

ANNUAL ACTIVITY REPORT 2024

REPORTING YEAR 2023

TOPICS IN FOCUS

Every year, E-Control deals with a wide range of important issues. Of these, the current activity report focuses on three areas in particular. The first is consumer protection, where on the one hand the high prices of the previous year created a whole new set of problems and on the other hand the idea of self-sufficiency and agency encouraged many customers to become more active. Secondly, the area of grid connection, where the rapid increase in the number of grid connections for PV systems on rooftops presented new challenges. And thirdly, hydrogen, which as a fossil gas alternative is becoming an increasingly significant part of the energy world's future plans and is thus also becoming relevant as a new area of regulation for E-Control.

Consumer protection

Competition on the household market had come to a near standstill in 2022, but then slowly picked up again in 2023. The federal government had also taken a number of measures to mitigate the high energy prices, some of which were continued in 2023. To address the practices observed on the energy markets in the previous year, e.g. in the area of offers and contract cancellations, the Federal Competition Authority and E-Control set up a joint task force, whose first interim report already provided some information and indications for further investigations.

The monitoring of commercial quality indicators and the reports from the companies painted a picture of the considerable challenges facing the industry. At the same time, E-Control's advisory and mediation activities provided insights into the concerns of consumers. In order to improve the situation for consumers on the energy market within the existing legal framework, E-Control drew up a catalogue of 10 demands for electricity and gas companies.

MEASURES TO RELIEVE THE BURDEN ON HOUSEHOLDS

In response to drastically increased energy prices, the Austrian government took a series of measures from autumn 2021. Some of these were still in place in 2023.

In particular, the "brake" on electricity costs grants all households a reduction of up to 30 ct/kWh on their electricity supplier's electricity price (pure energy price) for up to 2,900 kWh annually. Households with four or more people are granted an additional quota of kWh, in the vast majority of cases automatically. In addition, all households exempt from paying renewables support get a reimbursement of 75% of the grid costs (up to 200 euros per year).

The electricity grid charges for losses increased significantly in January 2023, primarily due to the price increases on the electricity markets. This was due to the increase in the corresponding grid loss costs, which are directly influenced by prices on the electricity markets. As a result, a law was passed in February 2023 to absorb around 80% of this increase from 1 March 2023 until the end of the year. Around 558 million euros were made available by the federal government for this purpose.

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In addition, the electricity levy was reduced to 0.001 ct/kWh for the period from 1 May 2022 to 31 December 2023. The fossil gas levy was reduced to € 0.01196/m³ for this period. In 2022, the Energy Cost Relief Act introduced a one-off subsidy of € 150 for households below certain income thresholds to compensate for increased energy costs. It took the form of a voucher that could be redeemed with the electricity supplier.

On top of the measures taken by the federal government, some state governments also provided support, for example in the form of one-off payments or consumption-based energy price discounts.

While these measures made things easier for many households, the question arises as to whether they did not also reduce the incentive to switch and thus slow down competition on the market (see chapter 'Competition Task Force with the Federal Competition Authority').

UNIVERSAL SERVICE

All customers within the meaning of section 1(1)(2) Consumer Protection Act may invoke universal service vis-à-vis electricity or gas suppliers. They must then be supplied at prices that may not be higher than those at which the largest number of customers in this group are already supplied by the respective energy companies.

Companies are obliged to deliver within these universal service rules. This ensures that people with payment difficulties or with a poor credit rating are offered a 'normal or average' contract. However, the specific provisions in the Electricity Act 2010 and the Gas Act 2011 mean that all customers can switch to an existing tariff if they reference their right to universal supply. This is particularly attractive if existing contracts are more favourable than new contracts.

Towards the end of 2022, universal service therefore attracted some attention for the first time since its inception. Cancellations and price increases prompted many customers to look towards switching electricity or gas suppliers. However, only a few and very expensive new contracts were being offered on the market. By referencing universal service, on the other hand, it was possible to obtain comparatively favourable energy prices. Universal service figures peaked in spring 2023 and have been trending sideways ever since. Around 16,000 electricity customers and 1,600 gas customers currently use universal service.

This increased utilisation in turn prompted several electricity and gas suppliers to make the conclusion of a universal service contract dependent on conditions that are not enshrined in law (e.g. the financial situation of the customer or proof of refusal to conclude a contract by another electricity or gas supplier). Furthermore, the existing tariff was often not offered under the universal supply heading. For this reason, E-Control has been conducting supervisory procedures since 2022 in order to bring about a legally compliant situation.

Regulations on universal supply with both electricity and gas are currently being dealt with by the Constitutional Court and their constitutionality is being reviewed.

DISCONNECTIONS AND CONTRACT CANCELLATIONS

Electricity and gas are essential commodities, the lack of which has a significant impact on everyday life. In order to prevent households from being switched off quickly or abruptly if they do not (or cannot) pay their energy bills, the statutory provisions stipulate that two written reminders must be sent. Only if the relevant deadlines expire without action is disconnection carried out. E-Control is therefore paying particular attention to those cases in which households are actually disconnected. [Figures on the supply situation of households](#) are collected and published by E-Control on a monthly basis.

If consumers violate their contractual obligations (usually in cases where bills are not paid despite multiple reminders), their energy suppliers can suspend or terminate the contract. If consumers remain without a valid energy supply contract, they will be disconnected by the grid operator. Figure 1 and Figure 2 show the development of total disconnection figures since April 2020 and a

comparison with the three-year average. They also illustrate how many of these disconnections were due to contract cancellations (as opposed to contract suspensions). While the disconnection figures for electricity show an upward trend and an alignment with the rates from before 2020, the corresponding figures for gas indicate fewer disconnections than in previous years.

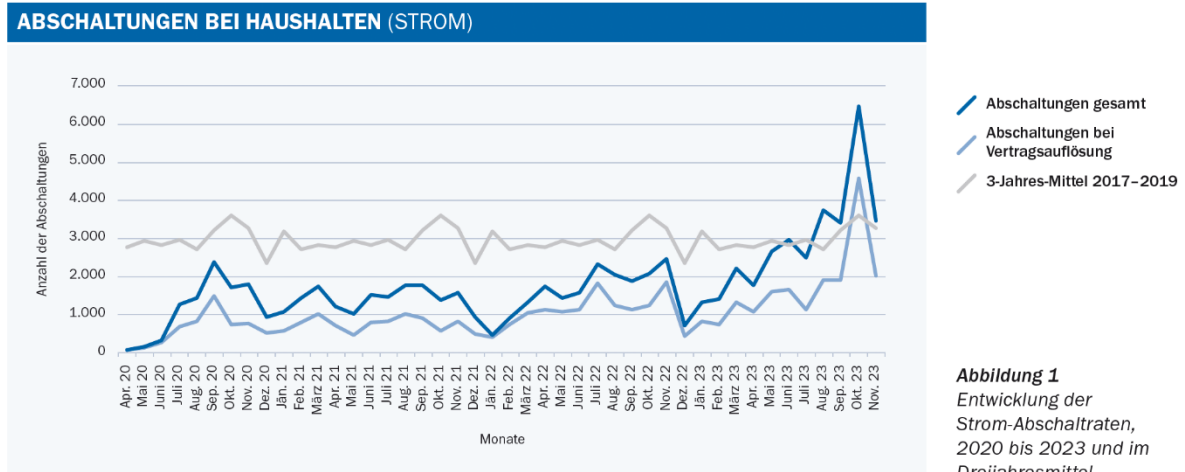


Abbildung 1
Entwicklung der Strom-Abschaltraten, 2020 bis 2023 und im Dreijahresmittel

Quelle: E-Control

Figure 1: Electricity disconnection rates, 2023 through 2023, compared with the three-year average. The figure shows total disconnections in dark blue, disconnections in connection with terminated contracts in light blue, and the 2017-2019 average in grey.

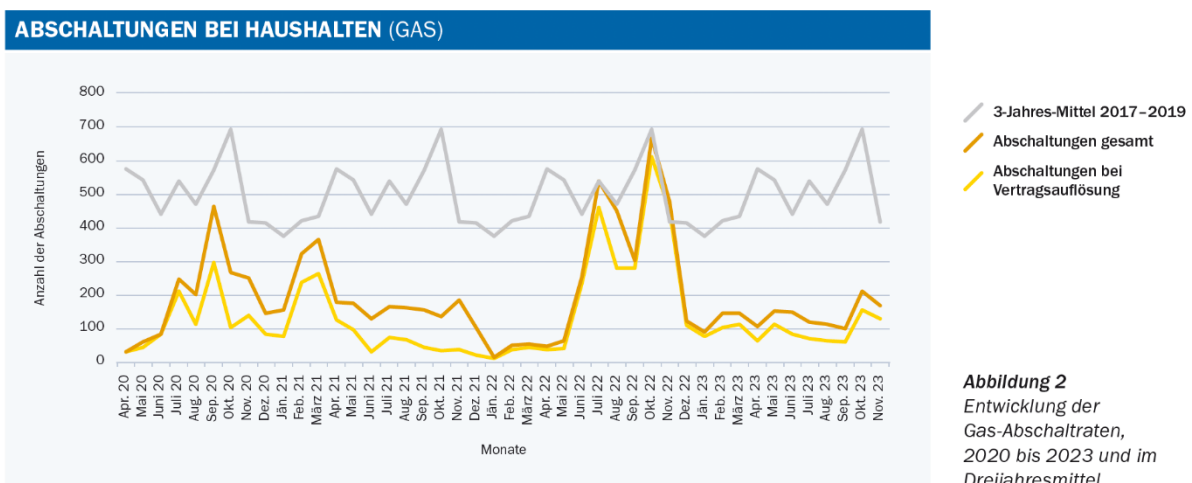


Abbildung 2
Entwicklung der Gas-Abschaltraten, 2020 bis 2023 und im Dreijahresmittel

Quelle: E-Control

Figure 2: Gas disconnection rates, 2023 through 2023, compared with the three-year average. The figure shows total disconnections in orange, disconnections in connection with terminated contracts in yellow, and the 2017-2019 average in grey.

As in 2022, ordinary termination of supply contracts by electricity and gas suppliers dominated the market for households and small businesses in 2023. Over 500,000 customers were affected by such cancellations or indirect terminations of existing electricity supply contracts by energy suppliers. Statistically speaking, this corresponds to around one in ten households in Austria.

When contracts are terminated in this way, it is quite likely that some of the consumers affected do not take action in time and thus remain without a contract. The legislator attempted to remedy this situation at the end of 2022 with a new regulation in section 77b Electricity Act 2010. Electricity suppliers that completely withdraw from the market and terminate all their contracts with consumers are now subject to certain information obligations. In addition, customers who have not

concluded a new supply contract by the end of the contractual relationship will be supplied by the largest electricity supplier in the respective grid area at its household tariffs for three months. Further information obligations in the interest of consumers are enshrined in another new section of the Electricity Act 2010, section 82(4)a.

COMPETITION TASK FORCE WITH THE FEDERAL COMPETITION AUTHORITY

In light of the developments on the household market, the Federal Competition Authority and E-Control set up a joint task force in 2023. Its aim is to contribute to the creation of a competitive environment on the energy market and thus to transparent, affordable and competitive prices for consumers by conducting comprehensive analyses from a regulatory and competition law perspective.

The task force's initial findings were presented in June 2023 in an [interim report](#). This already showed that competition had largely come to a standstill in 2022. On the one hand, this was reflected in the fact that the number of companies offering products on the market and the total number of products on offer had fallen massively across Austria. Prices for new contracts with local companies in particular remained high for an unexpectedly long time. Large companies did not compete on price directly and apparently did not have to do so. At the same time, local suppliers largely withdrew to their 'geographical core area'. On the demand side, this was reflected in lower switching figures. In many cases, unequal treatment of different customer groups, legal uncertainty and a lack of transparency on the market were also identified.

The results of the preliminary investigation also showed a very high level of market concentration. This was already at a high level beforehand but has recently increased again. The competitive pressure exerted by customers' having the option to switch suppliers did not take effect during this time.

Other topics discussed by the task force were the lack of transparency, the various mechanisms to relieve the burden of high energy prices on the population and their dampening effect on competition as well as the legal uncertainty surrounding price adjustments by companies. The last point proved to be particularly problematic. For companies, it is still not entirely clear how price changes can be implemented in a legally correct manner. Since the report was issued, many of the suppliers analysed have changed their price adjustment policy to mirror the statutory right to change prices in accordance with section 80(2a) Electricity Act 2010.

In particular, companies' pricing decisions and the different treatment of consumers and companies by energy suppliers highlight problem areas. The task force therefore decided to send a questionnaire to the largest Austrian energy companies in order to gain further insight into the economic justification for these behaviours.

At the same time, recommendations were made for certain legal adjustments. Empirically, restricted competition and high market concentration always ultimately lead to higher prices for consumers. E-Control, as the market supervisory authority, must and will continue to consistently pursue its role in safeguarding the competitive process in the energy sector. The task force with the Federal Competition Authority is an important building block in this regard and will continue to work at least until mid-2024.

STANDARDS FOR SERVICES

The regulations on grid service quality stipulate a range of commercial quality standards for electricity and gas distribution system operators. These include, for example, maximum response times to enquiries, complaints and applications from customers as well as compliance with agreed deadlines and billing deadlines. A standard is considered to have been met if a company can comply with it in over 95% of cases. Overall, compliance with the commercial quality standards by electricity and gas distribution system operators in Austria in 2022 can still be described as very

good (see Figure 3 and further information in the [reports on the commercial quality of the performance of gas and electricity distribution system operators](#)).

The development of two key figures is noteworthy. At 86%, the degree of fulfilment of the standard for the timely correction of a gas bill is the worst result on the gas side in 2022. However, this indicator was still at 70% in 2021. This improvement is all the more striking given that the absolute number of requests for bill corrections jumped from 17,085 in 2021 to 42,470 in 2022.

A second relevant development concerns the standard for the timely processing of grid access applications in electricity. While compliance with this standard was 98% in 2021, it fell to 89% in 2022. The grid connection of generation plants at distribution grid level in particular pushed individual grid operators to their limits in the short term, resulting in long waiting times for grid access and grid access contracts as well as for the commissioning of plants. In part to improve this situation, E-Control drew up grid connection guidelines, which are intended to improve the relevant processes (see chapter 'Grid connection'). However, the absolute figures should also be noted here. While the grid operators had to deal with 53,926 grid access applications in 2021, they faced four times the volume of work in 2022 with 199,861 applications.

While the regulations on grid service quality only relate to grid operators, the monitoring regulations for electricity and gas also cover energy suppliers. This overall view gives a similar picture. Grid operators and energy suppliers had around twice as many enquiries and complaints to deal with in 2022 as in 2021.

KENNZAHLEN ZUR KOMMERZIELLEN QUALITÄT 2022				
Kriterien zur kommerziellen Qualität	Strom		Gas	
	Anzahl	Erfüllungsgrad	Anzahl	Erfüllungsgrad
Anfragen und Beschwerden	2.474.697	99	374.351	99
Anträge Netzzutritt	199.861	89	3.051	98
Anträge Netzzugang	651.810	100	118.358	100
Zählereinbauten	110.096	99	6.332	99
Inbetriebnahmen von Messeinrichtungen	138.144	99	28.492	99
Rechnungslegung	8.290.901	98	1.780.894	99
Rechnungskorrekturen	89.473	85	42.470	86
Termineinhaltungen	1.535.351	99	179.799	99
Abschaltungen	12.026	100	2.651	100

Abbildung 3
Kennzahlen zur
kommerziellen Qualität,
2022

Quelle: E-Control

Figure 3: Commercial quality KPIs for 2022. The table shows the number of incidents and the degree of compliance with the standard for electricity and gas, for the following KPIs: enquiries and complaints, grid access applications, grid admission applications, meter installations, commissioning of meters, billing, bill corrections, adherence to deadlines, and disconnections.

In an extended survey, a voluntary questionnaire was sent out to the 20 largest electricity and gas suppliers to find out, among other things, the opening and waiting times of customer service centres, the provision of information on price adjustments and contract changes, as well as support measures for particularly exposed customers. The survey yielded some surprising results. For example, while the number of complaints to the E-Control Helpdesk about delayed invoices had risen sharply, the majority of companies stated that they had issued them on time.

As part of a broader investigation into the quality of the services provided by energy supply companies, further enquiries were sent to grid operators and electricity and gas suppliers in order to scrutinise direct communication with individual customers. An examination of the bills showed that in some cases legally required elements were missing. A heterogeneous picture emerged with regard to consumption and electricity cost information. Some companies emerged as pioneers in that the information on consumption and electricity costs was simple and easy to understand. However, a number of companies either took screenshots from customer portals and therefore did not sufficiently fulfil the minimum requirements for the information letter in accordance with the

Data Format and Consumption Data Ordinance 2012 or were not showing consumption and electricity cost information at all.

The investigation of the customer portals showed that essential contract content such as the current price or the product name could often not be found in the customer portal. With regard to apps, it was also found that some suppliers offered apps focussing on other topics, e.g. with information on charging points. However, only one of the 20 electricity suppliers analysed had an app that allowed access to contract data and other self-services like an online customer portal.

The provision of important general information and the findability of this information is a key instrument for promoting transparency on the internet. The regulations on grid service quality therefore stipulate that electricity and gas distribution system operators must provide consumers with centralised information that is easily and quickly accessible on their websites. This was given in almost all cases. However, it should be noted that several very small distribution system operators still do not have their own website.

In the future, this provision of information will play an even more important role, particularly with regard to electricity. The roll-out of smart meters (roll-out rate of 68% at the end of 2022), the further spread of own and shared electricity production and more conscious energy consumption in general will increase the need for information on personal energy consumption.

The websites of the electricity suppliers were analysed in particular according to the criteria of easy availability and findability of important information such as service numbers and any costs incurred, contact options and information on contact and helplines. The results of the website analysis showed that although a wealth of information could be found, the menus were often not clearly structured, and information was not grouped thematically. This makes navigation and searching more difficult and time-consuming than necessary for customers who are not very familiar with the topic of energy.

E-Control also scrutinised the topic of customer communication at a dedicated [event](#) in May 2023.

E-CONTROL'S 10 CHALLENGES FOR ELECTRICITY AND GAS COMPANIES

The market developments in 2022 undoubtedly represented difficulties for the energy industry. However, E-Control also realised that the industry was making insufficient use of the protection mechanisms already established for consumers. This is precisely where E-Control came in in spring 2023 by setting out 10 challenges for the energy industry (see Figure 4). They are all within the possibilities and obligations already in place, but send a strong signal against the energy industry's observed inadequate response to the difficult situation faced by many consumers.

Based on E-Control's 10 challenges, there were already numerous internal investigations in 2023. E-Control will continue to press the energy industry to implement the requirements in the following year.

ENERGY POVERTY

E-Control has been investigating the issue of energy poverty for well over 10 years. A proposed definition has been in place since 2012. According to this, households are considered to be energy poor if their income is below the at-risk-of-poverty threshold and they also have to pay high household energy bills. Since 2017, studies by Statistics Austria have shown at regular intervals that around three to four per cent of the Austrian population are affected by energy poverty.

Another widespread indicator of energy poverty is the inability to afford adequately heated housing. In the years up to 2021, less than 2% of the population stated that they were unable to keep their home adequately warm. From 2022, this proportion rose dramatically to as much as 12.1% in the fourth quarter of 2022. In the first quarter of 2023, 10.6% of the population could not afford to keep their home adequately warm (see [Statistics Austria](#)).



Quelle: E-Control

Abbildung 4
Die 10 Forderungen der E-Control an die Strom- und Gasunternehmen

Figure 4: E-Control's 10 challenges for the energy industry. They are: clear and personalised communication with customers, inform customers about their partial payments and the electricity cost 'brake', no conditions for universal service, no disconnections in difficult situations, only billing what has been consumed, being accessible for consumers, assistance to people that face payment difficulties, easy access to contractual details, quick insertion of products in the tariff calculator, speedy pass-through of decreasing wholesale prices.

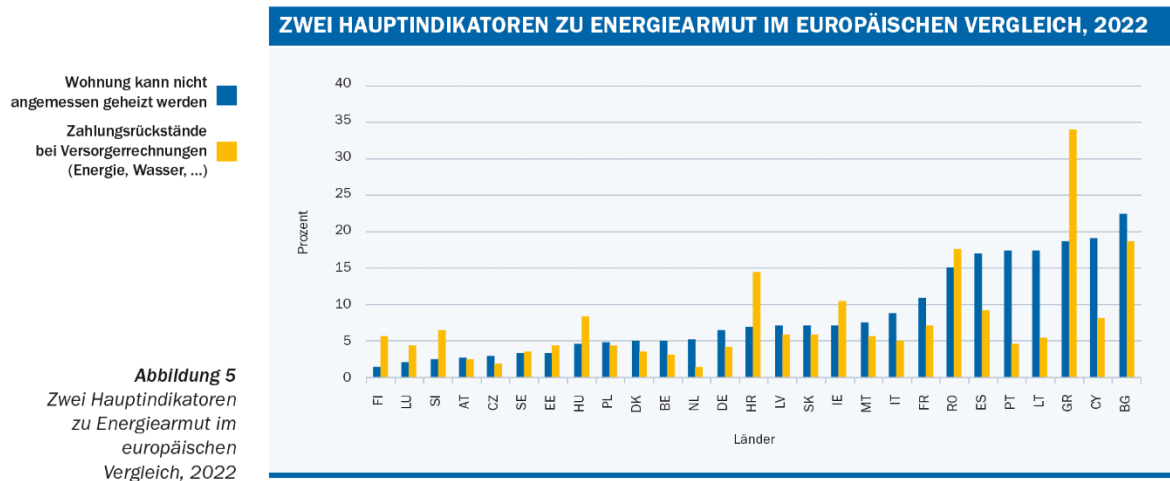
The Energy Efficiency Act established a coordination centre to combat energy poverty in 2023. In particular, the coordination centre is intended to facilitate cooperation and networking between the interest groups involved. In addition, it will develop recommendations and measures to combat energy poverty and provide information for households. Periodic reports by the coordination centre are intended to shed light on the current state of energy poverty in Austria and monitor relevant indicators for measuring it (see chapter 'ENERGY EFFICIENCY').

At European level, arrears are an additional long-term main indicator of energy poverty. In Austria, energy poverty recorded in this way is low (see Figure 5).

As a measure to relieve the burden on low-income households, the Renewable Energy Expansion Act extended the provisions on exemptions from renewable energy subsidy costs. In particular, the partial exemption from renewable energy subsidy contributions was extended to a larger group of people.

For 2022, the Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology announced in November 2021 that, in view of the high energy prices, the renewables flat rate and the renewables contribution for all households and companies would be cancelled. This provision

also applied for 2023. Even so, there was a significant increase in the number of applications for exemptions from these payments in the first half of 2023, as this entitlement is also linked to the recognition of a grid cost subsidy of up to € 200. As of 31 May 2023, GIS GmbH had already issued 210,160 exemptions from renewable energy subsidy costs. This corresponds to an increase of over 60% compared to 2022.



Quelle: Eurostat

Figure 5: Two energy poverty KPIs across Europe. They are: the inability to properly heat the home (blue), and payment arrears for utilities like energy and water (yellow).

STRENGTHENING CONSUMER PROTECTION

Since the beginning of 2022, consumers and small businesses have a right to pay electricity bills in instalments, which is intended to protect them from disconnection. E-Control has the legal mandate to evaluate this rule in terms of its social impact. The authority has already begun collecting data on applications and contracts, the amount of additional payments and the interest rate for instalment payments from electricity grid operators and electricity suppliers.

In the first half of 2023, around 35,000 agreements for such instalment payments were concluded between households and electricity suppliers, according to initial data reported by the companies to E-Control. E-Control will continue to monitor the development of this measure.

Other new regulations to protect energy consumers include

- > securing the supply of customers after their electricity supplier exits the market,
- > extended information obligations for electricity suppliers that terminate supply contracts,
- > additional obligations for suppliers to report data for the E-Control tariff calculator,
- > information obligations for suppliers regarding the end of minimum contract periods and more favourable standard products available to customers,
- > rules on so-called floater tariffs,
- > rules on the adjustment of instalment amounts, according to which discounts and the like are also to be taken into account in these instalment amounts,
- > an obligation to inform customers with smart meters about the possibility of monthly bills.

Some of these measures will be mirrored in the gas sector.

The new Electricity Monitoring Ordinance issued in 2022 and the amendment to the Gas Monitoring Ordinance from 2023 will ensure that consumer protection is monitored more closely in future. E-Control records and publishes the comprehensive results of these monitoring exercises and developments in this area every year in a separate consumer protection report.

Grid connection

The drastic increase in the number of applications for grid access from 2022 continued in 2023. This pushed the grid operators to their limits in some cases and resulted in longer processing times. To tackle this problem, E-Control worked with the grid operators to develop the [grid connection action plan](#), which outlines the causes in more detail and proposes solutions (see chapter 'Grid Connection Action Plan'). Implementation of the measures in the action plan is now being monitored on an ongoing basis.

PROBLEM DESCRIPTION

Interest in the construction of power generation systems has increased to an unexpected extent since the start of the energy crisis in 2021. In many grid areas, the number of applications for grid access for renewable electricity generation systems, especially PV systems, has multiplied. This increase has pushed many distribution system operators to their operational limits. Figure 6 illustrates the increase in PV metering points in the individual federal provinces from 2021 to 2022, which accounted for between 15% in Vorarlberg and 48.3% in Carinthia. This resulted in longer processing times, which grid users complained about through various channels.

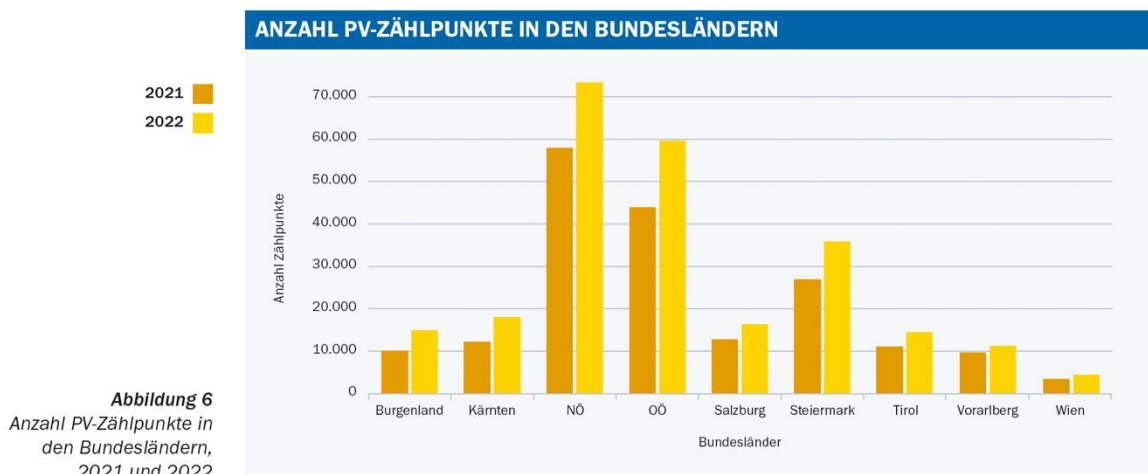


Abbildung 6
Anzahl PV-Zählpunkte in den Bundesländern, 2021 und 2022

Quelle: E-Control

Figure 6: Number of PV metering points in each federal province in 2021 (orange) and 2022 (yellow)

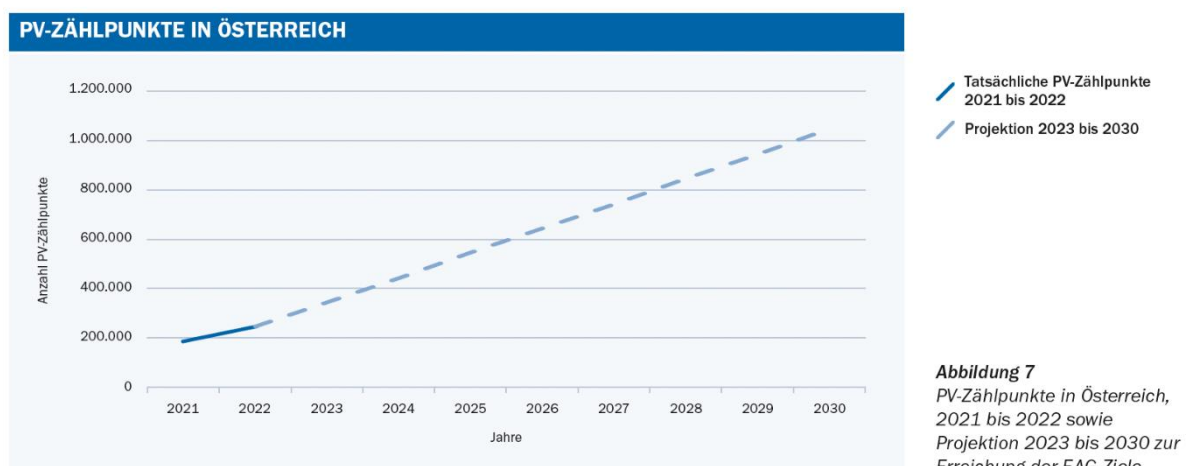


Abbildung 7
PV-Zählpunkte in Österreich, 2021 bis 2022 sowie Projektion 2023 bis 2030 zur Erreichung der EAG-Ziele

Quelle: E-Control

Figure 7: Number of PV metering points in Austria in 2021 and 2022, and projection of the numbers needed in 2023-2030 to reach the targets stipulated in the Renewable Energy Expansion Act

This increase resulted in almost 250,000 metering points for PV systems at the end of 2022, 97% of which were at the low-voltage level. The Austrian expansion targets for renewable electricity generation in accordance with the Renewable Energy Expansion Act envisage an increase of 11 TWh of PV generation by 2030. To achieve this, around 100,000 additional PV metering points will be required each year (see Figure 7).

Continued growth of this magnitude will continue to pose major challenges for the electricity distribution grid and therefore for distribution grid operators. A closer examination of the grid connection processes showed that in some cases applications are still processed manually from start to end. In addition, the grid connection processes are inefficient in some cases or do not lead to optimal results. For example, purely static extreme values are often used for the grid connection assessment, which can lead to feed-in restrictions and the existing grid infrastructure cannot be utilised as effectively as possible. Conversely, it is not at all clear to project developers how much capacity is available at their desired location, which makes the dimensioning of a renewable electricity generation plant considerably more difficult.

There is a lack of standardisation with regard to the safety and other requirements to be met, which usually necessitates a case-by-case review and therefore takes up a lot of time and resources. At the end of the process, there are often long waiting times between the notification of completion of an installation and the granting of the operating licence.

These and other challenges create tension between the need to connect new PV systems in order to achieve the objectives of the Renewable Energy Expansion Act on the one hand and the capacity of the grids and the processing options of the grid operators on the other.

GRID CONNECTION ACTION PLAN

In order to overcome the challenges posed by the increased expansion of renewable PV electricity generation in connection with the expansion targets of the Renewable Energy Expansion Act, E-Control developed a [Grid Connection Action Plan](#) in 2023, which presents the underlying processes, identifies sticking points and proposes actions. These can be implemented either by E-Control or by the grid operators. These actions are shown in Figure 8. The [CEER Paper on Alternative Connection Agreements](#) is also dedicated to one of these measures, the topic of alternative grid connection agreements.

The measures in the Action Plan on the chart are supplemented by two very technical measures, namely the adaptation of local reactive power control and the optimal utilisation of voltage band management, and by two more general or organisational measures, namely the holding of events and the provision of information by E-Control and through data collection.

As part of the Grid Connection Action Plan, a number of challenges were identified that affect various aspects of grid connection. The Action Plan shows how challenges relating to grid connection and grid access can be solved by regulators and grid operators, how PV systems in particular can be connected to the grid more quickly and how communication between all parties involved can be improved. The 14 concrete actions in the Plan include both short-term and medium-term measures. Responsibility for implementation lies with E-Control itself as well as with the grid operators and in the co-operation of all parties involved.

One focus of the Action Plan is standardisation and acceleration. This includes ongoing monitoring to check compliance with the deadlines set. Furthermore, the concept of maximum injection capacity is to be established in order to optimise the use of existing grid capacities. Standardised regulations and deadlines for limiting feed-in capacity are also to be created. Furthermore, the Action Plan provides for the reduction of bureaucratic hurdles in the course of commissioning PV systems.

In order to facilitate the integration of renewable generation plants as efficiently and quickly as possible, E-Control amended the Ordinance on Electricity System Service Quality 2012, adding

further deadlines in order to maintain a coherence with the Action Plan. This amendment introduces additional quality standards that meet practical requirements.

With these comprehensive measures in the Grid Connection Action Plan, E-Control aims to ensure more efficient and speedy grid connections in order to promote the expansion of renewable electricity generation plants. E-Control takes action against violations of legal provisions in this context in supervisory procedures and conducts dispute resolution proceedings upon request.

AKTIONEN FÜR EINEN EFFIZIENTEREN NETZANSCHLUSS für PV-Anlagen bis 20 kW



Anträge auf Netzzutritt & Netzzugang via Online-Portal

Netzkund:innen sollen den Antrag für einen Netzzutritt und Netzzugang auch selbst stellen können. Daher muss österreichweit die Möglichkeit bestehen, dass neben bevollmächtigten Elektrofachunternehmen auch den Netzbewerber:innen der Zugang zum Online-Portal des Netzbetreibers gewährt wird, wie dies bereits bei einigen Netzbetreibern möglich ist. Dadurch wird eine Netzanschlussbeurteilung deutlich einfacher und rascher möglich.



Standardisierung von Prozessen zur Netzanschlussbeurteilung

Vor Errichtung einer PV-Anlage ist vom Netzbetreiber eine sogenannte Netzanschlussbeurteilung durchzuführen und der Netzbewerberin bzw. dem Netzbewerber zu übermitteln. Dieser Prozess wird von den Netzbetreibern bisher unterschiedlich durchgeführt. Eine Standardisierung hilft, österreichweit einheitliche Prozesse und vor allem Fristen einzuhalten. Die Dauer zwischen dem Einlangen und der Bestätigung des Antrags auf Netzzugang soll maximal 14 Tage betragen.



Vereinfachung von Konformitätsnachweisen

Netzbetreiber können im Rahmen des Betriebserlaubnisverfahrens für die PV-Anlage weitere Nachweise zur Konformität der Anlage verlangen, unter anderem Prüfberichte zur Bestätigung der Einhaltung der erforderlichen technischen Eigenschaften. Eine existierende und laufend aktualisierte Wechselrichterliste schafft eine Erleichterung und Beschleunigung der Netzanschlussbeurteilung, weil nicht in jedem Einzelfall die Konformität des Wechselrichters zu prüfen ist. Künftig entfällt daher die Anforderung zum Erbringen von Prüfberichten für Wechselrichter, wenn diese bereits in der Wechselrichterliste enthalten sind.



Übermittlung der Zählpunktbezeichnungen

Jeder, der eine PV-Anlage errichten möchte, braucht für diese eine eigene Zählpunktbezeichnung. Die Bekanntgabe dieser durch den Netzbetreiber soll maximal 14 Tage betragen. Diese gesetzlichen Vorgaben sind im EIWOG 2010 und in Verordnungen der E-Control (END-VO 2012) festgeschrieben. Die E-Control überwacht weiterhin engmaschig die Einhaltung der gesetzlichen Vorgaben von Seiten der Verteilernetzbetreiber.



Monitoring des Fortschritts der Digitalisierungsmaßnahmen

Der Einbau von Smart Metern mit den entsprechenden Kommunikationstechnologien muss zügig vorangehen, um hierdurch ebenfalls die Digitalisierungsmaßnahmen für das Verteilernetz zu schaffen, um somit die Effizienz, die Zuverlässigkeit und die Nachhaltigkeit des Stromnetzes zu verbessern. Die E-Control wird den Fortschritt bei der Digitalisierung künftig genau monitoren.



Figure 8: Grid Connection Action Plan. The actions are: possibility to file applications for grid access and grid admission through an online portal, standardization of processes for assessing the capacity needed to connect a PV installation, simplifying compliance confirmations, transmitting metering point reference numbers, monitoring digitalization progress, using alternatives where there is insufficient capacity to connect a facility, publishing distribution network development plans, transparency regarding grid capacities at grid level 4, harmonizing requirements for emergency electricity supply systems, clarification that installations of different owners must be handled separately.

MONITORING

Even before the Grid Connection Action Plan was drawn up, E-Control carried out a survey of distribution system operators in order to have a reasonable data basis for the connection of electricity generation plants, especially PV systems. Subsequently, E-Control is focussing on increased monitoring of grid access and grid access for renewable electricity generation plants. This corresponds to Action 14 from the Action Plan.

Quarterly surveys of 16 distribution system operators are used to record the status and progress of the expansion and integration of renewable electricity generation plants. These surveys are carried out annually for a further 44 distribution system operators.

The data collection on grid connections consists of two parts. In the first part, the number of applications for grid connection received by the distribution system operators per quarter and the number of approved applications are recorded. The associated maximum capacities, maximum injection capacities and (only for photovoltaics) the module peak capacities are also recorded. The

average duration of the various grid connection process phases is also specified. The second part includes a query on the number of electricity generation plants and equipment subject to reporting requirements. The status and progress of the expansion and integration of renewable electricity generation plants, charging facilities and storage systems are recorded.

Hydrogen

The basis for the development of the hydrogen market in the EU and in Austria are the [European](#) and the [Austrian hydrogen strategy](#). In the Austrian hydrogen strategy, which was published in June 2022, the target for the development of the hydrogen market is an efficient and focused use of hydrogen (and replacement of fossil gas) in sectors that are difficult to decarbonise (industry/mobility) and in the energy system for peak load balancing of volatile renewable energies as well as for storage and flexibility services, in order to use and expand the infrastructure and establish the market nationally and internationally. The strategies envisage that hydrogen demand in these areas in Austria and the EU will be covered by national production and imports.

In order to minimise the economic costs of establishing a hydrogen market, the best possible use of the existing gas infrastructure for the transport of hydrogen and integrated network development planning with electricity/heat/transport are essential.

It is also important to provide an ecological and economic alternative to fossil gas, to establish Austria as a transit country and to offer alternatives for energy sources in the industrial, power generation and large commercial sectors.

Austria's 2022 hydrogen strategy and the EU's 2020 strategy also contain targets for the development of national and European hydrogen production and the import of hydrogen in the years 2030/2040/2050.

Accordingly, 1 GW of electrolysis capacity is to be built in Austria by 2030 for the expansion of hydrogen production. This should make around 80% of the current industrial hydrogen demand of 5 TWh climate-neutral by 2030 (112,000 tonnes per year [\approx 3.7 TWh per year]). A [study by Economica](#) estimates the investment costs at around €1 billion. At least 6 GW of electrolysis capacity is to be built in the EU by 2024 and 40 GW by 2030. This should produce up to 1 million tonnes (\approx 34 TWh/a) of renewable hydrogen per year in 2024 and 10 million tonnes per year (\approx 340 TWh/a) by 2030. By 2050, the production capacity of green hydrogen is to increase to 500 GW.

According to the Austrian hydrogen strategy, 70 TWh of climate-neutral hydrogen is to be available by 2040. In order to cover the gap between domestic production and demand, around 70% of this is to be imported in the long term. The southern corridor is to become the [main import route](#). The European hydrogen strategy envisages the import of 10 million tonnes (\approx 340 TWh) per year by 2030.

The joint platform HyPA (Hydrogen Partnership Austria) was set up in 2023 by the Austrian Federal Ministry of Culture, the Austrian Ministry of Economic Affairs and the province of Tyrol to support the ramp-up of an Austrian hydrogen economy. The platform is supported by an advisory board, which will draw up recommendations for the responsible ministries to accelerate the hydrogen ramp-up. E-Control is actively represented on this advisory board.

REGULATORY FRAMEWORK

In order to achieve the electrolysis capacity target of 1 GW by 2030, initial investments will have to be made in the construction of generation plants (electrolysers) during the start-up phase. The legal framework for subsidies and exemptions from grid charges (electricity) was created in the Renewable Energy Expansion Act and is constantly being further developed. The corresponding transport infrastructure should also be developed as soon as possible to enable hydrogen use in the industry. The legal framework for the European hydrogen market was adopted at EU level in December 2023 and must be transposed into national law in 2024/2025. The revised

Infrastructure Regulation already exists, which forms the basis for the selection of hydrogen infrastructure projects in the common interest (PCIs); energy regulators have the task of evaluating the projects. Some Member States, such as Germany and Belgium, have also already adopted and implemented a regulatory framework for the development of hydrogen infrastructure.

In Austria, planning for the development of the hydrogen infrastructure has already begun:

- > The feed-in of hydrogen (as renewable gas) into the existing gas infrastructure is covered by the Gas Act 2011; according to ÖVGW technical regulations, this is possible up to 10%.
- > H2 readiness can be taken into account if investments in the gas grid are still required.
- > In a study by the [Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology](#) and the draft of the Austrian integrated network plan (see chapter 'Cross-sectoral planning in the integrated network plan'), an initial network for 2030 and the further development of a hydrogen network based on demand and import requirements were designed.
- > Certain planning activities for a pure hydrogen network have been approved as part of the planning instruments in the network development plans (coordinated network development plan and long-term plan), but implementation projects including cost approval have not been approved.
- > Hydrogen projects of the Austrian transmission system operators GCA and TAG have been included in the list of projects of common interest (PCIs). This enables accelerated authorisation procedures and access to European funding.

However, a regulatory framework for the hydrogen market based on the European requirements from the decarbonisation package is necessary for the implementation of the projects. This was adopted in December 2023 (see chapter 'Decarbonisation package'). Legal regulations for the approval of implementation projects for pure hydrogen networks, the principles of tariffication in the transmission and distribution network for hydrogen, annual tariffication and capacity bookings and management in the hydrogen transmission and distribution network, access to the hydrogen network and hydrogen storage facilities, unbundling and transparency are essential. In addition, the authority for the regulation of pure hydrogen networks is to be determined.

In E-Control's view, a national grid operator should be sought for the construction and operation of a hydrogen grid. This should also be enshrined in law. "Dynamic regulation" and, in particular, flexible adjustments to market developments should be enabled via ordinance-issuing powers for E-Control (e.g. market model ordinances and tariff ordinances).

These and other topics were explored together with international experts at a [dedicated E-Control event](#) in June 2023.

Electricity supply, gas supply, security of supply

Fossil gas consumption in Austria fell in 2023 compared to the previous year. A comparison of consumption in the winter of 2022/23 with previous years also showed a significant reduction that goes beyond temperature-related fluctuations. A further decline is expected for the winter of 2023/24. Electricity consumption in 2023 was also lower than in the previous year and the decline is due to structural reasons.

In terms of gas supply, the focus was on making Austria less dependent on Russian fossil gas supplies and tapping into other sources of supply instead. The share of biogas is still very low. In the case of electricity, generation from renewable sources increased, in particular due to increased hydropower generation and the PV boom. In this respect, however, E-Control's calculations still show a clear gap between actual generation and the generation targets from the Renewable Energy Expansion Act.

Further information on the development of generation and consumption figures from the previous year is available in the [E-Control statistics brochure 2023](#) (reporting year 2022).

The electricity labelling for 2022 showed a slight decrease in the proportion of renewable energy sources compared to the previous year. The gas labelling for 2022 was mandatory for the first time, but for the most part showed gas of unknown origin.

E-Control is strengthening the areas of security of supply and supply reliability through preparatory measures on the one hand and close monitoring on the other. Despite the sometimes difficult situation, the supply to the Austrian population was guaranteed throughout 2022 and 2023 and all indicators point to a continued stable supply.

Development of electricity and gas consumption

Following the price spikes in 2022 and fears that the supply of both electricity and fossil gas might not be secure during the winter of 2022/2023, public attention in 2023 was primarily focussed on the development of fossil gas and electricity consumption.

At 75.6 TWh, Austria consumed 12.5% less gas in the 2023 calendar year than in 2022. In August 2022, an EU emergency regulation came into force, according to which fossil gas consumption in the six winter months was to be voluntarily reduced by 15% compared to the average of the previous five winters. Austria clearly exceeded this target at 17%. Even adjusted for temperature, the savings were 13.8% according to E-Control's own calculations. This means that around 80% of the savings were achieved through measures, while the rest was due to the warm temperatures last winter. In the first three winter months, another 10% was saved compared to 2022 (see Figure 9).

Electricity consumption was little affected by the high price months in 2022. However, there was a delayed but noticeable decline of over 3.4 TWh in 2023 compared to the previous year, ultimately totalling 60.7 TWh. Figure 10 shows the relative consistency of the monthly decline until September. This suggests that the decline is due not only to temperature effects, but also to structural reasons. However, the break in October 2023 is also striking. In the fourth quarter, the year-on-year reduction in consumption was only slight.

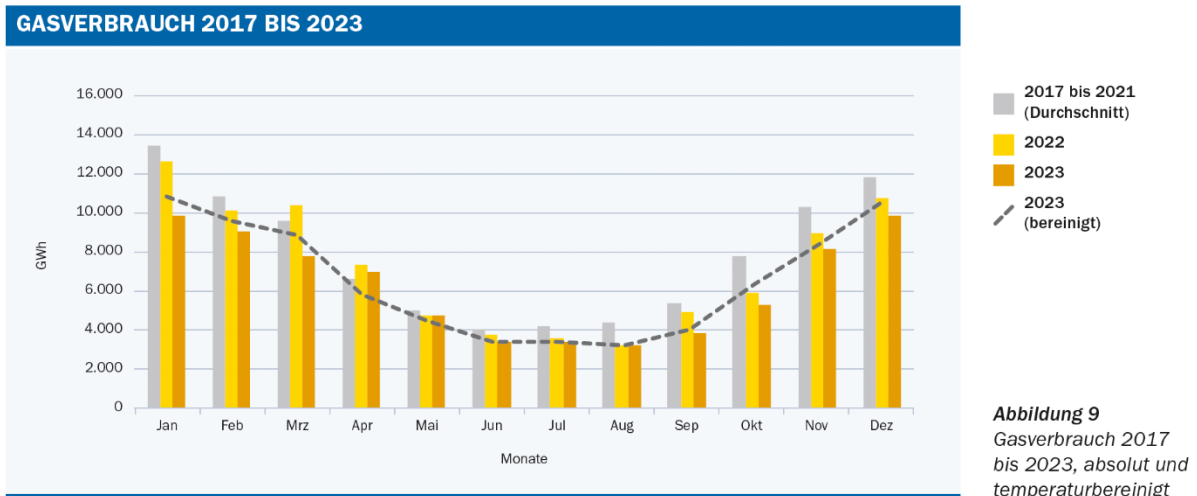


Abbildung 9
Gasverbrauch 2017 bis 2023, absolut und temperaturbereinigt

Quelle: E-Control

Figure 9: Gas consumption in absolute numbers and corrected for varying weather conditions. The figure shows the absolute consumption in 2022 (yellow), in 2023 (orange), as 2017-2021 average (grey) and the consumption as corrected for weather conditions for 2023 (dotted line).

One aim of the 2022/2023 measures was to reduce peak consumption in the electricity system. In fact, the consumption values show that in the first 12 weeks of 2023, the highest 10% of hours in terms of grid load were 5.1% below the values for 2017-2022 on a weekly basis. The range was relatively wide (between -2% and -11% depending on the week).

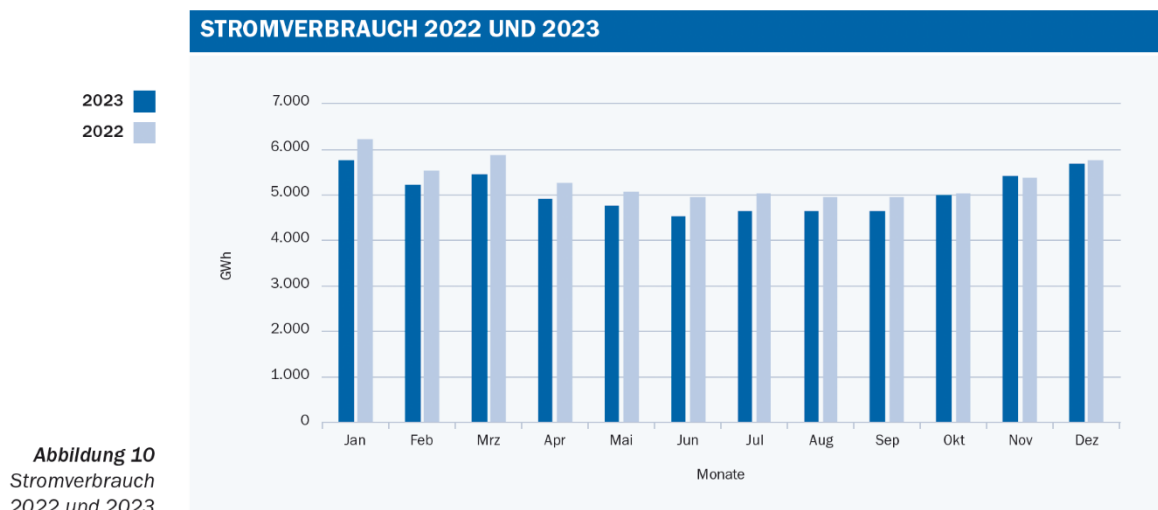


Abbildung 10
Stromverbrauch 2022 und 2023

Quelle: E-Control

Figure 10: Electricity consumption in 2022 (light blue) and 2023 (dark blue)

Sourcing and generation

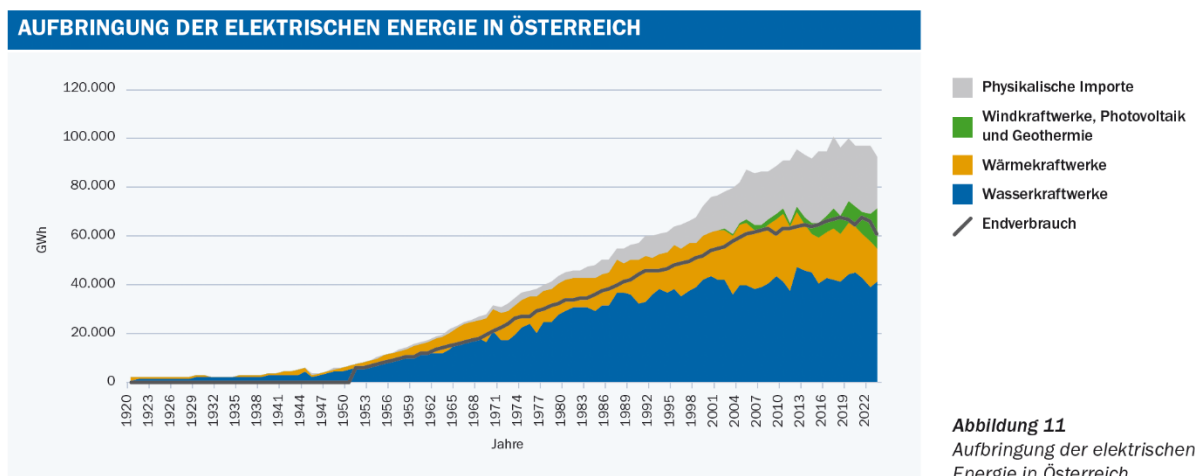
On the opposite side of demand in the gas balance, in addition to the low level of domestic fossil gas production, net imports are the main source of gas supply. The composition of imports and exports has changed significantly since 2022. While previously, an average of over 500 TWh was imported, and over 300 TWh was also exported to Italy alone (Austria's transit function). Imports fell to around 168 TWh in 2023 and Italy only purchased 27 TWh from Austria, a similar amount to that of Hungary (24.5 TWh). In contrast, Italy has even become an important exporter of fossil gas to the Austrian market (13.4 TWh).

Physically, only the quantities per border transfer point are known, i.e. which quantity of gas has entered or left Austria via which border. Imports at the Slovakian border (Baumgarten) can include Russian gas volumes, but also German gas volumes that are delivered via the Czech Republic and Slovakia. Conversely, imports at the German border may also include Russian gas volumes that were landed in western Europe by LNG ship. It is therefore not possible to clearly identify the countries of origin; this can only be approximated statistically. According to this estimate, 72 TWh of Russian fossil gas was brought onto the Austrian market in 2023 and sold here directly to domestic customers or via the wholesale market to national and international traders.

Figure 11 shows the generation of electrical energy in Austria over time. In 2023, 4.3 TWh more electrical energy was generated than in the previous year. On the one hand, 3.4 TWh less was generated in gas-fired power plants, while on the other hand, generation in renewable energy plants increased by 7.7 TWh according to preliminary data. This is primarily due to the increase in hydropower generation. The expansion boom in PV systems of almost 2.7 GW in 2023 led to an additional PV feed-in of over 1 TWh.

The Renewable Energy Expansion Act provides for 100% of electricity consumption to be covered by renewable generation by 2030. To this end, the target has been set to generate an additional 27 TWh of electricity from renewable sources by 2030. Converted to the individual technologies, this means an annual increase in generation volumes of:

- > 1,100 GWh photovoltaics
- > 1,000 GWh wind
- > 500 GWh hydropower
- > 100 GWh biomass



Quelle: E-Control

Figure 11: Sources of electrical energy in Austria. The figure shows physical imports (grey), wind, PV and geothermal energy (green), thermal power plants (orange), hydro power plants (blue), and compares it to the consumption in Austria (line).

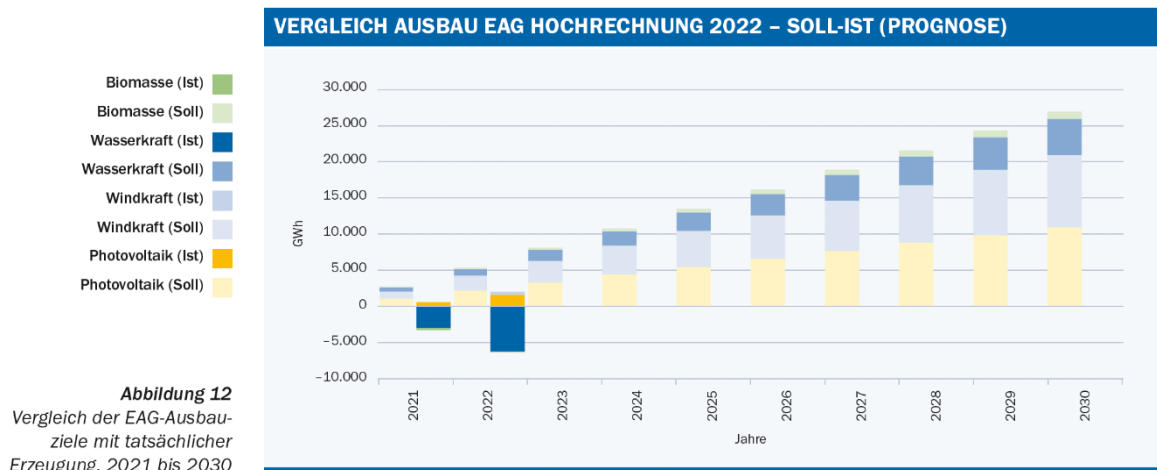
Figure 12 distributes these generation targets along a linear path from 2021 to 2030 and compares them with the actual electricity generation from renewable sources in 2021 and 2022. It can be seen that 2021 and 2022 were poorer generation years, especially in the area of hydropower.

If the additional TWh required by 2030 are converted to capacity using the full-load hours specified in the Renewable Energy Expansion Act, this results in a necessary annual capacity increase of 1,640 MW. Distributed across the individual technologies, these are annual expansion targets of:

- > 1,100 MW photovoltaics

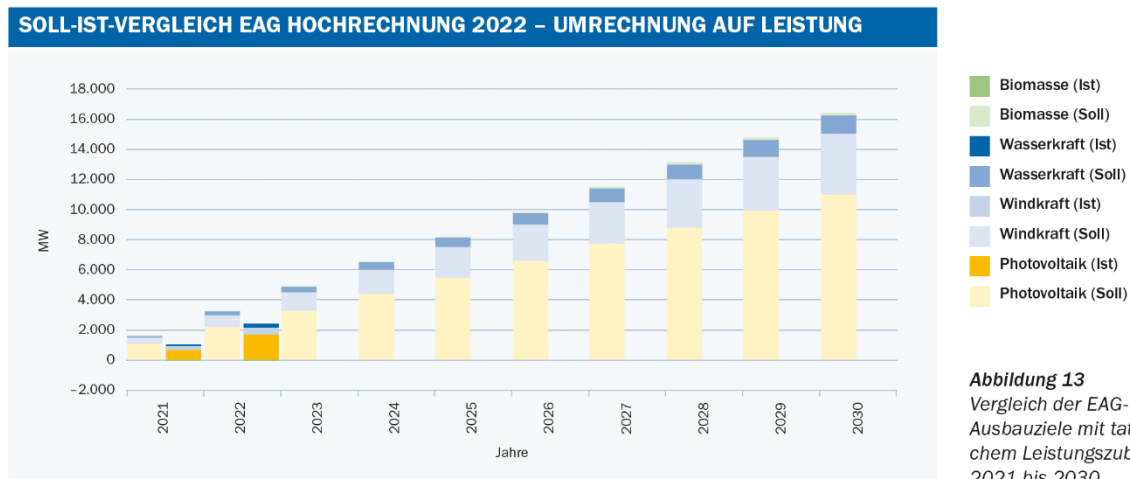
- > 400 MW wind
- > 125 MW hydropower
- > 15 MW biomass

Figure 13 distributes these values up to 2030 along a linear path and compares them with the actual expansion. In 2021, 990 MW could be added in the areas of photovoltaics, wind, hydropower and biomass, and by 2022 this figure had already risen to 1,430 MW. The total for 2021 and 2022 was 2,420 MW. Despite this, the actual expansion still falls short of the statutory targets.



Quelle: E-Control

Figure 12: Juxtaposition of actual renewables generation expansion in 2021 and 2022 and expansion needed to reach the statutory targets from 2021 to 2030. The figure shows solid colours for actual expansion and faded colours for expansion targets, for biomass (green), hydropower (dark blue), wind power (light blue), and PV (yellow).



Quelle: E-Control

Figure 13: Juxtaposition of actual renewables capacity expansion in 2021 and 2022 and expansion needed to reach the statutory targets from 2021 to 2030. The figure shows solid colours for actual expansion and faded colours for expansion targets, for biomass (green), hydropower (dark blue), wind power (light blue), and PV (yellow).

E-Control published a more detailed analysis and review of the targets from the Renewable Energy Expansion Act in a dedicated [monitoring report](#). The [CEER Report on Tendering Procedures for Renewable Energy Sources in Europe](#) analyses the tendering mechanisms for renewable electricity generation in various EU countries, while the [CEER Status Review of Renewable Support Schemes in Europe for 2020 and 2021](#) examines the support systems as a whole.

GAS DIVERSIFICATION

Both Austria and the EU as a whole are pursuing the goal of gas diversification. While the utilisation of several different gas sources and transport routes has been an objective for some time in the interests of security of supply, the replacement of Russian gas has been a high priority since the start of the Russian war of aggression against Ukraine. At a pan-European level, over 40% of gas imports to Europe used to come through Russian pipelines. In 2023, this figure was around 8%.

In order to compensate for these volumes, the purchase of pipeline gas from Norway can be increased. New routes via the international LNG market are required in order to expand the sources of gas supply beyond imports purely through gas pipelines. In this way, gas can also be imported from regions that are not connected to the European market by pipeline. The targeted diversification led to increased expansion of the LNG import infrastructure in 2023. New infrastructure for re-gasification and storage was built to bring the LNG transported by ship to Europe.

The supply of LNG is influenced by global factors. The Asian market, particularly China, South Korea and Japan, is one of the largest importers of LNG. LNG availability for Europe is therefore heavily dependent on demand and price levels in Asia.

After re-gasification in Europe, the gas must be transported to Austria via the existing pipeline system through Germany or Italy. Various LNG terminals and transport routes are available for this purpose. Info box 1 shows Austria's current gas import capacities at the borders and the injection capacities from storage facilities and compares them with total domestic consumption and the Austrian peak load.

For LNG imports from France, Belgium, the Netherlands and Germany, the direct transport route to Austria (at the Oberkappel entry point) would incur lower capacity costs than the route via the Czech Republic and Slovakia, but the transport capacities via Germany to Austria are significantly lower. The route via Italy to Austria (Arnoldstein entry point) tends to be more favourable despite higher capacity costs in Arnoldstein because the costs are only incurred for one border transfer point between Italy and Germany.

Substantial capacity expansions are planned at the LNG terminals in Belgium and the Netherlands. However, access to long-term capacity for new companies is restricted here (e.g. at the gate terminal in Rotterdam). There are also capacity bottlenecks for transport via Germany to Austria. There would be higher transport capacities on the transport route via Germany, the Czech Republic and Slovakia to Austria, but these are associated with higher transport costs. In Germany, LNG capacities were installed within a short space of time in 2022 and 2023 and these are still being expanded, which may also be of interest to the Austrian market.

Another option would be to import gas from Italy, where there are also LNG terminals in addition to the gas pipelines from North Africa and the southern gas corridor. Imports from Germany incur additional costs due to the German storage neutrality charge. Capacity is available in the medium term and an increase in pipeline capacity towards Austria to Arnoldstein is already planned, with completion forecast for the end of 2028.

Another theoretical option for importing gas from the south of Austria is the Croatian LNG terminal on the island of Krk. However, there are various issues that need to be considered here. On the one hand, the LNG capacities themselves are low (even after implementation of the planned expansion) and on the other hand, there are no usable transport capacities from Croatia via Slovenia to Austria. One possible route would be to transport the gas via Hungary and Slovakia to Austria, but there is still the issue of the relatively small quantities of gas and therefore the viability of transporting it. From today's perspective, it is more likely that the LNG landed in Krk will remain in the region and be utilised locally.

When considering the above options, however, it must also be borne in mind that potentially unfounded, additional charges at the border transfer points to upstream markets not only make the diversification efforts of Austrian, privately organised suppliers more expensive, but also make

them significantly more difficult or even impossible. Especially the neutrality charge levied at the exit points from Germany is a major obstacle for Austria on the path to diversification. As the price differences for trading gas between the trading points in Germany and Austria are usually not sufficient to offset these additional costs due to the German neutrality charge, large quantities of gas that could also flow to Austria are already being sold in upstream markets in order to avoid realising an economic loss. The legality of this charge still has to be assessed by the European Commission.

The Gas Diversification Act 2022 was enacted to accelerate the reduction of Austria's dependence on Russian fossil gas. On this basis, subsidy guidelines were drawn up for the partial compensation of additional costs incurred by companies in purchasing gas from non-Russian sources. The origin of the fossil gas must be verified in accordance with the guidelines. Similarly, only those quantities of fossil gas from non-Russian sources that can be proven to have been taken from storage for immediate consumption in Austria by 31 December 2025 will be supported.

The aim of the Gas Diversification Act 2022 is therefore to increase the resilience of the Austrian economy by reducing dependence on Russian fossil gas by cushioning the additional costs of diversification to relieve the burden on companies. This relief or compensation is handled by Austria Wirtschaftsservice Gesellschaft mbH (aws). On the infrastructure side, E-Control approves projects that enable an increase in imports of gas from non-Russian sources (e.g. partial WAG loop, see chapter 'Gas networks').



Quellen: AGGM Datenmonitor, AGGM Langfristige Planung 2022, E-Control

Info box 1: Existing gas import capacities into Austria. The figure lists the annual and hourly import capacity at the different entry points on the map. The yellow box displays the total capacity and hourly withdrawal capacity of the storage facilities. In the centre, the figure shows the Austrian annual consumption and peak load.

RENEWABLE GASES

In Austrian legislation, the term ‘renewable gas’ refers to renewable hydrogen or gas from biological or thermochemical conversion that is produced exclusively from energy from renewable energy sources, or synthetic gas that is produced on the basis of renewable hydrogen (section 7(1)(16b) Gas Act 2011). In 2022, renewable gases in Austria were only produced as biomethane and fed into the gas grid, i.e. all of this was biogas upgraded to fossil gas quality and fed into the gas grid.

After a relatively strong increase until 2018, the production of biomethane is currently declining somewhat. In 2022, only 0.14% of Austria's domestic gas consumption was covered by biomethane (see Figure 14).

The planned Renewable Gas Act is intended to encourage biogas plant operators to upgrade the biogas and feed it into the gas grid. At present, it is technically easier and, above all, more economical for most plant operators to convert the biogas produced directly into electricity and sell it as green electricity instead of upgrading it and feeding it into the gas grid.

Various studies by the Energy Ministry on the development of renewable gases and infrastructure as well as the national and European scenarios for infrastructure planning come to the conclusion that substantial quantities of gaseous energy sources will still be used in 2040. How large these quantities are and how they are distributed between methane and hydrogen depends on the respective scenario. Figure 15 illustrates different scenarios for the year 2040. Even if consumption in the small consumer segment and for heating is likely to fall, industry will continue to need gaseous energy sources. These are likely to be methane and/or hydrogen, at best from renewable sources.

INLANDSGASVERBRAUCH VS. BIOMETHANEINSPEISUNG												
in TWh	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Inlandsgasverbrauch	99	95	91	84	89	93	100	96	99	95	100	88
Biomethaneinspeisung	0,05	0,05	0,05	0,09	0,11	0,13	0,15	0,17	0,15	0,14	0,14	0,12 ^{*)}
Biomethananteil (in %) am Inlandsgasverbrauch	0,05	0,06	0,06	0,11	0,12	0,14	0,15	0,18	0,15	0,15	0,14	0,14

*) Daten aus dem Anlagenregister

Quelle: Biomethanregister, E-Control

Abbildung 14
Jährliche Biomethanmengen, 2011 bis 2022

Figure 14: Annual biomethane production from 2011 to 2022. The table shows the domestic gas consumption and the biomethane production (in TWh) and share of biomethane production in the overall consumption (in %)

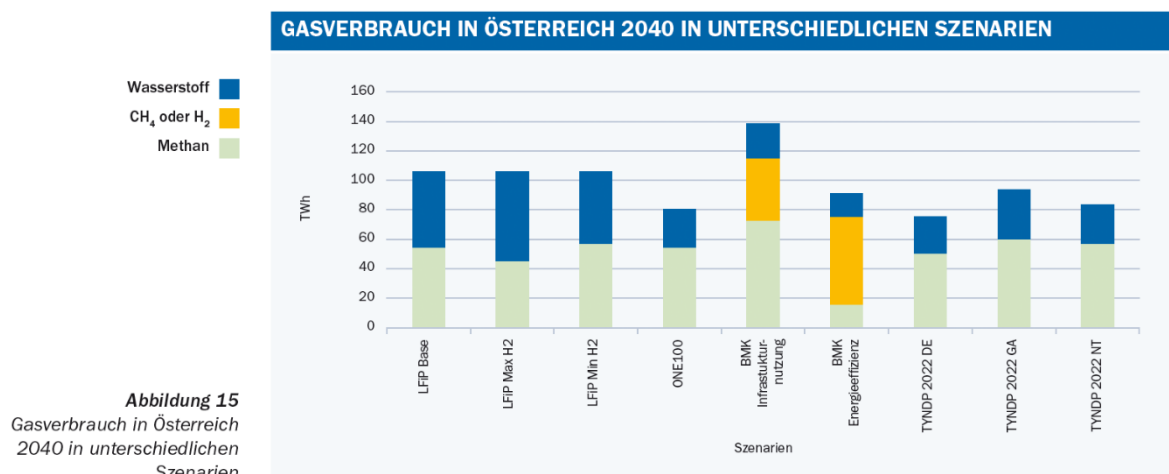


Abbildung 15
Gasverbrauch in Österreich 2040 in unterschiedlichen Szenarien

Quelle: LFIP der AGGM

Figure 15: Projected gas consumption in Austria in 2040 according to a variety of scenarios. The figure shows consumption of hydrogen (blue), CH₄ or H₂ (orange) and methane (green).

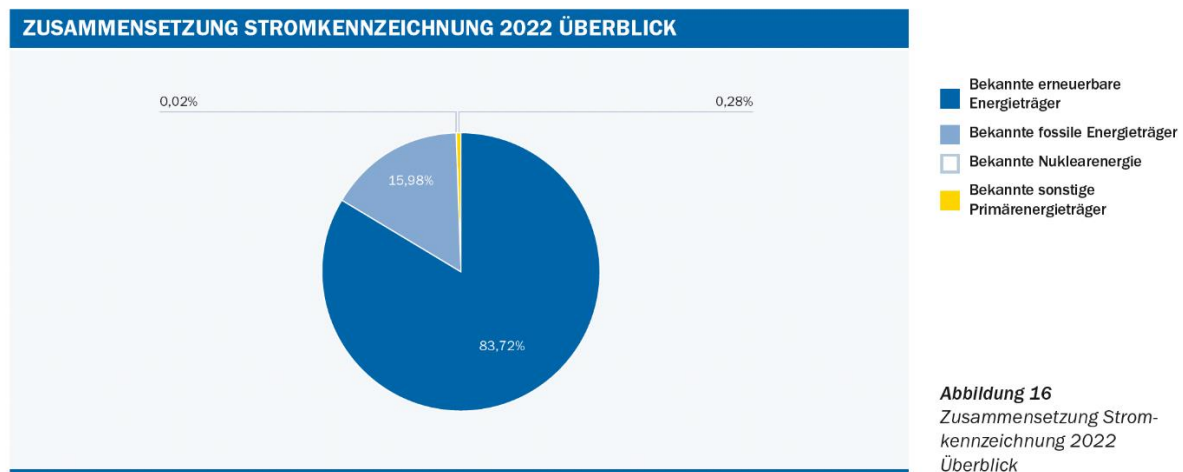
ELECTRICITY LABELLING

Electricity suppliers that supply final customers in Austria must disclose the origin of their electricity. This is based on guarantees of origin. These can be procured together or separately from the electricity.

In the 2022 labelling period, 83.72% of the guarantees of origin used came from renewable energy sources (see Figure 16). This figure has fallen slightly compared to the previous year (previous year: 85.39%). Guarantees of origin from nuclear energy were also used for the first time (share of 0.02%).

As guarantees of origin can also be imported from abroad, the values on electricity labelling deviate from the Austrian generation statistics. The share of imported guarantees was 37% in 2022.

The new two-stage electricity labelling system was used for the first time in 2022. The so-called primary electricity labelling is created automatically in E-Control's GO registry. This shows the generation technology, the country of origin of the GO and the extent of joint trading of electricity and GO. However, the disclosure of joint trading was still voluntary in 2022. For the years from 2023 onwards, suppliers are required to indicate which electricity volumes were procured together with the guarantees of origin. Detailed information is provided by secondary labelling, which only needs to be displayed on the supplier's website. The entire system is processed in E-Control's GO registry. This is also where guarantees of origin are issued for Austrian installations.



Quelle: E-Control

Figure 16: Electricity labelling in 2022. The figure shows electricity of known renewable origin (dark blue), of known fossil origin (light blue), of known nuclear origin (white) and of other known origin (yellow).

In the publicly accessible [plant register](#), all plants that are registered in the database are displayed in anonymised form. In addition to information such as maximum capacity and location, the energy fed into the grid by the respective plant can also be found (based on the grid operator reports for issuing guarantees of origin). More detailed information on Austrian electricity labelling can be found in [E-Control's electricity and gas labelling report 2023](#) (reporting year 2022).

GAS LABELLING

In 2023, suppliers had to carry out gas labelling for the first time, for gas volumes supplied to final customers in 2022, and state the origin of the gas supplied on invoices and advertising materials.

As with electricity, the labelling was carried out and checked in E-Control's GO registry. Gas for which there were no guarantees of origin was labelled as fossil gas of unknown origin. Gas for which there were biomethane guarantees of origin from the GO registry was labelled as renewable gas. On average, the proportion of renewable gas from Austrian generation plants was 0.10%. The remaining 99.90% of the fossil gas supplied to Austrian final customers came from unknown

sources. However, it should be noted that 41% of the generated guarantees of origin were not used for labelling.

As expected, some questions and inconsistencies arose due to the first-time implementation. The amendment to the existing Gas Labelling Ordinance was intended to clarify the situation. The results of the gas labelling are listed in [E-Control's electricity and gas labelling report 2023](#) (reporting year 2022).

In addition, following a comprehensive audit, E-Control's GO registry became the first active member to be connected to the international AIB Gas Hub in 2023, which will enable the international transfer of guarantees of origin between member states in future.

Security and reliability of supply

Supply reliability in Austria remained at a high level in 2022. Austria's electricity supply is also internationally secure thanks to close networking across borders.

After the intensive filling of gas storage tanks in the summer of 2022 and 2023, high storage levels were reached for both years at the start of the heating season. Nevertheless, the tense situation was reflected in gas prices, which is why the most effective measure is to save on gas consumption. In order to secure the supply of electricity to the Austrian population and economy in the long term, forward-looking national and international analyses of the adequacy of the supply situation are being carried out. To prepare for supply disruptions that may nevertheless occur, the Energy Intervention Powers Act provides for measures in the gas and electricity sectors. Gas suppliers must also comply with a strict supply standard, which is reviewed annually by E-Control.

ELECTRICITY AND GAS SUPPLY RELIABILITY

The supply situation in the electricity sector remains stable. The European Network of Transmission System Operators for Electricity (ENTSO-E) regularly prepares forecasts on security of supply on the basis of the EU Risk Preparedness Regulation. The probabilistic approach means that a large number of consumption and generation-related risks can be taken into account.

In contrast to the national level of the [E-Control Security of Supply Report](#), the ENTSO-E analyses primarily take into account cross-border electricity exchanges. Both the simulation results of the [Summer Outlook 2023](#) and the [Winter Outlook 2023-2024](#) show a stable supply situation for Austria. Neither the reference scenario nor the various sensitivity analyses have identified concerns regarding demand coverage.

In the electricity sector, the European interconnected grid is used for balancing. Particularly in summer, electricity is exported from Austria due to overproduction and imported from abroad in the colder months of the year. In 2023, seasonal balancing via the European interconnected grid was particularly evident. Due to the extreme weather conditions in 2023, specifically as a result of the heavy rainfall in May and August, there was high run-of-river hydropower generation. The generation values were significantly higher than the average values, reaching 4.7 TWh in May and 4.2 TWh in August. These developments also resulted in high export volumes. In contrast, Austria was reliant on higher electricity imports in the winter and autumn months. Cross-border exchange remains essential to ensure balanced electricity supply and acts as a safeguard for all participating countries. For this reason, the fulfilment of European contracts is particularly important for security of supply in Austria. Purchased transport rights and procurement rights must be honoured at all times.

The crises of 2022 posed enormous challenges for the security and quality of supply. Nevertheless, the analyses of the [annual outage and disruption data 2023](#) (reporting year 2022) show that the reliability of the electricity supply remained at a very high level. As part of the collection of this data, all Austrian grid operators record and report all power outages lasting one second or longer to E-Control every year. The cause, number of affected grid users, affected power and other data relevant for the statistical analysis are requested. In addition, all grid operators must submit the

reliability indicators for customer-related unavailability (SAIDI) and power-related unavailability (ASIDI) calculated for the previous calendar year to E-Control and publish them on their own website. Info box 2 explains how these key figures for unplanned interruptions are calculated.

The analysis of the data for the survey year 2022 resulted in a customer-related unavailability (SAIDI) excluding regional exceptional events of 37.72 minutes. A distinction was made between planned and unplanned supply interruptions (excluding regional events), resulting in values of 13.55 minutes and 24.17 minutes respectively. The SAIDI thus reached its second-lowest value since recording began (see Figure 17).

The value for service-related unavailability (ASIDI) excluding regional exceptional events totalled 39.81 minutes for the 2022 reporting year. A distinction is made between planned and unplanned supply interruptions, resulting in values of 15.83 minutes and 23.98 minutes. This is the third-lowest value since records began.

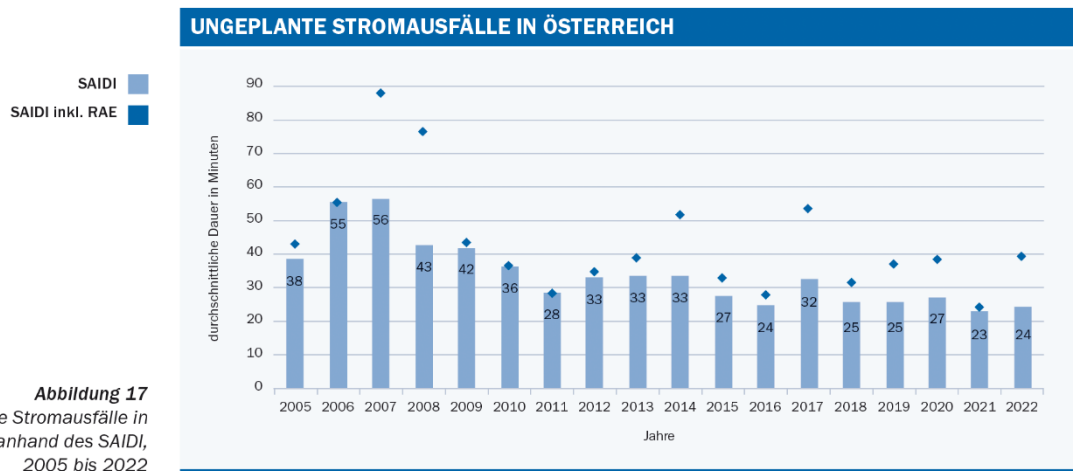


Abbildung 17
Ungeplante Stromausfälle in Österreich anhand des SAIDI, 2005 bis 2022

Quelle: E-Control

Figure 17: SAIDI displaying unplanned electricity supply interruptions from 2005 to 2022

ZUVERLÄSSIGKEITSKENNZAHLEN STROM

SAIFI

System Average Interruption Frequency Index

Anzahl der von jeder Unterbrechung betroffenen Netzbenutzer

$$\frac{\sum_j n_j}{N}$$

Summe aller Unterbrechungen

Anzahl aller Netzbenutzer



SAIFI: Wie oft war die Versorgung jeder Netzbenutzerin und jedes Netzbenutzers in diesem Jahr durchschnittlich unterbrochen?

SAIDI

System Average Interruption Duration Index

Anzahl der von jeder Unterbrechung betroffenen Netzbenutzer

$$\frac{\sum_j n_j \cdot t_j}{N}$$

Summe aller Unterbrechungen

Anzahl aller Netzbenutzer

Dauer jeder Unterbrechung



SAIDI: Wie lange war die Versorgung jeder Netzbenutzerin und jedes Netzbenutzers in diesem Jahr durchschnittlich unterbrochen?

ASIDI

Average System Interruption Duration Index

Scheinleistung der von jeder Unterbrechung betroffenen Transformatoren

$$\frac{\sum_j l_j \cdot t_j}{L_s}$$

Summe aller Unterbrechungen

Gesamte Scheinleistung

Dauer jeder Unterbrechung



ASIDI: Wie lange war die Versorgung **je Leistungseinheit** in diesem Jahr durchschnittlich unterbrochen?

INFOBOX

Quelle: E-Control

Info box 2: Meaning and calculation of different supply reliability measures

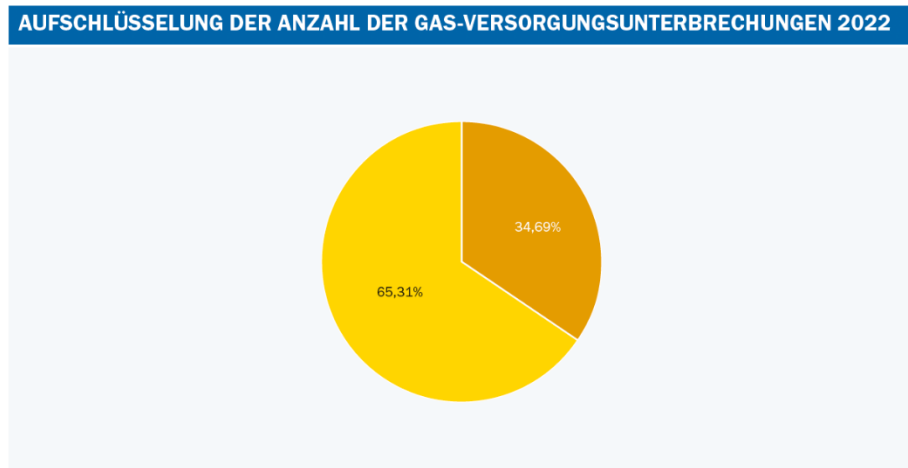


Abbildung 18
Aufschlüsselung der Anzahl der Gas-Versorgungsunterbrechungen 2022 nach geplanten und ungeplanten Versorgungsunterbrechungen

Quelle: E-Control

Figure 18: Share of planned (orange) and unplanned (yellow) gas supply interruptions in 2022

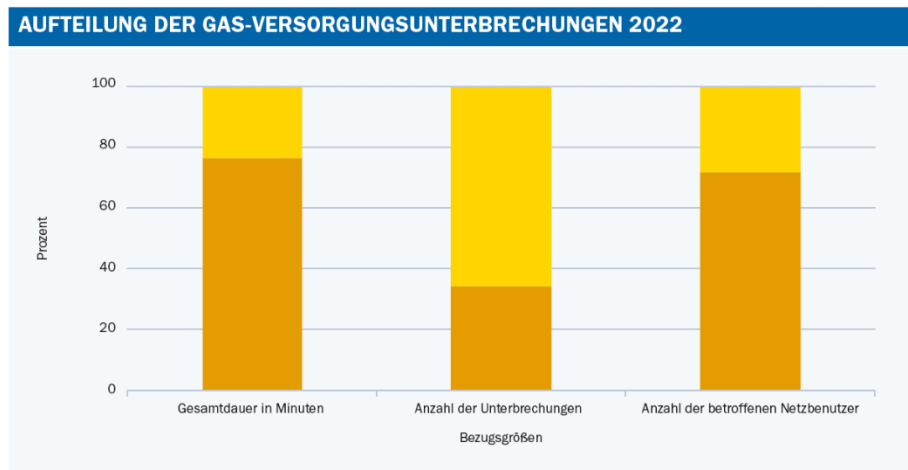


Abbildung 19
Aufteilung der Gas-Versorgungsunterbrechungen 2022 in geplant und ungeplant nach verschiedenen Bezugsgrößen

Quelle: E-Control

Figure 19: Share of planned (orange) and unplanned (yellow) gas supply interruptions in 2022, according to different measurements. The figure shows the overall interruption duration in minutes (first column), the number of interruptions (second column) and the number of affected grid users (third column).

In the gas sector, a total of 3,664 supply interruptions were reported to E-Control in the 2022 reporting year. As shown in Figure 18, 1,271 of these (around 35%) were planned supply interruptions and 2,393 (around 65%) were unplanned interruptions.

Figure 19 shows a breakdown of supply interruptions in 2022 according to different reference values. It can be seen that the duration of planned supply interruptions without weighting by affected grid users (i.e. without multiplying the duration of the interruption by the number of affected grid users) accounts for around 76% of the total duration of all supply interruptions. In terms of the number of interruptions, however, the relation is inverted. There were 35% planned interruptions and 65% unplanned interruptions. This means that there were fewer planned than unplanned supply interruptions in 2022. However, the planned interruptions were of longer duration. At the same time, the figure also shows that more grid users were affected by a planned than an unplanned interruption.

AUFTEILUNG DER GAS-VERSORGUNGSUNTERBRECHUNGEN AUF URSACHEN 2022

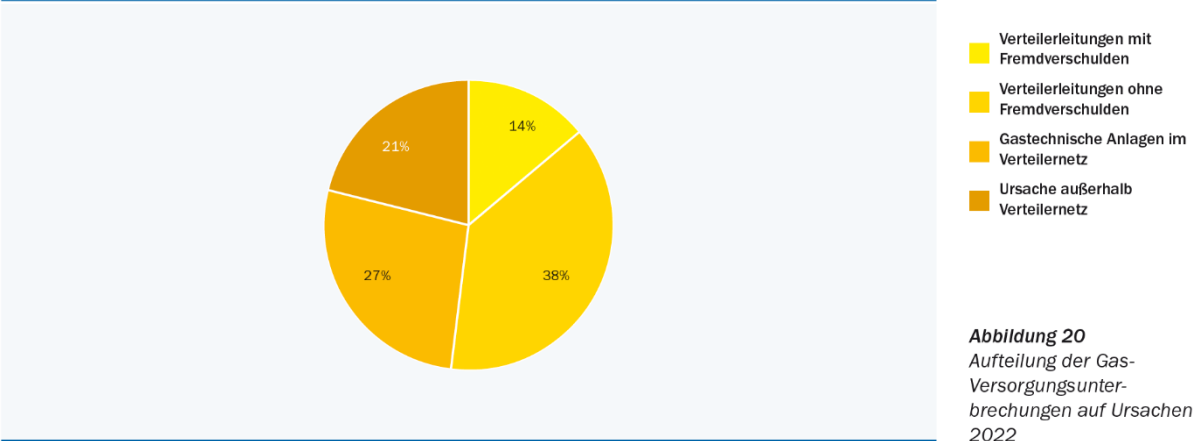


Abbildung 20
Aufteilung der Gas-Versorgungsunterbrechungen auf Ursachen 2022

Quelle: E-Control

Figure 20: Share of different causes of gas supply interruptions 2022. The figure shows, in different shades from light yellow to orange: distribution line interruptions attributable to third parties, distribution line interruptions not attributable to third parties, distribution grid operational equipment, and non-distribution grid causes.

As part of the survey on the technical quality of gas network services, a distinction is generally made between causes outside and inside the distribution network. The reason for this is that only those cases should be attributed to a network operator in the calculation of key figures that are within its sphere of influence. Figure 20 shows that around 21% of the reported supply interruptions were outside the distribution network (e.g. a defective gas boiler in the customer system). Interruptions with a cause in the distribution network are divided into causes not attributable to third parties (around 38%) and gas installations in the distribution network (27%). A comparatively small proportion, around 14%, is attributable to causes for which third parties are responsible.

Figure 21 shows the grid users affected by unplanned interruptions with the cause of the interruption in the distribution area in relation to the total number of metering points supplied in Austria. The original downward trend was countered by a significant increase in the years 2017 to 2019. In 2019, the number of grid users affected by unplanned interruptions was 0.54%. However, this trend did not continue in 2020. Only 0.34% of grid users were affected by an unplanned interruption in the distribution area. This corresponds to an improvement of around 37% compared to the previous year. In 2021, the figure stagnated at 0.34% and fell again to 0.31% in 2022.

VON UNGEPLANTER GAS-UNTERBRECHUNG BETROFFENE NETZBENUTZER

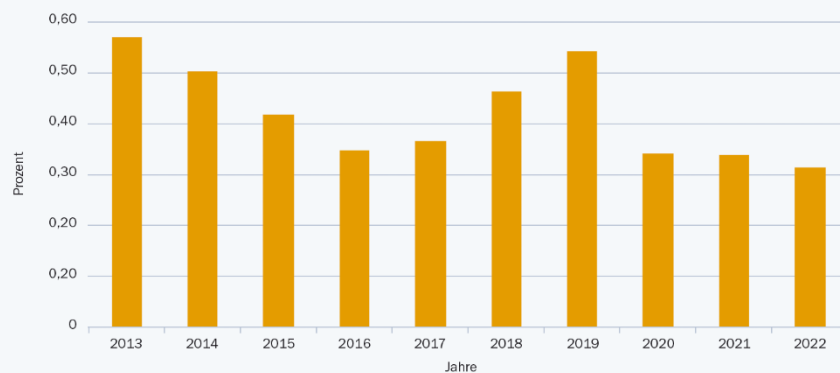


Abbildung 21
Entwicklung der Anzahl von Netzbennutzern, die von ungeplanten Gas-Unterbrechungen mit Ursache im Verteilergebiet betroffen waren, 2013 bis 2022

Quelle: E-Control

Figure 21: Share of grid users affected by unplanned supply interruptions with causes inside the distribution grid, from 2013 to 2022

It is important to note here that only supply interruptions in the distribution network are taken into account. For example, faults that have occurred in gas appliances that are the responsibility of the network user (e.g. gas boiler, gas cooker) are not taken into account. To calculate the total duration of all unplanned supply interruptions, the duration of the respective interruption is multiplied by the number of affected network users. There are also regional differences due to population density and building types (detached house vs. apartment block). For example, a supply interruption in a large city generally affects more grid users at the same time than in rural areas. It should also be noted that interruptions that did not affect any grid users are not taken into account when calculating the key figure. Supply interruptions in the transmission grid had no impact on the distribution grid when calculating the key figures shown.

A detailed analysis of the evaluation results reveals that some individual network operators have high key figures. These are usually due to one or more of the following factors:

- > Low number of metering points, which means that even a few interruptions have a high impact on the key figures;
- > Long duration with single or multiple interruptions;
- > High number of grid users affected by interruptions. Multiplying the number of affected network users by the duration of the respective interruption results in high values.

Overall, the survey shows that the availability and technical reliability of the gas supply remain at a high level. Further details on this can be found in the [gas outage and disruption statistics 2023](#) (reporting year 2022).

GAS SUPPLY AND STORAGE LEVELS IN AUSTRIA

At the beginning of the Russian war of aggression against Ukraine on 24 February 2022, the storage level was 18% in Austria and 30% in the EU, according to AGSI. This was significantly lower than in previous years. One reason for this was the lack of an economic incentive for storage customers to fill their storage facilities (negative summer-winter spread). Secondly, Gazprom Export emptied the storage facilities it uses in Austria (approx. 20 TWh working gas volume) and in the EU (in Germany and the Netherlands) in the summer months of 2021 and did not refill them. According to AGSI data, this left approx. 42 TWh of working gas volume unused in Austria in winter 2021/22. This is around 44% of the total working gas volume of storage facilities in Austria. The legal regulation in force at the time was unable to effectively prevent strategic non-utilisation.

Several measures were therefore taken in 2022 to fill storage facilities. These included the introduction of a strategic gas reserve of 20 TWh, the option of injecting 'protected' gas volumes for consumers and the introduction of the storage obligation for suppliers of protected customers. These measures made it possible to store a total of around 34 TWh by 1 November 2022, which would have been available to Austrian final customers in an emergency. Further volumes were injected by foreign storage customers. In mid-November 2022, the storage level was 96%.

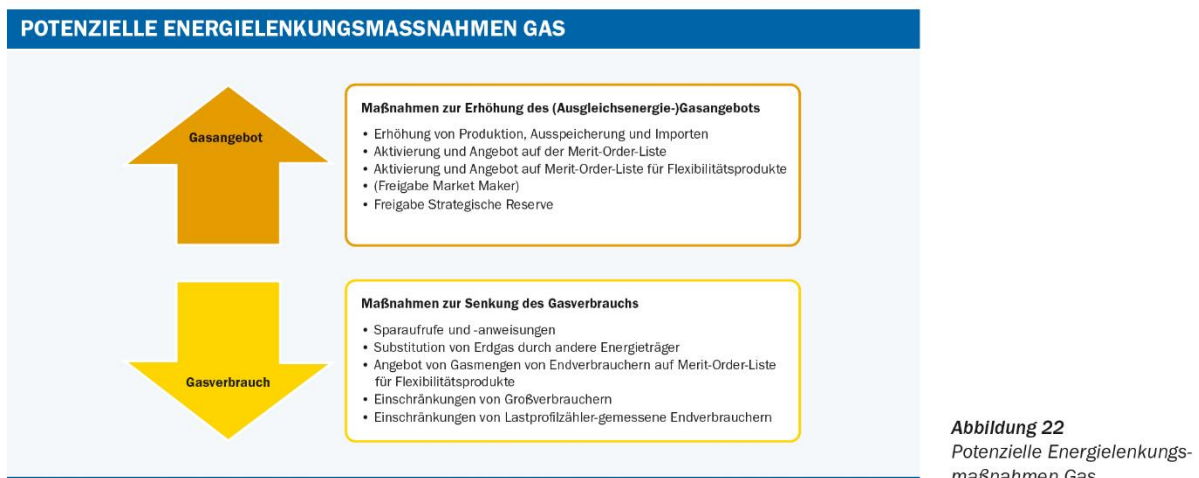
In terms of gas sources, Austria is one of the countries with the highest share of Russian gas in total EU imports. The Austrian gas wholesaler OMV Trading concluded a supply contract with Gazprom Export in 2018 that runs until 2040. The Gas Diversification Act 2022 was passed to incentivise diversification. Companies can be reimbursed for the costs of cross-border import capacities if they import the gas for Austrian final customers.

Due to the high demand to fill the storage facilities and the simultaneous reduction in gas flows from Russia, wholesale prices rose significantly in summer 2022, which was also reflected in final customer prices. This and the mild temperatures in the winter of 2022/23 resulted in significant savings in gas consumption. Austria's gas supply was secured for the 2022 calendar year and the 2022/23 winter period despite the significant reduction in Russian gas flows to Europe and the low storage levels at the start of the war in Ukraine. This was achieved by increasing gas imports via Germany and Italy, also in order to fill the storage facilities in Austria for the coming winter period.

PREPARATIONS FOR ELECTRICITY AND GAS SUPPLY EMERGENCIES

In accordance with the Energy Intervention Powers Act 2012, E-Control is responsible for preparing intervention measures to safeguard the supply of gas and electricity and coordinating them in the event of an emergency. If necessary, measures are put in place by the Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology by way of a dedicated ordinance.

In the event of a crisis, E-Control, in cooperation with the Federal Ministry of Transport, Innovation and Technology and in coordination with the market area and distribution area manager in the gas sector and system operators in the electricity sector, takes all necessary measures to ensure the best possible supply to Austria's final customers and minimise the economic damage. The potential measures to increase gas supply and reduce gas consumption are shown as examples in Figure 22.



Quelle: E-Control

Figure 22: Possible gas intervention measures. The figure shows measures to increase gas supply (orange box) and measures to lower gas consumption (yellow box).

In the event of a gas shortage, market-based measures are used to reduce consumption. Via the flexible merit order list (FlexMOL), final customers with a contractually agreed maximum capacity of more than 10 MWh/h can make available gas volumes in the form of physical balancing energy for the security of supply of the market area (i.e. they voluntarily reduce their consumption). This is intended to avoid further intervention measures (e.g. ordering reductions in consumption). The main steps for utilising FlexMOL are outlined in a [guide](#) published by E-Control.

If market-based measures are not sufficient to guarantee supply to all customers, interventions in the areas of supply and consumption must be prepared or coordinated. A solid forecast and data basis are necessary in order to make decisions on possible restrictions as appropriately as possible. E-Control has therefore developed an intervention calculator to map the supply and consumption of gas in Austria and thus how long storage would last in defined scenarios and in a specific observation period. Its primary purpose is to assess the necessity and impact of restricting gas consumption and thus answer two key questions: 'Are (governmental) measures to restrict consumption necessary?' and if so: 'Which measures are needed, and in what order?'

In order to best prepare large consumers for a situation with restrictions, E-Control also developed a [guide](#) which outlines and describes the most important steps in the event of restrictions on gas consumption in an energy reduction scenario. The guides and the interventions calculator for estimating the impact of the measures were explained in detail and transparently laid out at an [E-Control event](#) in November 2022. E-Control also carried out extensive information activities and public relations work. A dedicated helpline was also set up to provide information to larger gas consumers.

The Energy Intervention Powers Act also offers important instruments for maintaining electricity supply in the face of potential electricity shortages. Precautionary measures can be taken both in the area of generation, e.g. by issuing generation instructions to producers, as well as in the area of electricity consumers, e.g. with savings appeals, quotas or regional shutdowns. Against the backdrop of the ongoing Russian war of aggression against Ukraine, increased attention was also paid to energy intervention measures and crisis prevention in the electricity sector in 2023, even though many efforts at national and European level resulted in the electricity supply situation being more robust than last year.

In order to ensure a reliable database for the preparation and implementation of crisis prevention measures, E-Control is authorised under the Energy Intervention Powers Act to order the reporting of data in the gas and electricity sectors at periodic intervals by means of the Energy Intervention Data Ordinance. This ordinance is continuously revised in order to improve the granularity of information, allowing more accurate forecasts and more targeted measures to be determined.

Another important aspect of crisis preparedness is the development of crisis scenarios and the rehearsal of individual processes, particularly with regard to communication between the competent authorities and with the relevant stakeholders. To this end, E-Control regularly organises energy intervention exercises and takes part in numerous exercises conducted by other authorities and stakeholders.

In 2024, the focus will continue to be on the ongoing preparation and further development of measures, which will also include information events for the relevant stakeholders.

FORWARD-LOOKING MEASURES FOR SECURITY OF ELECTRICITY SUPPLY

To assess the security of electricity supply, E-Control prepares a dedicated annual report which evaluates both the domestic supply with regard to peak loads and the overall energy coverage of electricity consumption over a defined period. The [report on security of supply](#) consists of two parts. The first part presents the current supply situation in Austria. This includes a description of the most recently observed changes in consumption, installed power plant capacities and peak loads. In the second part, these variables are then forecast for the year 2030 in order to be able to make a statement on what the supply situation may be like in that year.

Following the weak coronavirus year of 2020, considerable new renewable electricity generation capacity was added in Austria in 2021. Photovoltaics added 660 MW (+33%) and wind power 258 MW (+8%). In contrast, the maximum capacity for hydropower only increased by 35 MW, almost all of which was attributable to facilities with storage. These additions were offset by closures of fossil fuel power plants totalling 103 MW and biomass plants of 25 MW. The total installed capacity in 2021 was 24,084 MW. Of particular importance is the freely deployable flexible capacity, which totalled 10,547 MW (gas-fired power plants and storage power plants). According to energy statistics, final electricity consumption in 2021 totalled 64.4 TWh, of which 31.5% was attributable to households. The peak load in the control area, which is particularly important for security of supply, stood at 10,415 MW (excluding pumped storage), while the winter average was 7,656 MW (excluding pumped storage). Austria was a net exporter in 14 weeks of 2021. However, the persistent drought reduced the number of export weeks to just 7 in 2022.

The forecast for 2030 assumes an installed power plant capacity of 40,235 MW. A probabilistic load coverage simulation using domestic power plants was used to determine a shortfall probability of 0.001% per hour, which corresponds to an expected shortfall of 0.11 hours in 2030. However, neither demand-side nor market flexibility through cross-border trading is taken into account in this simulation. Electricity consumption of 72.1 TWh or total demand of 85.1 TWh is forecast for 2030, which can also be covered by domestic generation.

Pursuant to section 88a Electricity Act 2010, the Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology, in consultation with E-Control and the control area manager, is required to draw up a security of supply strategy for the electricity sector. The aim of

the electricity security of supply strategy is to develop areas of action to ensure long-term security of supply while reducing dependence on fossil fuels. This is intended to ensure the effective organisation of electricity supply security and the prevention of supply crises. Last year, E-Control actively participated in a working group to develop this electricity security of supply strategy. E-Control's expertise was utilised for knowledge sharing and quality assurance purposes.

In accordance with the Electricity Regulation 2019/943 from the Clean Energy Package, the joint European Resource Adequacy Assessment (ERAA) was established at European level. The corresponding EU-wide methodology has already been approved by ACER. An annual European assessment, conducted by ENTSO-E, has been taking place since 2021. ENTSO-E is to continue to improve the implementation of the ERAA methodology every year in accordance with the [ERAA Methodology Implementation Roadmap](#). To date, ENTSO-E has not been able to fully implement an assessment in line with the ACER methodology. For this reason, no approval of an ERAA report has been issued by ACER. In 2023, E-Control was very actively involved in improving the implementation of the ERAA methodology through intensive exchanges with ACER and APG in order to ensure a good starting point for possible national analyses for Austria.

In order to better capture national specifics in the context of an adequacy assessment, a National Resource Adequacy Assessment (NRAA) was also established on the basis of the ERAA. Carrying out the NRAA was anchored as an important measure in the security of supply strategy. National specifics are recorded in the NRAA either through modelling or scenarios. In 2023, the framework for setting up the first national assessment for Austria was discussed between APG, E-Control and the Energy Ministry. E-Control played an active role in this and hopes that the national assessment will be successfully implemented in 2024.

The required level of security of supply is expressed via the reliability standard. Among other things, this also serves to categorise the adequacy results to determine whether further measures are necessary to ensure security of supply. In accordance with Article 25 of the EU Gas Regulation, the reliability standard is set by the Member State on a proposal from the regulatory authority. The proposal of the regulatory authority is to be determined on the basis of the economic value for maintaining the electricity supply (Value of Lost Load, VoLL) and the costs of the most favourable market entry to ensure additional capacities (Cost of New Entry, CoNE). The calculation of the reliability standard and the determination of VoLL and CoNE must be carried out in accordance with the methodology approved by ACER. E-Control carried out all the necessary preparatory work in 2023 to implement the project to determine the willingness to pay for maintaining the electricity supply and the costs of the most favourable market entry. E-Control plans to carry out both projects and finalise the calculation of the reliability standard in 2024.

GAS SUPPLY STANDARD

Every year, E-Control assesses compliance with the supply standard in accordance with the EU Security of Supply Regulation. The European requirement is reflected in section 121(5) Gas Act 2011. The supply standard is intended to ensure that Austrian suppliers of protected customers maintain sufficient quantities of gas to cope with extreme temperatures, exceptionally high gas demand or the failure of the largest gas infrastructure. In order to fulfil the standard, supply must be guaranteed in each of the following three situations:

- a) extreme temperatures on seven consecutive days with peak load, statistically likely to occur once every 20 years;
- b) an exceptionally high demand for gas over a period of 30 days that occurs with statistical probability once every 20 years;
- c) for a period of 30 days in the event of failure of the largest single gas infrastructure under average winter conditions.

Due to potential supply restrictions or interruptions of a political nature, the standard was tightened several times. In particular, the provision for the outage of the largest gas infrastructure can now only be proven via storage contracts and the concept of protected customers was extended to

include basic social services and district heating systems in addition to households. The necessary legal amendments to the Gas Act 2011 included a comprehensive change to the obligations of suppliers (section 121(5) Gas Act 2011) and a new power to issue ordinances for E-Control:

- > Fulfilment of case C must be demonstrated to E-Control by submitting storage utilisation contracts and proof that the storage facilities have been filled.
- > Proof can also be provided by the respective upstream supplier.
- > Operators of district heating systems must provide the data required to calculate the supply standard to be met by the supplier on request. Operators of district heating networks can make the calculations at the level of the overall network and allocate the amount of heat required for the supply standard to the district heating systems.
- > The regulatory authority may issue more detailed provisions on the implementation of the review, the survey modalities and the type of evidence required by ordinance.

On 22 May 2023, the Executive Board of E-Control issued the corresponding Gas Supply Standard Ordinance. Specifically, it stipulates that the metering points must be specified, that district heating plants must report how much gas was supplied in the form of heat to protected district heating customers in the previous months and that the short-term substitution potential must be disclosed. The type of contracts that can be used to provide evidence is also regulated.

In the survey on compliance with the supply standard in 2023, 45 suppliers of protected customers (households, basic social services and/or district heating systems) were obliged to participate. As a result of the survey, it was established that, cumulatively across all Austrian suppliers, the quantities of gas in storage are sufficient to fulfil case C (coverage of at least 165% over all winter months) to guarantee supply.

GAS SUPPLY DURING THE 2023/2024 WINTER

At the end of 2023, Austria's gas supply is guaranteed for the remaining winter period 2023/2024 if the situation remains unchanged (continued gas flows from the east, at least to the same extent as last winter). The gas volumes stored in Austrian gas storage facilities at the end of November 2023 corresponded to a comparatively high fill level of 99%. The majority of these storage volumes can be allocated to Austrian storage customers. By connecting the Haidach storage facility to the transmission and distribution network from the second quarter of 2024, this storage facility can also be used for direct withdrawal into the Market Area East in future.

In the event of a deterioration, for example due to the complete loss of gas flows from the east, the supply situation would have to be reassessed. An assessment must take into account that pipeline capacities for imports via other routes must be available and booked. It must be possible to use them in an emergency and the storage facilities must be refilled after the 2023/2024 winter period. Depending on the scenario, calls for reducing consumption and the need to restrict consumption cannot be ruled out.

This makes energy savings and the sustainable diversification of gas supply sources all the more important (see chapter 'Gas diversification') Expansions to the gas infrastructure that support these goals (WAG section loop) were approved by the regulatory authority in the Coordinated Network Development Plan 2022 in May 2023.

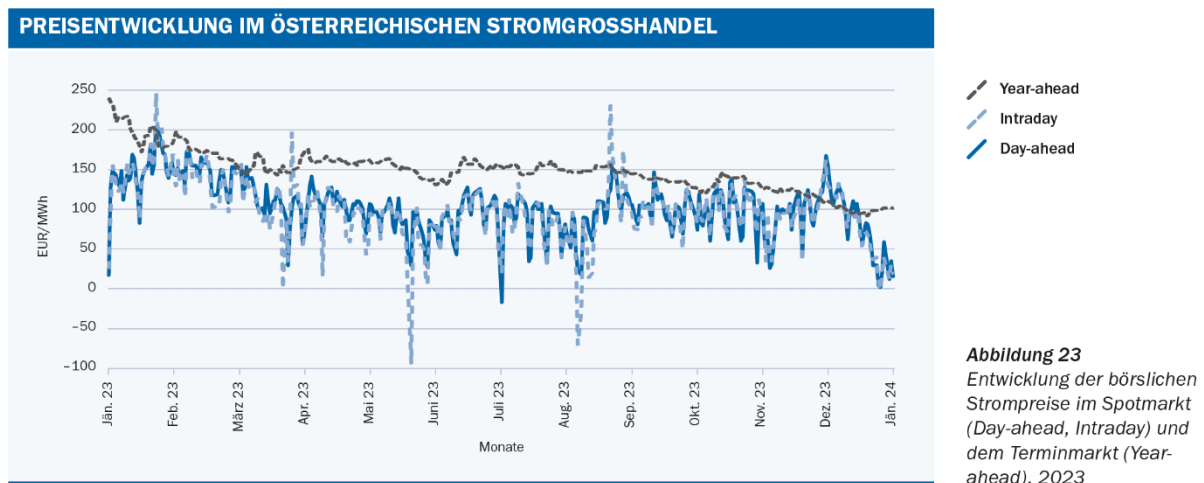
Price developments

Starting from a high level in 2022, short-term wholesale prices for electricity and gas eased significantly in 2023. Towards the end of the year, forward trading prices also moved closer to those of spot trading, which indicates stable market expectations.

On the household market, the premium between existing and new contracts was at its highest in autumn 2022 and has been falling again since then. In addition, the various government support measures had a significant cost-reducing effect for households.

Wholesale electricity prices

Following the extraordinary price spikes of the crisis year 2022, exchange-based electricity prices were still higher than the multi-year average at the start of 2023. However, after neither a potential gas shortage nor limited European electricity generation capacities materialised to the extent feared, prices eased significantly from the start of the year. The average day-ahead prices in the cross-border market coupling auction of € 145/MWh in January and February 2023 meant that prices were below the values from before the start of the Russian war of aggression against Ukraine for the first time. Subsequently, Austrian wholesale electricity trading was characterised by price consolidation (see Figure 23), which was supported not least by high generation from renewable sources (particularly hydropower). Accordingly, day-ahead prices fell to an average of € 82/MWh in May 2023 (compared to € 185/MWh in May 2022). In June, there was a certain trend reversal and the average spot market prices rose to €95/MWh. This increase was also due to increased price pressure from CO₂ certificates for thermal generation plants. In the stable market environment that followed, average spot market prices during the summer months were around € 90/MWh (compared to over € 400/MWh in the previous year).



Quelle: EPEX Spot SE, EXAA, NordPool, EEX, Berechnungen E-Control

Figure 23: Electricity spot and forward exchange prices. The figure shows day-ahead prices (unbroken blue line), intraday prices (dotted blue line), and year-ahead prices (dotted black line).

In addition to the significantly lower price level compared to the previous year, there were also repeated negative prices in spot trading. In the Austrian market area in particular, which is characterised by considerable storage capacities, such market results have been extremely rare to date. However, the phenomenon of negative prices occurred several times, particularly in the summer months. In individual hours of oversupply due to electricity feed-in from intermittent renewable generation and inflexible band-produced electricity, consumers were paid to purchase electricity. Such situations were particularly frequent at weekends with low demand. A particularly pronounced oversupply situation occurred on 2 July 2023. On this Sunday, there were negative

day-ahead prices for thirteen consecutive hours (04:00-17:00), and in the delivery hour 14:00-15:00 the minimum price of the market coupling auction of -500 €/MWh was reached.

In this context, it should also be mentioned that the steadily increasing share of intermittent generation has repeatedly led to significant price differences in the various spot trading segments (day-ahead, intraday). Any forecasting errors in the expected generation on the previous day lead to trading necessities in flow trading on the intraday market with corresponding price deviations from the day-ahead results. These deviations occurred in both positive and negative directions depending on the situation. There were also further shifts in liquidity as part of spot trading. Although day-ahead trading continues to have the highest liquidity of spot trading on the exchange, trading volumes in the intraday segment are increasing year on year.

The significant overall price declines in 2023 were also associated with certain risks. Suppliers and trading companies that had established long positions at very high prices to fix prices in the previous crisis year had higher procurement costs and were also exposed to particular liquidity risks (the problem of late summer 2022 was repeated here with the opposite sign).

In autumn, the market fundamentals painted a reassuring picture for the upcoming winter from a price perspective. On the supply side, sufficient water supply and high storage levels formed a solid basis. On the demand side, mild temperatures and weak economic data had a dampening effect on prices. At the same time, however, there were also new uncertainties with corresponding price relevance. Reports of a sudden gas leak on the Baltic Connector offshore pipeline fuelled fears of potential acts of sabotage on the energy infrastructure before the start of the heating season. In addition, the war in Gaza, starting with the Hamas attack on Israel, led to corrections on the fuel markets. However, the resulting price effects were of a short-term nature. The months of October and November were also characterised by above-average renewable generation, which enabled an average price level of below € 95/MWh despite the effects of seasonal factors. Cold weather and massive wind lulls led to a significant price increase at the beginning of December, although this was short-lived. Spot market prices collapsed again in the second half of December. Overall, the average day-ahead price in December was € 73/MWh. The full-year average for 2023 was ultimately € 102/MWh (compared to € 261/MWh in 2022).

Compared to the price downturn in spot trading, the futures markets were much more stable. Contracts for base load deliveries for the coming year (year-ahead) were always quoted well above the spot market results. This can be interpreted as an indication of the prevailing uncertainty with regard to the pricing of long-term contracts. Towards the end of the year, however, prices in futures trading also fell significantly. Austrian base contracts for 2024 as a whole were traded at an average of € 99/MWh in December 2023. This corresponds to the average day-ahead price in 2023, meaning that market players expect a sideways movement in 2024.

Price developments on the wholesale electricity market from a European perspective are analysed in the [ACER Wholesale Electricity Market Monitoring Report for 2022](#). In order to maintain a stable grid frequency, energy and capacity are handled on the control reserve market or procured by the control area manager. Details on how the balancing reserve market works and how prices develop can be found in chapter 'Balancing market'.

Wholesale gas prices

The past two years have highlighted the influence of geopolitical developments on the gas markets (see also the [ACER-CEER Annual Report on European Gas Market Trends and Price Drivers Volume](#)). Following the turbulence in 2022, which was largely due to the start of the Russian war of aggression in Ukraine, the wholesale gas market eased in 2023. Accordingly, day-ahead prices on the CEGH have been below the respective monthly averages of the last two years on a monthly average since July 2023. Overall, day-ahead prices on the CEGH averaged € 41.82/MWh in 2023, 67% lower than in the previous year. The maximum price in 2023 was reached on 9 January at € 76.86/MWh. The lowest price of the year was observed on 1 June at € 24.31/MWh on the CEGH.

In 2023, prices at the virtual trading point in Austria were largely in line with the German market area Trading Hub Europe (THE) and the most liquid hub in Europe, the TTF in the Netherlands (see Figure 24). On average over the year, the day-ahead product on the OTC market at the CEGH had a premium of € 1.40/MWh over the Dutch TTF. This is a reduction in the price premium of 54% compared to 2022. The price premium of € 0.94/MWh compared to the German THE also decreased compared to the previous year (-65%).



Quelle: ICIS Heren

Figure 24: Day-ahead gas prices from bilateral trading. The figure shows CEGH day-ahead prices in dark blue, THE day-ahead prices in light blue, and TTF day-ahead prices in medium blue.

The change in gas flows from Russia had a direct impact on Austria's role in gas transit. This becomes clear when looking at the gas flows to and from Italy. The Italian market switched its supply and reduced procurement from Russia. The Italian gas supply is now based on liquefied natural gas (LNG) and contracts with Algeria, Azerbaijan and Libya, which means that the route via Austria is now less important. In times of low demand on the Italian market, larger quantities are now exported to Austria and in some cases onwards to Germany. In 2022, around € 0.06/MWh more had to be paid for the day-ahead product on the CEGH than for the product equivalent on the Italian market (PSV). This was reversed in the calendar year 2023, when said product was on average € 1.06/MWh cheaper for the Austrian delivery point (CEGH) than on the Italian market.

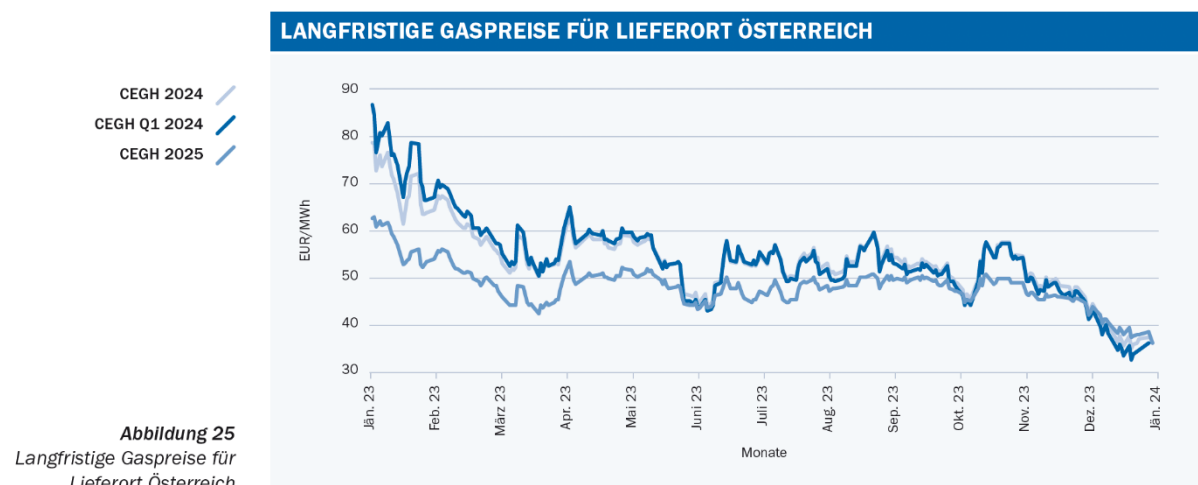


Abbildung 25
Langfristige Gaspreise für Lieferort Österreich

Quelle: EEX, Berechnungen E-Control

Figure 25: Futures gas prices for delivery in Austria. The figure shows CEGH prices for delivery in 2024 (light blue), for delivery in Q1 2024 (dark blue), and for delivery in 2025 (medium blue).

Gas storage facilities across Europe, including in Austria, were well filled at the start of the 2023/2024 winter heating season. The Austrian gas storage facilities recorded a storage level of 99.49% on 14 November 2023. In addition to the demand for gas to cover heating requirements, the price difference between products with near-term delivery (spot market) and products with delivery further in the future (futures market) also influences withdrawals from storage. In October 2023, the short-term day-ahead prices were on average € 9.56/MWh cheaper than the summer 2024 seasonal product and € 4.14/MWh cheaper than the rolling month-ahead product. If short-term products are cheaper than products with a delivery date further in the future (month-ahead, season-ahead, etc.), this has a dampening effect on withdrawals from gas storage facilities. In such a price situation, market participants with gas in storage are potentially more likely to decide not to withdraw it. Instead, they hope to be able to sell the gas at higher prices in the future. The average price for the 2024 delivery year (year-ahead) in the entire 2023 trading period was € 53.86/MWh (see Figure 25).

One factor influencing the European gas market in the coming calendar year could be the expiry of the transport contract between the Russian state-owned company Gazprom and Ukraine for the transit of Russian fossil gas. This agreement, which ends on 31 December 2024, is the central legal basis for Ukrainian pipelines from Russia to Austria and numerous countries in eastern and southeastern Europe. Whether Gazprom will be able to use auctions, as is customary in Europe, to book capacities with the Ukrainian gas network operator for transport at short notice still needs to be examined.

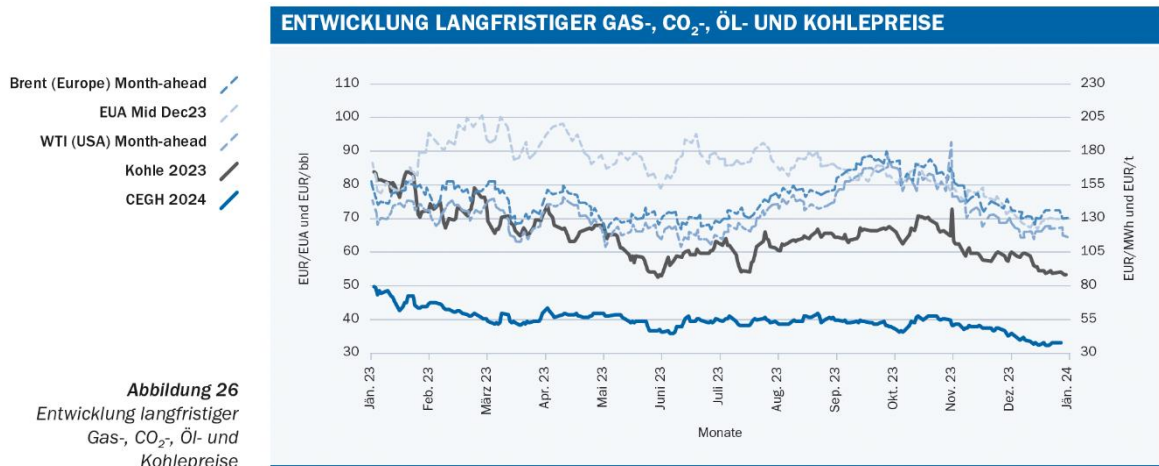
The volumes of short and long-term products traded on the Austrian CEGH fell slightly in trading year 2023 compared to the previous year. The reduction in volumes affected both over-the-counter volumes, which still account for more than 50% of the total volumes traded on the Austrian CEGH, and exchange-traded volumes. The trend towards trading more on the exchange and increasingly long-term futures market products in the past two years was a result of the increase in the number of wholesale prices. In the 2023 trading year, the wholesale price level was lower than in the previous two years and consequently the trading volume traded on the exchange also fell.

Coal prices (Rotterdam) fell by 45% in the 2023 trading year compared to the previous year. The average price for delivery in the 2024 calendar year (year-ahead) was € 117.05/t. The coal price for the year-ahead product reached its highest level of the year at € 164.54/t on 19 January 2023. On 16 May 2023, the coal price fell below € 100/t for the first time since 18 February 2022. This was also due to the drop in demand for coal-fired electricity. The lower gas prices made electricity generation using gas-fired power plants more profitable than coal-fired power generation. Gas-fired power plants emit less CO₂, which is why fewer emission certificates are required. This means that the operating costs for electricity generation from gas are also lower.

Figure 26 shows the development of long-term prices for gas, CO₂ emissions, oil and coal. The price of Brent crude oil followed a downward price trend in the 2023 trading year. The average month-ahead price for the year was € 75.94/barrel, 19% lower than in the 2022 trading year. The maximum price for this product was reached on 31 October 2023 at € 97.31/barrel. Influencing factors included geopolitical events (starting with the Hamas attack on Israel), OPEC production decisions, the general supply and demand situation (e.g. in China as a major crude oil importer), as well as other economic indicators (US dollar exchange rate, etc.).

Emissions polluters, such as electricity producers or energy-intensive industry, had to pay an average of € 85.54/t CO₂ in 2023. The highest price in the trading year was € 100.34 per tonne and was reached on 21 February for the product Mid-December 2023. With the temporary drop in demand for emission allowances in the fourth quarter of 2023, prices also fell.

In December 2022, it was agreed to extend the EU Emissions Trading Scheme (EU ETS) to the shipping industry and this agreement was formally adopted in May 2023. The inclusion of this additional sector in the EU ETS from 1 January 2024 could become a price-driving factor as demand increases.

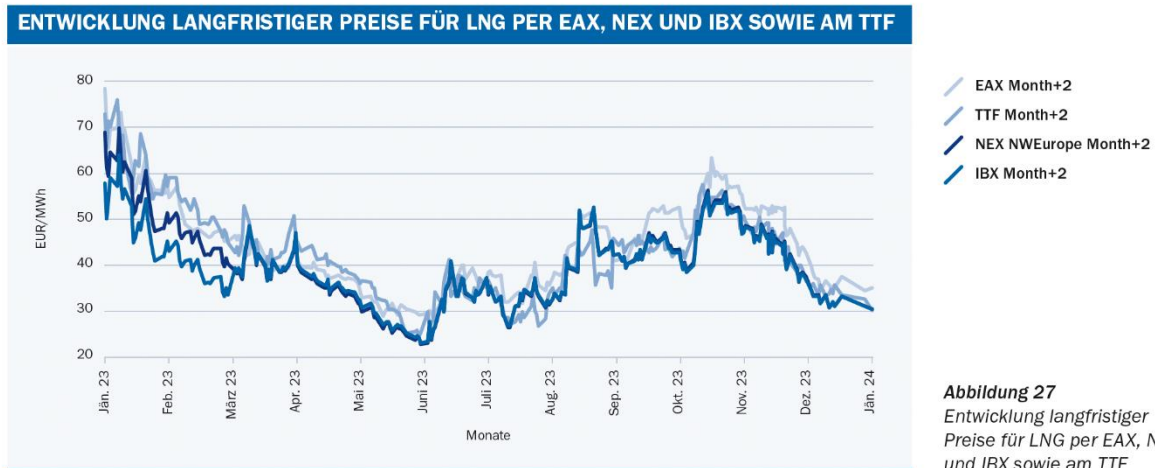


Quelle: ICIS Heren, ICE, CME, EEX

Figure 26: Futures and forward prices for gas, CO₂, oil and coal.

As far as LNG is concerned, Austria itself does not have a terminal, but is influenced by price developments on more liquid European markets. One example is the prices on the Dutch TTF, which have increasingly reacted to the LNG supply situation in recent years.

Liquefied natural gas is mainly traded bilaterally, with more and more exchanges including LNG products in their product portfolio. The contracts can be concluded shortly before delivery (spot) or for delivery further in the future (long-term). Some contracts are so flexible that LNG ships can spontaneously change their course or port of destination depending on the prices offered. LNG contracts can provide for a fixed agreed price, but can also be concluded dynamically on the basis of a price formula or linked to a price index. In the Asian market, a price formula linked to the oil price index is common for LNG contracts. In Europe, two thirds of all contracts are linked to a hub index (e.g. TTF). In addition, the trading of spot products is widespread in Europe.



Quelle: ICIS Heren

Figure 27: Forward LNG prices at EAX, NEX, and IBF, along with TTF prices.

The average price for the East Asian Index (EAX) for the year was € 44.8/MWh (two-month-ahead product). This corresponds to a change of -61% compared to the previous year. The price level of the ICIS LNG indices for Northwest Europe (NEX) was slightly lower at € 40.65/MWh and the Iberian Index (IBX) at € 39.58/MWh. As a number of LNG contracts in Europe are linked to the TTF hub, it is also worth taking a look at the TTF gas price. This averaged € 43.04/MWh for the two-month-ahead product in 2022. Compared to the previous year, this corresponds to a reduction of 69%.

The prices are largely in line with each other, although the TTF price was slightly lower than the EAX index on average over the year (see Figure 27).

BALANCING ENERGY GAS

Until the entry into force of the Gas Market Model Ordinance 2020 on 1 October 2022, balancing energy management for the transmission and distribution areas was carried out separately. Since then, daily balancing of the transmission and distribution grid has been handled in an integrated manner. Uniform rules therefore apply for all entry and exit points and a single balancing energy management for the market and distribution area by the market and distribution area manager AGGM in cooperation with the single clearing entities.

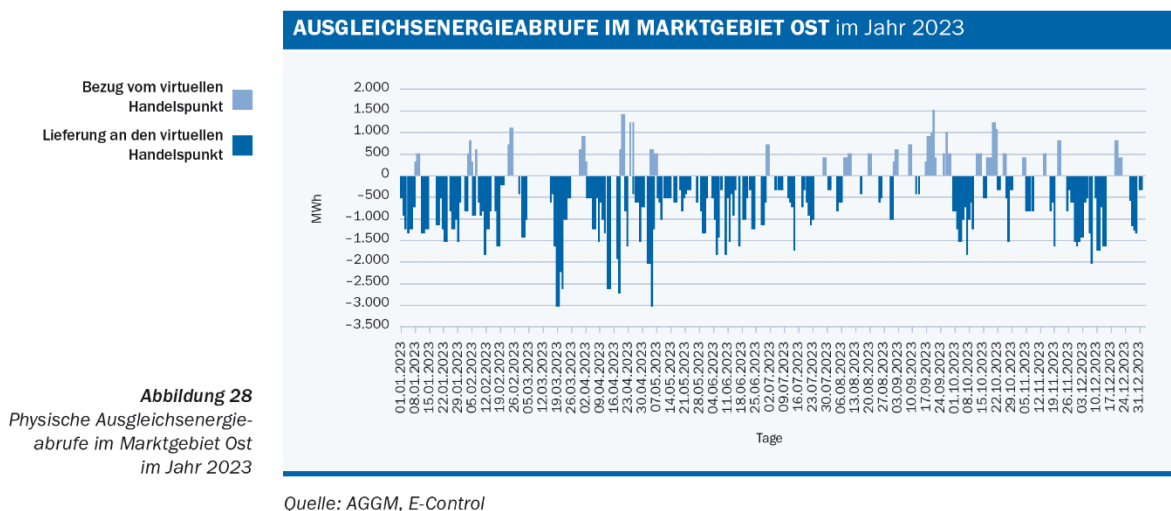
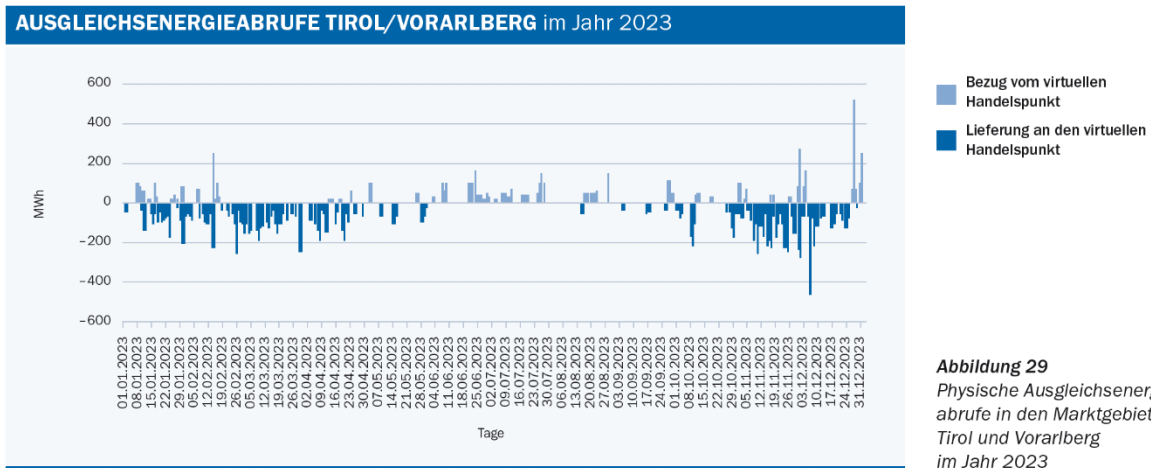


Figure 28: Balancing energy supplied in the eastern market area in 2023. The figure shows positive (light blue) and negative (dark blue) balancing energy trades with the virtual trading point.

The trend towards supply of the balance groups in the eastern market area also continued significantly in integrated balancing energy management from October 2022. In January 2023, the oversupply increased further before falling again from February (see Figure 28). It is not due to the effects of integrated balancing energy management but rather, gas consumption fell sustainably in response to the Russian war of aggression in Ukraine, which could only be taken into account gradually over the winter by adjusting the forecast based on the standard load profiles. Over the summer of 2023, balancing energy volumes returned to the previous year's levels. In September, as in the previous year, there was a trend towards undersupply in the eastern market area. However, the 4th quarter of 2023 was again characterised by a trend towards oversupply in the eastern market area, albeit to a lesser extent than in the previous year.

In the Tyrol and Vorarlberg market area, there was also a trend towards oversupply during the months of January to May 2023, although in January 2023 balancing energy deliveries were also offset by higher balancing energy purchases (see Figure 29). From June 2023 and over the summer, a trend towards undersupply was observed for Tyrol and Vorarlberg. In the 4th quarter of 2023, the situation reversed, and the Tyrol and Vorarlberg market area was once again characterised by a trend towards oversupply. In contrast to the market area east, oversupply in the market area Tyrol and Vorarlberg in the 4th quarter was at a higher level than in the previous year.



Quelle: AGGM, E-Control

Figure 29: Balancing energy supply in the Tyrol and Vorarlberg market areas in 2023. The figure shows positive (light blue) and negative (dark blue) balancing energy trades with the virtual trading point.

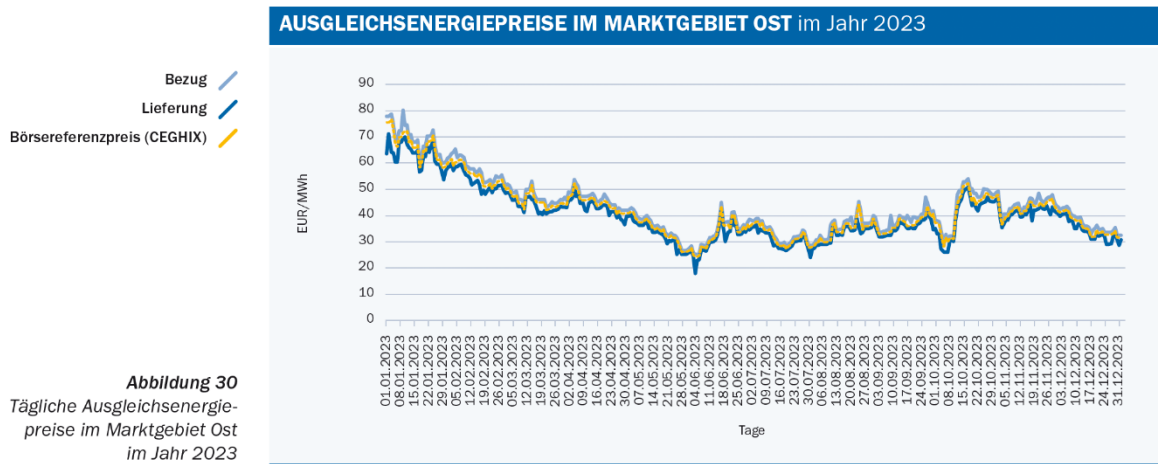
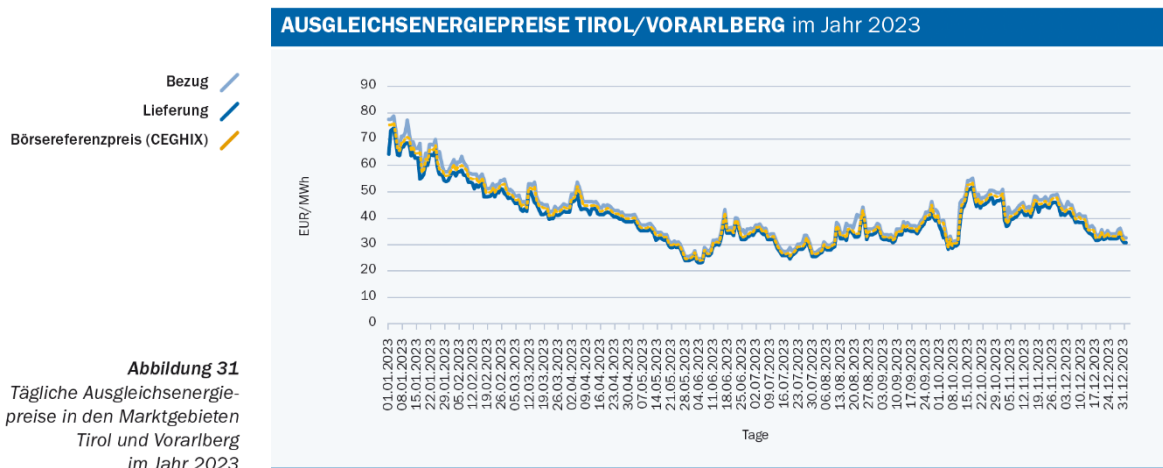


Abbildung 30
Tägliche Ausgleichsenergiepreise im Marktgebiet Ost im Jahr 2023

Quelle: AGGM, E-Control

Figure 30: Balancing energy prices in the eastern market area in 2023. The figure shows the prices for positive (light blue) and negative (dark blue) balancing energy, as well as the CEGHIX reference price.



Quelle: AGGM, E-Control

Figure 31: Balancing energy prices in the Tyrol and Vorarlberg market areas in 2023. The figure shows the prices for positive (light blue) and negative (dark blue) balancing energy, as well as the CEGHIX reference price.

The excess deliveries in the market areas are likely to be due to temperature effects (higher temperatures during the heating period) and ongoing consumption savings, as well as conservative consumption forecasts with regard to the higher balancing energy prices in the first quarter of 2023.

The pricing of balancing energy was adjusted in accordance with the EU Network Code for Gas Balancing in Transmission Networks. For example, within-day obligations were added to the pricing mechanism for daily balancing. In addition, pricing based on the actual costs/revenues of the single clearing entity for within-day fluctuations was introduced. Figure 30 shows the price development in 2023 for the eastern market area and Figure 31 shows the development in the Tyrol and Vorarlberg market areas.

In 2022, the calorific values actually measured were significantly higher than the prescribed settlement calorific value. Together with the sharp rise in spot prices, balancing energy settlement yielded much less revenues than predicted for the single clearing entities in summer 2022. The entities therefore had to increase the balancing charges in the 4th quarter of 2022. The neutrality charge for the eastern market area was set by AGCS (the competent single clearing entity) at 0.6 ct/kWh for the 4th quarter of 2022 and reduced again to 0 ct/kWh in January 2023. The charge for the Tyrol and Vorarlberg market areas was set by A&B (the relevant single clearing entity) at 0.7 ct/kWh for the 4th quarter of 2022 and also reduced again in January 2023, but to the level of the German neutrality charge of 0.059 ct/kWh, which is collected via the Austrian neutrality charge.

After spot prices gradually fell in the second half of October 2022 due to higher temperatures and high storage levels, among other things, they rose significantly in November and the first half of December, but plateaued in mid-December 2022. In the first half of 2023, spot prices fell continuously until the beginning of summer. In the second half of the year, spot prices fluctuated in a price corridor between around € 30-40/MWh in most months. In October and November 2023, the price level rose to around € 40-50/MWh due to the war in Gaza. In December, spot prices returned to their previous price corridor. While the average of the exchange reference price in the 4th quarter of 2022 was still almost € 100/MWh, the average in 2023 was significantly lower at around € 42/MWh.

Since the Gas Market Model Ordinance 2020 came into force, there have only been two days with opposing balancing energy calls and therefore a structuring fee was only calculated on these two days, in November 2022 and May 2023.

In 2023, there were only calls for balancing energy via the merit order list (MOL) in the eastern market area on the last two days of September 2023, which extended over a total period of 10

days into October 2023 (calls for MOL bids depending on the geographical entry point due to maintenance and repair work on the Arnoldstein entry/exit).

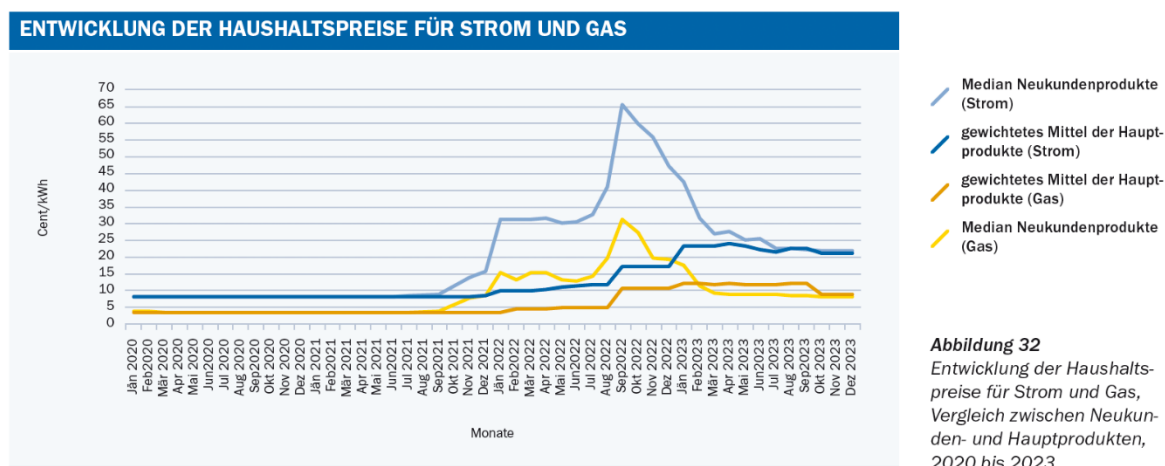
Household market

After a year of slow competition in 2022, there was significantly more movement on the household market in 2023. This was due to the price trend. However, price developments for households still took place in an environment of legal uncertainty and new market entrants were still very cautious. In this climate, many consumers decided to generate their own electricity and install PV systems on roofs or balconies, which was reflected in huge growth in grid access applications and energy communities.

HOUSEHOLD PRICES FOR ELECTRICITY AND GAS

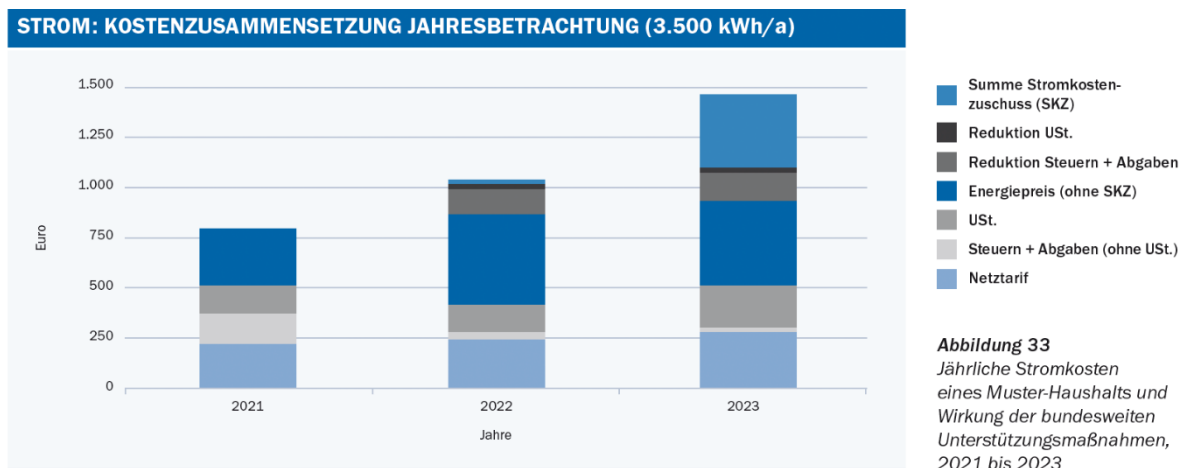
While the long-term energy prices (i.e. excluding taxes and levies or grid costs) were around 8 ct/kWh for electricity and 3 ct/kWh for gas, the energy prices for new electricity contracts to be concluded rose significantly for the first time in July 2021, for gas in autumn of the same year. The prices of the averaged main product did not become more expensive until later. The median value of the new contract offers and the average value of the main products weighted by metering points were around 1 ct/kWh apart for gas and electricity for the first time in October 2021. This difference reached its maximum in September 2022 at around 48 ct/kWh for electricity and around 21 ct/kWh for gas (see Figure 32). After this significant price spike in new customer prices, prices converged again. In the case of gas, it is interesting to note that the median of the new customer products was below the weighted average of the main products from February 2023 onwards.

It should be noted that the data used does not take into account the various subsidies, such as the nationwide electricity cost relief. They are clearly shown in the annual analyses in Figure 33 and Figure 34.



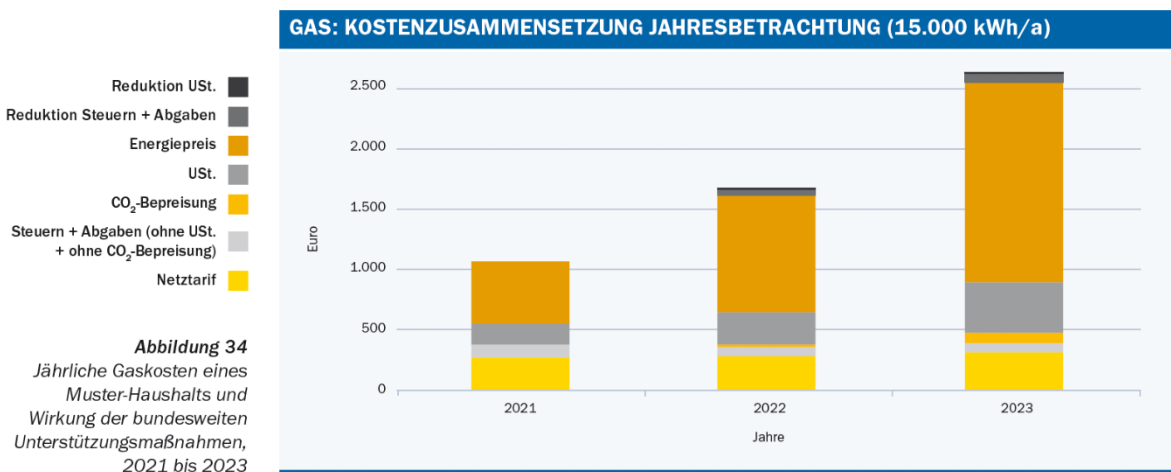
Quelle: E-Control

Figure 32: Household prices for electricity and gas from 2020 to 2023. The figure shows the median price offered by products for new customers (for electricity: light blue; for gas: yellow), and the median price paid by existing customers of the most popular products (for electricity: dark blue; for gas: orange).



Quelle: E-Control

Figure 33: Annual electricity costs of a typical household and effect of federal relief measures, from 2021 to 2023. The figure shows, from top to bottom in the legend: the electricity price relief, the VAT reduction, the reduction of other taxes and levies, the energy price (not counting what is covered by the relief), VAT, taxes and levies other than VAT, and grid charges.



Quelle: E-Control

Figure 34: Annual gas costs of a typical household and effect of federal relief measures, from 2021 to 2023. The figure shows, from top to bottom in the legend: the VAT reduction, the reduction of other taxes and levies, the energy price, VAT, the CO₂ tax, other taxes and levies, and grid charges.

In the case of electricity costs, the cost reduction in 2022 and 2023 due to the suspension of renewable subsidy costs is clearly evident, whereby the renewables flat rate (which is fixed for three years) is known and the renewables contribution was extrapolated from 2021. In addition, the reduction in the electricity levy from May 2022 to December 2023 reduced costs. The absence of the renewable subsidy costs and the reduced electricity levy also reduced the VAT payable. The electricity cost relief, which reduces the energy price (but not the VAT), also came into effect in December 2022.

In the case of gas, the reduction in the gas levy between May 2022 and December 2023 led to a reduction in costs for households. The introduction of CO₂ pricing in October 2022 and its increase in 2023 had a cost-increasing effect.

At European level, CEER and ACER jointly published their [annual market monitoring report on household markets and consumer protection 2023](#) (reporting year 2022), which highlights price

developments and compliance with European protection mechanisms for energy consumers across Europe.

HOUSEHOLD MARKET COMPETITION

Wholesale prices for electricity and gas fell over the course of 2023, although the effect on prices for households was delayed. The trends from 2022 therefore continued for some time in 2023, i.e. low switching rates, ongoing uncertainty regarding price change options, cancellations by electricity suppliers and use of the universal supply clause were observed. Competition on the household market picked up gradually. The potential for savings increased again, which also drove up switching rates. Simultaneous measures by the government provided financial relief for consumers. Disconnection rates for electricity returned to pre-crisis levels in 2023, while they remained stable and far below this level for gas.

MARKET ENTRY AND EXIT

Following a rapid increase in 2022, enquiries to the E-Control market exit desk fell significantly over the course of 2023. Six suppliers withdrew completely from the electricity market in 2023. Three of these were small, regionally active, long-established Austrian suppliers that had already planned to complete their withdrawal in 2022, but this was delayed until the beginning of 2023. In addition to households, all three also supplied larger customers. Another Austrian supplier, which had only started operating at the beginning of the crisis, had to cease operations in mid-2023. Two more suppliers, both branches of German municipal utilities, had been active in Austria since 2016 and 2019 respectively and withdrew from the domestic market. The latter three were active throughout Austria and mainly supplied households. In total, several thousand customers were affected by these withdrawals.

In 2023, six suppliers left the gas market completely. Five had been active throughout Austria and supplied households, and three of them also supplied large customers. Two suppliers belonged to the German municipal utilities mentioned above and withdrew together with their respective electricity suppliers, while the remaining gas suppliers were from Austria. Here, too, three suppliers wanted to complete their withdrawal by the end of December 2022. They gradually reduced the number of customers but were only able to terminate their last few supply contracts at the beginning of 2023. The share of customers who had to change their gas supplier in 2023 due to a market exit was below 1%. A small, regionally active, long-established gas supplier decided to leave the market for good on 31 December 2023. It transferred ownership and universal succession to a long-established gas supplier with effect from 1 January 2024. Its customers therefore did not have to switch suppliers.

In the area of market entry, interest in our online information and enquiries to the market entry desk in 2023 remained subdued. The companies mostly approached the authority with very specific questions as service providers or about electricity storage, feed-in and direct marketing of renewable energy. No companies started supplying households in 2023; only one electricity supplier started operating in the large customer segment.

The choice for households is decreasing due to the withdrawal of Austria-wide suppliers in particular. In 2022, some suppliers also stopped offering new contracts, which further reduced the choice available to households. In 2023, 145 electricity suppliers for households remained, but only 23 of them actually offered new contracts for households throughout Austria. The others either limited themselves geographically, often to the grid area of the affiliated company, or focussed on supplying their existing customers. Before the crisis, households looking for a new electricity supplier throughout Austria had twice as much choice.

On the gas market, 19 of the 38 gas suppliers for households were active throughout Austria before the crisis. In 2023, more than three quarters of these suppliers (15 on average) were again represented in E-Control's tariff calculator with nationwide household offers.

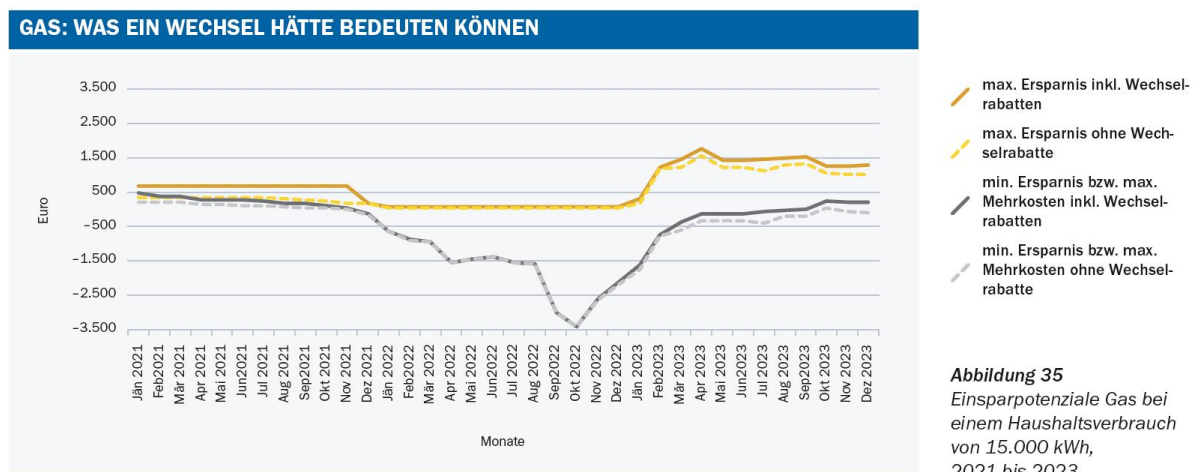
PRICES AND PRICE CHANGES

Following the massive price peaks in 2022, prices on the wholesale markets for electricity and gas moved steadily downwards in 2023, particularly in the first half of the year (see chapter 'Wholesale gas prices'). However, the pre-crisis level has not yet been reached again.

This had different effects on prices for households. On the one hand, competition on the household market picked up again and new and very attractive offers for new contracts came onto the market. On the other hand, the price level for existing contracts reached an all-time high following sharp price increases at the beginning of the year and subsequently stabilised. As wholesale price movements in this area have a delayed effect depending on the companies' purchasing strategy, the price reductions only gradually reached existing customers at the beginning of the second half of the year.

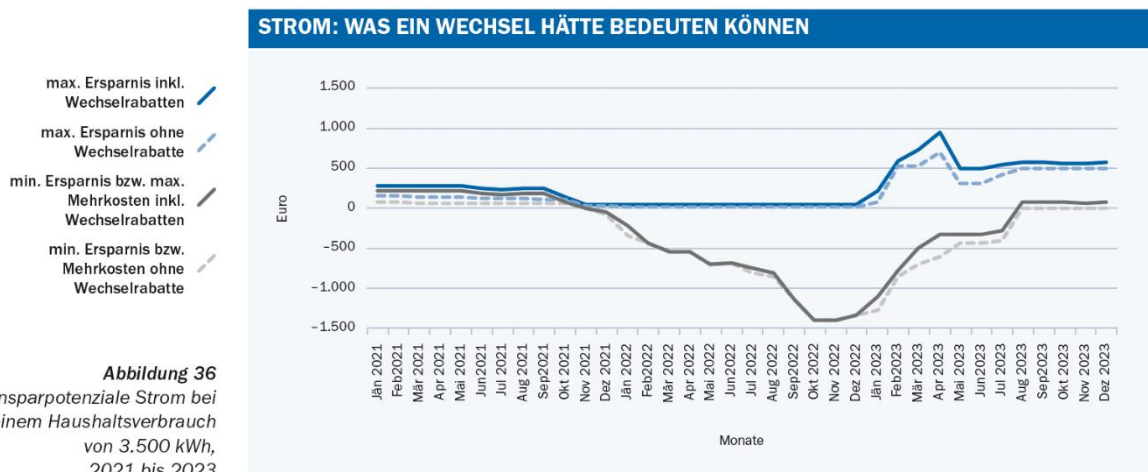
Price changes to existing contracts continued to be implemented in a highly uncertain legal environment. Energy companies therefore looked for various ways to adjust contracts with the greatest possible legal certainty. Some energy suppliers changed their general terms and conditions in the reporting period. As in the previous year, price change clauses from various companies are currently the subject of ongoing legal proceedings. Other suppliers resorted to discount models or cancellations, which were usually linked to an offer to conclude a new contract or price model. In the course of E-Control's advisory activities and arbitration proceedings, it became clear that these changing contract terms were difficult for many consumers to understand. In some cases, upward price adjustments came as a surprise and without prior information. Downward price adjustments in the course of discounts were often not transparent or had to be actively accepted by customers in order to take effect.

At the same time, it should be borne in mind that the vast majority of households in Austria receive annual bills for electricity and gas. As a result, the high energy prices in 2022 were only visible or financially noticeable to many consumers for the first time towards the end of the year or in 2023. High additional claims and subsequently significantly higher instalment requirements for the new billing year posed major challenges for many. In parallel to the price developments on the market in 2023, government support measures also played a significant role (see chapter 'Measures to relieve the burden on households').



Quelle: E-Control

Figure 35: Savings potentials from switching gas suppliers for a household with an annual consumption of 15,000 kWh, from 2021 to 2023. The figure shows the maximum savings, including one-time rebates (orange line) and excluding them (yellow dotted line), and the minimum savings/maximum additional costs including one-time rebates (dark grey line) and excluding them (light grey dotted line).



Quelle: E-Control

Figure 36: Savings potentials from switching electricity suppliers for a household with an annual consumption of 3,500 kWh, from 2021 to 2023. The figure shows the maximum savings, including one-time rebates (dark blue line) and excluding them (light blue dotted line), and the minimum savings/maximum additional costs including one-time rebates (dark grey line) and excluding them (light grey dotted line).

In this climate, competition on the household market had almost come to a standstill in 2022. Figure 35 and Figure 36 show that switching from the most commonly used product by a local supplier to the cheapest product by an alternative supplier would not always have been advantageous, especially in 2022. Even the greatest potential saving was very low at times. In some federal states, the cheapest alternative product was more expensive than the best-selling product from the local supplier, meaning that switching would even have meant additional costs.

The different developments for existing and new contracts in 2023 then led to a relatively high potential for savings when switching, which was reflected in a sharp increase in the number of switches. From August 2023, switching to electricity paid off in all federal states, i.e. switching to the cheapest alternative product did not result in additional costs in any case.

ACTIVE HOUSEHOLDS

After a slow start in the early years, the model of renewable energy communities (RECs) experienced a veritable boom in 2023. While 161 RECs were still registered at the end of 2022, this figure had risen to 675 by mid-2023. 209 of these were local and 466 regional RECs (see Figure 37). In terms of legal form, the trend towards associations increased, with a total of 123 associations and 8 cooperatives (with different forms under Austrian law) recorded.

ANZAHL UND REGIONALE VERTEILUNG EEGS MIT STICHTAG 30.06.2023		
	lokale EEG	regionale EEG
Burgenland	15	39
Kärnten	17	18
Niederösterreich	36	116
Oberösterreich	106	233
Salzburg	11	15
Steiermark	7	17
Tirol	7	13
Vorarlberg	7	11
Wien	3	4
Summe	209	466

Abbildung 37
Anzahl und regionale Verteilung EEGs mit Stichtag 30.06.2023

Quelle: E-Control

Figure 37: Number of local RECs (first column) and regional RECs (second column) in each federal province as of 30 June 2023

In the area of citizens' energy communities (CECs), there was a significant increase from four CECs on 31 December 2022 to 28 CECs on 31 June 2023. These were distributed as follows:

Burgenland	2
Carinthia	7
Lower Austria	8
Styria	2
Vorarlberg	1
Vienna	8

E-CONTROL SERVICES

E-Control operates two important information services for consumers on the Austrian energy market: the helpdesk and the alternative dispute resolution board. The number of enquiries to these services rose rapidly in 2022 due to the high energy prices but was actually exceeded once again in 2023. The tariff calculator also recorded a new high in the number of hits. At the same time, the complexity of enquiries is also increasing.

In addition, E-Control puts out numerous publications and information materials, processes enquiries from a wide range of organisations and has a presence on all popular social media platforms. A completely new EV charging calculator was added to the existing mobility applications in 2023, an energy glossary was also published, and the tariff calculator was continuously developed further.

Helpdesk

Under section 26 of the E-Control Act, the E-Control ADR board is responsible for disputes between electricity and gas companies and their customers. In addition, it is a state-recognised consumer conciliation body in Austria under section 4(1)(1) of the Alternative Dispute Resolution Act. Its mandate is to mediate a satisfactory solution between the parties in disputes and complaints between consumers and electricity and gas companies based in Austria. In addition, the team at the helpdesk handles telephone enquiries and complaints and also provides advice and assistance via various written channels.

The E-Control helpdesk received a total of 26,500 enquiries in 2022. This corresponds to an increase of 290%. The ADR board processed a total of 1,832 applications in 2022 (see the [2023 activity report of the ADR board](#)), around three times as many as in the previous year. Both E-Control services significantly exceeded these figures again in 2023. From January to December 2023, 31,300 telephone enquiries (an increase of 19% compared to 2022) were received by the helpdesk, 11,400 written enquiries and complaints (+66%), and 2,480 ADR applications (+35%), with each enquiry or application potentially involving several topics (see Figure 38).



Quelle: E-Control

Figure 38: Number of issues brought to the attention of E-Control's helpdesk from 2017 to 2023. The figure shows the number of mediation applications to the ADR board (dark blue) and the other enquiries and complaints received by the helpdesk (light blue).

In addition to the number of enquiries, their complexity has also increased significantly. In the past, for example, the 'Frag E-Control' message board was mainly used to ask simple and broad questions such as 'who is the cheapest electricity supplier' or 'how much does a kilowatt hour of electricity cost'. In 2023, more and more specific questions were asked by users who were obviously

more intensively involved with an energy topic, as shown in Figure 39. This clearly shows a qualitative change in the enquiries submitted to E-Control and therefore also in the questions that consumers are confronted with.

As a helpdesk for consumers, E-Control primarily provides information and advice. At the same time, E-Control hears directly about the concerns and problems of the population on the energy markets. Many consumers were unable to clarify their questions or problems directly with their contractual partners. They often reported that customer services were overloaded. This also explains the sharp increase in enquiries and complaints to E-Control (see chapter 'Helpdesk').

ANFRAGE AUF DER PLATTFORM „FRAG E-CONTROL“, 2023

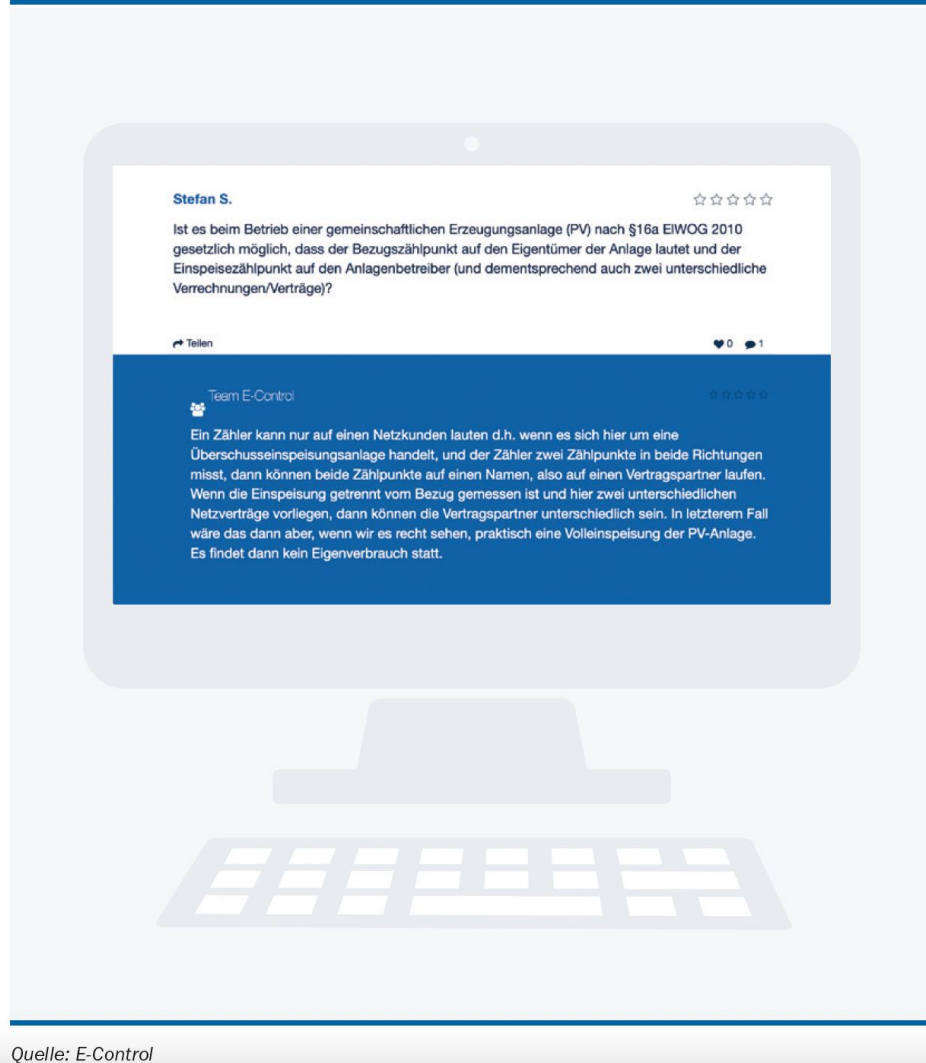
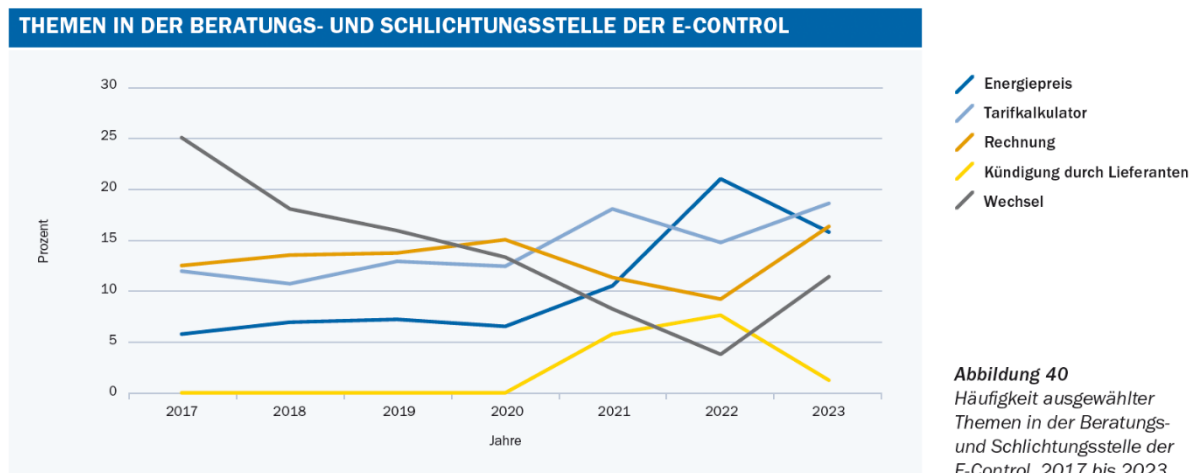


Abbildung 39
Anfrage auf der Plattform
„Frag E-Control“, 2023

Figure 39: Enquiry through the 'Frag E-Control' message board. The figure exemplifies the type of complex enquiries the team is approached with.

Figure 40 shows the development of selected reasons for enquiries to the E-Control helpdesk from 2017 to 2023. The energy crisis since the end of 2021 and then increasingly again in 2022 resulted in more consumers contacting E-Control with questions about energy prices than ever before. The topics 'tariff calculator' and 'bill' continued to be of great interest to consumers. Questions about switching fell sharply in proportion, while the topic of 'cancellation by suppliers' appeared for the first time in 2021. The picture of very weak competition on the household market, driven by exploding energy prices, is therefore reflected from the consumers' perspective as well as in the market indicators (see chapter 'Household market competition'). It can also be seen that

these trends experienced a certain reversal in 2023. Requests to switch increased again and cancellations by suppliers no longer concerned consumers to the same extent as in previous years.



Quelle: E-Control

Figure 40: Relative number of helpdesk enquiries about selected issues from 2017 to 2023. The figure shows enquiries about the energy price (dark blue), the tariff calculator (light blue), the energy bill (orange), contract cancellation by supplier (yellow), and supplier switching (grey).

One topic that gained prominence in 2022 and 2023 was grid access. For 2022, electricity distribution system operators reported 155,774 grid access applications at grid level 7 for the feed-in of electricity and 5,452 such applications at grid levels 1-6. However, as electricity distribution system operators do not yet register all connections under the keyword 'grid access', these figures are likely to be an underestimate of the actual grid access requests for feed-in. The PV boom is therefore continuing unabated.

These grid access figures presented many electricity grid operators with unexpected challenges, especially in 2022. Many consumers were faced with long waiting times, and in some cases it was no longer possible to meet the legally stipulated reaction times. There were also restrictions in some local electricity distribution grids as they were technically unable to absorb additional feed-in. Some of these problems still exist. In June 2023, E-Control presented the Grid Connection Action Plan (see chapter 'Grid Connection Action Plan') in order to accelerate the connection of additional generation plants to the electricity grid in view of the urgency of the renewable expansion and climate targets.

With 3,095 applications for grid access at grid level 3 for gas in 2022, there was a significant decrease in grid access applications of more than half compared to 2021 (7,221) and 2020 (7,409).

Tariff calculator

Since 2001, consumers have been able to use E-Control's tariff calculator to make an independent comparison of all the electricity and gas offers available for their consumption. The record access figures of 2022 were exceeded again in 2023. In total, the tariff calculator was accessed almost 1.6 million times in 2023.

The tariff calculator is also constantly being developed further in order to do justice to the growing complexity of electricity and gas offers. An important innovation in spring 2023 was the ability to enter data manually. Consumers who cannot find their product in the tariff calculator can now enter the basic fee and energy price manually and still receive a price comparison.

Another change was due to the challenge of comparatively volatile wholesale prices, which is why it is no longer possible to calculate savings or additional costs for products with automatic price

adjustment (so-called floaters). Instead, there is now a more detailed explanation of why the calculation is no longer useful and how the information presented (e.g. the total price) should be interpreted. Due to the amendments to Electricity Act 2010 and Gas Act 2011 in autumn 2023, suppliers and utilities are now also obliged to inform customers in detail about the opportunities and risks of such floater products.

New features in the tariff calculator are generally well received. For example, a new filter that has allowed users to search for products without a minimum contract period since the beginning of August 2023 is often used. In general, the various filter options are widely used. Filters are used for 65% of all queries in the tariff calculator. The most popular filter in 2023 was 'Product with price guarantee'.

There has also been an increase in the number of enquiries answered directly by the tariff calculator team. The number of these enquiries doubled in 2023 compared to 2022. Questions relating to specific products continue to be the top topic, with a threefold increase in enquiries about smart meter issues in the tariff calculator compared to the previous year.

Media relations and publications

Even though the energy markets calmed down somewhat in 2023, the demand for reliable and objective data and facts among consumers continued unabated. In particular, questions about the development of energy prices and the security of supply of electricity and gas remained at the centre of interest. E-Control's public relations work plays an important role here. In response to more than 500 enquiries from journalists, E-Control provided information on a wide range of electricity and gas topics, either in writing, verbally or electronically. The relevant content of the various topics was conveyed in press releases, press briefings, background and one-to-one interviews with the press and other targeted media activities. E-Control's short and concise [explanatory films](#) continued to be in high demand. Consumers also have access to a wide range of other information services, such as publications, email newsletters, websites, social media channels and the [frag.E-Control.at website](#).

In 2023, E-Control once again organised conferences (which were held as hybrid events), [webinars](#) and an online talk for the industry and decision-makers on Austrian and international energy-related topics. E-Control experts were represented at numerous national and international events, meetings and conferences and gave presentations on energy-related topics.

E-Control once again had a stand at a total of six energy-related trade fairs in 2023 to provide information on the latest issues relating to electricity and gas. More than 700 consultations were held. At the GewinnInfoDay, Austria's largest congress for school students aged 16 and over, E-Control reached more than 5,000 young people.

A new service is provided by E-Control's decisions register, which makes all decisions publicly available and easily searchable. E-Control's [bilingual energy glossary](#) has also been available since summer 2023. Over 2,200 technical terms and definitions from the Austrian and European energy world can be accessed via a search.

An overview of E-Control's European activities within [CEER](#) and [ACER](#) can be found in the respective annual reports of these organisations.

Social media

Having been present on Facebook, Twitter (now X), YouTube and its own message board 'Frag E-Control' for many years, E-Control also launched an official LinkedIn page in 2023. The target audience on Facebook is the general public, on Twitter/X it is mainly the press and early adopters and 'Frag E-Control' is aimed at those with a keen interest in the topic. In contrast, LinkedIn has a much stronger B2B character, which means that specialised topics can be dealt with in greater depth here. In addition, LinkedIn is now the number one recruiting platform in German-speaking countries. The start on LinkedIn can be categorised as very successful. Within the first nine months,

the E-Control page has already gained over 2,300 followers and triggered over 2,000 interactions with almost 100 of its own posts. Both members of the E-Control Executive Board also have their own personal profiles on LinkedIn, which also show high growth and interaction rates.

With a good 31,000 followers and around a quarter of a million interactions, Facebook is still the platform with the greatest broad impact. Twitter/X, on the other hand, continued to show the strongest growth in 2023 with just under 2,700 followers. E-Control's two-minute [explanatory films](#) continue to be very popular, and two more were produced in 2023. In total, they were viewed just over three quarters of a million times.

Further online information services

In 2023, the E-Control website was once again an important source of information for electricity and gas customers as well as for all market participants. With competition recovering since the beginning of the year and attractive offers coming onto the market, the number of visits to the tariff calculator and the website as a whole reached new record levels. Over 3.1 million visits were recorded on the website.

Mobility applications

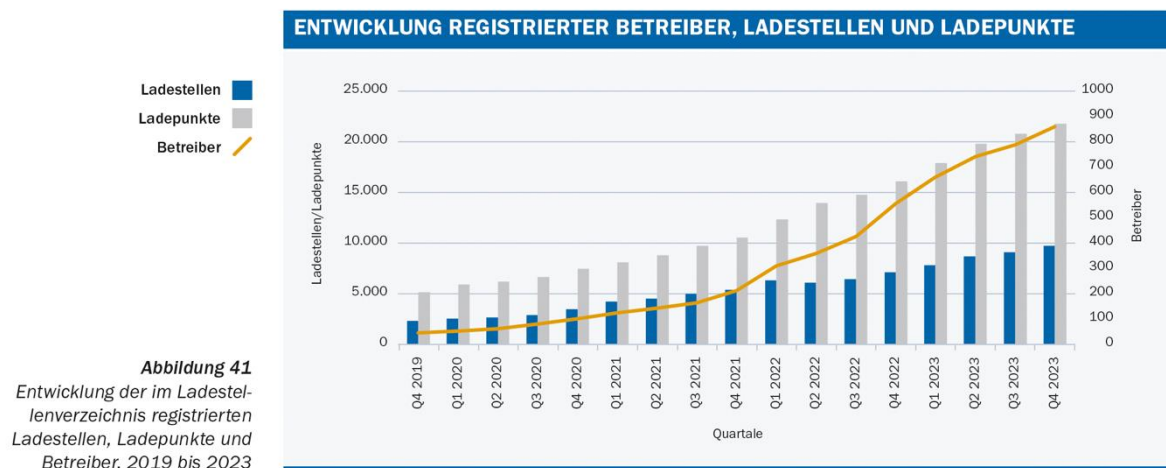
After almost three years of preparation and implementation, E-Control and the Energy Ministry presented the latest application for drivers of electric vehicles to the press on 23 November 2023. This new EV charging calculator provides clarity in the 'tariff jungle', which is still considered a major obstacle to the mass adoption of EVs. The aim of the new application at www.ladetarif.at is to make it easier to find and, above all, compare charging contract offers ('charging cards') in order to be able to choose the most suitable one for the individual situation. This means that, for the first time, almost all charging card offers are easy to find and compare in one place on the Internet.

Thanks to the great media interest, the number of visits to the new tool in the first two days after the presentation even exceeded that of the fuel price calculator, traditionally E-Control's most-used online application, with over 10,000 visits. In total, over 19,000 comparative calculations had already been made using the EV charging calculator by the end of 2023.

Overall, the fuel price calculator remained E-Control's most-used tool, even though the number of visits fell in line with the significant drop in fuel prices. By the end of the year, the application had recorded 3.9 million visits (see also the [quarterly reports on the fuel price calculator](#)).

The charging station directory at <https://www.ladestellen.at/#/electric>, which has been maintained by E-Control since 2019, remained at the same level in terms of the number of visits. Around 30,000 visits were noted in 2023 (see the [quarterly reports on the charging point directory](#)). The database itself shows that the number of registered charging point operators operating publicly accessible charging points in Austria has grown by more than 50% (see Figure 41). The number of charging points increased by more than a third to just under 22,000, making Austria one of the top three countries in Europe in terms of the density of publicly accessible charging infrastructure.

The topics of charging infrastructure and consumer protection in this complex situation are also addressed in the [CEER Report on Electric Vehicles: Network Management and Consumer Protection](#) and considered from a European perspective.



Quelle: Ladestellenverzeichnis der E-Control

Figure 41: Number of charging locations (blue), charging points (grey) and operators (orange line) in the charging station directory from 2019 to 2023

E-Control's reporting obligations

The legislation imposes numerous reporting obligations on E-Control. In the interests of transparency and to make E-Control's comprehensive reports easier to find, E-Control's publications in fulfilment of these obligations are mentioned here.

E-Control has further reporting and publication obligations arising from European legislation and various ordinances in Austria. These are not listed here.

In addition to the above, pursuant to section 128(1) Gas Act 2011, E-Control is responsible for informing the public about various aspects of the introduction of smart metering systems for gas (e.g. costs, network situation, data protection). The Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology is responsible for issuing a corresponding ordinance on the introduction of smart metering devices for gas. As no such ordinance exists, E-Control's duty to provide information in this respect does not currently apply.

In the coming years, E-Control will also have to submit an annual report in accordance with section 70(1) of the Energy Efficiency Act. The first such report, covering the 2021 and 2022 reporting periods, is scheduled by law for the first quarter of 2024.

At the end of 2023, the parliamentary constitutional committee is also set to pass a Freedom of Information Act. This legislative package will remove official secrecy from the constitution and grant citizens a right to information from the state. In general, ministries, provincial administrations, parliament, courts and other state bodies (including E-Control) will be obliged to publish information of general interest on their own initiative. E-Control welcomes this step towards strengthening a transparent and thus comprehensible public administration. E-Control has already set a good example in this regard in 2023. In addition to all the reports listed above, E-Control has created an online decision register that makes all E-Control decisions publicly available and easily searchable. To the best of E-Control's knowledge, this is the first of its kind in Austria. E-Control hopes that this will enable it to provide all citizens with even better information about its decision-making processes and practices.



Tätigkeitsbericht inkl. Marktbericht und Jahresabschluss gemäß § 28 Abs 1 und 2 E-Control-Gesetz sowie § 31 Abs 4 E-Control-Gesetz



EAG-Monitoringbericht gemäß § 16d Abs 4 EIWOG 2010



Tätigkeitsbericht der Schlichtungsstelle gemäß § 26 Abs 4 E-Control-Gesetz



Bericht über die Strom- und Gaskennzeichnung gemäß § 79 Abs 9 EIWOG 2010 sowie § 130 Abs 9 GWG 2011



Smart-Meter-Monitoringbericht gemäß § 83 Abs 1 EIWOG 2010



Bericht über die Situation am österreichischen Flexibilitäts- und Speichermarkt (Wettbewerbsbereich) gemäß § 98 Abs 2 und 3 GWG 2011 (zumindest alle 3 Jahre)



**Monitoring Report
Versorgungssicherheit Strom**
gemäß § 28 Abs 3
E-Control-Gesetz



**Monitoring Report
Versorgungssicherheit Gas**
gemäß § 28 Abs 3
E-Control-Gesetz



**Bericht zu den Anfragen
bei der Wechselpattform Strom**
gemäß § 76 Abs 6 EIWOG 2010
(zweijährlich, erstellt von APCS,
Veröffentlichung durch E-Control)



**Bericht zu den Anfragen
bei der Wechselpattform Gas**
gemäß § 123 Abs 6 GWG 2011
(zweijährlich, erstellt von AGCS,
Veröffentlichung durch E-Control)



**Bericht über die Situation
am österreichischen Strommarkt**
gemäß § 23b Abs 10 und § 111
Abs 6 EIWOG 2010 (zweijährlich)

E-Control's statutory reports: the Annual Activity Report (including the market report and annual accounts), the Renewables Report, the Activity Report of the ADR Board, the Report on Electricity and Gas Labelling, the Smart Meter Monitoring Report, the Storage Report, the Electricity SoS Report, the Gas SoS Report, the Report on Enquiries with the Electricity Switching Board, The Report on Enquiries with the Gas Switching Board, and the Report on Network Reserves.

LEGAL DEVELOPMENTS AT EU LEVEL AND IN AUSTRIA

Following the complex emergency legislation in 2022 to deal with the price crisis, legal developments at EU level in 2023 were divided into two parts. On the one hand, the measures quickly adopted in the previous year had to be evaluated and either finalised or extended. On the other hand, the European institutions also returned to a longer-term perspective and thus to overcoming the climate crisis and further developing the market model.

The situation was similar in Austria, where lessons learnt from previous years led either to the termination of selective crisis management measures or to longer-term changes and further development of the legal framework. In the area of climate protection, the Energy Efficiency Act and the draft Renewable Gas Act deserve particular mention, both of which contain numerous new powers and tasks for E-Control.

Legal developments at EU level

The year 2022 was characterised by a large number of EU emergency regulations in the energy sector. For their part, the EU member states took a large number of measures to implement these and other protective mechanisms for the population and the economy. ACER provides an overview of this on an [interactive website](#).

By contrast, in 2023, the last full year of this EU Commission's legislative term, the main focus was on negotiating outstanding legislative proposals. In addition to finalising the negotiations on the decarbonisation package, the main focus was on reforming the electricity market design. To this end, the Commission published a proposal in mid-March, together with a proposal to revise the REMIT Regulation for better protection against market manipulation on the wholesale energy market.

In October, the EU Commission published an action plan for the accelerated expansion of wind power in the EU, known as the [Wind Power Package](#). This action plan is intended to close the gap between the targets for 2023 and the actual expansion, which is primarily due to the complexity and duration of the authorisation procedures.

EFFECTS OF THE CRISIS LEGISLATION OF 2022

As far as short-term crisis legislation is concerned, no new initiatives were taken at European level in 2023, but some of the measures from the previous year were extended while others expired. However, the impact of the various legislative initiatives from 2022 was clearly noticeable. As part of the crisis management strategy, a series of emergency regulations in the energy sector were published within a very short space of time in 2022. The overarching aim of these emergency measures was to diversify away from Russian gas and curb high energy prices.

In June 2023, only 8% of EU gas imports came through Russian pipelines, compared to over 40% before the Russian war of aggression in Ukraine. Thanks to intensive diversification efforts and the decline in demand due to changes in consumption behaviour, the fall in imports from Russia was made up for at EU level. Total Russian gas imports fell to around 80 billion cubic metres in 2022 and to an estimated 40-45 bcm in 2023, compared to 155 bcm annually in previous years (see the [Eighth Report on the State of the Energy Union](#)).

At the end of the 2022/2023 heating period, the fill level of EU gas storage facilities was still more than 56%, and the overall target of 90% gas storage filling was reached on 18 August 2023, more than two months before the November deadline from the Gas Storage Regulation (Regulation 2022/1032) (see the Eighth Report on the State of the Energy Union).

Council Regulation 2022/2577 on accelerating the deployment of renewable energy aims to simplify and speed up authorisation procedures for renewable energy projects. In May 2023, wind and solar energy surpassed total fossil-fuelled electricity generation at EU level for the first time. Thanks in part to this regulation, the share of renewable energy in the energy mix increased significantly in 2023 (see the Eighth Report on the State of the Energy Union). Due to its success, the emergency regulation was extended until June 2025.

Council Regulation (EU) 2022/1369 on coordinated demand-reduction measures for gas stipulated that all EU countries should voluntarily reduce their gas consumption by 15% by 31 March 2023 compared to the 5-year average. The total consumption of fossil gas in the EU was reduced by 19.3% between August 2022 and January 2023 (see the [corresponding press release](#) issued by the Council of the EU on 28 March 2023). Due to the successful reduction in demand, these regulations were extended for a further year with the introduction of a new Regulation 2023/706. The voluntary target of reducing gas consumption by 15% compared to the (rolling) 5-year average now applies from April 2023 to March 2024.

As part of Council Regulation (EU) 2022/2576 enhancing solidarity through better coordination of gas purchases, reliable price benchmarks and exchanges of gas across borders, the European gas purchasing platform "AggregateEU" was launched on 25 April 2023. By the end of the year, three successful tendering rounds with a total demand of 44.75 bcm had already taken place. The demand registered by EU buyers in the first two tendering rounds alone was twice as high as the binding target of 13.5 bcm set out in the regulation (see the Eighth Report on the State of the Energy Union). The emergency regulation was extended for a further year in December 2023. As part of the interinstitutional negotiations on the proposed legislative package on the hydrogen market and the decarbonised gas market, it was decided to replace AggregateEU from 2025 with a very similar mechanism with which the Commission will create a voluntary system for demand aggregation and joint purchasing of fossil gas.

A [Commission report from June 2023](#) analysed the effects of Council Regulation (EU) 2022/1854 on an emergency intervention to address high energy prices. The regulation set the target of reducing electricity demand by 10% overall and by at least 5% during peak hours. While the reduction in demand during peak hours was achieved in principle by many Member States, including Austria, the 10% reduction in overall electricity consumption was not achievable for the majority of member states. As part of the regulation, 12 EU countries also utilised the option of extending the scope of retail price regulation to SMEs in times of crisis and applying price regulation below cost under certain conditions. Seven EU member states introduced price regulation for households as part of this regulation. As the situation on the energy markets somewhat eased, the Commission refrained from extending these crisis measures.

Council Regulation (EU) 2022/2578 establishing a market correction mechanism to protect Union citizens and the economy against excessively high prices has enabled the activation of a market correction mechanism since 15 February 2023 (until March 2024). The aim of this regulation is to limit phases of excessively high gas prices in the EU that do not reflect world market prices. At the same time, the security of energy supply and the stability of the financial markets are to be guaranteed. In this regulation, ACER and ESMA are tasked with evaluating the introduction of the market correction mechanism. In their final reports ([ACER](#), [ESMA](#)), both agencies were unable to identify any significant effects (either positive or negative) that can be clearly or directly attributed to the introduction of the market correction mechanism. Due to easing energy prices and the change in market dynamics since September 2022, gas prices have fallen continuously and remained below the market correction mechanism activation threshold. Despite this, the regulation was extended for a further year in December 2023.

DECARBONISATION PACKAGE

The so-called [decarbonisation package](#) includes a revision of the European Gas Directive and Gas Regulation as well as a completely new regulation to reduce methane emissions in the energy

sector. After around two years of intensive negotiations between Council and EU Parliament, the package was finalised in December 2023. The agreement on decarbonising the gas market and creating a hydrogen market is intended to facilitate the use of renewable and low-carbon gases, including hydrogen, while ensuring security of supply and the affordability of energy. The legislative texts stipulate that national network development plans must be based on common scenarios for electricity, gas and hydrogen. Furthermore, specific hydrogen network development plans must be drawn up to ensure that the development of the hydrogen system is based on a realistic demand forecast.

This package will create a market design for hydrogen in Europe, with the regulations being introduced in two phases (before and after 2033). In the start-up phase until 2033, a simplified regulatory framework will be applied, with clarity already in this phase on the future rules for a developed hydrogen market after 2033. These provisions concern, among other things, access to hydrogen infrastructure, the separation of hydrogen production and transport activities and the setting of tariffs. With the establishment of the European Network of Network Operators for Hydrogen (ENNOH), a new governance structure will be created to deal with the development of a dedicated hydrogen infrastructure and cross-border coordination.

ENERGY EFFICIENCY DIRECTIVE

The new Energy Efficiency Directive (EU) 2023/1791 was also published in September 2023. It stipulates a reduction in EU final energy consumption of 11.7% compared to the consumption expected for 2030. The directive must be implemented in Austria by October 2025 after a two-year implementation period.

RENEWABLES DIRECTIVE

A revision of the Renewable Energy Directive (EU) 2023/2413 was published in the Official Journal of the European Union on 31 October 2023. This completes the "Fit for 55" package. The directive stipulates that the share of renewables in gross final energy consumption must be increased to at least 42.5% by 2030. To this end, there are new regulations designed to speed up the authorisation and construction of renewable electricity generation plants. The directive is to be transposed into Austrian law by the beginning of 2025.

ELECTRICITY MARKET DESIGN

In March 2023, the EU Commission presented a [new legislative package on electricity market design](#). The overarching aim of the Commission's proposal is to accelerate the expansion of renewable energies and the phase-out of gas and to protect households from price fluctuations of fossil fuels, future price spikes and market manipulation. The proposal does not shake the foundations of the electricity market. The Commission focused on proposals aimed at optimising the design of the electricity market by supplementing the short-term markets with more longer-term instruments. Incentives for longer-term contracts for non-fossil energy generation as well as measures that bring cleaner flexible solutions such as demand response and storage into the system are to be created.

At the same time, the EU Commission presented a proposal to revise the REMIT Regulation, which is intended to adapt the scope of REMIT to current market developments and further strengthen the protection of the market against abuse. Among other things, the regulation provides for closer cooperation between national and European supervisory authorities.

After intensive negotiations in autumn 2023, the European institutions were able to reach a compromise in December and the legislative package will come into force in 2024.

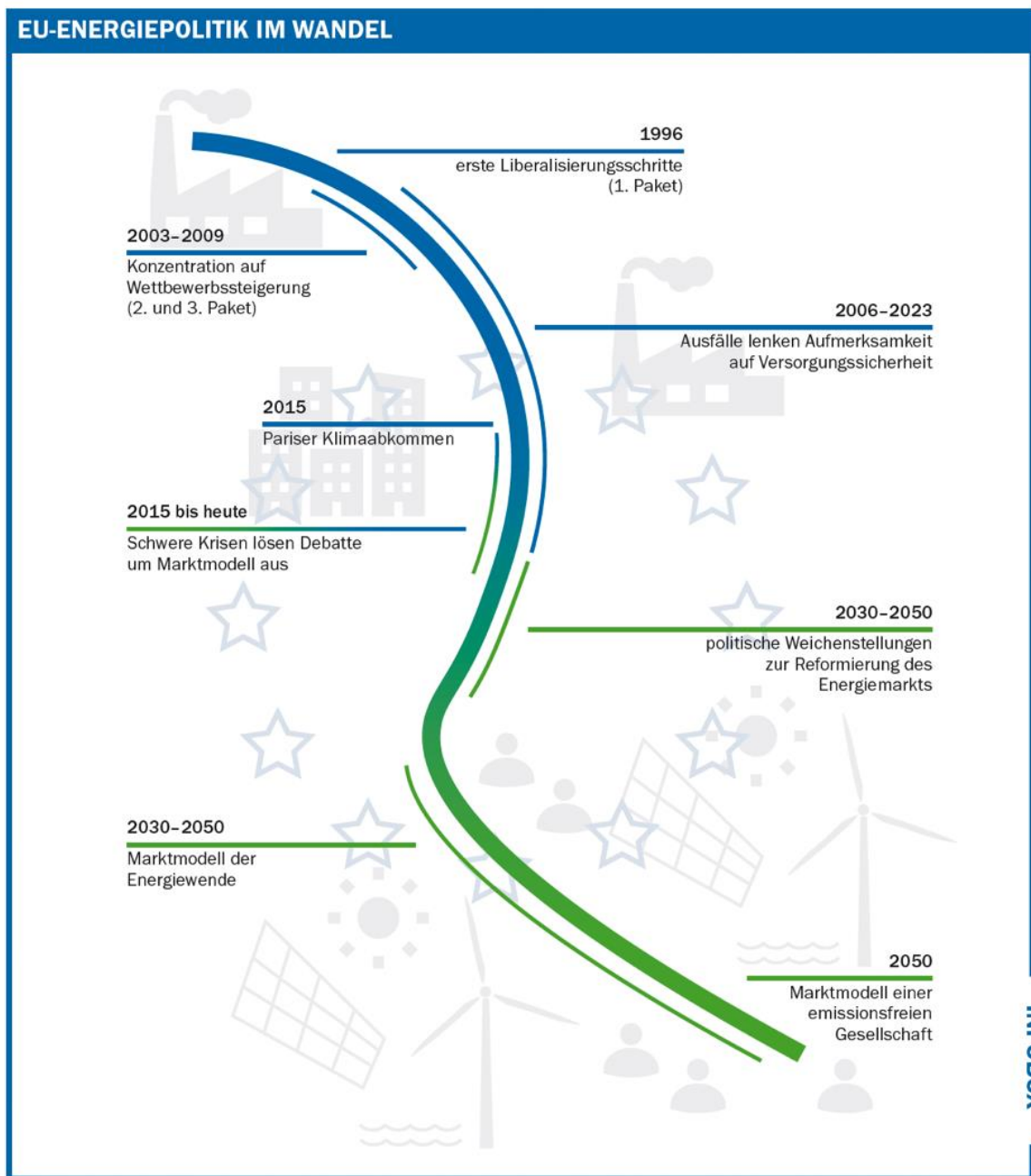
AMENDMENTS TO THE GRID CONNECTION CODES

On the initiative of ACER and CEER, revision processes for the European grid connection codes RfG (Requirements for Generators) and DC (Demand Connection) were launched in September 2022. There was a need for change primarily due to the growing momentum in the expansion of decentralised and converter-coupled power generation systems and storage, charging facilities for electric vehicles and heat pumps. As part of the revision process, ACER, with the involvement of E-Control, drew up proposals for amendments and subjected them to a public consultation. After completing the consultation and evaluating the contributions, ACER submitted proposed amendments and recommendations for the two grid codes to the European Commission in December 2023. The official recommendation was published by ACER on 19 December 2023.

The Demand Connection Grid Code (Regulation 2016/1388) contains provisions for the grid connection of electrical installations to the transmission grid, distribution grids and consumer units that provide load control services for grid operators. In the new version, charging facilities or electric vehicles, heat pumps and power-to-gas systems will also fall within the scope of the DC Code. New technical requirements are intended to ensure that these consumer units contribute to system stability and thus to security of supply in the future. Some of these requirements are already known at national level from the technical and organisational rules for distribution grid connections (TOR distribution grid connection) published by E-Control and are now being incorporated into the European legal framework.

The Requirements for Generators Grid Code (Regulation 2016/931) describes the requirements for the grid connection of power generation plants at all voltage levels. The provisions cover various aspects such as the ability to provide frequency support, the provision of reactive power and the black start capability of large installations. The revised RfG Code also takes electrical energy storage systems into account. Requirements for vehicle-to-grid charging facilities and electric vehicles also fall within the scope of the grid code. New technical requirements are intended to ensure that further contributions are made to the system stability of electricity generation plants.

Another code, the Demand Response Grid Code, is currently being drafted. E-Control was already involved in the preparation of the relevant framework guideline in 2022, which defines the framework, scope and objectives of the grid code. The overarching aim of the code is to increase the use of demand-side flexibility on European electricity markets. To this end, standardised regulations and requirements for the market integration of demand response and decentralised flexibility in national grid codes are being developed at European level. In March 2023, the European Commission asked the legal representatives of the European grid operators, ENTSO-E and the EU DSO Entity, to prepare a draft Demand Response Grid Code based on the framework guideline. ACER has set up a project team that includes E-Control representatives and is in continuous dialogue with the grid operator organisations responsible for preparing the draft. In 2024, the project team will finalise the proposal for the new network code on the basis of the network operator organisations' draft, submit it to the ACER decision-making level and send it to the European Commission.



Quelle: E-Control

Info box 3: Phases of EU energy policy, from first liberalisation efforts in 1996 to a net-zero society in 2050

NEW EU PARLIAMENT AND NEW EUROPEAN COMMISSION 2024

In June 2024, European elections will be held again after five years, in which EU citizens will elect members of the European Parliament. Due to the upcoming elections, the EU institutions primarily focussed on finalising dossiers in 2023. All legislative proposals that are not voted on by the plenary of the EU Parliament before the elections will automatically lapse.

After the EU elections, the European Council proposes a person as Commission President, taking into account the result of this election, who must be confirmed by the European Parliament by an absolute majority. The Commissioners themselves are nominated by the Member States, designated by the European Council and then rigorously scrutinised by the relevant parliamentary committee of the European Parliament. As soon as the Parliament has given its consent to the

entire new EU Commission, they are officially appointed by the European Council in a decision taken by qualified majority.

Legal developments in Austria

E-Control's ongoing activities were reflected in numerous administrative and regulatory proceedings in 2023. To ensure security of supply, the legislator amended the Gas Act 2011 in 2023, and various changes were made in the electricity and gas sectors to combat high energy costs. This also gave rise to tasks for E-Control in many areas.

Lessons learnt from the volume and price crisis were also translated into improved regulations for consumers in 2023, for example in the area of information provision.

From E-Control's perspective, the adoption of the Energy Efficiency Act in the middle of the year was a key legislative development. The authority has already begun implementing the new competences. The next significant expansion of responsibilities is expected to come from the Renewable Gas Act, which is currently in draft form.

ADMINISTRATIVE PROCEDURES

In 2023, a total of 355 administrative procedures and 18 ordinance procedures were conducted and concluded. In addition, there are 164 ongoing administrative proceedings, 58 of which are pending in court. Figure 42 provides an overview of the consultations, ordinances and administrative proceedings as well as E-Control's involvement in proceedings conducted by other authorities.

KONSULTATIONEN, VERORDNUNGEN UND BESCHEIDVERFAHREN	
Konsultationen	18
Konsultationen – Gas	7
Versorgungsstandard-Verordnung 2023	
Erdgas-Clearingentgelt-Verordnung 2023	
Erdgas-Energielenkungsdaten-Verordnung – Novelle 2023	
Gas-Monitoring-Verordnung 2017 – Novelle 2023	
Gaskennzeichnungsverordnung 2023	
Gas-Systemnutzungsentgelte-Verordnung 2013 – 2. Novelle 2023	
Gas-Systemnutzungsentgelte-Verordnung 2013 – Novelle 2024	
Konsultationen – Strom	11
RfG Anforderungs-Verordnung – 1. Novelle 2023	
Elektrizitäts-Energielenkungsdaten-Verordnung 2017 – Novelle 2023	
Herkunftsnachweispreis-Verordnung 2024	
Netzdienstleistungsverordnung Strom 2012 – Novelle 2024	
Elektrizitäts-Monitoring-Verordnung 2022 – Novelle 2023	
Clearinggebühr-Verordnung 2023	
Energieeffizienz-Standardisierte-Kurzbericht-Verordnung	
Energieeffizienz-Qualifikationsbewertungs-Verordnung	
Individuelle-Verbrauchserfassungs-Verordnung	
Systemnutzungsentgelte-Verordnung 2018 – 2. Novelle 2023	
Systemnutzungsentgelte-Verordnung 2018 – Novelle 2024	
Verordnungen	18
Verordnungen – Gas	7
Versorgungsstandard-Verordnung 2023	BGBl. II Nr. 151/2023
Erdgas-Clearingentgelt-Verordnung 2023	BGBl. II Nr. 275/2023
Erdgas-Energielenkungsdaten-Verordnung 2017 – Novelle 2023	BGBl. II Nr. 291/2023
Gas-Monitoring-Verordnung 2017 – Novelle 2023	BGBl. II Nr. 272/2023
Gaskennzeichnungsverordnungs-novelle 2023	BGBl. II Nr. 216/2023
Gas-Systemnutzungsentgelte-Verordnung 2013 – 2. Novelle 2023	BGBl. II Nr. 74/2023
Gas-Systemnutzungsentgelte-Verordnung 2013 – Novelle 2024	BGBl. II Nr. 396/2023

Verordnungen – Strom	11
RfG Anforderungs-V – 1. Novelle 2023	BGBI. II Nr. 271/2023
Elektrizitäts-Energielienkungsdaten-Verordnung 2017 – Novelle 2023	BGBI. II Nr. 290/2023
Herkunftsnachweispreis-Verordnung	BGBI. II Nr. 356/2023
NetzdienstleistungsVO Strom 2012 – Novelle 2024	BGBI. II Nr. 394/2023
Elektrizitäts-Monitoring-Verordnung 2022 – Novelle 2023	BGBI. II Nr. 393/2023
Clearinggebühr-Verordnung 2023	BGBI. II Nr. 276/2023
Energieeffizienz-Standardisierte-Kurzbericht-Verordnung	BGBI. II Nr. 242/2023
Energieeffizienz-Qualifikationsbewertungs-Verordnung	BGBI. II Nr. 264/2023
Individuelle-Verbrauchserfassungs-Verordnung	BGBI. II Nr. 321/2023
Systemnutzungsentgelte-Verordnung 2018 – 2. Novelle 2023	BGBI. II Nr. 52/2023
Systemnutzungsentgelte-Verordnung 2018 – Novelle 2024	BGBI. II Nr. 395/2023
Beschiedverfahren	
Abgeschlossene Verfahren	346
Anzahl der laufenden Verfahren	161
Davon gerichtsanhängige Verfahren	58
Beteiligung an Verfahren anderer Behörden	9

Abbildung 42
Konsultationen, Verordnungen und Bescheidverfahren der E-Control sowie Beteiligungen der E-Control an Verfahren anderer Behörden, 2023

Quelle: E-Control

Figure 42: Consultations, ordinances and official decisions by E-Control, as well as participation of E-Control in proceedings led by other authorities, 2023

LEGAL DEVELOPMENTS IN THE AREA OF ENERGY MARKETS

Throughout 2023, E-Control was responsible for coordination, monitoring and reporting under the Energy Intervention Powers Act 2012. The Austrian legislators continued to focus on the challenges on the European energy markets caused by the Russian war of aggression against Ukraine. It was very active in connection with the sky-rocketing energy costs and their impact on private individuals and companies, and added regulations to make security of supply more resilient and sustainable.

CONSOLIDATING SECURITY OF SUPPLY

Two amendments to the Gas Act 2011 were passed in 2023. The first amendment (Federal Law Gazette I No. 23/2023) implemented Article 3a of the EU Gas Regulation (EU) 715/2009 and for the first time created requirements for the certification of storage companies in Austria, also regulated the construction of a connection of the Haidach storage facility to the Austrian distribution network and extended the previous requirements for the gas supply standard to include gas volumes used in CHP plants or combined heat and power plants for protected district heating customers (households, small and medium-sized enterprises).

E-Control issued more detailed implementing provisions for the statutory requirements in its ordinance on the verification and review of the gas supply standard for protected customers in Austria (Federal Law Gazette II No. 151/2023).

The second amendment to the Gas Act 2011 (Federal Law Gazette I No. 145/2023), supplemented by amendments to the Petroleum Stockpiling Act 2012 and the Electricity Act 2010, dealt with further strengthening the resilience of domestic supply. The gas supply standard was raised from 30 to 45 days supply guarantee for protected customers, provided the supplier obtains its gas from non-diversified, conventional (Russian) sources. Comparable regulations apply to large gas-fired power plants (> 50 MW) with regard to the electricity they generate.

In addition, Austria and Germany concluded an agreement on the allocation of gas volumes in the Haidach and 7fields gas storage facilities used across borders. It contains mutual guarantees that the stored gas volumes can be safely transported to Germany and Austria.

COMBATING HIGH ENERGY COSTS

Reducing energy costs was also the aim of new laws and ordinances in 2023. An amendment to the Electricity Cost Relief Act strengthened the electricity cost brake, expanded the group of beneficiaries and created a supplementary electricity cost subsidy for households with more than three people. In addition to various simplifications for energy-consuming companies, the energy levy regulations (for gas and electricity) were amended, extending the levy exemption and reduction already enacted in 2022 by six months until 1 January 2024.

An amendment to the Federal Act on the Electricity Crisis Contribution (Federal Law Gazette I No. 64/2023) lowered the windfall profit cap to € 120/MWh. This extended absorption of windfall profits of energy-producing companies fits into the framework of previous measures for the redistribution of crisis costs.

The high energy costs also drove up grid loss costs, which is why an amendment to the Electricity Act 2010 slightly increased the corresponding state subsidy to cushion the impact and extended it for the second half of 2023. This stabilised the charge for grid losses in the electricity grid and provided financial relief for electricity consumers. As a result, the E-Control Regulation Commission was able to massively reduce the fees that were originally set. As the federal subsidies expire on 1 January 2024, this will result in an increase in charges depending on the grid area and grid user category (see chapter 'Development of system charges').

LEGAL DEVELOPMENTS FOR THE PROTECTION OF ENERGY CONSUMERS

By the end of 2022, the so-called 'supply after market exit' was introduced through section 77b of the Electricity Act 2010 (Federal Law Gazette I No. 234/2022). Consumers whose electricity supplier withdraws from the market and who have not concluded a new electricity supply contract by the end of the contractual relationship in question must now be supplied by the largest supplier in the respective grid area for three months. The first small-scale application was successfully completed at the beginning of 2023.

A further amendment to Electricity Act 2010 (Federal Law Gazette I No. 94/2023) led to new information obligations and transparency instruments. In addition, the regulations on E-Control's tariff calculator in section 65 Electricity Act 2010 were updated, information obligations towards consumers were included in sections 76a and 81(6) Electricity Act 2010 in particular and the provisions on instalment payments in section 81(5) Electricity Act 2010 were adapted. Corresponding provisions were also included in the gas sector in the form of the new sections 121, 123a and 126 of the Gas Act 2011 (Federal Law Gazette I No. 145/2023).

It should be mentioned separately that the legislator has now also introduced regulations specifically for so-called floater tariffs in section 80(4a) of the Electricity Act 2010 and section 125(4a) of the Gas Act 2011 (Federal Law Gazette I No. 145/2023). The new regulations provide for stricter information obligations on the part of energy suppliers. It was also clarified that such contracts can be terminated at any time in compliance with the statutory cancellation periods.

The proceedings of the Constitutional Court concerning the regulations on the universal supply with energy (GZ. G 122/2023) should also be emphasised. The legal basis for this is the fundamental provision of section 77 of the Electricity Act 2010 and the corresponding provincial implementation acts as well as section 124 of the Gas Act 2011. As part of these legal review proceedings, the Constitutional Court is examining, among other things, the question of how the aforementioned regulations are to be interpreted and whether they fulfil constitutional principles. A decision on these issues is expected in 2024.

ENERGY EFFICIENCY ACT

The Energy Efficiency Act was amended in mid-June 2023 (Federal Law Gazette I No. 59/2023). Most of the amendments came into force on 15 June 2023. They are in line with the European

Energy Efficiency Directive 2012/27/EU and brought numerous new operational responsibilities and regulatory powers for E-Control (see chapter 'E-Control's tasks in the field of energy efficiency').

RENEWABLE GAS ACT

The Renewable Gas Act, which is currently in draft form, aims to oblige gas suppliers to replace a certain proportion of fossil natural gas with renewable gas in future (green gas quota). The quota model is intended to lead to an increase in the proportion of domestically produced renewable gases, thereby reducing dependence on imports and increasing security of supply.

The plan is for gas suppliers that supply consumers in Austria against payment to replace at least certain proportions of their gas volumes, compared to what they sold in the previous year, with renewable gases from 1 January 2024. If the substitution obligation is not met in a given year, the shortfall is to be made up by 31 December of the following year through corresponding additional gas volumes. The shortfall in any one year may not exceed 20% of the substitution obligation for the same year. By 31 December 2030, gas suppliers should thus replace a total of at least 7.5 TWh of the gas volumes they sold to consumers that year with renewable gases. For the period from 1 January 2031 to 31 December 2040, a green gas quota is to be set so that at least 15 TWh of the gas volumes sold to consumers are substituted by renewable gases in that same period.

The draft act provides for significant new tasks for E-Control as the regulatory authority. For example, the clearing and settlement agent must report to E-Control the gas volumes sold by suppliers to Austrian consumers in the previous year and the green gas quota based on this in absolute figures (section 5(7) of the draft Renewable Gas Act). This serves to make compliance with the quotas traceable. Suppliers must provide E-Control with evidence of compliance with the quota in the form of guarantees of origin or green gas certificates, each bearing a green gas seal, by the last day of February each year (section 6(1) and (2) of the draft act).

If a gas supplier fails to comply with the obligation to achieve the green gas quota, E-Control will issue an official decision prescribing the amount of compensation to be paid. The compensation amounts are to be used as additional subsidies for the conversion of existing biogas plants and the construction of plants for the production of renewable gases pursuant to sections 60 and 61 Renewable Energy Expansion Act.

Finally, E-Control is to monitor the technical and economic developments in connection with the green gas quota and the decarbonisation of the gas market and carry out an evaluation of the substitution obligation. E-Control is to submit an initial report by 2026. E-Control will then carry out an evaluation every five years.

GRIDS AND GRID REGULATION

The grid charges for electricity and gas grid operators are determined in accordance with Electricity Act 2010 and Gas Act 2011 on the basis of the allowed costs of the grid operators and the relevant transported quantities. The appropriate costs and quantities are determined by E-Control in an official decision. Based on this, the grid charges to be paid are determined by means of electricity and gas system charges ordinances. The costs of electricity transmission system operators are reviewed annually, while multi-year incentive regulation models apply to distribution system operators and gas transmission system operators.

As every year, the [Report on Regulatory Frameworks for European Energy Networks 2022 by CEER](#) provides an overview of the tariff and regulatory systems in all EU countries.

Different planning instruments are used in the area of network development planning, which must be interlinked at geographical (Austria and EU) and sectoral (electricity and gas) levels.

Regulatory regime

The year 2023 brought a new regulatory framework for electricity distribution system operators, in force from 1 January 2024. The flexible design of individual points takes into account the expectation of future developments and at the same time creates stability and planning security for the grid operators.

In the area of gas transmission system operators, preparatory work for the new regulatory period from 2025 has already begun and a new reference price methodology – that of the capacity-weighted distance – was published for consultation in mid-December 2023. For gas distribution system operators and transmission system operators, the stability of the current regulatory period remains a solid basis for investments and network operation.

NEW REGULATORY FRAMEWORK FOR ELECTRICITY DISTRIBUTION SYSTEM OPERATORS

The [new regulatory system](#) for the fifth regulatory period for electricity distribution system operators, which will apply from 1 January 2024, has created a stable and predictable regulatory framework that enables grid operators to implement all necessary measures for future challenges and to react flexibly to new ones. At the same time, the interests of grid customers are taken into account.

In order to ensure a balanced regulatory regime, the existing system was further developed and new regulatory parameters were implemented. For example, in response to the increased connection requirements for producers of electricity based on renewable energies, a new operating cost factor was introduced for the connection of new feed-in metering points, which compensates for one-off operating costs incurred when connecting such metering points. In addition, existing and new plants are now handled separately for the first time in terms of the WACC, which is intended to ensure an appropriate return on the capital invested by grid operators. The introduction of a separate, higher interest rate for new investments is meant to enable the financing and realisation of appropriate and necessary infrastructure investments, particularly against the backdrop of rising interest rates. For the financing of existing grid facilities, a lower WACC is granted, and general cost reductions are taken into account. Due to the current extraordinary inflation, a retroactive consideration of the time lag inherent in the system for inflation compensation is introduced. This will prevent cost shortfalls on the grid operator side.

In anticipation of future legal changes and changes to the conditions under which electricity distribution system operators work, the regulatory model for the next five years was designed to be flexible in individual points in order to allow for any necessary adjustments.

The new regulatory model, which will apply until 31 December 2028 and thus forms the basis for the expansion of the electricity grid in a decisive phase of the energy transition, is virtually

unchallenged and was approved by almost all parties to the proceedings. Only one electricity distribution system operator lodged an appeal against the new regulatory system.

NEW REGULATORY SYSTEM FOR GAS TRANSMISSION SYSTEM OPERATORS

The current regulatory period for gas transmission system operators runs from 2021 to 2024. However, due to the requirements of the Tariff Network Code, the tariffs that will apply from 2025 must be published 30 or 60 days before the first Monday in July 2024. E-Control therefore worked intensively with the grid operators and statutory parties on a new regulatory model for the transmission system operators as early as 2023. The biggest challenge here was the elimination of large transit volumes due to the Russian war of aggression against Ukraine and the associated efforts to reduce the volumes of Russian gas.

Due to the change in gas flows, Baumgarten is no longer the point via which most gas flows. A change in the reference price method to the capacity-weighted distance method has therefore been consulted. This is the standard method of the network code. The process for the reference price methodology will be finalised in Q2 2024.

The new method also adjusted the allowed costs and revenues of the two transmission system operators to the new conditions on the European gas market.

REGULATION OF ELECTRICITY TRANSMISSION SYSTEM OPERATORS

The electricity transmission system operators also apply a separate interest rate for existing assets and new investments on the basis of the new regulatory system in force since 1 January 2023.

Both distribution and transmission grids are essential for enabling the energy transition. In order to achieve synchronisation with the regulatory period of the electricity distribution grid operators and to ensure a level playing field in the area of recognising appropriate capital costs, the interest rate for existing systems was updated with recent data. As a result, the interest rate applicable to transmission system operators for old systems has risen since this year.

Based on this system, the electricity transmission system operators have also laid the foundation for the expansion of the electricity grid in the current challenging phase, as the financing and realisation of appropriate and necessary infrastructure investments are guaranteed.

Development of system charges

The system charges for electricity and gas reflect the different developments in these infrastructure areas. Electricity distribution grid operators face the challenge of having to connect many decentralised generation plants. The extraordinary price peaks on the wholesale markets would also have led to a multiplication of grid loss costs, but the legislator intercepted some of these costs for 2023. This cost absorption will not be continued in 2024. In most federal provinces, there will be an increase in grid fees for households.

In the area of gas distribution networks, opposing trends partially offset each other, resulting in an increase in charges for households in around half of Austria's federal provinces and a reduction in charges for households in the other half.

ELECTRICITY SYSTEM CHARGES 2024

In the electricity sector, annual costs of around € 2.53 billion are recovered through grid fees. The majority of this is to be paid by consumers, with generation plants also having to contribute. In 2023, all grid operators with a supply quantity of more than 50 GWh in 2008 were subject to a cost audit to determine the allowed costs for the fifth regulatory period from 1 January 2024 in accordance with section 48(1) Electricity Act 2010. This cost audit was characterised by significant changes in the framework conditions for electricity distribution system operators. For example,

distribution system operators are currently required to connect a large number of decentralised generation units to the grid, set up energy communities and provide data for these. This will continue in the coming years. In this context, massive investments in the grids are also required and the general inflationary trend is also having an impact on the ongoing costs of grid operation. All of this leads to increased costs for 2024, which must be recovered through charges corresponding to withdrawal quantities. In addition, there was a slight reduction in the quantity of electricity supplied in many grid areas. The reason for this is, on the one hand, the increase in own electricity generation and thus a lower withdrawal from the electricity grid and, on the other hand, energy saving was triggered by the massive increase in prices. Sales to final customers fell by 2.4% in 2022 compared to the previous year. All of this means that there are significant increases in grid utilisation fees in most grid areas. Only in the Burgenland and Upper Austria grid areas, the grid charges could be reduced.

There have been significant developments in the area of costs for grid losses. The continuation of the previous system led to an average increase of more than 500% from 1 January 2023. This was due to the massive price peaks and generally significantly higher energy costs, which have a direct impact on the costs for grid losses. Against this backdrop, the legislator decided to cover part of the procurement costs for grid loss energy for 2023 with federal funds. In accordance with section 53(4) Electricity Act 2010, the costs for grid losses assumed by the federal government were to benefit exclusively consumers and not the injecting parties. This led to revised grid loss charges from 1 March 2023. In total, the federal government absorbed 186 €/MWh.

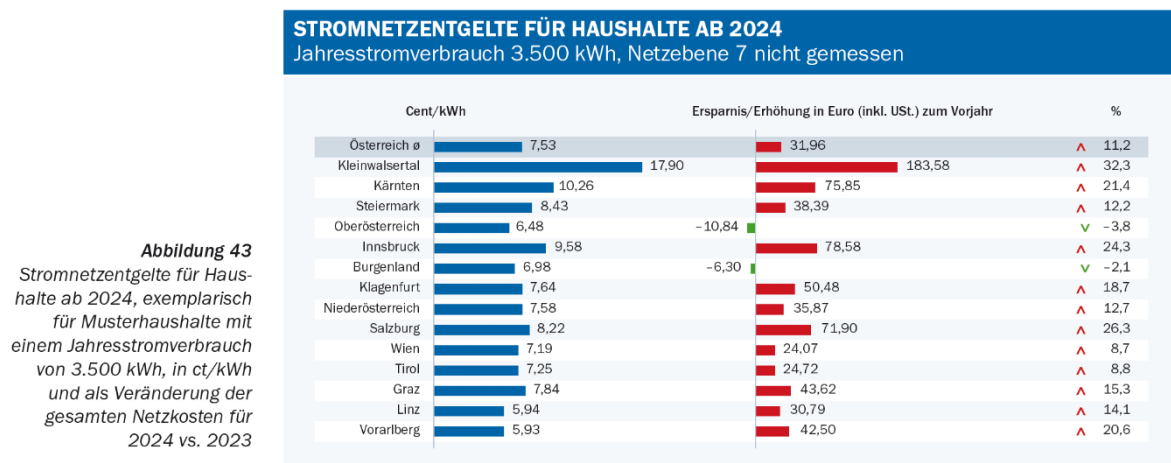


Abbildung 43
 Stromnetzentgelte für Haushalte ab 2024, exemplarisch für Musterhaushalte mit einem Jahresstromverbrauch von 3.500 kWh, in ct/kWh und als Veränderung der gesamten Netzkosten für 2024 vs. 2023

Quelle: E-Control

Figure 43: Electricity system charges for households from 2024, using a typical household with an annual consumption of 3,500 kWh. The figure displays the system charges in each federal province both in cent/kWh (first column) and as compared to the previous year, in Euro and percent (second and third columns).

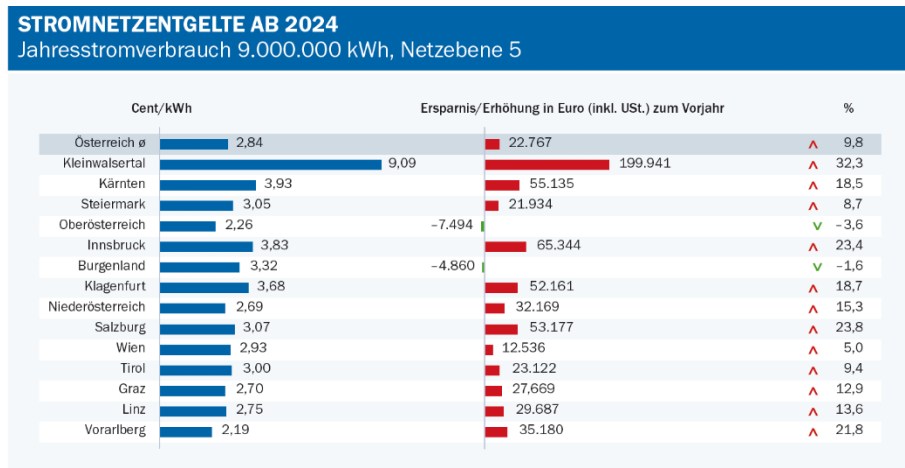
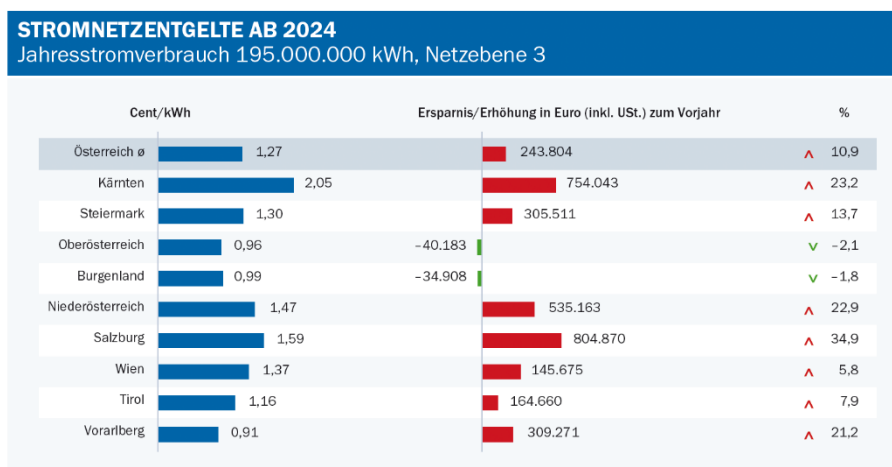


Abbildung 44
Stromnetzentgelte für Endkunden auf Netzebene 5 ab 2024, exemplarisch für Musterhaushalte mit einem Jahresstromverbrauch von 9.000.000 kWh, in ct/kWh und als Veränderung der gesamten Netzkosten für 2024 vs. 2023

Quelle: E-Control

Figure 44: Electricity system charges for final customers at grid level 5 from 2024, using a typical customer with an annual consumption of 9,000,000 kWh. The figure displays the system charges in each federal province both in cent/kWh (first column) and as compared to the previous year, in Euro and percent (second and third columns).



Quelle: E-Control

Abbildung 45
Stromnetzentgelte für Endkunden auf Netzebene 3 ab 2024, exemplarisch für Musterhaushalte mit einem Jahresstromverbrauch von 195.000.000 kWh, in ct/kWh und als Veränderung der gesamten Netzkosten für 2024 vs. 2023

Figure 45: Electricity system charges for final customers at grid level 3 from 2024, using a typical customer with an annual consumption of 195,000,000 kWh. The figure displays the system charges in each federal province both in cent/kWh (first column) and as compared to the previous year, in Euro and percent (second and third columns).

There is no corresponding subsidy for 2024. The Regulation Commission of E-Control therefore revisited the system for bearing the costs of grid losses for 2024 and decided to reorganise it. The share of grid loss costs to be borne by generators was increased to 48%. The grid loss fee for injecting parties was also standardised at 0.468 ct/kWh.

The effects of the above decisions are shown in Figure 43 for average customers at grid level 7 with an annual electricity consumption of 3,500 kWh. On average in Austria, such a household will have to pay a total of € 23.00 (incl. VAT) more in 2024 than in the previous year. This corresponds to an additional monthly cost of € 2.67. For average customers at grid levels 5 and 3, the increases of around 10% mean additional annual costs of around € 23,000 and € 244,000, respectively (see Figure 44 and Figure 45).

GAS SYSTEM CHARGES 2024

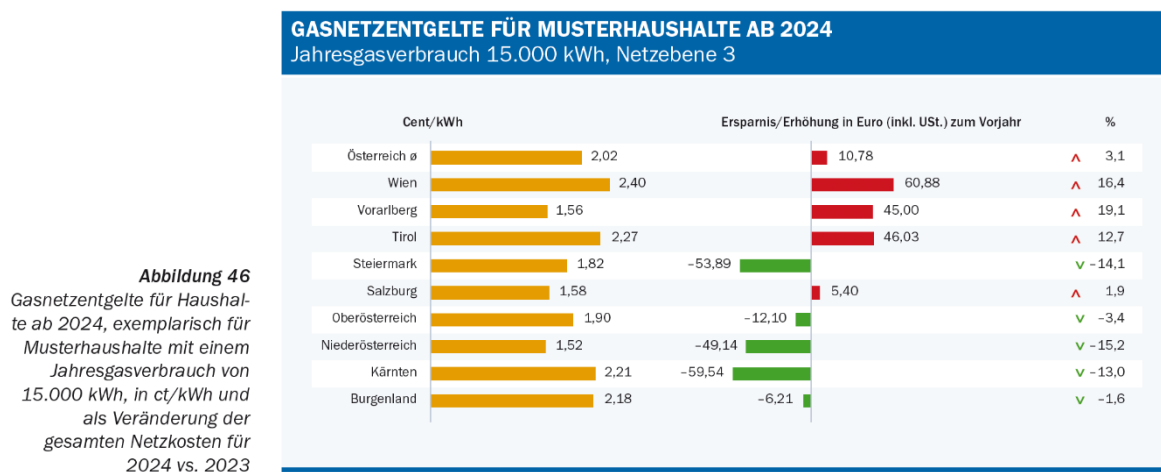
In the gas sector, annual costs of around € 0.611 billion are recovered through network charges, the majority of which are paid by consumers. Storage and production facilities also contribute to the grid costs to a lesser extent.

Pursuant to section 73 Gas Act 2011, the grid utilisation charge compensates the grid operator for costs incurred in particular for the construction, expansion, maintenance and operation of the grid, including the costs associated with the installation and operation of metering equipment, including calibration and data readout at entry and exit points, with the exception of customer installations, as well as the pro rata costs for the distribution area manager. The grid loss charge is to be set either on a time-variable and/or load-variable basis. The calculation of the grid utilisation fees from 1 January 2024 is based on a slightly lower transported quantity compared to the previous year.

The retroactive consideration of the additional or reduced revenues for the calendar year 2022 via the regulatory account pursuant to section 71(1) Gas Act 2011 had a cost-increasing effect on grid level 3 in most grid areas due to significant volume reductions. In contrast, volumes at grid level 2 increased in the grid areas with power plants.

The implementation of the new regulatory framework, which determines the allowed costs of distribution system operators for the years 2023 to 2028, would lead to a stable cost base without external influences. However, inflation has a cost-increasing effect. On the other hand, the development of charges is significantly influenced by the reduction in upstream grid costs, which has a positive effect on the eastern market area. The discontinuation of the volume-based transmission fee offsets the inflation and the increased costs for metering differences and own consumption, which partially compensates for the cost increases of the previous year.

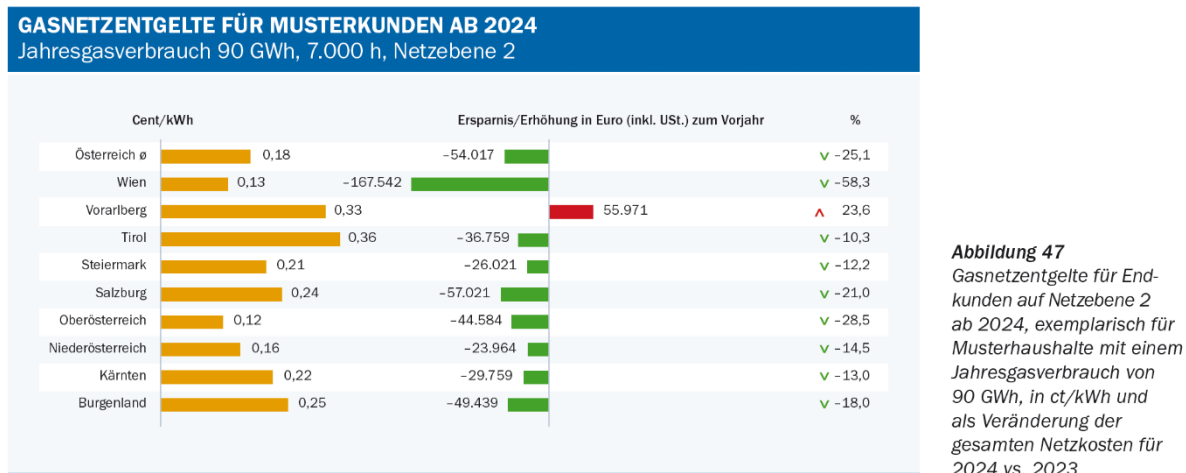
Compared to the charges for 2023, the average annual additional costs for an average household at grid level 3 in Austria are around € 10 (see Figure 46). This average results from increases in the Salzburg, Tyrol, Vorarlberg and Vienna grid areas and decreases in the Styria, Upper Austria, Lower Austria, Carinthia and Burgenland grid areas. The Tyrol and Vorarlberg market areas did not benefit from the abolition of the volume-based transmission charge but did not experience any major increases in charges in the previous year either. In the Vienna grid area, there are significant fee increases due to the decline in volumes at grid level 3, which has an impact on the tariffication volume and also on the regulatory account.



Quelle: E-Control

Figure 46: Gas system charges for households from 2024, using a typical household with an annual consumption of 15,000 kWh. The figure displays the system charges in each federal province both in cent/kWh (first column) and as compared to the previous year, in Euro and percent (second and third columns).

Developments are similar at grid level 2. With the exception of Vorarlberg, charges were reduced in all grid areas (see Figure 47). It should be noted that no customers are connected to grid level 2 in the Vorarlberg grid area. The increase therefore has no effect on customers.



Quelle: E-Control

Figure 47: Gas system charges for final customers at grid level 2 from 2024, using a typical customer with an annual consumption of 90 GWh. The figure displays the system charges in each federal province both in cent/kWh (first column) and as compared to the previous year, in Euro and percent (second and third columns).

The increase in fees in the previous year was largely due to the increase in upstream grid costs as a result of the settlement of volume-based grid utilisation fees for transmission system operators. For 2024, the volume-based grid utilisation fee for transmission is set to zero, but the use of power plants has also increased compared to the previous year. These two effects overall result in reducing fees at grid level 2.

Grid infrastructure

The planning and expansion of the grid infrastructure is characterised by the transformation of the energy system. Expansion planning for electricity is carried out via the network development plan (NDP) in Austria, the TYNDP at European level and the integrated network plan (INP) for consistency with the gas sector. On the gas side, Austrian planning is carried out in the coordinated network development plan (CNDP) and the long-term plan (LTP), which in turn must be in line with the TYNDP and INP. Two special features of the electricity distribution grid are the roll-out and use of smart meters on the one hand and the grid connection of photovoltaic systems at the low-voltage level on the other (see chapter 'Grid connection').

ELECTRICITY NETWORKS

The planning of the transmission grids in the network development plan must be in line with the European ten-year network development plan (TYNDP) and the Austrian integrated network plan (INP). While the NDP for Austria was approved by E-Control in December 2023, work on the TYNDP 2024 has already begun at European level. There must also be transparent expansion plans at the distribution grid level. Following preparations in the previous year together with the grid operators, E-Control published guidelines for the preparation of these distribution grid development plans in 2023. The procurement of sufficient grid reserves is also necessary to maintain electricity supply. This is done on a competitive basis and E-Control published a corresponding report in 2023.

Transmission grid planning for the energy transition

Austria is pursuing the goal of covering 100% of its electricity consumption from renewable energy sources by 2030. The significant increase in feed-in from renewable energy sources into

distribution grids will also change the demands on the infrastructure and the energy flows between transmission and distribution grids. E-Control fulfils numerous tasks in the area of electricity grid infrastructure. These include the authorisation and monitoring of grid development planning at transmission grid level, which must be implemented coherently with the newly created Austrian integrated network plan of the Federal Ministry of Transport, Innovation and Technology and the European ten-year network development Plan (TYNDP) of ENTSO-E. The further development of the distribution grids with regard to their expansion and the utilisation of flexibilities is also of particular importance with regard to the energy transition.

In order to integrate volatile and mostly decentralised electricity from renewable energy sources while ensuring secure and affordable energy supply, the infrastructure for distributing and transmitting the energy must be available at the right time. To this end, the existing infrastructure must be continuously evaluated and, if necessary, expanded and upgraded in line with demand. Grid development measures for the transmission grid then result from the status of the existing grid, the expected development of generation and load and the principle to first optimise the grid and only consider reinforcement and expansion in a second step.

In accordance with the provisions of Electricity Act 2010, E-Control is responsible for approving and monitoring the grid development plan of the transmission system operators. In this context, the Austrian transmission system operators (APG and VÜN) submitted a joint nationwide NDP. This was approved by E-Control in December 2023 and must now be prepared every two years. In addition to the projects already approved in recent years, 20 new projects were approved by APG, which primarily serve the purpose of decarbonising the energy system.

E-Control continuously reviews and evaluates the implementation of the measures provided for in the NDP. As a result, it ensures that reasonable costs are recognised when determining the system utilisation charges.

The development of the TYNDP 2024 has already been started by ENTSO-E and ENTSO-G. E-Control is involved in this process both through international working groups in ACER and through the direct national evaluation of the results. Electricity supply projects of particular interest for the European energy supply infrastructure are defined as projects of common interest (PCIs) on the basis of the TEN-E Regulation. The draft sixth PCI list contains eight projects on Austrian territory. In this process, E-Control is part of the regional groups North-South electricity interconnections in western Europe, North-South electricity interconnections in central eastern and south eastern Europe and the smart grid priority thematic group and, within this framework, also carries out the regulatory assessment of the PCI candidates.

Network development plans for distribution networks

As electricity generation plants based on renewable energy sources are largely connected to distribution grids, a rapid and targeted expansion of the distribution grids is a basic prerequisite for the success of the energy system transition. In addition, distribution grids must also be upgraded on the load side to meet increasing demands, particularly those arising from the electrification of road transport, the space heating sector and industrial processes.

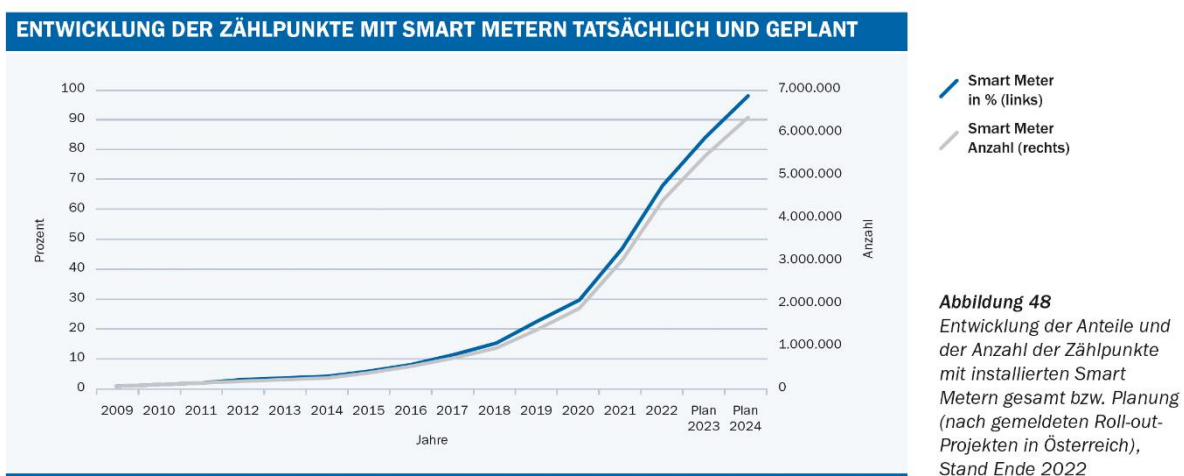
In order to create transparency for grid users with regard to planned and ongoing grid expansion and reinforcement measures and to ensure that the planning fulfils the requirements of national climate and energy targets, the expansion of the distribution grids must be based on transparent grid development plans. These must be published at least every two years and submitted to the regulatory authority following a public consultation. As part of these plans, the distribution system operators must take flexibility services into account and inform grid users about future flexibility requirements. The creation and publication of network development plans for distribution networks should therefore also contribute to the increased utilisation of flexibility and to increasing the efficiency of distribution network operation.

The main content and structure of the grid development plans for distribution grids were already agreed with the relevant grid operators in 2022. In 2023, E-Control presented a [guideline](#) for the

preparation of the network development plans, which describes the content requirements in detail, ensures the completeness of the required content and enables easy comparability between grid areas and operators.

Smart meters

E-Control's [Smart Meter Monitoring Report 2023](#) (reporting year 2022) shows that a roll-out rate of 68.38% (overall) and 60.89% (communicative) had been achieved by the end of 2022. For the first time, the grid operators were able to meet or even exceed their roll-out plans from the previous year (Austria-wide). A total of 24 network operators had even achieved the overall roll-out target of 95%. This included in particular, but not exclusively, larger companies. According to the grid operators' current plans, a roll-out rate of over 98% should be achieved across Austria by the end of 2024 (Figure 48). Those network operators that were unable to reach the 40% interim target for 2022 cited the COVID-19 pandemic, IT security and complications in software development as the main reasons.



Quelle: E-Control

Figure 48: Smart meter rollout, both in percent (blue line, left axis) and total number (grey line, right axis). Numbers are actual numbers from 2009 to 2022 and planned numbers for 2023 and 2024.

With the expected completion of the roll-out at the end of 2024, monitoring of the smart meter introduction in Austria will be completed. Subsequently, the focus will be on the obligations of distribution system operators, particularly with regard to data management and quality for final customers and market participants (including the associated web platforms). In addition, it must be ensured that the current legal requirements, for example those relating to the communication interface, web portal and market processes, are complied with.

In 2023, the key issues in the electricity system were once again the implementation of the Austrian Renewable Energy Expansion Act and the European Clean Energy Package as well as the urgent reorganisation of the Electricity Act 2010 with the main objective of far-reaching market integration of renewable electricity generation. This makes the digitalisation of the entire energy system a top priority. Smart meter data is a key element of this. E-Control has developed its positions on these issues in the form of a smart meter strategy, which was communicated to the relevant stakeholders and discussed in detail with them. In December 2023, E-Control organised an [event on data management as the basis for the energy system transformation](#), which was attended by around 300 participants, 100 of whom were on site, demonstrating the great interest in this topic. Representatives from various market roles highlighted the current problem areas in data transmission and market communication in general and thus the obstacles to a decentralised electricity market with many active final customers.

For this reason, the latest smart meter monitoring report also placed particular emphasis on the topic of smart meter data and its availability and quality. Without correct, complete and timely

transmission of data for market participants, applications and transactions based on this data cannot be processed. Final customers' access to their smart meter data as stipulated in the statutory regulations is complied with by most grid operators, although implementation and quality vary greatly between the individual grid operators. In comparison to the smart meter expansion, a survey of the 18 largest grid operators on their meter reading methods showed that 70% of annual bills are already based on remote reading. In contrast, the proportion of customers who receive monthly bills is still low.

Network reserves

The increased integration of renewable energy sources and the associated increased volatility of generation also require cost-efficient regulations to ensure grid stability by maintaining the necessary power plant reserves. Based on the corresponding regulations in the Electricity Act 2010, a system analysis was first carried out by the control area manager in 2023 and then the necessary grid reserve capacity was procured. The associated expression of interest and the general conditions for this procurement were agreed between E-Control and APG. Following receipt of the bids from eligible companies and a ranking by APG based on the statutory criterion (lowest total costs in the next contracting year), the selection was approved by E-Control.

E-Control endeavours to facilitate the broad participation of generators and consumers in the procurement of network reserves by the control area manager. In accordance with legal requirements, E-Control prepares and publishes a report on the situation on the Austrian electricity market with regard to the provision of grid reserve capacity at least every two years. The corresponding [report for 2023](#) was prepared and published by E-Control.

GAS NETWORKS

The Austrian transmission system is currently operated, maintained and, if necessary, expanded by two transmission system operators. The total length of the pipeline network is around 1,700 kilometres (of which approx. 560 kilometres are operated by Gas Connect Austria GmbH and approx. 1,140 kilometres by Trans Austria Gasleitung GmbH). The compressors installed along the pipelines have a total compressor capacity of 566 MW. The transfer point with the highest technical transport capacity in Austria is located on the border with Slovakia in Baumgarten.

The Austrian distribution grid has a total length of around 44,000 kilometres and is operated by a total of 21 distribution system operators. Of these, 17 are located in the eastern market area and two each in the Tyrol and Vorarlberg market areas. The distribution grid in Austria is congestion-free. This means that all final customers can be supplied 100% at the same time, even with high winter consumption.

Austrian network development planning in the gas sector must, in particular, support the goal of climate neutrality in 2040 and ensure the adequacy of the networks and security of supply. The two instruments for network development are the ten-year [coordinated network development plan](#) at transmission system level and the [long-term and integrated plan](#) at distribution system level (grid level 1), which covers at least ten years.

Coordinated network development plan 2022

In an application dated 21 February 2023, TAG Trans Austria Gasleitung GmbH and Gas Connect Austria GmbH requested approval of the CNDP 2022, which contained 19 newly submitted projects, among which 5 hydrogen projects. After reviewing the submitted documents, E-Control consulted the CNDP 2022 with the market participants. Seven comments were received, which in summary were in favour of the planning projects relating to hydrogen in particular. In a letter dated 2 March 2023, the regulatory authority requested GCA and TAG to amend the submitted version of the CNDP 2022. On 17 April 2023, the companies each submitted the revised version of the CNDP 2022. It was approved by the regulatory authority in May 2023. The hydrogen projects were approved as planning projects.

WAG partial loop

The WAG (West Austria Gas Pipeline) pipeline system consists of a continuous pipeline string and three looped sections (between the Baumgarten compressor station and Sierndorf, between the Kirchberg and Rapottenstein compressor stations and between the Rainbach and Bad Leonfelden compressor stations). At the Oberkappel entry point, 935,000 m³/h (10.472 GWh/h) are available.

In 2022, there was a significant increase in imports via Germany, including for filling storage facilities, and thus the use of the WAG in the west-east flow direction. Only a small amount of free capacity is available at the Oberkappel entry point.

An additional WAG partial loop between Oberkappel and Bad Leonfelden, an electric compressor unit in Rainbach and modifications in Rainbach and Baumgarten will increase the firmly allocable capacities at the Oberkappel entry point by 288,000 m³ /h (3.2 GWh/h) and 2.5 billion m³/a (28.23 TWh/a). No changes to the upstream grid (Bayernets and OGE) are necessary to increase the transport capacities.

The WAG partial loop project was submitted by grid operator GCA for approval in the CNDP 2022 and approved as an implementation project by the regulatory authority in May 2023. The project should therefore be implemented by mid-2027. In order to track the progress of the project and prevent delays, the regulatory authority provides for close monitoring.

Long-term plan 2022

In its application dated 24 February 2023, AGGM requested approval of the long-term plan 2022 with 21 new projects, including four hydrogen projects. After reviewing the documents submitted, E-Control consulted the long-term plan 2022 with the market participants due to its close connection with the coordinated network development plan, for which consultation is mandatory pursuant to section 64(2) Gas Act 2011. Seven comments were received, which in summary were in favour of the four hydrogen planning projects in particular. Following a request from E-Control, AGGM submitted an amended version of the plan, which was approved by the regulatory authority in June 2023. The hydrogen projects were approved as planning projects.

CROSS-SECTORAL PLANNING IN THE INTEGRATED NETWORK PLAN

The amendment to the Electricity Act 2010 as part of the renewable energy expansion package stipulates that the electricity NDP must be consistent with the gas CNDP in accordance with the Gas Act 2011 and the Austrian integrated network plan in accordance with the Electricity Act 2010. The national NDP also takes into account the EU-wide TYNDP, which is prepared every two years. E-Control is involved at several levels in the development of the TYNDP, the preparation of the European scenario framework, the determination of demand for cross-border transmission capacities and the cost-benefit assessment method to be applied.

Pursuant to section 94 Renewable Energy Expansion Act, the Ministry for Energy had to prepare an Austrian integrated network plan for the first time in 2023 and subject it to a strategic environmental assessment. The initial preparation of the plan in 2023 was carried out by the Ministry in the form of a comprehensive stakeholder process and based on two studies (hydrogen infrastructure in Austria by Frontier Economics and grid calculations/Infratrans by the University of Leoben).

In 2023, E-Control endeavoured in particular to incorporate the experience gained from the preparation and monitoring of the electricity and gas network development plans into the initial preparation of the Austrian integrated network plan. Particular attention was paid to the consistent application of the methodological tools for deriving infrastructure requirements. E-Control also took part in public workshops as part of the preparation of the plan and in discussion rounds on its content in the individual federal provinces. Both were organised by the Ministry for Energy. The Austrian integrated network plan and the report on the strategic environmental assessment were

consulted on by the Ministry in summer 2023. The final version of the two reports was not yet available at the end of the year.

MARKET RULES AND COMPETITION

The further development of the market rules covered a wide range in 2023. In the electricity sector, the technical and organisational rules for systems with a distribution grid connection were revised for the first time towards the end of the year. They now also take into account the requirements for charging facilities for electric vehicles. At the same time, the market code in the areas of schedules and information transmission, billing and clearing was further developed. Special attention was also paid to the issue of data quality and availability in 2023.

At European level, the Austrian transmission system operators already use the European platforms PICASSO and MARI to procure balancing reserves. The constant development of market rules via the European legal framework was reflected in a proposal by the European Commission to revise the electricity market design in 2023. This contains improvements, particularly in the areas of long-term markets, flexibility and consumer protection. In addition, E-Control is already working with the other European regulatory authorities on the question of what the electricity market design can and should look like in a largely decarbonised society. On the gas market, new responsibilities in the area of storage certification were particularly relevant for E-Control. The regulatory authority's review did not reveal any risks to security of supply. The review by the EU Commission has not yet been finalised.

Technical and organisational rules for distribution network connection

The technical and organisational rules (TOR) form a comprehensive set of national technical rules aimed at both transmission and distribution grid operators and all grid users. These rules serve as practical regulations for the operation and maintenance of electricity grids with the overriding aim of guaranteeing security of supply and ensuring smooth interconnected operation without disruptions.

The TOR regulate the coordinated interaction of electricity generation plants, transmission and distribution grids and the grid users' systems. The TOR distribution grid connection, which define technical and organisational rules for systems with a distribution grid connection and for special equipment, were revised for the first time at the end of 2023. This was done in coordination and cooperation with Oesterreichs Energie.

Version 1.1 of the TOR for distribution grid connection contains editorial revisions and clarifications, for example with regard to OVE guideline R 37 on testing requirements and proof of conformity for charging facilities for electric vehicles. At the suggestion of the EV industry, the data sheets and verification documents for reporting charging facilities and heating/cooling systems to distribution system operators have been revised and made available as editable pdf sample forms on the E-Control website.

Another change compared to version 1.0 concerns technical requirements for charging facilities for electric vehicles, namely their active power behaviour at over- and underfrequency (limited frequency sensitive mode, LFSM). As LFSM requirements are currently being developed at European level and are expected to become legally effective via amendments to the grid codes for grid connection, it was decided to suspend the national requirements. The requirements in accordance with the EU legal framework will be included in the TOR when they come into force.

Electricity market code

The European SOGL (System Operation Guideline) and the SOGL Data Exchange Regulation, which covers the data exchange of basic data, schedules and real-time data between the significant grid users, the control area manager and the grid operators, form an important basis for the electricity market code relating to schedules. On this basis, the regulations for schedules in Austria 2023 have been expanded to include the exchange of generation/consumption schedules and availability schedules of significant grid users. The revised version 6.5 was consulted on in

November 2022 and published on 29 January 2023. It had not yet been implemented by all companies by the end of 2023. The exchange of real-time data will be included in a new chapter of the market code on the subject of grid operation. A consultation on this was postponed to a later date as the necessary preparations by the grid operators had not yet been finalised.

The chapter 'Information Transmission, Settlement and Clearing' of the market code regulates the transmission of information from system operators to the affected market participants as well as the principles of 1st and 2nd clearing. The new version 4.1 will be published on 1 January 2024 and enter into force on 1 April 2024. To increase transparency, the transmission of information from grid operators to suppliers and energy communities will be expanded by two control steps. This will make for traceable actual value aggregates, which are sent to the imbalance settlement responsible monthly for each supplier. In addition to the energy values transmitted daily, the energy communities also receive the billing-relevant measured values on a monthly basis.

The technical requirements for the market processes must be developed market code revision process and must be consulted on and published in the form of technical documentation. The implementation of the market processes in accordance with the technical documentation takes place in the internal systems of the individual market participants. The implementation of market processes at the individual network operators is the prerequisite for these market processes to actually function for all other market participants. According to the results of the E-Control survey at the beginning of 2023, none of the currently active market processes have been implemented by all distribution system operators. E-Control will continue to monitor the implementation and advise the distribution system operators of the timely and correct implementation of market processes. As a result of these findings, targeted adjustments to the other market rules on market communication are planned.

The distribution system operators also play the main role in data quality and availability, as they are responsible for metering (including basic data management, the management of energy values and data transmission to market participants). These data then form the basis for all further energy industry processes and applications. Energy industry applications for the transmission of master data and energy values are billing, clearing, exchange of schedules, forecasting and transmission to energy communities, aggregators, final customers and their service providers.

The distribution system operators are required to provide the grid users and the authorised market participants the energy values in accordance with the statutory regulations and deadlines. Missing data and late data transmission are illegal. It should be noted that civil law claims may be asserted as a result. Nevertheless, the data quality and availability of smart meter data is currently unsatisfactory. The development of regulations for the quality management of smart meter communication and methodologies for the creation of proxy values as emergency measures in the event of non-compliance with legal regulations is expected to be finalised in the first half of 2024. E-Control held discussions with market participants on this topic and organised an [event on data management as the basis for the energy transition](#) on 7 December 2023. In E-Control's [statement on the availability and quality of smart meter data](#), the distribution system operators are requested to implement the regulations relating to the quality management of smart meter communication and methods for calculating proxy values as well as the provisions from the E-Control statement uniformly by 1 July 2024 at the latest.

Balancing market

In order to ensure a stable grid frequency and thus secure grid operation, it is necessary that there is a balance between generation and consumption at all times. This is ensured by power frequency control, which consists of primary, secondary and tertiary control. The procurement of the required balancing energy and capacity is done in a standardised way by the control area manager by means of regular tenders. All market participants who fulfil certain technical conditions and have signed a corresponding framework agreement can participate in these tenders. The market for secondary and tertiary control is divided into the market for energy and the market for capacity.

In the balancing energy market, bids are obtained just before real time, which are then activated as required by the control area manager to offset imbalances in the control area. The balancing energy provided is remunerated towards the providers. The capacity market takes place on the day before the balancing energy market, with suppliers submitting bids committing themselves to bid for certain time slices of the balancing energy market. This ensures that sufficient activatable energy will be available. Primary control has a special status, with only the availability of control capacity being remunerated, but not the activation of that capacity.

Developments on the various markets are monitored in detail by E-Control. The general market situation is also reflected on the balancing market. After significant cost increases in 2021, the costs for balancing rose sharply again in 2022 in line with prices on other wholesale electricity markets. In 2023, there was a decrease of 34% (see Figure 49).

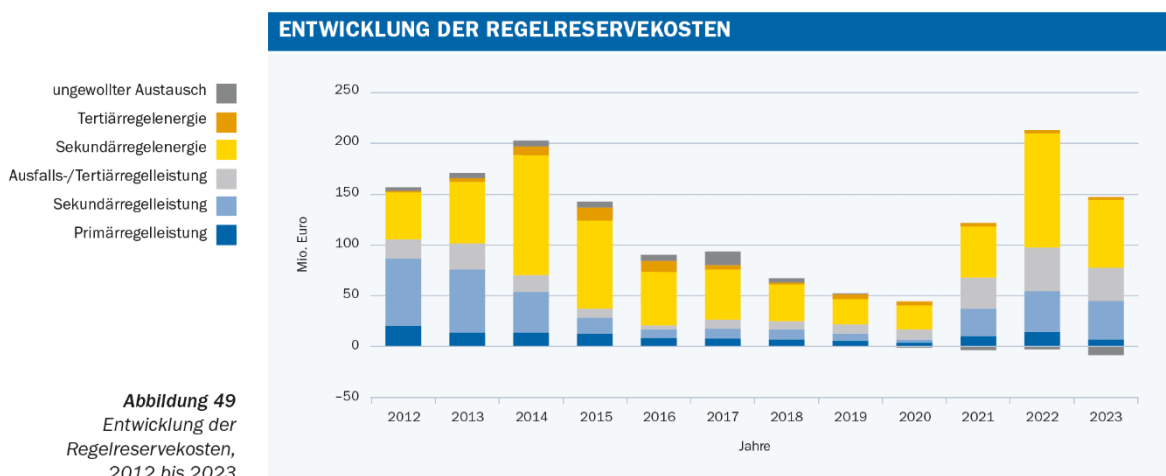


Abbildung 49
Entwicklung der
Regelreservekosten,
2012 bis 2023

Quellen: E-Control

Figure 49: Balancing costs from 2012 to 2023. The figure displays the costs for unwanted exchanges (dark grey), tertiary control (energy: orange; capacity: light grey), secondary control (energy: yellow; capacity: light blue), and primary control (dark blue).

In addition to the general developments on the electricity market, the price situation on the European balancing platforms is particularly important for balancing prices in Austria. E-Control shapes the framework conditions and has launched national initiatives to revitalise the balancing market as well as international cooperation for balancing. A key driver of many developments in the area of balancing reserve is the EU System Operation Guideline. It provides for the creation of joint European platforms for the exchange of balancing energy, which also replace existing bilateral and regional cooperation, and includes further measures for the realisation of a European electricity market in the area of balancing.

The European Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation (PICASSO) began operations in mid-2022. The platform is currently being used by the transmission system operators in Austria, Germany, the Czech Republic and Italy, and the other European transmission system operators will follow in 2024. The operation of the European online Manually Activated Reserves Initiative (MARI) also started somewhat after PICASSO. It is currently used by the German, Czech and Austrian transmission system operators, and further transmission system operators are expected to join in 2024.

Electricity Market Design

In response to the crisis in the energy supply sector, the European Commission announced a reform of the electricity market design in 2022. In March 2023, the Commission published concrete legal proposals and an agreement was reached between the institutions in December (see chapter

‘Electricity market design’). In order to mitigate the consequences of the gas supply crisis, the focus was on a secure supply of electrical energy, including options for reducing consumption, accelerating the expansion of renewable electricity generation and measures to protect customers from high prices.

In close consultation with ACER, the European regulatory authorities developed positions on a number of issues in the reform package and proposed these as part of the legislative process. E-Control was closely involved. Significant market design changes are expected in the areas of longer-term markets, the marketing of renewable electricity generation and the handling of flexible resources (load, generation and storage). With regard to long-term markets, it is envisaged to establish products in the form of regional hubs. The main aim of this is to ensure that market participants are not dependent on often illiquid national markets for price hedging but can operate via more liquid and larger trading centres. However, it is also necessary for the required long-term transmission rights to be made available at least in part beyond the following year and at more regular intervals.

Contracts for Difference (CfDs) are planned for a number of generation technologies in order to increase investment security for renewable electricity producers and to hedge prices over the longer term. CfDs define the purchase of energy by a (state) organisation at an agreed price over a longer period (e.g. 10 years). In addition, marketing via direct contracts between producers and customers (power purchase agreements, PPAs) is to be facilitated.

As the importance of flexibility services is increasing due to more volatile generation, the proposal also provides for assessments of flexibility requirements at national and European level. This should enable a structured overview of the necessary capacity and flexibility for fluctuations in generation and demand to be available for the first time. To make it easier to cushion fluctuations in generation or consumption on the market, it is also planned to reduce the lead time in cross-zonal intraday trading to 30 minutes.

Last but not least, the options and protection for final customers are also to be strengthened in order to better cope with phases of extremely high prices such as those seen in recent years.

Market design 2030+

The European market design is subject to constant change. Although a reform of the market design is currently being enshrined in law, further adjustments appear necessary in the future in order to achieve the desired decarbonisation of the energy system. The European regulatory authorities have therefore launched an extensive process to identify anticipated challenges and develop proposed solutions in the form of market and system design adjustments. The aim is to cover a broad range of topics across the wholesale market, technical aspects such as grid connection and system operation, data management, final customer markets and infrastructure development. The time horizon is based on a significantly decarbonised energy system in the coming decade. E-Control is actively involved in this work and is contributing key aspects.

Regulations of gas storage facilities

The certification provisions for storage companies at European level were accompanied by a new competence for E-Control. After storage facilities were booked by third countries but not utilised in the Netherlands, Germany and Austria, this measure is intended to examine the risk to the security of energy supply in the Union or in the individual member states.

E-Control therefore initiated ex officio procedures for the certification of storage companies on Austrian territory in the first half of 2022. As the certifying authority, E-Control must take into account all risks to the security of gas supply at national, regional or EU level as well as any mitigation of such risks that are attributable to the following, among other things:

- > Ownership, supply or other business relationships that could have a negative impact on the incentives and ability of the storage facility operator or storage company to fill the underground gas storage facility;
- > The rights and obligations of the European Union vis-à-vis a third country arising from international law, including agreements with one or more third countries to which the EU is a party and which address the issues of security of energy supply;
- > The rights and obligations of the Member States concerned vis-à-vis a third country arising from agreements concluded by the Member States concerned with one or more third countries, in so far as those agreements comply with Union law; or
- > Other special facts and circumstances in individual cases.

The review of the relevant documents requested from the storage companies in several rounds did not reveal any risks to the security of energy supply at the time of the investigation. E-Control submitted the certification notices to the European Commission on time in December 2023. The EU Commission's decision is still pending.

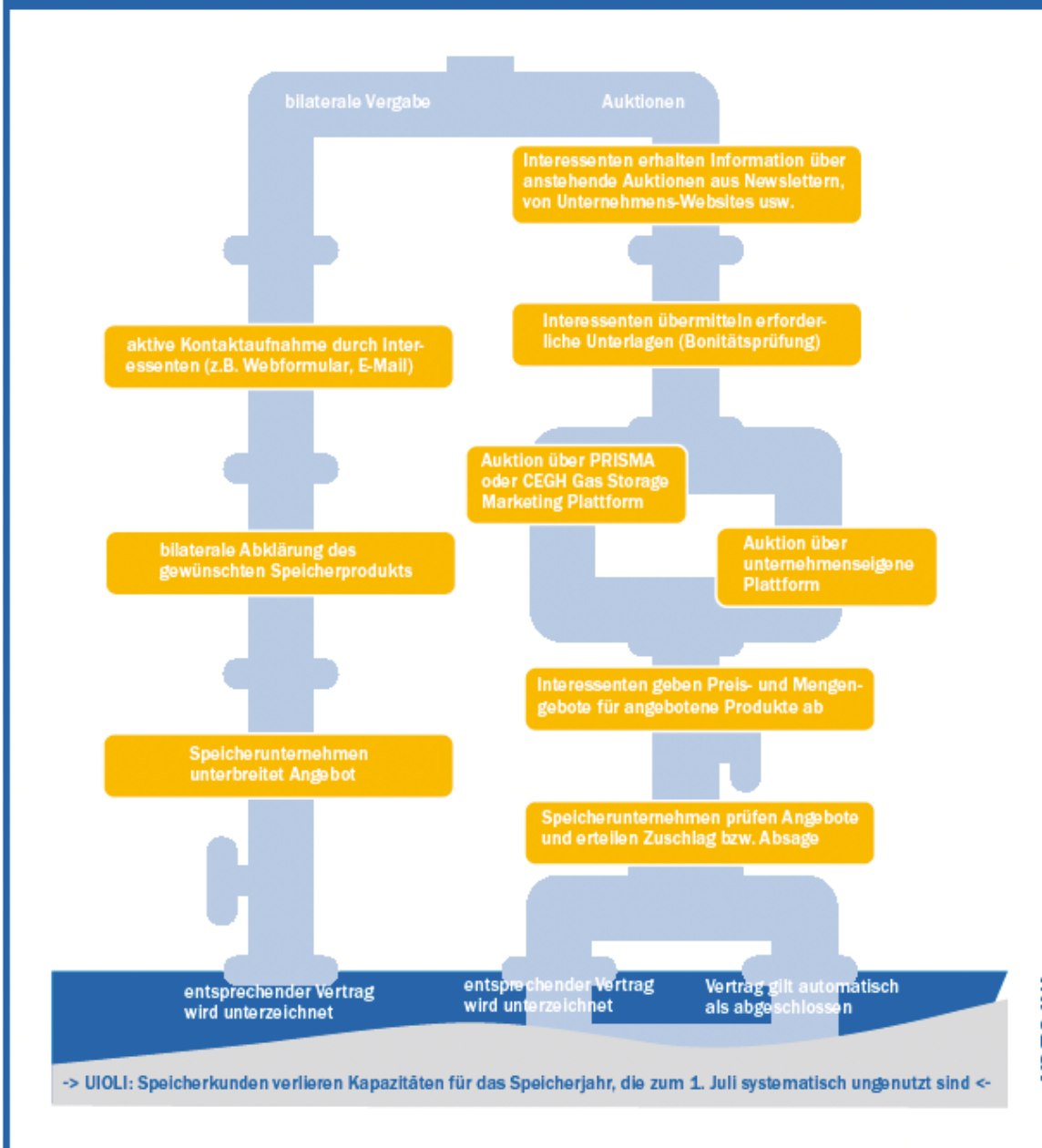
A regulation on strategic UIOLI for gas storage facilities was already included in the Gas Act 2011 in 2022. Accordingly, systematically unused storage capacities will be withdrawn from storage users and returned to the market. Storage capacities are deemed to be systematically unused if less than 10% of them were used by the respective storage facility user on 1 July 2022 or in subsequent years on 1 July. This statutory regulation has been applied once so far, resulting in storage capacity totalling 21 TWh being made available to other storage customers. Some of the capacity was also booked for ASGM's strategic gas reserve.

The strategic gas reserve is procured and managed by AGSM, a subsidiary of AGGM. This is done through tenders by AGSM. In addition, storage capacities were allocated via bilateral agreements between storage companies and customers or via auctions by the storage companies (see Info box 4).

Equal treatment reports and audit of the switching platforms

As part of its market surveillance activities, E-Control regularly monitors equal treatment and activities on the exchange platforms. In the 2023 equal treatment reports of the gas companies for the 2022 reporting period, the storage companies and gas system operators did not report any violations of the equal treatment provisions. The review of the equal treatment reports of the electricity companies also led to the same result.

WIE WERDEN SPEICHERKAPAZITÄTEN VERGEBEN?



Quelle: E-Control

Info box 4: Process of storage capacity allocation

ENERGY EFFICIENCY

The European Union's Energy Efficiency Directive 2012/27/EU currently applies in Austria. It provides a framework for the implementation of measures to improve energy efficiency for the member states. The aim of the directive is to improve energy efficiency by 32.5% by 2030.

The directive regulates:

- > Union-wide and national energy efficiency targets;
- > Public institutions setting an example in terms of energy efficiency, including through procurement;
- > Obligations to demonstrably save final energy;
- > An implementation obligation and rules on the quality of energy services;
- > Individualised consumption recording, remote reading and informative billing;
- > Efficiency in energy supply;
- > Measures to remove barriers to energy efficiency measures; and
- > Sanctions.

The contents of the Energy Efficiency Directive must be transposed into national law in the member states. The corresponding Austrian Energy Efficiency Act was first published in the Federal Law Gazette in 2014 (FLG I No. 72/2014). An amendment came into force on 15 June 2023 (FLG I No. 59/2023). It establishes E-Control as the competent body for the Energy Efficiency Act and defines its tasks and duties in this area. E-Control provides this and further, constantly updated information on the dedicated website of [E-Control's Energy Efficiency Monitoring Body](#).

Contents of the Energy Efficiency Act

Austria's final energy consumption according to the energy balance is to be reduced to 920 PJ by 2030. In the years 2021 to 2030, Austria is committed to achieving cumulative final energy savings of at least 650 PJ. These savings are to be achieved primarily through energy efficiency measures by the federal government, for example through funding programmes. The eligibility of energy efficiency measures is regulated by an ordinance.

Larger companies that supply electricity, gas, heating or cooling to consumers on the basis of open-ended contracts must set up helpdesks. These helpdesks provide households with free information on energy consumption, energy saving, energy costs and energy price trends. The Energy Efficiency Act also provides for a coordination centre to combat energy poverty (see also chapter 'Energy poverty').

As before, companies with many employees or high turnover figures are obliged to provide energy services. Energy services include energy audits and recognised management systems with a focus on energy efficiency. What is new compared to the previous Energy Efficiency Act is the standardised reporting system, which is regulated by ordinance.

Proof of professional qualification is required for the provision of energy services. An electronic list of persons who are professionally qualified to carry out energy audits or energy consultations must be published.

The federal government is also committed to improving its own energy efficiency. Each federal agency must appoint suitably qualified persons to regularly monitor the energy consumption of the respective federal agencies. The federal energy consultants in turn collate the information collected and must prepare energy reports based on this. In addition, the federal government, together with Bundesimmobiliengesellschaft, undertakes to save 1,320 TJ of energy between 2021 and 2030.

Furthermore, the Energy Efficiency Act stipulates that buildings with a shared heating, domestic hot water or cooling supply system must install remotely readable individual consumption metering, provided this is technically feasible and cost-effective. Technical feasibility and cost-effectiveness are in turn regulated in an ordinance.

E-Control is the competent authority for the Energy Efficiency Act. The Act regulates the tasks and powers of the authority. All reports must be submitted via the electronic reporting platform.

Transitional provisions regulate the options and obligations for the years 2021 to 2023.

E-Control's tasks in the field of energy efficiency

The overarching task of E-Control within the Federal Energy Efficiency Act is to monitor compliance with the targets and obligations arising from it. For the purpose of clear organisational and economic separation from E-Control's other tasks, the tasks arising from the Act are managed under the name 'E-Control's Energy Efficiency Monitoring Body'.

An overview of E-Control's tasks can be found in section 57 Energy Efficiency Act:

1. Drafting and partially issuing ordinances in accordance with the provisions of sections 43, 44, 54 and 62 Energy Efficiency Act, including the implementation of public review procedures;
2. Complying with tasks and requirements under EU law;
3. Monitoring the proper establishment of helpdesks for households;
4. Monitoring the proper implementation of energy audits and management systems;
5. Checking the standardised summary reports, energy audits and recognised management systems;
6. Checking the technical suitability of energy service providers;
7. Maintaining the electronic list of energy service providers;
8. Managing the electronic reporting platform;
9. Checking the eligible energy efficiency measures;
10. Reviewing alternative strategic measures;
11. Exercising statutory party status in administrative criminal proceedings;
12. Adhering to balanced financing and budgeting;
13. Creating reports;
14. Providing market information; and
15. Preparing and filing notices to restore a legally compliant status.

In addition to this overview, the Act provides for the following additional tasks for E-Control:

- > An obligation to provide information to the Coordination Office for Combating Energy Poverty;
- > Participating in the Commission of the Coordination Office for Combating Energy Poverty;
- > Checking data from the federal energy experts;
- > Ensuring data protection on the electronic reporting platform;
- > Exercising authorisations and obligations during on-site inspections;
- > Regularly checking that the regulation is up to date;
- > Publishing the contact information of the helpdesks for households;
- > Publishing an anonymised list of criminal proceedings initiated; and
- > Providing information to Statistics Austria.

Inspections in connection with the obligation to install individual and remotely readable consumption records in accordance with sections 53 to 55 are specifically excluded from E-Control's tasks.

E-Control regulations in the area of energy efficiency

In addition to numerous new operational responsibilities, E-Control had to issue a number of ordinances. These were

> the Ordinance on Standardised Energy Efficiency Summary Reports (FLG II No. 242/2023), which defines the format, structure and organisation of the standardised reporting system for energy audits and management systems. The results of the mandatory energy services (energy audits and

management systems) must be recorded in these standardised summary reports and reported to E-Control.

> the Energy Efficiency Qualifications Ordinance (Federal Law Gazette II No. 264/2023), which specifies the requirements for the professional qualification (and requalification) of the relevant energy service providers. The Energy Efficiency Act specifies the requirements for the professional qualification or requalification of energy auditors and energy consultants who are authorised for at least one of the main energy consumption areas of 'buildings', 'production processes', 'production processes', 'energy services' or 'transport' (quality standards). Those energy auditors and energy consultants who fulfil the requirements for professional qualification and requalification must be kept by E-Control in an up-to-date electronic list.

> the Individual Consumption Metering Ordinance (Federal Law Gazette II No. 321/2023) on the technical feasibility and cost-effectiveness of individual consumption metering. In particular, this regulation specifies the aspects of proportionality under which the installation of individual consumption recording and remote readability is 'technically feasible' and 'cost-efficient'. Individual consumption recording includes the obligation to install individual consumption meters and heat cost allocators.

In addition, in the summer of 2023, E-Control prepared a proposal for an ordinance for the Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology to specify the assessment and eligibility of energy efficiency measures in accordance with section 63(3) Energy Efficiency Act. The ordinance first regulates the subject matter and contains requirements for eligibility by defining incentives and the prohibition of double counting of energy efficiency measures in more detail. It also makes provisions on the timing of the measures and stipulates that eligible final energy savings must be determined on the basis of a generalised method or individual assessment, which must have certain minimum contents. The procedure for determining final energy savings is further specified by regulations on the standardisation and normalisation of final energy consumption, on the calculation of reference final energy consumption and on data sources, measurements and the household quota. Finally, the submission of reports is also defined in more detail by regulations on the use of the electronic reporting platform and on splitting.

Energy efficiency report

E-Control must report annually by 31 October on progress in the area of energy efficiency. The report covers developments in the achievement of national targets, the energy efficiency measures implemented, Austria-wide energy efficiency indicators, the resources utilised and the impact on obligated companies and individuals.

Due to a transitional provision, the first report must be published eight months after the Energy Efficiency Act comes into force and must therefore be published by 15 February 2024 at the latest.

MONITORING OF THE WHOLESALE MARKET (REMIT)

In 2022, the Russian war of aggression against Ukraine and the associated restrictions on the supply of Russian gas to Europe led to unprecedented distortions on the wholesale energy market. Although electricity and gas prices fell again somewhat in 2023, volatility remained high, particularly on the gas market. The gas supply situation improved, but geopolitical events continued to lead to nervousness and strong price fluctuations on the wholesale markets.

On the one hand, these developments showed that the physical markets are susceptible to the actions of companies with market power. On the other hand, the price fluctuations also ensured that trading in energy derivatives became increasingly interesting for many financial institutions and investment funds. This also led to a sharp increase in the liquidity of these financial products in the energy sector.

There was broad agreement at European level that part of the response to the crisis must be to expand and strengthen regulatory oversight of the wholesale energy markets. In March 2023, the European Commission therefore presented a proposal to revise the REMIT Regulation (1227/2011). Following intensive national and European discussions, the European institutions reached an agreement in November 2023.

This amendment, also known as "REMIT II", is expected to come into force in the first half of 2024. Its objectives are (i) to align the REMIT framework with applicable financial law rules, (ii) to improve data reporting and collection, (iii) to take account of new market developments (e.g. algorithmic trading) and (iv) to strengthen the competences of the regulatory authorities and ACER.

In addition to some additional competences, it is important for the national regulatory authorities that they also monitor financial products in future. At the same time, the regulatory authorities must be able to issue harmonised and higher penalties directly in accordance with REMIT II. Parts of REMIT II require national legal implementation, which is also expected to take place in 2024.

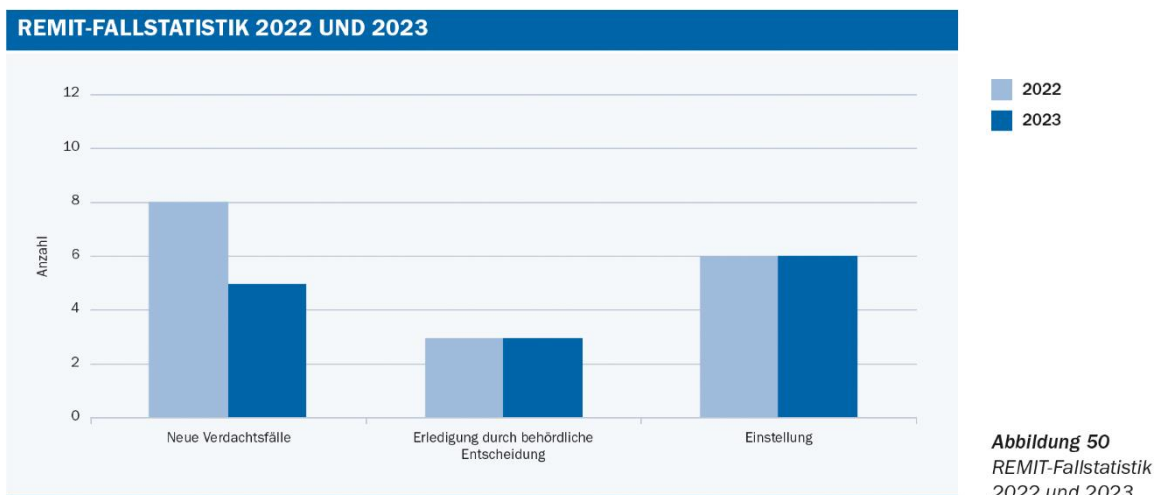
The crisis also continued to play a central role in E-Control's operational market monitoring. International investigations, for example as part of the cross-border investigation group, were systematically continued.

Monitoring

If the behaviour of one or more market participants on the wholesale energy market is suspected of violating REMIT, E-Control conducts an initial assessment to determine whether there is sufficient evidence for a more detailed investigation at the second level of market surveillance. REMIT suspicious cases are generally generated from the following sources:

- > Regular market monitoring using trade surveillance software by the national regulatory authorities;
- > Notification of operators of exchanges, broker platforms or other trading platforms (so-called PPATs);
- > Pan-European monitoring by ACER; and
- > (Anonymous) notifications, e.g. by other market participants.

In 2023, E-Control took up a total of 5 new suspected cases (2022: 8). At the same time, 9 cases were closed, i.e. the proceedings were discontinued or an official settlement was pronounced (see Figure 50).



Quelle: ACER, E-Control

Figure 50: REMIT cases in 2022 and 2023. The figure shows the number of new suspected breaches (first set of bars), the number of cases closed by official decision (second set of bars), and the number of cases where proceedings were discontinued (third set of columns).

In 2023, the main focus of new REMIT cases was on Article 4 (publication of inside information) and Article 8 (correct data collection). At the same time, 3 cases are now pending before appeal bodies.

European level

The REMIT team at E-Control continued to actively participate in the European dialogue in 2023, both in various technical ACER working groups and in discussions with the European institutions as well as through close coordination with the national regulatory authorities of other member states.

The continuation of the cross-border investigation group from 2022 should also be mentioned here. Investigations on the gas market in connection with the crisis, more intensive coordination between the regulatory authorities and coordination for the future were continued.

In 2023, the focus was also placed on cooperation between energy and financial regulatory authorities. This is of crucial importance, as the energy and financial sectors are closely interlinked and can influence each other. Efforts are being made at both European and national level to strengthen cooperation between the regulatory authorities in these areas in order to ensure coherent and efficient regulation.

The European Securities and Markets Authority (ESMA) and ACER also work closely together. This co-operation is particularly important as financial instruments such as derivatives can often have an impact on both energy and financial markets. For this reason, cooperation between the Austrian Financial Market Authority (FMA) and E-Control in the area of market supervision is also to be strengthened.

COMPLIANCE, INFORMATION SECURITY AND DATA PROTECTION

As a public authority, E-Control is committed to compliance, information security and data protection. To ensure the smooth, correct and secure fulfilment of its tasks, E-Control operates internal systems to safeguard these essential factors.

Compliance

E-Control is the national regulatory authority for the electricity and gas industries within the meaning of the European Electricity Directive (2019/944) and the Gas Directive (2009/73/EC). Transposing these acts, E-Control was established as an institution under public law by the E-Control Act.

The requirements under EU law for the independence of national energy regulatory authorities call for E-Control to have comprehensive institutional, budgetary, personnel and functional independence from the general state administration and, in particular, its supreme administrative bodies on the one hand and from any market interests on the other. This special position based on EU law was confirmed and reaffirmed by a ruling of the European Court of Justice in September 2021 (ECJ, Case C-718/18, Commission v Germany). The statutory bodies of E-Control, namely the Executive Board, the Regulation Commission and the Supervisory Board, are fully committed to this independence and promote it in all areas of E-Control's activities.

The case law of the European Court of Justice also emphasised the independence of E-Control from national regulations. For this reason, E-Control had to re-evaluate the applicability of various national regulations to E-Control for the first time in 2022, particularly with regard to the participation management of the Ministry of Climate Action and the Public Corporate Governance Code 2017 of the Federal Government.

As the relation between the Ministry and E-Control does not involve an ownership position and/or a shareholding, a general participation management vis-à-vis E-Control was ruled out in light of this latest ECJ case law on the independence of national energy regulatory authorities. In 2022, E-Control took the necessary steps in cooperation with the Ministry to adapt the existing framework to the requirements of EU law.

E-Control has been implementing the 2017 Federal Public Corporate Governance Code since it came into force. In this regard, the Executive Board decided in 2022 to continue to implement the provisions applicable to E-Control as a self-commitment, insofar as this does not conflict with the requirements of EU law regarding E-Control's independence. E-Control is clearly committed to the transparent, economical, efficient and expedient fulfilment of its statutory duties. This approach was continued in 2023.

E-Control's ongoing compliance activities include the preparation of an annual [corporate governance report](#), comprehensive training for E-Control employees and ongoing internal advice on all compliance-related issues by the Compliance Officer in cooperation with the Data Protection Officer. In addition, steps were taken in 2023 to deepen and continuously improve the compliance system already implemented at E-Control.

One such step towards improving E-Control's compliance system was the whistleblower system introduced in December 2021. E-Control employees can use it to report serious violations of legal provisions on an anonymous basis. E-Control therefore met the requirements of the Whistleblower Protection Act, which came into force on 25 February 2023, in advance.

Information security and data protection

In 2023, E-Control continued to face considerable challenges in the area of information security. Ongoing and newly emerging global conflicts and increasingly professional attacks are leading to

an increased cyber security risk situation. E-Control regularly discusses these risks together with the energy sector in the form of a comprehensive risk analysis.

E-Control also dealt with the requirements of three information security standards. These were the revised ISO 27001:2022 standard, the EU Cybersecurity Directive (2022/2555) (NIS2) and the Network Code on Cybersecurity. In order to ensure the best possible data security at E-Control and further increase its resilience to cyber-attacks, the authority operates an ISO 27001-certified information security management system, which is audited annually by independent auditors.

In order to be able to avert complex threats with comprehensive countermeasures, the internal Security Operations Centre was strengthened with an additional information security expert. Significant technical progress was made in recognising and dealing with software vulnerabilities and security gaps. Over the course of the year, more than 3,800 critical vulnerabilities were closed and 20 security incidents were dealt with without any information security breaches occurring.

From a data protection perspective, technologies such as artificial intelligence and the ever-increasing use of cloud services posed a particular challenge. The data protection risk was minimised thanks to clear guidelines and processes. No GDPR-reportable incidents occurred.