1	100%
	Germany	FTE	29	19	5	–	–	10	53%
	Total – other comapnies	**FTE**	**105**	**142**	**237**	**243**	**118**	**(37)**	**(26%)**
	Total – EPH	**FTE**	**958**	**996**	**1,088**	**1,298**	**925**	**(39)**	**(4%)**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017
401-1	**New hires rate**						
	EP Infrastructure						
	Czech Republic	FTE	8%	10%	10%	10%	12%
	Slovakia	FTE	5%	6%	8%	7%	4%
	Germany	FTE		2%	2%	2%	0%
	Hungary	FTE	0%	12%	42%	25%	
	Netherlands	FTE	0%	0%	0%	100%	100%
	Total – EP Infrastructure	**FTE**	**6%**	**7%**	**9%**	**8%**	**7%**
	EP Power Europe						
	Czech Republic	FTE	16%	35%	35%	24%	85%
	France	FTE	16%	13%	1%		
	Germany	FTE	4%	3%	5%	9%	6%
	UK	FTE	13%	5%	8%	14%	11%
	Ireland	FTE	56%	18%	0%		
	Italy	FTE	3%	6%	3%	3%	2%
	Switzerland	FTE	63%	67%	100%		
	Total – EP Power Europe	**FTE**	**7%**	**6%**	**6%**	**9%**	**8%**
	Other companies within the Group						
	Czech Republic	FTE	20%	24%	28%	27%	30%
	Poland	FTE	37%	10%	66%	93%	63%
	Germany	FTE	21%	23%	5%	20%	50%
	Slovakia	FTE	72%	43%	40%	75%	100%
	Total – other comapnies	**FTE**	**22%**	**21%**	**31%**	**45%**	**38%**
	Total – EPH	**FTE**	**7%**	**8%**	**9%**	**10%**	**9%**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017
401-1	**Employee turnover rate**						
	EP Infrastructure						
	Czech Republic	FTE	9%	9%	10%	16%	14%
	Slovakia	FTE	6%	4%	7%	7%	6%
	Germany	FTE		1%	3%	0%	0%
	Hungary	FTE	0%	31%	21%	22%	
	Netherlands	FTE	0%	0%	0%	50%	0%
	Total – EP Infrastructure	**FTE**	**7%**	**6%**	**8%**	**10%**	**9%**
	EP Power Europe						
	Czech Republic	FTE	7%	7%	24%	6%	11%
	France	FTE	21%	18%	8%		
	Germany	FTE	11%	13%	9%	7%	8%
	UK	FTE	11%	5%	10%	52%	7%
	Ireland	FTE	89%	18%	0%		
	Italy	FTE	4%	6%	4%	4%	2%
	Switzerland	FTE	26%	11%	0%		
	Total – EP Power Europe	**FTE**	**11%**	**12%**	**8%**	**12%**	**7%**
	Other companies within the Group						
	Czech Republic	FTE	2%	2%	3%	3%	2%
	Poland	FTE	40%	33%	66%	92%	30%
	Germany	FTE	96%	15%	3%	0%	0%
	Total – other comapnies	**FTE**	**16%**	**20%**	**31%**	**44%**	**23%**
	Total – EPH	**FTE**	**9%**	**9%**	**10%**	**12%**	**9%**

Social / Training

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
401-1	**Total training hours – all employee**								
	EP Infrastructure								
	Czech Republic	FTE	13,988	18,332	25,082	17,872	9,832	(4,344)	(24%)
	Slovakia	FTE	151,231	128,965	170,036	159,925	165,749	22,266	17%
	Germany	FTE	1,142	335	463	–	–	807	241%
	Hungary	FTE	–	5,472	2,047	2,653	2,361	(5,472)	(100%)
	Total – EP Infrastructure	**FTE**	**166,360**	**153,104**	**197,627**	**180,449**	**177,942**	**13,256**	**9%**
	EP Power Europe								
	Czech Republic	FTE	1,795	1,157	1,284	4,918	4,953	638	55%
	France	FTE	4,140	3,892	5,729	–	–	248	6%
	Germany	FTE	9,599	11,426	34,278	34,069	23,613	(1,827)	(16%)
	UK	FTE	13,072	7,226	13,745	10,752	11,472	5,847	81%
	Ireland	FTE	219	293	–	–	–	(74)	(25%)
	Italy	FTE	12,860	9,981	15,657	16,893	11,265	2,879	29%
	Total – EP Power Europe	**FTE**	**41,685**	**33,975**	**70,692**	**66,631**	**51,303**	**7,710**	**23%**
	Other companies within the Group								
	Czech Republic	FTE	4,756	4,556	11,009	4,988	4,160	200	4%
	Poland	FTE	129	615	4,616	6,496	5,632	(486)	(79%)
	Slovakia	FTE	–	25	–	–	–	(25)	(100%)
	Germany	FTE	2,000	2,101	1,002	–	–	(101)	(5%)
	Total – other comapnies	**FTE**	**6,885**	**7,297**	**16,627**	**11,484**	**9,792**	**(412)**	**(6%)**
	Total – EPH	**FTE**	**214,929**	**194,376**	**284,946**	**258,564**	**239,037**	**20,554**	**11%**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	Permanent contract	Temporary contract
102-8	**Employees: pernament and temporary contract**			
	EP Infrastructure			
	Czech Republic	%	95%	5%
	Slovakia	%	91%	9%
	Germany	%	97%	3%
	Netherlands	%	100%	0%
	Total – EP Infrastructure	**%**	**92%**	**8%**
	EP Power Europe			
	Czech Republic	%	87%	13%
	France	%	93%	7%
	Germany	%	97%	3%
	UK	%	98%	2%
	Ireland	%	78%	22%
	Italy	%	99%	1%
	Switzerland	%	95%	5%
	Total – EP Power Europe	**%**	**97%**	**3%**
	Other companies within the Group			
	Czech Republic	%	84%	16%
	Poland	%	100%	0%
	Slovakia	%	94%	6%
	Germany	%	100%	0%
	Total – other comapnies	**%**	**89%**	**11%**
	Total – EPH	**%**	**94%**	**6%**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	Employees under 30 years old	Employees between 30 and 50 years old	Employees over 50 years old
405-1	**Employees: age pyramid**				
	EP Infrastructure				
	Czech Republic	% FTE	7%	50%	43%
	Slovakia	% FTE	8%	47%	45%
	Germany	% FTE	10%	39%	52%
	Netherlands	% FTE	0%	100%	0%
	Total – EP Infrastructure	**% FTE**	**8%**	**48%**	**44%**
	EP Power Europe				
	Czech Republic	% FTE	21%	72%	7%
	France	% FTE	14%	55%	31%
	Germany	% FTE	19%	32%	49%
	UK	% FTE	9%	48%	43%
	Ireland	% FTE	22%	78%	0%
	Italy	% FTE	2%	38%	60%
	Switzerland	% FTE	0%	95%	5%
	Total – EP Power Europe	**% FTE**	**15%**	**39%**	**46%**
	Other companies within the Group				
	Czech Republic	% FTE	11%	62%	26%
	Poland	% FTE	21%	66%	13%
	Slovakia	% FTE	11%	61%	28%
	Germany	% FTE	6%	61%	33%
	Total – other comapnies	**% FTE**	**11%**	**62%**	**27%**
	Total – EPH	**% FTE**	**11%**	**45%**	**44%**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
401-1	**Employees: part-time job**								
	EP Infrastructure								
	Czech Republic	FTE	31	20	67	57	–	11	54%
	Slovakia	FTE	12	12	14	15	–	1	6%
	Germany	FTE	1	2	2	2	–	(1)	(61%)
	Hungary	FTE	–	205	205	202	–	(205)	(100%)
	Netherlands	FTE	2	2	2	2	–	–	0%
	Total – EP Infrastructure	**FTE**	**46**	**241**	**290**	**278**	**–**	**(194)**	**(81%)**
	EP Power Europe								
	Czech Republic	FTE	10	30	10	9	–	(21)	(68%)
	France	FTE	3	7	3	–	–	(4)	(63%)
	Germany	FTE	68	45	48	33	–	23	51%
	UK	FTE	3	93	2	4	–	(90)	(97%)
	Italy	FTE	6	5	11	11	–	1	20%
	Total – EP Power Europe	**FTE**	**90**	**180**	**74**	**57**	**–**	**(90)**	**(50%)**
	Other companies within the Group								
	Czech Republic	FTE	32	34	29	26	–	(1)	(4%)
	Poland	FTE	–	2	1	1	–	(2)	(100%)
	Slovakia	FTE	2	1	1	1	–	1	100%
	Germany	FTE	11	8	10	–	–	3	38%
	Total – other comapnies	**FTE**	**45**	**45**	**41**	**28**	**–**	**1**	**2%**
	Total – EPH	**FTE**	**182**	**466**	**405**	**363**	**–**	**(284)**	**(61%)**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
401-1	**Employees: full-time job**								
	EP Infrastructure								
	Czech Republic	FTE	1,428	1,870	1,916	1,537	–	(441)	(24%)
	Slovakia	FTE	4,277	4,260	4,185	4,173	–	17	0%
	Germany	FTE	60	56	56	57	–	4	7%
	Hungary	FTE	–	2	3	2	–	(2)	(100%)
	Total – EP Infrastructure	**FTE**	**5,765**	**6,188**	**6,159**	**5,770**	**–**	**(422)**	**(7%)**
	EP Power Europe								
	Czech Republic	FTE	114	77	78	63	–	37	48%
	France	FTE	410	444	515	–	–	(34)	(8%)
	Germany	FTE	2,335	2,344	2,350	2,436	–	(9)	0%
	UK	FTE	525	447	503	417	–	79	18%
	Ireland	FTE	9	11	–	–	–	(2)	(18%)
	Italy	FTE	575	576	571	555	–	(1)	0%
	Switzerland	FTE	18	9	4	–	–	9	100%
	Total – EP Power Europe	**FTE**	**3,986**	**3,908**	**4,021**	**3,471**	**–**	**78**	**2%**
	Other companies within the Group								
	Czech Republic	FTE	435	373	407	348	–	62	17%
	Poland	FTE	30	122	152	152	–	(92)	(75%)
	Slovakia	FTE	16	6	4	3	–	10	167%
	Germany	FTE	147	153	144	5	–	(6)	(4%)
	Total – other comapnies	**FTE**	**629**	**654**	**707**	**508**	**–**	**(26)**	**(4%)**
	Total – EPH	**FTE**	**10,380**	**10,749**	**10,887**	**9,749**	**–**	**(369)**	**(3%)**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
401-1	**Employees with disabilities**								
	EP Infrastructure								
	Czech Republic	FTE	13	18	15	8	–	(5)	(30%)
	Slovakia	FTE	148	133	126	132	–	15	11%
	Germany	FTE	4	3	3	3	–	1	17%
	Total – EP Infrastructure	**FTE**	**164**	**154**	**144**	**143**	**–**	**10**	**7%**
	EP Power Europe								
	France	FTE	20	16	21	–	–	4	25%
	Germany	FTE	108	84	90	94	–	24	29%
	UK	FTE	–	–	5	–	–	–	
	Italy	FTE	26	23	24	22	–	3	13%
	Total – EP Power Europe	**FTE**	**154**	**123**	**140**	**116**	**–**	**31**	**25%**
	Other companies within the Group								
	Czech Republic	FTE	5	5	3	3	–	–	0%
	Slovakia	FTE	3	1	–	–	–	2	200%
	Germany	FTE	1	1	1	–	–	–	0%
	Total – other comapnies	**FTE**	**9**	**7**	**4**	**3**	**–**	**2**	**29%**
	Total – EPH	**FTE**	**327**	**284**	**288**	**262**	**–**	**43**	**15%**

Social / Employment

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
401-1	**Number of not directly employed workforce**								
	EP Infrastructure								
	Czech Republic	FTE	29	19	28	9	–	10	51%
	Slovakia	FTE	4	4	6	7	4	–	0%
	Germany	FTE	–	1	1	2	–	(1)	(100%)
	Total – EP Infrastructure	**FTE**	**33**	**24**	**35**	**18**	**4**	**9**	**36%**
	EP Power Europe								
	Czech Republic	FTE	5	1	1	26	–	4	307%
	France	FTE	182	190	17	–	–	(8)	(4%)
	Germany	FTE	7	11	4	29	7	(4)	(40%)
	UK	FTE	166	169	1,161	1,484	3,385	(3)	(2%)
	Ireland	FTE	–	30	–	–	–	(30)	(100%)
	Italy	FTE	47	38	23	22	–	9	25%
	Switzerland	FTE	15	–	2	–	–	15	
	Total – EP Power Europe	**FTE**	**421**	**438**	**1,208**	**1,561**	**3,392**	**(17)**	**(4%)**
	Other companies within the Group								
	Czech Republic	FTE	45	28	44	48	13	17	62%
	Germany	FTE	–	–	1	–	–	–	
	Total – other comapnies	**FTE**	**45**	**28**	**45**	**53**	**13**	**17**	**62%**
	Total – EPH	**FTE**	**499**	**490**	**1,288**	**1,632**	**3,409**	**8**	**2%**

Main LEAG figures

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
Operations and sales									
	Coal extraction	million tonnes	46.8	43.2	52.0	60.7	61.2	3.6	8%
EU1	Net installed capacity – Electricity	MW	7,946	7,942	7,782	7,782	7,821	4.4	0%
	Lignite	MW	7,595	7,595	7,595	7,595	7,595	–	–
	OCGT and other NG	MW	334	334	184	184	223	–	–
	Photovoltaic	MW	15	10					
	Biomass	MW	3	3	3	3	3	(0.1)	(4%)
EU1	Net installed capacity – Heat	MW	1,799	1,799	1,802	1,802	1,802	(0.2)	(0%)
EU2	Net power production	TWh	44.8	41.2	49.6	55.6	55.0	3.6	9%
EU2	Net heat production	TWh	4.1	3.4	3.5	3.7	3.8	0.8	23%
102-7	Amount of electric energy sold	TWh	43.7	40.0	48.3	54.0	53.5	3.7	9%
102-7	Heat supplied to district heating network	PJ	14.9	12.0	12.5	13.2	13.7	2.8	23%

Main LEAG figures

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
Environment									
305-1	Direct GHG emissions (Scope 1)	million tonnes CO_2 eq.	48.3	44.6	53.3	60.3	60.0	3.7	8%
305-4	Emissions intensity – including heat component	tonnes Co_2 eq/GWh	987	1 001	1 004	1 018	1 020	(14.3)	(1%)
302-1	Energy consumption	PJ	448.9	409.4	489.0	548.1	542.0	39.5	10%
	Lignite	PJ	438.9	397.6	478.3	537.5	531.6	41.3	10%
	Other	PJ	10.0	11.8	10.7	10.6	10.3	(1.8)	(16%)
305-7	Total SO_2 emissions	thousand tonnes	29.3	24.2	31.4	38.9	39.7	5.1	21%
305-7	Total NO_x emissions	thousand tonnes	31.8	28.8	36.0	42.8	42.4	3.1	11%
305-7	Total dust emissions	thousand tonnes	0.8	0.8	1.0	1.2	1.1	(0.0)	(2%)
303-1	Quantity of water withdrawn	million m^3	447.0	458.3	491.5	501.2	510.9	(11.3)	(2%)
306-1	Quantity of water discharged	million m^3	355.0	369.8	370.4	387.0	400.0	(14.8)	(4%)
306-2	Byproducts – Total production	million tonnes	6.6	6.0	6.9	9.2	8.9	0.6	10%
	Ash	million tonnes	3.3	3.0	3.0	4.3	4.3	0.3	9%
	Slag	million tonnes	0.7	0.7	1.0	1.4	1.3	(0.0)	(0%)
	Gypsum	million tonnes	2.6	2.2	2.9	3.4	3.2	0.3	15%
	Additional material – hydrated lime	million tonnes	–	–					
306-2	Waste other than byproducts – Total production	thousand tonnes	118.1	101.5	219.2	93.7	194.9	16.5	16%
	Non-hazardous waste	thousand tonnes	112.7	94.9	214.4	87.4	178.2	17.9	19%
	Hazardous waste	thousand tonnes	5.4	6.7	4.8	6.3	16.7	(1.3)	(20%)
	Land creation and regeneration	hectares	272	445	333	394	520	(172.8)	(39%)
	Agricultural	hectares	31	90	60	277	136	(58.6)	(65%)
	Forest	hectares	172	267	190	49	195	(94.8)	(36%)
	Other uses for nature protection	hectares	69	88	83	68	189	(19.4)	(22%)

Main LEAG figures

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
Social									
G4-LA6	Injury Frequency Rate – Employees	index	1.5	1.6	1.6	1.4	1.5	(0.1)	(3%)
G4-LA6	Registered injuries – Employees	#	17	19	20	18	19	(2.0)	(11%)
G4-9	Headcount	#	6,779	6,965	7,802	8,053	8,227	(185.8)	(3%)
	Male total	#	5,522	5,697	6,306	6,501	6,657	(174.9)	(3%)
	Female total	#	1,257	1,268	1,496	1,552	1,570	(10.9)	(1%)
	Executives	#	76	79	95	101	102	(2.8)	(3%)
G4-LA1	New hires rate	%	6%	16%	6%	7%	7%	(0.1)	(62%)
	Employee turnover rate	%	12%	20%	9%	10%	8%	(0.1)	(42%)
G4-LA9	Total training hours – per employee	hours per capita	33.6	33.7	38.2	40.0	27.0	(0.1)	(0%)

Main Slovenské elektrárne figures

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
Operations and sales									
EU1	Net installed capacity – Electricity	MW	3,873	3,848	3,820	3,820	3,820	24.8	1%
	Hard coal	MW	89	198	198	198	198	(108.9)	(55%)
	Lignite	MW	215	215	216	216	216	–	–
	Nuclear	MW	1,867	1,843	1,814	1,814	1,814	24.4	1%
	Hydro	MW	1,590	1,590	1,590	1,590	1,590	(0.3)	(0%)
	Photovoltaic	MW	2	2	2	2	2	–	–
	Other	MW	110						
EU1	Net installed capacity – Heat	MW	579	579	7,290	579	579	–	–
EU2	Net power production	TWh	17.3	17.0	17.1	16.8	17.5	0.3	2%
EU2	Net heat production	TWh	0.7	0.6	0.7	0.6	0.7	0.0	3%
102-7	Amount of electric energy sold	TWh	19.9	20.2	21.0	23.0	26.4	(0.3)	(2%)
102-7	Heat supplied to district heating network	PJ	2.4	2.3	2.5	2.5	2.5	0.1	3%
	UCF coefficient (Unit capability factor)	%	91.5%	91.4%	92.1%	92.1%	92.1%	0.00	0%

Main Slovenské elektrárne figures

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
Environment									
302-1	Direct GHG emissions (Scope 1)	million tonnes CO_2 eq.	1.4	1.3	1.8	2.2	2.4	0.1	10%
305-4	Emissions intensity – including heat component	tonnes CO_2 eq./GWh	79.5	73.5	102.8	128.3	132.0	6.0	8%
302-1	Energy consumption	PJ	185.2	182.5	187.8	188.7	191.7	2.7	1%
	Hard coal	PJ	2.3	0.7	3.6	7.9	7.1	1.5	205%
	Lignite	PJ	11.5	12.0	14.3	15.3	17.7	(0.5)	(4%)
	Nuclear	PJ	169.6	169.3	169.5	165.1	166.5	0.3	0%
	Other	PJ	1.8	0.3	0.4	0.4	0.4	1.5	508%
305-7	Total SO_2 emissions	thousand tonnes	1.5	1.2	1.4	3.1	7.2	0.3	23%
305-7	Total NO_x emissions	thousand tonnes	0.9	1.0	1.2	1.3	1.8	(0.1)	(6%)
305-7	Total dust emissions	thousand tonnes	0.0	0.0	0.0	0.1	0.1	(0.0)	(17%)
303-1	Quantity of water withdrawn	million m^3	50.8	49.9	53.2	55.1	54.0	1.0	2%
306-1	Quantity of water discharged	million m^3	13.6	11.5	14.5	16.4	15.9	2.1	18%
306-2	Byproducts – Total production	million tonnes	0.6	0.5	0.7	0.9	0.9	0.0	1%
	Ash	million tonnes	0.2	0.2	0.3	0.3	0.3	0.0	20%
	Slag	million tonnes	0.0	0.0	0.0	0.1	0.0	0.0	20%
	Gypsum	million tonnes	0.1	0.1	0.1	0.1	0.1	0.0	2%
	Additional material	million tonnes	0.1	0.1	0.2	0.2	0.2	(0.0)	(24%)
	Other	million tonnes	0.1	0.1	0.2	0.2	0.2	(0.0)	(2%)
306-2	Waste other than byproducts – Total production	thousand tonnes	74.4	22.2	65.1	11.6	14.6	52.2	235%
	Non-hazardous waste	thousand tonnes	73.0	21.8	64.6	11.1	14.0	51.1	234%
	Hazardous waste	thousand tonnes	1.4	0.4	0.5	0.5	0.6	1.0	250%

Main Slovenské elektrárne figures

For the year ended 31 December 2021

GRI/EUSS	KPI	Unit	2021	2020	2019	2018	2017	2021-2020	%
Social									
G4-LA6	Injury Frequency Rate – Employees	index	0.6	0.3	0.5	0.1	0.5	0.3	96%
G4-LA6	Registered injuries – Employees	#	4	2	4	1	4	2.0	100%
G4-9	Headcount	#	4,322	4,249	4,222	4,356	4,339	73.6	2%
	Male	#	3,579	3,544	3,510	3,624	3,643	35.3	1%
	Female	#	743	705	712	732	696	38.4	5%
	Executives	#	22	23	21	22	22	(0.9)	(4%)
G4-LA1	New hires rate	%	10%	8%	7%	7%	8%	0.0	20%
	Employee turnover rate	%	6%	8%	9%	9%	8%	(0.0)	(28%)
G4-LA9	Total training hours – per employee	hours per capita	58.5	55.9	59.1	76.6	45.3	2.6	5%

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