



# Key findings and summary

## Monitoring report 2021



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# Key findings

## Generation

Market concentration in electricity generation and in the first-time sale of electricity (not entitled to payment under the Renewable Energy Sources Act (EEG)) saw another decline in 2020 as far as the market shares of producers was concerned. The aggregate market share of the five largest undertakings in the market for the first-time sale of electricity based on the German market area, including Luxembourg, was 65.3%, compared to 70.1% in 2019.

With respect to the German conventional generating capacity generally available for use in the market for the first-time sale of electricity, the share of the five largest suppliers was 56.7% and thus also below the previous year's level of 57.5%.

However, despite the falling level of concentration, the upcoming closures of power plants in the course of the nuclear and coal phase-out will lead to a reduction of domestic generating capacity and thereby strengthen the competitive significance of the remaining major power plant operators to cover German demand.

Since the legal decision to phase out coal-fired electricity generation came into effect on 14 August 2020, the results of the first three tendering processes to reduce the production of electricity from coal have so far been published. The tenders attracted a strong level of participation, with a total capacity of 8,434 megawatts (MW) from hard coal-fired power plants and smaller lignite plants (of up to 150 MW net rated capacity) being awarded. For the plants awarded in the first round of tendering (4,788 MW), the ban on producing electricity from coal entered into force on 8 July 2021.

At 530.7 terawatt hours (TWh), Germany's net electricity generation in 2020 was 5.5% lower than the 2019 level, primarily due to the coronavirus pandemic. There was a steep drop in generation from conventional power stations. Electricity generated by coal-fired plants, in particular, saw a large decrease for the second year in a row. There was a 7.7 TWh year-on-year increase in generation from renewable energy sources, which reached a 45% share of gross electricity consumption.

The total installed generating capacity stood at 233.8 gigawatts (GW) at the end of 2020 (2019: 226.4 GW), with 103.3 GW of non-renewable and 130.6 GW of renewable capacity. In the renewable energy sector, there was an increase in capacity of 6.1 GW from the level of 2019. A clear increase of withdrawals from the conventional energy market could be observed as a result of the phase-out of nuclear and coal.

The growth in renewable energy capacity of 6.5 GW (sum of renewable energy installations with and without payments under the EEG) is due in particular to the larger increase in solar capacity (+4.6 GW). The net growth in onshore wind was 1.2 GW, the same as the previous year.

The development of generation volumes and the energy mix in 2021 are not covered by this report.

### **Redispatching and feed-in management**

Overall, the volume of network congestion management measures was greater in 2020 than in the previous year. The costs for congestion management measures (feed-in management, redispatching including countertrading, and grid reserve provision and use) are provisionally put at around €1.4bn and are thus also higher (2019: €1.3bn).

### **Electricity network charges**

Average network charges for household customers remained largely stable in 2021 at 7.52 cents per kilowatt hour (ct/kWh). With respect to non-household customers, the arithmetic mean charges for commercial customers increased by around 3% to 6.64 ct/kWh and decreased for industrial customers by around 1% to 2.67 ct/kWh.

### **Wholesale electricity markets**

The trading volume and liquidity of the wholesale electricity markets remained at a high level in 2020. In particular, there was another increase in trading volume on the EPEX SPOT and Nord Pool intraday markets. Volumes of on-exchange futures trading also increased, with the Phelix-DE futures volume standing at 1,416 TWh in 2020, an increase of around 5%. Volumes traded off-exchange via broker platforms also recorded significant growth.

Average electricity wholesale prices were lower in 2020 than in 2019. The spot market Phelix Day Base average for 2020 was about €30.46 per megawatt hour (MWh) and the Phelix Base Year Future average was about 40.20 ct/kWh, although future prices were about 9% higher at the end of 2020 than they had been at the beginning of the year. On the futures market, the Phelix-DE Peak Year-Ahead Future stood at €53.02/MWh at the start of the year and €57.54/MWh at the end of December 2020. It thus saw considerable growth across the year, although there was a noticeable dip in prices in the middle of the period.

It should be noted that this report covers developments in prices and volumes in 2020 and not those in 2021.

### **Retail electricity markets**

As in previous years, the Bundeskartellamt assumes that there is currently no single dominant undertaking in either of the two largest electricity retail markets. The combined market share of the four largest undertakings was around 28.5% (2019: 24.5%) in the national market for supplying interval-metered customers and 42.8% (2019: 34.1%) in the national market for non-interval-metered (standard load profile, SLP) customers on special contracts. The rise in combined market share is largely due to the fact that the four largest providers were joined by another undertaking following the takeover of innogy by E.ON. The figures are therefore not easily comparable with those from the previous year. Nevertheless, the joint market share of the four biggest providers in 2020 is still well below the threshold for presuming market dominance.

The supplier switching rate for non-household customers has been fairly constant since 2009. The volume-based switching rate for customers with an annual consumption of more than 10 MWh stood at 11.6% in 2020, compared to 11.7% in 2019. The percentage of household customers' consumption provided by a supplier other than the local default supplier was around 38% (2019: 34%). The number of household

customers switching electricity supplier rose to nearly 5.4m (2019: 4.5m). There was another slight increase in the number of undertakings operating in the market for household customers, who had a choice between an average of 142 different suppliers (2019: 138). The most recent developments in 2021 are not included in this report.

At the same time, there was a further decrease in the number of customers whose electricity supply was disconnected. In 2020, a total of 230,015 customers were disconnected, representing a year-on-year decrease of around 20% (2019: 289,012). It may be assumed that this drop was partly due to the right to withhold performance set out in Article 240 section 1 of the Introductory Act to the Civil Code (EGBGB), which was put in place in the first half of the year because of the Covid-19 pandemic to provide temporary relief for consumers. Around 72% of the electricity suppliers surveyed also stated they had voluntarily decided not to disconnect their customers. The German Bundesrat consented to amendments to the Electricity Default Supply Ordinance (StromGVV) on 5 November 2021. These included changes to the rules on interrupting supply, naming explicit reasons that would make a disconnection disproportionate (a specific risk to life and limb). Under the new rules, it is only possible to disconnect a customer who is at least twice the monthly instalment/one sixth of the annual amount in arrears and the sum owed is more than €100. Energy suppliers are also required to offer final customers who owe money arrangements to prevent disconnection, such as interest-free repayments by instalment or a continued supply on a prepayment basis.

The average total price (excluding value added tax (VAT) and possible reductions) for industrial customers with an annual consumption of 24 gigawatt hours (GWh) as at 1 April 2021 was about 16.94 ct/kWh, up 0.40 ct/kWh on the average for 2020. The average total price (excluding VAT) for commercial customers with an annual consumption of 50 MWh in April 2021 was 23.23 ct/kWh, up 0.20 ct/kWh on the previous year. The increase in prices for industrial and commercial customers this year is mainly accounted for by the price components controlled by the supplier. Because the monitoring is based on a specific date, 1 April 2021, developments that occurred after this time are not included.

The average price for household customers rose from 32.05 ct/kWh on 1 April 2020 to 32.63 ct/kWh on 1 April 2021, corresponding to an increase of around 2%. This average is calculated by weighting the individual prices across all contract models for an annual consumption of 2,500 kWh to 5,000 kWh according to consumption volumes to obtain a reliable average price for household customers. For the first time in ten years, the various contracts reveal a non-default price from the default supplier that is lower than the price of a supplier that is not the local default supplier.

The price component controlled by the supplier (energy procurement, supply and margin) accounted for about 8.59 ct/kWh (26% of the total electricity price) as at 1 April 2021 and had thus increased, as in the previous year. The average network charge and the meter operation charge added up to 7.52 ct/kWh in 2021, around 23% of the total price. The EEG surcharge (6.50 ct/kWh) accounted for around 20% of the total price.

The rise in retail prices as at 1 April 2021 is largely due to the increase in the price component controlled by the supplier (energy procurement, supply and margin). Procurement costs are significantly influenced by wholesale prices. In April 2021, there was higher demand for electricity, despite the pandemic, while at the same time there was a rise in conventional generation and a fall in renewable generation. For the

electricity volumes procured at short notice, both of these factors contributed to the rise in wholesale prices. The higher prices for carbon emission allowances also affected wholesale prices.

### **Electric heating**

Developments in the electric heating sector need to be viewed against the backdrop of the transfer of market locations and volumes from E.ON Heizstrom to Lichtblick GmbH. There were major changes in 2020: for example, the amount of electricity supplied for night storage heating and heat pumps by a legal entity other than the local default supplier rose to 4.29 TWh from 2.15 TWh in the previous year. Around 37.3% of the total volume of electricity for heating in 2020 was made up by non-default suppliers (2019: 16%).

The supplier switching rate in the electric heating segment based on the number of market locations was higher than in the previous year. The supplier switching rate for 2020 was around 12% by volume and around 14.8% by market location. However, the transfer of market locations and volumes from E.ON Heizstrom to Lichtblick GmbH is likely to have played an important role in the higher level of supplier switching, because it basically meant an automatic change of supplier for affected customers.

The total gross price for night storage heating was 23.93 ct/kWh as at 1 April 2021 and thus higher than the previous year's level of 23.14 ct/kWh. The average total gross price for heat pump electricity was 23.80 ct/kWh and thus also higher than the previous year's average of 23.58 ct/kWh. Here, too, developments that occurred after the monitoring date are not covered in this report.

### **Electricity imports and exports**

Electricity exports again exceeded imports in 2020. Germany's electricity exports were down slightly in 2020 compared to a year earlier. Total cross-border trade volumes for electricity amounted to 83 TWh in 2020, up from 73 TWh in 2019. The 2020 export balance was 11 TWh, making the export surplus worth €48m.

### **Gas imports and exports**

The total volume of natural gas imported into Germany in 2020 was 1,446 TWh. Imports to Germany were thus down by 257 TWh from the previous year's figure of 1,703 TWh. The main sources of gas imports to Germany remain Russia and Norway.

### **Gas supply disruptions**

In 2020, the average interruption in supply per connected final customer was 1.09 minutes (2019: 0.98 minutes in the year). Despite the slight increase, this figure shows that the German gas network still has a high quality of supply.

### **Market area conversion**

The market area conversion from low-calorific L-gas to high-calorific H-gas, which is coordinated by the TSOs, is proceeding according to plan. During the reporting period, 347,599 appliances were adapted for standard load profile (SLP) customers and 723 for interval-metered customers. A total of 9,066 appliances that were to be adapted could not be, a proportion of 2.6% (2019: 2.2%).

### **Gas storage facilities**

The market for the operation of underground natural gas storage facilities is still highly concentrated. The cumulative market share of the three largest storage facility operators stood at around 67.2% at the end of 2020, representing a slight increase compared to the previous year (66.6%).

The total maximum usable volume of working gas in underground storage facilities as at 31 December 2020 was 274.72 TWh. Of this, 136.01 TWh was accounted for by cavern storage, 117.01 TWh by pore storage and 21.71 TWh by other storage facilities. Around 106 TWh of gas has been injected into German natural gas storage facilities since the beginning of the injection season at the end of March 2021, taking the overall level of storage in the country to about 164.2 TWh as at 31 October 2021. The storage level rose from just over 25% at the end of March to 71.3%, well below the average of previous years at the same time.

### **Gas network charges**

The average network charge for household customers was 1.59 ct/kWh in 2021 and thus around 2% higher than in the previous year. For commercial customers, the average network charge was almost unchanged at 1.28 ct/kWh, while for industrial customers there was a significant drop of just over 13.5% to 0.32 ct/kWh.

### **Wholesale natural gas markets**

The liquidity of the natural gas wholesale markets decreased again owing to lower energy demand as a result of the coronavirus pandemic. There was a year-on-year drop of around 11% in the total volume traded on the exchange (spot market: -9%; futures market: -23%), while for the volume of off-exchange wholesale trading via broker platforms, which accounts for a much larger share, a very small rise of 2% was recorded for 2020, but this was probably caused by an additional broker being included in the evaluation for the year.

It should be noted that this report covers developments in prices and volumes in 2020 and not those in 2021.

### **Retail gas markets**

The levels of concentration in the two largest gas retail markets for SLP and interval-metered customers are still well below the statutory thresholds for presuming market dominance. In 2020, the cumulative sales of the four largest companies to SLP customers were about 92.9 TWh, while to interval-metered customers they were around 139.2 TWh. The aggregate market share of the four largest companies (CR4) in 2020 was thus 26% for SLP customers (2019: around 24%) and 28% for interval-metered customers (2019: 29%).

The total consumption amount of non-household customers affected by supplier switches in 2020 was 80.6 TWh, corresponding to a clear year-on-year decrease of 8.3 TWh from 2019 levels. The switching rate for non-household customers fell to 7.3% from 9% the year before. The total number of supplier switches by household customers hit a new high in 2020, passing the 1.6m mark. Around 1.3m of these household customers changed directly by cancelling their previous contract. The remaining around 0.3m chose an alternative supplier rather than the default one right away when moving home.

The number of customers changing contract, which usually means changing to a less expensive contract, remained stable at around 0.6m. The percentage of household customers who had a contract with a supplier other than the local default supplier increased further to 35%, while the percentage of customers with a default supply contract remained stable at 17%. The local default supplier supplied 48% of household customers under a non-default contract.

There was also another significant increase in the number of undertakings operating in the market. Household customers can choose on average from among 113 different suppliers. The most recent developments in 2021 are not included in this report.

There was a sharp drop in the number of gas disconnections. In 2020, about 24,000 customers were disconnected in total, representing a year-on-year decrease of around 22% (2019: 31,000). It may be assumed that this drop was partly due to the right to withhold performance set out in Article 240 section 1 EGBGB, which was put in place in the first half of the year because of the Covid-19 pandemic to provide temporary relief for consumers. Around 75% of the gas suppliers surveyed also said they had voluntarily decided not to disconnect their customers in 2020. Gas suppliers also accommodated customers by offering them special or individual payment arrangements. Some suppliers extended their criteria for disconnections to make them more customer-friendly. The German Bundesrat consented to amendments to the Gas Default Supply Ordinance (GasGVV) on 5 November 2021. The GasGVV now specifies how high the amount owed must be for gas to be disconnected. Under the new rules, it is only possible to disconnect a final customer who is at least twice the usual instalment in arrears and the sum owed is more than €100, or if the amount owed is at least one sixth of the annual amount.

The volume-weighted gas price for household customers across all contract categories rose to 6.68 ct/kWh in 2021. The new carbon levy amounting to 0.4551 ct/kWh, which was introduced on 1 January 2021, was partly responsible for the rise as it was passed on to final customers almost completely and paid by them as part of the gas price. The carbon levy expanded the existing emissions trading system to the transport and heating sectors. Gas prices may be expected to continue rising in the next few years as the law provides for annual increases in carbon pricing until 2026. In the average price across all contract categories, the largest price component "energy procurement, supply and margin",<sup>1</sup> which makes up around 45%, fell by over 5% from 3.12 ct/kWh to 2.95 ct/kWh.

The volume-weighted gas price for customers on a default contract<sup>2</sup> as at 1 April 2021 was 7.45 ct/kWh (2020: 6.99 ct/kWh), corresponding to an increase of around 6.5% compared to the previous year. On 1 April 2021, the volume-weighted price for customers under a non-default contract with the default supplier was 6.58 ct/kWh, an increase of about 4.6% compared to 2020 (6.29 ct/kWh). On 1 April 2021, the volume-weighted price for a contract with a supplier other than the local default supplier was 6.41 ct/kWh, an increase of just over 7.6% compared to the previous year (2020: 5.96 ct/kWh).

The gas prices for non-household (industrial and commercial) customers as at 1 April 2021 showed substantial year-on-year increases caused by the introduction of the carbon levy. The arithmetic mean of the overall price (excluding VAT) for an annual consumption of 116 GWh ("industrial customer") was 2.95 ct/kWh, 0.42 ct/kWh or around 16.6% higher than the previous year's figure. The arithmetic mean of the

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<sup>1</sup> It is not possible to break down the individual elements of this price component owing to the survey method used.

<sup>2</sup> Customer category according to Eurostat: band II (D2): annual consumption from 20 GJ (5,556 kWh) to 200 GJ (55,556 kWh).



overall price (excluding VAT) for an annual consumption of 116 MWh ("commercial customer") was 4.74 ct/kWh on the reporting date, an increase of 0.22 ct/kWh or around 4.8% year-on-year. Because the monitoring is based on a specific date, 1 April 2021, developments that occurred after this time are not included.

### **Effects of the Covid-19 pandemic**

The Covid-19 pandemic started to have noticeable effects in March 2020. The effects on the energy market that are summarised here are also dealt with in detail in the relevant sections of the main report.

At 530.7 TWh, Germany's net electricity generation in 2020 was 5.5% lower than the 2019 level, primarily due to the pandemic. The electricity consumption of industrial, commercial and other non-household customers fell 24.7 TWh, or 7%, year-on-year. One reason for this development is the reduction in industrial production caused by the pandemic. Covid, with an increase in working from home, led to slightly higher electricity consumption among household customers than in 2019.

In 2020, a right to withhold performance (Article 240(1) EGBGB) was introduced for the period between 1 April and 30 June, which also applied to energy supply contracts. Some suppliers also chose not to disconnect their electricity or gas customers. There was, therefore, a significantly lower number of disconnections in 2020, but due to the exceptional circumstances no conclusions can be drawn from this about future developments.

People working from home and travelling less actually facilitated the gas market area conversion, with almost all network operators and companies carrying out adjustments reporting that it was easier to make contact with customers for the conversions.

# A Developments in the electricity markets

## 1. Summary

### 1.1 Generation and security of supply

The Act to Reduce and End Coal-Fired Power Generation (KVBG) came into force on 14 August 2020. This is the legal basis upon which tendering processes are carried out for hard coal-fired power plants and smaller lignite plants (of up to 150 megawatts (MW) net rated capacity) to meet phase-out targets. Bids totalling 4,788 MW were awarded in the first tendering round. Following a six-month phase of operational readiness, the ban on producing electricity from coal for these plants entered into force on 8 July 2021. The award volume for the second tender process was 1,514 MW and for the third it was 2,133 MW.

At 530.7 terawatt hours (TWh), Germany's net electricity generation in 2020 was lower than the 2019 level (561.3 TWh). The main reason for the lower total electricity generation in 2020 was the fact that consumption was lower than in 2019 due to the Covid-19 pandemic. The decline in the overall level of net electricity generation was accompanied by a decrease in generation from non-renewable energy sources of 38.4 TWh or 11.6%. For the second year in a row, there was a particularly large drop in net electricity generation from coal-fired power plants: 13.5 TWh less was generated in hard coal-fired power plants (-25.2%) and 20.6 TWh in lignite-fired power plants (-19.7%). Continuing the trend that began in 2015 (with the exception of 2018), natural gas power stations produced more electricity (5.5 TWh/7.3%).

As in 2019, there was only a slight increase in generation from renewable energy sources of 3.4% to 236.6 TWh. The share of renewable electricity as a proportion of gross electricity consumption in 2020 was 45%.<sup>3</sup>

Installed generating capacity was characterised by a further increase in renewable capacity in 2020. Overall, renewable capacity growth amounted to 6.1 gigawatts (GW). The year-on-year increase in 2019 was 6.2 GW.<sup>4</sup> The largest increases in 2020 were in solar photovoltaic (+4.6 GW) and onshore wind (+1.2 GW). Non-renewable generating capacity (nuclear, lignite, hard coal, natural gas, mineral oil products, pumped storage and other sources) also registered growth of 1.3 GW.<sup>5</sup> Total (net) installed generating capacity thus increased to 233.8 GW at the end of 2020, with 103.3 GW of non-renewable and 130.6 GW of renewable capacity. The non-renewable generating capacity includes power stations operational in the market and those outside the market (for example standby lignite and grid reserve power plants).

The installed capacity of installations eligible for payments under the Renewable Energy Sources Act (EEG) in Germany stood at 126.7 GW at the end of 2020 (2019: 114.0 GW). This represents an increase of 6.5 GW (+5.4%). A total of 222.0 TWh of electricity from renewable energy installations received payments under the EEG in 2020. Electricity generation from installations eligible for EEG payments thus increased by 4.8%. EEG payments were up 8% to €29.8bn. In 2020, renewable installation operators thus received an average

<sup>3</sup> If the share of renewables generation is taken to be about 50% or more, it usually relates to the definition of consumption as the "grid load" (for example on the SMARD website).

<sup>4</sup> The 2019 figure from the 2020 monitoring has been updated.

<sup>5</sup> Part of this growth is due to a change in the database. For the first time, the 2020 evaluations are based on the electricity generating units registered in the core energy market data register (MaStR).

of 13.4 cents per kilowatt hour (ct/kWh) under the EEG.<sup>6</sup> The expansion targets set out in the EEG 2021 for solar photovoltaic, onshore wind and offshore wind were met in 2020. Indications from the first half of 2021 are that this will also be the case for the full year.

## 1.2 Cross-border trading

Electricity exports again exceeded imports in 2020. Germany's electricity exports were down slightly compared to a year earlier. Cross-border trade volumes for electricity amounted to 83 TWh in 2020 (2019: 73 TWh). With an export surplus of €48m, Germany is still one of Europe's biggest electricity exporters.

## 1.3 Networks

### 1.3.1 Network expansion

The projects currently listed in the Power Grid Expansion Act (EnLAG) (as at the second quarter of 2021) comprise lines with a total length of about 1,827 kilometres (km). Around 8 km are currently in the spatial planning procedure and around 266 km are in or about to start the planning approval procedure. A total of 466 km have been approved and are under or about to start construction, and 1,087 km have been completed.

The projects listed in the Federal Requirements Plan Act (BBPlG) comprise lines with a total length of about 10,412 km (as at the second quarter of 2021). The 29 projects designated as crossing federal state or national borders, which fall under the responsibility of the Bundesnetzagentur, account for around 6,397 km of this total. The total length of the lines in Germany will largely depend on the route of the north-south corridors and will become apparent in the course of the procedure. In the second quarter of 2021, some 2,901 km of the total were ready to start the planning approval procedure. Around 912 km are in the spatial planning or federal sectoral planning procedure, and 5,779 km are in or about to start the planning approval or notification procedure. A total of 136 km have been approved and are under or about to start construction, and 684 km have been completed. Additionally, approximately 218 km are being carried out in procedures by the Federal Maritime and Hydrographic Agency (BSH).

### 1.3.2 Investments

In 2020, investments in and expenditure on network infrastructure by the network operators amounted to around €12,332m (2019: €10,629m) (both figures under commercial law).<sup>7</sup> This comprised €8,088m of investments and expenditure by the distribution system operators (DSOs) and €4,244m by the four German transmission system operators (TSOs). Investments were up on the previous year, 42% for those by the TSOs (2019: €2,727 m, 2020: €3,862 m) and 12% for those by the DSOs (2019: €4,337 m, 2020: €4,838 m).

<sup>6</sup> The average EEG payment is calculated by dividing the total sum paid under the EEG in a year by the total amount of renewable electricity fed in during that year.

<sup>7</sup> Investments and expenditure are defined in the glossary. The values under commercial law do not correspond to the implicit values included in the system operators' revenue cap in accordance with the provisions of the Incentive Regulation Ordinance (ARegV). Introducing indicator-based investment monitoring according to section 33(5) ARegV will make it possible to carry out comparative calculations using the figures supplied under commercial law and those derived from the incentive-based regulation. Medium to long-term trends can be derived from the evaluations on the basis of the survey of commercial values. The introduction of an index-based investment monitoring pursuant to section 33(5) ARegV is currently being prepared by the Bundesnetzagentur taking account of the effort required for companies to transmit data.

### 1.3.3 Congestion management

The total volume of network congestion management measures was higher in 2020 than the year before. The total costs for these measures (feed-in management, redispatching including countertrading, and grid reserve provision and use) are provisionally put at around €1.4bn and are thus also slightly higher (2019: €1.3bn).

Redispatching measures: the reductions and increases in feed-in from conventional operational and grid reserve power plants requested as part of the redispatching process amounted in 2020 to about 16,795 gigawatt hours (GWh) (8,522 GWh of feed-in reductions and 8,273 GWh of increases). The total volume of requested reductions and increases in feed-in from power plants in 2020 was therefore higher than in 2019 (13,521 GWh). In particular, the volume of voltage-related measures was higher in the second quarter than in the previous year due to the reduced load caused by the lower electricity consumption during the first pandemic-related lockdown. There was a further increase in the volume of countertrading, data on which is combined with redispatching. The increase is largely due to the bilateral agreement between Germany and Denmark. This agreement provides for minimum trading capacities across the border between western Denmark and Germany as well as for cooperation between the TSOs on countertrading measures. The latter incurred costs of €134.1m (2019: € 64.2m).

The costs for redispatching measures using operational and grid reserve power plants and for countertrading measures are provisionally put at around €443m in 2020 and are thus about 19% higher than the previous year's level (2019: €373m).

Grid reserve power plants: according to the Bundesnetzagentur's current information, the costs of reserving the grid reserve plant capacity plus costs not dependent on the use of the reserve are provisionally put at €194.8m in 2020 and are thus slightly lower than in the previous year (2019: €196.5m). The costs of using the grid reserve amounted to around €88m, which was slightly up on last year's €81.6m.

Feed-in management measures: in absolute terms, the volume of curtailments from electricity from renewable sources as part of feed-in management measures was 6,146 GWh in 2020, around 5% lower than in the same period of the preceding year (2019: 6,482 GWh). The decline was probably due to the network expansion projects in Schleswig-Holstein successively going into operation.

Onshore wind is the most-curtailed energy source, making up around 67% of energy curtailed, followed by offshore wind with nearly 29%. Installations in Schleswig-Holstein are curtailed the most (50%) followed by those in Lower Saxony (34%). Although 69% of curtailments were in the distribution system, around 79% of the network congestion that caused them was in the transmission system or in the network level between the transmission and distribution systems.

The estimated compensation claims of installation operators for these curtailments ran to about €761.2m in 2020 (2019: €709.5m). This rise, which amounts to about 7%, was caused by the greater curtailment of offshore wind turbines. Compensation payments are covered by final customers via the network charges although a share of these costs is offset by the reduction in the EEG surcharge, which network users also have to pay, since curtailed installations do not receive any remuneration or market premium under the EEG.

### 1.3.4 Network charges

The volume-weighted network charges (including meter operation charges) for household customers for 2020 were stable (+0.02 ct/kWh): for household customers with an annual consumption of 2,500 to 5,000 kWh, the weighted average was 7.52 ct/kWh. With respect to non-household customers, the arithmetic mean charges for commercial customers are slightly higher than the previous year's level.<sup>8</sup> The network charges (including meter operation charges) for commercial customers increased by 3% to about 6.64 ct/kWh (2020: 6.46 ct/kWh). The network charges (including meter operation charges) for industrial customers decreased by around 1% to 2.67 ct/kWh (2020: 2.70 ct/kWh).

### 1.4 Costs for system services

The net costs for system services, which are passed on to final customers, were higher in 2020 than in 2019 at around €2,018.3m (2019: €1,931m). Major costs were the costs of reserving and using grid reserve power plants at around €282.8m (2019: €278.1m), national and cross-border redispatching at €220.5m (2019: €227.2m), the estimated claims for compensation for feed-in management measures at €761.2m (2019: €709.5m) and loss energy at about €398.8m (2019: €321.2m). There was an increase in particular in the costs for countertrading, which totalled €134.1m (2019: €64.2m). The increase is largely due to the bilateral agreement between Germany and Denmark.

The structure of the costs for system services in 2020 was different to that in 2019 in that the costs for network congestion management measures and loss energy were higher while the costs for balancing capacity were lower.

### 1.5 Wholesale

The trading volume and liquidity of the wholesale electricity markets remained at a high level in 2020. In particular, there was another increase in trading volume on the EPEX SPOT and Nord Pool intraday markets. However, the volume of day-ahead trading is not fully comparable with the figure from the previous year since the presentation for 2020 was adjusted. Volumes of on-exchange futures trading also increased, with the Phelix-DE futures volume standing at 1,416 TWh in 2020, an increase of around 5%. Volumes traded off-exchange via broker platforms recorded significant growth as well. The volume of OTC clearing of Phelix-DE futures on EEX rose by about 28% to 1,668 TWh in 2020, well over the volume traded on the exchange.

Average wholesale electricity prices fell in 2020. The spot market Phelix Day Base average for 2020 was about €30.46 per megawatt hour (MWh) and the Phelix Base Year Future average was about 40.20 ct/kWh, although future prices were higher at the end of 2020 than they had been at the beginning of the year. On the futures market, the Phelix-DE Peak Year-Ahead stood at €53.02/MWh at the start of the year and €57.54/MWh at the end of December 2020. It thus saw growth of around 9% across the year, although there was a clear dip in prices in the middle of the period.

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<sup>8</sup> It should be noted that the arithmetic mean reflects neither the wide spread of the network charges nor the heterogeneity of the network operators for these consumption groups.

## 1.6 Retail

### 1.6.1 Contract structure and competition

The number of electricity suppliers from which retail customers can choose increased slightly. In 2020, final customers could choose between an average of 162 suppliers in each network area (not taking account of corporate groups), compared to 156 suppliers in 2019. The average number of suppliers for household customers in Germany was 142 (2019: 138).

In 2020, a relative majority of 37% of household customers' consumption was supplied on non-default contracts with local default suppliers (2019: 40%). The volume-weighted percentage of household customers' consumption supplied under default contracts stood at 25% (2019: 26%). This represents only a very slight decrease in the percentage of consumption supplied under default contracts, as in the previous year. The percentage of household customers' consumption provided by a supplier other than the local default supplier is around 38% (2019: 34%). Overall, about 62% of all household customers' consumption is still provided by default suppliers (under either default or other contracts). Thus the strong position that default suppliers have in their respective service areas has declined by about 4% compared to the previous year.

There was a clear rise in the number of supplier switches in 2020 to almost 5.4m. The supplier switching rate based on the total number of household customers is 10.9% and thus one percentage point higher than in the previous year (2019: 9.9%). In addition, about 1.8m household customers changed energy supply contract with the same supplier. The switching rate for non-household customers – with an annual consumption of more than 10 MWh – based on consumption volumes was 11.6% (2019: 11.7%).

### 1.6.2 Disconnections

There was a clear decrease in 2020 in the number of electricity customers whose supply was disconnected. The number of disconnections actually carried out by the network operators was 230,015, representing a decrease of 20% compared to the previous year (2019: 289,012). The number of disconnection notices issued by suppliers to household customers was very much higher, although it was lower than the year before as well. The number of notices issued was approximately 4.2m, of which about 696,000 were passed on to the relevant network operator with a request for disconnection (2019: 4.8m notices and 911,000 requests). It may be assumed that this drop was partly due to the right to withhold performance set out in Article 240 section 1 of the Introductory Act to the Civil Code (EGBGB), which was put in place in the first half of the year because of the Covid-19 pandemic to provide temporary relief for consumers. Around 72% of the electricity suppliers surveyed also said they had voluntarily decided not to disconnect their customers.

### 1.6.3 Price level

The average total price (excluding value added tax (VAT) and possible reductions) for industrial customers with an annual consumption of 24 GWh as at 1 April 2021 was about 16.94 ct/kWh, up 0.40 ct/kWh on the average for 2020. The average total price (excluding VAT) for commercial customers with an annual consumption of 50 MWh in April 2021 was 23.23 ct/kWh, up 0.20 ct/kWh on the previous April. This increase in prices for industrial and commercial customers in 2020 is mainly accounted for by the price components controlled by the supplier.

Data was collected from the suppliers operating in Germany on the prices for household customers as at 1 April 2021. The average price (including VAT) increased slightly to 32.62 ct/kWh (2020: 32.05 ct/kWh). This average is calculated by weighting the individual prices across all contract models for an annual consumption of 2,500 kWh to 5,000 kWh according to consumption volumes to obtain a reliable average for the electricity price for household customers.

In 2021, the price component controlled by the supplier (energy procurement, supply and margin) accounts for around 26.3% of the total electricity price and has thus increased, as it did in the previous year. The network charge in 2021 is slightly higher than in the previous year and thus still at a high level. The EEG surcharge (6.50 ct/kWh) accounted for around 20% of the total price. Compared to 2020, the average price for household customers on default contracts with an annual consumption of 2,500 kWh to 5,000 kWh remained stable at 33.80 ct/kWh (2020: 33.80 ct/kWh). The average price for customers on a non-default contract with their default supplier is 31.89 ct/kWh (2020: 31.67 ct/kWh). In previous years there had been a convergence of prices of non-default contracts with the default supplier and non-default suppliers. This year's monitoring revealed that the price of non-default contracts with the local default supplier was lower than that of contracts with suppliers that were not the local default supplier for the first time in ten years. The price for customers on a contract with a supplier other than their local default supplier increased by around 5% to 32.70 ct/kWh (2020: 31.22 ct/kWh).

The rise in retail prices in 2021 is largely due to the increase in the price component controlled by the supplier (energy procurement, supply and margin). Procurement costs are significantly influenced by wholesale prices. In April 2021, there was higher demand for electricity, despite the pandemic, while at the same time there was a rise in conventional generation and a fall in renewable generation. For the electricity volumes procured at short notice, both of these factors contributed to the rise in wholesale prices. The higher prices for carbon emission allowances, which are included in the electricity price components that are not controlled by the supplier, also affected wholesale prices.<sup>9</sup>

As a rule, customers on default contracts can make savings by switching contract (-1.91 ct/kWh) and switching supplier (-1.10 ct/kWh).<sup>10</sup> Household customers with an annual consumption of 3,500 kWh could consequently cut their electricity costs by around €67 per year. Special bonuses offered by suppliers, including one-off bonus payments, are an added incentive for customers to switch. One-off bonus payments for customers switching to non-default contracts with their local default supplier average €56, and those for customers switching to a non-default supplier €70.

#### 1.6.4 Surcharges

The network operators estimated that they would pass on around €25.85bn in surcharges to network users in 2021. In order of volume, this total comprises the EEG surcharge (€22.28bn), the offshore network surcharge (€1.41bn), the section 19 StromNEV surcharge (€1.21bn), the KWKG surcharge (€0.91bn) and the interruptible loads surcharge (€0.04bn).

The EEG surcharge continues to make up the largest share (over 86%) and would have been €10.8bn without the federal government assistance that was provided for the first time in 2021. This assistance is a

<sup>9</sup> Carbon price: 2020 – €24.80/t; 2021 – €46 /t; source: Spectron

Grid load: April 2020 – 36.4 TWh; April 2021 – 41.4 TWh; source: **Fehler! Linkreferenz ungültig.** smard.de

<sup>10</sup> Savings based on an annual consumption between 2,500 kWh and 5,000 kWh.

means of capping the EEG surcharge set out in budget legislation. In its Climate Action Programme 2030, the German government decided to introduce a national fuel emissions trading scheme and to use the proceeds from the pricing of carbon emissions from fossil fuels for the benefit of the public and the economy by reducing the burden of the EEG surcharge from 1 January 2021. Other budgetary funds from the stimulus package designed to mitigate the effects of the pandemic also helped to lower the EEG surcharge to 6.5 ct/kWh.

### **1.6.5 Electric heating**

Developments in the electric heating sector need to be viewed against the backdrop of the transfer of market locations and volumes from E.ON Heizstrom to Lichtblick GmbH. There were major changes in 2020: for example, the percentage of electricity supplied for night storage heating and heat pumps by a legal entity other than the local default supplier rose to 4.29 TWh from 2.15 TWh in the previous year. Around 37.3% of the total volume of electricity for heating in 2020 was made up by non-default suppliers (2019: 16%).

The supplier switching rate in the electric heating segment based on the number of market locations was higher than in the previous year. The supplier switching rate for 2020 was around 12% by volume and around 14.8% by market location. However, the transfer of market locations and volumes from E.ON Heizstrom to Lichtblick GmbH is likely to have played a role in the higher level of supplier switching, because it basically meant an automatic change of supplier for affected customers.

The total gross price for night storage heating was 23.93 ct/kWh as at 1 April 2021 and thus higher than the previous year's level of 23.14 ct/kWh. The average total gross price for heat pump electricity was 23.80 ct/kWh and thus also higher than the previous year's average of 23.58 ct/kWh.

## **1.7 Digitisation of metering**

The Energy Transition Digitisation Act and the Metering Act (MsbG) contained therein made the rollout of modern metering equipment and smart metering systems legally mandatory in Germany. Whereas in the past household customers were mainly equipped with analogue Ferraris meters, modern metering systems consist of digital meters that are connected to a communication unit (smart meter gateway) via an interface. Modern metering systems do not transmit any data. They are referred to as smart metering systems when they are connected to a smart meter gateway, enabling them to transmit the data recorded by the meter.

Default meter operators had until 30 June 2017 to notify the Bundesnetzagentur of their metering operations. These notifications also served to trigger a deadline set by the MsbG: three years after the notification of responsibility for default metering operations, ie by 30 June 2020, the default meter operators had to have installed modern metering equipment in at least 10% of the meter locations that have to be fitted with them by law. If they have not fulfilled this requirement, they are required to initiate a process to transfer their default responsibility.

The installation of smart metering systems was able to start when the first smart meter gateway was certified by the Federal Office for Information Security (BSI) on 12 December 2018. After the certification of a third gateway in December 2019 and the announcement of technical feasibility for certain applications, the BSI gave the go-ahead for the rollout of smart metering systems on 24 February 2020.



By February 2020, an Aachen-based company and some default meter operators, mainly municipal utilities, had started legal action against the BSI's general administrative order determining the technical feasibility of the installation of smart metering systems. At the time of writing, these legal disputes are still ongoing. However, in an application for an interim injunction, the Higher Administrative Court (OVG) in Münster ruled in favour of the complainant. Adjustments have been made to the MsbG to remove the resulting legal uncertainties. The law introducing these amendments (Act transposing provisions of Union law and regulating pure hydrogen networks in energy industry law) was promulgated in the Federal Law Gazette I No 47 on 26 July 2021 and entered into force on 27 July 2021. A central amendment to the MsbG was carried out in section 19(6) MsbG, creating a provision protecting vested rights for smart metering systems that have already been installed and those still to be installed.

A further important step towards creating greater legal certainty in the smart meter rollout was the setting up and consultation of the Gateway Standardisation committee, with the Federal Ministry for Economic Affairs and Energy (BMWi) subsequently agreeing to the expanded Technical Directive TR-03109-1 v1.1 of 23 September 2021. The Technical Directive focuses on the interoperability certification of smart meter gateways.

## B Developments in the gas markets

### Summary

#### Production, imports and exports, and storage

In 2020, natural gas production in Germany fell by 0.9 billion cubic metres (bn m<sup>3</sup>) to 5.1bn m<sup>3</sup> of gas (with calorific adjustment).<sup>11</sup> This corresponds to a decrease of 15% compared to 2019. The decline in production is chiefly due to the increasing exhaustion of the large deposits and the resulting natural decline in output.<sup>12</sup> Another factor is the lack of major new gas finds. The reserves-to-production ratio of proven and probable natural gas reserves, calculated on the basis of the previous year's production and reserves, was 7.7 years as at 1 January 2021.

The total volume of natural gas imported into Germany in 2020 was 1,674 terawatt hours (TWh). Imports to Germany were thus down by 28 TWh from the previous year's figure of 1,703 TWh. The main sources of gas imports to Germany remain Russia and Norway, but the Netherlands is an important source for German importers too. It is an established and liquid European producer, trading hub and point of arrival for LNG shipments and it provides a connection to natural gas fields in Norway and the United Kingdom.

In 2020, the total volume of natural gas exported by Germany was about 814 TWh. As the previous year's figure was 701 TWh, exports from Germany were up 113 TWh.

The total maximum usable volume of working gas in underground storage facilities as at 31 December 2020 was 274.72 TWh (2019: 275.27 TWh).<sup>13</sup> Of this, 136.01 TWh (2019: 135.63 TWh) was accounted for by cavern storage, 117.01 TWh (2019: 117,54 TWh) by pore storage and 21.71 TWh (2019: 22,01 TWh) by other storage facilities.

The volume of short-term (up to 1 October 2020) freely bookable working gas rose again and there was a slight rise in the long-term bookable capacities as well.

Around 106 TWh have been injected into German natural gas storage facilities since the beginning of the injection season at the end of March 2021, taking the overall level of storage in the country to about 164.2 TWh as at 31 October 2021. The storage level rose from just over 25% at the end of March to 71.3%, well below the average of previous years at the same time.

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<sup>11</sup> Calorific adjustment is used because natural gas is not sold according to its volume but according to its energy content (9.7692 kWh/m<sup>3</sup>). In contrast, gas without calorific adjustment has a natural calorific value that may vary depending on the location of the deposit (in Germany this figure varies between 2 and 12 kWh/m<sup>3</sup>).

<sup>12</sup> Source: Annual report "Erdöl- und Erdgasreserven in der Bundesrepublik Deutschland am 1. Januar 2020" [Crude Oil and Natural Gas Reserves in the Federal Republic of Germany as at 1 January 2021]; State Authority for Mining, Energy and Geology (LBEG), Lower Saxony.

<sup>13</sup> This figure includes the 7 Fields storage facility and part of the Haidach storage facility, both of which are located in Austria. They are included because they are directly connected to the German gas network and thus have an impact on it. Equally, storage facilities that are located in Germany but only connected to the network in the Netherlands are not taken into account since they have no direct impact on the German gas network.

The market for the operation of underground natural gas storage facilities is still highly concentrated. The cumulative market share of the three largest storage facility operators stood at around 67.2% at the end of 2020, representing a slight increase compared to the previous year (66.6%).

## Networks

### Network expansion

The Gas Network Development Plan 2020-2030 (Gas NDP) comprises a total of 215 measures with an investment volume of about €8.5bn. A total of 60 new measures have been added compared to the Gas NDP 2018-2028. The additional proposed measures are largely related to the planned liquefied natural gas (LNG) terminals, the expansion measures necessary for green gases, the supply in Baden-Württemberg and security of supply in the Netherlands, Switzerland and Italy.

The Bundesnetzagentur is also enabling infrastructure for hydrogen to be set up. A total of 24 pipelines and gas pressure regulating and metering stations in the natural gas network have been identified that are not essential for the transport of gas and can be converted for hydrogen.

### Investments

In 2020 the 16 German gas transmission system operators (TSOs) invested a total of €995m (2019: €1.33bn) in network infrastructure. Of this, €638m (2019: €1.08bn) was accounted for by investments in new builds, upgrades and expansion projects and €357m (2019: €249m) by investments in network infrastructure maintenance and renewal.

Across all TSOs, expenditure on maintenance and repair of network infrastructure amounted to €402m in 2020 (2019: €622m), with expenditure in 2020 and planned expenditure for 2021 shared almost equally between the two market areas.

The 600 gas distribution system operators (DSOs) reported total network infrastructure investments in 2020 of €1,674m (2019: €1,488m) in new builds, upgrades and expansion (€1,044m (2019: €940m)) and in maintenance and renewal (€631m (2019: €549m)). For 2021, the projected total investment is €1,689m.

Service and maintenance expenses, based on the data provided by the DSOs, totalled €1,365m in 2020 (2019: €1,152m). The projected expenditure on service and maintenance for 2021 is €1,183m.

### Supply interruptions

In 2020, the average interruption in supply per connected final customer was 1.09 minutes (2019: 0.98 minutes in the year). This figure shows that the German gas network has a high quality of supply.

### Network charges

As of 1 April 2021, the average volume-weighted network charge including the charges for metering and meter operation for household customers<sup>14</sup> (volume-weighted across all contract categories) was 1.59 cents per kilowatt hour (ct/kWh) (2020: 1.56 ct/kWh), an increase of slightly more than 2% compared to the previous year.

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<sup>14</sup> Customer category according to Eurostat: band II (D2): annual consumption from 20 GJ (5,556 kWh) to 200 GJ (55,556 kWh).

For business customers, as of 1 April 2021 the arithmetic mean of the network charge including the charges for metering and meter operation was 1.28 ct/kWh (2020: 1.27 ct/kWh). For industrial customers, as of 1 April 2021 the arithmetic mean of the network charge including the charges for metering and meter operation was 0.32 ct/kWh (2020: 0.37 ct/kWh), a decline of just over 13.5%.

### **Transport**

The total quantity of gas supplied by general supply networks in Germany fell in 2020 by about 6.9 TWh to 941.1 TWh. The quantity of gas supplied to household customers (as defined in section 3 para 22 of the Energy Industry Act (EnWG)) dropped to around 245 TWh (2019: 282.5 TWh). Gas supplies to gas-fired power stations with a nominal capacity of at least 10 megawatts (MW) increased by about 10% to 108 TWh (2019: 98.5 TWh).

With regard to gas transmission networks, the quantity of gas procured directly on the market by large final customers (industrial customers and gas-fired power stations) – in other words not using the classic route via a supplier, and instead approaching the network operator as a shipper (paying the transport charges themselves) – amounted to 73.7 TWh (2019: 78.9 TWh), equivalent to about 37% of the total quantity of gas supplied by the TSOs to final consumers. As regards gas distribution networks, the amount of gas procured without a conventional supplier contract amounted to 41.1 TWh, compared with 42.4 TWh in 2019, corresponding to a share of approximately 6% of the DSOs' total gas supplies.

### **Market area conversion**

The market area conversion, ie the conversion from low-calorific L-gas to high-calorific H-gas coordinated by the TSOs, is proceeding according to plan. A total of nearly five million appliances burning L-gas, such as gas cookers, gas-fired boilers and heating systems, have to be converted.

From a total of 35 network operators, 593,827 appliances were registered in 2020, of which 256,396 were condensing boilers (43.2%) and 63,605 self-adaptive appliances (10.7%). The proportion of condensing boilers had been 46.6% in 2019 and that of self-adaptive appliances 11.7%. During the reporting period, 347,599 appliances were adapted for standard load profile (SLP) customers and 723 for interval-metered customers. A total of 9,066 appliances that were to be adapted could not be, a proportion of 2.6% (2019: 2.2%).

### **Wholesale**

The liquidity of the wholesale natural gas markets decreased again overall in 2020 owing to lower energy demand as a result of the coronavirus pandemic. There was a year-on-year drop of around 11% in the total volume traded on the exchange. For the volume of off-exchange wholesale trading via broker platforms, which accounts for a much larger share, a very small rise of 2% was recorded for 2020, but this was probably caused by an additional broker being included in the evaluation for the year.

The volume traded on the spot market was about 429 TWh in 2020 (2019: about 472 TWh), which corresponds to a drop of 9%. As in previous years, the focus of spot trading for both market areas in 2020 was on day-ahead contracts (NCG: 148.7 TWh (2019: 179.5 TWh); GASPOOL: 117.6 TWh (2019: 121.5 TWh)). The futures trading volume fell from around 75 TWh in 2019 to about 58 TWh in 2020, corresponding to a decrease of 23%.

In 2020, broker platforms reported natural gas transactions for delivery to Germany had been traded for an amount totalling 2,898 TWh (2019: 2,844 TWh), representing growth of around 2%. Of this, 1,114 TWh was for contracts with delivery in 2020 and a delivery time of at least one week.

There were again lower wholesale gas prices in 2020 than in the preceding years. The respective price indices (EGIX and border prices as calculated by the Federal Office for Economic Affairs and Export Control (BAFA)) show a drop of some 24.5% (EGIX) and 39% (BAFA border price) from the arithmetic mean of the year before. The European Gas Spot Index (EGSI) fell year-on-year again, by about 32% in the NCG market area and about 29% in GASPOOL.

## **Retail**

### **Contract structure and competition**

An overall analysis of how household customers were supplied in 2020 in terms of volume shows that nearly half of them (48%) were supplied by the local default supplier under a non-default contract, receiving 117.4 TWh of gas.

Only 17% of household customers still had a default supply contract in 2020 and these were supplied with 41.2 TWh of gas. The percentage of household customers who had a contract with a supplier other than the local default supplier increased again to 35% for a total of 85.8 TWh of gas. Thus supply by the default supplier at a default tariff is the least popular form of supply.

The gas sold to non-household customers is mainly to interval-metered customers. About 22.8% of the total volume delivered to these customers was supplied under a contract with the default supplier on non-default terms (2019: 24.1%) and about 77.2% was supplied under a contract with a legal entity other than the default supplier (2019: 75.9%). These figures show that default supply is of only minor significance in the acquisition of interval-metered customers in the gas sector.

The total number of customers changing contract in 2020 was 0.6m. The volume of gas these customers were delivered was approximately 11.9 TWh. The volume-based switching rate was therefore 4.9%. The total number of household customers changing supplier hit a new high in 2020, passing the 1.6m mark. Around 1.3m of these household customers changed directly by cancelling their previous contract. The remaining around 0.3m chose an alternative supplier rather than the default one right away when moving home.

The total consumption amount of non-household customers affected by supplier switches in 2020 was 80.6 TWh, corresponding to a year-on-year decrease of 8.3 TWh. The switching rate for non-household customers fell to 7.3% from 9% the year before.

The level of concentration in the two largest gas retail markets for standard load profile (SLP) and interval-metered customers is still well below the statutory thresholds for presuming market dominance. In 2020, the cumulative sales of the four largest companies to SLP customers was about 92.9 TWh and to interval-metered customers around 139.2 TWh. The aggregate market share of the four largest companies (CR4) in 2020 was thus 26% for SLP customers (2019: 24%) and 28% for interval-metered customers (2019: 29%).

Since market liberalisation and the creation of a legal basis for an efficient supplier switch, there has been a steady rise in the number of active gas suppliers for all final customers in the different network areas. This positive trend was maintained in 2020 as well.

On average, final customers in Germany can choose from 133 suppliers in their network area (2019: 129); household customers can, on average, choose between 113 suppliers (2019: 109 suppliers) (these figures do not take account of corporate groups).

### **Gas disconnections**

There was a large drop in the number of gas disconnections in 2020. In 2020, about 24,000 customers were disconnected in total, representing a year-on-year decrease of around 22% (2019: 31,000). It may be assumed that this drop was partly due to the right to withhold performance set out in Article 240 section 1 of the Introductory Act to the Civil Code (EGBGB), which was put in place in the first half of the year because of the Covid-19 pandemic to provide temporary relief for consumers. Around 75% of the gas suppliers surveyed also said they had voluntarily decided not to disconnect their customers in 2020. Gas suppliers also accommodated customers by offering them special or individual payment arrangements. Some suppliers extended their criteria for disconnections to make them more customer-friendly.

According to the gas suppliers' data, a disconnection notice is issued when a customer is on average around €120 in arrears. Approximately 980,000 disconnection notices were issued to household customers in total, of which around 162,000, or 16.5%, were passed on to the relevant network operator with a request for disconnection. The suppliers' data show that around 3% of the relevant connections were actually disconnected.

The gas suppliers also stated that in some 18,000 cases they had disconnected customers with default contracts. Customers outside of default supply were disconnected around 7,600 times. The gas suppliers stated that around 10% of disconnections were the same customers being disconnected more than once.

### **Price level**

The volume-weighted gas price for household customers across all contract categories rose about 6% year-on-year from 6.31 ct/kWh to 6.68 ct/kWh. The new carbon levy amounting to 0.4551 ct/kWh, which was introduced on 1 January 2021, was partly responsible for the rise as it was passed on to final customers almost completely and paid by them as part of the gas price. The carbon levy expanded the existing emissions trading system to the transport and heating sectors. Gas prices may be expected to continue rising in the next few years as the law provides for annual increases in carbon pricing until 2026. In the price across all contract categories, the largest price component "energy procurement, supply and margin", which makes up around 45%, fell by over 5% from 3.12 ct/kWh to 2.95 ct/kWh.

The volume-weighted gas price for customers on a default contract<sup>15</sup> as at 1 April 2021 was 7.45 ct/kWh (2020: 6.99 ct/kWh), corresponding to an increase of around 6.5% compared to the previous year.

On 1 April 2021, the volume-weighted price for customers under a non-default contract with the default supplier was 6.58 ct/kWh, an increase of about 4.6% compared to 2020 (6.29 ct/kWh).

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<sup>15</sup> Customer category according to Eurostat: band II (D2): annual consumption from 20 GJ (5,556 kWh) to 200 GJ (55,556 kWh).

On 1 April 2021, the volume-weighted price for a contract with a supplier other than the local default supplier was 6.41 ct/kWh, an increase of just over 7.6% compared to the previous year (2020: 5.96 ct/kWh).

The average household customer with gas consumption of 23,250 kWh could save an average of about €200 a year as at 1 April 2021 by changing contract. The average potential saving for the year from changing supplier was €240.

The falling wholesale prices on the procurement level are passed on to household customers in different ways. The price component "energy procurement, supply and margin"<sup>16</sup> for default supply customers was 3.41 ct/kWh as at 1 April 2021 (2020: 3.51 ct/kWh). That corresponds to a drop of just over 3% in gas procurement costs. The gas procurement costs in the price for customers supplied under a non-default contract with the default supplier fell by slightly more than 8.5% from 3.18 ct/kWh to 2.91 ct/kWh. The gas procurement costs for customers supplied under a contract with a supplier other than the local default supplier decreased by just over 3% to 2.72 ct/kWh (2020: 2.80 ct/kWh).

Special bonuses offered by suppliers, including one-off bonus payments, are an added incentive for customers to switch. These one-off payments amount to an average of €70 to €80.

The gas prices for non-household (industrial and commercial) customers as at 1 April 2021 showed year-on-year increases caused by the introduction of the carbon levy. The arithmetic mean of the overall price (excluding value-added tax (VAT)) for an annual consumption of 116 gigawatt hours (GWh) ("industrial customer") was 2.95 ct/kWh, and thus 0.42 ct/kWh or around 16.6% higher than the previous year's figure. The proportion of the total price (about 52%) controlled by the supplier was 1.54 ct/kWh, down by 0.08 ct/kWh. The arithmetic mean of the overall price (excluding VAT) for an annual consumption of 116 MWh ("commercial customer") was 4.74 ct/kWh on the reporting date, an increase of 0.22 ct/kWh or around 4.8% year-on-year. The proportion of the total price (about 51%) controlled by the supplier was 2.41 ct/kWh, down by 0.25 ct/kWh.

The prices paid by non-household customers in Germany in the annual consumption range of 27.8 GWh to 278 GWh was 2.34 ct/kWh in the second half of 2020, about 0.20 cents above the EU average of 2.14 ct/kWh. On an EU average, the net price is subject to about 11% (0.24 ct/kWh) of non-refundable taxes and levies. In this regard, Germany's figure of about 17.5% (0.41 ct/kWh) is higher than average. Compared with the gas prices for industrial customers, there are relatively large differences between the gas prices for household customers across the EU. The gas price for household customers in Germany was 6.20 ct/kWh and thus around 12.5% below the EU average (6.98 ct/kWh). Taxes and levies amounted to an average of 1.49 ct/kWh in Germany. The EU average was 1.64 ct/kWh.

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<sup>16</sup> It is not possible to break down the individual elements of this price component owing to the survey method used.

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