Bundesnetzagentur

Annual Report 2018

20 years of responsibility for networks

There was reason to celebrate at the Bundesnetzagentur in 2018: our twentieth anniversary! The Regulatory Authority for Telecommunications and Post was founded in 1998 and received new areas of responsibility and a new name in 2005. Over the past two decades, the Bundesnetzagentur as an independent institution has evolved from a competition regulator into an infrastructure authority.

Ever since the process of liberalisation was started, we have been facing new challenges. The expansion of the networks is an increasingly important issue in the regulated sectors, the transition towards renewable electricity generation and the phase-out of nuclear power are top priorities and there are increasing numbers of enquiries and complaints in the fields of energy, telecommunications and post.

What is more, we are not just active in Germany. Our experts travel all over Europe, harmonising conditions to promote competition and ultimately benefit all consumers.

This report details our activities in four main sections: 1. Market watch, 2. Consumer protection and advice, 3. Rulings, activities and proceedings, and 4. International cooperation. We hope you find it an interesting read!

The President and Vice Presidents of the Bundesnetzagentur
Peter Franke, Jochen Homann and Dr Wilhelm Eschweiler (from left to right)

»By awarding this spectrum, we are making a key contribution to securing Germany's future as an industrial centre and improving mobile coverage.«

In 2018 the Bundesnetzagentur celebrated its twentieth anniversary in the presence of German Chancellor Angela Merkel. Since the authority was founded in 1998, we have been responsible for critical networks, ensuring competition, promoting investment and protecting consumers. The sectors we regulate have been undergoing constant change, so our work is and will remain varied and important.

The decision on the auction of 5G spectrum, for example, attracted a great deal of attention. We had to balance various conflicting interests to lay down the auction and award rules and our decision set vital preconditions for the digital transformation of industry and society. By awarding this spectrum, we are making a key contribution to securing Germany's future as an industrial centre and improving mobile coverage.

We have added an app to detect network availability to our broadband speed checker, allowing users to find and report dead spots. The results will be published in the form of a map in 2019. The more people support us by using the app, the more data we will have available to us. Each measurement increases the informational value provided.

Once again, the year was marked by numerous decisions from our ruling chambers. A particularly positive development was the confirmation of the once highly controversial decisions on vectoring by the Federal Administrative Court. We also reduced or avoided regulation, such as in the "VHF antenna dispute", when intense negotiations moderated by the Bundesnetzagentur and former Head of the Federal Chancellery Friedrich Bohl managed to avert the shutdown of antennas.

The national dispute settlement body continued to monitor the broadband rollout in accordance with the Digital Networks Act. Its decisions weighed up the interests of first-time investors and companies wishing to share infrastructure or trenches. The infrastructure atlas also provides an expanded, comprehensive range of data and new access rules.

In the energy sector, there was a further series of auctions for renewable energy and CHP installations. Our ruling chambers conducted proceedings on issues including revenue caps, the pricing of balancing energy and the productivity factor for the electricity networks.

We received high-level political backing on the expansion of the transmission system. Federal Minister for Economic Affairs and Energy Peter Altmaier visited

»The minister's visit kicked off a tour of Germany in which he highlighted the grid expansion. His grid action plan and summit events drew on our experiences with the rollout.«

the Bundesnetzagentur and presented measures to speed up the expansion of the grid. The minister's visit kicked off a tour of Germany in which he highlighted the grid expansion. His grid action plan and summit events drew on our experiences with the rollout.

We simulated a gas deficit scenario in the large-scale, interstate and inter-authority crisis management exercise LÜKEX18. Our role was central as we are the national supply coordinator for natural gas in the event of a crisis.

At the international level, we were involved with negotiations on wide-ranging packages of European legislation for both the telecommunications and energy sectors directly affecting many of the Bundesnetzagentur's activities.

Large fines were imposed for cold calling to protect consumers. In particular, there were cases of energy suppliers starting the switching process without the customer's consent. Many people also turned to the authority for help with problems regarding telecommunications contracts.

Our market surveillance team pulled a number of items from the market including illegal tracking devices with listening functions. The radio monitoring and inspection service solved countless cases of radio frequency interference once again.

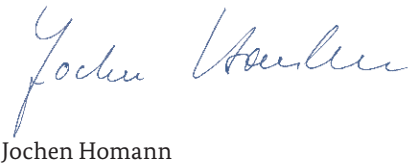
Consumer protection was a focus of our postal activities as well. We published the results of a consumer survey on minimum requirements for postal services and experienced a sharp increase in the number of complaints and requests for dispute resolution.

At the end of October, one of the ruling chambers ordered Deutsche Post to keep the current prices for standard letter products as they were for the time being. This step was necessary because the company had not provided sufficient evidence of the changes in its costs and savings resulting from the shake-up of its business.

We held a market dialogue event on unbundling in the rail sector. The information we gathered there helped us to make decisions in an unbureaucratic way, reducing the burden on companies. The aim of unbundling rules is to avoid discrimination, cross-subsidisation and other activities that distort competition.

An adaptable and highly efficient organisational structure with extremely skilled, motivated staff is

essential for the Bundesnetzagentur to meet its many responsibilities. I'm confident that we can continue to build on this year's successes in 2019. Functioning competition and modern, efficient infrastructure that bolsters the economy and meets the needs of consumers will remain our key objectives in future.



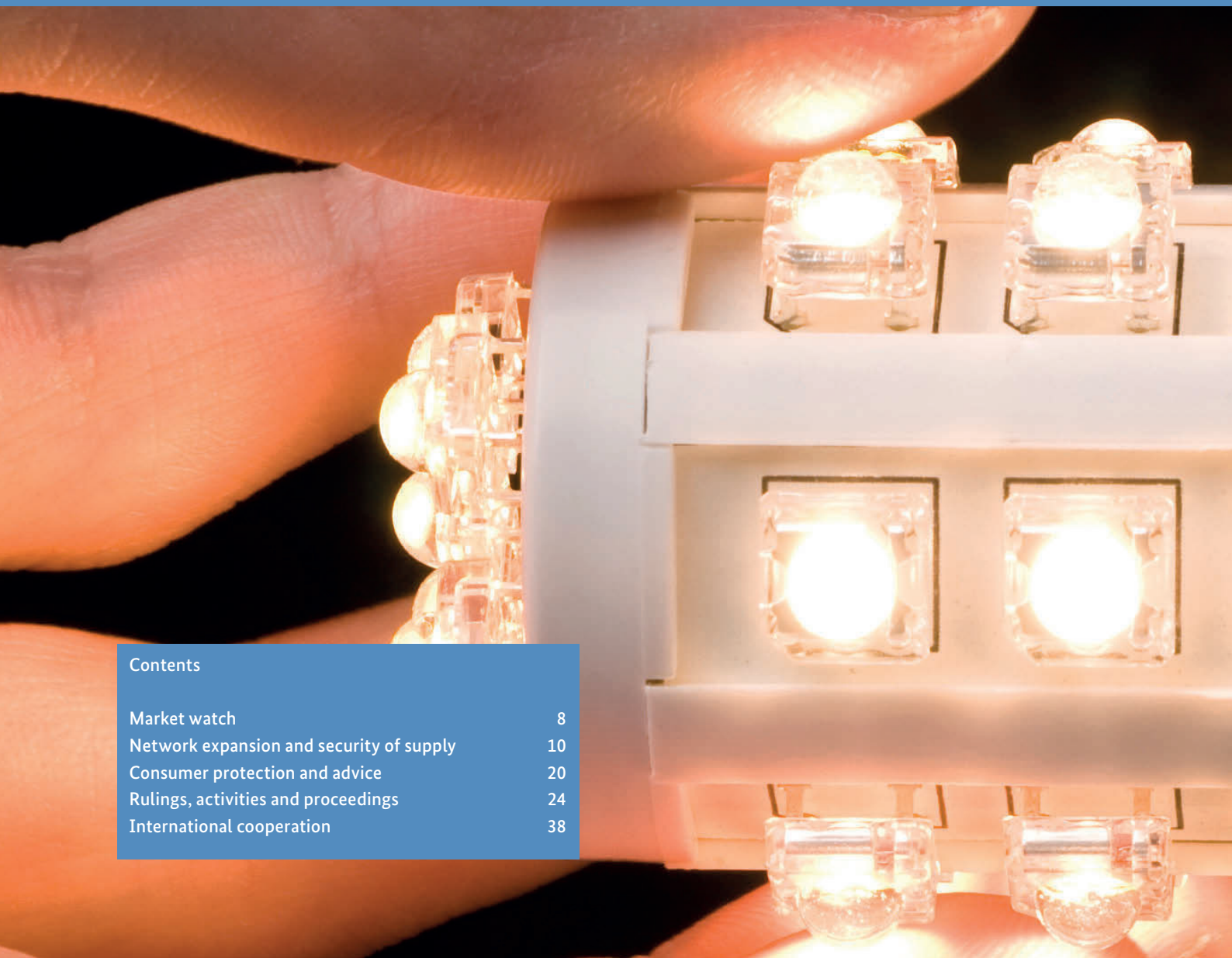
Jochen Homann
President of the Bundesnetzagentur

»We published the results of a consumer survey on minimum requirements in the postal sector and experienced a sharp increase in the number of complaints and requests for dispute resolution.«

ENERGY

The energy supply in transition

Renewable energy sources are expanding, while conventional energy generation is reducing. The energy supply in Germany is continuing to evolve and demands on the electricity grid are growing. The Bundesnetzagentur makes an important contribution to the energy transition, conducting auctions for renewable energy and issuing approvals for the necessary power lines.



Contents

The expansion of the grid is gathering speed. The Bundesnetzagentur has received in-depth planning documents for the SuedOstLink line, defined all the scopes of assessment for the line from Emden Ost to Osterath (A-Nord) and concluded the federal sectoral planning for smaller line projects as well.

In 2018, the authority opened the first round of a joint auction for onshore wind energy and solar power installations, which was the first time an auction had been held across technologies to determine the level of financial support for renewable electricity generation. The different technologies thus compete directly to generate electricity at the lowest costs.

The Bundesnetzagentur played a decisive role in the interstate crisis management exercise (LÜKEX), which this year focused on a gas deficit emergency. The authority participated in its role as national supply coordinator pursuant to the Energy Security of Supply Act (EnSiG).

Market watch

Generation from renewable energy sources accounted for 36% of gross electricity consumption in 2017, while generation from conventional sources continues to fall. Wind and solar power have the strongest growth.

Final customers were able to choose between an average of 143 suppliers in each network area. About 4.6m consumers took advantage of this opportunity in 2017 and switched electricity supplier. Just over 1.5m household customers switched gas supplier.

Electricity market

Development of conventional and renewable electricity generation

At 601.4 TWh, net electricity generation in 2017 remained at the level of 2016. Verified figures for 2018 were not available at the time of going to press. There was a 13.7% year-on-year increase to 204.8 TWh in 2017 (2016: 180.2 TWh), making the proportion of renewable energy generation in the gross electricity consumption 36%. Generation from conventional energy sources decreased by 24.8 TWh. In particular, there was a drop of 19.2% in generation from hard coal-fired power plants.

As in previous years, 2017 saw further growth in renewable energy sources (an increase of 8.3 GW compared with 6.5 GW in 2016). Capacity increased most strongly for wind (6.3 GW) and solar power (1.7 GW). Generation from conventional energy sources reduced by 2.3 GW in 2017. Total generating capacity increased to 217.1 GW, with 104.6 GW accounted for by conventional energy sources and 112.5 GW by renewables.

Changes in network charges

The provisional network charges for 2019, which were published in October 2018, are down if the offshore surcharge is not taken into account. Model calculations for a large industrial customer show a reduction of 10.3% from the transmission system operator (TSO) TenneT, 18.4% from 50 Hertz, 2.8% from Transnet BW and 20.4% from Amprion. The main reason for the drops are the exclusion of offshore costs. The aggregate revenue cap for the four TSOs has fallen from €5.7bn to €4.8bn. While €1.4bn of offshore costs has been removed from the revenue caps, there have also been cost increases, in particular for planning costs for redispatching and for standby lignite-fired power plants. Only customers in the TenneT network will benefit from the first stage of the national harmonisation of the TSO charges. There, the network charge for the example given above will be 0.051 ct/kWh lower after the change. By contrast, in the 50 Hertz network it will be 0.018 ct/kWh higher. The increase in the Transnet BW network will be 0.021 ct/kWh and in the Amprion network 0.029 ct/kWh.

The network charges of distribution system operators (DSOs), not including the offshore surcharge, will fall by 0.8% for a typical household customer and 2% for a commercial customer. The network charge for an industrial customer at the medium-voltage level will rise by 1.6%. The new offshore surcharge will include the costs of offshore connection for the first time in 2019, so to compare the costs imposed on network users in 2018 and 2019, the network charges must be added to the offshore surcharge. As an example, the resulting costs for an industrial customer in the control area of TSO TenneT would be 4.6% lower, in the area of 50 Hertz 10.2% lower and in the area of Amprion 10.5% lower, but in the control area of Transnet they would be 7.1% higher. In the distribution system, the costs for household and commercial customers will be about 4% higher and for industrial customers about 16%.

Household customers: supplier diversity, supplier switching and electricity prices

Supplier diversity and supplier switching

In the year 2017, final consumers were able to choose from an average of 143 electricity suppliers in their network area. About 4.6m consumers changed their supplier during that year. In addition, around 2.6m household customers switched contracts with the same supplier.

In 2017, a relative majority of 41.2% of household customers were on non-default contracts with their regional default supplier. The percentage of household customers on default contracts stood at 27.8%, while 31% of all household customers were now served by a supplier other than their regional default supplier.

Electricity prices for household customers

Electricity prices for household customers were relatively stable in 2018. In the consumption band between 2,500 kWh and 5,000 kWh, the average volume-weighted price for household customers increased by 0.02 ct/kWh or 0.1% compared with 2017 and was 29.88 ct/kWh on 1 April 2018.

Developments in the gas markets

In 2017, final consumers were able to choose from an average of 98 gas suppliers in their network area. Just over 1.5m household customers switched gas supplier during the year. In addition, almost 891,000 household customers changed the energy supply contract they had with their supplier. The majority of household customers are supplied under contracts with default suppliers on non-default terms. Just under 19% of household customers use default supply. The percentage of household customers who have a contract with a supplier other than the local default supplier rose again to about 30%. The average volume-weighted network charge for household customers was 1.51 ct/kWh as at 1 April 2018. The weighted average price across all contract categories in the consumption band between 5,556 kWh and 55,556 kWh fell by 0.08 ct/kWh compared with 2017 to 6.07 ct/kWh.

Security of supply and network expansion

Costs for network and system security measures reached a new high of about €1.5bn in 2017. Only by rapidly expanding the electricity grid will it be possible to bring these costs down in the long term. Around 800 km of power lines listed in the Power Grid Expansion Act (EnLAG) have been completed. From the Federal Requirements Plan Act (BBPIG), about 600 km of lines have been approved and about 150 km of those completed.

Network and system stability: redispatch and feed-in management

There has been a large increase in the number of measures to ensure the security and reliability of the electricity supply system in recent years due to the changing generation landscape, the delays in grid expansion and the effects of weather. Redispatching involves measures intervening in the market-based operating schedules of conventional generating units to shift feed-in geographically in order to take pressure off those elements of the grid which are under strain. In addition, feed-in management is used to temporarily curtail the priority feed-in of electricity from renewable energy and combined heat and power (CHP) installations if network capacity is insufficient.

According to current figures, the costs incurred for all network and system security measures in 2017 reached just over €1.5bn, which is a new record.

Redispatch measures (operational plants) comprised a total volume of 18,456 GWh in 2017. The TSOs estimated the costs for these measures at €392m. The costs of reserving and using grid reserve power plants were about €480m for the year with an activated volume of 2,129 GWh. The total curtailed energy due to feed-in management was 5,518 GWh in 2017. The estimated compensation payments claimed by installation operators for this period amounted to approximately €610m.

The information obtained from reports on these measures is published every quarter at *www.bundesnetzagentur.de/systemstudie*.

Network and system security measures

		2015	2016	2017
Redispatching				
Total volume[1] of operational plants	GWh	15,436	11,475	18,456
Cost estimate[2] for redispatching	€m	412	223	392
Cost estimate for countertrading	€m	24	12	29
Grid reserve power plants				
Volume[3]	GWh	551	1,209	2,129
Cost estimate for activation	€m	66	103	184
Capacity[4]	MW	7,660	8,383	11,430
Annual costs of holding in reserve	€m	162	183	296
Feed-in management				
Volume of curtailed energy[5]	GWh	4,722	3,743	5,518
Estimated compensation	€m	478	373	610
Feed-in adjustments				
Volume	GWh	27	4	35

[1] Volumes (reductions and increases) including countertrading and remedial action measures according to monthly report to the Bundesnetzagentur.
[2] TSOs' cost estimate based on actual measures including costs for remedial actions.
[3] Activations of grid reserve power plants including test starts and test runs. The feed-in of grid reserve power plants is only increased.
[4] Total capacity of German and foreign grid reserve power plants in MW. As at 31 December of the respective year.
[5] Reduction of installations remunerated in accordance with the RES or CHP Acts.

Special grid facilities

TSOs can hold special grid facilities in reserve. These plants are intended to restore the stability of the networks in the event of an actual failure of one or more facilities in the transmission system. This is known as curative redispatching. In other words, the facilities are not used preventively to relieve strain on the system when a lot of transmission has to take place, but only when a network fault has occurred despite all redispatch options being made use of and the grid needs to be put back from a (n-0) status to a secure (n-1) status.

In February 2017, the affected TSOs Amprion, TenneT and Transnet BW submitted a demand assessment to the Bundesnetzagentur, which the authority used in May 2017 as a basis to determine a need for 1.2 GW of special grid facilities in southern Germany. The TSOs presented a procurement concept in May 2018 and in June they started a European tender process for the facilities. Potential tenderers were able to notify their interest until 1 August 2018 and the tender is expected to be awarded on 1 April 2019. The period of performance is ten years and runs until 30 September 2032.

The TSOs are acquiring a total of 1,200 MW of active power divided into twelve lots of 100 MW each. Three lots, ie 300 MW, are allocated to each of the four regional lot groups. Companies can apply for one lot or for packets of lots within a lot group. To qualify for the tender, plants must be able to reach full capacity operation within an hour and be able to supply (in the case of generating installations) or reduce (in the case of interruptible loads) for at least 38 consecutive hours. The total operating period is at least 500 hours a year.

Ahead of the tender process, the Bundesnetzagentur had ensured that the special grid facilities would be operated by third parties and the holding in reserve of the curative redispatching potential of the tendering TSOs offered as a system service. The authority thus made certain that the TSOs would not own the installations, as this would have been incompatible with the legal requirements regarding the unbundling of network and installation operations. The Bundesnetzagentur also worked to make sure that the TSOs included a comprehensive ban on further use for both the capacity and the power of special grid facilities and for their (partial) plants in the tendering documents. The agency wants to avoid a situation in which plants refinanced from network charges could subsequently compete on the European electricity markets with plants that had not been able to obtain such secured refinancing.

Grid reserve and power plant closures

On 27 April 2018, the Bundesnetzagentur published its assessment of reserve power plant requirements for the winter of 2018/2019 and the year 2020/2021. The assessment confirmed the results of the system analyses which had been submitted to the Bundesnetzagentur by the four TSOs in compliance with the Grid Reserve Ordinance (NetzResV). The reserve requirements analysis performed by the TSOs determines the measures which are needed to guarantee the secure and reliable operation of the transmission system.

A common problem is the transport of electrical energy from northern Germany, where it is generated, to the south of the country where it is most needed. Redispatching is required to prevent lines from becoming overloaded. If there is not enough power plant capacity available on the market for redispatching measures to rectify congestion in the system, the TSOs have to make up the deficit of redispatch capacity from reserve power plants. For this purpose, each year the TSOs establish the demand for reserve capacity during the periods under review, taking account of requirements defined by the Bundesnetzagentur.

The Bundesnetzagentur then reviews, assesses, and publishes the outcome of this needs analysis in report form. The report for winter 2018/2019 identified 6,600 MW of required reserve capacity, with the same amount being identified for 2020/2021. The drop from the requirement of 10,400 MW for winter 2017/2018 in the previous needs analysis is due to the introduction of congestion management at the German-Austrian border on 1 October 2018. The reserve requirements are thus covered by the available national grid reserve power plants and it was therefore not necessary to contract grid reserve from neighbouring countries.

Following the notification of planned closures received by the Bundesnetzagentur by 1 December 2018, approval has so far been given for 15 power generation units with a total capacity of 3,698 MW to be categorised as systemically relevant. This enables the Bundesnetzagentur to ensure system stability by prohibiting the closure of systemically relevant power plants. These plants become part of the grid reserve. Seven power plants with a total capacity of 2,952 MW, for which the operators had applied for temporary closure, have also been identified as systemically relevant for grid operations by the TSOs. These are now part of the grid reserve as well and are reserved for the exclusive use of TSOs.

Evaluation of minimum generation

The second evaluation of minimum generation has been in preparation since the start of 2018. A workshop attended by power plant operators, network operators, representatives of academia and industry bodies was held in May to explore the causes of the feed-in of electricity in situations with negative exchange prices. The results of the workshop were used to create a survey for power plant operators, which the Bundesnetzagentur charged the TSOs with carrying out in autumn 2018. The TSOs also provided the Bundesnetzagentur with data on feed-in for selected days with negative prices in 2016 and 2017. These data are currently being evaluated along with the responses to the survey of power plant operators. The Bundesnetzagentur will publish the second report on minimum generation by the end of June 2019.

Discussion paper on reactive power provision for network operation

As the electricity supply is transitioning to a decentralised system far from load centres, in which power is generated by numerous renewable energy installations connected to rather low voltage levels, the issue of reactive power provision is growing in importance for the operation of the grid. Feed-in from generating installations increases the voltage in the network at the local level, which can lead to voltage problems. The provision of reactive power by generating installations can regulate the network voltage, avoiding the need for network operators to take other, expensive measures.

The reactive power provision requirement in the Technical Connection Conditions (TAB) means that generating installations contribute to maintaining voltage stability at the local level. However, this additional reactive power provision requires the electric components to be larger even though the maximum effective power remains the same. Moreover, the provision of reactive power in accordance with the stipulations of the network operator also increases the electrical losses within the generating installation, thus leading to higher investment and operating expenses for the operator of the installation.

For this reason, the Bundesnetzagentur's discussion paper on reactive power provision for network operation, published in 2018, distinguishes between the maintenance of voltage stability at the local level in order to reduce the need for grid expansion, which is a duty incurring no charges, and other options to manage reactive power. Providing reactive power without payment to maintain local voltage stability is in line with the principle of causation, but other provision of reactive power should be acquired on the market by network operators, ie the generating installations should be remunerated for it. It is planned for the contractual provision of reactive power, which is already taking place in a few cases, to be carried out in a transparent, non-discriminatory process in future, in order to increase the efficiency of reactive power provision with contractual arrangements and reduce the potential for abuse.

Scenario Framework for the Electricity Network Development Plan 2019–2030

Establishing the expansion requirements in the extra-high voltage network remains an important task for the Bundesnetzagentur in relation to the energy transition. A new round of network development planning started at the beginning of 2018. On 10 January, the TSOs presented their draft updated scenario framework for the target year 2030. The Bundesnetzagentur conducted a consultation on the scenario framework 2019–2030 and approved it on 15 June 2018. Responses to the consultation were able to be submitted by the public from 17 January to 21 February 2018 and the Bundesnetzagentur also held two dialogue events, one on 30 January in Berlin and the other on 1 February in Ingolstadt. The authority evaluated all the responses received and took them into account in its approval of the scenario framework.

The scenario framework 2019-2030 has significant differences to the previous framework for 2017–2030, reflecting past developments in energy policy and the economy. One major change is the raising of the proportion of renewables to 65% of gross electricity consumption by 2030. This increase is in line with the political goals of the CDU/CSU and SPD as laid down in their coalition agreement of 12 March 2018 and means a significantly faster expansion of renewable energy, as it is over ten percentage points higher than the figure in the previous scenario framework. It is also a departure from the current development corridors as per the Renewable Energy Sources Act (EEG).

As the previous framework did, the scenario framework 2019-2030 describes probable developments in electricity generating capacity in the years 2030 and 2035. All the scenarios in the scenario framework 2019-2030 have the same rate of expansion but they differ in the generation mix and the degree of innovation (eg sector coupling, storage and flexibility options). The projected generation structures in the scenarios A 2030 and C 2030 show the two extremes of a generation structure that is centralised or decentralised, respectively, while scenario B 2030 shows a mixed structure. Scenario A 2030 and B 2030 have a smaller reduction in conventional, centralised generating capacity than scenario C 2030. The transition in the conventional power plant sector is nevertheless considerable in all scenarios. For example, the market will lose at least half of coal-based generating capacity by 2030. At the same time, there are significant differences in the development of the regenerative generation landscape, with scenario A 2030 showing a much greater increase in the expansion of offshore wind power and a lower increase in photovoltaic capacity. All scenarios meet the climate targets for the reduction of greenhouse gases.

Rising electricity consumption is particularly caused by the coupling of the heat and transport sectors with the electricity sector, although higher electricity requirements are largely offset by compliance with energy efficiency targets. Scenario C 2030 is the scenario with the greatest degree of sector coupling, leading to a rise of about 8.5% in net electricity consumption over 2017 levels.

The examination of the energy landscape for 2025 is new. The purpose of the interim scenario for 2025 is to allow the ad hoc measures submitted by the TSOs to be checked to ensure they make optimal use of the existing network and thus reduce congestion costs and minimise the necessary grid expansion. The approval of the scenario framework 2019–2030 also requires TSOs to present new, innovative technical approaches for network equipment and its operation when drawing up the network development plan. The TSOs must also assess their suitability for transportation capacity and the best possible use of the existing network.

The scenario framework 2019–2030 is also an increasingly crucial element in the stronger synchronisation of the national and European network development plans. Like its European equivalent, the German scenario framework contains a flexible reference period of between 10 and 15 years, or between 15 and 20 years in the case of the long-term scenario. The scenario framework 2019–2030 is thus the second framework to allow the plans to be better compared against each other.

Network expansion

All nuclear power plants in Germany are to be decommissioned by 2022, while the proportion of renewables in the energy supply is to keep on rising steadily. These changes will alter the electricity generation structure and require network infrastructure to be expanded rapidly and on a wide scale. The Bundesnetzagentur has therefore been given an expanded mandate for the inter-state and cross-border network expansion measures at the extra-high voltage level. The transmission system requirements as regards network expansion, network optimisation and reinforcement measures will be identified every two years and then implemented within the framework of an approval procedure, the federal sectoral planning and the subsequent planning approval procedure.

Federal sectoral planning

Federal sectoral planning is a new tool for the 16 plans involving extra-high voltage lines that are classed as inter-state or cross-border in the Federal Requirements Plan. A corridor up to 1,000 metres wide is made binding as part of this procedure. The exact route the line will take is determined in the next stage of the planning process.

Federal sectoral planning begins with an application submitted by a TSO as the project promoter. The application under section 6 of the Grid Expansion Acceleration Act (NABEG), which includes the proposed route corridor, possible alternatives and explanations of the potential impact on people and the environment, forms the basis of information for the public scoping conference that has to be held. The subject and scope of the federal sectoral planning are explored with the project promoter, public agencies, industry associations and members of the public in the conference. The Bundesnetzagentur uses the results of the scoping conference to determine a scope of assessment for the planning evaluation and the strategic environmental assessment of the route corridor under section 8 NABEG, which also presents the supplementary documents and reports required from the project promoters.

Once the project promoter has submitted all the required documents, the Bundesnetzagentur consults authorities and the public again. The Bundesnetzagentur displays the complete documents for a month at its office in Bonn and at other locations. It announces the display of the documents in newspapers published in those regions where the plan is likely to have an impact as well as on its website and in the Bundesnetzagentur Official Gazette. Objections received are dealt with in a hearing.

The Bundesnetzagentur then decides on the route corridor, taking account of the arguments put forward and the impact on people and the environment. The route corridors determined in the federal sectoral planning are included in the Federal Grid Plan. The basis for the subsequent planning approval process in which the exact route of the lines is determined – with public participation – has thus been laid.

Major progress was made on the grid expansion in 2018. The Bundesnetzagentur issued decisions concluding the federal sectoral planning for several projects under the Federal Requirements Plan Act, including projects 11, 14 (western section), 13 (eastern section) and 25. Scopes of assessment were also defined and hearings held for other projects under the federal sectoral planning procedure. Further information on individual projects, including the current status of proceedings, the relevant application documents and the federal sectoral planning decision can be accessed at *www.netzausbau.de/vorhaben*.

Monitoring the status of projects under the Power Grid Expansion Act (EnLAG) and the Federal Requirements Plan Act (BBPlG)

As part of its monitoring role, the Bundesnetzagentur provides quarterly updates on the progress in planning and construction that has occurred for individual projects in the transmission system during the previous three months, including the projects from the BBPIG and the EnLAG as well as transmission links to offshore wind farms. Network optimisation measures – ie the completed and planned activities of network operators to increase the utilisation of the existing transmission system – have also been included in the monitoring since the second quarter of 2018.

The status of each project can be viewed at *www.netzausbau.de/vorhaben*.

Current status of EnLAG projects

The Power Grid Expansion Act (EnLAG) was passed back in 2009, putting the focus on an accelerated expansion of the grid. The current version of the law contains 22 projects that require urgent implementation in order to meet energy requirements. EnLAG project no 22 was deleted after a review was carried out during the process of drafting the NDP 2022. Because of alternative network solutions, project no 24 was considered in the NDP 2024 by TSOs to be no longer required to meet energy supply requirements.

The individual federal state authorities are responsible for conducting the spatial planning and planning approval procedures for the EnLAG projects. The projects currently listed in the EnLAG as at the third quarter of 2018 comprise lines with a total length of about 1,800 km. Around 1,200 km of this length have been approved, of which approximately 800 km have been completed (around 45% of the total length). A further 20 km are currently in the spatial planning procedure and around 550 km are in or about to start the planning approval procedure. The TSOs expect nearly 70% of the kilometres of line provided for by the EnLAG to be completed by the end of 2020. To date, none of the projects with pilot routes for underground cables has gone into full operation. Currently, the first 380-kV underground cable pilot project is underway in Raesfeld.

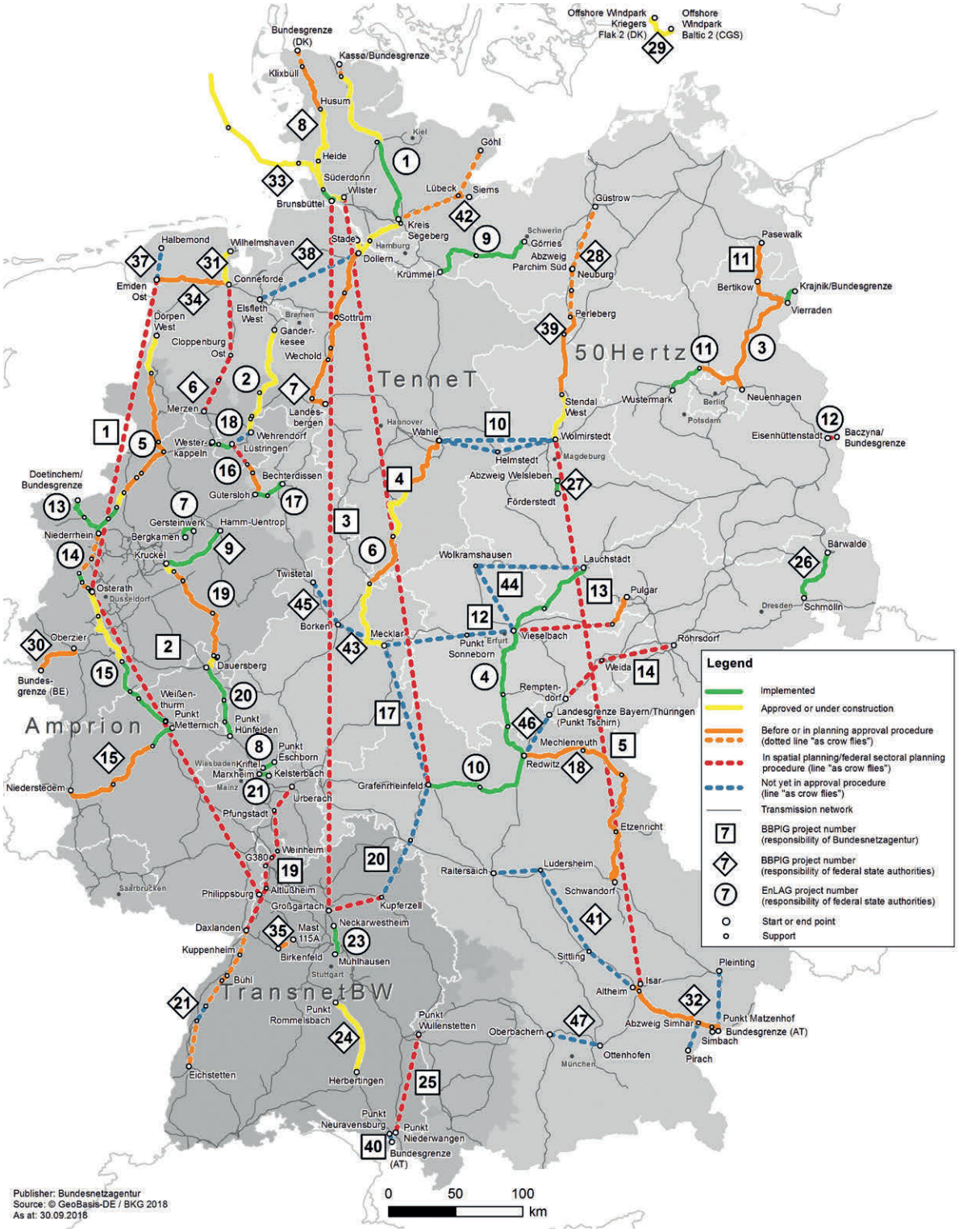
Current status of BBPIG projects

Alongside the EnLAG project monitoring, the Bundesnetzagentur also publishes the status of expansion projects under the Federal Requirements Plan Act (BBPIG) on its website on a quarterly basis. Of the 43 projects nationally, 16 of them have been classed as inter-state or cross-border. The Bundesnetzagentur is responsible for the federal sectoral planning and the subsequent planning approval procedure for these projects.

The projects currently listed in the BBPIG comprise lines with a total length of some 5,900 km. According to the network development plan, around 3,050 km of these lines will serve to reinforce the system. The total length of power lines will be largely determined by the route of the new direct current project linking the north and south of Germany. The route this project takes will become apparent in the course of the procedure. As at the third quarter of 2018, approximately 600 km of the total length of around 5,900 km have been approved and around 150 km completed.

Eight of the 43 projects have been designated as pilot projects for low-loss transmission over long distances (high-voltage direct current transmission). Five direct current (DC) projects have been earmarked for priority underground cabling and five alternating current (AC) projects for partial underground cabling. In addition, one project is a pilot project using high-temperature conductors and two are submarine cable projects. The following map shows the expansion status of EnLAG projects and BBPIG procedures as at the third quarter of 2018:

Power Grid Expansion Act and Federal Requirements Plan Act projects as at the third quarter of 2018.



Participation and dialogue

The expansion of the grid infrastructure is a project that affects society as a whole. The legislature has provided the opportunity for the public to participate in all decisions relating to grid expansion. The Bundesnetzagentur wishes to make the grid expansion process transparent, clear and comprehensible for the general public. It therefore hosts public information/dialogue events and method conferences across the country.

The information day "People and grid expansion" in May 2018 focused on the impact the expansion of the extra-high voltage network will have on people. It looked at the effects of electric and magnetic fields on the human body and the applicable limits for such fields. Another issue was noise emitted by power lines and how they affect the appearance of the countryside.

A dialogue event on soil conservation in June 2018 centred on the effects on the ground of different techniques for laying cables. Under discussion were the impact of underground cabling and the soil conservation options when laying DC cables.

The Bundesnetzagentur provided a platform for the exchange of scientific views on the grid expansion at its fifth science dialogue in October 2018. This event was based around discussions from various academic disciplines on the challenges of the grid expansion. The results were published in a conference report.

At a methods conference in October 2018, the Bundesnetzagentur presented the planned changes to the strategic environmental assessment for the Federal Requirements Plan and discussed various amendments with participants.

The programmes and presentations from the different events may be accessed at *www.netzausbau.de/termine*.

Further sources of information are the website www.netzausbau.de, the Bundesnetzagentur's YouTube channel, newsletter, Twitter posts and other publications on various topics to do with grid expansion. In addition, the general public can find out about these issues from our public advice service. This is staffed by employees from the grid expansion department who are available to provide information over the telephone or respond to post or email enquiries.

Minister Peter Altmaier visits the Bundesnetzagentur and presents grid action plan

Federal Minister for Economic Affairs and Energy Peter Altmaier came to the Bundesnetzagentur in summer to present grid expansion measures. His visit kicked off a tour of Germany in which he highlighted the grid expansion.

The Bundesnetzagentur welcomes the political support for the grid expansion from the federal government. Without a reliable, expanded electricity network, it will not be possible to achieve the transition to renewable energies.

Of the 1,800 km of lines given in the 2009 Power Grid Expansion Act (EnLAG) that come under the responsibility of the federal states, about 1,150 km have been approved and around 800 km completed. The TSOs expect nearly 70% of the kilometres of line provided for by the EnLAG to be completed by the end of 2020.

The projects listed in the Federal Requirements Plan Act (BBPIG) as amended at the end of 2015 and coming under the responsibility of the federal government and the states comprise lines with a total length of some 5,900 km. About 3,050 km of these are network reinforcement measures. Of the 5,900 km, 600 have been approved and 150 km completed.

Gas Network Development Plan 2018–2028

On 12 December 2017 the Bundesnetzagentur confirmed the scenario framework containing the capacity needs to be used for network planning for the next ten years. On that basis, the gas transmission system operators produced the gas network development plan 2018-2028, conducted a public consultation and submitted the revised draft for examination to the Bundesnetzagentur on 29 March 2018.

The TSOs' expansion proposal comprises 159 measures with an investment volume of about €7bn. These measures are primarily aimed at converting the market from L-gas (low calorific value) to H-gas (high calorific value) in northern and western Germany as a result of the upcoming drop in domestic production and reduced imports of L-gas from the Netherlands, the supply of new power plant projects and the transport of gas volumes from the planned Nord Stream expansion. To this end, the TSOs are planning the single biggest project so far with an investment volume of about €2.3bn: the EUGAL pipeline running from Lubmin on the German Baltic Sea coast to Deutschneudorf on the border with Czechia. There are also long-term bookings for the incremental capacity in Lubmin as part of the “more capacity” process, which is a Europe-wide market survey of shippers carried out by some TSOs. According to the TSOs, these bookings will make an essential contribution to refinancing investments.

For the first time, the modelling also included a liquefied natural gas (LNG) terminal at Brunsbüttel on the German coast, which, based on the information from the TSOs, will also create a need for network expansion.

The TSOs have added another modelling variant to the gas NDP 2018-2028 as a result of the current transportation restrictions caused by corrosion to one of the two lines of the Trans Europa Naturgas Pipeline (TENP), which runs from the border between Germany and the Netherlands to Wallbach at the German-Swiss border. The results of this variant were transmitted to the Bundesnetzagentur on 1 August 2018. It focuses on the supply for Baden-Württemberg and the transit capacity required for security of supply in neighbouring countries (Switzerland, Italy) in the event that the sections of pipeline that are currently out of service cannot be put back into full operation once the ongoing examinations and maintenance have been concluded. As the result of this modelling variant, the TSOs suggest that if it is not possible to operate them again, two sections totalling 54 km in length should be rebuilt alongside the existing TENP stretch. Moreover, cross-connections should be inserted between the TENP I and TENP II pipelines so that the undamaged parts of TENP I can continue to be used. This proposal would cost €171m.

The Bundesnetzagentur issued its request for amendment to the gas NDP 2018-2028 on 20 December 2018. This decision confirmed 152 measures with an investment volume of €6.85bn representing an expansion of 1,340 km in lines and 499 MW of additional compressor capacity. The assessment, particularly of the network data supplied by TSOs, showed that there is no more economical alternative to the proposed EUGAL pipeline. The three measures from the TENP supply security variant were also confirmed.

Four measures had to be taken out of the plan because they do not come within its scope, including the pipeline link for a planned LNG terminal in Brunsbüttel. It is the legal opinion of the Bundesnetzagentur that these measures are part of the network connection and thus the responsibility of the relevant project developer. However, the removal of these measures from the NDP does not imply any conclusion about their necessity or the likelihood of implementing the LNG and power plant units requiring connection to the network.

Another measure has to be taken out of the plan because the TSOs have not examined possible alternatives, which is a legal requirement because there might be more economical solutions to supply gas to the region in question. The request for amendment orders the TSOs to carry out a remodelling process.

Two measures on the market area conversion are to be taken out of the plan because they are not specific enough. Three measures are to be altered in size because new findings mean that they are no longer needed in the scale originally planned. The ownership of two other measures has changed.

The request for modification forms the conclusion of the gas NDP 2018-2028. The TSOs have three months to implement the requested modifications.

National and common risk assessments for gas

Pursuant to Article 7 of Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply, the Bundesnetzagentur conducted risk assessments and notified the European Commission of them within the deadline of 30 September 2018. The national risk assessment looked at risks to domestic gas supply. Relevant risk scenarios were identified as being the process for the market area conversion from L-gas to H-gas and the inability to use one line of the TENP, which runs from the German-Netherlands border to the German-Swiss one. As Germany is centrally located in the European gas supply system and is supplied by various different countries, the result of the risk assessment was that supply security in the country continues to be very high. In addition to the national assessment, a common risk assessment was also carried out for the first time with the risk group defined in the Regulation. The risk groups are based on the gas transport routes to and within Europe and the countries affected by each one. Germany's central location means that it is part of seven risk groups: in the Eastern gas supply risk groups, Germany is a member of the Ukraine, Belarus and Baltic Sea groups and in the North Sea gas supply groups it is part of the Norway, Low-Calorific gas, Denmark and United Kingdom groups. The Bundesnetzagentur has taken on the leadership of the Baltic Sea risk group. All the risk groups of which Germany is a member found that the failure of the largest single piece of infrastructure in each group could be overcome by the relevant countries and there are only slight risks to security of supply.

Incremental capacity for gas

The amended version of the network code on capacity allocation mechanisms in gas transmission systems (NC CAM), which came into force on 6 April 2017, brought in a pan-European, market-driven process for the creation of incremental gas transport capacity at the borders of market areas (incremental capacity process).

An economic test needs to precede each investment decision made for capacity requested by the market. This ensures that the network expansion costs incurred from the provision of new capacity are borne appropriately by those network users that requested the capacity and led to the investment decision being made.

The regulation stipulates that starting in 2017, TSOs had to carry out a market survey at each market area border to determine the amount of incremental capacity required. Demand was indicated at four of Germany's international borders (to Russia, Poland, Austria and the Netherlands) and at the border between the two German market areas, GASPOOL and NCG. Approval for the project application submitted by the TSO for the German-Austrian border was given in 2018, but the capacity then offered was not booked by traders, so the expansion measures were not implemented. The project applications for the German-Polish border and for the entry points related to the Nord Stream and Nord Stream 2 pipelines are currently being examined by the Bundesnetzagentur. TSOs are preparing a further application for incremental capacity at the border between Germany and the Netherlands. If the competent regulatory authorities give their approval, the planned expansion measures could be implemented in 2019, provided there are enough binding bookings by traders in the upcoming 2019 annual auction that lead to a positive economic test.

Consumer protection and advice

The consumer advice service received over 16,500 enquiries from consumers dealing with billing, hidden price rises, delays in switching supplier and contractual disputes.

The Bundesnetzagentur's map of publicly accessible charging points for electric vehicles in Germany was expanded. The number of charging points has nearly doubled in a year.

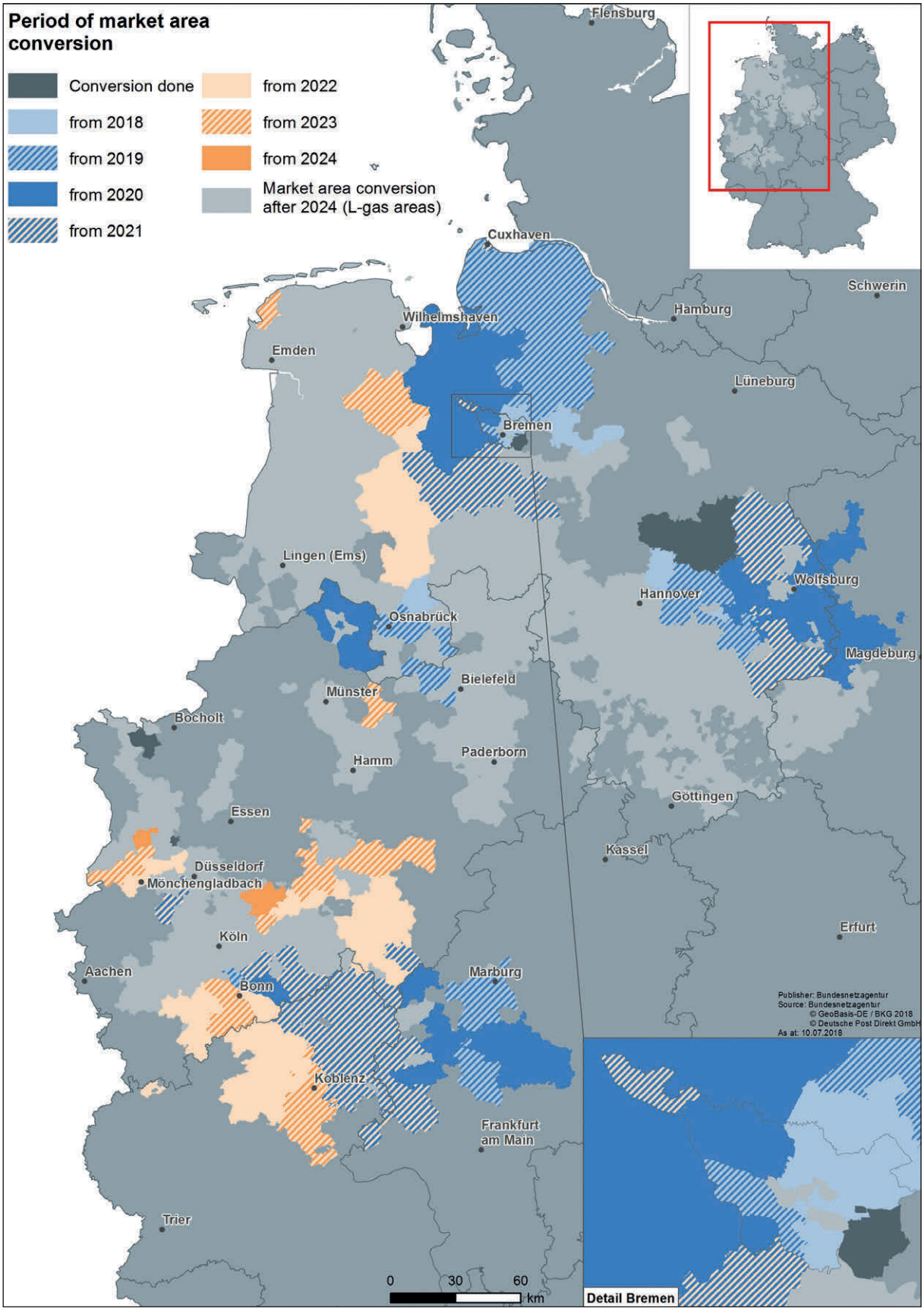
L-gas to H-gas conversion

The market area conversion – the changeover from L-gas to H-gas – will be a large-scale project for gas suppliers in Germany over the next decade. The areas of northern and western Germany that are currently supplied with L-gas will need to convert to H-gas as domestic production of L-gas declines and less is imported from the Netherlands. Current projections are for L-gas imports to Germany from the Netherlands to cease on 1 October 2029. The new structure of natural gas supply will affect more than four million household, commercial and industrial gas customers with over five million appliances burning gaseous fuels. These appliances will need to be adapted in stages up to 2030. About 110,000 appliances had already been converted as at April 2018. The Bundesnetzagentur map shows the areas which will be converted by 2024; the entire L-gas area is shown in light grey hatching.

All German gas customers share the costs for the market area conversion. Consumers will therefore not be required to pay any additional costs for the conversion of their appliances. Owners of gas appliances have an additional right to reimbursement from the network operator if their appliances have to be replaced.

The local network operator is always responsible for consumers. The Bundesnetzagentur recommends that affected gas customers take action as early as possible. They can find information on the website of their network operator.

The Bundesnetzagentur has a list of frequently asked questions for household customers on this issue under *www.bnetza.de/marktraumumstellung*.


Period of market area conversion
Conversion done
from 2018
from 2019
from 2020
from 2021
from 2022
from 2023
from 2024
Market area conversion after 2024 (L-gas areas)
Flensburg
Cuxhaven
Schwerin
Hamburg
Wilhelmshaven
Emden
Lüneburg
Bremen
Lingen (Ems)
Wolfsburg
Hannover
Osnabrück
Magdeburg
Bielefeld
Münster
Bocholt
Paderborn
Hamm
Göttingen
Essen
Kassel
Düsseldorf
Mönchengladbach
Erfurt
Köln
Aachen
Marburg
Bonn
Koblenz
Frankfurt am Main
Trier
0
30
60
km
Detail Bremen
Publisher: Bundesnetzagentur
Source: Bundesnetzagentur
© GeoBasis-DE / BKG 2018
© Deutsche Post Direkt GmbH
As at: 10.07.2018

Energy consumer advice service

The Bundesnetzagentur's energy consumer advice service provides information for consumers about their rights and possible action they can take as well as general energy issues. It received and replied to about 16,500 enquiries in 2018, a slight increase on last year. Around 8,500 queries were received by telephone, 7,500 by e-mail and 500 by letter.

Enquiries largely concerned billing, concealed price increases, delays in supplier switching and contractual disputes. There were also queries about metering, network charges and changes in energy prices.

There was a particular rise in requests for advice about the installation of modern, digital electricity metering equipment as such meters are becoming increasingly common. The part of the Bundesnetzagentur website concerned with metering received over 44,000 clicks (*www.bnetza.de/smartmeter*). The comprehensive FAQs explain the different between modern metering equipment and smart metering systems, show the timescale for the planned conversions and discuss the costs and benefits.

Electric mobility and charging stations

The Bundesnetzagentur's map of publicly accessible charging points for electric vehicles in Germany was expanded in 2018. In November 2017, the map featured 7,622 charging points. By November 2018, this figure had nearly doubled to 13,147.

More private charging stations were also installed. The network as it stands has not been designed for consumer behaviour with higher simultaneous loads, giving rise to new challenges for distribution system operators. This situation is exacerbated by new business models that encourage consumers to react to price signals, for example. The Bundesnetzagentur is looking at ways to integrate charging infrastructure to the benefit of the grid, as unrestricted charging anywhere, anytime is incompatible with the rapid, wide-scale roll-out of charging stations.

Decision on network charge transparency

The revised Incentive Regulation Ordinance (ARegV), which entered into force in 2016, greatly expanded the scope of data to be published by regulatory authorities under section 31(1) ARegV. The Bundesnetzagentur and some of the regulatory authorities of the federal states therefore announced that they would publish this data on their websites. Some network operators appealed this decision in higher regional courts, largely unsuccessfully. Only the higher regional court of Brandenburg issued a ban on the publication of data in summary proceedings.

The Federal Court of Justice (Bundesgerichtshof) prevented the publication of the majority of the above-mentioned data in two test cases on 11 December 2018. The ban covers the publication of regulatory account balances, expansion factors, capex mark-ups, totals of the permanently non-controllable costs, approved investment measures, costs of upstream network levels and avoided network charges as well as cost and output parameters. Specifically, the Bundesnetzagentur was required to refrain from publishing key data of the parties concerned. Only the revenue caps, efficiency scores and supply quality parameters were not included in the ruling.

The court's reasoning is not yet available. However, even without it, the judgement has far-reaching consequences for the Bundesnetzagentur's practice of publishing data and no comparable data on efficiency benchmarking or other determination proceedings will be published until further notice. The ruling will also have a significant impact on the publication of decisions and return to a situation in which large amounts of material are redacted.

Map of public charging points for electric vehicles

In 2017, the Bundesnetzagentur started publishing an interactive map of public charging points for electric vehicles in Germany.

The map shows the location and precise address of the individual charging points and specifies the available plugs and charging capacities. This makes it very quick and easy for users of electric cars to find out about charging facilities nearby. It is also possible to check the distribution of charging facilities in individual regions and federal states and to see whether charging points are normal or high power.

The latter distinction is taken from the Charging Station Ordinance, which defines charging points based on their maximum charging capacity: normal charging points have a capacity of up to 22 kW, and high power charging points have a capacity of more than 22 kW.

Operation of publicly accessible charging stations has had to be notified to the Bundesnetzagentur since 2016. This is mainly aimed at standardising the charging infrastructure in Germany by defining certain types of plugs as minimum standards.

Normal charging points that were established before the Ordinance entered into force are the only charging points exempted from these requirements.

The map is updated on a regular basis and can be found on the Bundesnetzagentur's website at *www.bundesnetzagentur.de/ladesaeulenkarte*.

Rulings, activities and proceedings

The main emphasis of the Bundesnetzagentur's work in the field of electricity network charges was the examination of costs. The third regulatory period for gas got underway.

The level of payments for renewable energy installations for solar, onshore wind and biomass power was identified in 2018. Joint auctions for onshore wind and solar power were held for the first time.

The Bundesnetzagentur published the IT security requirements catalogue. The implementation of requirements for electricity and gas network operators from 2015 was completed in the course of 2018 and evidence provided in the form of a certification.

Approval procedures under the European network codes and guidelines in the electricity sector

In the year under review, the Bundesnetzagentur conducted a number of approval procedures based on European regulations in the electricity sector. The focus was on the approval necessary – at national, regional and EU level – of the proposals developed by TSOs or nominated electricity market operators (NEMOs).

The majority of the over 70 approval procedures related to the electricity markets. Approval procedures for the capacity calculation and methodology for coordinated redispatching and countertrading, among other things, were initiated pursuant to Regulation (EU) 2015/1222 (CACM Regulation). The approval procedures within the scope of Regulation (EU) 2016/1719 (FCA Regulation) were concerned in particular with the design of long-term transmission rights and their nomination rules. There were also approval procedures pursuant to Regulation (EU) 2017/2195 (EB Regulation), including on the terms and conditions for balancing service providers and balance responsible parties and on harmonised rules for the exchange and procurement of balancing capacity.

System operation approval procedures pursuant to Regulation (EU) 2017/1485 (SO Regulation) concerned arrangements on the scope of data exchange between TSOs, DSOs and significant grid users (SGUs) and on the dimensioning and exchange of balancing capacity, among other things. Within the scope of Regulation (EU) 2017/2196 (E&R Regulation), applications were made on the rules concerning the suspension and restoration of market activities.

Amendment of provisions on electronic market communication

The Bundesnetzagentur made further progress on its work, started in December 2016, to implement the Metering Act (MsbG) and the related reorganisation of electronic market communication with further necessary adjustments during the year. For one thing, the network operator's responsibility for the processing and transmission of metering data, which was legally determined until 31 December 2019, was transferred to the market role of the meter operator in the determination on market communication 2020. As of 1 January 2020, the meter operator will be the

only party responsible for the processing and transmission of meter data to other market roles in the electricity market, regardless of the metering technology used and the availability of smart metering technology.

In the gas sector, the determination made use of the option provided for in the MsbG to have the processing of meter data and its transmission done by the network operator, including in the "gas target model". Moreover, the clarification of the connection obligation ensures that gas metering devices are included in the overall category of smart metering technology.

Change in the tendering system for secondary and tertiary balancing capacity

On 17 October 2017, bids of €77,777/MWh for activated tertiary balancing services led to by far the highest ever imbalance prices of €20,614.97/MWh (19:15–19:30) and €24,455.05/MWh (19:30-19:45). The balance responsible parties, who are legally responsible for the costs incurred for balancing energy in the imbalance price, therefore had to pay large sums for imbalances in the balancing group even though these were short-lived or small. Costs of €8m were incurred in this half-hour period. A causal analysis of the extremely high bids for activated balancing services revealed that the current tendering method needed to be adjusted. The new rules determined in May 2018 aim to raise the competitive pressure on prices for activated balancing services. Under the new rule, the price of activated balancing services (with a proportionate weighting factor) as well as the price of procured balancing services will be taken into account in the bids. Initial analyses of the new tendering system, which was introduced in 15 October 2018, have confirmed expectations. The prices of activated balancing systems that make up part of the imbalance price fell considerably in the first few weeks.

Electricity cost examination

The Bundesnetzagentur started to set the base level for the third regulatory period for electricity on 30 June 2017. Examining the costs of the 104 network operators that are under the Bundesnetzagentur's authority and use the standard procedure, as well as around the same number of network operators using the simplified procedure, was a main focus of the authority's activities in 2018. The 104 network operators using the standard procedure claimed about €19bn in costs for the base year 2016, of which €5bn of the permanently non-controllable costs came from upstream network costs and €1.7bn from avoided network charges.

Introduction of adjustment of capital expenditure
Starting in 2019, investments by electricity DSOs will be taken into account in the revenue cap using the annual adjustment of capital expenditure (capex). Network operators' expected investments are taken into consideration in the revenue cap using the capex mark-up. A comparison between expected and actual investments is carried out afterwards via the regulatory account. The DSOs under the Bundesnetzagentur's responsibility were granted a total capex mark-up of about €900m for the years 2017/18 and 2019 (they had applied for around €1.3bn).

In the capex deduction, the capital costs for the calendar year on which the cost examination is based are reduced annually by the capital costs that have ceased to exist, eg costs of plants that have been fully written down in that calendar year. The amount of the capex deduction thus rises over the regulatory period. The total capex deduction for DSOs under the Bundesnetzagentur's responsibility is €300m for 2019.

Determination on voluntary commitment on system services
The determinations on voluntary commitments regarding redispatching, balancing capacity and energy to compensate for losses in the third regulatory period were published in the Bundesnetzagentur Official Gazette on 17 October 2018. These defined, in particular, the approach to costs incurred by the TSOs due to system services provided. The German Association of Energy and Water Industries (BDEW) industry guidelines are used to determine the appropriate remuneration for domestic generating and storage facility operators from TSOs for redispatching measures.

The determination on the calculation of volatile costs for the consideration of DSOs' loss energy costs in the third regulatory period was published in May 2018. Loss energy is the energy consumed for and due to the operation of the electricity grid itself and makes up about 5% of the net generation fed into general supply

networks. As in the determination for the second regulatory period, the eligible loss energy procurement price is based on the annual average future prices of the EEX, with a standard weighting of base (69%) and peak (31%) applied for the entirety of the third regulatory period.

The weighting was determined on the basis of an analysis of the procurement prices of 65 network operators from 2014 to 2016. The amount of loss energy was specified for the duration of the third period on the value of the base year (2016). An assessment of the loss energy amounts in the period from 2011 to 2016 showed that it had been possible to reduce the amounts of loss energy in total across all DSOs and the majority of the network operators monitored, despite the challenges posed by the energy transition.

Maintaining the loss energy amount and including the costs incurred in the base year in the efficiency benchmarking set appropriate incentives for DSOs to work towards energy efficiency.

Electricity efficiency benchmarking

The Bundesnetzagentur carried out efficiency benchmarking for 203 electricity DSOs in the standard procedure in 2018. The efficiency scores resulting from this benchmarking exercise form the basis for calculating individual revenue caps for the third regulatory period from 1 January 2019 to 31 December 2023.

As part of the efficiency benchmarking, an operator's individual costs, as shown by suitable output parameters, are assessed in relation to the operator's supply obligations and each operator's relative cost efficiency compared to the other operators is determined. The results of the preceding cost examination are used as a cost basis. Network operators had an average efficiency score of 94.1%.

The efficiency scores for the German TSOs were identified ahead of the third regulatory period using a generic network analysis. It was not possible to carry out an international efficiency benchmarking exercise this time.

In the course of designing the model, it became clear that the current situation – with the German transmission systems not being large enough for the ongoing energy transition and the increase in necessary congestion management measures – could only be represented in a strict structural efficiency benchmarking using greatly simplifying assumptions.

As a result, three of the TSOs achieved efficiency scores of 100% and the fourth 99.92%.

Quality element

Incentive regulation harbours the risk that operators will make the required cuts in revenue by saving costs through not investing in their networks or not carrying out other necessary measures to maintain or improve quality of supply. This could lead to a poorer quality of supply. The Energy Industry Act (EnWG) and Incentive Regulation Ordinance (ARegV) therefore provide for regulation of supply quality in energy supply networks.

The fourth recalculation for a total of 196 electricity DSOs in the standard procedure took place in 2018. The System Average Interruption Duration Index (SAIDI) and Average System Interruption Duration Index (ASIDI) are used for the network operators' low and medium voltage levels. A total of 135 network operators were above average in terms of reliability and thus received mark-ups (bonuses) for their revenue caps in the years 2019 to 2020. By contrast, 61 network operators with a relatively poor level of quality were given a deduction. The highest mark-up was about €3.2m and the greatest deduction was €3.5m. The system of quality regulation has a neutral effect on revenues, ie the total mark-ups and deductions cancel each other out across all network operators.

With the aim of further developing the quality regulation system, the methodology for determining the quality elements on the basis of network reliability is currently being reviewed with expert support.

Sectoral productivity factor for electricity

The general sectoral productivity factor (Xgen), which is part of the revenue cap, is determined from the divergence between productivity gain in the network industry and productivity gain in the economy as a whole and between cost price development in the economy as a whole and cost price development in the network industry. The calculation of the Xgen has been the responsibility of the Bundesnetzagentur since the third regulatory period. Two methods – the Törnqvist index and the Malmquist index – are used in the calculation.

Data was collected for electricity supply system operators using both methods. For the Törnqvist index, commercial and structural data for the years 2006 to 2017 were collected from all electricity supply system operators. For the Malmquist index, there was an additional survey of structural parameters with changes in definitions over time for electricity distribution system operators that were part of the standard procedure in the second or third regulatory period.

EEG surcharge to fall to 6.405 ct/kWh in 2019

The EEG surcharge will fall for the second time running against continued growth in renewables.

In 2019, the contribution charge to cover the costs of electricity for which payments are made under the Renewable Energy Sources Act (EEG) – known as the EEG surcharge – will be 6.405 cents per kilowatt hour (ct/kWh). This represents a decrease of just under 6%. Since 2014, the surcharge levels have been stable, despite an increase of 50% in the amount of electricity receiving EEG payments over the same period.

The surcharge is determined and announced in mid-October each year for the following calendar year by the transmission system operators (TSOs) on the basis of expert forecasts. The Bundesnetzagentur ensures that the surcharge has been determined properly. The previous surcharge was 6.792 ct/kWh.

The reforms implemented in the last few years have led to a marked fall in the costs under the EEG. The switch to competitive procedures and auctions has

resulted in lower payment costs for new renewable energy installations in 2019. This contributed to the decrease in the surcharge for 2019, which can mainly be accounted for by the significant rise in electricity prices on the exchange.

The Bundesnetzagentur launched the process of determining the electricity productivity factor (Xgen) for the third regulatory period on 17 October 2018. As part of this, market participants were shown the data basis, the calculation stages and the results. They had the opportunity to submit responses to the consultation until 9 November 2018 and to the follow-up consultation until 26 November 2018. Once the responses had been evaluated and the calculations done again, the following mathematical range for the electricity Xgen was determined: 1.35% (Malmquist index) to 1.82% (Törnqvist index).

Given that the relevant value of 1.35% is significantly higher than the Xgen for gas supply networks, a deduction of one third of the mathematical value was applied to the electricity Xgen that was originally calculated until the end of the third regulatory period. Electricity supply system operators were therefore set an Xgen of 0.90% for the entire third regulatory period in a decision dated 28 November 2018.

Regulatory account for electricity
In 2018, the Bundesnetzagentur provisionally issued orders for the regulatory account balances for 2013-2016 and 2017 with the values applied for. The regulatory account balances will be checked and final approvals issued in 2019.

Introduction of the new offshore network surcharge

The Network Charges Modernisation Act (NeMoG) expanded the existing offshore liability surcharge from 2019 to include costs for installing and operating network connections to offshore wind farms in addition to the costs of compensation payments for delays, faults or maintenance to these connections. The installation and operation costs had previously been part of the standard network charges and were not reported separately. The payments under the EEG for offshore electricity production are not included in the offshore network surcharge.

The TSOs forecast costs of €1.56bn for installation and operation and €0.144bn for compensation in 2019. The offshore network surcharge for 2019, published by them on 15 October 2018, is €0.416 ct/kWh for non-privileged final consumers. Approximately €127m had to be credited as the positive difference between the compensation payments forecast for 2017 and those actually incurred. This results in an offshore network surcharge of nearly €12.50 for a typical household (four people, annual consumption of 3,000 kWh).

Recognition of costs for foreign plants in the grid reserve

In February 2018, the Bundesnetzagentur issued a determination for the four TSOs on the recognition of costs for contracts with plants outside Germany for the grid reserve pursuant to the Grid Reserve Ordinance (NetzResV).

- BK8-17/1500-R (50Hertz Transmission GmbH)
- BK8-17/2500-R (Amprion GmbH)
- BK8-17/3500-R (TenneT TSO GmbH)
- BK8-17/4500-R (TransnetBW GmbH)

TSOs are able to enter into grid reserve contracts with plant operators from other European Union countries and Switzerland for the provision and use of generation and storage facilities for the grid reserve. They have voluntarily committed to a procedure for the procurement of foreign redispatching potential, including a transparent description of the procedure. However, in 2018 they did not made use of this framework determination.

Voluntary commitment: "use, don't curtail"

In January 2018, the Bundesnetzagentur agreed on a voluntary commitment known as "use, don't curtail" with the three relevant TSOs: TenneT, Amprion, and 50Hertz. This enables the TSOs to contract with CHP installation operators in the "network expansion area" for the reduction of active power feed-in while continuing to supply electrical energy to maintain heat supplies. The aim is to avoid feed-in management measures (FIMM) in the network expansion area and, at the same time, to make new redispatch potential available.

Under the voluntary commitments a power plant is suitable for the economic and efficient elimination of congestion if the savings obtained from the avoided FIMM are projected to cover at least the required investment costs forecast over the five-year period following commissioning (terms of the contracts). This means that an across-the-board efficiency approach – ie one not related to grid costs – is adopted. The above TSOs offered to enter into such contracts with plant operators in the course of 2018, but no contracts were concluded. The first actual contracts are to be expected in the 50Hertz control area in 2019.

Recognition of costs for provision and use of power plants in the grid reserve

Transmission system operators are able to prevent the planned temporary or permanent shutdown of a power plant by its operator if it is found to be systemically relevant following an assessment by the Bundesnetzagentur. The power plant then becomes part of the grid reserve and is only used according to the instructions of the TSOs.

The use of such plants is detailed by law and governed by contracts between TSOs and plant operators made in consultation with the Bundesnetzagentur. These contracts, including the costs incurred from the grid reserve, are then passed on to network customers as permanently non-controllable costs. The determination on the recognition of costs for provision and use in the grid reserve was made for the following grid reserve plants in 2018:

- UPM Schongau
- GTKW Thyrow (gas turbines A-E)
- CHP plants Heilbronn 5 and Heilbronn 6

Determination on costs of standby lignite-fired power plants

In order to achieve national and European climate targets, some lignite-fired power plants have to be shut down, initially temporarily and then, once their period on standby has come to an end, permanently.

The decommissioning dates are laid down in law. The following plants went into standby by 1 October 2018: MIBRAG AG's plant in Lower Saxony (Buschhaus); RWE AG's Frimmersdorf Block P & Q and Niederaußem Block E and F; LEAG AG's Jänschwalde Block F.

The Bundesnetzagentur officially decided on the remuneration for the standby and decommissioning of the lignite-fired power plants Frimmersdorf P & Q and Buschhaus in 2018, while the other decisions are still outstanding. The plants have not been required.

Withdrawal of exemption authorisations pursuant to section 19 StromNEV

The European Commission Decision of 28 May 2018 ruled that the full exemptions from network charges granted in Germany in 2012 and 2013 on the basis of section 19(2) of the Electricity Network Charges Ordinance (StromNEV) at least partly constituted state aid in contravention of European law and had to be rescinded.

This affected over 200 cases under the responsibility of the Bundesnetzagentur and the state regulatory authorities with an annual volume of exemptions worth over €200m in total.

The repayment volume submitted and confirmed by the end of November amounted to about €150m, plus recovery interest amounting to about €8.6m. About €80m could already be taken into account with the effect of reducing the current section 19 surcharge. In 74 cases, recovery did not have to take place owing to the de minimis rule affecting recovery sums less than €200,000.

Abuse proceedings on avoided network charges for large-scale power plant

The Bundesnetzagentur made a decision on a special abuse case on 16 May 2018. In the case, RWE Generation SE was involved in a dispute with the distribution system operator Westnetz GmbH regarding a claim to avoided network charges for the coal-fired power plant Westfalen (Block E) in Hamm-Uentrop. It was decided that the network operator was right to refuse to pay avoided network charges, since in this form, this specific case did not constitute feed-in from a distributed

generating installation and the requirements of section 18 StromNEV did not apply. Court proceedings are pending.

Decisions on the distinction between network and customer facilities

Customer facilities within the meaning of the Energy Industry Act (EnWG) are facilities for the generation of energy in a spatially connected area. They are connected to an energy supply network or a generating installation and must be provided to connected final consumers at no charge and without discrimination. Moreover, customer facilities may not have a negative effect on competition in the supply of electricity and gas. Since no clear criteria were laid down in the law for the point at which the energy supply network ends and the customer facility begins, it was necessary to approximate this using legal interpretation.

In the past year, two Bundesnetzagentur decisions on the distinction between the network and customer facilities were supported and expanded by rulings of the Higher Regional Court (OLG). It found that the regulated network constitutes the standard situation and the non-regulated customer facility is the exemption. This principle applies equally to the criterion of insignificance to ensure effective and genuine competition in the supply of electricity and gas. The customer facility is an exception if it is of no significance to competition. The decisive point is whether the facility, on account of its size or its economic importance, is able to influence competition to such an extent that it must be subjected to regulation.

Setting the gas revenue caps

The third regulatory period for gas distribution and transmission system operators began on 1 January 2018 and will last until 2022. The Bundesnetzagentur first determined the base level by examining costs in accordance with the provisions of the GasNEV. The revenue caps for network operators using the simplified procedure were set in 2018, as were those for all transmission system operators except one. The Bundesnetzagentur's area of responsibility covers costs amounting to about €2.07bn for TSOs and €3.09bn for DSOs. These sums correspond to the amounts of the adjusted revenue caps in 2018 for network operators under Bundesnetzagentur responsibility, ie not including those under the responsibility of the federal states.

Adjustment of capital expenditure
The annual capex deduction, introduced in 2016, was applied by the Bundesnetzagentur for the first time in the course of its determinations of revenue caps for the third regulatory period for gas (2018 to 2022). For each year of the regulatory period, the capital expenditure resulting from the reduction in residual value over time is deducted from the capital expenditure calculated for the base year on the basis of the cost examination conducted in 2017.

The capex mark-up, which has the opposite effect, is designed as a yearly application procedure. Rising capital expenditure due to investments is then reflected in the annual revenue cap. In the second half of 2018, the Bundesnetzagentur decided on 153 applications for the 2019 capex mark-up for gas network operators under its responsibility.

Network transfers
When part of an energy supply network is transferred to another operator, the regulatory authority decides how the revenue cap for the network is to be split between the operators concerned.

In 2018, the first hearings were held for determinations on the splitting of revenue caps in disputed cases of network transfer, ie where the relevant network operators did not submit consistent applications. No final decision has yet been made on these disputes.

During the year, 20 consistent applications for the transfer of part of the revenue cap as the result of a network transfer were submitted. A total of 41 applications were decided on in 2018, including those from previous years.

Efficiency benchmarking
Once the cost examination had been carried out, the efficiency scores were determined. Various circumstances, some of them occurring simultaneously, led to delays in determining the revenue caps.

In particular, rulings by the Federal Court of Justice (BGH) in the course of 2018 made it necessary to recheck the model design and recalculate the efficiency scores for DSOs under the standard procedure. This process was completed by the end of the year and concluded that the original model was still preferable.

To determine the efficiency scores for the 16 German TSOs, the structural and cost data in the survey were first subjected to an intensive examination and plausibility check. The efficiency model identified and applied included the structural parameters of pipeline volume, corrected number of entry and exit points, surrounding surface and corrected compressor capacity. This was primarily a continuation of the model from the second regulatory period, with the addition of the compressor capacity. The average efficiency score of all TSOs was 98.06%, with 13 of the 16 achieving 100%. All revenue caps except one had been completed by the end of the year.[1]

Gas productivity factor
The general sectoral productivity factor (Xgen), which is part of the revenue cap, is determined from the divergence between productivity gain in the network industry and productivity gain in the economy as a whole and between cost price development in the economy as a whole and cost price development in the network industry. The effect of the Xgen is to correct general inflation and ensure that as a result of the simulation of competitive structures, productivity gains made in the network economy can be passed on to customers at an early stage.

The calculation of the Xgen has been the responsibility of the Bundesnetzagentur since the third regulatory period. Two methods – the Törnqvist index and the Malmquist index – are used in the calculation.

Owing to delays in the efficiency benchmarking as the basis for the Xgen calcuation using the Malmquist method, a final factor of 0.92% for gas supply network operators was not able to be calculated until early 2018. In view of the fact that this value is higher than the Xgen calculated using the Törnqvist method, the gas Xgen issued by way of a preliminary order was unchanged. The Xgen for operators of gas supply networks was therefore set at 0.49% for the duration of the third regulatory period in a decision dated 21 February 2018.

Regulatory account
Network operators applied for an adjustment of the revenue cap for the first time up until 30 June 2017 under the revised Incentive Regulation Ordinance (ARegV). The Bundesnetzagentur had already started considering applications from network operators in 2017 and continued this work in 2018. The examination focuses on the differences of the years 2012 to 2016 and the resulting regulatory account balance as of 31 December 2016, which is then spread out over each year up to the end of the third regulatory period.

Implementation of the network code on transmission tariff structures for gas

In 2017, the Bundesnetzagentur had already started to prepare the implementation of the Regulation establishing a network code on harmonised transmission tariff structures for gas, which entered into force on 6 April 2017. It initiated five determination proceedings in 2018:

- Determination regarding the reference price methodology and the other points listed in Article 26(1) of Regulation (EU) 2017/460 applicable to all transmission system operators operating in the NetConnect Germany/GASPOOL entry-exit system
- Determination regarding the calculation of tariffs for interruptible capacity, discount for LNG terminals, level of multipliers and seasonal factors
- Determination regarding the introduction of an effective inter-transmission system operator compensation mechanism within a market area

Furthermore, with the aim of harmonising specific rules for DSOs, the existing determination is to be adjusted with a new determination (requirements for converting yearly capacity prices into capacity prices for non-yearly capacity rights and requirements for appropriate arrangements for setting network tariffs). The necessary pre-consultation and final consultation processes were largely complete by the end of 2018, so the determinations will be issued in early 2019 and can be implemented by market participants in time for the entry into force on 1 January 2020.

[1] More information on the efficiency benchmarking for the gas TSOs may be found online at https://www.bundesnetzagentur.de/DE/ Sachgebiete/Elektrizitaetund-Gas/Unternehmen_Institutionen/Netzentgelte/Gas/ EffizienzvergleichFernleitungsnetzbetreiber/3RegPeriode/3RegPeriode_node.html

Implementation of virtual interconnection points pursuant to NC CAM

Pursuant to the Commission Regulation of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems (NC CAM), where two or more interconnection points connect the same two adjacent market areas, the TSOs concerned must offer the available capacities at the interconnection points at one virtual interconnection point (VIP) as of 1 November 2018 at the latest.

The Bundesnetzagentur closely monitored the process of implementing VIPs at the borders of the market areas in accordance with the conditions laid down in the NC CAM. It held numerous meetings with the TSOs responsible for each market area border and, in particular, explored individual questions arising during the implementation at each border. Legal uncertainty as to the interpretation of the relevant legal provisions led the Bundesnetzagentur to liaise intensively with market players at both national and European level.

The first VIPs were set up in time for the legal deadline of 1 November 2018, with others planned for the first half of 2019. The main reason for the delay in some implementations is the legal uncertainty mentioned above.

Regulatory support for the merger of the gas market areas

The TSOs and the Bundesnetzagentur agreed that the single German market area would come into effect on 1 October 2021. The market area merger is laid down in the 2017 amendment of the Gas Network Access Ordinance. The main aim of this legislation is to allow uniform reference pricing for the German natural gas market and to strengthen the German gas market as a whole by increasing liquidity. Moreover, the national merger is intended to pave the way for future European developments, which could include Germany being part of a cross-border market area.

Moreover, a Germany-wide market area manager will further simplify operational activities in future. At the same time, the Bundesnetzagentur initiated determination proceedings on standardising capacity products (known as KASPAR) with the aim of enabling efficient access to the entire market area by simplifying and standardising the rules for transparent capacity products as far as possible.

The Bundesnetzagentur is providing regulatory support to the market area merger process. The TSOs have pledged to inform market players about progress at regular intervals.

Federal Court of Justice confirms decision on waiting times under unbundling law

The Federal Court of Justice (BGH) confirmed two Bundesnetzagentur decisions on waiting periods under unbundling law. The Bundesnetzagentur had prevented two appointments of former managers of TSOs for the legally prescribed period of four years, one in which the manager was to move to a majority owner of the TSO and one in which the manager was to move to a vertically integrated energy utility located outside Europe.

The BGH confirmed that the waiting period rule can be applied regardless of whether the subsequent employment gives rise to specific potential for discrimination. The term "majority owner" is to be interpreted in a broad sense and includes indirect ownership structures. Moreover, the ruling on waiting periods is also to be applied to employment contracts concluded outside Europe.

Auctions under the Renewable Energy Sources Act (EEG)

The determination of the level of payments for renewable energy installations for solar, onshore wind and biomass power continued in 2018. Joint auctions for onshore wind and solar power were held for the first time.

Solar installations

The continual competitive pressure led to generally lower award prices in the three auction rounds carried out. Prices awarded have fallen by 29% since the auction process was introduced for all solar installations at the start of 2017. The maximum payment for new solar installations determined by the auction is 4.69 ct/kWh.

Onshore wind plants
Compared with the previous year's auctions, the results of the four rounds completed in 2018, without applying special rules to citizens' energy companies, were marked by reduced competitive intensity, higher award prices and far lower participation by citizens' energy companies. The average award price for the last round in October was 6.26 ct/kWh. In December 2018 the Bundesnetzagentur issued another determination that sets the highest bid price that can receive an award to 6.2 ct/kWh for the auction rounds in 2019. This is a response to the cost level for wind power plants and ensures that the defining feature of the 2018 auctions – the lack of competitive intensity – does not lead to award prices far exceeding generating costs in 2019.

Biomass plants
The annual auction for biomass plants was still significantly undersubscribed despite a clear increase in participation. The average volume-weighted price for winning bids was 14.73 ct/kWh.

Joint auctions for wind and solar plants
In April and November 2018, joint auctions for onshore wind plants and solar installations were held for the first time. These auctions featured the distribution network component, which takes account of the network and system integration costs incurred by the building of new solar installations and onshore wind plants. All the bids accepted in both rounds went to solar installations. The average, volume-weighted award price was 4.67 ct/kWh in April and 5.27 ct/kWh in November. The bids for onshore wind turbines were not competitive in these joint auctions.

Second auction for offshore wind farms

In spring 2018, the Bundesnetzagentur held the second auction for transmission links and remuneration for existing offshore wind farms.

A total of six bids won the award, taking into account the available auction volume of 1,610 MW and the free capacity of the transmission links. Three of the winning projects are in the North Sea and the other three in the Baltic Sea. The total awarded bid volume was 1,610 MW – the maximum amount. The average weighted award price in the second auction was 4.66 ct/kWh, higher than the 0.44 ct/kWh from the first auction. This result reflects the difference in the competitive situation compared with the first auction. For one thing, there were fewer bids submitted, because only existing projects that had not been successful in the first auction in 2017 were allowed to participate in the second auction. Moreover, individual transmission links were already taken up by bids awarded in 2017. Finally, unlike in the first auction, bids from offshore wind farms in the Baltic Sea were given priority.

Now that the second auction is finished, the transition phase in which a total of 3,100 MW was to be awarded to existing projects has come to an end. Offshore wind projects scheduled to start operations from 2026 will be awarded using the "central model".

Auctions for CHP installations

As well as the auctions for CHP installations, the first of which were carried out in 2017, the Bundesnetzagentur held two rounds of auctions for innovative CHP systems. While the CHP installation auctions were not very competitive, there was a slight rise in the volume-weighted award price, from 4.05 ct/kWh in December 2017 to 4.31 ct/kWh in June 2018 and finally to 4.77 ct/kWh in December 2018.

The auctions for innovative CHP systems were undersubscribed, so the volume-weighted award price was at the upper end. Innovative CHP systems, which are a combination of a CHP plant, an innovative renewable heat source and an electric heat generator, were the subject of auctions for the first time. The results indicate that the market has not really been opened up for such systems yet.

Feed-in management guidelines

Version 3.0 of the feed-in management guidelines was published in June 2018. The new version updated and expanded the guidelines, the purpose of which is to present the Bundesnetzagentur's basic understanding of the application of the feed-in management rules and to clear up practical questions and legal uncertainty as far as possible.

The most important change was the addition of information on the calculation of compensation payments for directly marketed renewable installations. An additional notice was published in October further expanding on some of the statements made in the guidelines about the compensation for directly market renewable installations.

Another main topic of the new guidelines is the application of feed-in management for CHP installations. The explanations provided are intended to reduce obstacles to the processing of feed-in management vis-à-vis CHP electricity generation.

Notice on tenants' electricity premium

The Bundesnetzagentur published a notice on the tenants' electricity premium, which is a special type of payment for electricity generated from solar installations pursuant to the EEG. It was introduced in July 2017. Operators of solar installations (< 100 kW) on residential buildings and first taken into operation after 24 July 2017 are entitled to the premium for electricity generated with these installations and supplied to the residents of the building.

The main aspects of the payments for tenants' electricity are explained in the notice, with a focus on the basic requirements that need to be met to claim this special type of payment for electricity from solar power. The notice serves as a guide both for installation operators who are going to become tenants' electricity suppliers and want to claim the premium, and network operators who have to check that requirements are met and pay out the premium. The aim is to ensure that the provisions are applied in a uniform manner and to be avoid legal uncertainty.

IT security requirements in the energy sector

In the interests of energy supply security, it is increasingly important that IT systems used are operated securely. The Bundesnetzagentur previously published an IT security requirements catalogue detailing minimum IT standards for secure network operation and aimed at electricity and gas network operators. Operators were able to finish implementing these requirements and obtain certification to show this in the course of 2018. At the end of the year, further IT security standards were laid down in a second IT security requirements catalogue that applies to the operation of certain types of energy installation, including all installations in the BSI Critical Infrastructure Ordinance (BSI-KritisV), in particular those greater than 420 MW as well as larger gas storage facilities and gas production facilities. The IT security requirements catalogue also includes a certification requirement and must be implemented by 31 March 2021.

Core market data register

More and more electricity is being supplied by smaller and smaller electricity generation installations, which are becoming increasingly integrated in the market. To ensure that this system works properly, it is necessary to have reliable plant data that can be used in a uniform manner by all market players.

It was not possible to provide data in a sufficiently high quality using the previous register, so the Bundesnetzagentur set up a new, comprehensive one known as the core energy market data register to make the electricity and gas market fit for the future.

The legal basis for the register is laid down in the 2014 Renewable Energy Sources Act (EEG). The new register has been up and running since the beginning of 2019 and permits operators of large and small installations to enter and update the relevant details in an up-to-date internet portal. The register can be accessed at *www.marktstammdatenregister.de*.

Suspected breaches in wholesale energy trading

The Bundesnetzagentur monitors the integrity and transparency of the wholesale energy market (REMIT) with a view to insider trading and market manipulation. It received 23 notifications of suspicious behaviour in 2018. Most of these came from the market monitoring bodies of the energy exchanges, although a few were made by brokers or disadvantaged market participants.

The number of suspected breaches reported has been rising steadily since 2012. The following diagram shows the number of cases of suspected breaches reported since 2012, divided into market manipulation and insider trading:

Suspected breaches 2012–2018[1]
Number

[1] as at: 28 December 2018

Insider trading usually refers to transactions concluded prior to the publication of power plant failures. Market manipulation includes cross-transactions and the placing of orders with no intention of executing them.

Twenty-four cases, some of which involve international cooperation, are currently being processed. Several administrative fines proceedings are pending in another case.

Interstate crisis management exercise (LÜKEX)

The Bundesnetzagentur played a decisive role in the interstate crisis management exercise (LÜKEX), which is designed to test and improve the strategic level of crisis management in Germany. About 2,000 people from federal and state government departments, higher federal authorities, critical infrastructure operators from the private sector and disaster prevention institutions took part in a gas shortage scenario.

The two days of the exercise in November 2018 centred around the emergency measures planned in the gas sector and the practicing of the Bundesnetzagentur's crisis management structures in its function as national supply coordinator pursuant to the Energy Security Act (EnSiG).

The exercise showed that, while the crisis management processes in the gas sector are already working well, there is a need to provide greater legal certainty and regulation. The intensive assessment will take place in 2019.

Gas deficit scenario – LÜKEX 2018

The Bundesnetzagentur played a decisive role in the interstate crisis management exercise (LÜKEX). The aim was to put crisis plans to the test and examine the communication channels and decision-making processes among all parties concerned.

The exercise took as its starting point a particularly long, cold winter in which technical, economic and climatic conditions led to a shortage of gas in southern Germany.

The two days of the exercise centred around the emergency measures planned in the gas sector and the practicing of the Bundesnetzagentur's crisis management structures in its function as national supply coordinator under the EnSiG.

The exercise showed that, while the crisis management processes in the gas sector are already working well, there is a need to provide greater legal certainty and regulation. The intensive assessment will take place in 2019.

Göttingen conference/Hanover conference

2018 legal conference in Hanover
As part of its anniversary year celebrations, the Bundesnetzagentur held a legal conference entitled "20 years of the Bundesnetzagentur – history, development and prospects of energy regulation" in the Altes Rathaus in Hanover. Keynote speeches by professor Thomas von Danwitz ("What is regulation anyway?") and professor Marc Oliver Bettzüge (on the changing regulatory requirements due to the German and European energy transition) led to lively debates. Speakers and participants from the public sector, business, law firms and the judiciary discussed regulatory discretion and scope for interpretation, transparency, and regulatory control through transparency and through the courts.

Tenth Göttingen energy conference on energy auctions
The specialist conference in the anniversary year of 2018 focused on auctions as the "multitool" of regulation and on the questions of how suitable they are to regulate the energy supply system and what needs to be looked at when designing an auction. Professor Achim Wambach delivered a keynote address on the role of auctions as a complement to or replacement for energy regulation. Other papers and expert discussions focused on experiences and perspectives of auctions for renewable energy and CHP installations, the European legal framework and ongoing legislative procedures, and the procurement of system services, in particular balancing energy to ensure a balance between generation and consumption in the electricity network. The 2019 conference will look at sector coupling and the role of network operators and will take place on 8 and 9 May 2019.

International cooperation

One of the decisive developments of 2018 was the introduction of a congestion management scheme for the German and Austrian wholesale markets on 1 October. The split was made necessary by the fact that in recent years, unlimited trading flows had no longer reflected the physical reality.

Clean Energy for all Europeans: development of the internal energy market

At the end of 2016, the European Commission presented a comprehensive package of legislation with the aim of further integrating the European single energy market. The Clean Energy for all Europeans Package (CEP) set the following goals:

- Energy efficiency must be the top priority
- The EU needs to take a leading role in renewable energy globally
- Consumer interests should be strengthened

Specifically, the Commission published the following legislative proposals:

- Revised Regulation (EU) No 714/2009 on conditions for access to electricity networks
- Revised Renewable Energy Directive 2009/28/EC
- Revised Internal Electricity Market Directive 2009/72/EC
- Regulation on measures to safeguard security of electricity supply (replaces Directive 2005/89/EC on Security of Supply)
- Revised ACER Regulation (EC) No 713/2009
- Revised Energy Efficiency Directive 2012/27/EU and Energy Performance in Buildings Directive 2010/31/EU
- Regulation on the Governance of the Energy Union

The CEP contains additional non-legislative documents, including a statement on energy innovation, a task plan for planned measures in the area of ecodesign for the period 2016 to 2019, a report on energy prices and costs as well as the report on the final result of the Sector Inquiry on Capacity Mechanisms.

Key events of 2018 were the debates on legislative proposals both in the European Parliament and in the European Council, and the subsequent trilogues. The upcoming European Parliament elections in May 2019 have increased the pressure to conclude the legislative proposal in this legislative period.

The Bundesnetzagentur has acted in an advisory function to the German government in the assessment of the legislative package and made suggestions for changes. It has also worked on positions in cooperation with other European regulators and ACER and put forward these positions to European institutions.

The CEP will introduce new regulation for central areas of the European internal electricity market. This includes provisions on the design of bidding zone configurations and the calculation of cross-border capacities. The Bundesnetzagentur argued for the single German bidding zone to be kept.

There will be new regulation of the increased cooperation between transmission system operators in regional coordination centres. In that context, the federal government believes it is important for system operations and responsibility to remain in the hands of TSOs.

Other key points are the priority access for renewables and the privileged treatment of self-consumption. The Bundesnetzagentur takes a critical view of the latter and is in favour of a restrictive treatment of such privileges.

Other questions in the CEP are those pertaining to the new actors proposed by the Commission, such as the design, composition and tasks of the so-called EU DSO Entity, the Active Consumers and the Renewable Energy Community.

There is also discussion still ongoing regarding the Commission's proposal to exclude power plants from participating in capacity markets if discharge of pollutants exceeds the level of 550 g CO_2/kWh. A further area of focus is the amendment of the ACER Regulation, which is mainly concerned with internal rules governing the balance of power between ACER Directors and the Board of Regulators. Each regulatory authority – including the Bundesnetzagentur – has a vote on the Board of Regulators.

Congestion management between Germany and Austria

One of the decisive developments of 2018 was the introduction of a congestion management scheme between the German and Austrian wholesale markets on 1 October. The split was made necessary by the fact that in recent years, unlimited trading flows had no longer reflected the physical reality.

The additional power lines planned between the two countries were still not enough to carry the flows of electricity. These trading flows would have had to be secured permanently using expensive system security measures and unplanned flows via neighbouring countries, but, in the long term, this situation neither makes economic sense nor is it permitted under energy law.

The congestion management scheme was the result of intensive talks between the between the Austrian regulatory authority E-Control and the Bundesnetzagentur, during which, in May 2017, the basic points of its implementation were determined in an agreement. A minimum capacity of 4.9 GW was set and secured by means of the provision of redispatching power plants with 1 GW (1.5 GW from October 2019) in Austria. The long-term transmission rights are issued as Financial Transmission Rights (FTRs) and the capacity calculation is carried out using the flow-based method of capacity calculation in the Central Western Europe (CWE) region. This method is the European target model and aims to distribute cross-border trading capacity among the individual borders in the best way possible.

The technical and IT-related implementation of the border in the CWE market coupling algorithm for the allocation of trading capacity went smoothly. The algorithm has been able to deliver a result within the calculation deadline at all times since 1 October. Cooperation on the project was exemplary and the CWE parties also provided support. Now that the congestion management scheme has been introduced on schedule, the number of critical network situations will be able to be reduced and network security in Germany will be improved. Moreover, it is expected that trading capacity at the other external borders will rise and unplanned flows will reduce.

Capacity in the trading direction Germany-Austria was auctioned for €0.88/MWh in October, while in November the price was €5.75/MWh. Capacity prices are currently falling. In December, the monthly auction led to a price of €3.82/MWh and 2,940 MW of yearly capacity for 2019 (60% of 4,900 MW) was traded at €3.33/MWh. The price for yearly capacity is within the expected range of between €1.5 and €3.5/MWh.

Forward capacity allocation

Regarding the implementation of the Guideline on Forward Capacity Allocation, further progress was made on the design of the methodologies, including the harmonised European methodology for sharing congestion income from forward capacity allocation.

The Europe-wide methods on data provision and common grid modelling were also completed and approved in 2018, as were the regional design of long-term capacities and their border-specific nomination rules.

Implementation of the CACM guideline (in particular XBID)

In 2018 the regulatory authorities and ACER issued approvals within the framework of the Capacity Allocation and Congestion Management Guideline (CACM GL). The guidelines on the coupling algorithms, the products to be taken into consideration and the necessary back-up measures, the timings for the opening and closing of intraday trading and the fallback procedures for capacity allocation were approved. These rules form the basis for the European single electricity market. A significant step was also the start of the cross-border intraday solution (XBID) on 12 June 2018. This couples the continuous intraday trading between Belgium, Denmark, Germany, Estonia, Finland, France, Latvia, Lithuania, Norway, the Netherlands, Austria, Portugal, Sweden and Spain, complementing the existing day-ahead market. The other countries will be added in a second batch in 2019. The coupling will improve efficiency in intraday trading to the benefit of all concerned.

Of particular relevance for the German market is the capacity calculation method for the Core Region, which is a further development of the flow-based method in the CWE region. This method includes the whole network in calculations, and not just individual cross-border lines, in calculations, allowing more transmission capacity to be made available for cross-border trade.

Work in the Core Region is being coordinated by a special joint working group with the participation of all the regulatory authorities and TSOs. The TSOs first put together a joint proposal for the capacity calculation method and presented it to the regulatory authorities in September 2017. Once the authorities had conducted a thorough assessment of the proposal, the first request for amendment was sent to the TSOs in March 2018 and they produced a revised version in June. The authorities discussed the matter in depth but did not come to an agreement, so in August 2018 the procedure was passed to the European Agency for the Cooperation of Energy Regulators (ACER).

Implementation of guideline on electricity balancing

In 2018, the Bundesnetzagentur participated in the development of a total of eight European proposals pursuant to the Regulation on electricity balancing by commenting on and assessing the proposals on which TSOs had consulted. At issue were product characteristics, pricing, harmonisation of settlement and the design of the European platforms for future cross-border access. There were additional national proposals for the further development of the national balancing energy market. The competent European regulatory authorities issued a request for amendment on the proposals for the further design of the primary reserve market in September, laying the groundwork for the approval in December 2018. Moreover, the Bundesnetzagentur worked on proposals from TSOs to lay the basis for a future joint, cross-border procurement of secondary control reserve in Germany and Austria.

System Operation/Emergency & Restoration

To implement the European guideline on electricity transmission system operation, TSOs have to develop various terms and conditions and methodologies with the involvement, and later the approval, of the relevant regulatory authorities. At the European level in 2018, these included key organisational requirements, roles and responsibilities in relation to data exchange related to operational security, methodology for building the common grid models, and methodology for coordinating operational security analysis and assessing the relevancy of assets for outage coordination. At the synchronous area level, the common proposal from TSOs for the determination of load-frequency control (LFC) blocks was approved and various other methodologies, conditions and values that have to be included in the operational agreements for the synchronous area or LFC blocks were developed. Moreover, the scope of data exchange with DSOs and significant grid users was determined nationally.

TSOs developed their system protection and restoration plans according to the network code on electricity emergency and restoration (including in consultation with the Bundesnetzagentur). Certain methodologies require the approval of the Bundesnetzagentur.

Introduction of CWE minRAM

A minimum remaining available margin of 20% ("20%minRAM") for the flow-based market coupling was introduced in the CWE region on 26 April 2018. That means that at least 20% RAM must be available for cross-border trade in electricity in each relevant line in the CWE flow-based system. The aim of this measure is to strengthen the cross-border electricity trade in the region. However, system security takes priority, so the measure can be suspended if the relevant TSOs determine that keeping 20% RAM available would lead to grid and system security problems.

Assistance for Belgium

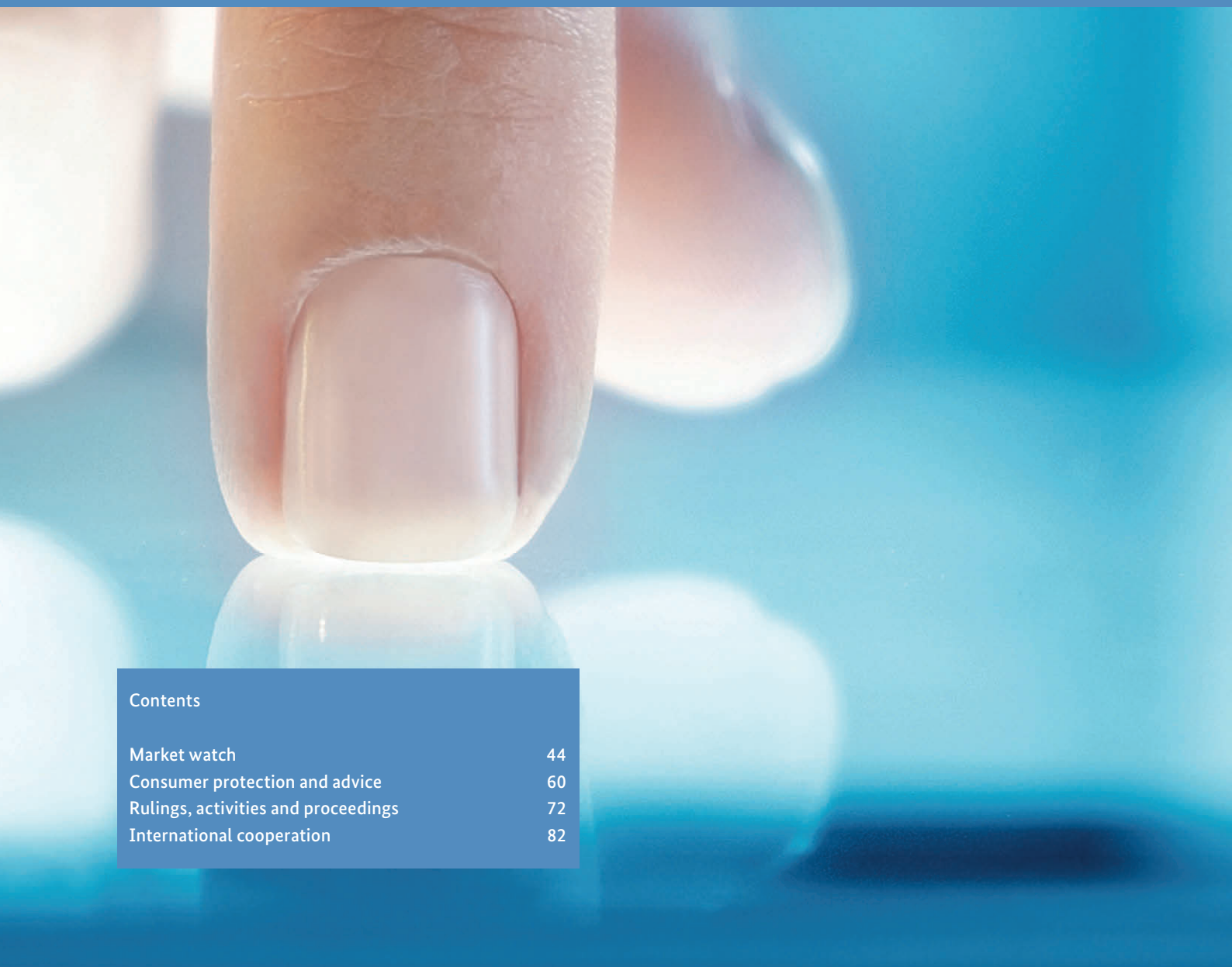
Belgium did not have enough of its own generating capacity for winter 2018/2019 and was therefore unable to cover its own electricity needs at all times. The main reason for this was the numerous unplanned outages of Belgium nuclear power plants in November 2018. The Belgium government therefore asked its neighbours for assistance. In a spirit of solidarity, the neighbouring European countries provided all the help they could to avoid blackouts. The Bundesnetzagentur was actively involved in this process along with the regulatory authorities, ministries and TSOs of the CWE region. It was agreed that the German TSOs would maintain 20%minRAM insofar as this was possible without jeopardising grid and system security. Belgian TSO Elia can provide notification of critical days in advance and ask the other CWE TSOs to make changes in their capacity calculation for day-ahead trading with the aim of increasing Belgium's imports (market measures). The other CWE TSOs consider whether this is possible while maintaining their own grid and system security. The agreement also increased volumes in intraday trading and cross-border cooperation between TSOs to coordinate grid and system security measures in near real time. The Bundesnetzagentur will continue to support future developments in grids and generation in Germany's neighbours.

Future Role of Gas (FROG)

With a view to the legislative package on gas planned by the European Commission for 2020, the Council of European Energy Regulators (CEER) is working on a position paper on a sustainable gas sector in an increasingly decarbonised energy market. The position paper is based on the Future Role of Gas (FROG) study published in March 2018, which discusses future challenges for the European gas network within the context of decarbonisation, and two thematic questionnaires. The questionnaires are directed at European regulatory authorities and market participants respectively. A consultation on CEER's final position is expected to take place around mid-2019. The Bundesnetzagentur is playing an important role in working out CEER's position in the Regulatory Gas Strategy Workstream. Taking part in regular discussions enables the Bundesnetzagentur to put its position across and take a key role in shaping results.

Shaping digital change

As the competent supervisory and competition authority, the Bundesnetzagentur creates reliable and future-oriented framework conditions at the regulatory level to enable market participants to invest in network rollout. It thus ensures the future viability of telecommunications infrastructures and lays the foundations for digitisation in Germany.



Contents

In 2018 the Bundesnetzagentur paved the way for the auctioning of 5G frequencies. The terms and conditions of award include requirements for better coverage in both urban and rural areas and measures to promote competition, including service provider regulations and national roaming requirements. Through the award of frequencies, the Bundesnetzagentur is creating planning and investment certainty and contributing to the fast, needs-based rollout of the mobile radio network in Germany.

In the first half of 2018 an escalation of the dispute concerning access to VHF antenna seemed likely. Threats were made to halt the transmission of VHF broadcast signals. The Bundesnetzagentur therefore held talks with the parties involved with the aim of finding an amicable solution. Under the guidance of the Bundesnetzagentur and former Federal Minister Friedrich Bohl, the parties found common ground, which eventually led to contractual agreements.

The Bundesnetzagentur received around 250,000 written consumer enquiries and complaints in connection with telecommunications. In the fight against unsolicited marketing calls, the number of complaints continued to rise, despite the Bundesnetzagentur having imposed the maximum fines in two major cases. The positive impact of the Bundesnetzagentur's work was reflected in the reduction in the number of complaints about "missed call" scams in 2018.

Market watch

Data volumes in fixed and mobile networks continued to rise sharply.

Since the introduction of the “roam like at home” mechanism, use of mobile services abroad has risen significantly.

Telecommunications markets as a whole

External revenue

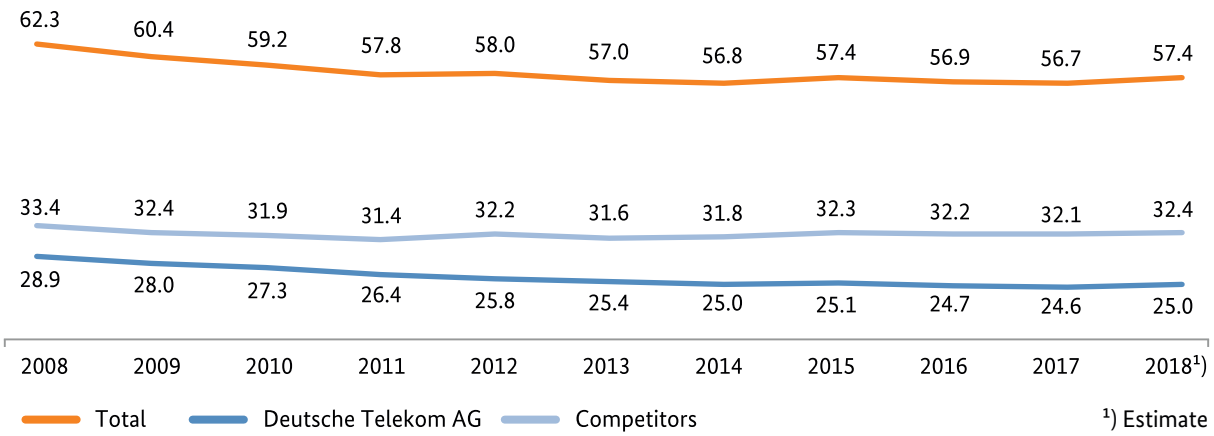
According to the Bundesnetzagentur’s preliminary calculations, external revenue in the telecommunications market amounted to around €57.4bn in 2018. This represents a year-on-year increase of €0.7bn.

A breakdown of revenue by providers shows that the revenue of both competitors and Deutsche Telekom AG (DTAG) increased in 2018. While the external revenue of competitors rose by €0.3bn year on year to €32.4bn in 2018, the external revenue of DTAG increased by €0.4bn to €25.0bn.

Competitors accounted for around 56% of external revenue in the telecommunications market in 2018 and DTAG for approximately 44%.

A breakdown of revenue by market segment shows that – as in the last two years – the largest share is attributable to mobile services. Accounting for 46%, preliminary findings suggest that the market share of mobile services was more than that of conventional telecommunications networks (37%). Owing to a steady rise in external revenue, the market share of HFC networks rose from 9% in 2016 to more than 10% in 2018.

External revenue in the telecommunications market
€bn



External revenue by segment	2016		2017		2018[1]	
	€bn	%	€bn	%	€bn	%
External revenue in the telecommunications market	**56.9**		**56.7**		**57.4**	
External revenue in conventional telecommunications networks	**21.96**	100	**21.65**	100[2]	**21.48**	100
Via retail	16.78	76	16.95	78	16.98	79
Via wholesale	4.60	21	4.41	20	4.25	20
Other external revenue	0.58	3	0.29	1	0.25	1
External revenue in HFC networks	**5.26**	100	**5.48**	100	**5.81**	100
Via retail	4.92	94	5.11	93	5.41	93
Via wholesale	0.07	1	0.09	2	0.10	2
Other external revenue	0.27	5	0.28	5	0.30	5
External revenue from mobile services	**26.46**	100[2]	**26.37**	100	**26.54**	100
Via retail (excluding terminal equipment)	18.65	70	18.82	71	19.33	73
Via wholesale	2.93	11	2.80	11	2.75	10
Via terminal equipment	3.20	12	3.38	13	3.38	13
Other external revenue	1.68	6	1.37	5	1.08	4
Other external revenue	**3.17**	100	**3.19**	100	**3.61**	100

1) Estimate

2) Totals may deviate from rounded cumulative figures.

Conventional telecommunications networks

In the conventional telecommunications networks segment, external revenue continued to fall slightly in 2018 according to currently available data, amounting to almost 1% less than in the previous year. Conventional telecommunications networks are networks based on copper and optical fibre cables.

External revenue in conventional telecommunications networks consists of revenue from retail and wholesale services and other external revenue. Revenue via retail is generated from services for private, commercial and public sector customers. According to the Bundesnetzagentur's estimates, it accounted for around 79% in 2018. Wholesale services for fixed-network and mobile operators and service providers outside of the DTAG group are expected to account for one fifth of external revenue. These services include wholesale products for voice traffic and telephony, broadband and internet, and infrastructure services.

HFC networks

The revenue of HFC (hybrid fibre-coax) network operators continued to grow. In 2018 it increased by 6% year on year to approximately €5.8bn, thus easily surpassing the growth rate of 4% achieved in 2017. The lion's share of this external revenue (93%) is likely to be attributable to retail. Wholesale business accounted just under 2%. The limited significance of wholesale business compared with the conventional telecommunications networks segment is probably due to the fact that HFC network operators do not offer any wholesale products that can be used by third parties to provide broadband connections.

Mobile services

External revenue from mobile services amounted to an estimated €26.54bn in 2018 and was therefore slightly higher than in 2017. According to the Bundesnetzagentur's estimates, 73% of this external revenue was attributable to retail business (excluding terminal equipment) and 10% to wholesale business. As in the previous year, revenue from terminal equipment accounted for an estimated 13%.

The distribution of revenue between mobile network operators and mobile service providers, based on the latest data, shows that the lion's share of this revenue (over 80%) was attributable to network operators. In 2018 they increased their share by one percentage point year on year to 82% thanks to increased external revenue. By contrast, slight revenue decreases for service providers led to their share falling to 18%.

External revenue from mobile services

	2016		2017		2018[1)]	
	€bn	%	€bn	%	€bn	%
Total	**26.46**	**100**	**26.37**	**100**	**26.54**	**100**
Network operators	21.44	81	21.25	81	21.66	82
Service providers	5.02	19	5.12	19	4.88	18

[1)] Estimate

Investments in fixed assets

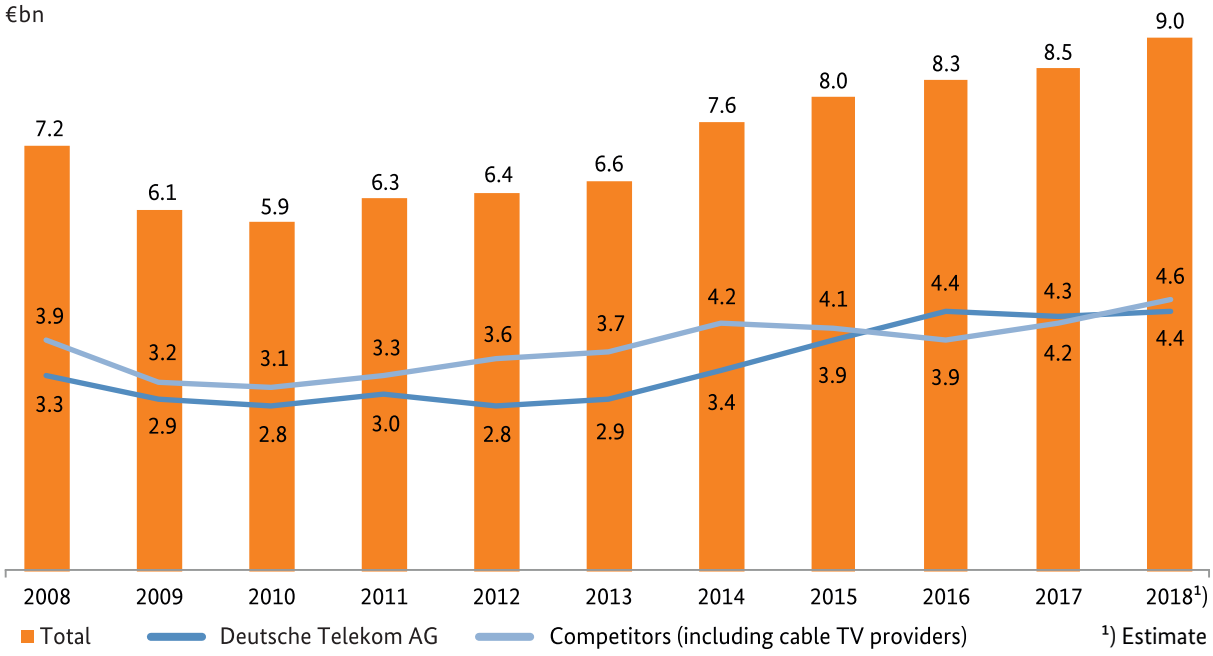
According to currently available data, investments in fixed assets in the telecommunications market increased once again to €9.0bn in 2018, thereby surpassing the 2017 level by €0.5bn (an increase of 5.9%).

This development was driven mainly by competitors. They invested €4.6bn in 2018 compared with €4.2bn in 2017. This represents an increase of 9.5% on the part of competitors, while DTAG's investments increased only slightly. It invested €4.4bn in 2018, an increase of €0.1bn (2.3%) compared with the previous year.

Companies invested primarily in new broadband network infrastructure.

This includes investments that create new opportunities in the areas of broadband coverage and bandwidths. According to currently available data, they accounted

Investments in fixed assets in the telecommunications market



for around 65% of all investments in 2018. Maintenance of existing broadband network infrastructure accounted for approximately 20% and other investments for around 15%. These encompass investments in subscriber terminal equipment, the expansion of data centres and investments in customer support.[1]

Competitors increased their share of total investments in the telecommunications market from 49% in 2017 to 51% in 2018. Conversely, DTAG's share fell from 51% in 2017 to 49% in 2018.

In the fixed network segment, investments concentrated on the rollout of optical fibre networks, the upgrading of cable networks and the changeover to IP-based networks. In mobile networks, the focus was on the rollout of LTE networks.

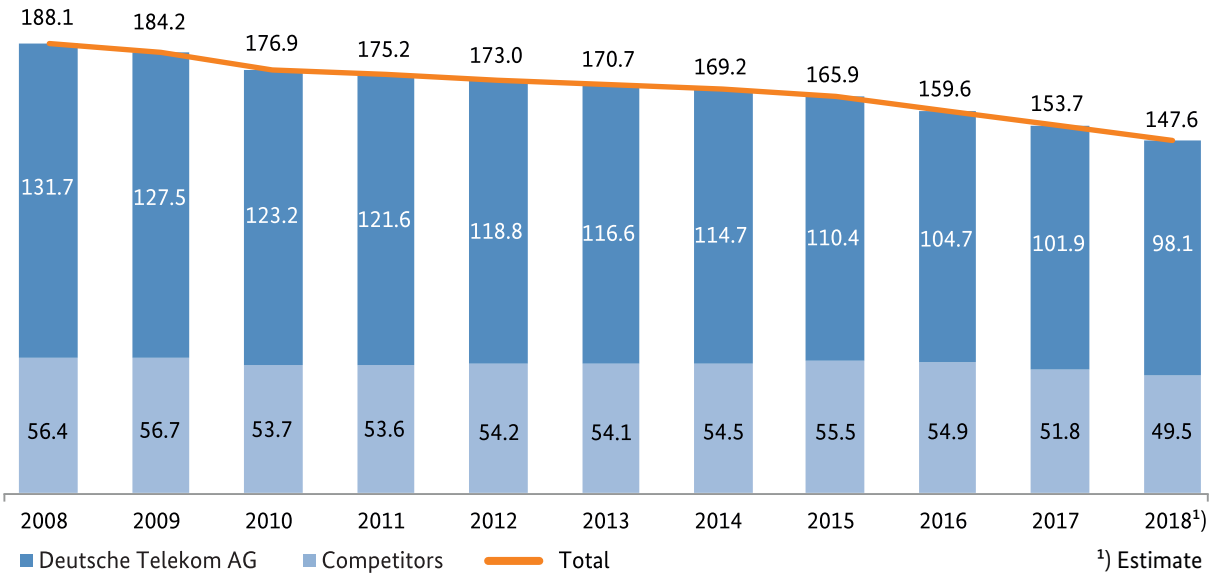
Since the market opened up in 1998 through to the end of 2018, companies have invested a total of €154.0bn in fixed assets in the telecommunications market. Of this amount, more than half (52%) is attributable to competitors (€80.1bn) and 48% (€73.9bn) to DTAG.

Employees

According to the Bundesnetzagentur's initial calculations, 147,600 people were employed by companies in the telecommunications market at the end of 2018. This is around 6,100 or 4% less than at the end of 2017. The staff numbers of both competitors and DTAG decreased in 2018 – by over 4% year on year to 49,500 in the case of competitors and by almost 4% to 98,100 in the case of DTAG.

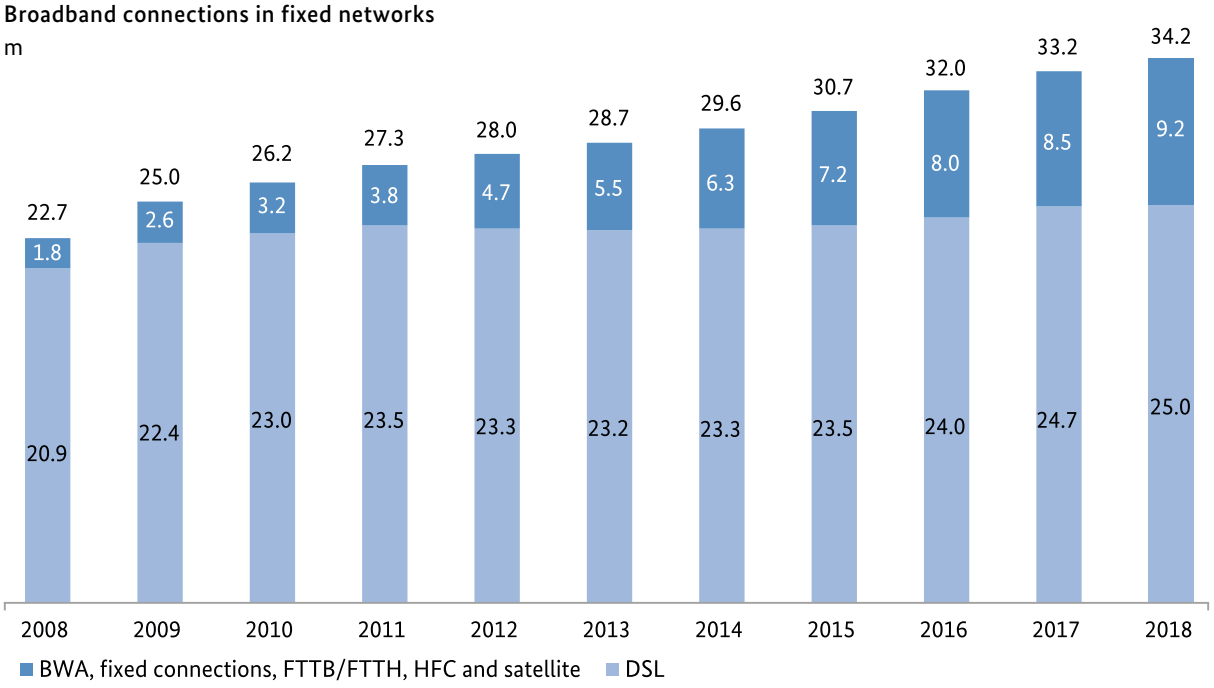
These developments have been influenced by two factors. First, companies are being forced to realise efficiency potential due to increasing competition. Second, recent years have been characterised by technological advances, the innovative potential of which is best realised in a competitive environment. The investments made have enabled the provision of more telecommunications services of a better quality by fewer employees. This increase in productivity is particularly marked in the telecommunications sector.

Employees in the telecommunications market
Thousand



[1] When interpreting the data, it should be noted that the assignment of investments to the categories "existing broadband network infrastructure", "new broadband network infrastructure" and "other" may have been subject to different interpretation by the companies surveyed in order to collect information for this report. In addition, not all companies were able to provide a breakdown of their data. These companies are not included in the calculation of shares.

Broadband connections in fixed networks



Fixed network

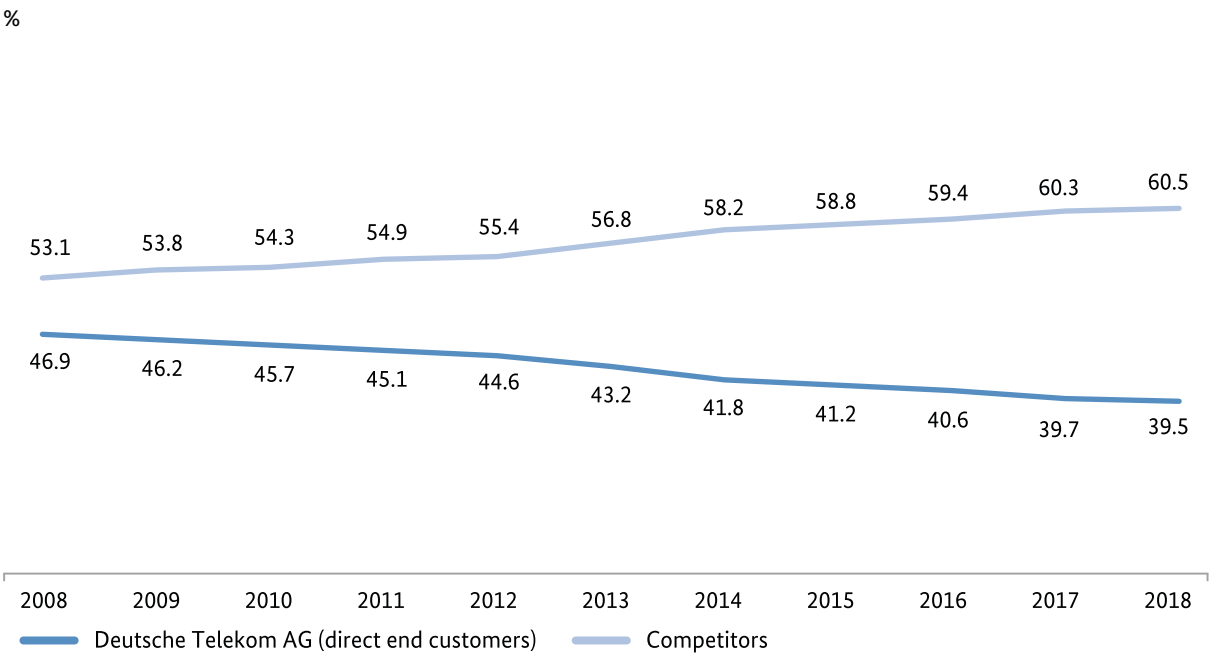
Broadband connections

The number of contractually agreed broadband connections increased by 3% in 2018, bringing the total to around 34.2m at the end of 2018.

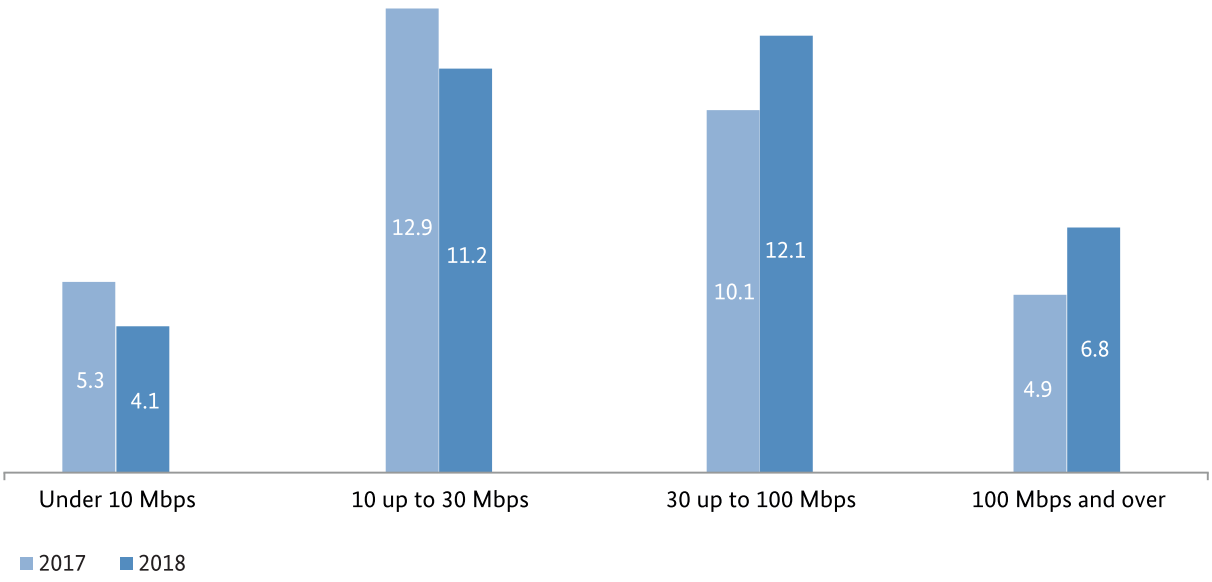
With a share of 73% (25m), the majority of broadband connections are based on various DSL technologies. Together, all other technologies accounted for approximately 9.2m connections. Most of these were based on HFC networks (around 8.0m), while approximately 1.1m were based on fibre-to-the-building (FTTB) or fibre-to-the-home (FTTH). Roughly 0.1m connections were broadband wireless access (BWA), fixed connections or satellite connections. DTAG's competitors were able to expand their share of the broadband market slightly once again.

With regard to retail business, competitors had achieved a market share of around 61% of all broadband connections by the end of 2018.

Share of fixed broadband



Advertised speed of contract-based fixed broadband connections
m



Transmission rates

In the broadband market, demand for connections with high nominal bandwidths increased. In relation to the total number of fixed-network broadband connections (34.2m.), the number of connections with speeds of at least 100 Mbps rose by around 39% year on year to approximately 6.8m at the end of 2018.

Some 4.1m broadband customers were still using connections with a nominal data rate of under 10 Mbps at the end of 2018.

DSL connections

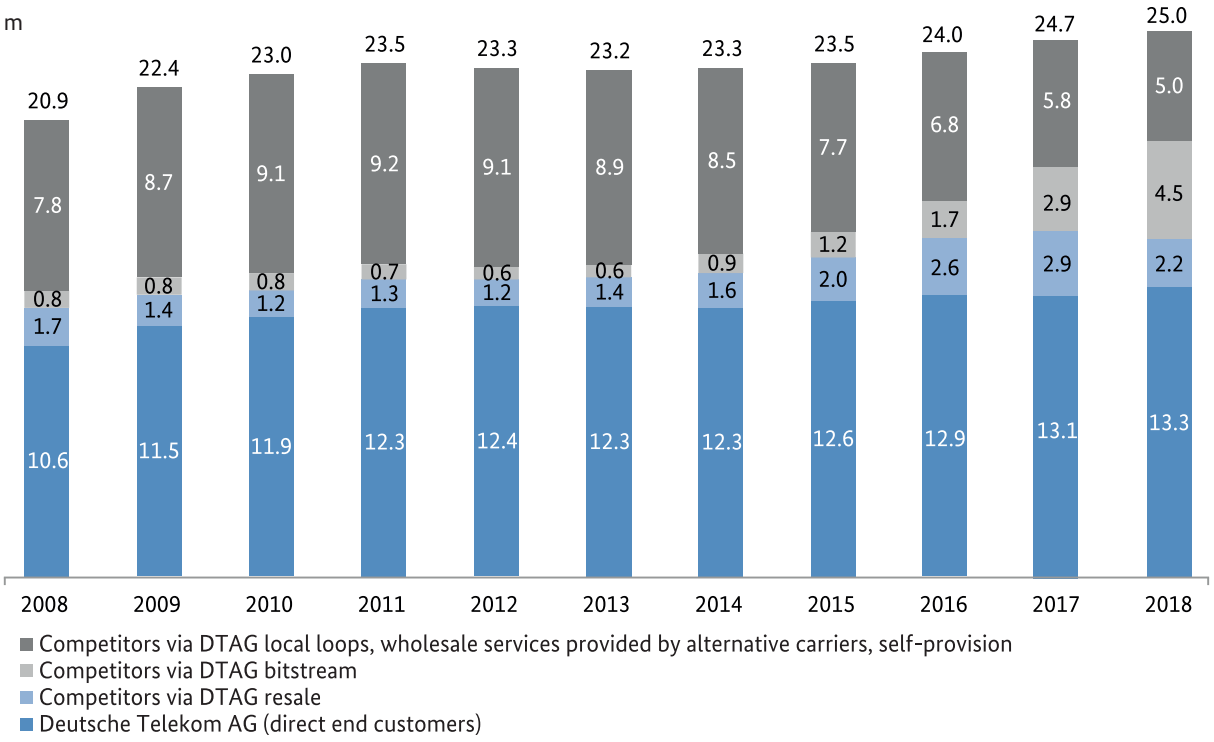
In total, there were approximately 25m operational DSL connections at the end of 2018, around 13.3m of which were attributable to direct end customers of DTAG and around 11.7m to competitors, which primarily marketed DSL connections to customers on the basis of the specific wholesale products of DTAG and alternative carriers. Based on these figures, DTAG's competitors had achieved a market share of around 47% by the end of 2018.

The growth of the DSL market is based chiefly on the positive development of the number of VDSL connections. With around 12.6m connections (2017: 9.9m), VDSL accounted for a share of around 50% of all DSL connections at the end of 2018. Around 5.5m VDSL connections were provided by DTAG's competitors and around 7.1m direct VDSL connections by DTAG.

The rise in the spread of VDSL is due mainly to vectoring technology, which currently enables transmission rates of up to 250 Mbps.

The increasing significance of VDSL was also reflected at the wholesale level. It led to a considerable rise in demand for specific DTAG VDSL wholesale products. Demand for bitstream wholesale products was especially high, with a year-on-year increase in the number of products sold of approximately 1.6m. This could be due partly to the fact that, in addition to the established layer 3 bitstream product, DTAG has been offering a layer 2 bitstream product since early 2017. By contrast, demand for DTAG's high bitrate, unbundled local loops fell further.

DSL connections



Broadband connections via HFC networks

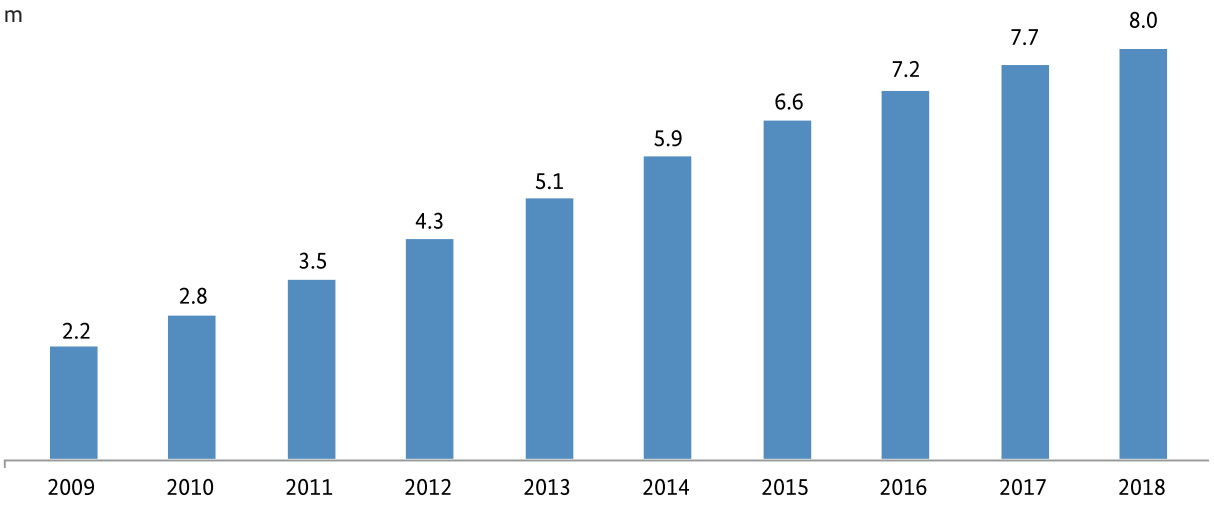
Using a combination of optical fibre and coaxial cables and the DOCSIS 3.0 transmission standard, HFC networks now enable broadband services with download speeds of up to 1 Gbps. While the annual increase in connections for cable network operators between 2009 and 2015 was between 600,000 and 800,000, growth has slowed since 2015. At the end of 2018 there were almost 8m connections via HFC networks. Of these, almost 4.4m (more than 50%) had delivering speeds of over 100 Mbps.

Broadband connections via FTTB/FTTH

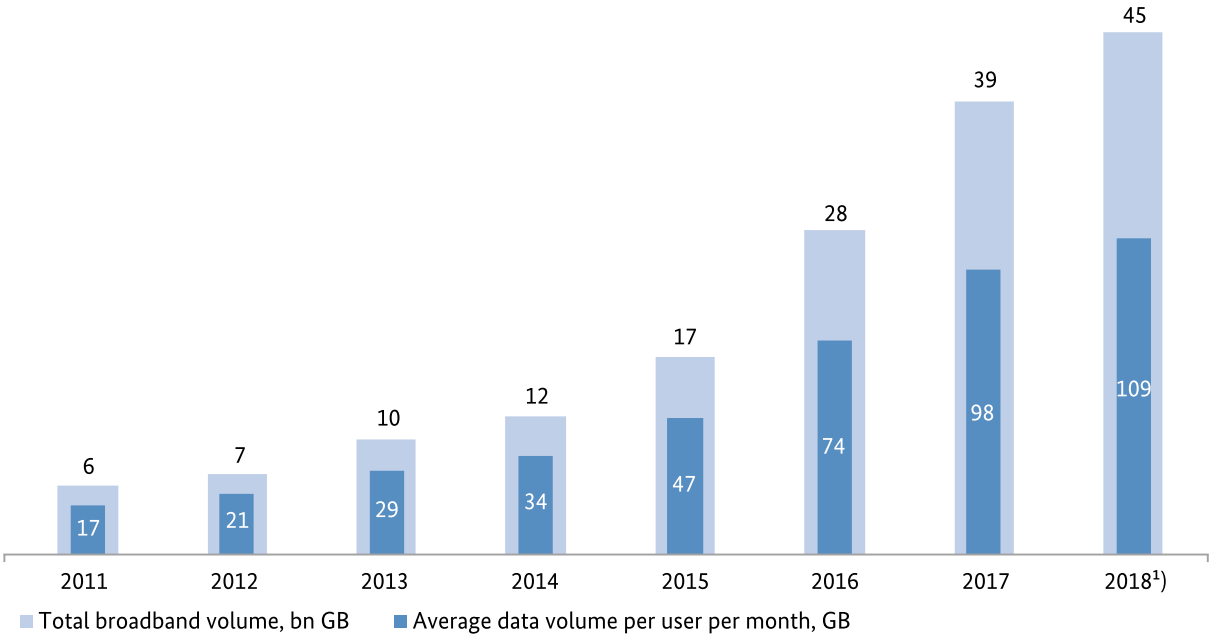
Thanks to their outstanding technical properties and the almost unlimited bandwidths these make possible, optical fibres are considered to be the ideal infrastructure for telecommunications. At the end of 2018 there were around 1.1m FTTB and FTTH connections.

With around 3.7m connections available to customers in mid-2018, the potential offered by this infrastructure is much greater than the demand. Nonetheless, the take-up rate has increased over the years.

Broadband connections via HFC networks



Broadband data volumes in fixed networks



¹) Estimate

While just 24% of available connections were in use in 2016, the take-up rate in 2018 was around 30% according to initial calculations.

Satellite broadband connections

Satellite internet connections can make a contribution to ensuring full broadband coverage in regions where other technologies are not, or not sufficiently, available. At the end of 2018 there were around 25,000 of these connections, which can be accessed from virtually any location. User numbers therefore continued to be low.

Data volumes

The data volume per fixed-network broadband connection[2] continued to rise sharply. While consumers generated a total volume of roughly 39bn GB in 2017, initial calculations suggest that they will generate around 44bn GB in 2018. This would correspond to an average data volume per connection per month of around 109 GB.

Bundled products

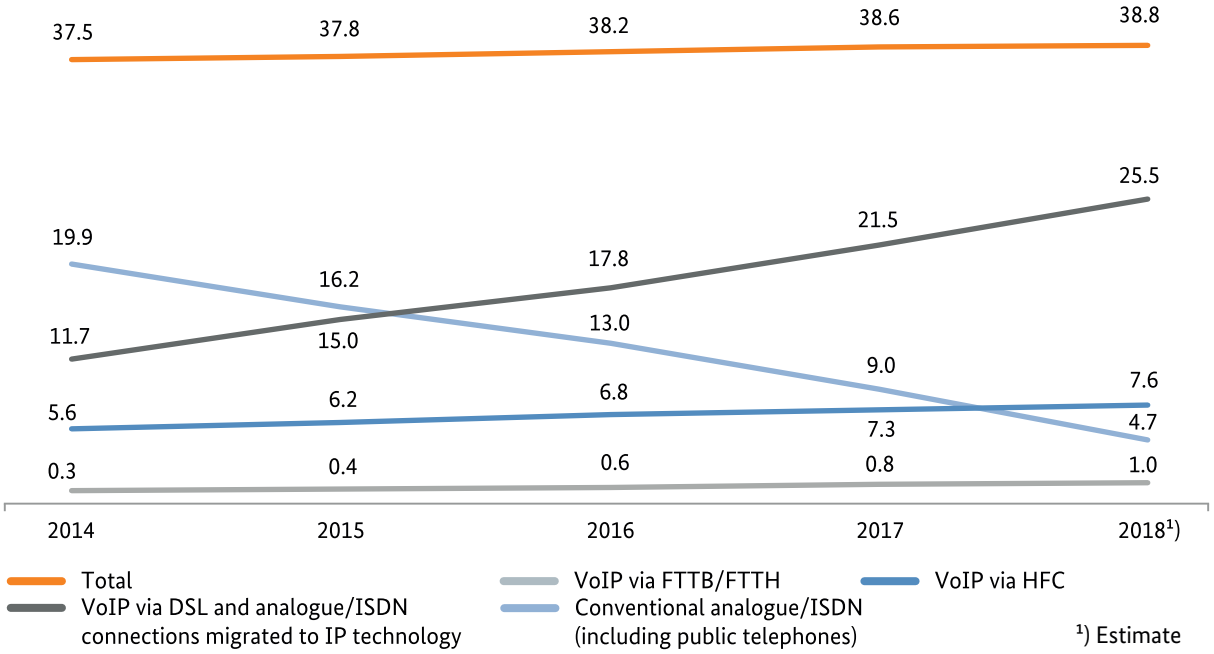
Bundled products which, in addition to a broadband connection, include at least one other telecommunications service (fixed-network telephony, TV or mobile services[3]) in a single contract are now offered as standard by companies in their marketing to end customers. In many cases, it is no longer possible to purchase these services separately. Consumers who enter into a fixed-network and mobile contract with the same provider can also take advantage of additional discounts and exclusive offers by bundling the two contracts in special advantage programmes. By offering such measures, providers are seeking to increase customer loyalty to their products.

At the end of the first half of 2018 DTAG and its competitors were providing more than 32m bundled tariffs and advantage programmes. Accounting for 21.4m customers, bundled products with two services were by far the most common of these. The majority of these bundled products consist of an IP-based telephone service in addition to a broadband connection.

[2] The traffic volumes shown do not include data volumes from DTAG's internet-based TV service (a closed data network).
[3] No distinction is made between mobile voice and mobile data services.

Total number of telephone connections

m



At the end of the second quarter of 2018 around 9.3m customers had bundled products consisting of three services. Approximately 68% of these consisted of a broadband connection, a telephone service and a TV service, while roughly 32% had a mobile component instead of a TV service.[4]

The distribution of bundles with four products increased in the reporting period. By mid-2018 these integrated fixed-network and mobile packages were being used by around 1.6m customers (end of 2017: approximately 1.4m).

Telephone lines and IP-based voice services – competitors' shares

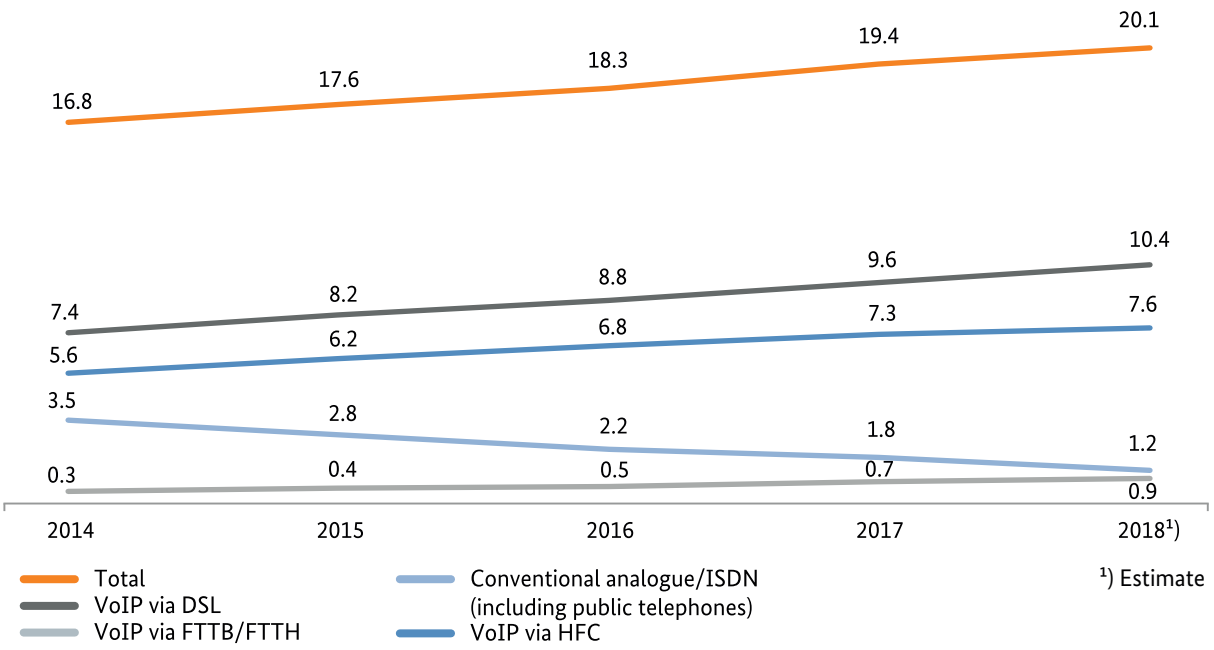
	2016		2017		2018[1)]		
	Total stock	Competitors' share	Total stock	Competitors' share	Total stock	Competitors' share	
	m	%	m	%	m	m	%
Analogue lines[2)]	**8.20**	8.0	**5.60**	8.8	**2.69**	0.28	10.4
ISDN basic rate lines[2)]	**4.70**	33.0	**3.32**	37.3	**1.89**	0.89	47.1
ISDN primary rate lines[2)]	**0.086**	34.9	**0.084**	35.7	**0.079**	0.03	38.0
Public telephones	**0.025**	4.0	**0.022**	4.5	**0.018**	0.001	5.6
VoIP via HFC	**6.81**	99.9	**7.26**	99.9	**7.63**	7.61	99.7
VoIP via FTTB/FTTH	**0.559**	89.4	**0.825**	88.0	**0.991**	0.852	86.0
VoIP via DSL[3)]	**17.77**	49.5	**21.50**	44.7	**25.52**	10.42	40.8
Total connections	**38.15**	48.1	**38.61**	50.1	**38.82**	20.08	51.7

[1)] Estimate [2)] Conventional telephone lines [3)] Including analogue/ISDN lines migrated to IP technology

[4] The findings cannot be compared with previous publications due to differences in the classification by surveyed companies of customers with advantage programmes.

Telephone connections from alternative subscriber network operators

m



Telephone connections

The changeover to Voice over Internet Protocol (VoIP) in fixed networks is progressing well. The last few years have seen contrasting trends in voice communication using conventional telephone lines on the one hand and IP-based voice services on the other.

The use of IP-based voice services has increased to the detriment of conventional telephone lines. Overall, demand for voice communication services from fixed networks rose slightly in 2018 compared with the previous year.[5]

At the end of 2018 the Bundesnetzagentur estimates that there were around 25.5m fixed-network DSL lines used for VoIP and analogue/ISDN connections that had been migrated to IP technology. The number of HFC connections used for telephony increased to approximately 7.6m. By the end of 2018 the number of voice lines in optical fibre networks had also risen to approximately one million. At the same time, the number of conventional fixed-network analogue lines, ISDN basic rate lines and ISDN primary rate lines fell to around 4.7m. These lines are gradually being replaced by IP-based technologies, which now account for an estimated 88% of connections. The total number of public payphones (coin- and card-operated) stood at around 18,000 at the end of 2018.

DTAG's competitors had an estimated 20.1m telephone lines and access points to IP-based voice services at the end of 2018. While the number of analogue and ISDN basic rate lines provided by alternative subscriber network operators decreased further, their share of IP-based voice services continued to rise.

Relative to the number of fixed-network telephone connections provided by DTAG's competitors, the share of DSL lines for VoIP – analogous to broadband connection numbers – also surpassed the share of voice lines in HFC and optical fibre networks in 2018. Overall, an estimated 94% of all competitors' lines were based on IP technologies at the end of 2018. For alternative subscriber network operators, conventional telephony via analogue and ISDN lines is now of little relevance.

[5] DSL lines used for VoIP and analogue/ISDN connections that had been migrated to IP technology are presented together. In addition, the number of VoIP connections via DSL provided by alternative subscriber network operators in 2014 and 2015 has been revised compared with the previous year's report.

The fixed-network voice communication services of alternative subscriber network operators were operated primarily on the basis of contracts on access to the DTAG local loop, or using the alternative providers' own local loops.

Call minutes in fixed networks

The volume of call minutes[6] within conventional telephone networks (analogue/ISDN) and IP-based fixed networks continued to decrease. According to the Bundesnetzagentur's estimates, the volume of outgoing call minutes in fixed networks totalled approximately 107bn minutes in 2018.

This decrease is likely to be due to, among other things, the increasing use of internet-based mobile communication services and, to some extent, to a shift in calls to mobile networks.

Calls within German fixed networks amounted to an estimated 91bn minutes in 2018. According to an initial forecast, around 82% of these were billed via flat rates. In addition, calls to national mobile networks accounted for just under 9bn minutes (around 25% flat rate) and calls to foreign fixed and mobile networks for an estimated 7bn minutes.

In total, around 53.2bn call minutes had been handled by DTAG's competitors by the end of 2018. The majority of these calls (45.3bn minutes) were made via IP-based networks. The volume of calls (4.7bn) made via conventional lines continued to fall.

Due to, among other things, DTAG's ongoing switch to IP-based network technology, this trend was also increasingly evident at DTAG. At the end of 2018 around two thirds of the 54bn call minutes handled by DTAG were handled via IP technology.

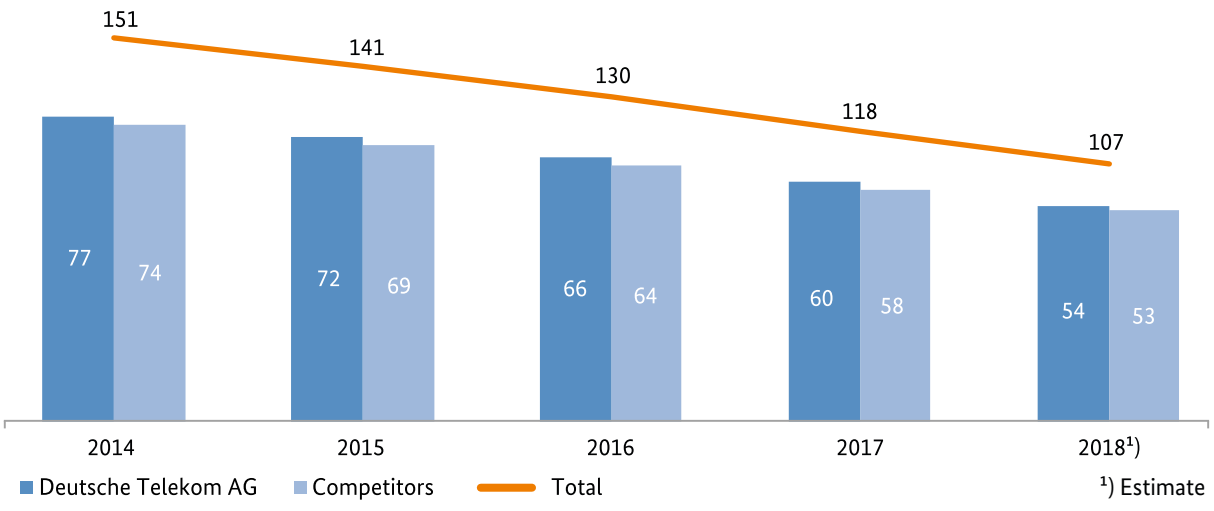
The Bundesnetzagentur estimates that around 76% of all calls – ie over three quarters of all call minutes within fixed networks – were being handled via IP technology by the end of 2018.

Based on initial forecasts, indirect call-by-call and preselection calls handled by alternative providers accounted for a total of 3.2bn minutes – or 6% – of all calls handled by competitors at the end of 2018. Despite a decrease in the number of lines with preselection in the DTAG network, preselection call volumes exceeded call-by-call.

With regard to individual call segments, the Bundesnetzagentur estimates that DTAG's competitors were able to maintain their shares of domestic calls, calls to foreign fixed and mobile networks and calls to national mobile networks.

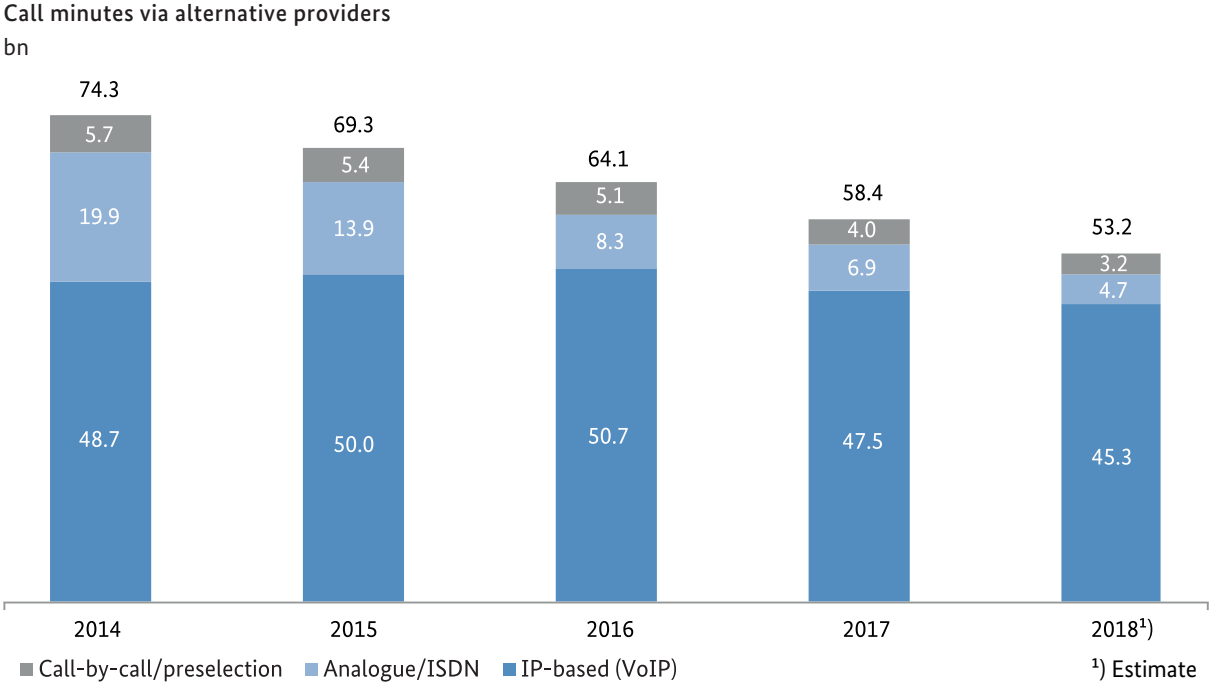
Outbound fixed call minutes

bn



[6] Calls within Germany, international calls, and calls to German mobile networks.

Call minutes via alternative providers



In general it should be noted when interpreting the above-mentioned call minutes that certain traffic volumes are not currently included in the Bundesnetzagentur's database.

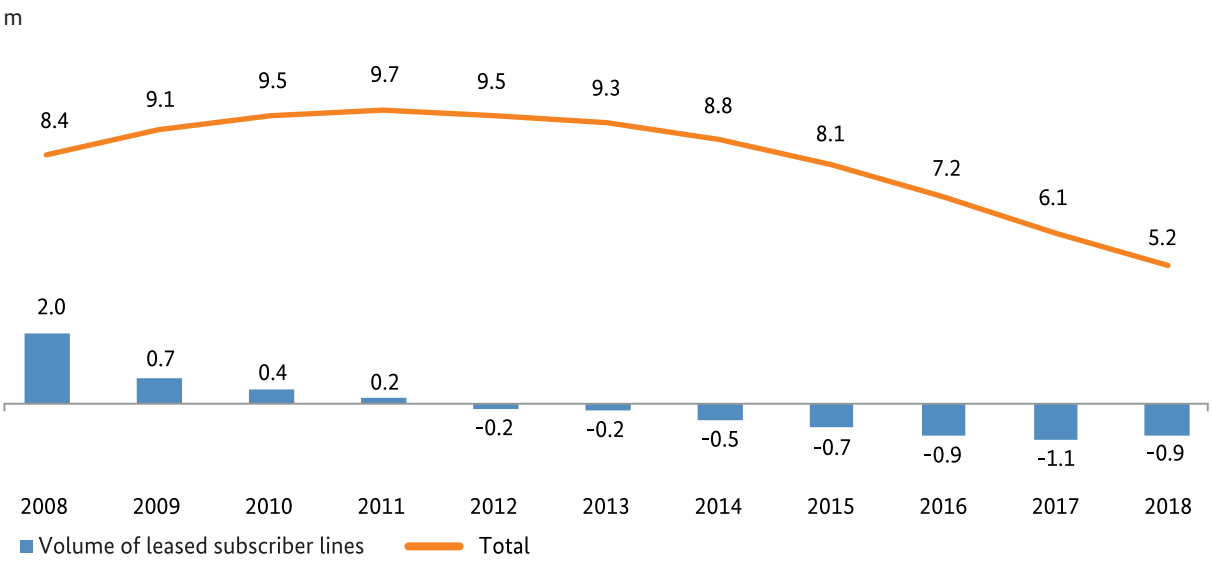
These primarily include voice transmission by over-the-top providers that do not operate their own fixed-network lines or telecommunications networks and that offer internet-based services independent of available network infrastructure (eg DSL, HFC or optical fibre).

Subscriber lines

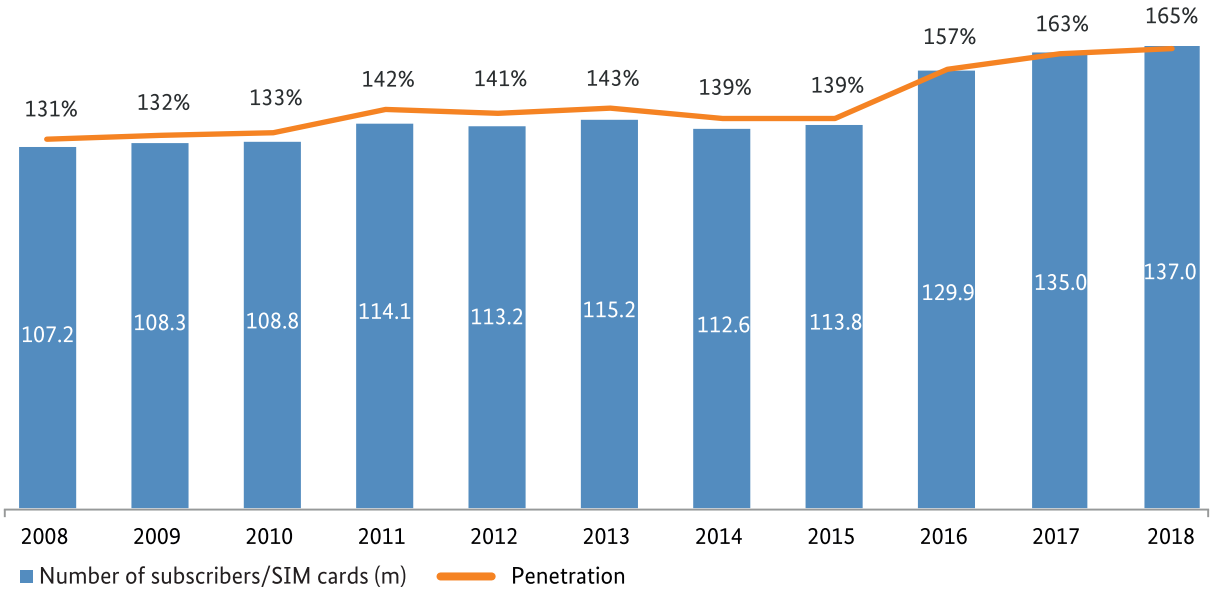
The number of local loops leased by DTAG's competitors in 2018 fell again by 0.9m or 15% year on year.

In total, around 5.2m local loops were being leased at the end of 2018. The decline in the significance of local loops as a wholesale product is likely to be due mainly to the shift in demand for wholesale services to DTAG's special VDSL bitstream wholesale services. Alternative providers are also increasingly migrating their end customers to optical fibre lines they operate themselves.

Volume of leased subscriber lines



Subscribers and penetration in mobile communication networks



Mobile communications

Subscribers

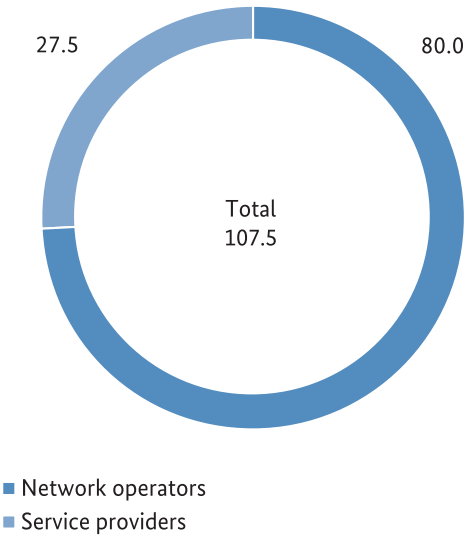
At the end of 2018 there were 137.0m SIM cards activated by network operators, including M2M and IoT (Internet of Things) cards (end of 2017: 135.0m).7 Some 23.1m of these SIM cards were being used for data communication between devices (M2M) (end of 2017: 17.6m).

Statistically speaking, each inhabitant has around 1.7 SIM cards. However, the use of two or three devices means that these devices are not in constant use. If only active SIM cards are taken into account, the actual number is lower. SIM cards are defined as active if they have been used for communication in the last three months or if an invoice has been generated for the SIM card in this period. On this basis, data collected by the Bundesnetzagentur suggest that there were 107.5m active SIM cards at the end of 2018 (end of 2017: 109.7m). M2M and IoT cards are not included in these figures. Of the total number of active SIM cards, 25.6% were attributable to service providers.

Around 1.1m SIM cards were used at a fixed location. The number of LTE SIM cards in active use had increased to around 50.5m by the end of 2018 (end of 2017: 44.9m).

Active postpaid cards accounted for a share of 65% at the end of 2018 compared with 64% in the previous year.

Actively used SIM cards in 2018
m

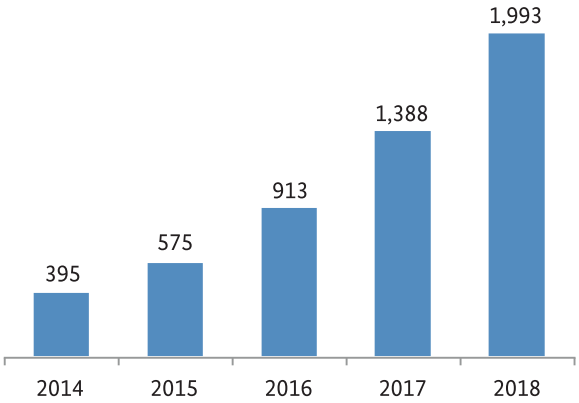


Traffic volumes and usage

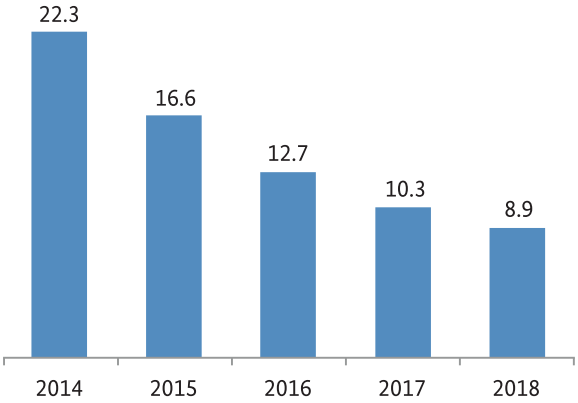
Mobile broadband

Mobile data volumes increased significantly once again. In 2018 1,993m GB of data were transmitted via mobile communication networks. This represents an increase of 44% compared with the previous year (2017: 1,388m GB).

Mobile data volumes
m GB

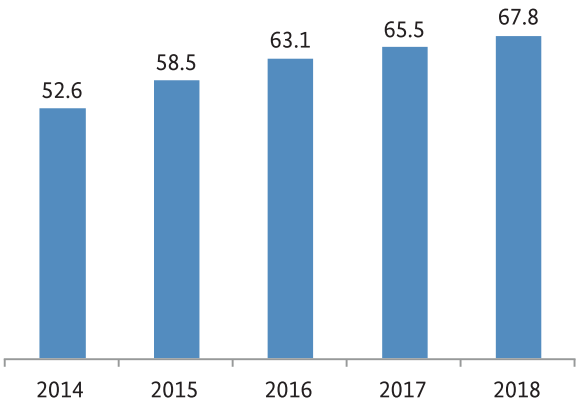


SMS messages sent
bn



In order to use mobile data transmission services, the number of SIM cards being employed in UMTS- and LTE-enabled devices had risen once again to 67.8m at the end of 2018 compared with 65.5m in 2017.

Number of regular UMTS and LTE users
m



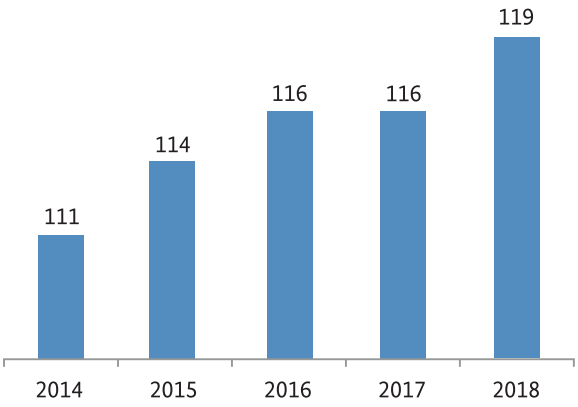
SMS messages

The decline in the use of the Short Message Service (SMS) continued in 2018. The number of SMS messages sent fell to 8.9bn in 2018 compared with 10.37bn in 2017. An average of around five SMS messages were sent per SIM card per month. Traditional SMS messages are increasingly being replaced by messaging apps.

Call minutes

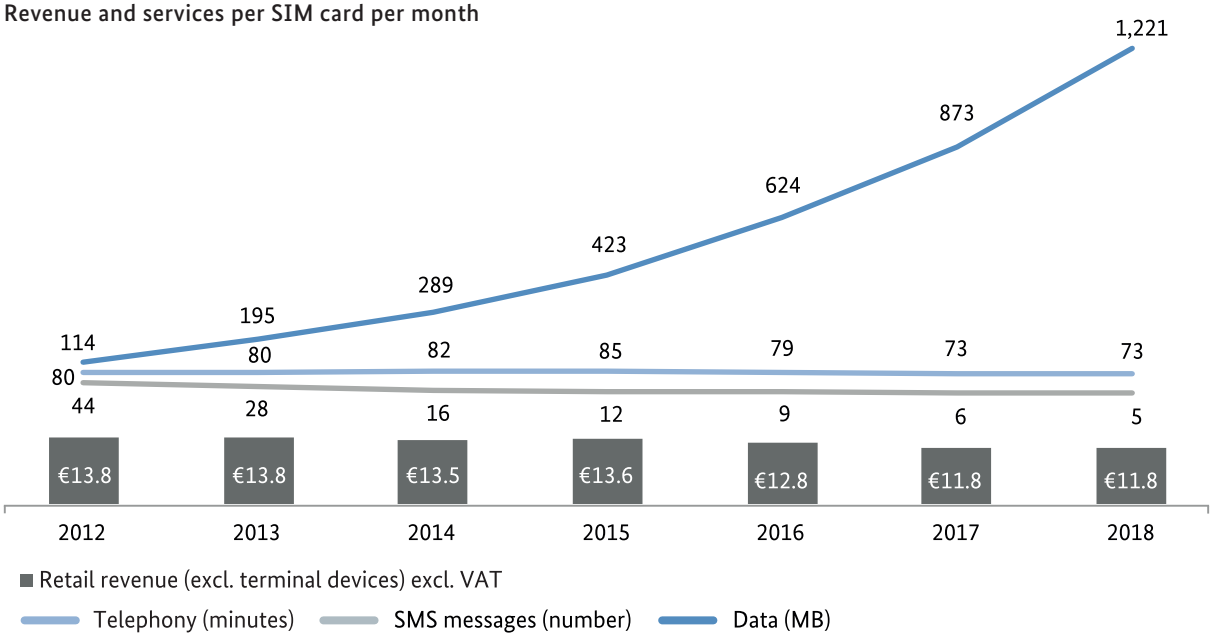
Almost 119bn minutes of outgoing calls were made by mobile subscribers in Germany in 2018. For the first time, the volume of calls in mobile networks surpassed that in the fixed network. The prevailing trend towards an increase in the number of call minutes therefore continued.

Outbound mobile call minutes
bn



In 2018 monthly revenue (excluding terminal equipment and VAT) per registered SIM card was around €11.84. The average data volume included in this amount has increased more than tenfold since 2012.

Revenue and services per SIM card per month



International roaming

Since the introduction of "roam like at home", which allows consumers to use their domestic mobile plan on equal terms in other EU countries, the use of mobile services has increased considerably. While outgoing call minutes in other EU countries increased by 14% year on year from 2,557m in 2017 to 2,908m in 2018, the volume of data generated abroad almost doubled from 33.8m GB to 66.4m GB. However, the number of text messages sent in other EU countries followed the general downward trend in SMS use, decreasing by 14% year on year from 320m in 2017 to 276m in 2018.

Infrastructure and network coverage

The LTE rollout continued at a brisk pace. At the end of 2018 there were 54,911 LTE base stations (2017: 48,146).

LTE network coverage in relation to the population at the end of 2018 was 98% for DTAG, 93% for Vodafone and 88% for Telefónica Germany. For all providers, this represents an increase compared with the previous year.

In relation to households, LTE availability in mid-2018 was 97.5% for bandwidths from 2 Mbps and 95.2% for bandwidths from 6 Mbps according to the federal government's broadband atlas.[7]

By comparison, a survey published by the European Commission[8] at the end of June 2017 reported that LTE network coverage in Germany was 96.5% in relation to households.[9] The survey covered all 28 EU member states plus Norway, Switzerland and Iceland. Of these, network coverage was over 96% in 27 countries. LTE network coverage in Germany was therefore comparable with similar countries at that time. The average LTE network coverage in relation to households for all 28 EU member states was 97.9%.

[7] See https://www.bmvi.de/DE/Themen/Digitales/Breitbandausbau/Breitband-atlas-Karte/start.html
[8] See https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017
[9] The growing number of households in Germany has a partially offsetting effect on the LTE network coverage figures collected at various times.

Key figures and competitors' shares

The following table provides an overview of selected key figures and competitors' shares in the telecommunications market for the period from 2016 to 2018.

Key figures	2016	2017	2018
Revenue (€bn)	56.9	56.7	57.4 [1]
Investments (€bn)	8.3	8.5	9.0 [1]
Employees	159.600	153.700	147.600 [1]
Total fixed broadband connections (m)	32.0	33.2	34.2
– DSL	24.0	24.7	25.0
– HFC	7.2	7.7	8.0
– FTTB/FTTH	0.6	0.8	1.1
– Other	0.2	0.1	0.1
Broadband penetration rate (% of households) [2]	79	82	84
Total telephone connections in fixed networks (m)	38.2	38.6	38.8 [1]
– Conventional analogue/ISDN (including public telephones)	13.0	9.0	4.7 [1]
– VoIP via DSL and analogue/ISDN lines migrated to IP	17.8	21.5	25.5 [1]
– VoIP via HFC	6.8	7.3	7.6 [1]
– VoIP via FTTB/FTTH	0.6	0.8	1.0 [1]
DTAG leased subscriber lines (m)	7.2	6.1	5.2
Mobile subscribers (SIM cards in m) [3]	129.9	135.0	137.0
Mobile penetration rate (% of inhabitants) [3] [4]	157.4	163.1	165.1

Competitors' shares %	2016	2017	2018
Revenue	57	57	56 [1]
Investments	47	49	51 [1]
Fixed broadband connections	59	60	61
DSL	46	47	47
Telephone connections in fixed networks	48	50	52 [1]

[1] Estimate
[2] Number of households according to Eurostat
[3] According to network operators' publications
[4] Number of inhabitants according to the Federal Statistical Office

Consumer protection and advice

The Bundesnetzagentur received around 250,000 consumer enquiries and complaints in connection with telecommunications in 2018. In the fight against unsolicited marketing calls, the number of complaints continued to rise despite the Bundesnetzagentur having imposed the maximum fines in two major cases.

The positive impact of the Bundesnetzagentur's work was reflected in the decrease in the number of complaints about "missed call" scams at the end of 2018. Here, the Bundesnetzagentur ordered the activation of a free price indication service for certain international area codes in mobile networks.

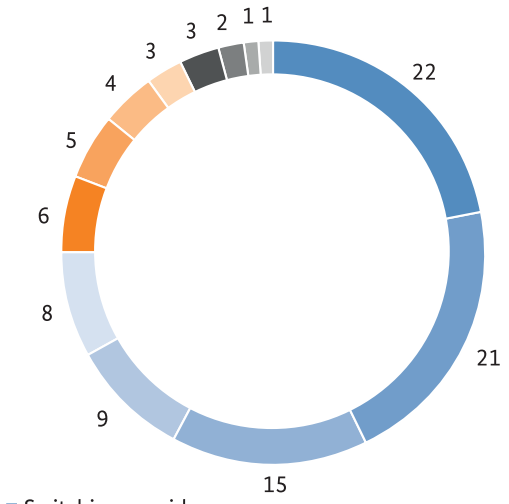
General consumer enquiries and complaints

The Bundesnetzagentur's consumer advice service has been involved in protecting consumers in conflicts with telecommunications providers and network operators and in questions relating to the telecommunications market for 20 years.

In 2018 it received around 46,000 written complaints and enquiries (including follow-up enquiries) in connection with telecommunications. Consumers were able to engage directly with employees of the Bundesnetzagentur's consumer advice service at the German Federal Ministry for Economic Affairs and Energy's open day in mid-2018.

Main subjects of enquiries and complaints in connection with telecommunications

%



Once again, many consumer enquiries in 2018 related to switching providers. Consumers mainly contacted the consumer advice service due to lengthy disruptions to their service or in cases where they were unable to take their existing number to a new provider.

One in five enquiries related to a complaint about the conclusion, amendment or termination of a telecommunications contract. Consumers criticised delays in the implementation of contractual agreements or the failure to implement such agreements. Specifically, consumers wanted to explore the options available to them for cancelling contracts early or for amending contracts.

A frequent source of complaint was the poor quality of customer service from telecommunications providers, particularly insufficient availability, the need to repeat concerns to various service employees and failure to implement solutions. Further gripes concerned technicians not turning up for appointments and services not being provided.

The consumer advice service also provided information and advice on issues relating to the relocation of telecommunications services. Enquiries related to, among other things, the fact that telecommunications contracts must be continued at the end customer's new place of residence if the services can be provided by the existing provider at this location. Consumers often assume that they have a special right of cancellation when relocating. According to the Telecommunications Act, however, contracts can only be terminated early if the services cannot be provided at the new place of residence.

The main focus of consumer complaints about telecommunications invoices were pricing issues, the invoicing of subscriptions and the implementation of the European roaming regulation. In the balancing act between respecting the corporate freedom of telecommunications providers to determine their own pricing and service on the one hand and upholding consumer protection on the other, the consumer advice service can only answer contractual questions in the context of telecommunications law. Under the Out-of-Court Legal Services Act, clarification of matters of civil law is the domain of consumer organisations and lawyers.

In addition to service interruptions during the process of switching providers, consumers also criticised lengthy faults on their subscriber lines. For both corporate customer and private customer lines with medical alarm systems, the fault-free provision of telecommunications services is essential. Questions concerning the provision of basic telecommunication services and the effects of Telekom Deutschland GmbH's IP migration were also of interest to consumers.

With respect to the federal government's broadband rollout activities, failure on the part of telecommunications providers to comply with advertising claims or contractual promises on the bandwidths offered by internet connections led to misunderstanding on the part of consumers. Many consumer enquiries related to when broadband rollout is set to begin in their area or when mobile reception will be available without limitations throughout Germany.

With the involvement of those telecommunications providers affected, the Bundesnetzagentur was able to find rapid and consumer-friendly solutions to the majority of customer concerns.

New topics arose from the General Data Protection Regulation and the growing use of digital technology in consumers' everyday lives. Consumers are likely to need even more information going forward. The primary objective of the Bundesnetzagentur's consumer advice service is to promote consumer competency with respect to their rights and obligations, give telecommunications providers feedback from a customer perspective, identify unwelcome market developments and initiate appropriate measures to counteract these.

Dispute resolution

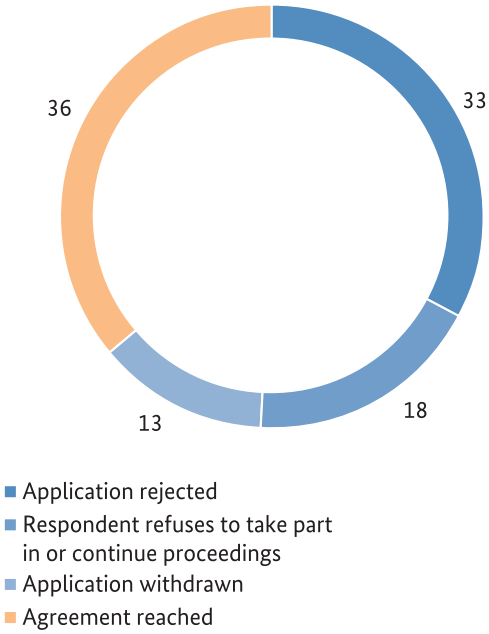
The Bundesnetzagentur's telecommunications consumer dispute resolution panel acts as an intermediary between customers and telecommunications providers. Dispute resolution provides a fast and cost-effective alternative to court proceedings. It aims to find mutually acceptable solutions, and thus avoid legal disputes.

Owing to the extensive media coverage of the Consumer Alternative Dispute Resolution Act, the number of applications for dispute resolution by the consumer dispute resolution panel increased dramatically in 2017. In 2018 the volume of applications stabilised year on year at 1,828. In addition, the consumer dispute resolution panel received 1,421 enquiries and requests for assistance from consumers as to whether the facts presented in their cases could be resolved through conflict resolution.

The consumer dispute resolution panel closed 2,001 cases in 2018. In 36% of closed cases, the parties concerned reached an agreement, usually before a settlement proposal was made. In 13% of cases, the applicants withdrew the applications because the matter had been resolved quickly, for example. In 18%

of cases, the respondent refused to take part in the dispute resolution proceedings or to continue the proceedings, without offering a solution to the issue at hand. In 33% of closed cases, the application for dispute resolution was dismissed as the prerequisites for initiating proceedings were not met.

Results of closed dispute resolution proceedings in 2018
%



The main subjects of dispute resolution proceedings in 2018 were as follows: In 37% of cases, disputes related to the provision of contractual services, and one quarter of these to insufficient data transmission rates. Some 27% of disputes concerned pricing details of telecommunications services provided. Billing was the most common source of complaint. In some cases, roaming costs proved contentious.

Some 18% of disputes related to the termination of contracts. Switching providers and relocations accounted for 10% of dispute resolution proceedings. The remaining 8% related primarily to line disconnection, itemised billing, network access and entries in telephone directories.

In accordance with the Alternative Consumer Dispute Resolution Act, additional information is published in the dispute resolution panel's annual activity report, which can be found on the Bundesnetzagentur's website.

Switching providers

When a switch of providers occurs, telecommunications providers and network operators have a legal obligation to ensure that there is no disruption to the service before the contractual and technical requirements for the switch have been met. Any disruption to the service must not last more than one calendar day, unless otherwise agreed with the subscriber.

If service is disrupted for more than one day with no agreement to the contrary, the end customer should report this to the Bundesnetzagentur immediately. In such cases, the Bundesnetzagentur forwards the complaint to the companies involved in the switching process. They are obligated to clarify each case as quickly as possible. Around 2,350 such cases were reported in 2018. The level therefore remained low, as in previous years.

The Bundesnetzagentur strives subsequently to analyse the causes of disruptions, with a view to taking further measures where appropriate. The Bundesnetzagentur is committed to working with providers to further reduce the number of unwanted service disruptions in future. Scope for improvement exists, in particular, with regard to compliance with agreed migration dates.

Transparency measures

The transparency requirements and information obligations of the Transparency Ordinance have been making it easier for consumers to select products in the telecommunications market since June 2017. A key element of the Ordinance is the product information sheet that providers must draw up for products that enable end users to access the internet.

This allows consumers to see the essential contractual provisions quickly and easily before concluding a contract. Service providers must also inform consumers of possible ways to test internet speed, forinstance by making them aware of the Bundesnetzagentur's measuring tool, which is available at *www.breitbandmessung.de*. This enables consumers to inform their providers of any discrepancies between actual and contractually agreed data transmissions rates.

In the period under review a number of consumers contacted the Bundesnetzagentur to report discrepancies between actual performance levels and contractually agreed download speeds. The Bundesnetzagentur has developed a special complaints procedure for discrepancies in fixed networks. Above all, this sets out the requirements for the measurements made by consumers in the event that the contractually agreed speeds are not being met and no solution can be found between the end user and the provider. The Bundesnetzagentur asks that consumers use the desktop version of its broadband measuring tool. Consumers made increasing use of this option in the reporting period.

Once again, consumers queried information on their invoices and the information obligations for contracts with limited data volumes. They must be able to access information about their monthly data usage. Providers must update this information daily and make it available in their online customer centre or via their own app. At the end of the billing period, the total data volume used and the contractually agreed data volume must be shown separately on the itemised bill or customer invoice. The inclusion on bills of the prescribed information about conditions for contract termination also makes it much easier for consumers to switch providers, should they wish to do so.

Measuring broadband speeds

On 30 October 2018, the Bundesnetzagentur released a new version of its broadband measuring app, which includes a dead spot identification feature. The German Federal Ministry of Transport and Digital Infrastructure had asked the Bundesnetzagentur to update its existing broadband measuring app to enable consumers to report dead spots in mobile radio coverage easily and unbureaucratically. The dead spot app records at regular intervals whether there is network coverage, and presents dead spots in a clear and user-friendly manner. When sufficient data is available, the Bundesnetzagentur will summarise and publish this information in the form of a detailed map. The dead spot app can be downloaded free of charge for Android and iOS from the respective stores.

In connection with broadband measurement, the Bundesnetzagentur also released an installable desktop app in May 2018. With this easy-to-use app, a minimum number of individual measurements can be made and documented in a log. The test results can be used by consumers to provide evidence of non-compliance on the part of providers.

According to European law, every significant continuous or recurrent deviation in speed or in other service quality parameters between actual and contractually agreed performance levels for fixed-network broadband connections constitutes a breach of contract. The Bundesnetzagentur published a communication on this topic in July 2017.

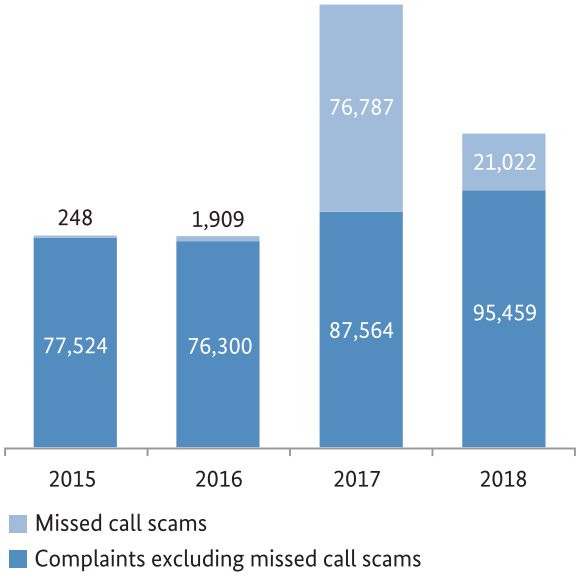
Even in the third year of operation (October 2017 to September 2018), many end customers used the Bundesnetzagentur's broadband measuring tool to measure the speed of their internet connection. Once again, the number of tests conducted increased considerably compared with previous years.

Combating number misuse

The Telecommunications Act places responsibility on the Bundesnetzagentur for combating number misuse. The Bundesnetzagentur has to deal with numerous technically, economically and legally complex constellations of misuse. It follows up on any breach of number use, particularly with regard to consumer and customer protection issues. Most of the cases pursued in this context relate to frequent breaches of the Telecommunications Act's consumer protection provisions and the Unfair Competition Act. A variety of measures are in place to protect consumers against disturbances and financial losses.

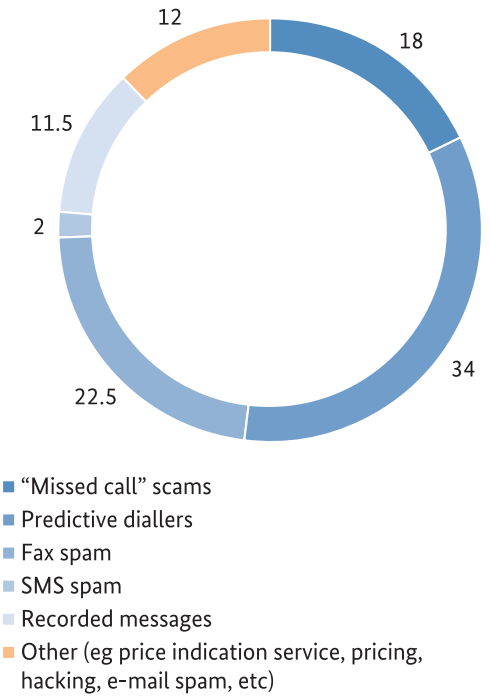
In 2018 the Bundesnetzagentur received 116,481 written complaints and enquiries in connection with number misuse, in addition to 23,895 telephone enquiries and complaints relating to number misuse and nuisance marketing calls. Adjusted for the special effect of "missed call" scams, which accounted for a very high volume of complaints in 2017, the volume of complaints therefore rose steadily compared with previous years.

Written complaints and enquiries



Focus of enquiries and complaints in connection with telecommunications

%



The Bundesnetzagentur opened 3,987 administrative proceedings last year. In 235 cases, the Bundesnetzagentur ordered the disconnection of 735 phone numbers. Billing and collection bans were also issued for 5,765 telephone numbers. In one case, the Bundesnetzagentur banned a prohibited business model and imposed fines for non-compliance. All actions taken are published online (*www.bundesnetzagentur.de/Massnahmenliste*). The Bundesnetzagentur thus continued its successful efforts to combat fax and text message spam, harassing calls, the improper use of call queuing, the circumvention of the Telecommunication Act's consumer protection provisions, and misleading postal spam.

"Missed call" scams

The Bundesnetzagentur continued to take action against "missed call" scams in 2018. After receiving 76,787 complaints about this topic in 2017, the number fell to around 21,022 in 2018. The measures ordered are clearly taking effect. To protect consumers, the Bundesnetzagentur expanded the scope of its 2017 order – which requires the activation of a price indication service in mobile communication networks to provide no-cost information on the charges associated with specific country codes – to include further destinations. With this service, consumers are told that they are calling a premium-rate number outside of Germany before charges are incurred. The aim is to prevent consumers from making unwanted return calls. The Bundesnetzagentur also issued billing and collection bans to ensure that consumers can neither be billed for the costs of calls to such numbers nor pursued for recovery of the debt. If the illegal practice is continued, the Bundesnetzagentur examines the possibility of extending the period for which the price indication service must remain in place or expanding the scope of this obligation.

Predictive diallers

The Bundesnetzagentur once again received a substantial number of complaints in connection with unreasonable call behaviour by call centres in 2018. It received a total of 39,605 complaints that fall into the category of predictive diallers.

There are no legal regulations regarding the specific call behaviour and thus configuration of predictive diallers. However, the number of call attempts and associated inconvenience (time, repeated call attempts, etc.) can constitute unreasonable harassment and therefore a breach of section 7(1) of the Unfair Competition Act. The Act does not define what is meant by unreasonable harassment. Clearly, complainants experience and describe harassment differently. When evaluating these issues, the Bundesnetzagentur considers the perception of the average market participant. The notification process introduced in July 2017, which aims to make companies aware of complaints about call behaviour at an early stage, has proved effective. Nevertheless, the Bundesnetzagentur ordered the disconnection of numbers in a variety of cases.

Fax spam

The Bundesnetzagentur received 26,195 complaints about fax spam in 2018. A special topic in this context was the fight against fax spam from international numbers. Although the Bundesnetzagentur cannot order the disconnection of numbers in foreign networks, it does take other measures, where appropriate, to counteract attempts to circumvent German competition law with international numbers. For example, the Bundesnetzagentur ordered that German network operators prevent the accessibility from Germany of international numbers that have prompted high volumes of complaints. Hundreds of complainants had previously received fax spam advertising radar detectors. These illegal advertisements contained international numbers that consumers were asked to contact if they were interested in buying the product.

In another case, business operators received fax spam on a massive scale from the “data protection information centre” (DAZ) containing an international 00800 service number. It transpired that fax responses to this number were being forwarded to the actual sender of the faxes via a German number. Both numbers were disconnected at the behest of the Bundesnetzagentur. The faxes claimed that the business had a legal obligation to fulfil certain requirements under the new General Data Protection Regulation. To do so, the recipients were asked to sign and return a seemingly official fax form. The cost of around €1,500 was hidden in the small print. The Bundesnetzagentur’s intervention prevented further fax responses from being forwarded from false addressees to the person responsible for the faxes.

SMS spam

The number of complaints received in connection with SMS spam fell by around one quarter year on year to 2,344 in 2018. The marked downward trend in the number of complaints observed since the entry into force on 1 July 2017 of the updated version of section 111 of the Telecommunications Act therefore continued, albeit at a significantly slower rate. The Bundesnetzagentur was, however, confronted with a number of new models in its efforts to combat misuse in 2018. In several cases, for example, the names of well-known international companies from the consumer electronics, credit card and drinks production sectors were misused to inform consumers about alleged large cash prizes and trick them into revealing personal data. In all reported cases, the Bundesnetzagentur ordered the disconnection of the numbers to ensure that no other text messages could be sent from the numbers in question.

Recorded messages

The Bundesnetzagentur received a total of 13,375 complaints about recorded message calls in 2018. Many of these related to recorded messages in which consumers were promised large cash prizes by alleged law firm or notary offices. To claim the prize, consumers had to purchase vouchers from online retailer Amazon and then call a conventional local network number to provide the voucher codes. According to the Bundesnetzagentur’s investigations, none of the law firms or notary offices specified in the recorded messages existed. The Bundesnetzagentur ordered the disconnection of all reported German numbers, thus ensuring that these numbers are no longer available and that return calls cannot be made by consumers.

Misleading pop-up error messages
The Bundesnetzagentur ordered the disconnection of several 0800 numbers and local network numbers included in misleading pop-up error messages. It received 189 complaints from consumers in this connection. This scam targets consumers by means of pop-up windows on their computers claiming that there is a computer or software problem. They allege that support is available free of charge at the number specified in the pop-up window. However, official error messages or warnings from Microsoft Corporation never contain phone numbers. Unknown third parties impersonating Microsoft employees then try to gain access to the computers, obtain data or demand money for a protection programme.

Telephone system hacking
In the reporting period, the Bundesnetzagentur took comprehensive action against cases of hacking in which third parties illegally generated premium-rate calls via the routers or telephone systems of consumers or other end customers.

In these situations, billing and collection bans are issued regularly to protect those end customers affected. This protection also extends to payment bans for the network operators affected that aim to ensure that no payment is made in respect of call charges generated in this way. Hacking cases are also reported to the public prosecutor's office in accordance with section 67(4) of the Telecommunications Act.

This topic was the subject of the Bundesnetzagentur's recently established expert panel on hacking, in which the background and effects of such behaviour are discussed at length and the Bundesnetzagentur's decision-making processes are presented to market participants. The Bundesnetzagentur actively supports the sector's efforts to optimise processes for preventing and identifying hacking cases at an early stage as well as its efforts to quickly and transparently implement a system for the provision of sector-wide information on relevant cases.

Measures to combat "missed call" scams are having an impact

Thanks to the steps taken to combat missed call scams, the Bundesnetzagentur reduced the number of complaints in 2018 by more than half compared with 2017. A mandatory price indication service is in place to protect consumers from hidden costs.

Missed call scams are bait calls where a person's mobile phone rings briefly, showing a foreign number on the screen that could be easily mistaken for a German area code. For example, the area code for Koblenz (0261) could be easily mistaken for the country code for Madagascar (00261). The caller's aim is to lure the recipient into calling back a number that will incur charges.

The Bundesnetzagentur ordered the activation of a price indication service in mobile communication networks to provide no-cost information on the charges associated with specific international codes. The price indication service informs consumers that they are calling a premium-rate number outside of Germany before the costly call begins. They can therefore hang up without incurring any costs.

The measures are having the desired effect. Following the introduction of the price indication service, the number of complaints fell to around 500 in December 2018.

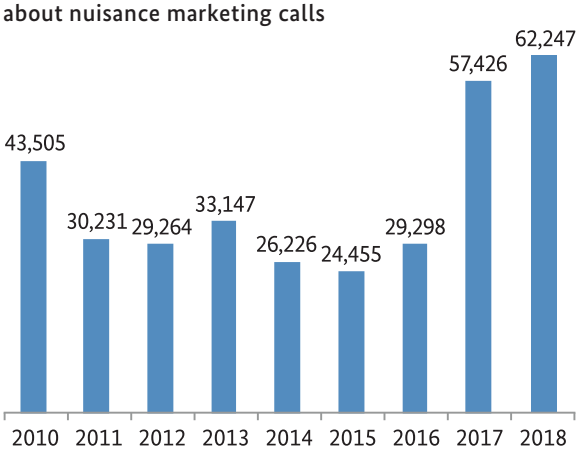
Consumer protection guidelines for mobile payments
Following the opening of determination proceedings in accordance with section 45d of the Telecommunications Act, the Bundesnetzagentur received numerous responses from market participants and associations. The various arguments were taken into account in the Bundesnetzagentur's background discussions and further investigations. A determination will be made in 2019. The corresponding draft is expected to be made available for consultation.

Combating nuisance marketing calls

Thousands of consumers inadvertently become the victims of nuisance marketing calls every year. They become involved in marketing calls from often professionally trained callers who, without attempting to build a customer relationship, seek to boost sales of certain products or services, despite the fact that the consumer neither wanted nor consented to the call. This unethical business practice is motivated by significant financial incentives and considerable competitive pressure in individual sectors. Technical advancements facilitate the process by providing opportunities for telephone numbers to be hidden or deliberately falsified.

In 2018 the Bundesnetzagentur received 62,247 written complaints about nuisance marketing calls. The volume of complaints therefore reached an all-time high, having risen steadily over the last four years.

Written complaints
about nuisance marketing calls



Differentiated by sector, the energy supply sector accounted for the largest number of complaints by far. In prioritising the cases it pursued, the Bundesnetzagentur last year focussed on pursuing habitual offenders who came to its attention due to either the significant detrimental impact of their call behaviour or the large number of consumers they had harmed. Here, too, marketing calls for energy products were particularly noteworthy. As a result, the biggest case pursued by the Bundesnetzagentur to date – based on over 6,000 complaints – involved the energy sector. The highest possible fine of €300,000 was imposed on a company cold calling consumers to encourage them to switch electricity and gas suppliers. In this case, the company deliberately flouted competition law, employed a number of sales partners, some of which were operating from abroad, and was extremely persistent, aggressive, offensive and in some cases threatening in its call behaviour. In another case in which the maximum fine of €300,000 was also imposed due to nuisance marketing calls for energy supply contracts, the judgement was heavily influenced by the fact that many consumers were given misleading and false information. In some cases, for example, the callers claimed to work for the consumer's energy supplier in order to surreptitiously gain their trust. In other cases, they introduced themselves as independent "rate optimisers". Sometimes, the callers even claimed to be employees of an authority, such as the Bundesnetzagentur or the fictious "German electricity optimisation authority". Under false pretences and using misleading information, the callers recommended that consumers urgently switch to the energy supplier they suggested due to price hikes.

The Bundesnetzagentur also received a significant number of complaints about phishing in the reporting year, but was unable to pursue these as they fell outside of its responsibility. Where there was evidence of crimes having been committed, the relevant cases were passed on to the responsible criminal prosecution authorities.

As well as imposing fines as punishment, the Bundesnetzagentur took measures to prevent the further spread of nuisance marketing calls by proactively informing consumers about cold calling and number misuse as part of its public relations work and by raising awareness of potential risks.

The disclosure practices updated in 2017 have been well received. Wherever necessary and legally possible to protect and warn consumers, the Bundesnetzagentur therefore continued these practices in 2018 by publishing in press releases, for example, the volume of fines imposed and the names of companies involved. Together with a list of measures that is published online and updated continuously, this has proven to be an effective tool in strengthening transparency and consumer protection in the field of telephone marketing.

Given the relevance of the topic, the Bundesnetzagentur is continuing to carefully monitor developments in European legislation and is strongly in favour of maintaining the current level of consumer protection based on the European legal framework. At the national level, it welcomes the efforts to further develop on a practice-oriented basis the existing legal framework that began with the evaluation of the report on dubious business practices.

Action to combat the misleading use of geographic telephone numbers

The Bundesnetzagentur continued to take action against the misleading use of geographic telephone numbers to feign a local presence in 2018. A requirement when using geographic telephone numbers is the link to the respective locality. This exists when the subscriber has a telephone line or a place of residence or business in the respective geographic area. Telephone numbers thus allow inferences to be drawn about the geographic location of subscribers.

Geographic telephone numbers are often misused by companies online and in print media to feign a local presence. This is intended to give consumers the impression that companies are based in a particular location. Local proximity is an important factor for many consumers. It is especially relevant for urgently required emergency services, such as locksmiths, emergency trades, pest control or stonemasonry services for headstones. In actual fact, however, these companies do not have premises in the relevant geographic area.

If call forwarding is being used, consumers must be informed clearly in the text advertising the number that the call will be forwarded to the company's business premises in another locality.

The Bundesnetzagentur opened administrative proceedings against those involved on a regular basis in order to protect consumers and other market participants. As a result, most violations of numbering and competition law were remedied. If the companies failed to rectify the shortcomings, the Bundesnetzagentur ordered the disconnection of the illegally used geographic telephone numbers or prohibited the use of business models.

Decision on permissible charges for fixed-network number portability

Following a consumer complaint, the Bundesnetzagentur investigated the charges imposed by Freikom GmbH for fixed-network number portability. On the strength of this, it prohibited the charge of €39.90 (including VAT) levied by the company for number porting, and ordered a net charge of €9.61.

According to the customer protection provisions of the Telecommunications Act, consumers may only be billed for costs incurred on a one-off basis when switching providers.

The ordered charge was calculated based on a European price comparison. The company can still choose to impose a lower service charge or no charge at all. The ordered charge is significantly lower than the previously known maximum level of €29.95 (including VAT).

The decision is definitive. The company adjusted its charge with immediate effect. Although the decision only applies directly to Freikom GmbH, it sends a signal for the investigation of other fixed-network providers' portability charges, as the findings provide sufficient evidence for the assumption that portability charges in excess of €9.61 (net) in fixed networks are not in keeping with the relevant legal provisions.

The ruling chamber has initiated preliminary investigations against a number of companies charging more than €9.61 (net). As a result, some of these companies have adjusted their charges voluntarily. For the others, investigations are currently under way to determine whether to initiate formal proceedings.

Universal service

In 2018 just over 900 consumers wrote to the Bundesnetzagentur for support with matters concerning the provision of basic telecommunication services. Universal services are a minimum set of services to which all end users must have access at an affordable price. DTAG currently provides the basic service in Germany on a voluntary basis. For consumers, a large number of complaints submitted to the Bundesnetzagentur were prompted by delays in the provision of a telephone line. With the involvement of Telekom Deutschland GmbH, the Bundesnetzagentur is regularly able to ensure a speedy and satisfactory resolution for consumers.

The provision of public payphones and cardphones is likewise part of the universal service. At the end of 2018 an inventory of payphones and cardphones listed around 18,000 phones. Mobile communications continued their extensive spread, now having reached more than 107.5m SIM cards. This market development and the full coverage nationwide that has been attained with landlines have reduced demand for public telephones. Based on the new European regulations, changes will have to be made to the universal service regulations from 2020 to take account of technological advancements, market developments and changes in demand.

Text and video relay service

The text and video relay service enables deaf and hearing-impaired people to make phone calls. To do so, they set up a video or data link to the text and video relay service, which calls the requested person and translates the message into spoken language. Conversely, the recipient's message is translated into sign language or written language. Due to a change in the law, the text and video relay service is now available 24 hours a day.

In the interests of aligning the living conditions of deaf and hearing-impaired people with those of non-disabled people, there are plans to reduce the charges for private use of the service from 2019. In addition to abolishing the basic monthly fee, hearing impaired people now pay standard call charges for the sign language and speech-to-text service.

In 2018 the Bundesnetzagentur calculated and determined the demand for the text and video relay service for the period from 2019 to 2022 and put operation of the service out to tender for this period. The contract for service provision was awarded to "Tess - Sign & Script – Relay Dienste für hörgeschädigte Menschen GmbH". The Bundesnetzagentur once again took appropriate measures in 2018 to ensure the financing of the text and video relay service and, in particular, determined the proportionate costs to be paid by providers of publicly available telephone services.

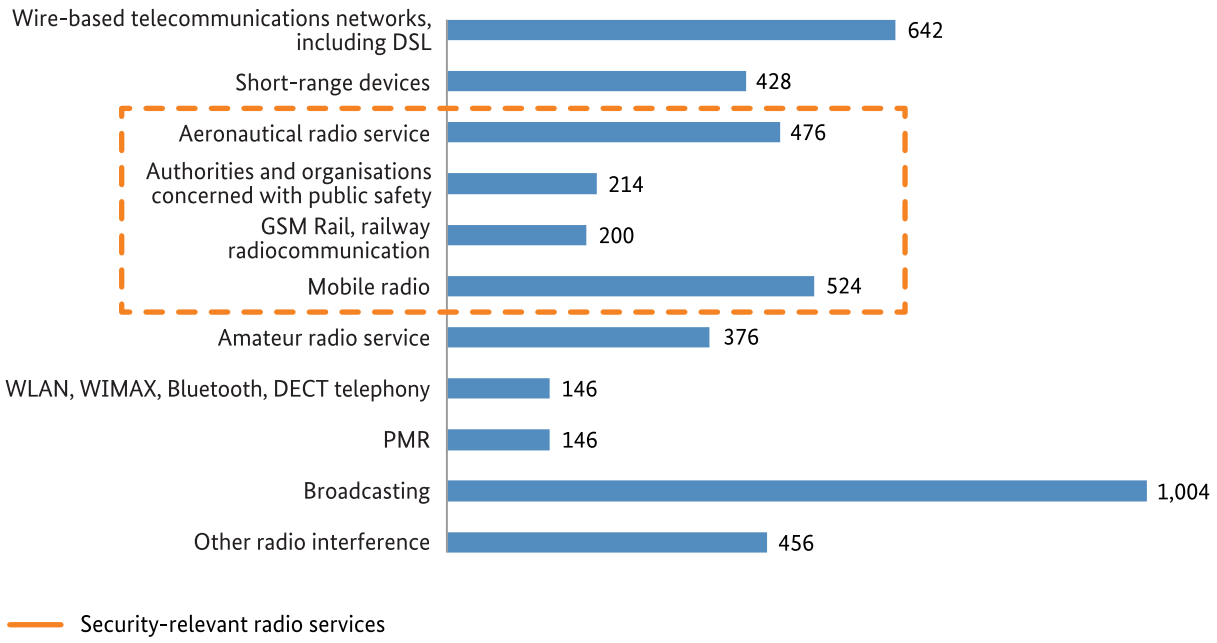
Investigating interference – the radio monitoring and inspection service

The Bundesnetzagentur also makes an important contribution to consumer protection through its radio monitoring and inspection service. By resolving cases of radio interference, the radio monitoring and inspection service provides for the efficient and interference-free use of radio spectrum.

More than 4,600 cases of radio interference and electromagnetic disturbances were investigated and resolved by the radio monitoring and inspection service in 2018. Of these, more than 1,400 affected security-related areas, such as the aeronautical service, rescue services, fire brigade, police service, rail radio communications and the public mobile network. Because these disruptions must be resolved as quickly as possible, the radio monitoring and inspection service is available 24 hours a day, seven days a week. Thanks to its nationwide presence in 19 locations throughout Germany, the radio monitoring and inspection service ensures speedy and efficient fault processing.

This service can be used by institutions, companies and consumers at no cost. This also applies to those who cause radio interference, provided the interference was caused unintentionally.

Interference volumes by type of service



Bundesnetzagentur withdraws banned products from circulation

To protect all consumers, the Bundesnetzagentur tests electric and electronic devices on a random basis and withdraws from circulation products that do not belong in households.

In 2018 the Bundesnetzagentur banned the online sale of over ten million products. These devices can cause radio interference or electromagnetic disturbances and may not be sold in the EU. The Bundesnetzagentur also ordered the imposition of sales bans or corrective measures by manufacturers and retailers in Germany for a further 1.63m products in 2018.

These devices included 4.14m bluetooth speakers, 2.42m smartwatches, 508,200 mobile devices and almost 123,000 remote-control drones.

A further key area, with over 2.5m units, was wireless headphones that can cause interference in security-relevant frequencies, such as frequencies reserved for police or rescue services.

An increasing number of unsafe products from East Asia are appearing on the German market via the internet. The Bundesnetzagentur's investigations in 2018 therefore focused on individual retailers offering large quantities online. More and more investigations are also being conducted by means of anonymous test purchases.

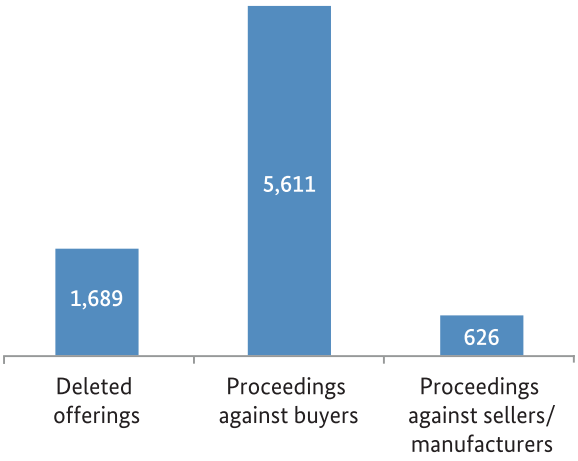
Misuse of transmitting equipment under section 90 of the Telecommunications Act

In 2018 the Bundesnetzagentur expanded its activities to combat the use of prohibited cameras with a transmission function and bugging devices hidden in everyday objects. Internet-connected children's toys were a key focus as well as multi-functional transmitting equipment, such as GPS trackers with a listening function, children's watches with a listening function and everyday objects with voice control (e.g. smart speakers). Further focuses included robot vacuum cleaners and glasses with live-streaming cameras and/or microphones.[1]

The Bundesnetzagentur also achieved positive results without imposing sales bans by encouraging manufacturers to work closely with the Bundesnetzagentur to transform their products into lawful transmitting equipment. This resulted in the listening function being deleted from the software or hardware in many GPS trackers and children's watches.

In many cases, buyers of banned transmission equipment were also offered the opportunity to transform their products into lawful transmitting equipment rather than having it destroyed. As a result, almost half (2,718) of the 5,611 cases initiated against buyers in 2018 were terminated following the transformation of products into lawful equipment.

Misuse of transmitting equipment



[1] For the latest advice and background information, see *www.bundesnetzagentur.de/spionagekameras*

Rulings, activities and proceedings

In 2018, the Bundesnetzagentur devoted time to preparing for the 5G spectrum auction. The award conditions include obligations to improve coverage in urban and rural areas, as well as competition-promoting initiatives such as a service provider regulation and national roaming guidelines. The award of spectrum creates planning and investment certainty and supports the rapid, demand-oriented expansion of mobile communications networks across Germany.

In market regulation, the Bundesnetzagentur mediated in the “VHF antenna dispute” and was able in particular to prevent any impending disconnections. The resulting agreements also dispel further uncertainty for the market.

Spectrum management

Auction proceedings for 2 GHz and 3.4–3.7 GHz spectrum

As the digital transformation progresses apace, demand continues to grow for high data rates together with greater mobility. Suitable spectrum is essential if capacities, availability and latency levels are to keep up with this demand. The bands at 2 GHz and 3.6 GHz have been identified as pioneer bands for the fifth-generation mobile technology, 5G. 5G will enable the emergence and development of innovative services and applications, such as industry 4.0, automated driving and the Internet of Things. A fast and competitive 5G rollout calls for a regulatory framework that ensures the early and demand-oriented award of usage rights for spectrum in the band at 2 GHz set to expire in 2020, as well as assignments in the band at 3.6 GHz set to expire in 2021.

To protect Germany's global standing as a centre of business both now and in the future, achieving a reliable mobile network nationwide is of great importance both to business and to society as a whole. The Bundesnetzagentur takes a two-pronged approach to accomplishing this goal. Firstly, it has drawn up individual coverage obligations for roads, rail routes and waterways. Secondly, assignment holders undertake to install new base stations in "not-spots" and to make base stations available for 5G applications. The aim here is to continue closing coverage gaps and make Germany future-ready in preparation for the 5G rollout.

With infrastructure sharing and roaming offering further suitable methods for eliminating not-spots and supporting a cost-effective network expansion, in the future a negotiation requirement will apply to encourage mobile network operators to cooperate in these areas. The Bundesnetzagentur takes on the role of arbiter in this context. Given the relevance of roaming to new entrants and the desire to promote competition at the level of services – mobile network operators are to be encouraged to make mobile communications capacities available to providers, including those without any mobile infrastructure of their own (service providers) – the negotiation requirement also applies here, too.

The process to make key spectrum available for 5G was initiated in 2017 when the Bundesnetzagentur began identifying demand for nationwide assignments in the bands at 2 GHz and 3.4–3.7 GHz. A draft decision of the President's Chamber on the order for and choice of proceedings for the award of spectrum was then opened up for consultation on 29 January 2018. After evaluating the responses received from interested parties, on 14 May 2018 the President's Chamber decided to award the spectrum by way of an auction (decision parts I and II).

The key regulatory aspects of the award proceedings were discussed at an oral hearing on 13 July 2018 and covered, in particular, issues relating to the award conditions, for instance the coverage obligations and the service provider regulation. Concerns expressed at the hearing and in writing afterwards were considered in the further course of the proceedings, and on 24 September 2018 the draft consultation on the award conditions and auction rules was published. After evaluating the comments received in response to the draft consultation, on 26 November 2018 the President's Chamber, in consultation with the Advisory Council of the Bundesnetzagentur, laid down the spectrum award conditions and the auction rules (decision parts III and IV).

The publication of these decisions marked the start of the qualification procedure in which potential bidders had until 25 January 2019 to apply for admission to the auction proceedings. There are no restrictions in place regarding who is entitled to take part in the auction proceedings. The auction is expected to take place in the first quarter of 2019 and will be held as a physical auction at the Mainz offices of the Bundesnetzagentur.

Application process for 3.7–3.8 GHz and 26 GHz

Alongside the spectrum provided on a nationwide basis, 5G frequencies that enable, for instance, the inter-networking of factories and production facilities (industry 4.0) are also in high demand. Spectrum in the bands at 3.7–3.8 GHz and 26 GHz is being made available for such applications.

The Bundesnetzagentur aims to make it possible for applicants to receive local assignments flexibly and in line with demand, even once the majority of the 3.6 GHz band has been made available for nationwide assignments. This will not only allow emerging business models to be implemented later on, but also gives due consideration to the fact that some business models require spectrum for in-house, closed telecommunications networks.

On 15 August 2018, the Bundesnetzagentur published for public comment a consultation on the provision of spectrum in the bands at 3.7–3.8 GHz followed, on 5 September 2018, by a consultation on initial considerations in connection with the band at 26 GHz. The responses are still being evaluated. The application process is expected to begin after the auction.

Coverage obligations

The spectrum at 700 MHz, 900 MHz, 1800 MHz and 1500 MHz auctioned in 2015 was assigned in combination with a coverage obligation that requires every mobile network operator, using mobile transmission technologies, to provide broadband coverage to the population with rates of at least 50 Mbps per sector. This should ensure that households as a rule have access to data rates of 10 Mbps and over.

Every mobile network operator is obliged to reach 97% of households in each federal state and 98% nationwide. Additionally, full coverage is to be ensured along major travel routes where practicable and technically feasible. All mobile network operators must comply with the coverage obligation as of 1 January 2020 and may opt to use their entire spectrum packages in order to do so.

Whilst the coverage obligation only applies from 2020 onwards, the Bundesnetzagentur is supporting the expansion of mobile broadband coverage from an early stage. Reporting obligations on the mobile network operators ensure that the Bundesnetzagentur stays up to date on the status of spectrum usage and the network rollout, as well as on build-out plans. The Agency has designed a concept that will allow it to verify the coverage obligation on households and main transport routes and also set the defining parameters. The mobile network operators prepared coverage maps on the basis of these parameters and submitted them in May 2018.

The Bundesnetzagentur used the coverage maps provided to determine suitable reference regions and routes in each federal state. Measurements taken from these reference areas for all three mobile network operators were reviewed to determine whether and to what extent the coverage levels reported corresponded to those measured in practice. Each federal state contains at least two reference regions, selected to take account of the fact that the measurements cover differing settlement structures and topographic characteristics so as to enable a comprehensive analysis and evaluation of the forecast accuracy of the simulation tool used by the respective network operator. The coverage maps provided can only be accepted as suitable verification of the level of compliance with the coverage obligation once the forecast accuracy of the maps is deemed to be adequate.

Further progress is discernible in the field of mobile broadband coverage and will continue to take shape in the lead up to next year's deadline.

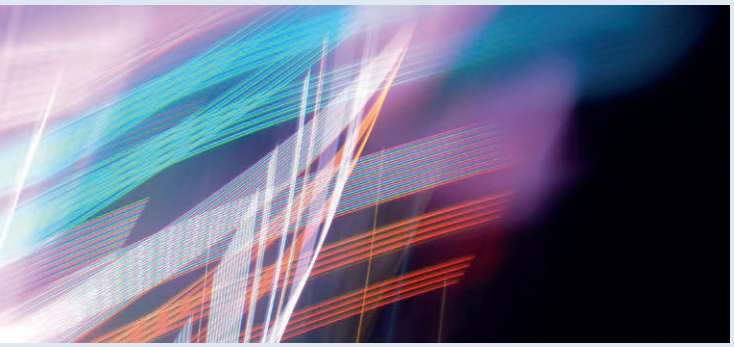
Market regulation

Resolution of the "VHF antenna dispute"

In the first half of 2018, the dispute relating to access to the VHF antennas dominated discussions surrounding market regulation in the telecommunications sector. Following the sale of the antennas by Media Broadcast GmbH to several financial investors, a conflict arose between the buyers and the transmitter network operators who entered the market after it was opened up. The dispute primarily concerned the conditions for access to the antennas, in particular the lease fees for (shared) use of the antennas. Previously, given Media Broadcast GmbH's significant market power, the rates had been subject to regulation and approval by the Bundesnetzagentur. In view of the fact that the conflict was moving increasingly into the public eye and in particular the impending disconnection of VHF transmission expected in early April, the Bundesnetzagentur looked closely into the possibility of imposing telecommunications market regulation on the buyers of the antennas. After an in-depth legal review found that this would be possible in principle, the competent ruling chamber opened corresponding regulatory proceedings against the buyers as a precautionary measure.

5G spectrum auction preparations

In November 2018, the Bundesnetzagentur set the award conditions for the 5G spectrum auction – keeping a watchful eye on technical and commercial feasibility and lawfulness.



In pursuit of improved mobile network coverage, the Bundesnetzagentur incorporated demanding obligations that included an increase in the data transmission rate to double its current level. In regions where network rollout would be commercially infeasible for an individual operator working alone, the Bundesnetzagentur expects network operators to cooperate on implementing the obligations. Increasing the level of collaboration can significantly reduce the costs of rolling out coverage in rural areas.

These obligations are a first step in the right direction. With more spectrum due to become available in the next few years for further network rollout, building out the mobile communications networks is an ongoing task.

In parallel, the Bundesnetzagentur entered into talks with the parties with the aim of reaching an amicable resolution. Following long and extensive negotiations moderated by the Ruling Chamber and subsequently also by former Federal Minister Friedrich Bohl, the parties showed signs of rapprochement. This led to the signing of memoranda of understanding in June and ultimately in early July to contractual agreement regarding access to the VHF antennas and the lease fees to be paid to the new owners by the transmitter network operators. All parties demonstrated an incredibly high degree of conscientiousness during the negotiations. Each went to – and occasionally crossed – their respective pain threshold on specific aspects in pursuit of a resolution.

Thanks to their efforts, there was no need for the Bundesnetzagentur to make any regulatory decisions on this market. In all likelihood, regulatory intervention would not have resulted in a long-term solution to the VHF conflict. Any regulation would have involved decisions concerning highly complex issues, which would inevitably have entailed further disputes and legal proceedings. The agreements reached prevented any such uncertainty.

Decision on a planned joint venture between EWE TEL and Deutsche Telekom

Following submission of a joint application by EWE TEL and Deutsche Telekom, the Bundesnetzagentur examined whether a joint venture planned by the two companies for rolling out high-speed fibre-optic lines in north-west Germany would – on account of the involvement of Telekom – also be subject to the same regulatory obligations that apply to Telekom with respect to access to the last mile (local loop) and bitstream access. On 13 July 2018, the Bundesnetzagentur determined that a joint venture would not be subject to the obligations imposed on Telekom on the local loop and bitstream markets as per the corresponding regulatory orders. The planned joint venture is thus not included in the scope of the two current market analyses for the local loop and bitstream markets. Since the regulatory orders are accessorial to the determinations in the market analyses with respect to the addressees, the regulatory orders cannot oblige companies other than those designated in the underlying determination.

Decisions on the rollout and deployment of supervectoring

As the next phase in the development of existing VDSL technology, Deutsche Telekom began deploying supervectoring on 1 August 2018. Supervectoring enables download bandwidths of up to 250 Mbps to be achieved by utilising an extended frequency band (from 17 to 35 MHz) for vectored data transmission on the local loop. On 17 December 2018, the Bundesnetzagentur approved the monthly access charges for layer 2 bitstream access in the new supervectoring speed classes VDSL 175 Mbps and VDSL 250 Mbps at €23.37 each (standard price) and €18.57 each under the minimum quota pricing model. Alongside approving the charges, the Bundesnetzagentur called for a number of modifications and additions to be made to Telekom's reference offer for layer 2 bitstream. The contractual offer submitted by Telekom met the statutory criteria of fairness, reasonableness and timeliness in full and thus could be adopted directly as the reference offer without the need to progress to a second round of proceedings.

IP bitstream reference offer

In a first partial decision dated 29 August 2018, the Bundesnetzagentur informed Deutsche Telekom about the modifications required to the draft reference offer for IP bitstream access that Telekom had submitted in accordance with the bitstream regulatory order. This partial decision laid down extensive requirements that Telekom must fulfil in order to remedy the draft contract. The points of contention included DSL line lead times, the introduction of an entitlement to an appointment on the provision date, the scope of sanctions on inadequate services, rules regarding the quality of transport, and reporting obligations for Telekom.

Review of Deutsche Telekom's local loop reference offer

On 20 December 2018, the Bundesnetzagentur issued a first partial decision as part of its review of the reference offer on access to Deutsche Telekom's local loop.

The two-stage review process examines the drafts of the local loop standard contract and the collocation contract as well as a raft of additional agreements and change agreements in connection with local loop access.

Both Telekom and other competitors were of the view that, since the last review of the local loop reference offer, practical experiences, new framework conditions (like vectoring), developments in case law and other factors had given rise to the need to amend several points.

The focal points of the process and thus the first partial decision relate in particular to the improvement of the order and provisioning quality, which has for many years been criticised by competitors, rules on implementing the equivalence of output concept in line with the local loop regulatory order, the expansion of the scope of monitoring and the placing of sanctions on inadequate services, for example by way of a lump-sum fee for damages and contractual penalties, and extensive changes in respect of both fault clearance and the access requested by competitors to additional information for local loop access.

Telekom has been given until the end of April to incorporate the changes and modifications stipulated in this first partial decision into the draft contracts. In the second stage of the process, the Ruling Chamber will assess the extent to which the requirements have been met.

Approval of one-off prices for local loop access
On 25 September 2018, the Bundesnetzagentur issued final approval to Deutsche Telekom regarding the one-off charges for local loop access for the period from 1 October 2018 to 30 September 2020. The decision covers the rates for provisioning and disconnecting all types of local loop products as well as the charges for several other services. The rates that were approved for the provisioning and disconnection of the basic versions CuDA 2Dr and CuDA 2Dr hbr, which represent the vast majority of sales, increased only marginally versus the previous charges.

Price approval for interconnection services, collocation etc.
The new fixed-network interconnection rates for Deutsche Telekom effective 1 January 2019 as proposed by the Bundesnetzagentur were published on 17 December 2018 and approved provisionally in view of the fact that the previous rate approvals were set to expire at the year end. The rates cover the termination and origination of calls as well as other optional and additional interconnection services.

Under the new rates proposal, Telekom will be able to charge 0.08 ct/min for call termination within its network. This is a 20% reduction versus the termination rates that expired on 31 December 2018 (0.10 ct/min). Also effective 1 January 2019, the termination rates were approved for 67 alternative access network operators – the relevant regulatory orders require these operators to provide network interconnection and termination services, for which the rates are set in accordance with the principle of symmetric efficiency. Calls originating from the Telekom network to competitor networks have been reduced to €0.0013/minute, down from €0.0023/minute. The draft decisions on the main points for Telekom and the alternative access network operators were published for national consultation in mid-January.

Ultimately, on 19 December 2018 the Bundesnetzagentur approved the rates for services related to interconnection lines, for instance the provisioning and lease of "intrabuilding sections" in the framework of interconnection lines in the PSTN, including the switching and transmission technology required at the network interconnection points, as well as the rates for other configuration measures.

Regulatory order on high-quality business customer access
The Bundesnetzagentur issued a regulatory order relating to high-quality wholesale access provided at a fixed location. Accordingly, Deutsche Telekom is now also required to grant access to other high-quality access products in the bandwidths from 2 Mbps to 155 Mbps – unlike previously, when access was limited exclusively to the terminating segments of leased lines. The rates must be approved in advance. The exceptions to this are complex high-quality access products that are subject to ex post rates controls only.

Price approval for leased lines for the new CLL 2.0 service
Regulated leased lines: In a letter dated 16 July 2018, Deutsche Telekom filed a first application requesting approval of the rates for its Carrier Leased Line (CLL) Ethernet 2.0 product – i.e. for implementing leased lines on native Ethernet. These lines are realised technically using a BNG (broadband network gateway) architecture.

Reference offer for leased lines for the new CLL 2.0 service

Deutsche Telekom submitted a reference offer for CLL Ethernet 2.0 (native Ethernet) in August 2018. Within the relevant proceedings, the terms of this access service are examined and determined for the first time, provided there is a general demand for such a product.

Infrastructure atlas – a single information point

The infrastructure atlas has proven itself to be an essential information tool in almost 9,000 broadband rollout projects to date. It contains data on existing infrastructure, such as fibre-optic lines, ducts and trenches, carrier infrastructure and access points, as well as the contact details for the shared-use point people at some 900 companies and local authorities.

The introduction of the single federal information point has increased the amount of data available: An infrastructure planning function has largely replaced the earlier infrastructure atlas and contains additional data on traffic lights, street lighting and sewage pipelines. Data on the industry, current infrastructure usage and available broadband funding is also collected to offer background details. The infrastructure sharing function provides a detailed view of ducts and trenches, sewage pipelines and carrier structures to enable a review of the potential for shared use.

Users also gain access to information on civil works as communicated to the single information point. Regional authorities can already view the infrastructure planning function for general planning and funding purposes.

Resolution of the "VHF antenna dispute"

With VHF transmitters potentially at risk of being disconnected, leaving several million people without their daily dose of radio, the Bundesnetzagentur stepped in and a compromise was reached.

In the first half of 2018, the dispute relating to access to the VHF antennas in question dominated discussions surrounding market regulation in the telecommunications sector. Following the sale of the antennas by Media Broadcast GmbH to several financial investors, a conflict arose concerning the conditions for access to the antennas, in particular the lease fees for (shared) use of the antennas.

In view of the fact that the conflict was moving increasingly into the public eye and in particular the threat of a potential disconnection of VHF transmission, the Bundesnetzagentur looked into the possibility of imposing market regulation on the buyers of the antennas and launched corresponding proceedings as a precautionary measure.

In parallel, the Bundesnetzagentur entered into talks with the parties with the aim of reaching an amicable resolution. With the Bundesnetzagentur's involvement and subsequently also that of former Federal Minister Friedrich Bohl, the parties showed signs of rapprochement which ultimately led to contractual agreement regarding access to the VHF antennas.

Thanks to their efforts, the Bundesnetzagentur was not required to impose regulatory decisions on this market.

During the implementation phase, the technology underpinning the infrastructure atlas was extended to optimise the performance and visual presentation, new contracts were signed with data suppliers, administrative instruments were adopted, and new inspection terms entered into force. The presentation of the infrastructure elements in the map view has improved considerably as a result.

The updates to the infrastructure atlas have created an even better information tool that offers greater transparency with respect to infrastructure available for shared use. Ultimately, it allows broadband expansion projects to be structured even more efficiently. The extra data is also of special interest to the 5G rollout, since additional carrier infrastructure will be key when it comes to site densification. Given this, the infrastructure atlas is certain to continue growing in relevance.

Broadband rollout: Synergistic effects created by trench sharing and shared use

The Bundesnetzagentur has established clear rules on the distribution of costs in the context of trench sharing. The Agency allowed the application filed by Deutsche Telekom for trench sharing in an area of new urban development and decided that the telecommunications companies involved must contribute equally to the costs of civil engineering works. Moreover, Telekom must assume all further costs incurred in connection with trench sharing. In this case, the civil works to extend coverage to the local development region were financed from the public purse given the budgetary resources used and the fact that development is a statutory mandate of the local authority.

The rates for trench sharing were determined for the first time in two sets of proceedings. The law requires these rates to be fair and reasonable.

The rates charged for sharing passive infrastructure operated by telecommunications network operators must follow the cost-recovery principle, taking the effects on the business plan – including infrastructure investment – into consideration. In the case in question concerning the shared use of Telekom's infrastructure between a street cabinet and a main distribution frame, the rate previously set for the dominant company in the context of regulatory action was applied. The national dispute resolution panel considered this to be particularly fair and reasonable in line with the statutory requirements, given that the regulated charge would have been directly applicable to the use of the same installations in the opposite direction, i.e. from the main distribution frame to the street cabinet. Further, since the competitor intended to use the installations to deploy vectoring technology, the considerations regarding the effects on Telekom's business plan were no different to the deliberations in the vectoring decision.

Where shared use involves other public supply networks, the shared use rates comprise the additional costs incurred by the sharing of infrastructure plus a reasonable surcharge. The surcharge is designed to act as an incentive on infrastructure operators to open up infrastructure for shared use. This cost benchmark was applied for the first time in 2018. A nationwide market price per metre and year, calculated from an analysis of shared-use contracts, served as the starting point. The surcharge was set at one fifth of this reference value, arriving at €0.25 per metre and year. For short distances of up to one hundred metres, a minimum surcharge of €25 per year applies. This should offer sufficient incentive to grant access for shared use and thus have a positive overall effect on the broadband rollout.

Bundesnetzagentur surveys shared-use agreements for public supply networks

Owners and operators of public supply networks are required to file agreements on shared use with the Bundesnetzagentur within two months of signing. In July 2018, the Bundesnetzagentur launched a nationwide survey amongst owners and operators of public supply networks to collect data on the shared-use agreements in place.

Over 1,000 agreements have been evaluated so far on the basis of this exhaustive survey, giving the Bundesnetzagentur a comprehensive overview of the conditions on the market.

Net neutrality

On 15 December 2017, the Bundesnetzagentur had prohibited certain elements of Deutsche Telekom's StreamOn add-on option, including the slowing down of video data transmission rates – a process also known as "data throttling". Telekom appealed against the Bundesnetzagentur's decision both in summary and in principal proceedings. On 20 November 2018, Cologne Administrative Court ruled against granting the preliminary injunction being sought by Telekom. A summary examination found the prohibition of data throttling to be lawful. Telekom has filed an appeal against the ruling with the Higher Administrative Court in Münster. A judgement in the principal proceedings has yet to be handed down.

Vodafone also launched a similar product called Vodafone Pass, which gives out passes for audio, video, chat and social media services. The passes prevent the data volumes consumed by partner services from being deducted from the data allowance in the customer's basic tariff. The Bundesnetzagentur had objected to the offering on several counts, of which one related to the aspect of net neutrality. In response, Vodafone modified the product. Unlike under the StreamOn service, video traffic is not currently throttled when using Vodafone Pass. However, Vodafone reserves the right to limit video traffic to SD quality where legally permissible. The Bundesnetzagentur anticipates that Vodafone will consider in particular the outcome of the StreamOn court proceedings in this context. Vodafone has said that it will notify the Bundesnetzagentur three months in advance of introducing any restrictions on video traffic, which would give the Bundesnetzagentur sufficient time to prohibit any unlawful throttling of video data. Moreover, the original set-up of Vodafone Pass meant that content providers without an app could not take part. During the proceedings, third parties asserted that this could be detrimental to the competitive opportunities of these content providers. Vodafone then published an amended version of the service provider agreement that resolved these concerns. The Bundesnetzagentur's criteria for transparent, open and non-discriminatory participation in Vodafone Pass are thus met in full. Accordingly, the proceedings concerning net neutrality were closed on 15 June 2018.

In 2018, the Bundesnetzagentur published its second annual report on net neutrality in Germany covering the period from May 2017 to April 2018.

Position paper on the significance of data in the network sectors as a factor in competition and value creation

The growing importance of data in all industries is a key driver of the digital transformation. Access to relevant data and the ability to analyse big data form the basis for companies to both exploit internal efficiency gains and develop new products and services. Data-driven processes are the essential foundation that will make a variety of innovative business models possible, for instance smart home applications, connected mobility, and streaming and communication services.

The position paper published in October 2018 on the significance of data in the network sectors as a factor in competition and value creation looked at how, with data becoming more relevant as a production factor in the regulated telecommunications, post, energy and rail network sectors, this will affect competition on the one hand and the potential for value creation on the other. The paper also considers whether action is already required in specific sectors and what general courses of regulatory action can emerge in this context.

The analysis makes clear that data is increasingly becoming the basis for managing complex network structures and associated value creation processes in the network sectors. Digital technologies, for example, enable individual network components to be monitored continually and their status tracked. Physical network infrastructure is becoming increasingly smart as a result. Furthermore, there is a clear trend in particular towards new, innovative market players, many of whom operate platform-based business models that rely on data as the major value-creation factor. Such market players can exert significant influence on established market structures.

Given the unique characteristics of data and digital markets, insights into barriers to competition and the suitability of corrective measures when regulating data must be consistently based on actual case analyses. The recommendations are likely to differ depending on the market conditions in the respective sector or the specific business model in question.

Possible courses of action range from imposing transparency obligations or promoting standardisation and interoperability through to establishing rules on access to data (pools). Another major challenge will be to develop clear, innovation-friendly, data privacy-compliant rules that strike a reasonable balance between the various interests of the market players.

The paper also makes a strong case for comprehensive, ongoing and proactive market monitoring. An extensive body of data and information is essential if the digital structural shift and its consequences for the regulated network sectors are to be evaluated on a sound basis.

Reorganisation of aviation call sign assignments

Under the ITU Radio Regulations, all aeronautical stations must be issued with an AIRCRAFT STATION LICENCE. Responsibility for issuing these licences, which contain assorted data including the call sign assigned to the station, falls to the Bundesnetzagentur.

Up until the end of 2018, these call signs were assigned as part of the frequency assignment process. Since the frequencies were assigned generally as of 1 January 2019 but the call signs still need to be assigned individually given that they are “numbers” within the meaning of section 3 para 13 of the Telecommunications Act, the entire scheme of assigning and using the call signs was changed from frequency assignment to number assignment effective 1 January 2019.

Following public hearings, a numbering plan, an application process and a partial revocation were published. The numbering plan sets out various aspects including the terms of use applicable to the call signs. The effect of the partial revocation is to ensure that, firstly, not all of the existing assignment notices must be re-issued but, secondly, that the terms of use set out in the numbering plan apply uniformly to all aeronautical stations.

Technical regulation

Monitoring the protection of persons within the electromagnetic fields of radio equipment
The Bundesnetzagentur issued 17,616 certificates of safety across Germany in 2018. A total of 87,703 radio equipment sites in Germany are subject to this certification requirement. The Bundesnetzagentur maintains a password-protected database of these sites for local authorities. In 2018, 1,611 local authorities were registered to access the database and more than 10,000 certificates of safety were accessed by users.

In 2018, the Bundesnetzagentur set up a message portal to collect data on radio equipment installations that do not require certificates of safety, i.e. which have equivalent isotropically radiated power of less than ten watts. The portal can be used, for example, to quickly and easily look up the installation sites of small cells without any red tape. This is another step towards greater transparency, particularly with regard to 5G.

Automated and connected driving
The federal government launched its Strategy for Automated and Connected Driving with the aim of both further consolidating Germany's position as a leading innovator in this field and becoming a lead market. Technical assistance systems can not only enhance road safety, but also optimise the utilisation of infrastructure and gradually increase the level of automation using a variety of driver assistance systems through to fully automated driving. The primary focus in this context is on safeguarding interoperability between the various systems. The Bundesnetzagentur is committed to achieving this objective in its work on the standardisation bodies at ETSI and 3GPP.

German market surveillance forum
The Federal Ministry for Economic Affairs and Energy coordinates the government's cross-sector activities relating to market surveillance. To this end, the ministry set up a surveillance forum (Deutsches Marktüberwachungsforum, DMÜF) which consults with and supports the federal government. At the end of 2017, the Bundesnetzagentur was charged with managing the affairs of the DMÜF.

The forum commenced work in summer 2018 at its inaugural meeting and agreed initial specific plans at the first regular meeting in autumn 2018.

Public safety

Automated information procedure
The automated information procedure enables authorised bodies (police, state police, federal and state protection authorities, emergency dispatch centres) to request customer data, such as names, addresses and telephone numbers, via an automated and highly secure system 24 hours a day. The Bundesnetzagentur bundles the responses received from all the companies contacted and passes them on to the authorities.

Further modernisation of the process in 2018 resulted in the majority of authorised bodies being migrated to a new IP interface with end-to-end encryption. At present, 107 authorities are registered as authorised bodies, with 116 companies taking part in the scheme.

Information can now be provided extremely rapidly – if necessary, within a few seconds – thanks to technological improvements. The procedure has become a well-established investigative tool that receives up to 120,000 requests for names and telephone numbers each day from authorities and emergency dispatch centres. In 2016, the Bundesnetzagentur processed 10.26 million requests. This number increased to 13.57 million in 2018, corresponding to growth of around 60% since 2016.

Telecommunications intercepts
In 2018, the Bundesnetzagentur once again carried out checks on the companies obliged to perform telecommunications intercepts and thus ensured a consistently high standard of implementation of the legal requirements. Version 7.1 of the Technical Directive (TR TKÜV, section 110(3) Telecommunications Act) came into force in October 2018 implementing the new rules of the Telecommunications Act and the Telecommunications Interception Ordinance. The new version was drafted in consultation with the authorised bodies and with the involvement of the associations of the companies affected and the manufacturers.

Storage of traffic data
The Bundesnetzagentur is taking no steps to issue orders and other measures to implement the storage obligations in section 113b of the Telecommunications Act vis-à-vis all companies affected until a legally binding conclusion is reached in principal proceedings.

OTT-1 services
In spring of 2017, the Bundesnetzagentur began to develop an internationally standardised monitoring approach for messaging services. The aim was to incorporate the solution into the Technical Directive relating to the Telecommunications Interception Ordinance (TR TKÜV) and press for its implementation. Some initial success was achieved in 2018. Looking ahead, the progress made, together with collaboration in the area of public safety, are to be taken forward in close consultation with the cooperating providers and the German and international partner authorities. A corresponding ETSI specification is expected to be ready by autumn 2019.

Technical safeguards
Protecting the privacy of telecommunications and personal data, protecting systems against faults or interference, and managing the risks to the security of telecommunications networks and services are the objectives of section 109 of the Telecommunications Act. Approximately 70 incidents classified as security violations within the meaning of section 109(5) of the Act were reported to the Bundesnetzagentur in 2018. The Bundesnetzagentur also received around 190 new security concepts, which it examined for compliance. Fines were imposed on approximately 18 companies to enforce the obligation to present. Some 230 spot checks were carried out to check the implementation of the security concept.

At the time of preparing this report, two security concepts had been submitted and reviewed in accordance with section 113g of the Act. No security issues were found. Around 100 OTT service providers were reminded of their obligation under section 109(4) of the Act in view of the growing importance of this topic as well as competition from traditional telecommunications services (such as text messaging and telephony) with OTT services (e-mail, messenger and voice over IP services).

International cooperation

With the Bundesnetzagentur represented on numerous international committees in the telecommunications sector, its goal is to contribute from experience gained over 20 years in the regulatory field. In 2018, the new European regulatory framework for the telecommunications market formed a central focus of activities. The Bundesnetzagentur provided support in connection with the legislative process in Europe and was closely involved in the work of various European working groups.

Work on international committees

The Bundesnetzagentur is represented on numerous international committees active in the telecommunications sector, including the Independent Regulators Group (IRG) and the European regulatory body BEREC. The latter advises in particular the European Commission on creating a single European market in the telecommunications sector. In the working groups, experts from the national regulatory authorities contribute from their experience gained over 20 years of regulatory activity in areas including international roaming, net neutrality and consumer protection. Each year, BEREC publishes an updated work programme to ensure its work continues to address fields relevant to the sector's ongoing development.

BEREC has a two-pronged structure: The first is the Board of Regulators, on which the European regulatory authorities are represented. Various expert working groups reporting to the Board of Regulators carry out the specialist work. The second is the BEREC Office, which is overseen by the Management Board (known as the Management Committee until December 2018), itself also comprising representatives from the regulatory authorities plus a European Commission delegate with voting rights. BEREC is represented externally by a Chair, who is elected in each case for a term of one year by the Board of Regulators. 2018 Chair Johannes Gungl of RTR (Austria) was succeeded by Jeremy Godfrey of ComReg (Ireland) in 2019.

The Bundesnetzagentur was once again represented by experts on all working groups in 2018 and provided one of the two co-chairs for two of these groups.

Revision of the regulatory framework for electronic communications including the BEREC Regulation

In June 2018, the three institutions involved in the legislative process at European level agreed on an overall package of new regulation for the European telecommunications market. The European Parliament and the Council adopted the European Electronic Communications Code (Directive 2018/1972) in mid-December 2018. Member States now have two years[2] to transpose the requirements into national law; in Germany by way of amendments to the Telecommunications Act.

[2] The regulations on intra-EU services are to be applied from 2019 onwards.

In light of current developments, an update to the regulatory situation was considered necessary to set the right course for the Digital Single Market in Europe. The Code covers the core of existing sector-specific regulation, and has been updated to include new developments such as 5G and non-number-dependent communications services (OTT-1).

Within the scope of the European legislative process, the Bundesnetzagentur supported the two federal ministries responsible and advised on the regulatory effects of the planned rules. The Bundesnetzagentur was also closely involved in the various BEREC working groups working on the Code.

Spectrum management
The Code includes supplementary rules on spectrum management. In the interests of smoothing the path for the rapid build-out of 5G networks across Europe, it requires the necessary frequency bands to be made available by the end of 2020. The Code also specifies a minimum licence term of 15 years for the award of spectrum, with a one-off option to extend by a further five years.

Additionally, it calls for the introduction of a voluntary peer review process in which national draft decisions are opened up for consultation Europe-wide. The Commission's proposals originally included multiple additional implementing acts relating to spectrum award and assignment proceedings, although these were eventually discarded in the course of the legislative process.

Further development of market regulation
Some key changes in the Code relate to market regulation and are designed primarily to stimulate investment in high-speed broadband networks, particularly in rural areas. In addition to the existing regulatory objectives – promoting competition, consumer interests and the single market – these changes explicitly aim to improve connectivity and access to high-speed infrastructure.

Detailed regulatory requirements/conditional exemptions in certain scenarios should further boost the optical fibre rollout. In the future (following an extensive review of the agreements by the regulatory authorities), market-dominant companies are no longer to be regulated in cases where, for example, fibre-optic networks are being rolled out as a co-investment under agreements involving multiple telecommunications network operators. The new rules are to give investing companies greater freedom whilst adhering to the rules of play regarding competition.

Improvements for consumers
Since the Code aims to cement a high level of consumer protection in the EU, this will go hand in hand with improvements for customers in Germany – for example, with respect to bundled services. Moreover, it stipulates that end users must be able to access at least one comparison tool at no cost that allows them to compare communications and internet access services with specific quality attributes.

The distinction between “conventional” telecommunications products (like telephony or text messaging) and internet-based communications services (such as WhatsApp or iMessage) is becoming increasingly blurred for consumers. In light of this, the new EU regulatory framework takes a much more functional and less technical tack with respect to its scope of application. It ensures – where necessary – a level playing field for all communication services and "comparable protection for comparable services".

In the future, consumers are to be protected against inflated prices for international calls within the EU (intra-EU services). Calls to other EU countries (for instance, from Germany to France) will be capped at 19 ct/min and text messages at 6 cents effective 15 May 2019. These requirements are in addition to the roaming rules that allow consumers to “roam like at home” using their mobile devices abroad without incurring additional charges.

Responsibilities of BEREC
Alongside the Code, an amended EU regulation on BEREC was also adopted. The proven two-pronged committee structure was retained in its current form.

However, BEREC was handed a range of additional mandates with the aim of safeguarding the consistent application of the complex new regulatory challenges EU-wide. As such, BEREC is tasked with drawing up 12 new guidelines for the Code alone – for example, on the criteria for the reference offer, on co-investment, on very high-capacity networks and on intra-EU

services. With respect to symmetric regulation or in the case of co-investment, national regulatory authorities are now required to retract or amend their draft measures in the event that BEREC shares the serious doubts raised by the European Commission.

Findings of the BEREC Data Economy Working Group

The findings in the position paper published by the Bundesnetzagentur on the significance of data in the network sectors as a factor in competition and value creation are taken into account both on a national and international level. The Bundesnetzagentur passes on the findings to the BEREC Data Economy Working Group. The Group also looks at the effects of rising levels of data collection and analysis on competition, innovation and consumer protection. A public consultation process gave businesses, associations and other interested parties the opportunity to respond to the aspects mentioned. Moreover, several workshops have been held with associations, market participants and experts from the research world. This work will continue in 2019, including publication of a report.

Net neutrality

In 2018, BEREC published an evaluation of experiences gained to date with the application of net neutrality rules, which found that the rules and guidelines were being applied sufficiently well. At the same time, it noted that clarification was needed on certain aspects without necessarily altering the substance of the guidelines. BEREC will draft an update to the guidelines in 2019 and open this up for consultation.

The BEREC report on the implementation of the net neutrality rules found that the national regulatory authorities were implementing the rules with adequate uniformity.

BEREC put the development of a procedure for measuring net neutrality out to tender in 2018. The winning bid was submitted by a consortium of companies from Austria and Germany. The measuring procedure is expected to be in development for a year before it can be implemented by the national regulatory authorities or integrated into existing national measuring systems.

Article 7 and 7a procedures

In accordance with Articles 7 and 7a of Framework Directive 2002/21/EG, the European Commission can review measures planned by the national regulatory authorities for their compatibility with EU law. If it finds "serious doubts" within four weeks, the Commission can open an in-depth investigation known as a "Phase II". During this procedure, the regulatory authority may not definitively adopt the draft measure.

As part of the Phase II, BEREC submits an opinion which the European Commission is required to take utmost account of when making its final recommendation. The Commission can ask the regulatory authority to amend or retract the draft. Under Article 7a, the regulatory authority may decide to retain the draft in its original form provided sufficient justification is given. BEREC shared the European Commission's concerns in two of the three remaining Phase II investigations in 2018, while in the third case a differentiated picture emerged.

The Bundesnetzagentur gave notification of draft measures in eight procedures in 2018, all of which entered into force without the need for a Phase II.

International roaming and national enforcement of the Roaming Regulation

International activities

The “roam like at home” principle definitively abolished roaming surcharges from 15 June 2017. The new rules enable consumers to use their mobile service EU-wide just like at home by substantially reducing the maximum wholesale charges that roaming partners can demand from mobile providers for making the network available for use. The Roaming Regulation caps these rates and is bringing down other charges, for instance that for data consumption, which is to be reduced to €2.50/GB by 2022.

Given these substantial reductions, the European Commission has been tasked with reviewing the roaming market and its rules on a regular basis. With the Commission due to file its first report at the end of 2019, in spring 2018 it initiated a cost study coordinated by the Bundesnetzagentur. The Bundesnetzagentur thus ensures that German mobile providers are included in the cost study and that the Commission receives the data required for its review.

National implementation
The Roaming Regulation places the responsibility for monitoring and implementing the rules in Germany with the Bundesnetzagentur.

Administrative proceedings held by the Bundesnetzagentur in 2018 resulted in the Agency ordering the zero-rating product Vodafone Pass to be brought in line with the new roaming rules. Vodafone Pass enables users to access certain video, music, social media and chat applications in their home country without using up the data volume included in their rate plan.

However, the data volumes used by Vodafone Pass partner services are deducted from the customer's data allowance when roaming in the EU. This does not conform to the roam like at home principle, which says that consumers can use their mobile plans exactly the same EU-wide as at home. Vodafone has filed an appeal against the order with Cologne Administrative Court. In a similar case from 2017, the Bundesnetzagentur had ordered Deutsche Telekom to adapt its zero-rating product StreamOn to conform to the new rules. Telekom also sought a preliminary injunction with Cologne Administrative Court, which was not granted. Telekom has filed an appeal against the ruling with the Higher Administrative Court in Münster.

In dispute resolution proceedings, the Bundesnetzagentur ruled that Telefónica must submit a reference offer to French company Transatel on wholesale roaming access at regulated rates in accordance with the Roaming Regulation. This decision is final and absolute.

The dispute related to the use of “901-IMSI” numbers by Transatel. These are international IMSI numbers that – unlike other IMSI numbers – are not assigned to a specific country.

In Telefónica's view, this practice opens up the regulated rates to potential abuse since it is impossible to know whether or not the end customer comes from an EU/EEA country and thus is – or is not – eligible to benefit from the regulated rates. In the view of the Ruling Chamber, 901-IMSI numbers are covered by the scope of the Roaming Regulation and do not carry a greater potential for abuse than do national IMSI numbers. Telefónica was permitted to incorporate measures to combat abuse in its reference offer.

International spectrum management

Electronic Communications Committee (ECC) with WGFM and WGSE
In cooperation with other European regulatory authorities, the Bundesnetzagentur supported numerous technical studies and assisted with the subsequent drafting of Europe-wide spectrum regulation.

In MFCN, CEPT prepared the affected ECC decisions for the bands at 3400–3800 MHz and 24, 25–27, and 50 GHz and adapted them to the demands of 5G. A solid foundation has thus been created for these 5G pioneer bands from a frequency viewpoint. This applies in particular to the deployment of 5G technology taking into account the need to protect other radio applications in the 5G pioneer bands and neighbouring frequency bands.

The Bundesnetzagentur also contributed its expertise in the following areas:

- Intelligent transport systems in the band at 5.9 GHz for road traffic, urban rail and metro networks etc.
- Future Wi-Fi systems in the band at 5925–6425 MHz
- Future radio applications for public rail
- Frequency usage to control professional drones
- Frequency usage for broadband systems in the band at 57–66 GHz
- Updating the spectrum rules for short-range device and ultra-wide band applications
- The use of mobile earth stations for geostationary and non-geostationary satellites in the bands at 10.7–12.75 GHz and 14.0–14.5 GHz
- The use of microwave frequency bands above 90 GHz
- Adaptation of the terms of use for mobile radio applications within the bands at 400 MHz in line with the latest technological developments
- Wi-Fi applications in trains, vehicles etc.
- Spectrum applications below 9 kHz

International Telecommunication Union and WRC 19
In 2018, the ITU was busy wrapping up the various studies on topics planned for the World Radiocommunication Conference 2019. All committees involved were required to conclude work on their respective subject areas by the end of August. The combined draft report, including proposals on potential regulatory decisions, was published in September and will be accepted by the ITU Conference Preparatory Meeting CPM19-2 in February 2019.

In contrast to the discussions in Europe, there was already general support for a number of approaches thanks also to the intensive efforts of the Bundesnetzagentur worldwide. With respect to the central topics of 5G/IMT2020, the bands at 26 GHz, 40 GHz and 66–71 GHz have been clearly earmarked as spectrum above 24 GHz with the potential for worldwide harmonisation.

Intensive discussions surrounding potential worldwide terms of use and impact assessments continue. By contrast, in the field of intelligent transportation systems for road, rail and aviation, there is general agreement on the approach at WRC. The option of using satellites or high-altitude platform stations (HAPS) to provide broadband coverage is still a subject of debate.

Radio Spectrum Committee (RSC)
The European Commission's Radio Spectrum Committee (RSC) drafts implementing decisions on the basis of the Radio Spectrum Decision. These implementing decisions provide binding requirements EU-wide on the harmonisation of spectrum-related terms and conditions.

In the reporting year, the committee discussed the terms of use for MFCN with respect to future 5G applications. Both these and other activities relating to a new future harmonisation initiative for radio applications in public rail are ongoing. In the area of public rail, the Bundesnetzagentur has already put in place stable framework conditions for future radio systems by making 2 x 7 MHz of spectrum in the band at 900 MHz available in Germany. One of the Bundesnetzagentur's key goals is to avoid any restrictions on the opportunities for using this spectrum, so as to enable a longer migration phase for the future transition to a new technology. This also calls for additional frequency bands to be explored in other (higher) spectrum bands.

Looking at the vertical market sectors, a particularly noteworthy example is the transport industry. In the reporting year, the Bundesnetzagentur was involved in efforts to update the harmonisation initiative for intelligent transport systems (ITS). The aim is to both establish technology-neutral terms of use for ITS on roads and create opportunities for urban railways, metros etc. ITS will enhance road safety by enabling vehicle-to-vehicle communication and vehicle-to-infrastructure communication. In conjunction with other vehicle assistance systems, such as long-range and short-range radar, ITS constitutes a key element in the advancement of self-driving cars.

Radio Spectrum Policy Group (RSPG)
In 2018, this high-level advisory group focussed on areas central to the implementation of the new telecommunications directive. Following the adoption of the new regulatory framework, the new remit of the RSPG will be fleshed out in 2019. One major change is the introduction of a peer review process in connection with the provision of information on award proceedings. The topics of "5G implementation" and "WRC 19" were also dealt with in depth, with the RSPG issuing new opinions that took into account the interests of vertical industries in respect of 5G and included recommendations for binding EU positions in the context of WRC 19.

The latter had become necessary given the current case law of the European Court of Justice on international organisations. Moreover, the RSPG initiated extensive discussions on the long-term strategic aspects of European spectrum regulation with a view to improving its ability to respond to the dynamics of the telecommunications market.

5G standardisation/5G dialogue platform

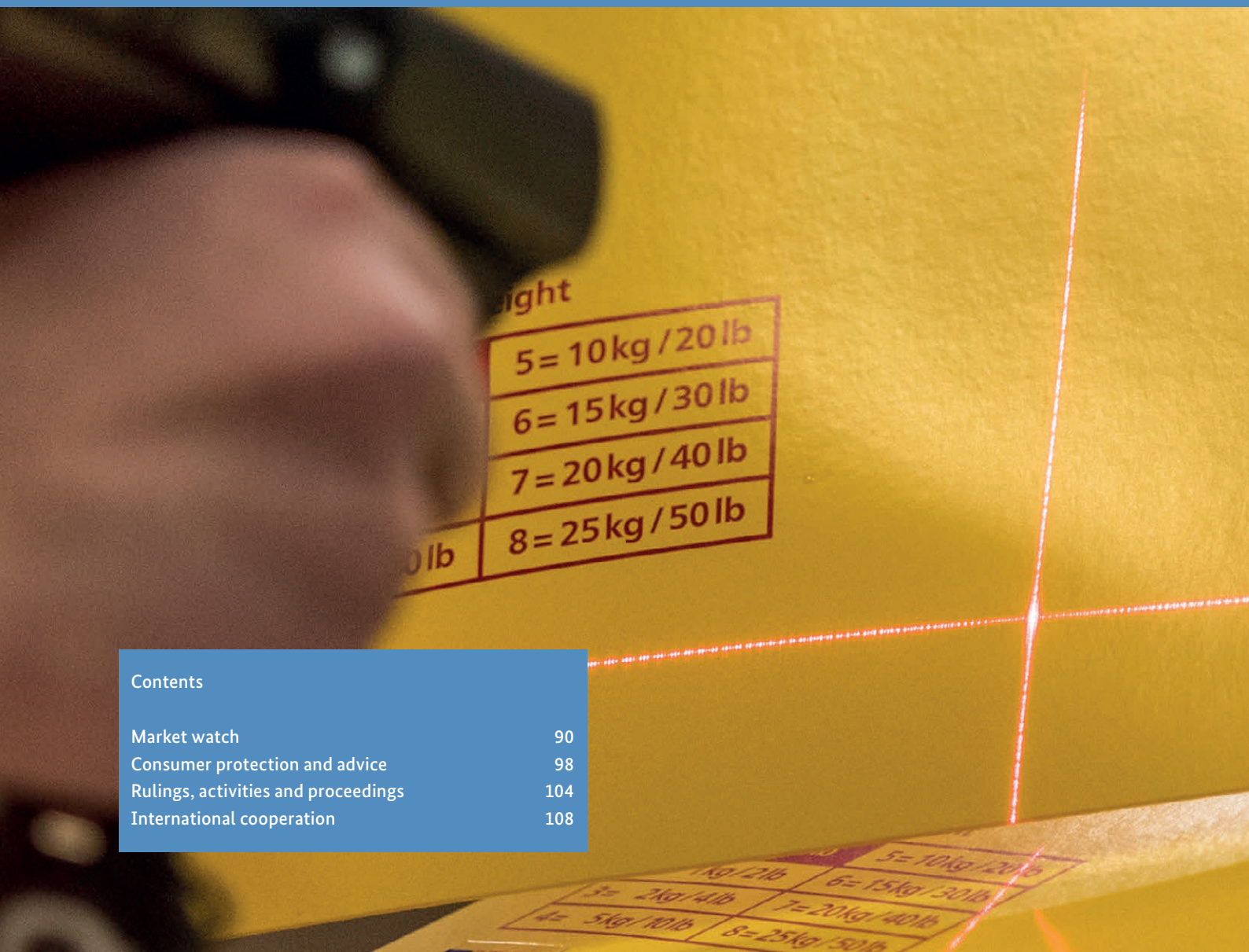
The 3rd Generation Partnership Project (3GPP) plays a key role in the standardisation of 5G. In June 2018, 3GPP concluded its standardisation work in the form of Release 15 and published an initial package of 5G specifications. Overall, 5G offers a significant improvement versus LTE and is to be used in a range of applications in the future, such as industrial environments. The Bundesnetzagentur makes an active contribution to the work of 3GPP and helps to ensure compliance with the necessary regulatory framework in the course of 5G standardisation.

The Bundesnetzagentur also moderates a 5G dialogue platform (AP5G) to give German businesses and sectors using 5G the opportunity to voice their demands to 3GPP in connection with 5G standardisation. Key areas in 2018 included coordinating applications for 3GPP, ascertaining the current status of 5G standardisation, and advising and introducing new participants to 3GPP.

POST

Postal markets gain momentum

Digitalisation and e-commerce have increasingly driven the pace in the postal market. They have again ensured market growth for another year in succession. Cross-border online trade has also continued to gain in importance in recent years. These market changes are reflected in a new European Commission regulation on cross-border parcel delivery services.



Contents

The growth momentum in the postal market of recent years has clearly been generated by the courier, express and parcel sectors (CEP). Overall, this positive market performance is expected to continue in 2018. The encouraging trend in CEP, however, is in contrast with the slight decline in letter post.

Deutsche Post Group remained the dominant mail service provider in the market. Nevertheless, its larger competitors were for the most part able to stabilise their market position. Overall there were signs of keener competition in the letters delivery market, especially from bigger competitors.

The new European Parcel Regulation provides an initial response to progressive digitalisation in the postal markets. The term “parcel regulation”, however, is slightly misleading: in the regulation, anything other than correspondence falls under the term “parcel”. This includes many items that fit in a letter box, for instance small goods and packets. Postal items such as these are regularly transported via the postal network by mail service providers, who have thus unwittingly become parcel service providers. To all practical intents and purposes, there is no longer a clear distinction between letter conveyance and parcel conveyance. The Parcel Regulation has moved away from the classic definitions of the postal sector and has redefined them.

Accordingly, in 2018, the Bundesnetzagentur started to widen the scope of its market survey to cover all the market segments. By doing so, it has already made adjustments to meet the requirements of the EU Parcel Regulation, which entered into force in May 2018.

This shows that the lines between the courier, express and parcel segments are becoming increasingly blurred. It is likewise proving difficult to make a distinction between postal services and those of logistics and goods transportation, since many transport providers offer both logistics and postal services.

Market watch

Growth in the CEP area continued in 2018, especially for business-to-consumer services (B2C), but difficulties in hiring staff acted as a restraint. The worldwide decline in letter volumes was also noted in Germany, although the impact remained comparatively modest.

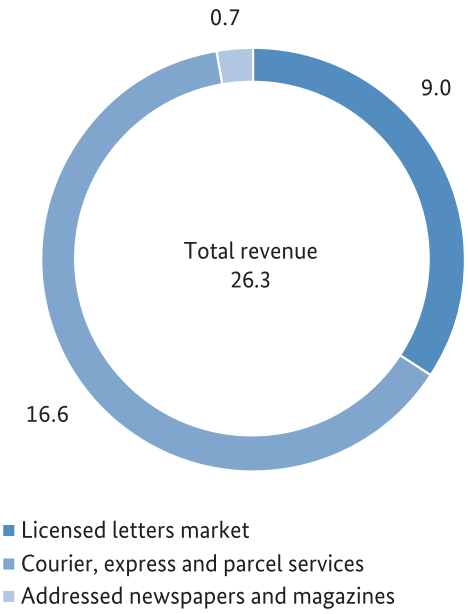
Postal markets

The postal markets include the CEP market, the conveyance of letters weighing up to 1,000 grammes (licensed sector), and the delivery of addressed newspapers and magazines.

In 2017 the postal markets generated revenues of €26.3bn, marking an increase from the prior year of around 4.1%. The CEP segment was the main growth driver. Overall a slightly improved market performance is expected for 2018. The positive trend in the CEP segment is in contrast to the slight decline in letter mail.

In 2017 revenues in the CEP market rose by around 0.9%, whereas letter mail revenues in 2017 fell by 1.8% to approximately €9.0bn (2016: around €9.1bn). It is primarily the competitors to Deutsche Post Group[1] that have reported falling revenues and volumes compared with the prior year. The press distribution services (advertisements, magazines, daily and weekly newspapers) reported a continued average decline of just above 1% per year for the period 2010 to 2017. This trend is forecast to continue in 2018.

Revenues in the postal markes 2017
€bn



Letter services

Revenues and volumes

A slight fall in revenues from €9.1bn in 2016 to €9.0bn in 2017 was reported in the letter services segment. A further decline in revenues and volumes is expected in 2018; this is attributed to the progressive spread of digital technology.

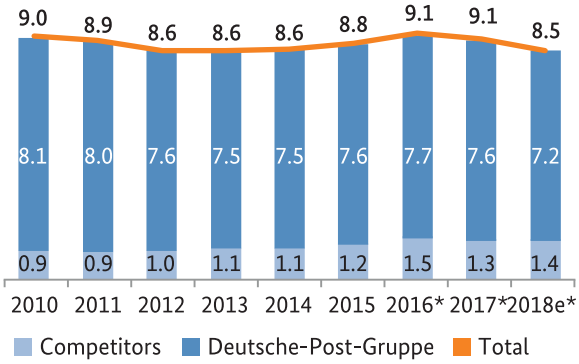
Competitors to Deutsche Post Group reported revenue increases in recent years, which reached as high as €1.5bn in 2016. However, revenues fell to €1.3bn in 2017. For 2018, the competitors are expecting a slight improvement on the 2017 revenue.

Deutsche Post Group achieved revenues of around €7.6bn in 2017 (2016: around €7.7bn). A slight decline in revenues has been forecast for 2018.

The number of books and goods items sent via Deutsche Post AG has also fallen steadily over the last eight years (2010: around 0.14bn items, 2017: around 0.09bn items).

[1] The Deutsche Post Group includes Deutsche Post AG and its subsidiaries that provide licensed letter services.

Letters market revenues**
€bn



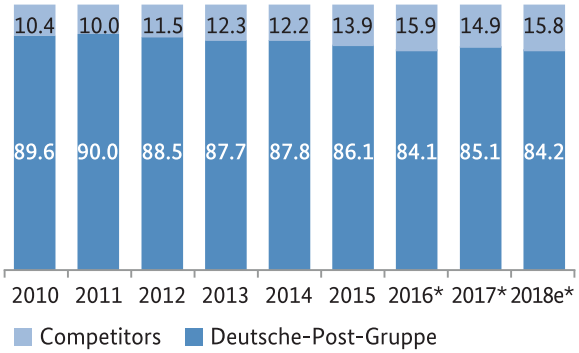
e = Estimate

* Discrepancies in the graph are due to rounding.
** As of 2016, the questionnaire for the DP AG competitors has become more precise following validation of the data inputs. The changes have simplified the data input.

Market shares

The percentage of the letters market revenue accounted for by Deutsche Post Group rose to 85%, which is slightly higher than the prior year's level (84%). In terms of revenue, the market share of Deutsche Post Group's competitors fell to around 15% in 2017 (2016: around 16%).

Revenue-based market shares in the letters market
%



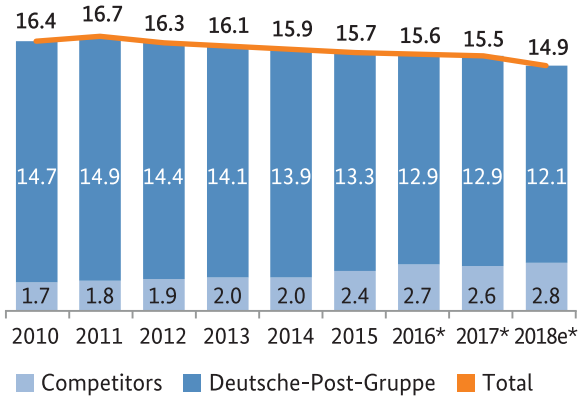
e = Estimate

*As of 2016, the questionnaire for the DP AG competitors has become more precise following validation of the data inputs. The changes have simplified the data input.

The overall volume remained stable at around 15.5bn items in 2017 (2016: around 15.6bn items). At Deutsche Post Group the volume remained practically unchanged at 12.9bn items.

Its competitors were able to maintain their market position in terms of volume. However, the number of items transported fell slightly from 2.7bn items in 2016 to around 2.6bn items in 2017. This represents a year-on-year decline for the competitors of 3%.

Letters market volumes
Billion items



e = Estimate

* Validations have led to minor corrections to the figures for the previous year.

Deutsche Post Group is assuming a further drop in volume (around 0.8bn items) in 2018, whereas its competitors are expecting an increase of around 0.2bn items. The competitors do not expect to be able to make up the drop in volume at Deutsche Post Group according to their forecasts for 2018.

Deutsche Post Group retained its dominant position in the letters market. The high-revenue competitors to Deutsche Post Group were largely able to stabilise their market position. Overall there were signs of keener competition in the letters market, especially

Licensed letter service operators by revenue*
(without Deutsche Post Group)

Revenue	Up to €100,000	> €100,000 to €500,000	> €500,000 to €1m	> €1m to €10m	> €10m	Total number
2010	~ 330	108	44	93	20	595
2011	~ 330	117	42	90	22	601
2012	~ 350	113	36	103	28	630
2013	~ 350	94	42	94	26	606
2014	~ 325	97	28	92	27	569
2015	~ 325	102	26	86	35	574
2016	229	116	39	101	46	531
2017	237	92	37	80	39	485

* This breakdown only covers companies active in the market and the number is therefore lower than that of licensed operators.

from the bigger competitors. In total, 485 companies reported that they generated revenues in the letters market.

Competitive structure
If the competitors in the letters market are viewed in terms of their revenues, the different weighting of the companies operating in the market is revealed. The ten companies with the highest revenues (about 2% of all competitors) accounted for approximately 42% of the total revenues earned by all market competitors.

Access services
When bulk mailers or Deutsche Post competitors transfer items to Deutsche Post Group for delivery, they are charged a lower rate to account for the preliminary work they have carried out, such as pre-sorting or franking.

Revenues earned from access mail have risen slightly from around €4.6bn in 2016 to around €4.7bn; the competitors to Deutsche Post Group accounted for around €0.1bn of this amount. However, a slight decline has been forecast for 2018.

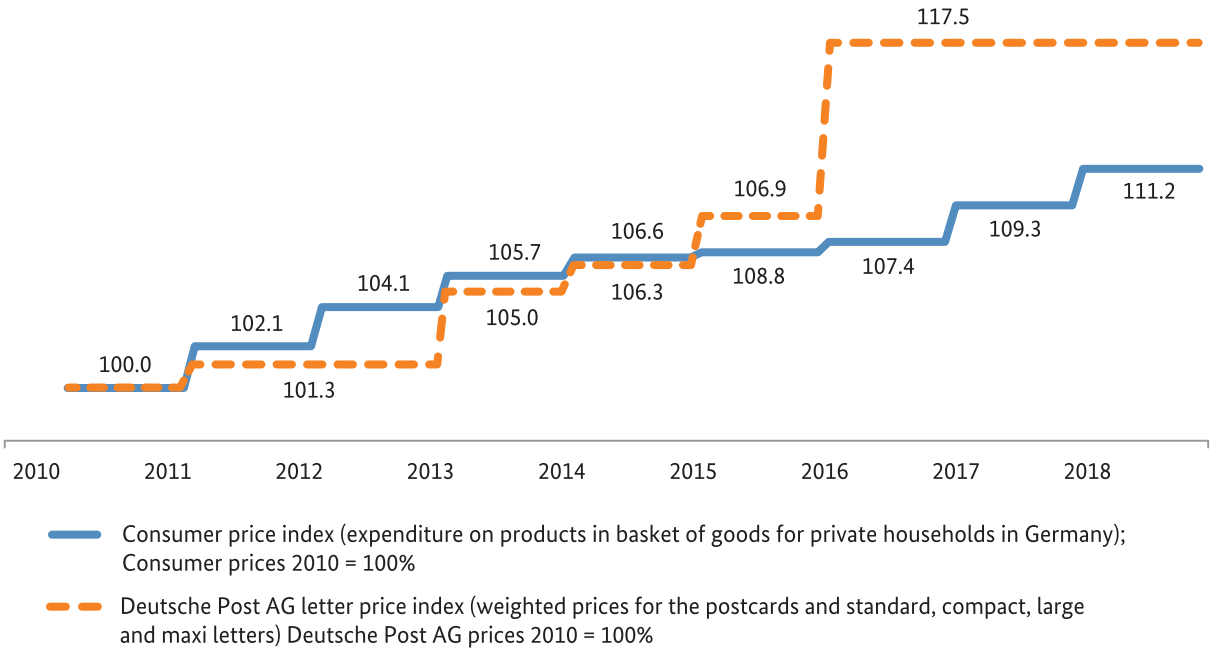
Domestic letters weighing up to 1,000 grammes
In 2017, the majority of letter-post items subject to licence (excluding access services) were for delivery in Germany. About 4.4bn items were handled overall and revenues totalled around €2.8bn. The competitors to Deutsche Post accounted for approximately 2.3bn items with revenues of nearly €1bn; they reported delivery of about one-third of the items. Approximately two-thirds of the items were delivered by cooperation partners or were transferred to consolidators.

Stamp prices for letters* 2010 to 2018
€

Year	2010–2012	2013	2014	2015	2016–2018
Standard letter up to 20 g	0.55	0.58	0.60	0.62	0.70
Compact letter up to 50 g	0.90	0.90	0.90	0.85	0.85
Large letter up to 500 g	1.45	1.45	1.45	1.45	1.45
Maxi letter up to 1.000 g	2.40	2.40	2.40	2.40	2.60
Postcard	0.45	0.45	0.45	0.45	0.45

* Prices as at 1 January each year

General price trend and DP AG letter prices



Service of documents

Revenues from the service of documents rose modestly to around €126m in 2017 (2016: around €124m). Both Deutsche Post Group and its competitors reported a slight increase. Neither Deutsche Post Group nor its competitors are expecting any noticeable change in volume in 2018.

National stamp prices

The standard letter stamp price, which is set by Deutsche Post AG and has been in force since 1 January 2016, remained at €0.70 in 2017. At the time of going to print, a new postal charge had not been approved. For the first time since 2010, the letter price increase introduced in 2016 was greater than the increase in the consumer price index.

International stamp price comparison for standard letters (E+X)

Country	Nominal price standard domestic letter	Real price standard domestic letter	Weight	Delivery speed
DK	1.21 €	1.16 €	50 g	E+5
IT	0.95 €	0.95 €	20 g	E+1
IS	1.44 €	1.23 €	50 g	E+1
NO	1.42 €	1.38 €	20 g	E+1
FI	1.50 €	1.46 €	50 g	E+1
IE	1.00 €	0.98 €	100 g	E+1
CH	0.85 €	0.85 €	100 g	E+1
HR	0.42 €	0.41 €	50 g	E+1
FR	0.77 €	0.75 €	20 g	E+1
UK	0.76 €	0.84 €	100 g	E+1
BE	0.79 €	0.76 €	50 g	E+1
NL	0.83 €	0.80 €	20 g	E+1
SE	0.91 €	0.88 €	50 g	E+1
PL	0.48 €	0.49 €	350 g	E+2
EL	0.65 €	0.64 €	20 g	k.A.
DE	0.70 €	0.68 €	20 g	E+1
LU	0.70 €	0.68 €	50 g	k.A.
SK	0.50 €	0.49 €	50 g	E+1
AT	0.68 €	0.66 €	20 g	E+1
EE	0.65 €	0.63 €	250 g	E+1
CZ	0.74 €	0.71 €	50 g	E+1
PT	0.53 €	0.51 €	20 g	E+1
LV	0.50 €	0.48 €	20 g	E+1
ES	0.55 €	0.54 €	20 g	E+3
HU	0.39 €	0.38 €	20 g	E+1
LT	0.39 €	0.37 €	20 g	E+1
BG	0.33 €	0.32 €	50 g	E+2
CY	0.34 €	0.34 €	50 g	E+1
SI	0.40 €	0.39 €	20 g	E+1
RO	0.28 €	0.28 €	20 g	E+2
MT	0.26 €	0.25 €	50 g	E+1

Source: Websites of the postal operators/Eurostat

International stamp prices
The Bundesnetzagentur performed a comparison of international stamp prices for standard, compact, large and maxi letters for the first time in 2018, which included universal service provider prices in 31 different countries. The results showed that in many countries it is not customary to have a price difference between standard and compact letters.

For standard letters it is important to note that in the majority of countries where the stamp price was higher than that of Deutsche Post AG this was often linked to a higher letter weight. If the principle of affordability is taken into account when considering the stamp price, the average of all real prices was €0.69 per standard letter. The quality of delivery reflected the consumer's perspective in terms of choosing the most affordable comparison product. Deutsche Post AG was just below the average real price for a standard letter at €0.68.

Revenues and volumes in the non-licensed segment

This year, for the first time, the Bundesnetzagentur has collected data in its market survey on non-licensed letter services, which includes access and unaddressed items.

This segment generated total revenues of €625m; the forecast for the coming year is for revenues of more than €750m. Around 3.8bn items were transported in this segment and the same volume is forecast for 2018. On the whole, this segment is heavily dominated by Deutsche Post Group.

Courier, express and parcel (CEP) services

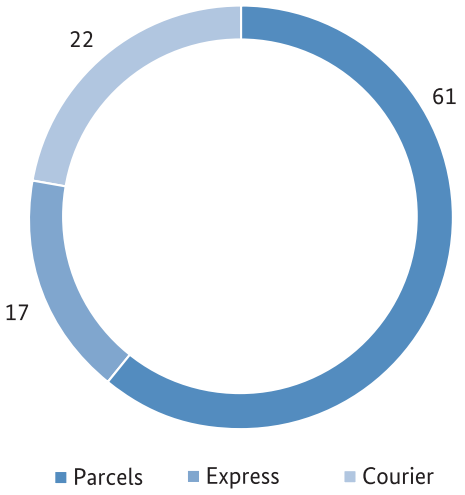
The positive trend in the CEP market continued in 2017. Revenues of around €16.6bn were generated overall, representing a year-on-year increase of just under 1.0% (2016: around €16.4bn).

The market figures published here are based on the definitions from the postal services market survey carried out by the Bundesnetzagentur in 2018. Previous data was collected with more generous weight limits, leading to differences from earlier market data. These definition-related differences do not represent any actual changes in the market.

As the figures are not comparable, this report only includes data that corresponds to the new definitions, even with respect to the data provided for previous years.

In 2017 the parcels segment again accounted for the largest share of revenues at 61% (2016: around 62%). The express market generated 17% of revenues (2016: around 17%) and the courier market around 22% (2016: around 21%).

Revenue in the CEP segments 2017*
%



* There are differences from the figures for the previous year.
Source: Bundesnetzagentur, WIK-Consult , CEP-Research

In 2018 the Bundesnetzagentur started to widen the scope of its market survey to cover all the market segments. This meant the market survey also met the requirements of the EU Parcel Regulation, which entered into force in May 2018.

At the same time this revealed that the current segmentation applied to CEP products is increasingly being eroded. It is likewise proving difficult to make a distinction between postal services and those of logistics and goods transport. Many transport companies offer both logistics and postal services. Accounting systems, however, do not make a legal distinction between these related markets. Therefore it is becoming increasingly difficult to make a clear-cut distinction between the individual segments.

Overall there was revenue growth in the CEP market in 2017, although the changes in the different segments varied considerably. The courier and express markets

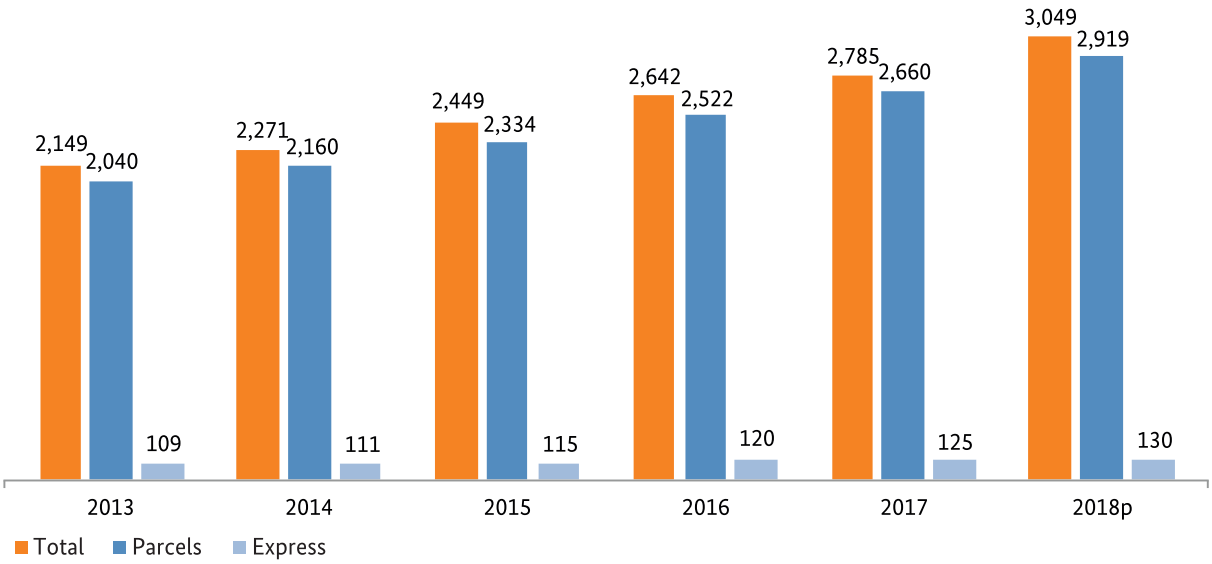
CEP market revenues
€m

Year	2015	2016	2017	2018p
Courier	3,371	3,439	3,559	3,684
Express	2,645	2,743	2,855	2,978
Parcels	9,528	10,266	10,180	11,066
Total	15,544	16,448	16,594	17,728

Source: Bundesnetzagentur, WIK-Consult, CEP- Research

reported clear growth of 3.5% and 4.1% respectively, whereas revenues in the parcels sector fell by nearly 1%. The forecast for 2018 shows that revenue growth is expected again in all the CEP markets. Although the volume of items in the courier market cannot be determined with sufficient accuracy to permit comparison with the parcels or express markets. In the parcels market, volume growth continued at just under 6%. Volume growth in the express market achieved 4%.

CEP market volumes
Million items



Source: Bundesnetzagentur, WIK-Consult, CEP-Research

Employment trend

In 2017 a total of 482,464 people were employed by postal operators. The trend towards higher employee numbers in recent years is successfully continuing and will most likely continue in 2018. However, this growth will be slowed by the excellent situation on the employment market. Postal operators are finding it increasingly difficult to fill vacant positions. According to the trade associations for the sector, at the time of going to print more than 40,000 positions across the entire logistics sector were unfilled.

Employment trend

Year	Total	Change
2015	448,114	4.29 %
2016	468,806	4.62 %
2017	482,464	2.91 %
2018p	489,701	1.50 %

Market access

Licensing
During the period from 1998 to 2018, the Bundesnetzagentur issued about 3,150 licences to individuals and companies for the conveyance of letters weighing up to 1,000 grammes. In 2018, 32 new licences were issued (2017: 54 new licences) and 31 licensed operators withdrew from the market (2017: 43 withdrawals). Thus the number of new licensees and those licensees withdrawing from the market remained more or less balanced. Following the issue of a relatively high number of new licences in the years 2015 to 2017 (>50 licences), the number issued in the reporting year was once again at the 2014 level (39 licences). At present more than 1,000 valid licences are in use on the market.

Administrative offence proceedings
The German Postal Act provides for warnings to be issued or fines to be imposed for various breaches. In general, most breaches concern the conveyance of letter items without a licence or the failure to comply with the notification obligation for the provision of postal services. In 2018 the vast majority of violations prosecuted were in relation to the notification obligation and for the most part were treated as minor cases of non-compliance. A bigger fine was imposed in one case for operating without a licence. In total the Bundesnetzagentur issued seven warnings and imposed six fines. The total amount of fines was approximately €1,600 in 2018.

Multi-agency conference
On 19 and 20 September 2018, the Bundesnetzagentur hosted the fifth meeting of the federal bodies responsible for issuing and enforcing administrative fines and the associated proceedings. The two-day event was attended by 49 people from 11 different federal authorities and federal ministries. One of the main topics this year looked at the possibilities for cross-border enforcement. In addition, the North Rhine-Westphalia Police Force informed the attendees of the practical possibilities of conducting a search of business premises.

Notification obligation
Operators of licence-exempt postal services are required to notify the Bundesnetzagentur in writing and within one month when they commence, change or cease operations. The following licence-exempt activities must be notified: (i) conveyance of letter items each weighing more than 1,000 grammes, (ii) conveyance of addressed parcels weighing up to 20 kg, (iii) courier services, (iv) conveyance of books, catalogues, newspapers or magazines by companies also operating letter or parcel services; and (v) conveyance of letter items each weighing up to 1,000 grammes as a subcontractor of a licensed operator. Certain processes forming part of conveyance must also be notified (eg acceptance or collection of postal items, sorting, forwarding, transport and delivery of postal items).

As in 2016 and 2017, the Bundesnetzagentur offered information and advice on the notification obligation during on-site checks. In the reporting year, as in the prior year, the Bundesnetzagentur recorded an increase in notifications dealing with changes or service termination. In 2018, a total of 3,919 notifications dealing with changes (2017: 1,254) and 1,814 notifications of termination (2017: 3,196) were received. Some 6,414 individuals or companies reported the commencement of operations in the reporting period.

The Bundesnetzagentur informed not only the operators of parcel shops but also traditional forwarding agents and every kind of transport agent whose services might include the conveyance of addressed parcels of the notification obligation.

A market study carried out during the reporting period revealed that some of the notified service operators could no longer be contacted at the address given. The Bundesnetzagentur carried out on-site checks to verify this. In each case it was discovered that the business had been taken over by a new operator. The previous operator had not notified the Bundesnetzagentur of the termination of the activity as is legally required. This is an administrative offence that can be subject to prosecution.

At the end of 2018, the Bundesnetzagentur had a list of about 53,051 active postal operators who had provided notification. Some of these operators provided postal services at several locations.

Postal market checks/data protection

The Bundesnetzagentur checked postal service operators for compliance with data protection. Alongside the Federal Commissioner for Data Protection and Freedom of Information (BfDI), the Bundesnetzagentur was responsible for data protection in the provision of postal services. Following the introduction of the General Data Protection Regulation (GDPR) of the European Union and of the new German Federal Data Protection Act on 25 May 2018 incorporating the GDPR regulations, responsibility for data protection was transferred in its entirety to the BfDI. If the Bundesnetzagentur becomes aware of any data protection non-compliance during a routine check of the premises of postal operators, this information is passed on to the BfDI.

In total the Bundesnetzagentur carried out 2,060 checks last year, 312 of which were prompted by specific circumstances. Where the Bundesnetzagentur's previous checks of postal service operators have revealed shortcomings in relation to postal secrecy, this is regularly viewed as a reason to carry out a repeat check. Consumer complaints of breaches of postal secrecy are a further reason for carrying out a check. During the reporting period 1,748 routine checks were carried out.

In 2018 the Bundesnetzagentur also carried out checks at parcel shops and discovered shortcomings in parcel storage. Parcels were stored in such a way in the customer area of the premises that the recipient's and sender's address were visible to anyone. During a repeat check of these parcel shops, a clear improvement in the storage of parcels was noted, for instance through more frequent collection runs and larger storage areas.

The Bundesnetzagentur received 50 complaints of a breach of postal secrecy or data protection in 2018. The complaints generally concerned letter items that had already been opened when delivered or the incorrect delivery of parcels or letter items. Occasionally in such cases a complaint of data protection violation was made. The Bundesnetzagentur pointed out to postal operators that letter items delivered incorrectly or already opened represented a breach of postal secrecy. In view of this, the Bundesnetzagentur consulted on the complaint with the operators affected in each case, whereby the mere fact of a consultation generally led to an improvement in the situation giving rise to the complaint.

In one case a complainant criticised the constant receipt of letters that were not addressed to him. The letters were correctly addressed on the outside. Only once the envelope was opened was it apparent that the contents were addressed to another person with a similar name. Delivery of these letters, whose content was not intended for the complainant, was due to an error of the operator involved when processing a redirection request. In response to previous letters to the similarly-named person, the sender had been notified of a change of address of this person but was given the complainant's current address as this person's new address.

Despite the Bundesnetzagentur's consultation with the operator, the complainant continued to receive what appeared to be correctly addressed letters, but which contained content intended for another person. Consequently the Bundesnetzagentur prohibited the operator from linking the complainant's address data with that of any other similarly named person and instructed the operator to point out, in all products and services for address research, the similarity of the complainant's name to that of other person's whenever the complainant's name is entered.

Consumer protection and advice

In 2018 consumer complaints reached into the tens of thousands for the first time. Delayed, incorrect or no postal delivery of letters and parcels caused annoyance and growing dissatisfaction. There was continued strong interest in consumer dispute resolution. Most postal operators, however, still declined to take part in dispute resolution procedures.

Consumer advice

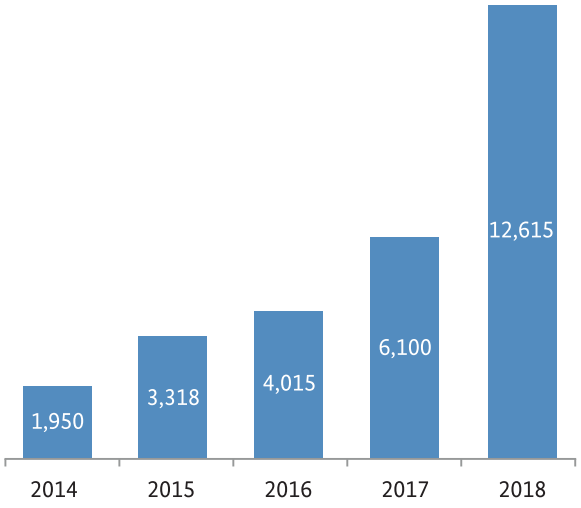
The postal consumer advice team at the Bundesnetzagentur was the main point of contact for those people whose complaints had not met with any response from the respective postal operator. In many cases the operator's reaction was regarded as insufficient and the complainant would turn to the Bundesnetzagentur for help.

Complaints

In 2018 the number of complaints shot up. Although there had already been as many as 6,100 complaints in the previous year, in 2018 the number of complaints more than doubled to 12,615. The number has tripled since 2016 (4,015 complaints) and has increased fourfold when compared with 2015 (3,318 complaints). More than 50% of complaints concerned letter conveyance and delivery by Deutsche Post AG.

The number of telephone complaints also nearly doubled in 2018 to 3,451 telephone calls; only 1,800 calls were answered in the prior year.

Written complaints



The complaints often involved recurring problems that were noticeably regional, especially where delivery was concerned. Postal operators, Deutsche Post AG in particular, did not appear capable of ensuring the promised uninterrupted service throughout Germany on a more than temporary basis.

The Bundesnetzagentur is increasingly concerned at this development, especially in light of the universal service requirements laid down in the Ordinance concerning Universal Services for the Postal Sector (PUDLV). In view of the delivery problems described, the Bundesnetzagentur considers it appropriate to monitor the quality of postal services even more closely.

In addition, the Bundesnetzagentur had occasion several times last year to request detailed reports and comments from Deutsche Post AG. This was prompted not only by the complaints situation but also by greater media coverage of consumer-related issues about postal services as well as by a clear rise in the number of requests at the federal and local political levels.

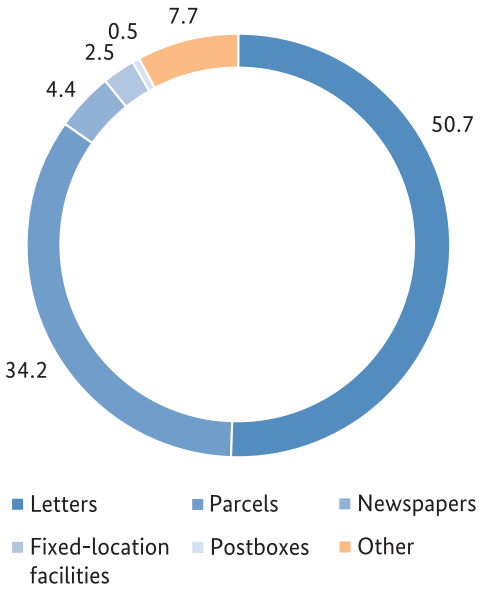
Letters and parcels

Delivery problems were unmistakably the main cause of more than 50% of complaints. This applied equally to letters and parcels delivery.

The letters sector, however, generated the most frequently expressed criticism from consumers and at 50.7% topped the list of all reasons for complaint. The

parcels sector accounted for 34.2% of complaints, followed by “newspapers” at 4.4%, “fixed-location facilities” at 2.5%, “postboxes” at 0.5% and “other” (including “registered/special formats”, “charges” and “damage”) at 7.7%.

Reasons for complaints 2018
%



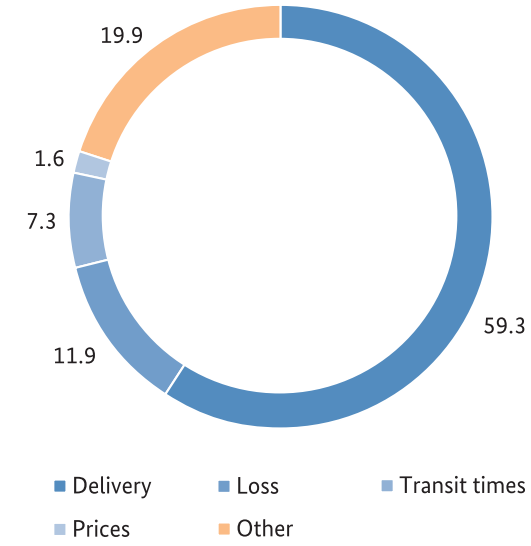
Hence the 2017 trend of “letter” complaints making up the majority of complaints continues unabated. The only year when there were more “parcel” complaints than “letter” complaints was 2016.

Letter complaints

Grievances relating to letter delivery were the most frequent cause for complaint, accounting for 59.3%. Criticism was levelled primarily at repeatedly late delivery and at a lack of delivery occurring over a period of days or even weeks. Further complaints concerned the lack of letter delivery on certain days of the week, for instance on Mondays and Saturdays, which lasted for a long period of time. According to a substantial amount of feedback, the delivery situation changed following the Bundesnetzagentur's demands, but this was often only short-term. Within a few weeks or months, the regional delivery shortcomings occurred again and were again bemoaned.

Other grounds for complaint were letters delivered to neighbours or mis-delivered for no apparent reason. Lost items (11.9%), long transit times (7.3%) and high prices (1.6%) also gave cause for complaint.

Reasons for complaints – letter deliveries 2018
%



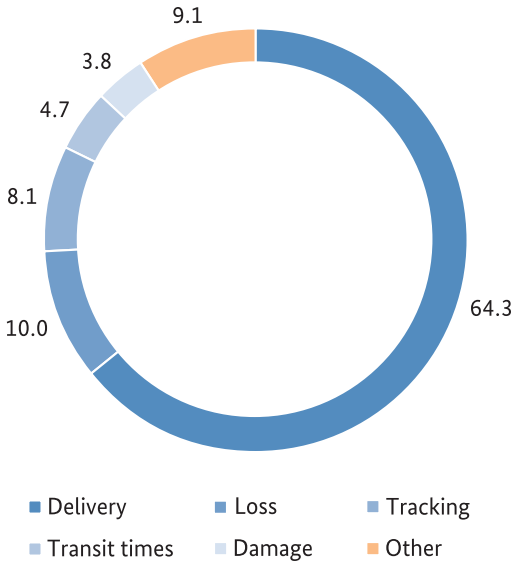
The Bundesnetzagentur is increasingly receiving complaints about customs clearance on letters that are sent from non-EU countries to Germany and conveyed by Deutsche Post AG. The main complaints centre on the shorter holding period for letters (cut from 14 to 7 days) when forwarded to a customs office as well as the customs handling fee charged by Deutsche Post AG. The shorter holding period and the customs clearance fees or handling charges, however, cannot be contested under postal law.

Parcel complaints

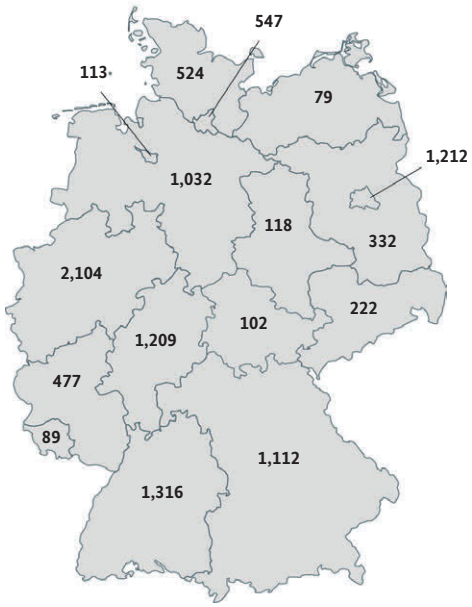
The most frequent cause of annoyance for consumers were problems with the delivery of parcels. In fact, this area of complaint alone accounted for 64.3% of all parcel complaints in 2018. The main criticism was that a delivery card stating a failed delivery and giving instructions for parcel collection was often found in the letterbox without any attempt having been made to deliver the parcel.

Increasingly unhappy (8.1%), people complained about the loss of parcels (10%), incorrect or ambiguous information in parcel tracking systems (8.1%) and damage to parcels (3.8%). A further 4.7% of complaints were due to transit times being too long and 9.1% of complaints related to “other”. The latter includes the complaints management of the parcel service providers, parcel tracking and parcel stations (“Pack-stationen” – secure lockers accessible 24/7 for holding and collecting parcels).

Reasons for complaints – parcel deliveries 2018
%



Complaints by federal state 2018



Complaints by federal state

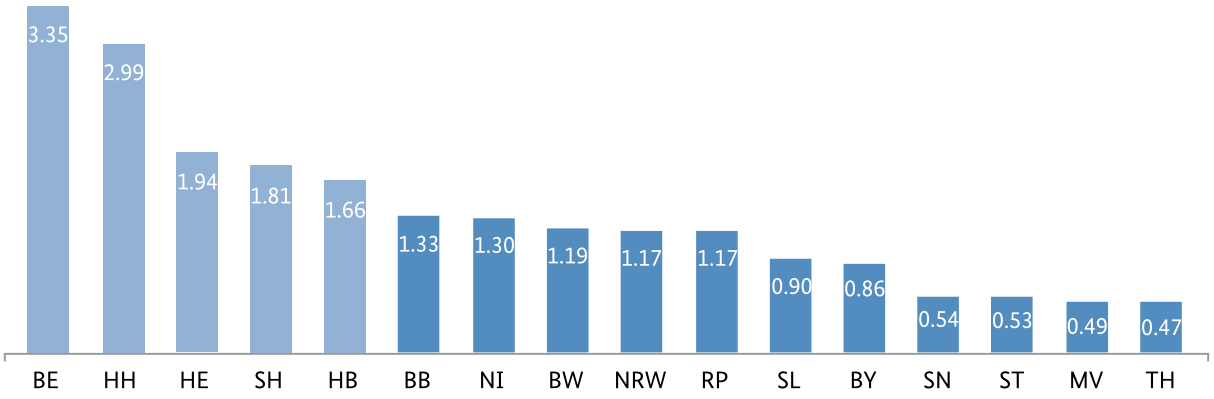
In a federal state comparison, as in previous years North Rhine-Westphalia topped the list in absolute figures in 2018 at 2,104 complaints. This shows that complaints have doubled (1,034 in 2017). Baden-Württemberg followed at 1,316 complaints, which is nearly three times as many complaints as in 2017 (469). The number of complaints in Berlin of 1,212 did not double (777 in 2017), although they did in Hesse to 1,209 (552 in 2017) and in Bavaria to 1,112 (495 in 2017). The fewest complaints did not come from Saarland (89 complaints), as had been the case in previous years, but instead from Mecklenburg-Western Pomerania (79 complaints).

Putting the number of complaints in relation to the population of the federal states yields a completely different picture. With 3.35 complaints per 10,000 inhabitants Berlin has the worst performance, followed by Hamburg with 2.99 complaints per 10,000 inhabitants and Hesse with 1.94 complaints per 10,000 inhabitants – after these come Schleswig-Holstein (1.81) and Bremen (1.66). These federal states are thus above the average of 1.36 complaints per 10,000 inhabitants. North Rhine-Westphalia (1.17) and Baden-Württemberg (1.19) fell in the mid-range in this comparison.

Universal service

An important task of the Bundesnetzagentur is securing infrastructure. The Bundesnetzagentur is by law and of itself an infrastructure authority. To secure the

Complaints per 10,000 inhabitants



The federal states BE, HH, HE, SH and HB are above the average of 1.36 complaints per 10,000 inhabitants.

postal services of general interest for the public, the legislator has set minimum standards for basic postal service provision (universal service) in the Postal Universal Service Ordinance (PUDLV).

In addition to specific universal services, the PUDLV defines certain quality standards for letter and parcel conveyance, in particular the frequency and modalities of delivery. The PUDLV likewise specifies the number and distribution of post offices or postal retail outlets (fixed-location facilities) and postboxes, as well as the average transit times for letters and parcels.

Delivery

Letters and parcels must be delivered at least once every working day – even on Saturday. Provided no other form of collection has been agreed, letters are to be posted through the letterbox or handed to the addressee. If this is not possible, the mail may be left with another person – unless the addressee has issued instructions to the contrary. Parcels are likewise to be handed to the addressee personally or to a neighbour.

Overall, from a national perspective, the requirements of the PUDLV were met in 2018. Nevertheless, there has been a further rise in complaints relating to these requirements and consequently the Bundesnetzagentur has serious concerns as to whether the provision of the universal service in certain parts of the country and at all times can be secured.

Fixed-location facilities and postboxes

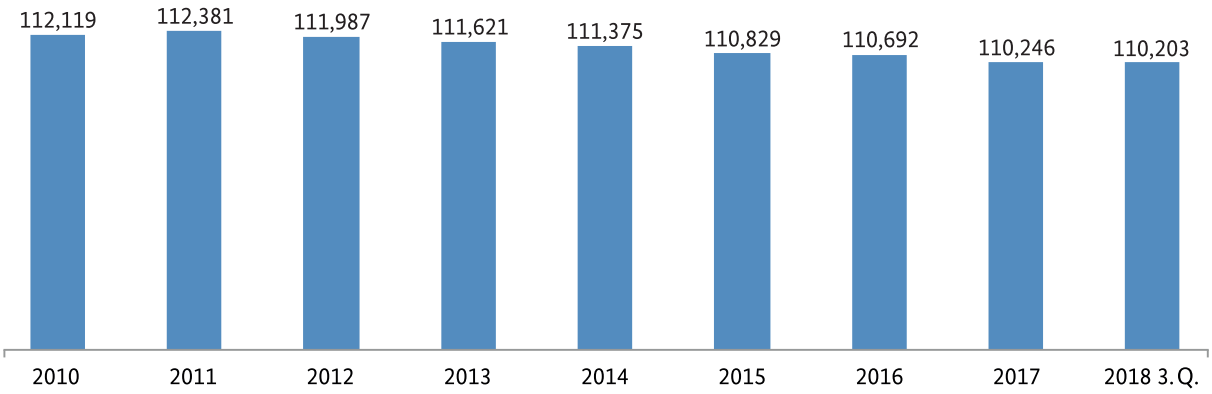
Under current legislation there must be at least 12,000 fixed-location facilities (post offices or postal retail outlets) in Germany where customers can conclude contracts for the conveyance of letters and parcels. In municipalities with more than 2,000 inhabitants, there must be at least one fixed-location facility. Moreover, for any urban area where the respective municipality has more than 4,000 inhabitants, or if it has the function of a central location, customers must be no farther than 2,000 metres from a fixed-location facility.

This requirement was met in the year under review. In 2018 Deutsche Post AG alone operated a total of 12,852 branches or agencies for letter and parcel services.

However, the Bundesnetzagentur recorded an increasing number of complaints about irregular opening times and temporary, unannounced closures of certain branches or agencies operated by Deutsche Post AG. This often meant that customers were not able to send postal items or collect notified items. The PUDLV sets out, however, that fixed-location facilities must be operational on working days in line with demand. The Bundesnetzagentur will closely follow the effectiveness of the countermeasures announced by Deutsche Post AG in the cases reported.

According to data supplied by the five major parcel carriers (Deutsche Post DHL, DPD, GLS Germany, Hermes Logistik Gruppe and UPS), a total of 41,177 parcel shops were operating in Germany in 2017 in addition to postal branches and agencies. These broke down into 14,838 parcel shops operated by Hermes Logistik Gruppe, 11,883 by Deutsche Post DHL, 6,121 by DPD, 4,903 by GLS Germany and 3,423 by UPS. Figures for 2018 were not available at the time of going to print. Another statutory requirement in Germany is that sufficient postboxes must be provided so that customers in urban areas are, as a rule, within 1,000 metres of a postbox. In 2018 Deutsche Post AG had 110,203 postboxes located across the country (as at the end of the third quarter 2018). Added to this were postboxes placed in some cities and municipalities by postal operators who are not bound by the PUDLV.

Deutsche Post AG postboxes



As postbox collection times are still important today for many individuals, as well as for small and medium-size enterprises, the Bundesnetzagentur examined changes to collection times. Postbox collection times only in the morning are becoming more frequent. In 2011 there were still 60,200 afternoon collections but by the end of the second quarter of 2018 only 47,757 postboxes still had an afternoon collection time.

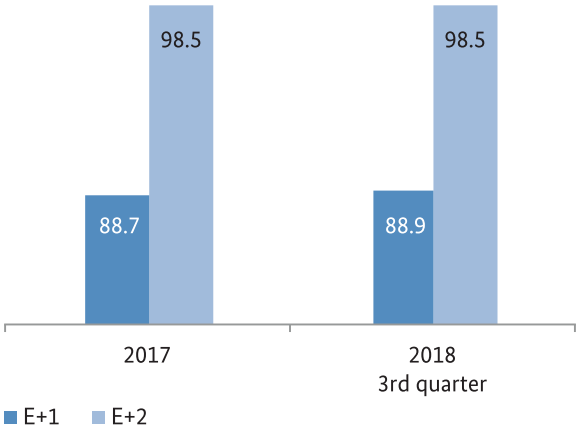
Transit times/quality measurements

Under the PUDLV an annual average of at least 80% of all national letters must be delivered on the working day after deposit (D+1); with 95% of national letters having to be delivered within two working days (D+2).

Deutsche Post AG commissions an external independent quality and market research institute certified by TÜV Rheinland to measure its letter mail transit times. The results are presented to the Bundesnetzagentur on a quarterly basis.

Deutsche Post AG letter mail transit times

%



A lack of mail delivery on Mondays in 2018 led to an increase in complaints to the postal consumer advice service and as a result the Bundesnetzagentur carried out test mailings of 240 letters to 21 recipients in seven federal states over a period of several weeks. The aim was to gain more knowledge not just of the deficits in letter mail delivery on Mondays but also of transit times.

A fundamental finding of the – non-representative – monitoring operation was that letter-post items were to a large extent also delivered on Mondays. Yet, despite this, the D+1 rate for items posted on a Friday and delivered on a Saturday was significantly better at over 95% than the D+1 rate for items that were posted on a Saturday and delivered on a Monday, which was only 74.5%.

This does not automatically give rise to a breach of the statutory transit time requirements as these transit times are applicable to the annual average for all items.

Postal dispute resolution panel

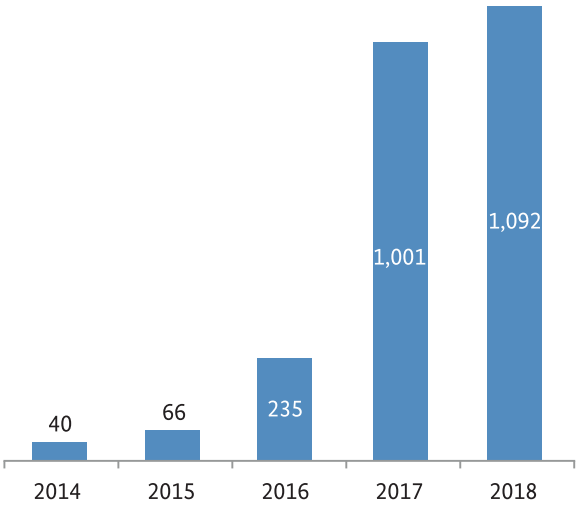
Statutory mandate

The postal dispute resolution panel at the Bundesnetzagentur conducts dispute resolution procedures to resolve disputes between postal operators and their customers. The postal dispute resolution panel is an official dispute resolution entity within the European Economic Area and is recognised by the European Commission as such.

Dispute resolution requests and procedures

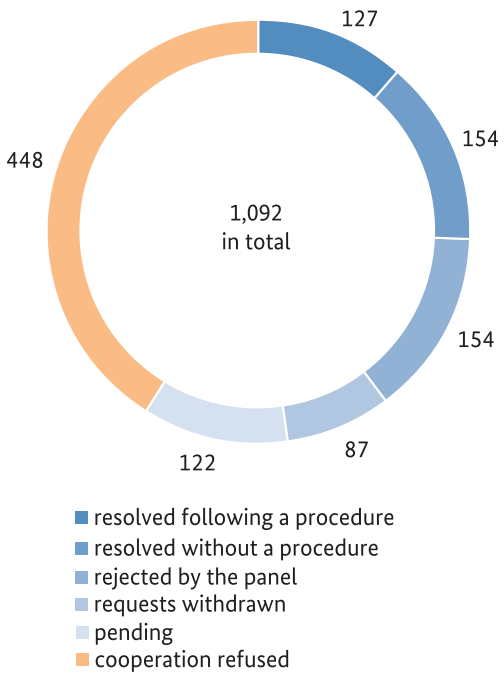
Following a steep rise in 2017, the number of dispute resolution requests in 2018 remained at the high level set in the previous year. The postal dispute resolution panel received 1,092 dispute resolution requests in the year under review (2017: 1,001 requests). By the end of the year, 966 cases had been closed.

Dispute resolution requests 2014–2018



In the year under review, postal operators refused to cooperate in 448 cases of mediation. The dispute was successfully resolved in the dispute resolution procedure in 127 cases. Direct agreement without resorting to a conciliation procedure was reached in 154 cases and in 87 cases the request for a dispute resolution procedure was withdrawn. The dispute resolution panel refused 154 requests as none of the rights set out in the Postal Services Ordinance (PDLV) had been violated.

Dispute resolutions in 2018

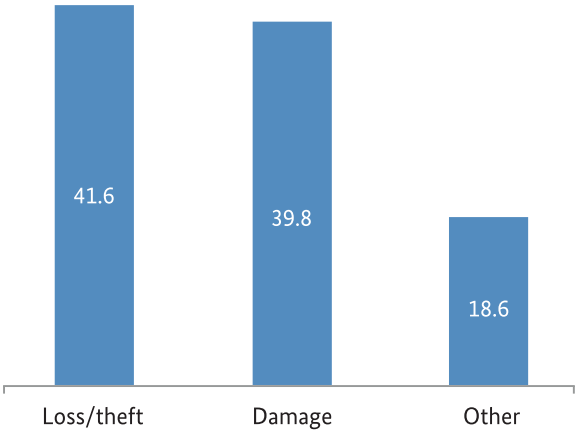


Reasons for dispute resolution requests

In the year under review, the majority of requests for dispute resolution procedures concerned for the first time the loss or theft of postal items (454 requests or 41.6%). A further 435 requests for dispute resolution (39.8%) concerned damaged items. The remaining requests (18.6%) concerned long transit times and delivery irregularities.

Reasons for dispute resolution requests 2018

%



In the period under review, requests for dispute resolution mainly concerned problems with parcel conveyance (81.68%). Far fewer of the requests submitted for dispute resolution involved letter conveyance problems (5.49%).

Rulings, activities and proceedings

The year 2018 was characterised by the benchmarking procedure to set the prices for single-piece letters. As Deutsche Post AG was unable to provide adequate cost information by October 2018, the Chamber issued an interim ruling to the effect that the prices approved for the period until the end of 2018 would continue to apply until a final price-cap decision had been taken.

Ruling Chamber decisions

Price-cap regulation – benchmarking 2018

The Bundesnetzagentur issued an interim ruling on 31 October 2018 to the effect that the current prices for standard letter products (including standard, compact, large and maxi letters, postcards, outgoing international mail, and special services such as registered and cash-on-delivery services) should continue to apply. The price approval was due to expire on 31 December 2018. The interim ruling will apply until the final approval of new letter prices.

Deutsche Post AG had issued a profit warning in June 2018 in conjunction with the announcement of extensive restructuring, technical innovations and staffing measures. Some of the cost data and forecasts (dated May 2018) submitted for examination became obsolete following the profit warning. A decision based on outdated cost data would not have taken account of the measures announced and changes taking place at Deutsche Post AG. Deutsche Post AG was, however, unable to identify the cost effects sufficiently precisely and provide transparent information promptly. On 30 November 2018, Deutsche Post AG responded to a comprehensive questionnaire aimed at further clarifying the matter, and provided more detailed explanations of its current cost situation. The examinations were still ongoing at the time this report went to press.

The basis for the price approval to be granted is the conclusion of the framework decision defining the scope for changes in letter prices in the years ahead, known as the benchmarking procedure. The rate of price changes is derived from the development of inflation and the company-specific rate of productivity, or "X factor". The X factor is calculated on the basis of the development in costs and volumes at Deutsche Post AG. It was not possible to determine the X factor on the basis of the cost data already submitted.

The formal legal provisions lay down a three-stage procedure that can no longer be concluded by the end of the year: The Bundesnetzagentur first publishes the planned benchmarking decision, giving Deutsche Post AG, competitors, consumer protection organisations and other interested parties the opportunity to comment, and consults the Bundeskartellamt. The final decision defining the benchmarks for price changes, amongst other things, is then issued. Only then can Deutsche Post AG propose new letter prices and apply for approval of specific prices for the individual products, such as standard letters or postcards. The proposed prices will be approved if they are within the framework set by the price-cap decision. It was not possible to conclude this procedure in 2018 in time for the new postage prices to be introduced at the turn of the year.

E-Postbrief mit klassischer Zustellung

On 29 November 2018, Ruling Chamber 5 approved the follow-up application submitted by Deutsche Post E POST Solutions GmbH (DP EPS), a Deutsche Post AG subsidiary, for its *E-Postbrief* mit klassischer Zustellung service, with effect from 1 January 2019. The prices approved by the Ruling Chamber for the basic products were those put forward for approval. DP EPS will no longer be offering special *E-Postbrief* services (registered service, etc) due to a lack of demand.

The defining characteristic of the *E-Postbrief* service is that the letters are posted electronically by senders pre-registered with Deutsche Post AG and then delivered either electronically (if the addressee is also registered) or physically. The letters delivered physically are sent as electronic messages by the sender and are then printed, folded and inserted into envelopes by DP EPS or a subcontractor. They are also franked with the postage payable for conveyance by Deutsche Post AG, for example 70 cents for a standard letter. The letters are then passed on to Deutsche Post InHaus Services GmbH (DP IHS) – a mail consolidator that hands them over to Deutsche Post AG under the terms of a partial service contract – for delivery to the addressee.

The prices put forward for approval by DP EPS are the charges for physically transporting the letters, which is just part of the service provided by the company, and are therefore not the full rates payable by the customers. Senders also have to pay the costs for electronically posting and producing the letters, as well as the applicable VAT. The current price payable by private customers for a standard *E-Postbrief* letter is not the approved rate of 44.2 cents, but 70 cents. The approval will expire on 31 December 2019.

In the approval procedure, Deutsche Post AG also announced that it would in future be supplementing its *E-Postbrief* mit klassischer Zustellung product with its new Digitale Kopie service as a mandatory or optional add-on, depending on the type of delivery. The Digitale Kopie service to be introduced on 1 January 2019 involves notifying an addressee of the physical delivery of a letter by sending a digital copy of the letter in advance. This requires the sender providing Deutsche Post AG with a copy of the contents of the letter as a PDF file. The competitors of Deutsche Post AG and DP EPS see the potential for anti-competitive practices in the Digitale Kopie service and the provision of the service in conjunction with the *E-Postbrief* service. Although there are still some open questions regarding the Digitale Kopie service, the service was not the subject of the rates approval procedure for the physical *E-Postbrief* service. Unlike the infrastructure discount discussed in the previous year, the Digitale Kopie service does not constitute a cost component for the *E-Postbrief* service, and was therefore not relevant to the costs and rates in the approval procedure. The rates could therefore be approved. Should there be indications of anti-competitive effects from the Digitale Kopie service, the Chamber would still be free to make a regulatory intervention and take action against a breach of the Postal Act, for instance as provided for under section 24 (ex-post rates reviews) or section 32 (control of anti-competitive practices).

Changes to the general terms and conditions for partial services

Deutsche Post AG revised the legal framework conditions applicable to its partial services for letters. This affected the contracts, supplementary agreements and general terms and conditions for partial outward and inward letter services for customers and commercial mail consolidators. The existing partial service contracts were properly terminated in three stages with effect on 31 March, 30 April and 31 May 2018. At the same time, the contract partners were offered the conclusion of

new contracts. The conclusion of a partial service contract does not oblige the contract partner to pass on letters to Deutsche Post AG for delivery. Thus contracts formally remain valid even if the clauses are not put into effect. Since Deutsche Post AG did not change the terms and conditions by way of termination pending a change of contract (with a right to object for the contract partner), unused contracts became ineffective due to a lack of response from the contract partner. This measure therefore also served to sort out the portfolio of contracts, which are also notified to the Bundesnetzagentur.

A number of concerns expressed by competitors and mail consolidators about the effects of the changes were resolved by Deutsche Post AG. There were no sustainable complaints about the changes. The Chamber therefore saw no reason to intervene against the contractual changes, following examination of the changes to the general terms and conditions.

Charges for access to PO box facilities
On 1 October 2018, the Bundesnetzagentur approved Deutsche Post AG's charges for competitors' access to its PO box facilities for the period from 1 January 2019 to 31 December 2021. Deutsche Post AG is required to enable alternative postal operators to deliver items that are addressed to PO boxes. This in turn allows Deutsche Post AG's competitors to deliver all items from their customers. Without access to PO box facilities, competitors would need to either sort out items addressed to PO boxes and deliver them to Deutsche Post AG with the full postage paid, or return the items to their customers. With access, competitors can deliver the items to the relevant PO box point, and Deutsche Post AG staff then sort them into the correct boxes. Access to PO box facilities is thus an important element in promoting competition in the postal market.

Deutsche Post AG is entitled to charge for the work involved, and the rates must be approved in advance by the Bundesnetzagentur. The rates comprise an acceptance charge, which is payable for each delivery for the activities entailed in accepting the items, and an item-related sorting charge for placing the items in the boxes. The approved sorting charge is unchanged at 3.7 cents per item. The approved acceptance charge of 99 cents is slightly lower than the previous charge of €1.00, and is considerably lower than the per-delivery rate of €3.51 put forward by Deutsche Post AG.

Approval of charges for the service of documents
Charges for the service of documents are different in that all companies offering formal delivery services, and not just the dominant company, are required to have their charges approved by the Bundesnetzagentur. This is because Deutsche Post AG and its competitors are granted special sovereign powers to issue certificates of service.

In 2018, only five applications were made for the approval of charges for the service of documents, considerably fewer than in the previous years (33 in 2017 and 17 in 2016). In 2018, the applications were mainly first-time applications for the approval of service of document charges. There were considerably fewer follow-up applications, which had accounted for a large number of the applications made in the previous two years. Applications were made for both sliding-scale and individual charges, applicable to regional and also nationwide delivery. The highest charge approved in 2018 was €3.45 and the lowest €1.95.

Legal proceedings concerning the submission of DP IHS partial service contracts

In its judgment of 1 December 2015, Cologne Administrative Court confirmed that the Bundesnetzagentur was entitled to also require DP IHS, as a subsidiary of Deutsche Post AG, to submit its partial service contracts. This entitlement was derived directly from legislation.

In the proceedings, DP IHS and Deutsche Post AG had stated the view that the submission requirement was only directly applicable to the dominant company, but not to its affiliated companies. By contrast, the Court said that the dominant company's subsidiaries were also subject to the submission requirement, stating that DP IHS provided partial services to its customers as a single undertaking in affiliation with the parent company.

The dispute of principle about the classification of the contracts concluded by DP IHS with its customers as partial service contracts and the subsequent submission requirement – in conjunction with a right of inspection for third parties – was accompanied by a further legal dispute about the classification of the contents of the contracts as confidential business and trade secrets.

In its ruling of 15 June 2018, the Higher Administrative Court for the state of North Rhine-Westphalia, in response to the Bundesnetzagentur's objection, dismissed all aspects of an urgent appeal lodged by DP IHS. The appeal concerned maintaining the confidentiality of business and trade secrets in connection with the inspection of data from partial service contracts. In June 2017, Cologne Administrative Court had largely upheld the appeal. The Higher Administrative Court took the view that DP IHS had to accept that the Bundesnetzagentur allowed other parties to the proceedings or other third parties to inspect the information that was still the subject of dispute in the appeal proceedings. The Court stated that the Postal Act required the Bundesnetzagentur to allow the inspection of certain information. The requirement applied to “rates and other conditions” for partial services and for access to PO box facilities and change of address information that are not part of the general terms and conditions. DP IHS was unable to successfully assert its claim that the disputed information constituted confidential business and trade secrets. The information includes binding collection and delivery times, (staggered) discounts, and remuneration for collecting items from customer premises.

The Bundesnetzagentur will now allow interested market players (in particular consignors and mail consolidators) to inspect the DP IHS partial service contracts, with most of the information no longer blacked out.

International cooperation

E-commerce is growing continuously. This is reflected in the ever-increasing volume of goods being sent nationally and internationally. In 2018, various international bodies at which the Bundesnetzagentur is also represented dealt with the challenges arising from this development. The EU responded by adopting a Regulation on cross-border parcel delivery services, which is now in force.

ERGP

The European Regulators Group for Postal Services (ERGP) holds two Plenary meetings a year. In 2018, the 14th Plenary meeting took place in Oslo on 29 June and the 15th Plenary in Belgrade on 29 November. Both meetings were chaired by Jack Hamande, Member of the Council of the Belgian regulatory authority (BIPT).

At the first meeting for 2018, the 2019 ERGP Chair, Joao Cadete de Matos from the Portuguese regulatory authority (ANACOM), presented the draft ERGP Work Programme 2019. One particular focus is ERGP's input regarding the upcoming revision of the Postal Services Directive. The future postal regulatory framework was also the focus of the first ERGP stakeholder forum under the heading "When digital meets postal – evolution or revolution?".

The Plenary was also presented with a report on the questionnaires and principles in connection with the EU Regulation on cross-border parcel delivery services of 18 April 2018, which had been developed by the ERGP Cross-border parcel delivery Working Group, chaired by the Bundesnetzagentur. The ERGP has now adopted these principles. The data collection principles must be adopted uniformly in all member states as from 2019.

Finally, the Plenary adopted the ERGP report on access regulation. At the second meeting for 2018 in Belgrade, the Plenary agreed on the ERGP Work Programme 2019. Another particular item was the publication of the consultation draft ERGP Report on developments in the postal sector and implications for regulation; the consultation ran from 12 December 2018 to 24 January 2019. The report analyses the market conditions and the changes that have occurred in the postal sector since 1997, for instance due to the evolution of the digital economy, and discusses the resulting implications for the future regulatory framework. Based on the report's findings and the consultation process, the ERGP plans to present its opinion regarding the future postal regulatory framework, setting out its conclusions as to the need for a review or reform of the current framework.

Dr Spyros Pantelis from the Greek regulatory authority (EETT) was nominated for the 2020 ERGP Chair. The working group structure was also updated. A Regulatory Framework Working Group was established to deal with the review of the Postal Services Directive, and a task force was set up to revise the ERGP Medium-Term Strategy 2020 2022. The Cross-border parcel delivery Working Group is co-chaired by experts from the Bundesnetzagentur and EETT. Further documents that were adopted are available on the ERGP website.[2]

European and international standardisation

The European Committee for Standardization (CEN – Comité Européen de Normalisation) is responsible for developing European standards for the postal sector. CEN's 34 national members are the national standardisation bodies of the 28 EU countries, Serbia, Turkey and the former Yugoslav Republic of Macedonia, plus three EFTA countries. Cooperation within CEN is based on the principles of transparency, openness, coherence and consensus.

[2] https://ec.europa.eu/growth/sectors/postal-services/ergp_en

The European standards and technical specifications for the postal sector are developed and agreed on by the CEN Technical Committee for postal services (CEN/TC 331). They serve to harmonise the technical methods for measuring the quality of service and improve cooperation between all postal industry stakeholders, at the same time ensuring the interoperability of the individual systems.

The development of market-based standards within CEN is regularly driven by the European Commission, in particular, as well as interested stakeholders in the economic sector. There is a close interplay between national, European and worldwide standardisation.

CEN/TC 331 currently comprises four working groups, which are mirrored within the German Institute for Standardization (DIN) and its "Postal services" committee. The working groups consist of representatives of postal and logistic operators, courier, express and parcel operators, e merchants, industry, regulatory authorities, trade associations and consumer organisations.

The Bundesnetzagentur was elected to chair the European Technical Committee CEN/TC 331 at the end of 2016, and also chairs the relevant DIN committee. Within the bodies, the Bundesnetzagentur advocates open standards as a way to prevent, at an early stage, barriers to market entry for competitors and the transfer of imbalances from the physical to the electronic postal service market. It places emphasis on ensuring the necessary transparency in standardisation, non-discriminatory access, and communication with all market players.

The double-digit growth in cross-border commerce items has created enormous challenges for postal and courier, express and parcel operators as well as customs and fiscal authorities. On average, western and central European EU states are having to process more than 100,000 cross-border low-value goods items every day.

Many of the items sent from non-EU countries, and in particular from countries in the Far East, lack a verifiable sender's declaration, accurate value details, description of content or correct VAT registration based on a specific identification number. It is usually impossible to ensure that the lawful VAT is paid in the country of the recipient, which can lead to VAT losses in the EU.

In addition, the existing tax exemptions for cross-border goods items (mostly €22) will be phased out by the end of 2020. At the same time, EU customs regulations will make the transmission of electronic advanced data compulsory for all goods items.

This in turn will require modern electronic data systems. CEN and the Universal Postal Union (UPU) are working together to define a standardised interface for electronic advanced data systems. This will enable the transmission of all the key data necessary to uniquely identify each individual goods item, its content, value, recipient and import turnover tax identification in a standardised format, in digital form, directly to the customs and tax authorities. Furthermore, the International Organization for Standardization (ISO) launched two projects with the participation of CEN/TC 331.

The first project concerns transaction assurance in e-commerce. One purpose of the project is to establish the basis for technical cooperation in brand and commodity quality inspection between countries. It will also aid buyers and sellers in documenting the authenticity of a transaction process, gaining easier access to e platforms and e stores, protecting commodity brands, and assuring the authenticity and integrity of information about online commodities. Consumers will ultimately gain further advantages: The authenticity and integrity of the identification data for e stores and e-commerce suppliers will be guaranteed. At the same time, consumers will be given information about the origin and quality of the commodities. In addition, information about dispute resolution and harmonised resolution processes will protect online consumer rights and improve consumer confidence in e-commerce transactions.

The second project serves to develop a standard entitled "Indirect, temperature-controlled refrigerated delivery services – Land transport of parcels with intermediate transfer". This project addresses the transport and delivery of temperature-sensitive goods as chilled or frozen food parcels, which is rapidly increasing in some countries. Existing regulations do not adequately cover the specific requirements of these transport and delivery services. The new ISO standard will therefore specify harmonised quality and provision requirements for refrigerated delivery service providers, and will serve as a yardstick in the future. This, in

turn, will increase confidence among consumers, who will have the necessary information to make a reliable choice of refrigerated delivery service provider. An existing DIN standard for refrigerated food delivery services will feed into the work on developing the ISO standard.

Universal Postal Union

The Bundesnetzagentur is active within the Universal Postal Union (UPU) under the leadership of the Federal Ministry for Economic Affairs and Energy. The UPU today has 192 member countries. Its meetings are attended by governments, regulatory authorities and postal operators. Every four years, a Universal Postal Congress sets the UPU's strategic and financial course. For the second time in the history of the UPU, an Extraordinary Congress was held; it took place in Addis Ababa from 3 to 7 September 2018. The Extraordinary Congress was needed to discuss the reform of the UPU, the reform of the system applied to contributions that fund the UPU, the UPU's Provident Scheme – the pension fund for UPU staff, and an Integrated Product Plan (IPP) for designated operators. Follow-up action on these issues was taken by the UPU's Council of Administration (CA) and Postal Operations Council (POC). The International Bureau (IB), under the authority of a Director General, takes care of preparatory work for the two Councils and of day-to-day business between Universal Postal Congresses.

UPU reform
The number of seats in the POC was increased from 40 to 48. The African countries, which had felt under-represented, received four additional seats, Asia two, and America and Eastern Europe one each. The number of seats for the Western European countries remained unchanged. It was also decided that one third of the members of the POC from each geographic region should be newly elected at each ordinary Congress.

Integrated Product Plan (IPP)
The IPP no longer differentiates products by format, but by content (documents/goods). The aim here is to adapt the portfolio of products to meet the requirements of e-commerce. Follow-up work is currently ongoing within the POC, which is addressing issues including minimum specifications for physical services, with a view to improving delivery times and quality of service.

Contribution system
Upon admission to the UPU, new member countries are free to choose one of the contribution classes, ranging from one half to 50 units. Countries may only lower their contributions at the Congresses and by just one class (maximum five units). Since lower contributions from one country necessitate higher contributions from other countries to cover fixed budget expenses, a new contribution system was discussed. As no agreement could be reached at the Extraordinary Congress, it was decided as a first step to introduce intermediate levels to the contribution classes, with the effect that countries will in future only be able to lower their contributions by a maximum of three units. Work on a new contribution system is continuing under German leadership.

Reform of the pension fund
The UPU has its own pension fund for staff of the IB. Since, under Swiss law, there is a deficit in the pension fund and the age structure of the staff is unfavourable, alternative pension schemes need to be discussed. One of the alternatives is to transfer the pension fund to the United Nations Joint Staff Pension Fund (UNJSPF), which covers all the participating UN organisations. The negotiations with the UNJSPF are being accompanied by a CA working group.

Terminal dues
No final agreement on terminal dues was reached at the Extraordinary Congress. Rather, there was an agreement to discuss the matter further at the POC meeting in October 2018. This agreement was ultimately made redundant by the USA's announcement to withdraw from the UPU because of insufficient terminal dues.

The USA stated that it had made efforts most recently at the Extraordinary Congress in Addis Ababa to secure fair and cost-based terminal dues for incoming goods items (in particular small parcels) from its foreign postal partners, but that this had not been possible, or not quickly enough.

The UPU currently applies a classification system that places the member countries in different categories, based on the countries' postal development. The system determines the terminal dues to be paid for goods items weighing less than two kilograms. More developed countries pay more in order to support developing countries, while developing countries pay less.

This arrangement initially appears fair. However, China continues to be classified as a developing country, despite the rapid growth in the country's economy. The UPU has not updated its classification for a long time. No agreement on the changes could be reached among the 200 or so voting countries.

Each year, some 300 million small parcels are sent from China to the USA (around 60% of the USA's inbound goods items). It costs the USA around one US dollar more than it receives in terminal dues to deliver a small parcel. The US government sees this as subsidising the Chinese economy. Should a satisfactory solution be found within a year, the USA would be prepared to abandon its planned withdrawal from the UPU.

Germany will continue to work within the UPU for a global postal network, smooth international postal operations, multilateralism and sustainable development.

Parcel Regulation aims to promote cross-border e-commerce
Data collection with uniform standards

The European Parcel Regulation[3], which entered into force on 22 May 2018, aims to promote the further development of cross-border e-commerce. Price transparency for consumers and small businesses is to be increased.

To achieve these aims, market monitoring by the regulatory authorities is to be improved. Against this background, the Regulation requires all member states to collect data on cross-border parcels and large letters. Minimum standards apply to the data collection. An ERGP working group was tasked by the European Commission to develop the questionnaires and more detailed principles for the standardised data collection in Europe. One of the working group's two chairs was a representative of the Bundesnetzagentur. Additional data may be collected where required by a country's specificities.

To improve price transparency, all postal operators with a certain number of employees are required to provide the Bundesnetzagentur with a list of their domestic and intra-Union tariffs for certain single-piece postal items. The tariffs will then be published online by the European Commission. Consumers and small businesses will thus have access to information on the options available for sending or receiving parcels to or from other EU countries.

Should a universal service provider's cross-border parcel tariffs appear unreasonably high, based on objective criteria, the regulatory authority can make a more detailed assessment of the tariffs. The Regulation provides for a number of criteria for the assessment, as set out by the European Commission in separate guidelines. The ERGP working group was also tasked here by the European Commission to develop relevant principles.

Data will be collected for the first time in 2019.

[3] Regulation (EU) 2018/644 of the European Parliament and of the Council on cross-border parcel delivery services

RAIL

Rail and Competition

In the course of numerous individual proceedings, the Bundesnetzagentur defined and improved the parameters for competition in the rail sector. With these rulings, the Bundesnetzagentur prepared the ground for stable development and ensures competition in the rail sector.

Contents

Transport performance in the rail freight segment reached 129bn tonne-kilometres (tkm) in 2017. This represents an increase of a little more than two percent over the previous year. The share of competitors in the rail freight transport segment was 47% in 2017.

With a total of 57bn passenger kilometres (pkm), the regional passenger rail transport segment set a new record. The share of passenger kilometres which competitors accounted for remained unchanged over the previous year at 26%.

The long-distance passenger rail transport segment also set a new record in 2017 with 41bn passenger kilometres. Here, nearly all – more than 99% – of the transport services in this segment were provided by Deutsche Bahn AG (DB AG) undertakings.

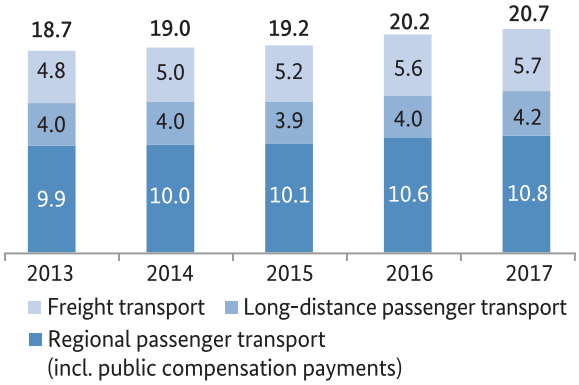
Market watch

All in all, railway undertakings generated €20.7bn in revenue in 2017. Revenue generated in the rail freight transport segment reached €5.7bn. This figure was €10.8bn in the regional passenger rail transport segment and €4.2bn in the long-distance passenger rail transport segment.

In 2013, federally-owned railway undertakings moved 67% of the rail freight transported in the German railway network. This figure was just 53% in 2017.

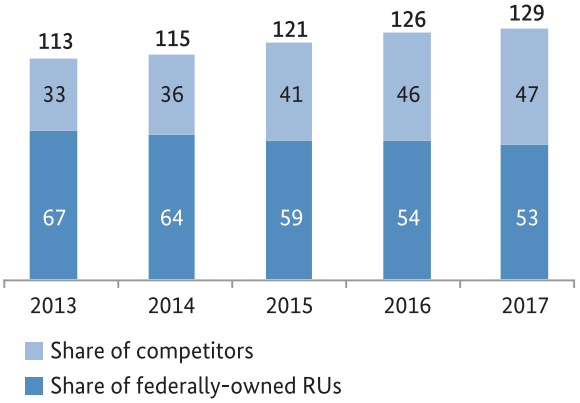
Key trends

Revenue development in the rail market by type of transport
in €bn[1]



All three segments of the rail market reported continued revenue growth again in 2017. Revenue increased approximately three percent from 2016 to 2017. All in all, railway undertakings generated €20.7bn in revenue in 2017. In the rail freight transport segment, revenue rose slightly, from €5.6bn to €5.7bn, while revenue in the regional passenger rail transport segment increased from €10.5bn to €10.8bn. Revenue in the long-distance passenger rail transport segment increased as well: by five percent, from €4bn to €4.2bn.

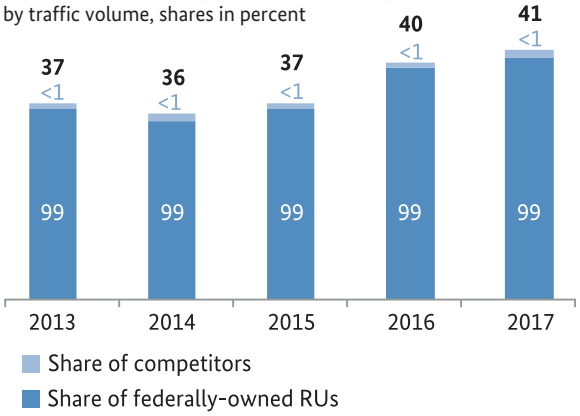
Competition in rail freight transport[1]
by traffic volume, shares in percent



[1] Data for the year 2018 is not yet available.

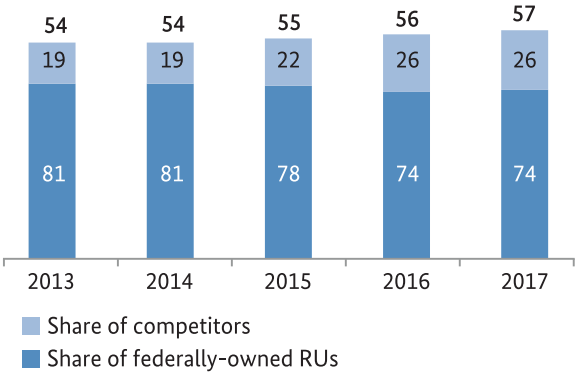
The volume of rail freight moved in 2017 reached 129bn tonne-kilometres (tkm). This represents an increase of a little more than two percent over the previous year. In 2013, federally-owned railway undertakings moved 67% of the rail freight transported in the German rail network. This figure was only around 53% in 2017. The volume of freight transported by rail grew by more than 14% during the period 2013 to 2017. In the years 2013 to 2017, rail freight transport increased the size of its share of the modal split[2] from 18 to 19.3%.

Competition in long-distance passenger rail transport[1]
by traffic volume, shares in percent



Traffic volume in the long-distance passenger rail transport segment has grown continuously since 2014, and set a new record in 2017 with 41bn passenger kilometres. Once again, nearly all transport services – more than 99% – were provided by Deutsche Bahn AG (DB AG) undertakings. In addition to these undertakings, Thalys, Locomore and HKX also offered regular scheduled service in 2017. Flixtrain began offering train service in 2018; ÖBB offers night trains.

Competition in regional passenger rail transport[1]
by traffic volume, shares in percent



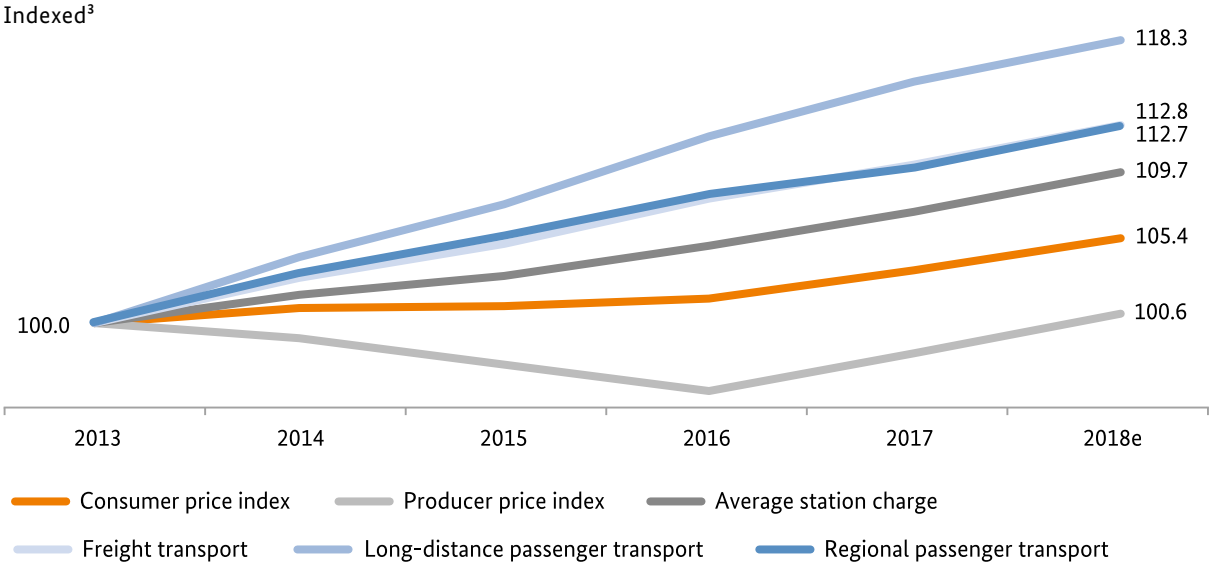
Traffic volume in the regional passenger rail transport segment has increased steadily for several years now. A new record was set in 2017 with 57bn passenger kilometres. The share of traffic volume held by the competitors stagnated in 2017 after having increased markedly the year before. Looking ahead however, the share held by the competitors is expected to increase even further because a number of routes with potential for large numbers of passengers (e.g. RRX in North Rhine-Westphalia) were awarded to competitors.

Between 2013 and 2017, the passenger rail service saw its share of the modal split increase slightly, from 8.3% to 8.4%.

[2] Transport volume, broken down by mode of transport

Infrastructure charges

Average track access charge per train-path kilometre
Indexed[3]



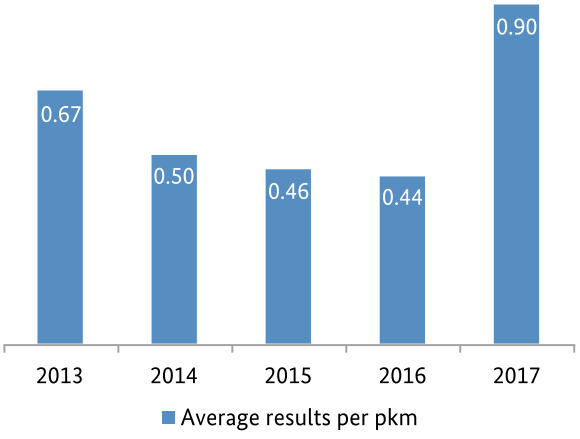
Between 2013 and 2018, the consumer price index rose by more than 5% while track access charges increased by more than 18% in the rail freight segment and by more than 12% in the regional and long-distance passenger transport segments.

The average charge for using passenger stations increased by approximately 10%. By contrast, the producer price index remained virtually unchanged over the same period.

Operating results of the railway undertakings

In 2017[4] the number of railway undertakings generating a positive operating result increased.

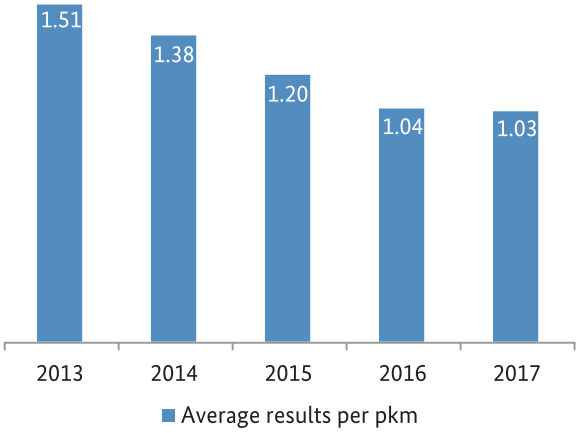
Specific results of RUs in long-distance passenger transport
in euro cents per passenger kilometre



[3] Annual figures marked with an "e" are estimated values.
[4] Data for the year 2018 is not yet available.

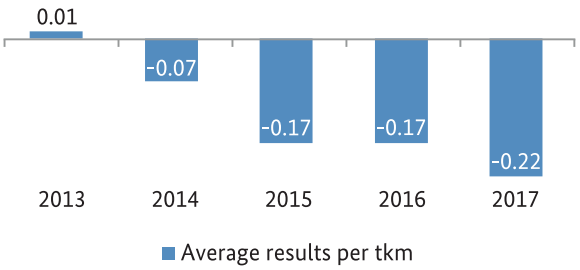
Measured in terms of one passenger kilometre, the long-distance passenger transport segment reported an average operating result of 0.90 cents per pkm in 2017, a markedly higher operating result than in 2016 when this figure was 0.44 cents per pkm.

Specific results of RUs in regional passenger transport
in euro cents per passenger kilometre



In the regional passenger transport segment, the average operating result in 2017 was 1.03 cents per pkm travelled, slightly less than in 2016.

Specific results of RUs in rail freight transport in euro cents per tonne kilometre



The railway undertakings reported an average loss of 0.22 cents per tonne-kilometre in the rail freight transport segment in 2017. This represents a further increase over the average loss in 2016.

Rulings, activities and proceedings

In the course of numerous individual proceedings, the Bundesnetzagentur spelled out and improved the parameters for access to railway infrastructure and service facilities. In addition, the infrastructure charges were the subject of a number of rulings and proceedings.

Track access

Disruption management for Rail Freight Corridor 1 (Rhine-Alps)
Working together with the regulatory authorities in Switzerland, the Netherlands and Belgium, the Access to Rail Infrastructure and Services section at the Bundesnetzagentur examined in 2018 the operational processes and interfaces involved in handling disruptions in national rail traffic and outlined the criteria of the action plans to be implemented at national level. The analysis of the national particularities of Germany's railway infrastructure and the national regulations and arrangements that have been implemented in the disruption management system began with the elaboration of common fundamental operational issues and a comparison of the required European/national legal foundations. This was followed by a bilateral meeting between the regulatory authorities and infrastructure managers to discuss and delve deeper into operational issues.

The regulators then outlined the decision-making, communication and implementation processes with possible integrated action plans for disruptions in rail traffic.

Ruling regarding the network statements of DB Netz AG
On 2 October 2018, DB Netz AG and DB RegioNetz Infrastruktur GmbH notified the Bundesnetzagentur of changes they intended to make to their network statements. The Bundesnetzagentur had six weeks time to review the intended changes and made use of its right of refusal under section 73 (1) no. 4 of the Rail Regulation Act.

It refused to approve, among other things, plans to freeze at the current level orders for regional passenger rail transport services on lines that have been designated as congested. Although it is possible to introduce special priority criteria, the particular lines must be in conflict with one another before such criteria can be applied. The ruling must additionally take into account the societal benefits offered by the respective rail service. In this case the statutory provisions were not complied with.

The Bundesnetzagentur also refused to approve a change which would extend the minimum stop and turnaround times that are to be taken into account in the timetable. Minimum stop times include the time needed at a station for passengers to board or alight from a train. In the case of heavily used lines, exceeding the duration of the stop times at stations as provided for in the timetable regularly leads to knock-on delays. However, in its notification DB Netz AG did not present any specific need for extending the existing minimum stop and turnabout times nor did it demonstrate the reasonableness of the size of the respective adjustment. According to the Bundesnetzagentur, were the change to be implemented, various regional transport timetable concepts would not be feasible in the long term.

The Bundesnetzagentur also refused to approve an arrangement DB Netz AG wanted to use to shorten the coordination process in conflict situations. When there is a conflict between requests that have been submitted for infrastructure use, the infrastructure manager must negotiate with the concerned parties with access entitlements to ensure that capacity can be allocated to all users if possible. DB Netz AG wanted to set a low abstract maximum limit on the number of proposed solutions to be submitted. The Bundesnetzagentur determined that with this arrangement DB Netz AG would not fulfil its obligation to coordinate train path requests.

Due to the Bundesnetzagentur's refusal to approve the request, the planned changes cannot go into effect. DB Netz AG has instituted legal proceedings with the Cologne Administrative Court against the ruling.

Network statements of other infrastructure managers

Compared to previous years, there was an increase in the number of infrastructure managers outside of the DB Group who revised their network statements in keeping with the provisions of the Rail Regulation Act. Owing to the advisory services provided by the Bundesnetzagentur, it was possible to reach mutually agreed solutions in all 14 of these cases.

Congestion on the West Rhine line and at Cologne Central Station

The congestion proceedings continued for the West Rhine line for the section from Hürth-Kalscheuren via Bonn to Remagen. After DB Netz AG was unable to demonstrate that there is an actual need for freight train paths instead of the Ahrtalbahn railway, or more specifically, was unable to demonstrate relevant conflicts over the use of infrastructure, it currently no longer challenges the Ahrtalbahn railway's through service on the congested main line from Bonn to Remagen. Instead there is now a timetable and a capacity board that looks for operational options for dealing with capacity problems. A particular focus here will be on increasing and reducing in Remagen the number of carriages of Rhine-Ruhr Express (RRX) trains that will begin running in June 2019. This long stretch of line in North Rhine-Westphalia is very susceptible to delays. For this reason, this operational procedure might not work in up to 50 percent of the cases. As a consequence, it could frequently be necessary for the relevant trains to turn around in Remagen instead of further down the line in Coblenz. This solution would require an additional RRX vehicle and clarification of who will bear the additional costs arising from this.

The congestion proceedings for the line from Cologne Central Station via Cologne Messe/Deutz to Cologne-Mülheim has shown that the Cologne railway hub is hopelessly congested and in urgent need of an extensive expansion. The discussion with the Bundesnetzagentur and the Nahverkehr Rheinland (NVR) regional public transportation association focused not only on limited possible operational measures, but also the question of whether so many trains presently operate on this congested section of line that operational quality is inevitably poor and delays are unavoidable as a result.

In addition, the Bundesnetzagentur is of the opinion that the Cologne Messe/Deutz (underground) railway station should be expanded to be user-friendly enough for it to serve as a halfway acceptable alternative to Cologne Central Station: every day, up to 39 long-distance trains travel north and south from Cologne along the eastern banks of the Rhine. In order to make a stop at Cologne Central Station these trains have to turn around at the Cologne Messe/Deutz station, just west across the Rhine. As a result, the tracks east of Cologne Main Station (crossing the Hohenzollern Bridge) are used double. This works only at the expense of quality and the availability of capacity for a further expansion of train service.

Review of the Westbahn railway's access entitlement
The company Westbahn Management GmbH informed the Bundesnetzagentur of its plans to offer cross-border train service between Vienna and Munich Central Station for the 2019 working timetable (starting December 2018).

Westbahn does not have a registered office in Germany. Consequently, based on current law, in order to acquire access entitlement it must notify the rail regulatory authorities in advance of its intention to offer cross-border passenger rail transport service. After these plans were announced by the Bundesnetzagentur, "entitled parties" (railway undertakings that operate passenger services on at least one section of the planned train service) had the opportunity to request the Bundesnetzagentur to review the crossing of the border to determine if it is the main purpose of the planned service. DB Regio AG and DB Regionetz Verkehrs GmbH made use of this opportunity.

The Bundesnetzagentur determined on 25 September 2018 that the main purpose of the train service being planned by Westbahn along the route Vienna – Munich for the 2019 working timetable is to transport passengers between railway stations in different EU Member States (Federal Republic of Germany and the Republic of Austria).

Access to service facilities

As part of its activities to regulate access to service facilities and services, the Bundesnetzagentur monitors access to important hubs in the railway system such as marshalling yards, interfaces with other modes of transport such as (container) terminals or passenger stations or railway workshops and other services pertaining to railway transport. Considerably more than 100 investigations and proceedings relating to this issue were conducted in 2018.

Proceedings regarding freight terminals
Access to service facilities must be provided on reasonable, non-discriminatory and transparent terms.

In January 2018, the Federal Administrative Court confirmed (6 B 21.17 of 15 January 2018) that operators of trimodal freight terminals are subject to rail regulation and are required to grant access on said terms. In the case of a facility that is operated for the trimodal transshipment of containers, it ruled that the facility, irrespective of the share represented by rail transport, is a freight terminal in terms of rail regulation. From a functional standpoint, the purpose and typical operational processes in such a facility are decisive factors for its classification, the court said. The Federal Administrative Court thus adheres to a broad understanding of the term "service facilities" under the Rail Regulation Act as well.

Following the Federal Administrative Court's ruling, 14 suspended investigations of terminal operators in the Duisburg/Upper Rhine area were resumed. In the meantime, the operators of the container terminals have acknowledged that they are subject to regulation.

The regulation of freight terminals in the area of conventional freight traffic continues to be the subject of discussion. From the standpoint of the Bundesnetzagentur, the deciding factor for classification as a service facility is the question whether the facility transships freight to or from the railway. The Cologne Administrative Court confirmed this view (18 K 7139/16 of 27 July 2018). According to its decision, what matters is the fact that the transshipment facility serves the changing of modes of transport, even when the freight is warehoused temporarily and handled for this purpose, as long as it was not "processed".

Alternative methods for requesting capacity in passenger stations
The provisions regulating access must be laid down in the service facilities statement and applied uniformly to all parties with access entitlements. One important aspect is the rules for the request procedure.

The use of web-based request systems is becoming increasingly important. In April 2018, DB Station&Service AG agreed in a court settlement before the Cologne Administrative Court to having to offer an alternative method for submitting a request or concluding a contract in the case of all technical breakdowns, with the exception of disturbances in the area of the technical equipment at the party with access entitlements. The court agreed with the Bundesnetzagentur that companies operating in a monopoly sector bear special responsibility toward their users.

Description of the infrastructure in service facilities
Precise descriptions of the available infrastructure and its features and configuration are vital for ensuring transparent, non-discriminatory request processes.

The Bundesnetzagentur enforced an improvement in DB Netz AG's descriptions of its tracks and platforms.

Employees of railway undertakings need walkways and shunting paths in order to move safely between tracks and platforms during ongoing railway operations and to be able to work on rolling stock. Railway undertakings complained to the Bundesnetzagentur that DB Netz AG did not provide information about the illumination or the walkways and shunting paths available in the railway facilities it operates. They reported that due to this situation they were unable to assess whether the facilities were safe in terms of occupational safety requirements. The Bundesnetzagentur conducted extensive investigations and initiated Ruling Chamber proceedings. In the course of these proceedings DB Netz AG agreed to significantly improve the descriptions of its marshalling yards and other railway facilities through the addition of binding information about the level of lighting in the respective facility and on the location and dimensions of the walkways and shunting paths. This information will be published as a graphical representation in the electronic request system. Railway undertakings can then, when requesting platforms and tracks, get an idea of the quality of the installations. DB Netz AG will complete the necessary nationwide data collection in its railway facilities by the year 2020 at the latest.

Conflict resolution in service facilities

The Rail Regulation Act provides for a coordination procedure and decision-making process for handling conflicts between requests. When a conflict cannot be resolved, the service facility is required to notify the Bundesnetzagentur about its plans to refuse a request to use its infrastructure. During the preparation of the 2018/2019 working timetable, DB Netz AG reported ten cases in which it refused a request to use a service facility. The number of conflicts in the long-distance passenger rail transport segment rose between competitors in night train and point-to-point service. Half of these cases were decided on the basis of long-term contracts. The number of conflicts involving requests for the use of service facilities is usually much higher. DB Netz AG has been able to resolve many cases to date by reaching a mutual agreement with the parties involved. For years now, the capacity available in service facilities for freight and passenger transport services has declined while the amount of traffic and number of users have grown. This has led to an increase in conflicts over the use of service facilities. Capacity bottlenecks particularly exist in the greater Hamburg and Berlin areas where many trains end and have to be stabled.

When a service facility does not have sufficient capacity available to allow the requested use, the operator of the service facility must look for alternatives – including in other operators' service facilities – for the party with access entitlement.

The "viable alternative" criterion played a role for the first time for the 2018/2019 timetable period in connection with the coordination and decision-making process for allocating capacity in service facilities. When a request to use a service facility is refused, the requesting party can call the Bundesnetzagentur in. When there is no viable alternative available, the Bundesnetzagentur examines whether to allocate a reasonable part of the service facility's capacity itself. In 2018 the Bundesnetzagentur had the possibilities for viable market alternatives examined and evaluated under practical conditions[5]. In the expert opinion, abstract legal requirements were backed with actual operational requirements. Given the variety of service facilities, the expert opinion focused on rail sidings. It concluded that operational parameters determine whether a different siding can serve as an alternative to the originally requested siding. The question of whether an alternative is acceptable for the party with access entitlements can be decided (only) on the basis of its operational plan.

Infrastructure charges

DB Netz AG incentive system

In 2018 the Bundesnetzagentur refused to approve the arrangements DB Netz AG planned to put in place for an incentive system.

The fundamental requirements for an incentive system are set forth in Section 39 and Annex 7 of the Rail Regulation Act. According to this, the arrangements for charges for using rail infrastructure must offer railway undertakings and the respective infrastructure managers incentives through performance-based elements to minimise disruptions and increase the efficiency of the railway network. As a rule, incentive systems are to be designed in such a way that train delays lead to the payment of contractual penalties. For this purpose, the difference between the scheduled and actual arrival time is measured. When a specified threshold is exceeded, the particular train is considered to be delayed. The delay is assigned to the event that caused it and, based on this, to the ambit of the respective infrastructure manager or the ambit of the respective railway undertaking.

[5] See https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Eisenbahn/Unternehmen_Institutionen/VeroeffentlichungenGutachten/Gutachten2018.pdf?__blob=publicationFile&v=2

Delays that are assigned using this method trigger reciprocal payment obligations.

An objection to DB Netz AG's incentive system was raised in 2017. The company subsequently submitted a revised system in 2018. The revised incentive system was supposed to include higher contractual penalties and apply to DB Netz AG's entire network. In addition, contractual penalties for DB Netz AG were significantly higher for delays due to construction work than for delays with other causes.

The Bundesnetzagentur found that the system proposed by DB Netz AG was not compliant with the legal requirements for incentive systems. On the one hand, the basic parameters of the planned incentive system had not been sufficiently agreed on with the parties with access entitlements. There was no corresponding agreement with the rail freight transport undertakings. Further, the payment calculation did not take into account the average delay of the transport services. Other objections concerned unreasonably short deadlines for applying for corrections regarding the assignment of delay minutes, the lack of impartiality on the part of the designated dispute settlement body, and inappropriate provisions to reduce and preclude claims for damages.

Proceedings to set an upper limit on total costs
Since the Rail Regulation Act came into force, all operators of standard-gauge railways require approval of their charges. They are to include incentives in their pricing system unless an exception has been made or an exemption has been granted. This applies to DB Netz AG and eight other undertakings.

Prior to the start of the first regulatory period, which runs from 2019 to 2023, the base level of total costs for each undertaking concerned was determined on a one-off basis in a ruling. Using this base level, an upper limit on the total costs was set for each undertaking concerned for the 2019/2020 working timetable period. The annual determination of the upper limit on total costs takes into account the general inflation rate on the one hand and the general productivity growth rate on the other. The productivity growth rate is based on time series published by the Federal Statistical Office or the German Council of Economic Experts. The upper limit on total costs restricts the charges to be requested and approved for the respective working timetable period in the first regulatory period.

The determination of the 2020 upper limit on total costs for the 2019/2020 working timetable period is the second determination of an upper limit on total costs in the first regulatory period. DB Netz AG's upper limit on total costs for 2020 is €59 million (1.1%) less than the previous year's determination for the 2019 upper limit on total costs (€5.3bn). The key dynamic behind the lowering of the upper limit on the total costs was the fact that during relevant period the inflation rate that fuels rising prices was lower than the productivity growth rate which acts to lower costs.

The fact that the reduction rate was not applied to DB Netz AG resources whose use DB Netz AG agreed to undertake in the Service Level and Funding Agreement II had the effect of slightly dampening the lowering of the upper limit on the total costs. DB Netz AG underwent a recognition procedure to determine whether Service Level and Funding Agreement II could be taken into account when calculating the upper limit on total costs. This procedure resulted in the recognition of this agreement as a qualified regulatory agreement.

Charge approval procedure for other infrastructure managers
Eight infrastructure managers in addition to DB Netz AG needed an incentive pricing scheme. By the end of 2018, most of these companies had submitted a request for the approval of their charges. The Bundesnetzagentur expects that once all documents – with correct content – have been submitted, it will be possible to finalise all of these procedures in early 2019.

A simplified approval procedure will be sufficient for this, provided that the conditions for exceptions or exemptions have been fulfilled. These infrastructure managers' charges are to be approved when they are calculated so that they are reasonable, non-discriminatory, transparent and do not exceed the cost of providing the services plus a reasonable profit.

For this purpose, the Bundesnetzagentur wrote to approximately 60 infrastructure managers in summer 2018 and informed them about the legal basis for this and the steps involved in the procedure. The Bundesnetzagentur standardised the entire process even further in order to reduce the burden on the infrastructure managers concerned. To this end, it reworked the electronic questionnaire and filled the relevant boxes with appropriate information that was gathered during the last approval phase.

DB Station&Service AG's station charges for 2019
The Bundesnetzagentur approved DB Station&Service AG's charges for the use of its passenger stations for the year 2019. DB Station&Service AG operates approximately 5,400 stations in Germany, making it the largest operator of passenger stations in the country. Prices for the year 2019 increased an average of 1.11%. This was a moderate increase compared to the previous year (2.96%).

In the course of the approval procedure, various cost estimates were not accepted in the originally submitted amounts. This led to a lowering of the relevant upper limit on charges.

Regulation of charges for maintenance facilities
The Rail Regulation Act provides for regulatory relief for operators of maintenance facilities. In particular, the specific provisions governing the calculation of charges are not applicable here. On the basis of a complaint lodged by a party that holds access entitlements, uses two DB Regio AG maintenance facilities and has bound itself contractually to these locations on a long-term basis, the Bundesnetzagentur initiated a review and requested information on how DB Regio AG calculated its charges. The general requirements placed on operators of service facilities to grant non-discriminatory access provided the basis for the review.

This practice was initially rejected in decisions handed down by the Cologne Administrative Court and the Higher Administrative Court of the Land North Rhine-Westphalia in summary proceedings. According to current national law, reviewing the charges raised by an operator of maintenance facilities does not fall under the duties of the regulatory authorities, the courts said. Rather, they pointed out, a preponderance of considerations supports granting operators of maintenance facilities a general exemption from having their charges regulated. Therefore, it is also not permissible for the Bundesnetzagentur to gather information regarding the calculation of charges. However, the Upper Administrative Court of the Land North Rhine-Westphalia said it reserved the right to hand down a decision regarding the interpretation of relevant Union requirements in possible main proceedings. Clarification is needed, the court stated, to determine the extent to which Member States are permitted to anchor such exemptions in national law.

The facilitations for maintenance facilities that are currently provided for in the Rail Regulation Act apply for only a limited period of time and are being reviewed by the legislature. The question of whether they will be extended beyond 31 December 2020 will be decided in part on the basis of the Bundesnetzagentur's report on the market situation for maintenance facilities.

DB Netz AG's charges for the use of its rail sidings in Saarbrücken Central Station
DB Netz AG's facility pricing system regularly includes a charge for the use of its rail sidings. The amount of this charge is based on the features of the respective train station's infrastructure. In some cases, however, DB Netz AG levies an additional, facility-specific charge. It does this for certain parts of the storage sidings at Saarbrücken Central Station.

The Bundesnetzagentur declared this additional charge to be invalid. Its aim here was to end the discrimination of railway undertakings affected by the additional charge and to prevent this discrimination in the future. At the same time, the Bundesnetzagentur wanted to remove existing distortions of competition. Only the regular charge applies to the relevant rail sidings. This particularly benefits those railway undertakings that are dependent on the long-term use of the storage sidings and were not aware of the additional charge beforehand.

DB Netz AG has filed a suit against the Bundesnetzagentur's ruling. The Bundesnetzagentur's decision is not yet final.

Unbundling

Market dialogue on unbundling in the railway market
With the enactment of the Rail Regulation Act, the Bundesnetzagentur was given the task of monitoring compliance with unbundling provisions. All undertakings operating in the railway market are subject to having their compliance monitored by the Bundesnetzagentur insofar as they are not exempted.

The Bundesnetzagentur determined, among other things, in the context of the ongoing charge approval proceedings, that railways have difficulties with interpreting or, more specifically, implementing the unbundling rules. For this reason, the Bundesnetzagentur held the 2018 Marktdialog Eisenbahn forum in Berlin on 20 June 2018 to discuss organisational and accounting separation and unbundling in the railway market.

The unbundling rules serve in particular to avoid discrimination, cross-subsidisation and other distortions of competition. The event focused on presenting the legal basis for unbundling in the Rail Regulation Act and information about exemptions.

Monitoring provisions governing transparency in the use of public funds
Public funds which a railway receives for the provision of transport services or for the operation of railway infrastructure may not be applied to the other area of operation. This prohibition must be reflected in the accounting system for these two business segments.

Unbundling
In its judgment of 28 June 2017 in Case C-482/14, the European Court of Justice (ECJ) determined that the Federal Republic of Germany had failed to fulfil its obligations to put this requirement into practice. According to this judgment, the Federal Republic of Germany had failed to take all measures necessary to ensure that the detailed rules on accounting make it possible to monitor compliance with the prohibition against taking public funds earmarked for the operation of railway infrastructure and applying them to transport services.

The Bundesnetzagentur consequently requested DB Netz AG in late 2017 to provide information regarding its plans for implementing the ECJ judgment and to report on the progress made in its efforts to prepare annual accounts that comply with the requirements of the ECJ judgment.

DB Netz AG agreed to implement a plan developed by the Bundesnetzagentur. This plan takes into account the transparency requirements set forth in the ECJ judgment by giving readers of the annual financial statement the possibility of examining the following four aspects:

1. Introductory remarks: Overview of public funds received, together with a comprehensive descriptive presentation
2. Overview of the sources of funds – Who are the funding bodies?
3. Presentation of the use of the funds – Where do the funds go?
4. Supplementary information in the balance sheets – Presentation of the gross amount of aid

The Bundesnetzagentur will continue using the successful consensual procedure with DB Netz AG to monitor the individual implementation measures.

Market consultation pursuant to section 67 of the Rail Regulation Act

The Rail Regulation Act provides that the Bundesnetzagentur consult at least every two years with representatives of the users of services in the rail freight and passenger rail transport segments. The Bundesnetzagentur conducted a market consultation with representative associations in the field of passenger rail transport services for the first time in 2018. A preliminary survey using a qualitative questionnaire was conducted to get the associations involved before the actual consultation. As the next step, an in-depth survey was conducted to determine which issues the associations ought to consider more closely. The selected topics which the Bundesnetzagentur presented in a workshop included the overall travel chain and information management.

2019 access charges for DB Netz AG train paths

In 2018 the Bundesnetzagentur approved DB Netz AG's charges for the use of its train paths during the 2018/2019 working timetable period.

The track access charges for regional passenger rail service were approved without any adjustments. The charges for regional passenger rail services were calculated on the basis of the average charges per Land (federal state) in 2017 and then increased in line with the funding provided for the development of regional public transportation.

The track access charges DB Netz AG applied for in the "standard" market segment for rail freight transport were lowered by 5% because of the special intermodal competitive and margin pressure in rail freight transport.

The Ruling Chamber reduced the track access charges proposed by DB Netz AG in its request by 16% in the segments Charter / Nostalgia (which are served primarily by competitor railways) and by 7% in the Point-to-Point segment.

The determinations issued by the Ruling Chamber will apply starting 9 December 2018.

International cooperation

International cooperation is becoming increasingly important in the area of railway regulation.

Important work is being done by the Independent Regulators' Group Rail (IRG-Rail) and by the European Network of Rail Regulatory Bodies (ENRRB) at the European Commission. The Bundesnetzagentur contributes its experience and expertise in both organisations.

Working groups at IRG-Rail and ENRRB

In 2018, the Bundesnetzagentur particularly advocated the interests of service facility operators in the Independent Regulators' Group Rail (IRG-Rail) as well as in the European Network of Rail Regulatory Bodies (ENRRB) at the European Commission. IRG-Rail, which now counts 31 members, approved a new Memorandum of Cooperation last year. This Memorandum governs cooperation between the rail regulatory bodies represented in IRG-Rail in cases involving cross-border complaints, thus operationalising European legal requirements arising from Directive 2012/34/EU for individual application.

In the ENRRB, the Bundesnetzagentur worked to ensure that the requirements that apply to service facilities by virtue of Implementing Regulation (EU) 2017/2177 are implemented in ways that take the specific target group into account. This was supported by working meetings with the European Commission and other stakeholders from the rail sector.

The Bundesnetzagentur monitored and supported cooperation involving the rail freight corridors, particularly in its capacity as a representative of the railway regulators on the administrative boards of Rail Freight Corridor 1 (Rhine-Alps) and Rail Transport Corridor 8 (North Sea – Baltic States). In the case of Rail Transport Corridor 8, the Bundesnetzagentur supports on the regulator side plans to expand the corridor through the addition of Latvia and Estonia.

Implementing acts of the European Commission under Directive 2012/34/EU

In 2018, the Bundesnetzagentur intensively prepared the application of Commission Implementing Regulation (EU) 2017/2177. This Regulation specifies the details of the procedure and the criteria to be applied for access to the services to be provided in service facilities. For this purpose, the Implementing Regulation requires, among other things, the establishment of service facility descriptions. In addition, infrastructure managers are required to develop a joint web portal and/or a common template and make it available to service facility operators.

IRG-Rail closely followed and supported these tasks for the railway market and established a continuous exchange between the various stakeholders in order to ensure solutions that are as closely in line with market conditions as possible.

This work was rounded off by the development of common principles for making decisions on applying exemptions which release the respective party from part of the obligations arising from the Implementing Regulation, including an overview of the rules for heritage railways of the respective IRG-Rail member. In addition, the railway regulators established time limits as required by the Regulation for responding to requests for access to service facilities and supply of rail-related services provided there.

The Delegated Decision (EU) 2017/2075 was to be applied for the first time in 2018 during the preparation of the working timetable. This Decision is supposed to establish greater transparency regarding available railway capacity and the duration of capacity restrictions.

Access issues – Rail freight corridors

The Bundesnetzagentur has monitored cross-border access to railway infrastructure, particularly in the case of European rail freight corridors. The focus here was on preparing and implementing the handbook on disruption management on Corridor 1 (Rhine-Alps). In addition, the Bundesnetzagentur was active in the area of technical / operational barriers to access for European freight traffic in connection with the issue "Logbook of the European Commission". Further, the Bundesnetzagentur monitored the performance indicators of the rail freight corridors and incorporated them into an IRG-Rail report on the cross-border cooperation between infrastructure managers.

In addition to the rail freight corridors, monitoring and supporting timetabling design became more important in 2018. Here, European railways are working on redesigning the traditional process for developing working timetables in order to be able to allocate capacity, particularly for rail freight traffic, on a more demand-driven basis. The intention here is to make railways as a mode of transport more attractive to freight transport. At the same time, the Bundesnetzagentur makes sure reasonable framework parameters are adhered to and all relevant stakeholders are involved.

Market monitoring at European level

The Bundesnetzagentur is actively involved in market monitoring at European level in its capacity as a member of the IRG-Rail[6]. The extensive collection and processing of data from 28 countries and involvement in drafting the annual Market Monitoring Report[7] comprise the main tasks of the Market Monitoring working group. Besides examining indicators relating to the European railway networks, the latest report focuses on the subject of quality and quality indicators in the passenger rail transport segment. The report's high relevance and informational value are dependent on a harmonised system for collecting data on common indicators in the Member States. Regular communication with the other regulatory authorities provided the foundation for effective, transparent cooperation in this connection. The IRG-Rail working group also functioned as a platform for cooperation between regulatory authorities on various issues regarding the railway market with the aim of deriving best practices for consistent regulation in Europe.

[6] IRG = Independent Regulators' Group
[7] Sixth IRG-Rail Market Monitoring Report 2018, available at https://www.irg-rail.eu/irg/documents/market-monitoring/186,2018.html

The Bundesnetzagentur's core tasks and organisation

The requirements placed on a higher federal authority are constantly changing, not only with regard to its tasks, but also with regard to its role as a modern employer. This is why an adaptable and highly efficient organisational structure is essential for the Bundesnetzagentur to meet these various requirements.

Tasks and structure

The Bundesnetzagentur, originally known as the Regulatory Authority for Telecommunications and Post, was set up on 1 January 1998 as a separate higher federal authority under the then Federal Ministry of Economics and Technology. It took over the responsibilities of the former Federal Ministry of Post and Telecommunications and the Federal Office for Post and Telecommunications. In 2005, on being assigned responsibilities under the Energy Industry Act and the General Railway Act, the Regulatory Authority for Telecommunications and Post was renamed the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen.

First and foremost, the Bundesnetzagentur's remit is to promote competition through regulation in the energy, telecommunications, postal and rail sectors and to guarantee non-discriminatory network access. Alongside regulatory measures in the energy sector, as the national planning authority the Bundesnetzagentur is also responsible for electricity transmission lines crossing national or federal state borders in the context of the energy transition. In the telecommunications and postal sectors it ensures appropriate, adequate and nationwide services and, on the basis of various pertinent laws and ordinances, provides regulations for the use of frequencies and numbers. Furthermore, the Bundesnetzagentur is the competent authority under the Electronic Signatures Act (SigG).

The Bundesnetzagentur's tasks are complex and highly diverse. They range from cases addressed in quasi-judicial proceedings in regulation areas, reporting requirements and planning authority responsibilities, consumer protection and information activities in the regulated sectors, to the nationwide investigation and processing of frequency interference complaints.

Below the management level the Bundesnetzagentur comprises ruling chambers and departments. The President's Chamber takes decisions in specific cases, in particular on award proceedings for scarce radio spectrum resources and the imposition of universal service obligations. In the telecommunications sector it determines which markets require regulation and which companies have significant market power in these markets. On the basis of these determinations, the ruling chambers then decide on the regulatory measures to be imposed on companies with significant market power. This is how decisions on specific details of obligations are reached, for example in the field of network access conditions or ex ante or ex post price reviews. In the postal sector the ruling chamber focuses on (ex ante and ex post) rates approval and the

control of anti competitive practices, including the regulation of access to the postal network. In the energy sector the ruling chambers have decision making powers on general and individual issues regarding access to electricity and gas networks and network charges.

The departments perform specialised and central administrative functions. These include economic and legal policy issues in the various areas of regulation and the relevant international coordination, as well as technical aspects of frequencies, standardisation, numbering and public safety. The Bundesnetzagentur is involved in international standardisation bodies, cooperating in the development of next generation networks and new radio systems.

In the energy sector the Bundesnetzagentur has been assigned key market supervisory tasks resulting from gas and electricity network development planning, from the Market Transparency Unit for Wholesale Electricity and Gas Markets set up in 2013, and from its responsibility for safeguarding security of supply. A major departmental function is to give ruling chambers specialist assistance in their decision making.

All of the Bundesnetzagentur's responsibilities have a strong international element. Coordination at European level, in particular, has always been an important aspect of its regulatory activity. This is reflected by the fact that the international activities are mostly concentrated and dealt with in one department.

In the telecommunications sector the Bundesnetzagentur is mainly responsible for the key decisions and objectives that promote investment, innovation and competition for the benefit of all citizens. In the context of Industry 4.0, ideas are being developed to promote the spread of digital technology and internetworking in key future-oriented fields; at the same time economic opportunities offered by the digital revolution and internetworking are being assessed with respect to growth, employment and competitiveness in the national economy.

Consumer protection remains another key focus area in the telecommunications sector. In this regard, particular emphasis is placed on investigating problems that hinder a smooth change of supplier. Furthermore, the Bundesnetzagentur continues to vigorously combat misuse as regards the unlawful use of telephone numbers, anti competitive behaviour and cold calling. In protecting the consumer, particular attention is given to preventing the illegal billing of call queues. Another primary function is to ensure transparency of consumer contracts, in particular with respect to the bandwidth guaranteed in the contract. The Bundesnetzagentur also maintains a database of sites of fixed transmitters operating above a specified power level. Also of particular importance for consumers are the resolution of radio interference, the dispute resolution procedure and general consumer services. Moreover, the Bundesnetzagentur plays an essential role in ensuring public safety. Its tasks include checking the technical protection measures for critical telecommunications infrastructure, protecting personal data and telecommunications privacy, the technical implementation of interception measures, and implementing and safeguarding information procedures.

In the energy sector it is the Bundesnetzagentur's duty to create and secure the basis for efficient competition in the electricity and gas markets. This is done in particular through unbundling and regulating non-discriminatory access to the energy networks, including rates regulation. In addition, the statutory decision in 2011 to phase out nuclear power as part of the Energiewende and the continued expansion of renewable energy require state measures with respect to the various market players, including monitoring the electricity and gas wholesale markets and intervening where necessary to safeguard security of supply. The Bundesnetzagentur also monitors the development of upstream generation and import markets along with consumer markets.

One of the major tasks for the Bundesnetzagentur in the context of the energy transition is the fast, large scale expansion of the electricity transmission networks. To achieve this, the Bundesnetzagentur has been given wide ranging authority in network development planning and in approving network expansion measures. This includes implementing the federal sectoral planning for extra high voltage lines crossing federal state and national borders and, as of 2013, their planning approval. As part of the statutory planning process, the network development plan is constantly being updated to take account of the latest developments. This also involves network planning and connection in the offshore sector.

In rail regulation the Bundesnetzagentur monitors compliance with the legislation on rail infrastructure access. A core task here is to ensure non-discriminatory

use of the rail infrastructure by railway undertakings and other access beneficiaries. The term rail infrastructure includes the infrastructure and services connected with both tracks and service facilities (eg stations, freight terminals). Rates regulation includes the examination of the level and structure of infrastructure charges and of other charges levied by the infrastructure managers.

A nationwide presence is vital for the Bundesnetzagentur to perform its duties. To ensure consistency the Bundesnetzagentur's regional offices, the contact point with consumers and industry, are managed and coordinated centrally by a single department.

The regional offices are mainly responsible for technical matters. They provide information, for example, on compliance with regulations on electromagnetic environmental compatibility and telecommunications. They are also in charge of frequency assignment, for instance for private mobile radio systems, for granting site certificates and for sampling equipment under their market surveillance duties. Another important area is the investigation and processing of radio interference using state of the art measuring equipment, monitoring compliance with regulations generally and carrying out radio monitoring and inspection tasks.

Additional executive tasks are carried out by specific regional offices. In particular, this involves activities in number administration, number misuse, cold calling, consumer protection and information, the registration of photovoltaic systems and the registration of railway infrastructure. They also carry out some human resources management functions for other government bodies and institutions, primarily those falling under the Federal Ministry for Economic Affairs and Energy.

Human resources management

Human resources management is a top priority at the Bundesnetzagentur. It is important both to assign staff optimally and to recruit new qualified staff. This is only possible when human resources management takes account of work requirements and staff skills and preferences in equal measure. Only a combination of pro active, appropriate staff deployment and motivated employees will allow the Bundesnetzagentur to perform its responsibilities in an efficient and cost effective way even in times of tight budgets. Aspiring to modern human resources management, the Bundesnetzagentur offers not only corporate health schemes, but also models for balancing work and family life.

In recruiting new staff the Bundesnetzagentur requires excellent specialist knowledge as well as the ability to structure and address complex new tasks in an interdisciplinary team quickly and with a flair for practical solutions.

Given its diverse areas of activity, the Bundesnetzagentur attaches particular importance to an interdisciplinary work approach. In total the Bundesnetzagentur employs about 3,000 specialists, including legal experts, economists, engineers and scientists from various fields, to ensure the efficient, proper performance of tasks in all areas.

Retirements and posts created as a result of new tasks have opened up numerous opportunities for new recruits in the fields mentioned above, providing interesting career prospects for new arrivals.

The Bundesnetzagentur has been offering apprenticeships since 1999. In view of the recruitment of future staff and the challenges of demographic change, the training qualifications offered by the Bundesnetzagentur have become ever more diverse. In 2018, a total of 189 trainees and students were trained at the Bundesnetzagentur in various vocational training and study programmes. Vocational training is available for office management trainees, electronic equipment and systems trainees, and for IT trainees in applications development and system integration. Since 2011 the Bundesnetzagentur has also offered a practice oriented study programme, now available at five locations, for students to gain a Bachelor of Engineering/Electrical Engineering or Bachelor of Science to qualify them to work as technicians for electronic equipment and systems at the Bundesnetzagentur. In 2016, the Bundesnetzagentur introduced a similar programme with further places for computer science students (Bachelor of Science) in combination with posts as IT trainees. Moreover, each year since 2012 civil servants preparing for the rank of Regierungsinspektor have been selected to take a university degree in IT in public administration. Vocational training courses are offered at a total of eight Bundesnetzagentur locations, in particular at the regional offices.

Budget

The Bundesnetzagentur's income and expenditure is budgeted for in the federal budget as part of the departmental budget of the Federal Ministry for Economic Affairs and Energy.

The table below shows the income for 2018 (target and performance) and 2019 (target).

Type of income	Target 2018 €'000	Performance 2018 €'000	Target 2019 €'000
Fees, contributions and other charges in the telecoms sector	41,801	27,841	24,739
Fees and other charges in the postal sector	40	21	38
Fees and other charges in the rail sector	62	0	0
Fees and other charges in the energy sector (electricity and gas)	9,139	7,182	6,854
Fees and other charges under the Grid Expansion Acceleration Act	30,402	19,721	42,980
Other administrative income, eg fines and rental and sale income	2,877	3,142	2,723
Administrative income	**84,321**	**57,907**	**77,334**

Lower than expected income in the telecommunications sector is due to an adjustment of fees associated with the entry into force of the Electromagnetic Compatibility of Equipment Act (EMVG) and the Radio Equipment Act (FuAG). In addition, the collection of interference protection contributions had to be postponed by another year due to ongoing legal proceedings. In the rail sector no income will be budgeted pending the entry into force of a new fee ordinance. The collection of fees related to grid expansion depends on progress in planning and procedures and accounts for deviations in the estimates.

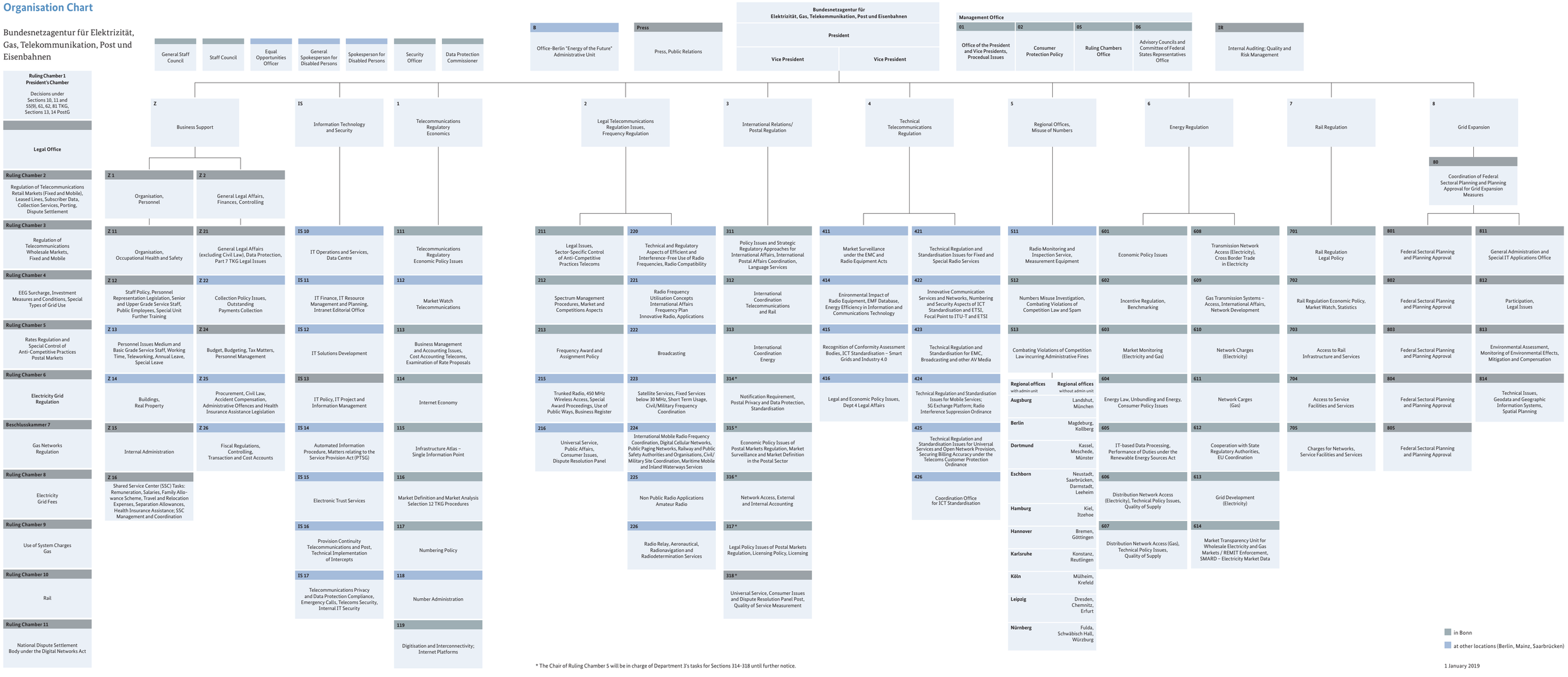
The table below shows the expenditure for 2018 (target and performance) and 2019 (target).

Type of expenditure	Target 2018 €'000	Performance 2018 €'000	Target 2019 €'000
Staff costs	140,164	142,700	168,444
General administrative expenditure, appropriations and special financing expenditure	62,707	50,445	57,228
Investment	16,814	7,507	13,630
Total expenditure	**219,685**	**200,652**	**239,302**

The lower than expected general administrative expenditure and investment are mainly due to the provisional budget in place in the first six months of 2018.

Organisation Chart

Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen



* The Chair of Ruling Chamber 5 will be in charge of Department 3's tasks for Sections 314-318 until further notice.

1 January 2019

List of abbreviations

3GPP 3rd Generation Partnership Project

5G 5th generation of mobile networks

A

AC alternating current

ACER Agency for the Cooperation of Energy Regulators

AEG General Railway Act

AG stock company

ARegV Incentive Regulation Ordinance

ASIDI Average System Interruption Duration Index

B

B2C Business-to-Consumer

BBPIG Federal Requirements Plan Act

BDEW German Association of Energy and Water Industries

BfDI Federal Commissioner for Data Protection and Freedom of Information

BGH Federal Court of Justice

BHE Bremische Hafeneisenbahn

bn billion

BIPT Belgian Institute for Postal Services and Telecommunications

BK Ruling Chamber

BOS public protection and disaster relief agencies

BSI Federal Office for Information Security

BSI-KritisV BSI Critical Infrastructure Ordinance

BWA Broadband Wireless Access

C

CA UPU Council of Administration

CDU/CSU Christian Democratic Union/Christian Social Union

CEER Council of European Energy Regulators

CEP courier, express and parcel services

CEP Clean Energy for all Europeans Package

CEN European Committee for Standardization

CEN/TC 331 Technical Committee for postal services

CHP combined heat and power

CHP Act Combined Heat and Power Act

CPI consumer price index

ct/kWh cents per kilowatt hour

CWE Central Western European region

D

D+1 working day after deposit

DB Deutsche Bahn

DB AG Deutsche Bahn AG

DC direct current

DECT Digital Enhanced Cordless Telecommunications

DIN German Institute for Standardization

DOCSIS Data Over Cable Service Interface Specification

DP AG Deutsche Post AG

DP EPS Deutsche Post E-Post Solutions GmbH

DP IHS Deutsche Post InHaus Services GmbH

DSL Digital Subscriber Line

DSO distribution system operator

DUSS Deutsche Umschlaggesellschaft Schiene-Straße mbH

E

E-Control Austrian regulator for the electricity and gas industry

ECJ European Court of Justice

EEG Renewable Energy Sources Act

EETT Greek regulatory authority

EEX European Energy Exchange

EFTA European Free Trade Association

eg for example

EMVG Electromagnetic Compatibility of Equipment Act

EnLAG Power Grid Expansion Act

ENRRB European Network of Rail Regulatory Bodies

EnSiG Energy Security of Supply Act

ENTSO-E European Network of Transmission System Operators

EnWG Energy Industry Act

ERegG Rail Regulation Act

ERGP European Regulators Group for Postal Services

ETOE Extraterritorial Office of Exchange

ETSI European Telecommunications Standards Institute

EU European Union

EU DSO entity planned cooperation of European DSOs

EUGAL European Gas Pipeline Link

Eurostat statistical office of the European Union

F

FAQ Frequently Asked Questions

FCA Regulation Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation

FIMM feed-in management measures

FROG Future Role of Gas

FSR Florence School of Regulation

FSV NSA voluntary “Use, don't curtail” commitment pursuant to section 13(6a) EnWG

FTTB Fibre To The Building

FTTH Fibre To The Home

FuAG Radio Equipment Act

G

GasNEV Gas Network Charges Ordinance

GasNZV Gas Network Access Ordinance

Gaspool gas market area cooperation of the companies Gascade GmbH, Gastransport Nord GmbH, Gasunie Deutschland Transport Services GmbH, Nowega GmbH, Ontras Transport GmbH

GB gigabyte

Gbit gigabit

GL guideline

GL CACM Guideline on Capacity Allocation and Congestion Management GmbH limited liability company

GW gigawatt

GWh gigawatt hour

H

HAR harmonised allocation rules

HFC Hybrid-Fibre-Coax

H-Gas high-calorific gas

HKX Hamburg-Köln-Express GmbH

HVDC-VO Commission Regulation (EU) 2016/1447 of 26 August 2016 establishing a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules

I

IB UPU International Bureau

IC interconnection

ICAs interconnection accesses

IM infrastructure manager

inc including

IMSI International Mobile Subscriber Identity

IoT Internet of Things

IP internet protocol

IPP integrated product plan

IRG-Rail Independent Regulators' Group – Rail

ISA infrastructure atlas

ISDN Integrated Services Digital Network

ISDN-PMx ISDN primary multiplex

ISO International Organization for Standardization

IT information technology

ITU International Telecommunications Union

K

km kilometre

KRITIS critical infrastructure

kV kilovolt

kW kilowatt

kWh kilowatt hour

L

LAN Local Area Network

L-Gas low-calorific gas

LNG liquefied natural gas

LTE Long Term Evolution

LuFV Service Level and Funding Agreement.

LÜKEX interstate crisis management exercise

M

m million

M2M Machine-to-Machine

MB megabyte

Mbit/s megabits per second

MRU Manner-Romberg Unternehmensberatung GmbH

MsbG Metering Act

MW megawatt

N

NABEG Grid Expansion Acceleration Act

NC Network Code

NC BAL Network Code Balancing

NC CAM Network Code Capacity Allocation Mechanism;

NC IO Network Code Interoperability

NC TAR Network Code Tariff

NCG NetConnect Germany; gas market area cooperation of the companies bayernets GmbH, Fluxys TENP GmbH, GRTgaz Deutschland GmbH, Open Grid Europe GmbH, terranets bw GmbH, Thyssengas GmbH

NEMO Nominated Electricity Market Operator

NeMoG Network Charges Modernisation Act

NDP network development plan

NGA Next Generation Access

NL Netherlands

no number

O

ÖBB Österreichische Bundesbahn; Austrian rail company

OLG Higher Regional Court

O-NDP offshore network development plan

OTT Over-the-top

OVG Higher Administrative Court

P

p forecast

PCI Project of Common Interest

PDLV Postal Services Ordinance

PEK plan to increase rail infrastructure capacity

pkm passenger kilometre

POC UPU Postal Operations Council

Postcon Postcon Konsolidierungs GmbH

PostG Postal Act

PSO public service obligations

PUDLV Postal Universal Service Ordinance

R

RAM remaining available margin

REMIT Regulation (...) on wholesale energy market integrity and transparency

RfG-VO Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators

RRX Rhein-Ruhr-Express

RU railway undertaking

S

SAIDI System Average Interruption Duration Index

SIM Subscriber Identity Module

SMARD Bundesnetzagentur's core electricity market data platform (www.smard.de)

SMS Short Message Service

SO Regulation Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation

StromNEV Electricity Network Charges Ordinance

SPD Social Democratic Party

T

TAB Technical Connection Conditions

TEN trans-European energy infrastructure

TEN-E Regulation EU Regulation No 347/2013 on guidelines for trans-European energy infrastructure

TENP Trans Europa Naturgas Pipeline

TKG Telecommunications Act

tkm tonne-kilometre

TKÜV Telecommunications Interception Ordinance

TNV Telecommunications Number Fee Ordinance

TR TKÜV Technical Directive relating to the Telecommunications Interception Ordinance

TSO transmission system operator

TTF Title Transfer Facility; Netherlands virtual gas trading point

TV television

TWh terawatt hour

TYNDP Ten Year Network Development Plan

U

UMTS Universal Mobile Telecommunications System

UN United Nations

UNJSPF United Nations Joint Staff Pension Fund

UPU Universal Postal Union

V

VAT value-added tax

VDSL Very High Speed Digital Subscriber Line

VDV Association of German Transport Companies

VG Administrative Court

VHF very high frequency

VIP virtual interconnection point

VoIP Voice over IP

VSBG Consumer Alternative Dispute Resolution Act

VULA Virtual Unbundled Local Access

W

WIK Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste

WIMAX Worldwide Interoperability for Microwave Access

WindSeeG Offshore Wind Energy Act

WLAN Wireless Local Area Network

X

XBID cross-border intraday solution

Xgen sectoral productivity factor

Z

ZIS single information point

Contacting the Bundesnetzagentur

The Bundesnetzagentur provides reliable information and advice to anyone who wants help or has a complaint.

General enquiries about telecommunications
Phone: +49 30 22480-500
Fax: +49 30 22480-515
bundesnetzagentur.de/tk-verbraucher

General enquiries about electricity and gas
Phone: +49 30 22480-500
Fax: +49 30 22480-323
verbraucherservice-energie@bnetza.de
bundesnetzagentur.de/energieverbraucher

General enquiries about postal services
Phone: +49 30 22480-500
Fax: +49 228 14-6775
verbraucherservice-post@bnetza.de
bundesnetzagentur.de/post

Number misuse, spam, cold calling and call queues
Phone: +49 291 9955-206
Fax: +49 6321 934-111
bundesnetzagentur.de/tk-beschwerde

Radio interference
Nationwide number (24 hours a day)
Phone: +49 4821 895-555
funkstoerung@bnetza.de

Telecom provider switching
Phone: +49 30 22480-500
Fax: +49 30 22480-517
bundesnetzagentur.de/tk-anbieterwechsel

Number administration and number information rights
Phone: +49 661 9730-290
Fax: +49 661 9730-181
nummernverwaltung@bnetza.de
bundesnetzagentur.de/rufnummern

Core market data register
Phone: +49 0228 14-3333
Fax: +49 0228 14-3334
marktstammdatenregister.de/kontakt

Energy grid expansion public liaison service
Phone: Freephone 0800 638 9 638
info@netzausbau.de

Publication orders
Phone: +49 361 7398-272
Fax: +49 361 7398-184
druckschriften.versand@bnetza.de

Publisher's details

Publisher
Bundesnetzagentur für Elektrizität, Gas,
Telekommunikation, Post und Eisenbahnen
Press and Public Relations
Tulpenfeld 4, 53113 Bonn
Phone: +49 228 14-9921
Fax: +49 228 14-8975
pressestelle@bnetza.de
www.bundesnetzagentur.de

Editing
Press and Public Relations
Responsible for content: Fiete Wulff

Design
Fink & Fuchs AG

Print
Druck- und Verlagshaus
Zarbock GmbH & Co. KG
Sontraer Straße 6
60386 Frankfurt am Main

Photo credits
p 27, iStock (allou)
p 68, 123rf (francoillustration)
p 76, 123rf (aleq1463)
All other photos: Bundesnetzagentur

Editorial deadline
31 December 2018

Bundesnetzagentur Annual Report 2018 in accordance with section 122 of the Telecommunications Act (TKG)

Bundesnetzagentur für Elektrizität, Gas,
Telekommunikation, Post und Eisenbahnen
Tulpenfeld 4
53113 Bonn
Tel: +49 228 14-0
Fax: +49 228 14-8872
Email: info@bnetza.de
www.bundesnetzagentur.de