



Bundesnetzagentur

Annual Report 2013

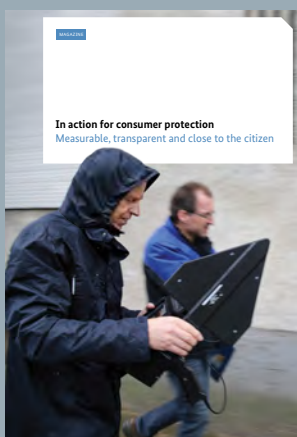
Strong networks in focus.

Spotlight on consumer protection.



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The latest magazine focuses on the consumer. Read about the importance attached to consumer protection in all the Bundesnetzagentur's regulatory areas and especially in grid expansion.



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In action for consumer protection – that is our mission. The Bundesnetzagentur's work in the telecoms, electricity, gas, postal and rail sectors focuses not only on the companies active in the markets, but also on the consumers. For it is the consumers who buy the services offered by the companies and who in turn present the companies with their new expectations and demands. And the Bundesnetzagentur is there to see that this dialogue works. That is why we will continue to make sure that citizens can always come to us with their concerns and interests – just as the companies do in our various proceedings and consultations. This is what makes our work measurable and transparent – with our regular reports on all the regulated markets. And at the same time close to the citizen – with us there for everyone, ready to listen.



»In safeguarding competition in the regulated energy, telecoms, postal and rail sectors we are concerned not only with the companies active in the markets but also – and especially – with the interests of consumers.«

»Crucial both to consumers and to effective competition are smooth processes for switching providers.«

The Bundesnetzagentur's past year has been both eventful and successful. The *Energiewende* has played an even greater part in defining the political agenda. This has presented us with huge challenges and put us in the public spotlight, as the projects needed to transform our energy landscape and expand the grid directly affect a large number of citizens.

Less focus has been placed on our core task of safeguarding competition in the regulated energy, telecoms, postal and rail sectors. Here again we are concerned not only with the companies active in the markets but also – and especially – with the interests of consumers. For the general public, however, this is just as important and has been highlighted in this year's annual report.

This is why we provide active and effective support and act in the interests of citizens and consumers. And in the sectors we regulate, these activities centre on the telecoms and energy markets.

Last year we received a total of 66,617 consumer complaints and enquiries. Half were about the telecoms market, with most customers reporting the difficulties they faced when changing their provider. Other areas of consumer concern were contracts, billing, problems with services when moving home, number misuse, spam calls, number allocation, basic telephone services and international roaming.

Crucial both to consumers and to effective competition are smooth processes for switching providers. In the interests of consumer protection, the providers involved must ensure that services are transferred and that customers are not without service for more than one calendar day. To improve the ease of switching, we have developed an electronic interface to help providers coordinate with each other. We are promoting this automated switching process and are following providers' implementation of the interface.

Another key issue is improving the quality of information given to telecoms customers by increasing transparency. Consumers need clear information on prices when considering a service or provider. They need reliable information from providers on the speeds they can expect and the amount of data they use.

»We see ourselves as a partner and ally for consumers in an increasingly complex world. Our regulatory activities promote competition and thus choice for all customers.«

In this context we published the results of our study to measure the quality of broadband internet access and a report on the transparency of contracts with landline and mobile operators following research on fixed line and mobile internet access. There was a huge take-up of our two rounds of speed tests that gave customers the opportunity to check the performance of their broadband lines – as the speeds providers promise often differ from those actually delivered to consumers. The results confirmed our belief that a transparent market is key to customer satisfaction. This is underscored by the planned issue of a Transparency Ordinance in 2014.

Alongside the consumer service team, our dispute resolution panel mediates between consumers and telecoms companies, helping them come to a mutual agreement comparatively quickly. This is a considerably less expensive but effective alternative to legal proceedings and – being accessible to all citizens – is in the interests of consumers, too.

Combating number misuse is also central to protecting consumers and is reflected by the wide range of consumer complaints received each year. Last year complaints were related to breaches of the rules on price messages and call queues, nuisance callers withholding their identity and, most notably, spam calls, texts, faxes and emails. If we suspect a number is being misused, we will investigate and take action – from ordering the number to be disconnected to banning the company from billing or being paid for the calls. This is one way in which we can foster a well-functioning telecoms market, promoting services that add value for all the market participants and prohibiting behaviour that abuses consumer trust.

The volume of consumer complaints about nuisance marketing calls and callers hiding their identity is rising. This shows two things: firstly, just how important this issue is for the public and secondly, the need for us to combat nuisance calls and messages. We will fine companies that are found to be breaking the rules and – since last year – search premises if we suspect a company is doing so.

Telecoms and IT services are now part and parcel of everyday life. Resolving radio interference is therefore especially important in today's connected and mobile society, as the risk of interaction and interference increases with the number of electronic devices in use. Interference can be caused by faults or defects in equipment, unwanted radiation, or systems that have not been properly installed. Our radio monitoring and inspection service supports customers from the moment they report interference to the time the case is resolved.

The majority of consumers contacting us about the universal telecoms service needed advice and information about telephone lines and access to public telephone services. We were able to find a pragmatic solution, agreeing with Telekom on a separate process for dealing with customers wanting new or different lines.

Our consumer service has also continued to receive a good number of complaints and enquiries from energy customers, most of them concerning contracts and bills or, in particular, the quality of service delivered by suppliers. Complaints were made about differences in interpreting the terms and conditions of bonus payments or contract termination, incorrect billing, and delays in receiving credit balances and bonuses.

We also received a large amount of complaints about continuity of supply in the event that a customer's electricity or gas supplier has failed to pay the network charges and no longer has access to the grid and the default supplier has to provide service to the customer. This happened to a number of consumers whose particular supplier became insolvent. Most of the customers wanted to know about the reliability of the default supplier's service, their obligation to pay the new supplier and, for instance, their contractual and legal rights in relation to their failed supplier as prepaid customers. The fact that there is still considerable uncertainty among customers is a clear sign of the need for information at an early stage in particular, to protect consumers from harm.

Grid expansion is another issue of growing public interest, and last year we set up our own dedicated hotline. Our prime concern is to involve the public early on both in the process as a whole and in specific expansion projects, providing transparent procedures and reliable information.

One thing is clear, and this is also a measure of our work: the success of the *Energiewende* depends on the widespread approval of the public. Last year we held another six open information events on grid expansion to explain why we need new electricity lines, what steps are involved, and how the people directly affected can play a part. We have made various films about transforming the energy landscape and expanding the grid, and there are many ways in which those interested can talk to us and find out about the opportunities provided by the legislator for the public to take part. As soon as specific routes are being planned and discussed, we want to be there for the citizens as a qualified, open and dependable partner: a partner valued for taking into account all the relevant aspects – the legal and economic arguments as well as the views and interests of those personally affected – to achieve a measured and informed solution.

We see ourselves as a partner and ally for consumers in an increasingly complex world. Our regulatory activities promote competition and thus choice for all customers. And our consumer service provides advice and practical support for those with specific problems.

A handwritten signature in blue ink, appearing to read 'Jochen Homann', is positioned above the printed name and title.

Jochen Homann
President

In action for consumer protection Measurable, transparent and close to the citizen





18

High-tech equipment and the staff's experience and know-how are all needed when it comes to tracking down interfering signals.

10

"Competition is not an end in itself. By bringing transparency and price restraint, competition always benefits the consumer as well", says Jochen Homann, Bundesnetzagentur President, in our interview.



30

Reading with best-selling author Marc Elsberg in Berlin. Events such as this provide the opportunity for dialogue between the Bundesnetzagentur and the general public.



28

Price stability in the letter market – also one of the Bundesnetzagentur's concerns.

Manning the grid expansion hotlines, assessing signal box staffing, discussing with scientists, consulting with companies, tracking down interfering signals: the Bundesnetzagentur's staff – totalling more than 2,700 – are always in action in the interests of consumer protection. For more competition and transparency in the rail and postal sectors and in the energy and telecommunications markets is not an end in itself: it strengthens the networks, in turn benefiting consumers across the country.

10 **Core responsibility: consumer protection**

Jochen Homann, Bundesnetzagentur President, explains in an interview why consumer protection is the Bundesnetzagentur's principal concern.

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The challenges of the *Energiewende* call for the expertise of people from a variety of professional backgrounds. This is provided by the grid expansion department.

16 **More transparency for better decisions**

The Bundesnetzagentur aims for greater market transparency to improve the quality of broadband connections – all in the interests of the consumers.

18 **Tracking interference**

The staff at the radio monitoring and inspection service are always on the lookout for signals interfering with radio, TV or even aircraft reception. We spent a day with them.

23 **Everything grinds to a halt**

The rail chaos in Mainz revealed company staff shortages. What can the Bundesnetzagentur do to stop it happening again?

24 **The details regarding energy – what exactly do we have to pay for?**

Surcharges, fees, taxes – what is actually in my bill? And how can the Bundesnetzagentur influence the price of electricity? The facts.

26 **Reinforcing the digital networks**

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28 **Price cap ensures continued affordable postage rates**

Good services at good prices – the regulator's goal in the postal market, too. How letter prices can remain stable over years.

30 **Fostering dialogue**

The Bundesnetzagentur actively fosters communication with all interest groups – at public readings, in working groups or at conventional information events.



Jochen Homann, born in Rotenburg an der Wümme in 1953, has been President of the Bundesnetzagentur since 2012. Prior to this Mr Homann, an economics expert, held the post of state secretary at the Ministry of Economics and Technology, following positions as head of division and director general.

Core responsibility: consumer protection

Consumer protection is the Bundesnetzagentur's principal concern. Jochen Homann, Bundesnetzagentur President, explains why this is so in the following interview.

Mr Homann, securing competition and network access, protecting consumer rights, speeding grid expansion – how do you keep track of what's going on with five areas to oversee, and how do you set priorities?

Maintaining a clear overview is thanks first and foremost to the excellent staff here in the Agency, who analyse the information from their specialist areas and prepare the ground for me. Our priorities are often set by political developments; just think, say, of the *Energiewende*, our shift to green energy, or broadband rollout. And then unforeseen events push some tasks up the agenda. This was the case last summer with the train dispatcher problems in Mainz, for instance. And lastly, I decide myself where the focal points should be. Consumer concerns is one.

Why is consumer protection such an important issue?

First of all, our remit as a federal authority is clear. We are the main point of contact for consumers experiencing problems with service providers in the electricity/gas, telecommunications, post and rail sectors. Thus we are automatically a consumer protection authority too. But that aside, our commitment to more competition in the markets always serves consumer interest. That is why we also provide a comprehensive Consumer Service.

What are the typical issues that consumers come to you about?

In telecommunications, switching provider for instance. But our Consumer Service staff also deal with diverse other issues such as contract disputes, complaints about cold calls and call queues.

And how can the Bundesnetzagentur help?

For a start, we provide comprehensive information online. We have also set up hotlines to enable direct contact. We also provide information at special events. Our prime concern is to listen to consumers, to hear what they are not happy with. And I am often astonished at how quickly problems can be resolved when, in particular cases, we contact the companies ourselves. For more complex issues, however, we have further options: we can impose fines, order house searches and even disconnect call numbers.

»For a start, we provide comprehensive information online. We have also set up hotlines to enable direct contact. Our prime concern is to listen to consumers, to hear what they are not happy with...«

»Competition is not an end in itself. Competition, by bringing transparency and price restraint, always benefits the consumer as well...«

What shape does your work with other consumer organisations such as consumer protection centres or the Justice Ministry take?

We work hand in hand. We are, after all, pursuing the same goal: to help consumers with their problems. This is illustrated by the events held with others, the Forum for Consumer Protection in Telecommunications, for instance, or our work in the Anti-Spam Alliance.

And how can the Bundesnetzagentur help consumers on energy matters?

First of all, every one of us can do our bit by using energy thoughtfully. Therefore we strongly recommend consumers to compare electricity prices and, via switching to a cheaper supplier, exert competitive pressure. Consumers can, in addition, become involved in matters of grid expansion and contribute to making the *Energiewende* a success by their support.

The Bundesnetzagentur has been seeking to gain this support at information events across the country for two years now

These events are extremely useful, in my view. They enable us to take important information to the centres of grid expansion, to explain what we're doing and to answer questions. The entirely positive response to these information events underlines the relevance of this form of dialogue.

But the increasing electricity prices are unsettling consumers more and more. Calls for a cap on the electricity price are repeatedly appearing on the political agenda. Could that be an answer?

It is immensely important to put the whole subject of cost on the political agenda. And so I can only welcome the fact that the discussion of a cap on the electricity price amounts to a wake-up call. Solutions are needed to keep costs within acceptable limits. Then afterwards, we can ask how the costs should be fairly distributed.

Last December, moreover, the European Commission opened proceedings on the renewables surcharge. Is this also a welcome wake-up call?

Naturally we are glad that the European Commission is keeping an eye on energy policy in the Member States. But it is unlikely that the renewable surcharge in its entirety will be called into question. On the matter of relief, decisions will have to be taken on its extent and the proper beneficiaries.

So there's never a dull moment with the Energiewende...

No, and there won't be either. But above all there will be a huge amount of work for us to do. Our expertise will be in demand, not just for the reform of the Renewable Energy Sources Act. Once we receive applications for transmission lines in the federal sectoral planning process, a period of intense activity will begin. The route corridors along which the electricity highways will ultimately run have to be determined. So 2014 will see another big contribution to the *Energiewende* from us.

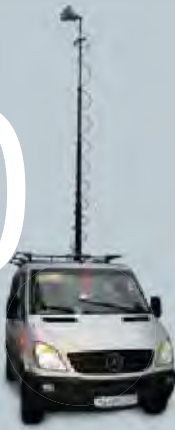
What other priorities do you have?

A further central aim undoubtedly is to speed broadband rollout and make sure that rural areas, too, can enjoy a modern infrastructure. Our recent decisions on vectoring and the quota model and the arrangements on local loop charges have already boosted competition. However, let us not forget that competition is not an end in itself. Competition, by bringing transparency and price restraint, always benefits the consumer as well. ■

Numbers from the networks

7,340

... cases of interference were dealt with by the radio monitoring and inspection service nationwide in 2013 for the benefit of the consumers.



16.1 billion

... letters up to 1,000g and 2.5 billion parcels were conveyed in Germany in 2013.¹⁾



7,656

... responses were received by the Bundesnetzagentur in the 2013 consultation on the network development plans and environmental report.

11.3%

... of the letter market (in terms of turnover) in 2012 went to Deutsche Post AG's competitors.



110 billion

... minutes were spent by Germans on their mobiles last year, with a call lasting an average 2.5 minutes.

Over 3000

... railway undertakings are active in Germany in the railway market.

5.3%

... average improvement in efficiency by 2018 is the target for electricity distribution system operators under incentive regulation.

1) Forecast figures

Diversity's role in grid expansion

The Grid Expansion department is a new and important department within the Bundesnetzagentur. One of the most exciting challenges of the *Energiewende*, the planning and approval of the electricity grid befitting the *Energiewende*, is shaped to a great extent here. People of different professional backgrounds with different careers work closely together. This mix provides the expertise and diverse experience that is required for the necessary grid expansion to gain broad support in the public.

1

Energy supply framework scenarios

How much electricity will we need in ten years' time? What role will coal-fired power plants and wind turbines play in the future? Possible answers are provided once a year by what's known as the Scenario Framework. It describes the likely developments in the German energy landscape over the coming years. The framework is drafted by the transmission system operators and approved by the Bundesnetzagentur.

2

Network Development Plan and Environmental Report

The scenarios help the transmission system operators to calculate expansion requirements for the next decade. The Network Development Plan that has to be confirmed by the Bundesnetzagentur is the result of this. Additionally, information on possible environmental impacts is recorded in an environmental report. Rounds of participation allow citizens, industry associations and public authorities to work together constructively on the Network Development Plan and the Environmental Assessment.



Dr. Heinz-Jürgen Scheid, 56, economics expert and head of the Grid Expansion department:

"My department is responsible for the planning and approval procedures for transmission network expansion projects crossing federal state and/or national borders. More than 120 employees work closely together here. Ranging from spatial and landscape planning, environmental preservation and nature conservation to agricultural engineering or law, the number of fields in the mix are as diverse as can be. This is how we ensure that all aspects of grid expansion are taken into account. It is especially important for the *Energiewende's* success to complete pending federal sectoral planning procedures in a manner that is legally secure while achieving the necessary level of civic participation."



Nicole Schneider, 37, landscape planner:

"I am contributing to the compilation of the environmental report. By identifying the especially sensitive areas in the regions through which lines may pass we are establishing a sort of early warning system. Where are nature or bird conservation areas? What sort of effects do power-line pylons have on birds? And how does this affect the countryside? To answer these questions I work closely together with appraisers and scientists. It helps to have worked in the field of species protection before."



**Tobias Landwehr, 28,
industrial engineer:**

"I work to ensure that the processes driving dialogue with the public go through smoothly to render a public liaison service that is easily accessible. During the consultation phase of the network development plan and environmental report we ensure that all applications from citizens, organisations or companies are documented in our systems and forwarded to the correct specialist unit. This is one of our most important tasks. In addition to this we are working to simplify our dialogue still further, without losing sight of data protection and legal integrity."



**Max Diehl, 24, scientist
specialising in earth and
life sciences:**

"I support the various sections with geographical maps. We create the most diverse maps for the environmental report, the network development plan and for information events. The maps are intended to clearly display the areas through which lines might possibly pass, where water or nature conservation areas are located and where rail electricity lines might run. Because we need these data for the maps, cooperation with transmission system operators and other companies and institutes make up another part of my work."

3

A binding Federal Requirements Plan

Together with the environmental report, the Network Development Plan forms the draft Federal Requirements Plan. This contains a list of the necessary projects – including start and end points for each new construction project. The federal government is presented with a draft such as this at least every three years. This starts the legislative process which concludes with the necessity of all projects being determined by law.

4

Federal sectoral planning or Regional impact assessment?

The transmission system operators propose corridors for the new extra-high voltage cables. The decision regarding these corridors is made either by the relevant federal state authority or by the Bundesnetzagentur if the planned cable crosses national or federal state borders. They examine the route of the corridor in what is known as Federal Specialist Planning, which includes a Strategic Environmental Assessment.

5

Determination of exact cable routes – Planning Approval

The corridors determined in step four form the basis of the Planning Approval Proceedings. The transmission system operators must take several alternative routes into consideration for each corridor. Their proposals are discussed publicly and assessed for their environmental compatibility. At the end, a planning approval decision is reached with the routes that impact the least on people and the environment.



**Alexander Becker, 39,
agricultural engineer:**

"I cover the topic of 'soil' as a natural asset in the environmental report. After all, soil not only fulfils an important function, filtering water and absorbing pollutants, but should also be conserved for the long-term for use for farming and forestry. My work therefore also involves finding the path to reconcile different interests. Here, talks with farming organisations and other interest groups are just as important as the participation in meetings, in working and research groups and the actual writing up and evaluation of statements."



**Ulrike Platz, 39,
landscape architect:**

"The Public Participation section's work focuses on communication during the entire course of the grid expansion process. This involves being in contact with the scientific community, during the Scientific Dialogue event for example, which took place for the first time in 2013 on the one hand, and receiving statements on the network development plan and the environmental report on the other. Anybody who wants to make a case for grid expansion must be familiar with a broad range of questions such as the design of power poles to name an example: they do, after all, shape the landscape to a considerable degree. New exciting ideas are already flowing in from our neighbours in this regard."

More transparency for better decisions



The Bundesnetzagentur is doing a lot to make sure consumers know exactly what they can expect from their Internet Service Providers (ISPs). Dr Cara Schwarz-Schilling, head of the section for internet economy policy issues, explains.

Why is transparency in the context of broadband quality so important to the Bundesnetzagentur?

Transparency is vital for effective competition. And this is true as far as the quality of broadband connections is concerned, too. I can't make an informed choice about a new provider without a good idea of what I can expect in terms of quality. And, once I have bought broadband, I need to be able to check if the quality I am getting is the same as the quality I was promised – and if not, if it is worth switching provider. This is how transparency can boost competition for the best quality – benefiting both consumers and good providers.

What can the Bundesnetzagentur do to help?

The most obvious thing is our speed tests. We first reported on the quality of broadband connections back in 2012, with the focus on internet access. Using a software tool, we looked at the difference between advertised "up to" and actual speeds for fixed and mobile UMTS connections.

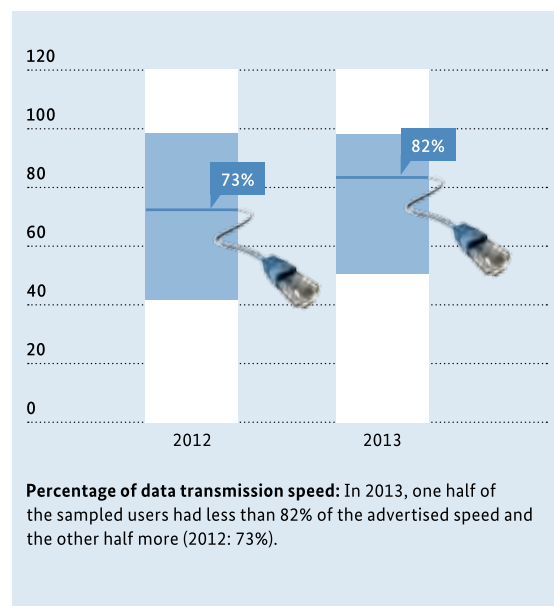
And what did the tests show?


The results were disappointing: there was a wide disparity across all technologies, products and providers. Only one in five users actually got the headline speed they had bought. But the study also showed just how important transparency is for

customer satisfaction: users getting speeds nearer to those they expected were more satisfied with their provider.

What effect did the results have on your work?

The first thing we did was to publish a key elements paper on the subject, asking the companies to comment. This marked the beginning of a constructive dialogue with industry, the aim being to speed up



 For details of the performance results from 2013 and 2014 and more information about this topic, go to www.initiative-netzqualitaet.de.


Smooth switching

Consumers wanting to switch provider should no longer have to put up with long breaks in service – thanks to legislation introduced in May 2012 and the Bundesnetzagentur's efforts. With information, practical advice and new fast track procedures the Bundesnetzagentur did its bit in 2013 to make this a reality. Customers can take their complaints to the ombudsman service set up especially for switching problems. The significant number of complaints received led to three companies being fined for repeatedly breaching their legal obligations: in February 2014, fines totalling €225,000 were imposed. Action was also initiated against a fourth major German provider. Some 70 percent of complaints are about these four providers. To reduce service losses and, in turn, the volume of complaints further, the Bundesnetzagentur is also backing the introduction of an electronic interface to facilitate communication between the companies. It is keeping a watch on progress

to make sure the companies set up the interface without avoidable delay.

If you have any questions or complaints, call or write to the Bundesnetzagentur:

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tk-anbieterwechsel@bnetza.de**

 For more information, go to www.bundesnetzagentur.de/tk-anbieterwechsel.

improvements for consumers. We also made new tests across the country in 2013 to see if things really had got better since our first report, and we finished analysing the results this spring.

And what did the new figures show?

Our first report obviously sparked off discussions and initial improvements. More than three out of four users with fixed broadband connections get at least half their headline speed, compared to just under 70 percent before. We now need to find a system that will make this incentive a permanent feature in the market and lead to even more transparency. As you can see, there is still a lot to be done.


The key elements paper suggests another improvement in the form of customer speed checks. What exactly would that involve?

Our aim is for consumers to be able to test and assess the quality of their internet connections themselves – simply, at any time and free of charge. What we need is a method that is user-friendly but at the same time provides reliable information that will

enable customers to compare the quality promised and delivered by providers. This in turn means that all providers will need to have the same speed test software and servers.

What can you do to get these speed checks off the ground?

We are working hard to get a speed checker for both fixed and mobile broadband customers up and running. One of our priorities is making sure that the results the consumers get are comparable and transparent. ■

 Read more about this topic in "Quality and transparency" on page 80.



Thomas Hasenpusch (left) and Markus Albertshofer (right) are experts when it comes to finding sources of interference to reception. The men draw on their technical know-how and years of experience in Mr and Mrs Wolf's living room at the couple's home in Planegg, Upper Bavaria.

Tracking interference

The staff at the Bundesnetzagentur's radio monitoring and inspection service have a challenging job. Their daily work involves tracking down electrical equipment interfering with radio, TV and sometimes even aircraft reception.

It's just after eight on a rather dull January morning. In one of Munich's quiet residential areas, not far from the city's botanical gardens, the day is just beginning. Cars are coming out of garages, parents are taking their children to nursery school, a cat is creeping through the front gardens. Everything is normal. Except there's one building that stands out in this particular road: its flat roof – not gabled like its neighbours – is dotted with literally dozens of antennas in all shapes and sizes. Some like forks, others like oversized nest boxes, all reaching up into the gloomy sky. What can this be? The secret service? Not very secret, though. No, this is the home of one of the Bundesnetzagentur's numerous regional offices and bases for its radio monitoring and inspection service.

Inside, the team are tucking into a traditional Bavarian breakfast of sausages and pretzels. "Our weekly breakfasts have been tradition for more than thirty years. And tradition is something you don't break with here in Bavaria", explains Thomas Hasenpusch, one of the staff responsible for investigating interference complaints, and born in Hamburg. "And anyway, it's the only time we really all get together – one of us is always out and about." Indeed, finding and clearing sources of interference – which is the most important, though not the only task of the radio monitoring and inspection service – means that the staff are always in action. "Dealing with interfering signals picked up by pilots coming in to land at Munich airport is just as much part of our work as resolving interference to domestic radio

»Dealing with interfering signals picked up by pilots coming in to land at Munich airport is just as much part of our work as resolving interference to domestic radio reception.«

reception", Hasenpusch says. And because some cases need immediate attention, the engineers are on call 24 hours a day, seven days a week.

This bonds. Take Hamburg-born Thomas Hasenpusch and Munich-born Markus Albertshofer, for instance. Hasenpusch, 56, started with the radio monitoring service at the Deutsche Bundespost – then state-owned – in 1984, moving to Munich in 1986. At the end of the 1980s, Hasenpusch left for Fiji, where he stayed for three years, managing a telecommunications project for several Pacific island states on behalf of the International Telecommunication Union (ITU). Albertshofer, 50, began his career in 1979 as a trainee with the Deutsche Bundespost. He switched to the radio interference investigation service in 1986, specialising in wireless technologies. The two of them have already done a lot together on the job. And they are off again today as a two-man team.



»No two jobs are the same. It's back to square one each time – whether it's a domestic or military case, in the mountains or up a TV tower, or on a measurement flight«

The office, situated in a quiet residential area in the north of Munich, is the focal point of contact for interference reports from all over Bavaria and southern Hesse. The duty and case managers pick the right team for each job. Then it's off in the high-tech monitoring vans.

But before they leave, they consult with the duty manager. The office is the focal point of contact for interference reports from all over Bavaria and southern Hesse: anything and everything from interference to aircraft communications above Rosenheim to an illegal transmitter in Fulda. Depending on the problems and the duty rota, the field teams are put together and set off in their vans, equipped with all sorts of radio and measuring apparatus. Hasenpusch and Albertshofer have been given two cases to investigate today. All a matter of routine for the experienced men? "There's no such thing as a standard call", Albertshofer replies, "No two jobs are the same. It's back to square one each time – whether it's a domestic or military case, in the mountains or up a TV tower, or on a measurement flight."

They set out in the drizzle to their first case in Planegg, a small community within Munich's rural district. Here, in a top-floor flat, live Mr and Mrs Wolf. The couple are familiar with what the Bundesnetzagentur do. It wasn't long after they had bought themselves a new TV last year when the problems began. Every couple of seconds the picture would go. "That was the last thing we were

expecting", says Hannelore Wolf, "We even thought we might have to get rid of our new TV." But their retailer assured them there was nothing the matter with the set. And their cable TV company, whom they contacted about the problem, couldn't find anything wrong, either. In the end, the Bundesnetzagentur was called in, and the measurements the engineers made showed it was the antenna of the pumping station next door that was interfering with reception. The data transmission equipment was reprogrammed to work with a lower power, and the problem was solved. Until last December, when the same thing happened again. Today the men are here to find out why there is more interference. Has the equipment's programme been updated and the power gone up again? Or is the problem due to a faulty cable connection?

Painstaking search for interference sources

The team get straight down to work in the living room. They switch on the TV and – quite predictably – get a perfect picture. That doesn't put them off, though. They wire various items of measuring equipment to the cable wall sockets in the living room and bedroom and to the TV set. They unplug the connection in the basement and plug it back in again. They check the communal cable system, watch the dots and lines on the spectrum analyser, and take notes. Hasenpusch explains what they're doing: "We have to look at the whole system in the



That wasn't what Hannelore Wolf and her husband were expecting: instead of the superb picture quality promised with their new TV, the signal kept being interrupted. The Bundesnetzagentur's field team use a spectrum analyser to find the cause of the disturbance. Detective work that fortunately comes up with an inexpensive solution: a new cable should clear the problem.



building bit by bit and find out exactly where the interfering signal gets stronger or weaker." It's not just the technology, but also the right questions that can help trace the cause. Have the couple bought any new appliances recently? Or have any cables been laid? Finally, the men go out into the garden to measure the signal from the small and inconspicuous antenna on the roof next door. A telescopic mast carrying a measuring antenna is put up to exactly the same height where the signal was measured last time. But this just confirms what the team had suspected: the transmitter power hasn't changed, and it must be a faulty cable connection that's causing the problem. "We could see the connection between the wall socket and the TV was the critical spot. A cable with better shielding should do the trick", says Hasenpusch. Mr and Mrs Wolf are obviously relieved: "We just wouldn't have known where to start."

High-tech hunt

It's still raining when the team head off at lunch-time, back into the city. They park their van in a square in Munich's Westend district, where a mobile phone mast tops the roof of an old, four-storey building. The operator has contacted the

Bundesnetzagentur because of interference to reception. "We want to find out what's behind it", says Hasenpusch. This is where they need the vehicle's specialist equipment. Albertshofer climbs onto the van's roof to get the directional antenna ready. Not long afterwards, it is towering like a large loudspeaker ten metres high up into Munich's rainy sky. Albertshofer nods at the antenna: "Of course, when we're trying to find illegal interferers or transmitters, the vans we take are better disguised. You can hardly tell they're monitoring vehicles." Inside the van, hemmed in between cables, laptop and monitoring devices, Hasenpusch and Albertshofer are bent over a screen showing all the nearby signals picked up by the antenna. "I can't see anything apart from signals from the mobile phones round here", says Hasenpusch. Time to get the van – and antenna – moving. While Albertshofer drives slowly from the square into the next street, Hasenpusch spots the interfering signal. Less than 200 metres away, the signal gets much stronger. The directional antenna is readjusted and almost immediately pinpoints a building as the origin of the interfering signal. Hasenpusch can tell from the signal characteristics that the source is most probably an active indoor antenna.



What the men need now is experience and tact – and a hand-held direction finder. The black plastic cover protecting the sensitive antenna from the drizzle makes the portable unit look rather sinister. Not a good omen, since Hasenpusch and Albertshofer now rely on the cooperation of the residents. But luck is on their side: someone buzzes them into the hallway. They make their way up the stairs with the direction finder: the signal gets stronger, the tone clearer. They stop on the first of the five floors and try their luck. Albertshofer rings a doorbell confidently. A lady opens the door and smiles; the men explain who they are and she lets them in. No success, though: the interference doesn't seem to be coming from there. The signals picked up on the stairs point to just one other possible flat – the one directly above – but no-one's at home. Hasenpusch shrugs his shoulders. "It's just one of those things.

The staff at the radio monitoring and inspection service are out and about in all weathers. The directional antenna on top of the van's ten-metre telescopic mast is needed to find out what is interfering with reception at a mobile phone mast. Once the men have found the building where the interference is coming from, they can switch to a portable direction finder to track down the source floor by floor.

"We'll have to come back another day." Downstairs, Albertshofer puts a note in the letter box, asking the tenant to call to arrange a time for them to come again.

It's well into the afternoon when the team leave. They pack up their monitoring equipment, dismantle the antenna and drive back to the office, where paperwork is waiting: they still need to write up on their day's work. And they never know, there might be the odd pretzel left over from breakfast – their long search has made them hungry. ■

Everything grinds to a halt

Rail chaos in Mainz revealed company staff shortages. Can the Bundesnetzagentur do anything to stop it happening again?

Is there a train to Nowhere? No, not even there, the Frankfurter Allgemeine Zeitung mocked, when chaos broke out on the tracks in Mainz last August. Other media couldn't help but poke fun, too. At the main station in Mainz – where over 100 long distance and more than 300 regional trains would stop each day – everything suddenly came more or less to a standstill. What the 60,000 or so passengers at the station didn't know was that there had been a shortage of traffic controllers for weeks. And because of that, signal box staff had stopped taking time off. But when some eventually went on holiday in August and others were off work sick, there were not enough staff available for all the shifts. So what happened? Commuter trains ran hourly instead of half-hourly, intercity trains didn't run at all, and many a stranded passenger found themselves having to get a taxi to Wiesbaden or Frankfurt.

Even a crisis summit convened by the federal state's Minister-President failed to promise a swift solution. "And there was no way we could have done that", says Christoph Döbber, who accompanied the Bundesnetzagentur's President, Jochen Homann, to the meeting. "After all, we soon realised that the problem was a structural one." Investments in new computerised and manpower-saving equipment had kept being put off because of the planned initial public offering, but there had still been cutbacks in staff.

The Bundesnetzagentur first became aware of signal staff shortages in October 2012, when trains in Bebra and Zwickau were disrupted. Enquiries made by the Bundesnetzagentur then revealed staff shortages elsewhere, too. But before the right solutions could be found, passengers in Mainz began to feel the effects, and in the end it took nearly a whole month before trains started running smoothly again.

That didn't mean the Bundesnetzagentur's work was over, though. "The first thing we did was to get detailed facts, look at staff schedules and talk to the traffic controllers as well as the management at DB Netz AG", says Döbber. It soon became clear that long term action was needed to improve the staffing situation. The Bundesnetzagentur then sent an official notice asking DB Netz AG to clear the critical bottlenecks identified in Mainz and saying the company would otherwise face a penalty of €250,000. This was followed by a second notice concerning the situation in Bebra, with the threat of a €100,000 fine.

One problem, though, is that it is impossible to recruit and train new staff overnight. Another is that not every signal box is the same. Qualified traffic controllers need some 70 shifts on the job in Mainz to get to know how things are at that particular signal box before they are actually allowed to work the signals and points themselves. The Bundesnetzagentur kept a watchful eye on DB Netz AG to make sure that the company was doing everything it could to solve the problems all the same. "DB Netz AG introduced a new system that monitors the status at signal boxes across the country and gives us regular updates on staffing and training", Döbber explains.

Since last August, three new traffic controllers have been trained for the signal box at the main station in Mainz. And DB Netz AG plans to have another two controllers on hand in the first half of the year. This was good news for the signal staff in Mainz, and a relief for the Bundesnetzagentur and – above all – the passengers. ■

The details regarding energy – what exactly do we have to pay for?

The rise in electricity prices has various causes and the expansion of the electricity grid is only one of them. We are showing where the Bundesnetzagentur's work is influencing energy prices in the interest of consumers.

1 Renewables surcharge

To press ahead with the expansion of alternative energy sources, such as wind and solar, the Renewable Energy Sources Act (EEG) ensures the purchase of energy from renewable sources at a fixed rate for plant operators. Additional costs brought on by this, that is the difference between the feed-in tariff and the market price, are redistributed among the utility companies and reflected in the price of electricity as the renewables surcharge. The Transmission System Operators (TSOs) publish how high the EEG rate per kilowatt hour is every year. The Bundesnetzagentur verifies the complex calculations that were made by the TSOs and has the option to take corrective actions in the event that errors were made.

2 Concession fees

To use public ways to lay gas pipelines or electricity lines, utility companies must pay charges to the local authorities. The costs appear as concession fees on the bill. The admissible contributions are regulated by law.

3 Electricity tax

Electricity in Germany is subject to the electricity tax that must be collected from customers and paid by the energy supplier. In terms of Bundesnetzagentur regulation, the electricity tax has no meaning.

ABC Energie und Gas
Frau und Hr. Sonja und I. Musterstr. 12345 Mut.

Verbrauchsabrechnung
vom 01.01.2014 - 31.12.2014
Rechnungsnummer: 0000000000000000
Kundennummer: 0000000000000000

Verbrauchermittlung Strom
Zahlpunktbez. DE00000000000000000000
Codenummer des Netzbetreibers: 0000000000000000

Verbra	Datum von	Datum bis	Ableseart*	Zählerstand von	Zählerstand bis
vom D	01.01.14	31.12.14		93.829,410	98.019,850
Rechr					
Sehr					
wir b					
für d					
Summe					

Betragsermittlung Strom – ABC Flex
Entnahmeebene: Niederspannung

Preisbestandteile	Datum von	Datum bis	Menge	Preis
Paketpreis Tarif IV	01.01.14	31.12.14	4.190,440 kWh	0,221300 €/kWh
Leistungspreis pauschal	01.01.14	31.12.14	365 Tage	50,40 €/Jahr
Verrchnungspreis	01.01.14	31.12.14	365 Tage	32,40 €/Jahr
Nettobetrag Strom				
Zzgl. Umsatzsteuer 19%				
Bruttobetrag Strom				

Im Nettobetrag Strom sind enthalten:

Entgelt EEG Gesetz (Gesetz für den Vorrang erneuerbarer Energien)	261,48 €
Konzessionsabgabe	83,39 €
Stromsteuer	85,99 €
Entgelt Netznutzung	193,95 €
Entgelt Netzbetrieb	12,00 €
Entgelt Messstellenbetrieb	7,33 €
Entgelt Messung	3,12 €
\$19 StromNEV-Umlage Kategorie A	3,86 €
Entgelt KWKG Gesetz (Gesetz für die Erhaltung, Modernisierung u. Ausbau Kraft- Wärme-Kopplung)	7,46 €
Offshore-Haftungsumlage nach §17 EnWG	10,48 €
Umlage für absehbare Lasten §18 Abs. 1 AblA-V	0,38 €

Ihr derzeit gültiger Energieliefervertrag ist unter Beachtung der Kündigungsfrist von 2 Wochen kündbar.

4 Network tariff

The network tariff finances the share of costs that arise through the build, operation and maintenance of the energy networks. This tariff must be paid by the suppliers to the network operators and is passed on to the consumers.

5 Other tariffs

Additionally there is a **charge for the billing of the network tariff** by the network operator with respect to the supplier. The network operator calculates all of the costs that are connected with meters, eg the procurement and installation of the meter, calibration, exchange and fault clearance in the **charge for metering operations**. The **charge for metering** includes the recording and the processing of the metering values of the consumers. By law, the metering charges must be shown separately because other operators may provide this service in the place of the network operator.

The grid operation and metering costs of every network operator in Germany are verified by expert teams of the Bundesnetzagentur or by a regulatory authority on federal state level every 5 years. The complex and comprehensive cost calculations based on the Electricity and the Gas Network Charges Ordinance (StromNEV and GasNEV) take account of the various network levels, staff and capital costs etc. Finally, network operators are benchmarked. This how their efficiency in carrying out supply service tasks is measured. These steps determine the permissible annual revenue that every company can receive from network operation. It includes a permissible rate of return on the capital employed. The permissible revenues are allocated to the network levels and converted to a price. This price generally includes a withdrawal-based component in Ct/kWh, a price per kilowatt in €/kW and a base price for small consumers in euros per year. These charges do not require approval from the Bundesnetzagentur. We ensure that the legal provisions are upheld and that no company earns more than is permissible according to the revenue cap.

6 Section 19 – redistribution

Exceptional network charge reductions are addressed in section 19 of the Electricity Network Charges Ordinance (StromNEV). A company is eligible for a reduction if their offtake patterns considerably reduce the configuration of the networks. The beneficiary's charge reduction will however be redistributed to all of the other electricity customers: the charge reduction appears as a section 19 redistribution on the bill. The Bundesnetzagentur is tasked with the verification of the legal exempting provisions and the shaping of the redistribution procedure.

7 Combined Heat and Power Act (KWKG) charge

Similar to the EEG, the KWKG was conceived to support certain sources of energy. In this case, it is energy from the co-generation of heat and electricity. The goal: further reduction of CO₂ emissions. Because the redistribution cap is already set in the law, these calculations are not subject to verification through the Bundesnetzagentur.


8 Offshore liability charge

The expansion of offshore facilities, though costly, is indispensable to the *Energiewende*. These costs are reflected in the renewables surcharge, the network tariffs and the offshore liability charge. To prevent cases of liability in the first place, the Bundesnetzagentur is working together with the TSOs on an Offshore Network Development Plan that ensures that the construction of wind farms out at sea goes hand in hand with the construction of network connections.

9 Metering point designation or metering number

Through the metering point designation or meter number a metering point that shows how much electricity or gas was consumed can be identified precisely. This information is to be indicated in the event one wishes to change gas or electricity supplier. ■

 Further important information on the topic of switching supplier can be found at www.bundesnetzagentur.de/energieanbieterwechsel.

 To learn more, please read "Consumer protection and advice" in the Energy activity field on page 50.

The illustrations shown here do not depict sample calculations. The information needed for a billing can be found at: www.bundesnetzagentur.de/energie-rechnungen



Reinforcing the digital networks

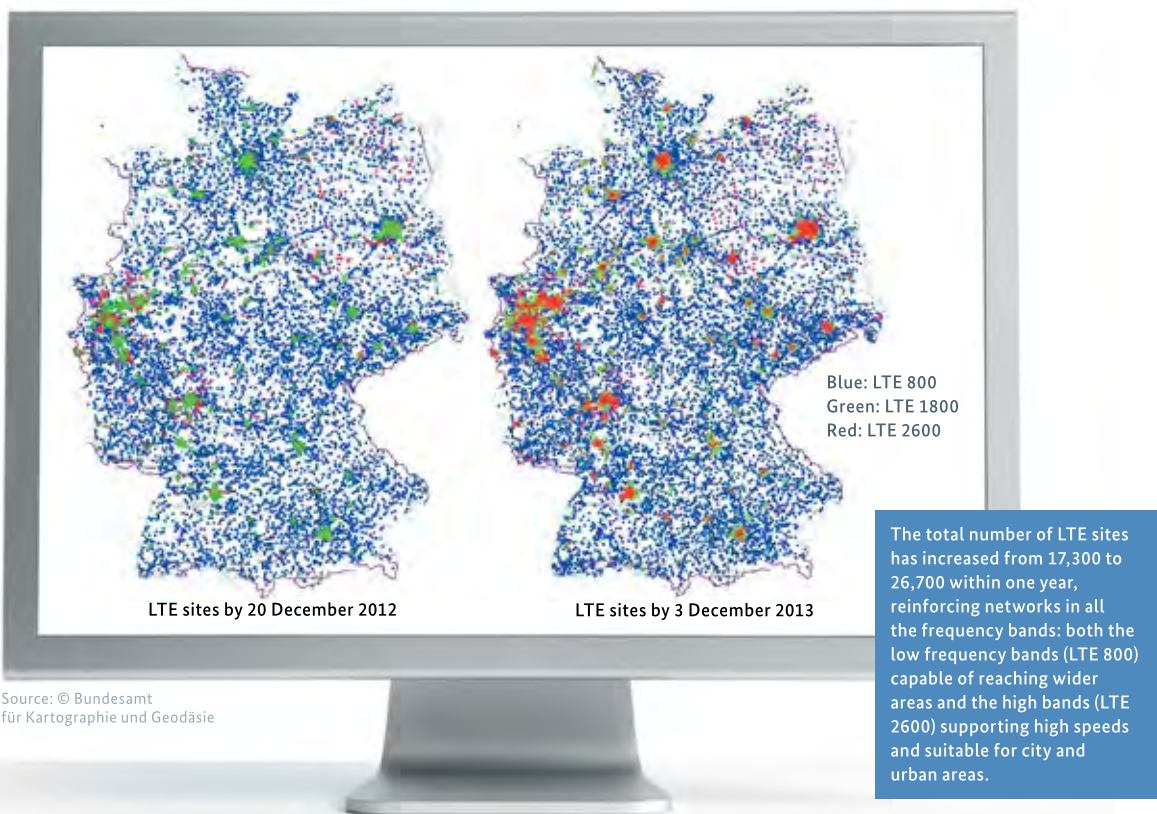
Broadband expansion was and is one of the most important tasks for Germany's economy as a whole. And in 2013, the Bundesnetzagentur again made its contribution towards achieving this task with various proceedings, decisions, price regulations and strategy documents. Here are just a couple of examples.

More bandwidth for mobile data networks

More and more consumers are surfing the Net not only on their computers at home but also on their smartphones when on the move. And the volume of data consumed by each user is also increasing. With just one tap of the screen you can read your emails, download photos and videos, and watch or listen to live stream podcasts. At the same time, though, there are still broadband not-spots or slow-spots across the map. "Mobile broadband can play an essential part

in closing this digital gap", says Thomas Ewers, head of the section for international affairs and the frequency plan at the Bundesnetzagentur.

Switching technology – from GSM to LTE – can help provide more data capacity. Network density is also a major factor: since the amount of data each base station can handle is limited, building new stations could also help. Here, significant steps forward were made in 2013.



Allocating more spectrum can also help in the medium term to spread fast mobile Internet coverage. Here, the Bundesnetzagentur is committed to an open-minded approach in assessing all frequencies for their suitability. "We use our own scenarios to take a critical look at the spectrum: Which frequency bands can technically be used? And what are they being used for at the moment?", says Ewers. It is also important to see how things are managed in other countries as we want to be able to use our smartphones abroad, too. Higher frequency bands are suitable for improving data transmission speeds, while lower bands are attractive for reaching wider areas with fewer base stations – particularly useful for providing coverage in rural regions.

 [Read more about this topic at www.bundesnetzagentur.de/tk-projekt2016](http://www.bundesnetzagentur.de/tk-projekt2016)

More speed for surfing fun at home

New technologies open up new opportunities. This is particularly true with respect to broadband expansion. And that is why the Bundesnetzagentur is open to all technologies supporting fast Internet access rollout.

Take vectoring, for instance – a VDSL technology that can be used to deliver faster transmission speeds over copper lines. Fibre optic cables – which are relatively expensive – are taken just up to the street cabinet instead of all the way to the home. Vectoring technology is then employed at the cabinet to enable the existing copper lines into the home to be used more efficiently than before. The technology is seen as a useful intermediate step allowing end customers' short to medium-term demand for bandwidth to be met – in line with the federal government's broadband expansion goals – but without blowing companies' investment budgets. Taking optical fibre right the way up to the home later on is still an option, and is even brought a step further forward.

But there is a drawback: vectoring requires that all the local loops at a street cabinet be operated by the same company. This "last mile", however, forms the cornerstone of competition. "That's why, when we were making our decision, we had to keep a sharp eye on the competitors' interests", Ernst-Ferdinand Wilmsmann, Chairman of the Bundesnetzagentur's Ruling Chamber 3, explains. Thorough investigations and intensive discussions with all the market players hallmarked the Bundesnetzagentur's

Broadband ABC

GSM

The Global System for Mobile Communications is the first fully digital standard for mobile communications. GSM is the most widespread standard in the world and is used primarily for telephony, but also for data transmission and SMS.

LTE

Long Term Evolution is a fourth-generation mobile communication standard. LTE can deliver download rates of up to 300 megabits per second, considerably higher than previous standards.

Local loop

The local loop, or last mile, is a cable connecting the network operator's local exchange to the master socket at the customer's premises.

Street cabinet

The street cabinet is a box connecting the main cable of a telephone network to the distribution cables. It is where customers' lines are connected to the telephone network.

proceedings, which centred around introducing safeguards for the benefit of vectoring, ie preventing any use of parallel loops that may interfere with the technology. The Bundesnetzagentur's decision means that Telekom Deutschland GmbH, as the dominant company, must continue to allow its competitors access to the local loop at the street cabinets – unless Telekom or another company wants to implement vectoring at a cabinet. "Our decision has established the best possible framework of reliable conditions for the introduction of vectoring in Germany", says Wilmsmann. ■



Price cap ensures continued affordable postage rates

Postage for a standard letter was raised to 60 cents at the beginning of this year, with prior approval from the Bundesnetzagentur. Why was this increase necessary? What criteria do the experts apply when granting such approvals?

Deutsche Post AG (DP AG) is no company like any other. A mechanism known as universal service is in place to ensure that all citizens have access to postal services at affordable prices. The Bundesnetzagentur is responsible for ensuring that these postal services are provided adequately and appropriately. For this reason, and in order to make sure competition doesn't suffer, the Bundesnetzagentur monitors postal service prices.

Key benchmarks

Two key criteria are used to ensure that prices do not rise beyond an unreasonable level: one, the rate of inflation and two, the productivity rate, also known as the X-factor. Last year, the latter was set at 0.2% per annum for 2014 to 2018. "Over the last few years Deutsche Post has prepared itself for competition and invested a considerable amount in its sorting systems, for instance," explains Jens Meyerding, Vice Chair of the Bundesnetzagentur's Ruling Chamber 5. "The company is hence finding it more difficult to cut costs." Since the X-factor is currently below the rate of inflation, DP AG has some room for maneuver when it comes to postage rate increases.

The role of the Bundesnetzagentur

First, the framework conditions were determined for any letter rate increases for the next five years using what is known as a benchmark procedure, which involved calculating the X-factor. DP AG then submitted its new prices for 2014 to the Bundesnetz-

agentur for approval. Finally, Jens Meyerding and his colleagues verified whether the benchmarks were correctly set and later, whether the calculated scope for the increase was correctly exercised.

Not all of the prices for postal services covered by the price cap have to be raised. DP AG is free to spread the scope it is given across several types of service. Accordingly, besides the rate for standard letters the price of a registered letter was also raised, this time by 10 cents (now €2.15), as was the price of a registered letter with proof of delivery to a mailbox, which went up 20 cents to currently €1.80. DP AG can also lower the price of certain products in order to raise the price of others.

What does DP AG do in return?

Not only does the Bundesnetzagentur monitor prices, it also keeps an eye on the quality of the services provided. How many letterboxes are there across the country? How long are letters in transit? And are there enough postal retail outlets in rural and urban areas? All of these aspects are subject to precise rules and regulations. For instance, 80% of letters have to be delivered within one working day, rising to 95% within two working days. "Of course there are occasional lapses, but our checks have shown that the overall system works very well," says Jens Meyerding.

In addition, DP AG has to report on its mail volumes – after all, these have a considerable impact on the

company's productivity and costs. "Should volumes decline less strongly than predicted, we're able to review our original decision," explains Meyerding.

Regulation pays off

The Bundesnetzagentur will continue to ensure that consumers have access to high-quality postal services at moderate prices. To prevent a fresh round of prices increases every year, DP AG is able to defer any unused scope for increases to the following year. "That makes economic sense because it gives the company greater flexibility to introduce new prices. It's also helpful for consumers because the prices don't turn out too awkward," says Meyerding. "Our work has proven immensely effective in

recent years," he adds, with reference to recent price developments. After all, today's letter prices are only 4 cents above what they were in 1998, namely 56 cents in today's currency. In fact, some postal services are even cheaper than they were when regulation began in 1998. For instance, back then the price of a compact letter stood at €1.12, whereas in 2014 it's still only €0.90. Large-size letters, currently €1.45, are 8 cents below their 1998 price; postcards currently cost €0.45, 6 cents less than in 1998. ■



3 questions to Peter Franke

Vice President of the Bundesnetzagentur and responsible for postal affairs

In 2013, there was extensive media coverage of the letter price increases. What other issues kept you busy last year?

As it happens, it was the benchmark procedure underlying the postage rate increases that kept us on our toes in 2013. There were many other issues in the postal area, too, such as Deutsche Post AG's acquisition of a stake in Compador, the closure of Nordbayern Post and the European Commission's Green Paper on boosting e-commerce and cross-border parcel delivery. On top of that, Deutsche Post tested private parcel delivery boxes, incidental service discounts for large customers were increased, and we conducted a survey of working conditions in the licensed sector.

What impulses do you expect from the recently constituted federal government?

In the coalition agreement the government pledges to ensure that Germans have continued access to high-quality, nationwide, affordable postal services. The postal universal service will remain in place.

And what does that mean for the work of the Bundesnetzagentur?

What impact the grand coalition's work will have on postal market regulation remains to be seen. It will largely depend on whether the new government puts the reform of the Postal Act back on the political agenda. ■

Fostering dialogue

The Bundesnetzagentur actively fosters communication with all interest groups – at public readings, in working groups or at conventional information events.



Berlin

Under the slogan "Bundesnetzagentur meets science", scientists from various fields were invited to discuss current research projects, technical challenges, transparency and economic aspects of grid expansion. Jochen Homann, Bundesnetzagentur President, opened the first conference.



Berlin

At the 11th postal licensee forum, representatives of the postal sector met to discuss innovations in the postal market, the German Postal Act and the future of the postal industry. In addition to a moderated podium discussion, participants had the opportunity to attend presentations and visit numerous information stands.

Berlin

Jochen Homann (right), Bundesnetzagentur President, discussed the *Energiewende* and developments in the electricity market together with author Marc Elsberg (left), on the occasion of the author's reading from his novel "Blackout".



Lübeck

The Bundesnetzagentur is fostering transparency in grid expansion with its information events. In Lübeck and five other cities, the off-shore network development plan was presented for the first time alongside the network development plan and the participation process.



Bonn

Using expertise to bring the evaluation process forward – this was the goal of the workshop on evaluating the Incentive Regulation Ordinance. Discussions and working groups served to look closely at the various aspects.



Focusing on consumer interests

Consumer interest was at the heart of the wide range of the Bundesnetzagentur's activities in the energy sector: security of supply, electricity price regulation and structured grid expansion.

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In 2013, the Bundesnetzagentur's work continued to be marked by the expansion of electricity and gas networks in the context of the *Energiewende*. In addition to this intergenerational vision, the focus will be security of supply in the coming years.

In addition to being the focus of these future-oriented activities, the consumer is also at the centre of the Bundesnetzagentur's work on common topics relating to energy. Taking all of this into account, the Consumer Advice Service was restructured and expanded in 2013.

Preparations by the Bundesnetzagentur for the second regulatory period for electricity also serve consumer interests, since companies are again subject to a transparent efficiency benchmark and therefore have a further incentive to keep economic activity in compliance with the requirements of quality assurance for consumers.

Market watch

Retail prices for electricity were driven by price increases. The decommissioning of power plants was one of the major issues of the year 2013.

Electricity

Generation

There was a marked increase in capacities in 2013 for both renewable and conventional generation.

Among renewable energy sources, the increase in solar power capacity of 3.3 GW and of wind power (onshore) by approx. 2.7 GW is particularly noteworthy. The increase in installed solar power capacity slowed significantly in 2013 compared to the increase in solar capacities of 7.6 GW in the year 2012.

Among conventional sources of energy, capacities for generation of electricity from natural gas and hard coal both increased by more than 1 GW. The increase in generating capacity using hard coal was largely the result of the commercial commissioning of two large power stations in North Rhine-Westphalia. Installed natural gas capacity was also increased by the commissioning of a large gas-fired power plant in North Rhine-Westphalia as well as of a series of smaller units distributed across the country.

By the year 2018 national installed capacity of "non-volatile" (ie controllable) power plants (excluding solar, wind and water) may contract nationally by more than three GW. Corporate planning for southern Germany may result in the final shutting down of capacity of more than five GW from non-volatile power plants.

Power plant closures

Under section 13a of the Energy Act (EnWG), power plant operators have been required by law since 2013 to notify the transmission system operator (TSO) responsible for the relevant system and the Bundesnetzagentur at least 12 months prior to the planned temporary or permanent closure of entire power plants or parts of power plants. Plants may only be shut down after this twelve month notification period has expired. During this period the TSO assesses whether it is essential that the affected generating unit remains operational in order to ensure the safety and reliability of the electricity supply system.

By 31 December 2013 the Bundesnetzagentur had been notified of the planned closure of 41 power generation units accounting for a total net nominal capacity of 11,056 MW. Notice was given of the permanent closure of 24 power generation units and of the temporary closure of 14 power units. In three other cases the

information provided by operators in their notification to shut down power generation units was insufficiently clear; these units were classified as not being "system relevant".

Of these power generation units 16 (with a total net nominal capacity of 5,092 MW) have already been assessed as not being "system-relevant". These are basically power generation units located to the north of the "Mittelrheintrasse" (Middle Rhine) and "Thüringer Strombrücke" (Thuringia Power Bridge) power line routes where congestion tends to occur. These are to the north of the so-called Main line – a fictive line which runs from west to east through Frankfurt am Main.

If a power plant operator provides notification that it intends to finally shut down a plant which has a nominal capacity of 50 MW or more, and if the assessment by the TSO responsible for the system shows that the plant is system relevant, the responsible TSO designates the plant as system relevant and makes application to the Bundesnetzagentur for approval of this status. Approval is given if the Bundesnetzagentur accepts the findings of the TSO assessment. If it is both technically and legally possible to continue operating the plant, the approval will result in the closure being prohibited beyond the 12-month period. The prohibition on shut down may be made for a period of up to 24 months.

Throughout the course of the year 2013 five power generation units with a total rated output of 668.4 MW were designated as "system-relevant" by the responsible TSO. The Bundesnetzagentur has reviewed these designations and approved them in full in its official notification of 19 December 2013. The five power generation units are all located to the south of the Main line in the federal state of Baden-Württemberg and, as a result, are also to the south of the "Mittelrheintrasse" which is particularly susceptible to congestion.

Grid reserve

In the year 2013, TSOs again agreed with the Bundesnetzagentur to contract with power plant operators for the latter's plants to remain in operation in particularly critical grid situations in order to maintain system security. The "reserve power plants" needed to ensure the stability of the grid together represent the TSOs' "grid reserve". The purpose of the grid reserve, along with many other instruments of which regular use is made, is to provide an additional safeguard mechanism

to ensure security of supply during winter months in which weather conditions are more likely to lead to critical grid situations. Actual reserve requirements as well as the power plants which are suitable for covering needs were determined for the first time on the basis of the Reserve Power Plant Ordinance which was passed in the summer of 2013.

Reserve requirements are calculated on the basis of a technical needs analysis performed by the TSOs. This analysis must be passed onto the Bundesnetzagentur, which is then tasked with checking the results of the TSO needs analysis and then determining actual requirements.

The needs analysis for the winter of 2013/2014 was drawn up on the basis of a particularly critical grid utilisation scenario which was premised on the simultaneous occurrence of a number of especially critical events in the grid. The analysis assumed a peak load on the evening of a winter working day which coincided with extreme wind speeds in northern Germany and a correspondingly high feed in of wind-generated electricity, as well as a simultaneous – unplanned – failure of power plants in the south of Germany. The TSOs calculated that a reserve of around 2,500 MW would be required to ensure that the grid could continue to be operated safely and reliably under these critical conditions. This level of requirement was confirmed by the Bundesnetzagentur after performing its own review of this data.

The determined requirements could, for the most part, already be met from contracts concluded between the TSOs and German and Austrian power plant operators even before the Reserve Power Plant Ordinance became effective. As a residual requirement of around 500 MW was still not met, a procedure was launched for the first time in which German and foreign power plant operators were invited to submit offers for the provision of reserve power plants to the TSOs. This resulted in contracts to cover the remaining reserve capacity of approximately 500 MW with a German, an Austrian and an Italian power plant operator whose plants were found to be most appropriate in terms of technical grid requirements and in terms of costs.


Under the provisions of the Reserve Power Plant Ordinance, the TSOs were also required to determine the reserve capacity needed for the winter of 2015/2016 by the end of September 2013 and to submit these to the Bundesnetzagentur for confirmation. The winter

after next will be of particular interest bearing in mind the decommissioning deadline of 31 December 2015 prescribed by law for the nuclear power station in Grafenrheinfeld and the considerable reduction in generating capacity which this will bring about in southern Germany. If, contrary to expectations, the grid expansion work needed to complete the South-West Interconnector is not finalised before the shutdown of Grafenrheinfeld, the TSOs predict a substantial increase in total reserve capacity requirements of 4,800 MW. This requirement level has been assessed and determined by the Bundesnetzagentur. Setting aside the reserve power plants which have already been contracted for by TSOs for the medium term and the power plant capacity which has been secured for 2015/2016 (and which the Bundesnetzagentur is able to prevent being shut down by approving system relevance under section 13a(1) of the EnWG), there is still unmet need for capacity of "just" 1,215 MW. An inquiry of commercial interest was launched in January 2014 for the procurement of this reserve power plant capacity.

Wholesale electricity

The German wholesale market for electricity is highly liquid in the short term spot market as well as in the long term futures market. Trading took place on the important German exchanges EPEX Spot (spot market) and EEX (futures market) as well as over the counter. As was the case last year, the majority of trading took place over the counter (OTC), either as purely bilateral trades between two market participants or through a broker.

Exact trading volumes are currently only available up to the year 2012.

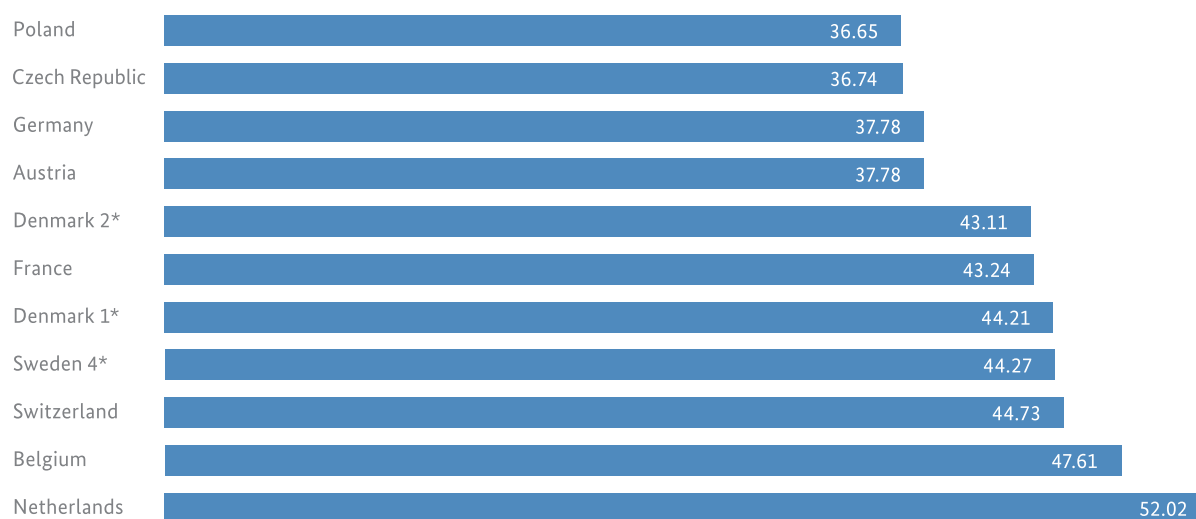
 More detailed information can be found in the "Monitoring Report 2013", which is available at www.bundesnetzagentur.de/monitoring.

Prices on the EPEX SPOT or EEX exchanges form the reference price for the German market. Day-ahead prices for energy traded on the EPEX Spot and EEX fell substantially again in 2013, continuing the trend in 2012. While the average price paid for one megawatt of electricity in 2012 was still €42.60, this fell to just €37.78/MWh in 2013. This is equivalent to a drop of around 12 percent. This is the lowest average price since 2004. At the same time it is apparent that, compared with the previous year, the price fell lowest in the midday and late evening hours.

This makes Germany one of the countries with the lowest wholesale electricity prices in Central Europe. Among Germany's neighbours prices are only slightly lower in Poland and the Czech Republic. Prices in Denmark and Sweden, which were lower than prices in Germany in 2012, rose in 2013. They are now significantly higher than the German price.

The prices for all future supply years have also fallen significantly in 2013 on the futures market for electricity. At the beginning of the year the price for deliveries of power in 2014 was still €45.26/MWh; by the end of the year the quoted price had fallen to €37.30/MWh.

Average wholesale electricity prices (spot markets) in Central Europe 2013
€/MWh



*Relates to the respective price zone adjacent to Germany

This drop in price mainly occurred, however, in the first six months of the year, while the price then stabilised in the second half of the year.

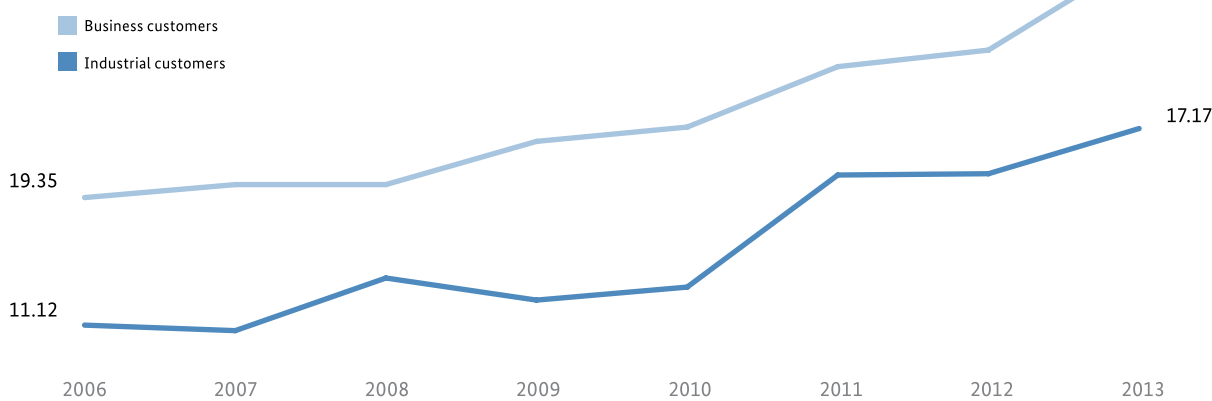
Electricity retail prices

Electricity retail prices rose substantially in the period 1 April 2012 to 1 April 2013. At the same time, electricity sales remained at about the same level as in the previous year. At the end of the year 2012, final customers (household, industrial and business customers) had consumed almost 500 TWh of electricity from the public power supply network.

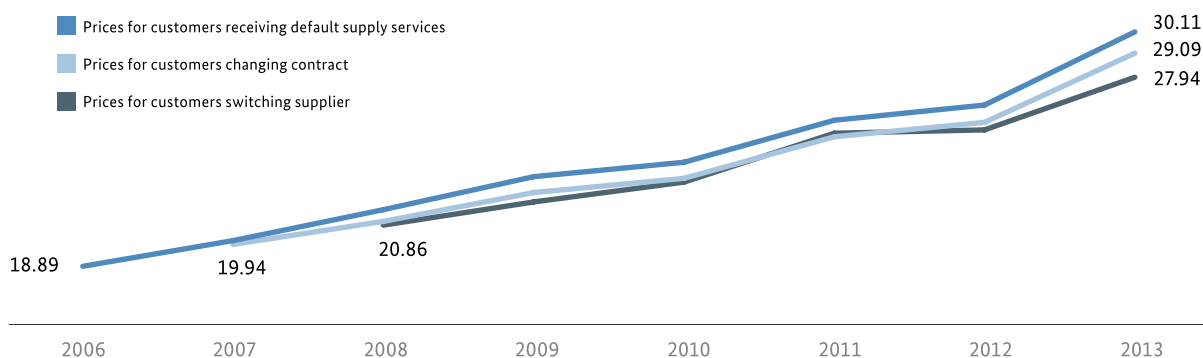
The total price for business customers rose on average by 11.9 percent to 26.74 ct/kWh during the relevant period (1 April 2012 to 1 April 2013). The average total price for (non-privileged) industrial customers rose less steeply than in other customer segments. It increased on average by 8.8% to the current price of 17.17 ct/kWh.

The main drivers of prices were increases in surcharges, network tariffs and taxes. The increase in the EEG surcharge had the most noticeable impact. The offshore liability surcharge was levied in 2013 for the first time. The increases in these price components were absorbed to some extent by a renewed drop in the "energy procurement and supply" price components. This is almost certainly primarily the result of lower wholesale prices on exchanges which have made it much cheaper for suppliers to procure electricity. A larger share of these price reductions was passed on to industrial customers than to business customers.

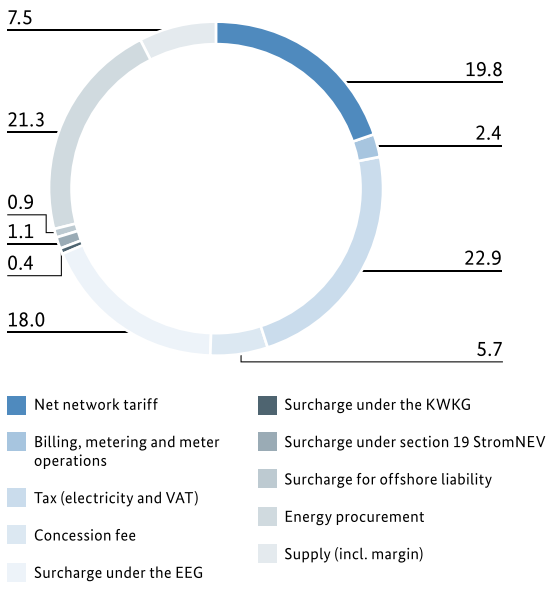
Development of electricity prices for industrial and business customers
ct/kWh



Development of electricity prices for household customers
ct/kWh



Components of the electricity price paid by household customers 2013
(percentage)



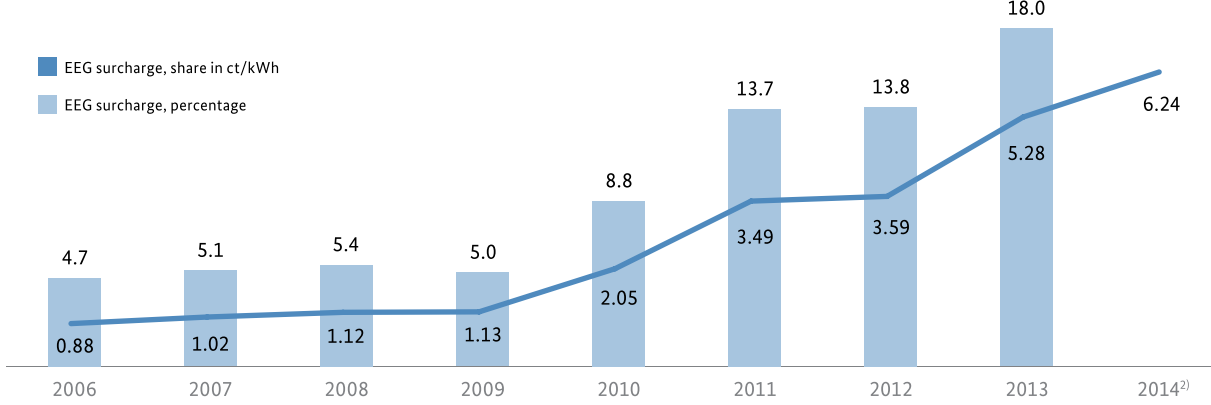
Prices charged to household customers rose more than in any other final customer segment. The average price for household customers receiving default supply services had risen by 1 April 2013 by 13.2% up to 30.11 ct/kWh compared to the year 2012. Price increases are also apparent for other consumer groups – special contract with a default supplier, special contract with a third supplier. A simple change of contract from default supply services to a special tariff was enough to obtain a lower price of, on average, 29.09 ct/kWh on 1 April 2013. The average electricity price for customers who changed their electricity supplier was even lower at 27.94 ct/kWh. Competitive pressure is clearly a factor in the passing on of lower prices. This means that consumers can benefit from competition by changing their contracts or, to an even greater extent, by changing supplier.

The average electricity price (calculated as the mean price for all tariff categories) paid by all household customers was 29.38 ct/kWh. The higher prices paid by household customers were largely the result of increases in price components determined by law. In particular, the surcharge payable under the EEG rose by 1.69 ct/kWh to 5.28 ct/kWh in the year 2013, and had a substantial impact on retail prices. This surcharge now makes up 18% of the mean total price.

The EEG surcharge went up again in 2014. It is now 6.24 ct/kWh. Between the years 2012 and 2013 further increases took place in network tariffs (+0.48 ct/kWh), surcharges under the Combined Heat and Power Act (KWKG) (+0.13 ct/kWh) and under section 19 of the Electricity Network Charges Ordinance (StromNEV) (+0.18 ct/kWh) as well as in taxes (+0.53 ct/kWh). Household customers pay 0.25 ct/kWh towards the newly introduced surcharge for offshore liability. In total, levies account for 26% (or 7.66 ct/kWh) of the electricity price averaged over all household customers. The largest share, 29% or 8.46 ct/kWh, is accounted for by the energy procurement and supply block of costs. Taxes (electricity and VAT) account for 23% or 6.74 ct/kWh and network tariffs (including charges for billing, metering and meter operations) for 22% or 6.52 ct/kWh.

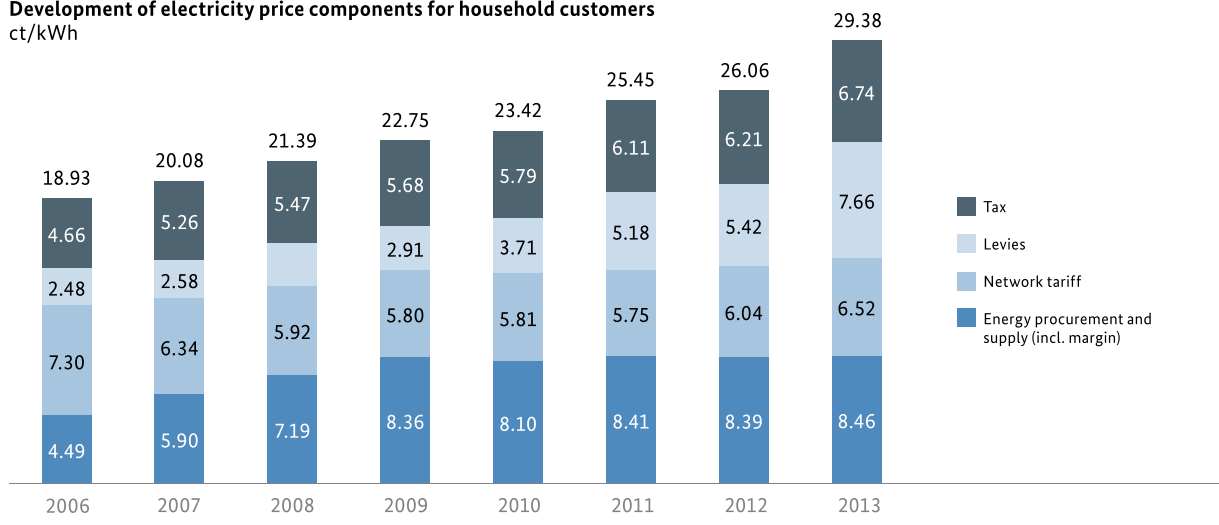
[Read more on this topic under "Energy in detail – what exactly do we have to pay for?" on page 24 in the magazine section.](#)

Development of EEG surcharge
ct/kWh, percentage¹⁾

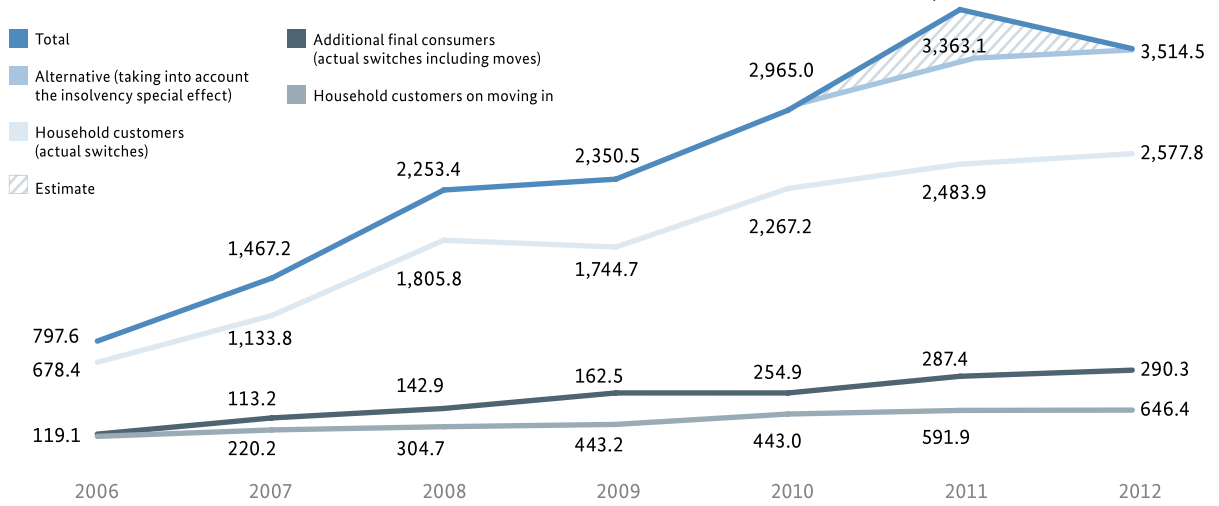


1) Totals may deviate slightly owing to rounding differences.
2) Forecast figures

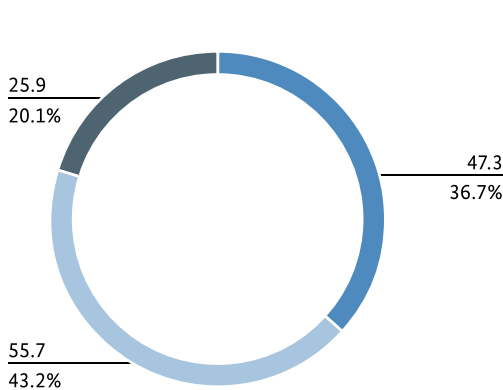
Development of electricity price components for household customers
ct/kWh



Number of final customers switching supplier (including customers moving in, moving out and relocating)
(numbers in thousands)



Switches of contract and supplier by household customers
TWh, percentage



- Household customers having a default supply contract with the default supplier
- Household customers having a special contract with the default supplier
- Household customers having a special contract with a supplier other than the default supplier

Change of electricity supplier

The following information on changes of electricity supplier is taken from the 2013 Monitoring Report, which basically relates to the calendar year 2012.

Gas

Volumes and wholesale

Natural gas production in Germany fell in the year 2013 from 105 TWh to 96 TWh¹ (8.6%). Diminishing gas reserves and the drop in production are largely due to the increasing depletion and dilution of existing storage. The reserves-to-production ratio of natural gas reserves in Germany was around 10.5 years on 1 January 2013. The volume of gas imported to Germany has risen by around 16 TWh (1.6 percent) from 1,012 TWh in 2012 to 1,028 TWh in 2013.² The main supplier countries continue to be Russia, Norway and the Netherlands.

Underground storage facilities were largely emptied owing to the lengthy heating period over the winter 2012/2013 and, by mid April 2013, were only 17.5 percent full. However, they were substantially replenished from early June 2013 onwards. By 15 September 2013 underground storage facilities were around 70 percent full.³ The facilities continued to be filled through to early November 2013 until they reached their maximum level of over 90% of the total usable volume of working gas in store at the outset of last winter. The completion of new storage capacities enabled the usable volume of working gas to be increased during the course of the year 2013 by around one billion m³, thereby reaching the maximum filling level of around 91 percent.⁴

OTC trading volumes at virtual trading points in the NCG (NetConnect Germany) and Gaspool market areas rose in all qualities (high-calorific H-gas and low-calorific L-gas) from a total of around 2,460 TWh in 2012 to around 2,948 TWh in 2013. This corresponds to an increase of approximately 16 percent. Trading volumes on the EEX increased in 2013 by 46 percent to 110 TWh (2012: 75.5 TWh). This volume was spread between 80.6 TWh (2012: 35.9 TWh) on the spot market and 29.5 TWh (2012: 39.5 TWh) on the futures market.⁵ The average daily reference price at the virtual trading points rose to €27.16/MWh (2012: €25.19/MWh). The average cross-border price was about €27.62 /MWh (2012: €29.01/MWh).⁶

The Bundesnetzagentur's own surveys show that retail prices have risen since last year. Household customers were most affected. Net network tariffs in this consumer category were 1.27 ct/kWh on 1 April 2013, equal to a share in the total gas price of approximately 18 percent. The costs of energy procurement and supply, which accounted for around 53 percent of the total retail price charged to household customers, remained constant at 3.75 ct/kWh.

The mean volume-weighted gas prices for supplies at tariffs following a change of contract rose from 6.58 ct/kWh at the same point in time last year to 6.69 ct/kWh on the key date of 1 April 2013. This corresponds to an increase of under two percent. This means that the price increased less in this customer category than for customers receiving default supply services.

Changes in volume weighted average gas prices according to customer categories

	Volume-weighted average price as of 1 April 2013 ct/kWh	Volume-weighted average price as of 1 April 2012 ct/kWh	Difference in percent
Business customers with change of contract	6.28	6.26	0.32
Industrial customers changing contract with the same supplier	4.68 ¹⁾ (arithmetic mean)	4.61 ²⁾ (arithmetic mean)	1.52
Household customers receiving default supply services	7.09	6.95	2.01
Household customers with change of contract	6.69	6.58	1.67
Household customers with change of supplier	6.66	6.48	2.78

1) Consumption volumes of the industrial customers covered by the survey differed too much to allow any reasonable weighting of volumes for the price components.

2) Source: Bundesamt für Wirtschaft und Ausfuhrkontrolle

1) Source: Bundesamt für Wirtschaft und Ausfuhrkontrolle

2) Source: Bundesamt für Wirtschaft und Ausfuhrkontrolle

3) The reference usable volume of working gas is 23.53 billion m³

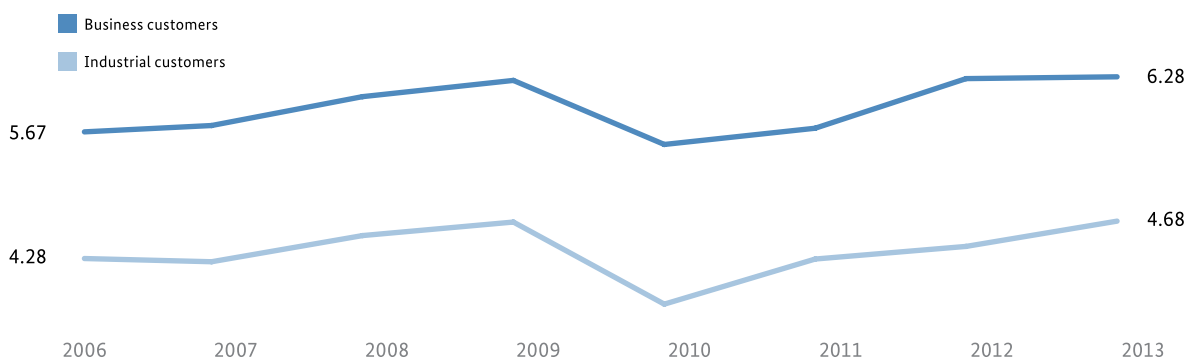
4) Source: own survey data

5) Source: European Energy Exchange AG

6) Source: Bundesamt für Wirtschaft und Ausfuhrkontrolle

Development of gas prices for business and industrial customers

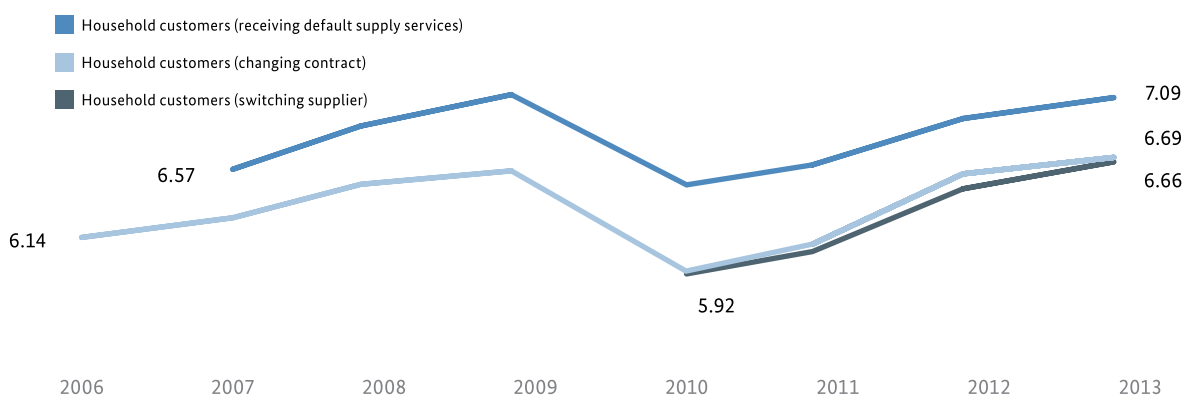
As of 1 April each year
ct/kWh



As of 1 April 2013 according to survey of gas wholesalers and suppliers

Development of gas prices for household customers

As of 1 April each year
ct/kWh



Following the substantial rise in the energy procurement and supply price component of around 18 percent, this element had dropped within a year from 3.65 ct/kWh to 3.59 ct/kWh. Finally, average network tariffs (including upstream network costs) also rose in this customer category from 1.17 ct/kWh to 1.32 ct/kWh. The network tariff finally accounted for around 19.7 percent of the gas price, around two percentage points higher than last year.

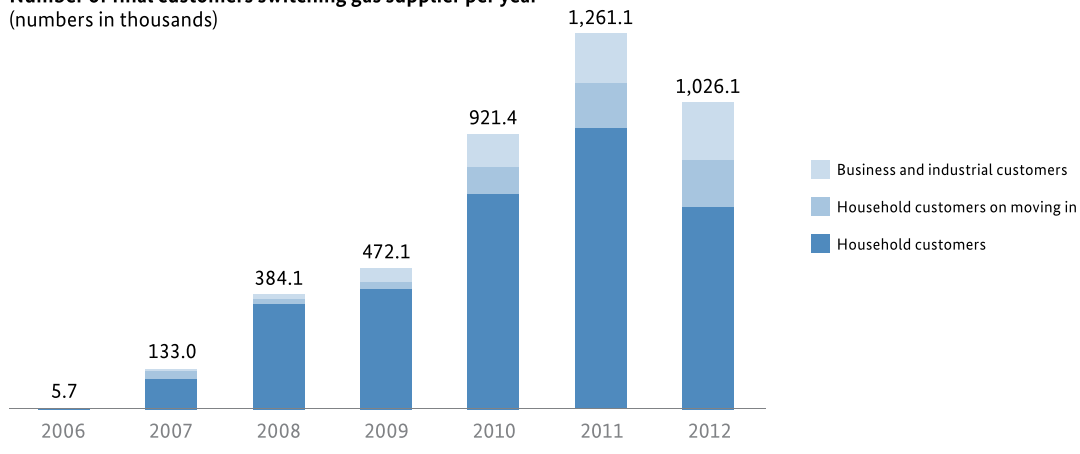
As in the other customer categories, the average price level also increased for customers who changed to a new gas supplier. Following an increase up to 6.66 ct/kWh, the volume-weighted price on 1 April 2013 was almost three percent higher than in the previous year.

This meant that the price had risen in this customer category by a relatively larger amount than in the other two customer categories. Similar to the "change of contract" category, this increase in volume-weighted price in the category "change of supplier" reflects two contrasting trends: An increase in average net network tariffs (including upstream network costs) as well as a fall in the component of the price accounted for by energy procurement and supply. The price element for gas procurement and supply on 1 April 2013 accounted for just 52.0 percent compared to around 54.8 percent the year before.

Change of gas supplier

The following information on changes of gas supplier is taken from the 2013 Monitoring Report, which basically relates to the calendar year 2012.

Number of final customers switching gas supplier per year
(numbers in thousands)



Grid expansion

Work continues to proceed on the necessary expansion of electricity and gas grids with the participation of the general public.

Expanding the national electricity grid

Broad political consensus was achieved almost 3 years ago on the launch of Germany's *Energiewende* and the fundamental reshaping of Germany's entire energy sector. All of Germany's nuclear power stations are scheduled for final closure by the year 2022. The German government's energy concept also envisages an incremental increase in the share of power derived from renewable sources.

In this context, expanding the electricity grid at the transmission level will be of crucial importance for the success of the *Energiewende*. The new power generation structure will lead to a substantial spatial separation of energy production and consumption. The wind-generated electricity which is predominantly produced in northern Germany, both on and offshore, will need to be transported to the key consumption areas in southern and western Germany. The existing grid is not designed to transport this amount of power. The current rate of increase in renewable energies is already pushing today's transmission networks to the limits of their capacity.

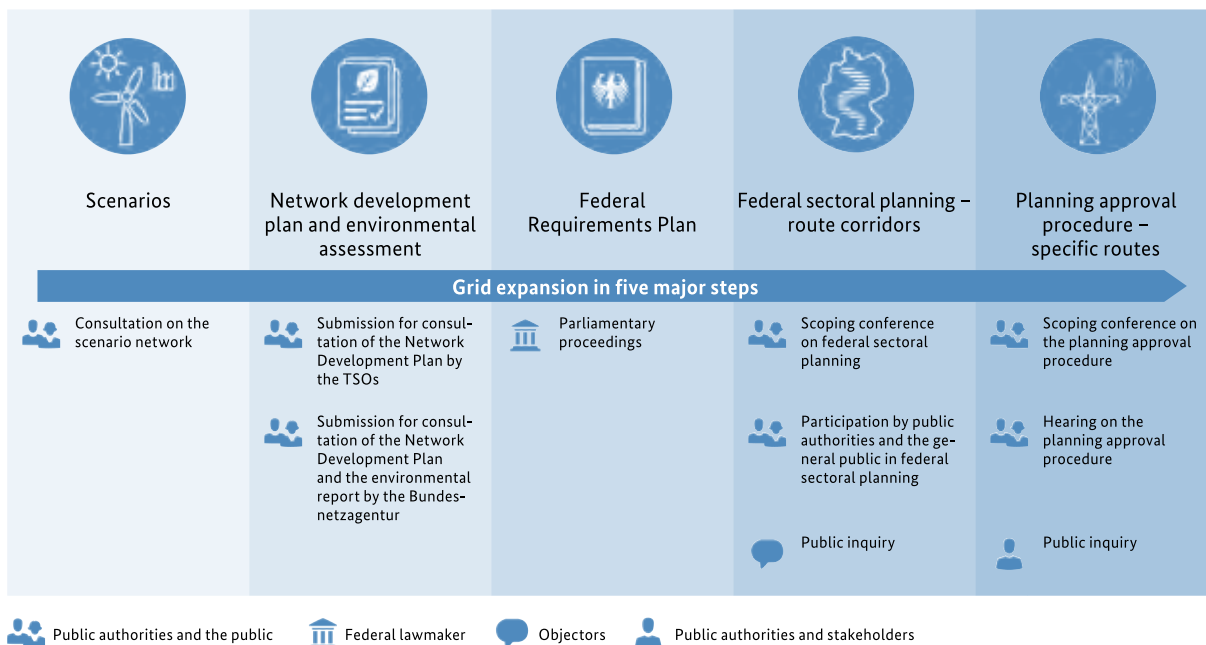
Bearing in mind the firmly scheduled shutdown of the nuclear power stations which are still operating in Germany, it is essential that work on the extension and upgrading of Germany's extra high-voltage grid is speeded up in order to maintain the security of supply. The amendment of the Energy Act and the coming into force of the Grid Expansion Acceleration Act in August 2011 created the legal framework for a faster expansion of the grid. Under these new laws, the need for grid expansion, upgrading and reinforcement measures is to be established on a recurring annual basis; these measures are then to be implemented by associated approval procedures.

The first step will be for TSOs to forecast the development of electricity generation and consumption over the next ten to twenty years. The outcome, the so-called scenario framework, will be communicated to the Bundesnetzagentur, which will then evaluate the findings, engage in intensive consultations with the general public, and finally confirm the scenario framework. This will be used by the TSOs to draw up a network development plan (NDP); the general public will then be given the opportunity by the TSOs to comment on this plan. The NDP contains all the network expansion measures which will be required in the future for the purpose of maintaining system stability. The "NOVA principle" (network optimisation ahead of reinforcement ahead of expansion) ensures that all optimisation measures are exhausted before measures to reinforce or expand the grid are implemented. The NDP only refers to start and end points. The specific routes will only be finalised in subsequent process steps.

In addition to their onshore network development plans TSOs have also, since 2013, produced offshore development plans (offshore NDPs) which are based on the scenario framework and which are consulted on and submitted to the Bundesnetzagentur for confirmation. This plan specifies the grid connection lines which will be required over the next few years in order to transport wind power generated on the North Sea and Baltic Sea.

The Bundesnetzagentur evaluates the energy rationale for the proposed network expansion measures. As well as assessing the NDP and the offshore NDP, the Bundesnetzagentur also determines, describes and evaluates any envisaged substantial environmental impact in a strategic environmental assessment (SEA). The SEA is a form of early warning system designed to identify and, as far as possible, avoid potential conflicts right from the start of the process. The results are summarised in an environmental report which is then published with the draft versions of both NDPs. After the assessment has been completed the general public, associations and authorities can again respond to the NDP, offshore NDP and draft environmental report during a second consultation procedure; the Bundesnetzagentur then includes these responses in the final evaluation.

Possibilities for participation in the grid expansion planning process



The Bundesnetzagentur subsequently submits the confirmed NDPs with the agreed environmental report to the German government at least once every three years as the draft for the Federal Requirements Plan. This then goes through the legislative procedure which leads to a Federal Requirements Plan Act. This law endorses the energy economy's urgent need for the projects specified in the Plan.

The first Federal Requirements Plan Act, which was based on the 2012 NDP, came into effect on 27 July 2013 and covers a total of 36 projects. The Act deals with around 2,300 km of new lines as well as optimisation or reinforcement measures to existing lines over a distance of around 2,700 km.

Analysis of needs 2013

The measures needed to optimise, reinforce and expand the transmission system must be determined every year. On the basis of the scenario framework approved in 2012 the TSOs submitted their draft NDPs to the Bundesnetzagentur in early March 2013. These plans focused on the development of the infrastructure for the energy sector up to the year 2023 and again up to 2033.

In the framework of an eight-week consultation procedure, which lasted from 13 September through to 8 November 2013, the public was given the opportunity to respond to the draft versions of both NDPs. During the same period, the draft environmental report was also submitted for consultation. With the around 7,600 comments received, mainly from ordinary citizens, the

number of comments more than doubled compared with the year before.

Following detailed assessment, the Bundesnetzagentur confirmed 56 of the 90 onshore measures applied for. Four grid connection lines have been approved in the North Sea and Baltic Sea in the confirmed offshore NDP. The outcome of this year's review was confirmation – apart from two exceptions – of the projects which had already been set down in the Federal Requirements Plan Act.

The Bundesnetzagentur is confident that the 2013 Electricity NDP / 2013 Onshore NDP is consistent with the Community-wide NDP (Art. 8 (3b) of Regulation (EC) No. 714/2009) and a recommendation to amend (Art. 37(1) para g of the Electricity Directive 2009/72 EC) was therefore not issued.

The specific impact of the new energy policy framework arising from the coalition agreement between the members of the new German government (including particularly the reduction in offshore expansion and the new expansion corridor for renewable energies) will be taken into account in the process of drawing up and consulting on the NDPs for 2014. In August 2013, the Bundesnetzagentur also approved the scenario framework on which the 2014 NDPs are based. Approval was preceded by a consultation period of several weeks and a public workshop.

The electrotechnical findings resulted in the following overview of kilometres and measures:

Overview of kilometres		
km	NDP 2023 confirmed	Federal Requirements Plan Act (based on NDP 2022)
AC, new build	600	650
DC corridors	1,600	1,600
DC, new build (interconnectors)	450	450
AC network re-inforcement	2,500	2,000
AC/DC changeover	300	300
Total	5,450	5,000

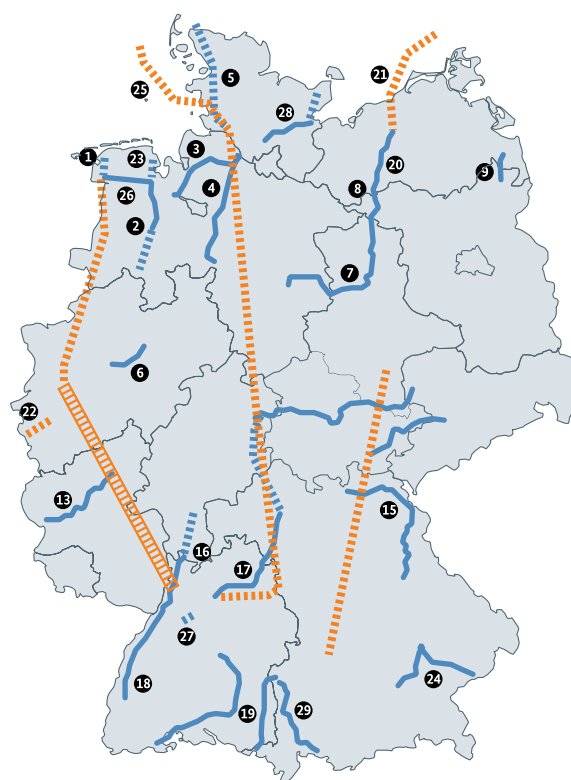
Implementation of identified requirements

A new planning instrument - federal sectoral planning - comes into play for the 16 projects identified in the Federal Requirements Plan Act which cross national or federal state borders. This procedure, which replaces the regional impact assessment procedure, is laid down in the Grid Expansion Acceleration Act (NABEG): its purpose is to speed up network expansion. The Bundesnetzagentur is responsible for implementing federal sectoral planning. The relevant state authorities are responsible for projects which impact one particular federal state only.

Federal sectoral planning begins with an application submitted by the relevant project promoters. This application includes the route of a preferred 500m to 1,000m wide corridor as well as potential alternative corridors. The Bundesnetzagentur holds a public scoping conference as soon as the application has been received. Owing to the length of the high voltage direct current (HVDC) corridors, several scoping conferences are planned at different locations along the routes. The subject and scope of the federal sectoral planning for the route corridors are discussed with parties representing public interests, associations, the project promoter and the general public. Discussion focuses in particular on the extent to which corridors comply, or can be made to comply, with regional planning requirements in each of the federal states affected. The federal states (as well as third parties) are able to make alternative suggestions.

The Bundesnetzagentur then defines the scope for assessment. It determines which corridors and which potential alternatives should be examined. It also determines what documents and expert reports must be submitted by the project promoter during further proceedings.

Confirmed route measures in the Electricity NDP B2023



- New build/direct current
 - Grid reinforcement and expansion/direct current
 - New build/ alternate current
 - Grid reinforcement/alternate current
- 1 Emden/Ost – Halbmond
 - 2 Conneforde – Cloppenburg/Ost – Merzen
 - 3 Dollern to Elsfleth/West
 - 4 Stade – Sottrum – Wechold – Landesbergen
 - 5 Brunsbüttel – Bartl – Heide – Husum – Niebüll – Danish border
 - 6 Hamm/Uentrop – Kruckel
 - 7 Wolmirstedt – Helmstedt – Wühle
 - 8 Güstrow – Perleberg – Wolmirstedt
 - 9 Bertikow – Pasewalk
 - 10 Vieselbach – PSW Talsperre Schmalwasser (Sonneborn) – Mecklar
 - 11 Pulgar – Vieselbach
 - 12 Röhrsdorf – Remptendorf
 - 13 Point Metternich – Niederstedem
 - 14 Mecklar – Grafenrheinfeld region
 - 15 Redwitz – Mechlenreuth – Etzenricht – Schwandorf
 - 16 Urberach – Pfungstadt – Weinheim – G380 – Altlußheim – Daxlanden
 - 17 Grafenrheinfeld region – Kupferzell – Großgartach
 - 18 Daxlanden – Bühl/Kuppenheim – Eichstetten
 - 19 Tiengen – point Sigmarszell/Austrian border – point Neuravensburg – point Niederwangen – Herberlingen – point Wullenstetten – point Rommelsbach
 - 20 Parchim/Süd junction
 - 21 Combined Grid Solution
 - 22 Oberzier – Belgian border
 - 23 Wilhelmshaven (Fedderwarden) – Conneforde
 - 24 Simbach junction – Altheim – Austrian border – Isar – Ottenhofen
 - 25 DC interconnectors Germany – Norway
 - 26 Emden/Ost – Conneforde
 - 27 Birkenfeld Mast 115A
 - 28 Göhl – Lübeck region – Siems – Segeberg district
 - 29 Vöhringen – Austrian border – Woringen/Lachen

Submission of a complete set of documents by the project promoter is followed by the participation in the process by public authorities and the general public. The Bundesnetzagentur then arranges a public inquiry meeting. The federal sectoral planning process concludes with planning approval being given by the Bundesnetzagentur for a corridor which is environmentally sustainable and consistent with the requirements of spatial planning.

Comparison of number of measures

	Total	Eligible for confirmation	Not eligible for confirmation
Confirmation NEP 2023	90	56 (+2 in the existing network) ¹⁾	32
Consultation NEP 2023	90	70 (+2 in the existing network) ¹⁾	18
Confirmation NEP 2022	74	51 = included in BBPG)	23

1) P59/M75 (Bärwalde – Schmölln) and P60/M99 (Förderstedt) are measures for which planning approval has been granted; they are part of the existing network which is not assessed in the NDP. These measures have been included in the table for clarification and completeness.

The Bundesnetzagentur has made detailed organisational preparations for the forthcoming federal sectoral planning process. The first applications for federal sectoral planning are expected for 2014. In particular, the focus will be on HVDC corridors which are important cornerstones of required network expansion. Their completion is a matter of urgency, partly due to the closure of nuclear power stations and also owing to the fact that they extend over distances of several hundred kilometres.

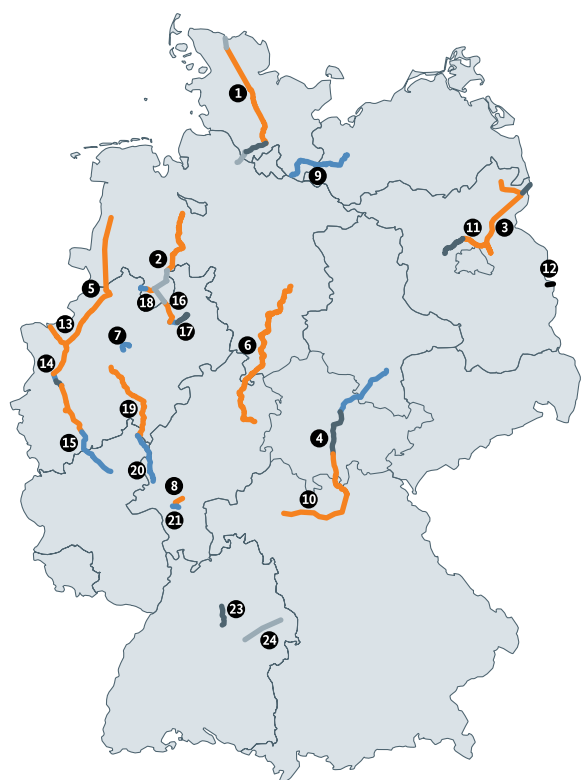
The corridors determined during federal sectoral planning then form the basis of the planning approval procedure which stipulates the actual routes which will be taken. Since the Planning Approval Responsibilities Ordinance came into effect on 27 July 2013, the Bundesnetzagentur has also been the authority responsible for planning approval proceedings. This means that responsibility for planning and approving projects which cross national or federal state borders has now been concentrated in the hands of the Bundesnetzagentur.

Monitoring projects under the Power Grid Expansion Act and the Federal Requirements Plan Act

The focus shifted to the accelerated expansion of networks at the extra-high voltage level with the Power Grid Expansion Act (EnLAG) which came into effect in 2009. The current version of this legislation specifies 23 projects which require urgent implementation in order to meet energy requirements.

German TSOs are responsible for planning, establishing and operating these projects. The relevant federal state authorities are responsible for conducting the applicable approval procedures for the new routes, which will stretch over a distance of 1,855 km. The Bundesnetzagentur regularly documents the status of approval procedures for the specific projects on its website at www.netzausbau.de. The information provided here is based on quarterly reports on current building and planning progress submitted by the four TSOs, TenneT, 50Hertz, Amprion and TransnetBW.

State of development of EnLAG procedures (in Q4/2013)



- not in the approval procedure
- in the spatial impact assessment procedure
- planning approval procedure initiated or opened
- approved or under construction
- completed


- 1 Kassø (Denmark) – Hamburg Nord – Dollern
- 2 Ganderkesee – Wehrendorf
- 3 Neuenhagen – Bertikow/Vierraden – Krajnik (Poland)
- 4 Lauchstädt – Redwitz (als Teil der Verbindung Halle/Saale – Schweinfurt)
- 5 Diele – Niederrhein
- 6 Wahle – Mecklar
- 7 Bergkamen – Gersteinwerk
- 8 Kriftel – Eschborn
- 9 Hamburg/Krümmler – Schwerin
- 10 Redwitz – Grafenrheinfeld (as part of the connection Halle/Saale – Schweinfurt)
- 11 Neuenhagen – Wustermark (as an initial part of the Berlin ring)
- 12 Eisenhüttenstadt – Baczyina (Poland)
- 13 Niederrhein/Wesel – Dutch border (in the direction of Doetinchem)
- 14 Niederrhein – Uftorf – Osterath
- 15 Osterath – Weißenthurm
- 16 Wehrendorf – Gütersloh
- 17 Gütersloh – Bechterdissen
- 18 Lüstringen – Westerkappeln
- 19 Kruckel – Dauersberg
- 20 Dauersberg – Hünfelden
- 21 Marxheim – Kelsterbach
- 23 Neckarwestheim – Mühlhausen
- 24 Bünzwangen – Lindach – Goldshöfe

The following diagram shows the expansion status of EnLAG procedures in the fourth quarter of 2013: As well as monitoring expansion projects under the EnLAG, the Bundesnetzagentur will also monitor and record procedures performed subject to the Federal Requirements Plan Act (BBPlG).

Public participation

The legal framework within which the grid is being expanded provides numerous opportunities for formal participation.

Citizens are able to actively shape the overall process in many different ways at every step along the way. The numerous comments received by the Bundesnetzagentur during consultations on the NDPs 2013 and the environmental report of the same year demonstrate that these opportunities are also being used. From 2014 onwards further formal participation processes will be integrated within the framework of federal sectoral planning (public scoping conferences, procedures for official and public participation and public inquiry meetings).


 *More detailed information about comments which have been received can be found in the "Analysis of needs 2013" section on page 44.*

The Bundesnetzagentur believes that it is important to provide more information to the general public in addition to the public participation measures required by law and, for this reason, takes steps which go beyond the required formal participation. It is one of the Bundesnetzagentur's core concerns to engage in dialogue with the general public and industry associations, and to include all these parties in procedures from the very start. This is critical in ensuring that transparent information is provided, in attaining the acceptance of the population and in reconciling conflicting interests.

In the light of the positive response elicited in the previous year the Bundesnetzagentur has decided again to organise six one-day regional information events to accompany its consultation procedures for the 2013 NDPs and 2013 environmental report. One of the aims has been to present the decisions reached by the Bundesnetzagentur and to call for active participation by the stakeholder associations and the interested general public.

Network expansion is a challenge which cuts across professional demarcations and requires links to be made to numerous interest groups. One important area is science and research which, with their findings, can have a significant influence on the further development of the extra-high voltage grid. The Bundesnetzagentur held the first »Bundesnetzagentur meets Science« event on 24 and 25 June 2013 at which researchers and experts addressed and discussed specific aspects of grid expansion as well as current issues relating to Germany's *Energiewende*. Participants collaborated in workshops to develop common ideas for solutions to technical, economic and communication science issues relating to network expansion. Consideration was also given to the impact of the *Energiewende* on the landscape and its integration in the natural environment. Building on the findings of the first science dialogue, the Bundesnetzagentur aims to intensify its contact with researchers and also plans further events for the future.

Since early 2013 the Bundesnetzagentur has also been using film as a medium to inform the general public and to foster understanding of issues relating to network expansion and the *Energiewende*. This medium captures the interest of viewers by enabling complex issues to be presented in a simple and understandable way. The first six films document events, such as the science dialogue, explain how "grid expansion in five steps" works, or provide insights into citizens' attitudes towards the expansion of the electricity grid. The successful launch of this film series is demonstrated by the number of clicks which our YouTube channel has received, very positive external feedback, and the successful integration of our films in talks and events.

 *The films can be seen on our website at www.netzausbau.de as well as on YouTube.*

The Bundesnetzagentur launched its own social media activities in 2013 with accounts on the issue of network expansion with Twitter and YouTube. Both of these offerings have been very well received to date. Twitter is not only useful for distributing information of our own, it is also a good way of answering a growing number of direct questions relating to the topic of network expansion.

Expanding the gas network

2013 Gas Network Development Plan

Gas transmission system operators are required by section 15a of the EnWG to produce an annual joint national NDP for gas and submit this to the Bundesnetzagentur. The Bundesnetzagentur confirmed the scenario framework for the 2013 gas NDP on 18 October 2012 including the plan's assumptions concerning future extraction, supply and consumption of gas. The scenario framework covers three main scenarios which describe a broad development path for higher and lower gas requirements by final consumers and electricity and heat-power cogeneration. An average gas requirements scenario was also used to calculate various model variants for determining the scope and cost of expanding the network. At the core of the model variants were various capacity products which include grid users' right to the transport of gas and, in contrast to the development of the electricity network, are the main factors driving the expansion of gas networks.

Based on the confirmed scenario framework the 17 gas transmission system operators drew up a draft version of the national gas NDP 2013 and submitted this to the Bundesnetzagentur for confirmation in early April.

The proposal submitted by gas TSOs comprises various measures for the needs-oriented optimisation, reinforcement and expansion of the gas transmission system which, for technical reasons relating to the grid, will be necessary in the next ten years to ensure security of supply. These measures are fundamentally based on modelling using efficient capacity products for power plants and storage facilities. The transmission system still needs to be expanded despite the overall downward trend in gas consumption.

The Bundesnetzagentur launched the consultative procedure on the 2013 gas NDP on 24 April 2013. In order to make the consultation easier and to obtain focused answers from the market, the Bundesnetzagentur developed a questionnaire to go with the draft submitted by the gas TSOs. This questionnaire asked market participants about their views on the planning approach adopted for efficient capacity products, on the changeover from L to H gas, as well as on information relating to the capacity requirements of distribution system operators (DSOs) for future network modelling.

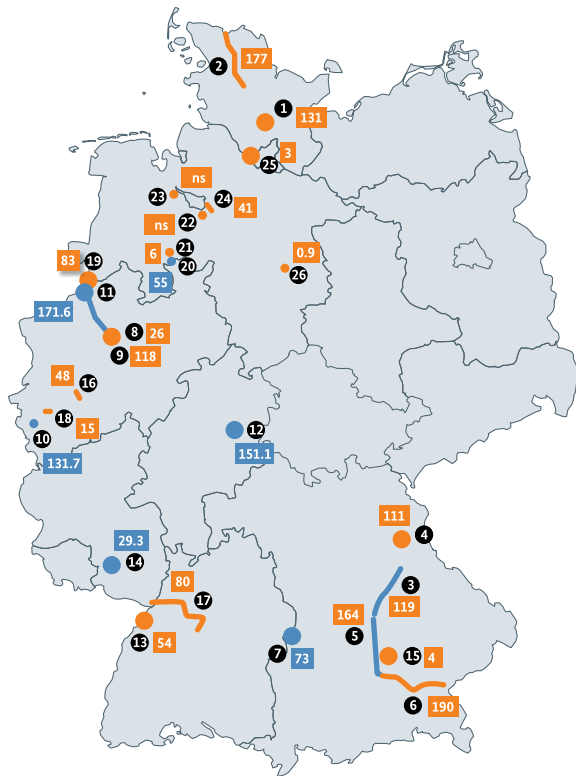
In addition to the written consultative procedure, the Bundesnetzagentur also held workshops on core issues arising from the gas NDP in June 2013 (eg on storage, gas-fired power plants and DSOs). A public workshop also gave market participants an opportunity to express their views on the draft gas NDP verbally.

After evaluating the outcomes of the consultation, and with a view to future NDPs, the Bundesnetzagentur sent an amendment request relating to the 2013 gas NDP to the gas TSOs on 18 December 2013. This includes changes which guarantee consistent long-term planning and the continuation of several network expansion measures derived from the 2012 NDP, which may help to rectify the critical situation concerning supplies to DSOs in southern Germany. Specifically, several measures in the 2013 NDP were changed which were more generously dimensioned in the 2012 NDP (pipeline length, diameter, compressor capacity) or were taken up again if they had been completely excluded for no clearly stated reason. This ensures that fixed capacities for industry and power stations as well as local public utilities serving final customers can be supplied in the future. The Bundesnetzagentur is confident that the 2013 Gas NDP is consistent with the Community-wide NDP (Art. 8 (3b) of Regulation (EC) No. 715/2009) and a request to amend Art. 41(1) para g of the Directive 2009/73 EC) was therefore not issued. The measures outlined in the 2013 Gas NDP are binding as soon as the amendment request has been received. This means that, if this has not happened already, gas TSOs must begin work on planning measures immediately. New pipeline construction projects over a length of almost 522 km and additional compressor capacity of approximately 344 MW will be required by the year 2023. €2,093 million will therefore be invested over the next ten years. The Bundesnetzagentur will review progress on implementation of the expansion measures in the 2013 gas NDP on an ongoing basis.

2014 Gas Network Development Plan

In parallel to the implementation of the amendment request the gas TSOs are already in the process of modelling and drafting the gas NEP 2014 on the basis of the scenario framework endorsed by the Bundesnetzagentur on 16 October 2014.

Network expansion measures in the Gas NDP 2013 after amendment requests



- modelled compressor station (VDS), network interconnection point (NKP) or cross-border interconnection point (GÜSt) to be newly built or expanded
- new VDS/NKP or VDS/NKP to be expanded with Gas NDP 2012 dimensioning
- expansion measure with Gas NDP 2012 dimensioning

111 Costs per measure in € million according to draft gas NDP 2013 **111** Costs per measure in € million according to draft gas NDP 2012

- 1 VS Quarnstedt (new; 2016)
- 2 Loop Fockbek – Ellund (2016)
- 3 Line Schwandorf – Arresting (2017)
- 4 VDS Rothenstadt (2018)
- 5 Line Arresting Finsing (2018)
- 6 MONACO 1 (2017)
- 7 VDS Amerdingen (2022)
- 8 VDS Werne (2017)
- 9 New build VDS Werne (2018)
- 10 VDS Stolberg (2017)
- 11 Line Epe – Werne (2018)
- 12 VDS Lauterbach (2018)
- 13 Reversierung TENP (2017)
- 14 VDS Mittelbrunn (2022)
- 15 M+R Landshut (2018)
- 16 Line Voigtslach – Paffrath (2023)
- 17 Line Nordschwarzwald (2015)
- 18 Connection Verlautenheide – Weisweiler (2018)
- 19 VDS Ochtrup (2017)
- 20 Network interconnection Drohne (2017)
- 21 Conversion Rehden (2016)
- 22 M+R Achim (2018)
- 23 M+R Ganderkesee (2020)
- 24 Loop Achim – Luttum (2016)
- 25 Wedel project (2016)
- 26 Connection Ahlten 3 (2014)

(forecast by TSOs), medium and high capacity requirements (forecast by DSOs). The use of "efficient" capacity products for new storage facilities and new power plants as the planning basis for determining long-term network expansion is the same in all variants. Efficient products of this kind allow the overall cost of network expansion to be reduced to an overall economic level. In the future the NDP no longer assumes that, in 10 years' time, the same flow commitments for the operation of gas networks will be available as they are today.

Overall this will entail a reduction in the modelling variants from seven to three. What is more, the 2014 Gas NDP will again focus on the incremental switch over in areas currently served with L-gas to H-gas. Specific projects which are necessary in order to guarantee security of supply despite falling L-gas production will also be identified as part of a security of supply scenario.

The gas TSOs will submit this draft of the gas NDP to the Bundesnetzagentur on 1 April 2014 on the basis of this scenario framework.

All the documentation on the 2013 Gas NDP and on the 2014 gas scenario framework is available on the gas TSOs' website at www.netzentwicklungsplangas.de.

More information on the development of the gas network, including information on the decision to request amendments to the 2013 NDP are available at www.bundesnetzagentur.de/gasnetzentwicklung.

In contrast to the 2013 scenario framework, the 2014 gas scenario framework focuses on the different statement of capital needs for downstream DSOs. These can be divided into the three variants of low

Consumer protection and advice

In 2013, the energy consumer advice service was restructured in a separate service centre at which it provided consumers an extended and easily understandable range of information on energy-related topics and on the work undertaken by the Bundesnetzagentur.

National consumer work / Consumer protection and advice

As a central information provider for energy consumers the task of the Bundesnetzagentur is to provide energy consumers with information about the current law, the rights of household customers and about the dispute resolution procedure. The Bundesnetzagentur fulfils this task through its energy consumer advice service.

The energy consumer advice service was restructured, both organisationally and in terms of personnel, in 2013. As a result delays occurred in responses to written inquiries and the telephone service was limited in the second half of the year. The changeover coincided with the redesign of the authority's website in May 2013 so that, by the end of the year, the energy consumer advice service was able to provide more information in accessible form. The energy consumer advice service does not, however, have the authority to provide legal advice or offer conciliatory services relating to the energy supply relationship.

The energy consumer advice service received a total of around 17,500 inquiries and complaints by telephone or letter in 2013. Of these, around 12,000 related to electricity and 1,200 to gas. In addition, the section also received around 4,300 inquiries on general and cross-cutting topics.

As was the case the previous year, consumer inquiries and complaints relating to electricity and gas tended to concern questions relating to contracts and billing as well as to complaints about the quality of service offered by suppliers in particular. Most of these inquiries and complaints concern just a few companies. Consumers are particularly concerned about irregularities in the interpretation of contractual bonus and termination clauses, errors in energy bills as well as delays in the payment or settlement of credit notes and bonuses.

A large number of inquiries and complaints received in 2013 also related to back-up supplies of electricity and gas. The back-up services provided for under section 38 of the EnWG provide legally mandatory emergency supplies for all final customers receiving low voltage and low pressure supplies. Emergency supplies are provided whenever a supplier loses its rights of access to the network. This could be the case, for example, if a network usage contract is terminated by the network operator if network tariffs are not paid. In order to ensure that uninterrupted supplies continue to be

received by the customers affected, the network connection ordinances (NAV, NDAV) require network operators to assign the point of connection of customers affected to the local default supplier so that back-up supplies can be provided.

In 2013 it was mainly customers of the Flexstrom and Care Energy corporate groups who received back-up supplies:

In April 2013, companies in the Flexstrom group filed for the opening of insolvency proceedings. In this connection, many network operators terminated the network usage contracts they had made with these companies. The inquiries made by customers affected by this corporate insolvency mainly concerned the reliability and nature of back-up supplies, the obligation to pay the costs involved and the fate of any advance payments customers had made as well as the contractual and legal options available to them as regards the supplier and insolvency administrator. As consumers who paid invoices in advance are subject to the risk of the company going insolvent, in the worst possible case these customers may lose all the money which they have paid in advance.

In the summer and autumn of 2013 several network operators refused access to the network for a company of the Care Energy group. The Bundesnetzagentur was informed by the network operators in advance of their decision to refuse access. Care Energy applied in an expedited proceeding for an assessment of the legality of these measures; the ensuing rulings diverged considerably. Many consumers were therefore worried about the current status of their contracts and of deliveries. The inquiries made by these customers focused on the reliability of back-up supplies as well as the contractual rights they may have vis-à-vis their supplier and network operator, and concerning the overall legal rules relating to use of the network and the responsibilities of the Bundesnetzagentur.

The Bundesnetzagentur had fined the managing director of the Care Energy corporate group €40,000 as early as June 2013 for breaching the duty to submit notification of deliveries of energy to household customers. The company itself refers to its business model as "contracting", which involves supplying useful energy in the form of "light, power, heat and cold" to consumers. As a pure energy service provider the company maintains that it was not subject to the obligations imposed on suppliers by the EnWG. However, the Bundesnetzagentur regards the company's business model as a classic case of selling electricity to

household customers. As the company raised objections to the fine, the case was handed over to the Chief Public Prosecutor in Düsseldorf.

The energy consumer advice service also received complaints concerning changes of supplier, for a large part relating to the network operator Westnetz GmbH, which is part of the RWE Group. According to the information available to the Bundesnetzagentur, these problems are mainly due to a process of IT reorganisation within the company which has affected the handling of supplier changes and market communication. Westnetz is working hard to rectify the problem and is currently reporting regularly to the Bundesnetzagentur.

Instead of clarifying contractual or billing problems before court, since November 2011 private consumers have been able to submit complaints about contracts or the quality of a company's services to the relevant energy utility, metering operator or metering service provider. If the company does not respond to the customer complaint within four weeks, customers have the option of applying for a dispute resolution service provided by Energie e.V.

International consumer work / consumer protection

The legal framework in Europe for the development of competitive consumer-oriented energy retail markets was established several years ago. Nonetheless, in many respects these markets failed to live up to the expectations of consumers and policymakers in many EU Member States. For this reason the focus shifted to the consumer's perspective last year. In June 2013, the Council of European Energy Regulators (CEER) held its second annual customer conference. It was at this conference that the joint declaration on the "2020 Energy Customer Vision" was drafted by the CEER and the European umbrella organisation of consumer organisations, the Bureau Européen des Unions de Consommateurs (BEUC), which set down the requirements for future energy retail markets in Europe. This year's conference is now the first step along the way to realising this vision. It identifies reliability, affordability, simplicity and customer empowerment as the four key principles of a future consumer-oriented retail market.

In 2013, the Bundesnetzagentur also worked with other national energy regulation authorities in CEER on status reports on the implementation of European regulations and regulatory recommendations.

 *More detailed information is available at www.ceer.eu.*

The status report on the regulatory aspects of smart metering compares the introduction of smart meters in various Member States, where retail market design and the technical requirements for smart meters vary significantly. The growing popularity of smart meters entails new challenges, including the issue of the centralised or decentralised management of meter data as well as requirements concerning data protection and security.

All the status reports clearly show that there are still large differences, both in terms of the degree to which European rules have been implemented and in the way they have been implemented, in different EU Member States. Germany is certainly one of the most highly developed markets.

In December 2013, representatives from national consumer organisations, the energy industry, Member States, national regulatory authorities and government authorities met for the sixth time at the Citizens' Energy Forum (London Forum) in London to discuss the current situation on energy retail markets and to identify and prioritise future areas of work. The Forum also focused on the development of a competitive, consumer-oriented retail market which fulfils the key principles of reliability, affordability, simplicity, and consumer protection. The Forum concluded that rules on the internal energy market must be strictly implemented and enforced if this objective is to be achieved and also regarded the promotion of competition as an absolute necessity.

Rulings, activities and proceedings

One of the Bundesnetzagentur's core projects in 2013 was the rollout of the Market Transparency Unit in collaboration with the Bundeskartellamt. A second was the preparation of the second regulatory period for electricity. A third was, as in previous years, the certification of the transmission system operators.

Initial situation for electricity

In 2013, pursuant to the provisions of the Electricity Network Charges Ordinance (StromNEV), the Bundesnetzagentur examined cost structures with a view to determining the base level for revenue caps for the second regulatory period for electricity. Owing to the difference in the length of the regulatory periods for electricity and gas, the corresponding work on the gas network operators had largely been completed in 2012.

The costs examination was based on the business data collected by the grid undertakings for the 2011 financial year. In addition to the 105 network operators covered by the Bundesnetzagentur's primary remit, 173 other operators had their costs examined, under an administrative agreement by which seven of the federal states officially delegated the relevant powers. The states in question were Berlin, Brandenburg, Bremen, Mecklenburg-Western Pomerania, Lower Saxony, Schleswig-Holstein and Thuringia. The administrative agreement with Lower Saxony expired, at the federal state's request, at the end of 2013. Under a transition agreement between the Federal Republic of Germany and Lower Saxony, data and files were handed over to the latter, and the ongoing proceedings to determine the revenue cap will be completed by the Bundesnetzagentur.

The costs examination involved ascertaining the operating costs which network operators necessarily incur. According to the principles governing the determination of network costs, current outlay and imputed costs can only be recognised to the extent that they correspond to the costs of an efficient and structurally comparable network operator. The examination focused not only on current outlay costs, including the cost of obtaining energy to compensate for grid losses, but also on determining imputed depreciation, imputed cost of equity and imputed tax costs, less the cost of reduced revenue and income.

The legal framework underwent substantial changes in the course of the examination. One of them related to adjustments to the StromNEV, which had to be considered in calculating necessary operating costs. The adjustments affected in particular the index series to be used for determining the replacement costs of fixed assets and the rate at which interest was paid on the proportion of equity in excess of the equity ratio of 40 percent permissible in law.

Efficiency benchmarking for electricity DSOs

The Bundesnetzagentur carries out the nationwide efficiency benchmarking on the basis of the costs it has examined and then sets the revenue caps for the DSOs. 2013 therefore saw the second nationwide efficiency benchmarking, for a total of 179 DSOs. These are all the operators under federal or state jurisdiction which did not opt for a so-called "simplified procedure" or which – due to their size – did not have this option. The operators' individual efficiency values resulting from this benchmarking form the basis for determining the individual revenue caps for the second regulatory period, from 1 January 2014 to 31 December 2018.

The efficiency benchmarking involves setting the network operators' supply tasks against the costs they have individually incurred, thus demonstrating the relative cost effectiveness of the individual operator as compared with that of the other operators. Full recognition is given to the complex and multi-layered nature of the DSOs' supply tasks through the application of so-called structure parameters, such as the number of offtake and metering points, the length of overhead and other cables, the annual peak load and the area supplied. The "decentralised installed producer capacity" parameter is used to map the operators' performance in the context of decentralisation.

The electricity sector was involved at every stage in the efficiency benchmarking. A consultation process was conducted and notes were compared with the business circles concerned, which were given repeated opportunities to state their views. The consultation process provided a framework for the associations and the network operators to confer directly with a commissioned consortium of consultants and the Bundesnetzagentur on methodological procedure and the selection of parameters.

The result was a preliminary unweighted average efficiency value of 94.7 percent for the electricity DSOs, which meant that the relative efficiency was 2.5 percentage points up on the first regulatory period. The difference between the average and the individual efficiency values declined by one percentage point. Thus in the first five years of incentive regulation, the gap between the efficiency values of the electricity DSOs narrowed, as had been intended. This means that the incentive regulation will require an average 5.3 percent improvement of efficiency from the electricity DSOs in the second regulatory period, up to 2018 (but not annually).

For the second regulatory period the Ordinance provides for a flatrate efficiency value based on the values ascertained for the first period. It will apply to the total of more than 700 DSOs in the simplified procedure (DSOs which have fewer than 30,000 customers and have not registered for the normal procedure) and will be 96.1 percent for undertakings in the simplified procedure.

 Further information on the efficiency benchmarking for DSOs in the electricity sector can be found in the relevant final report, which is accessible at www.bundesnetzagentur.de/effvgl-strom-vnb.

Efficiency benchmarking for electricity TSOs


Under section 22(1) of the Incentive Regulation Ordinance (ARegV) in conjunction with the provisions stated therein, the individual efficiency values of the four TSOs were determined on the basis of an international efficiency benchmarking process. The Bundesnetzagentur is obliged to include TSOs from other Member States of the European Union in a benchmarking process to be conducted before the start of the second regulatory period. A consortium of consultants was commissioned to carry out the efficiency benchmarking.

An opening event was followed by the collection of the data necessary for the benchmarking, a consultation process on methods and the presentation of the preliminary results. The final results have now been published. Section 22(1) sentence 4 ARegV requires the international efficiency benchmarking process to ensure the undertakings used for the benchmarking are structurally comparable. This was achieved by differentiating between the various functions of a TSO's activities, by standardising the operating and capital costs, by selecting parameters on the basis of a comprehensive analytical and statistical cost-driver analysis, and by analysing the stated special characteristics of individual undertakings and recognising such characteristics where they exist. A scientifically recognised method – Data Envelopment Analysis or DEA – was used for the efficiency benchmarking. The national regulatory authorities, in harness with the consortium of consultants, then adapted the findings to the individual needs of their regulatory systems, which enabled them to produce an efficiency value on the basis of a national run. Special national features having been taken into account, the German TSOs were found to have an average efficiency value of 99 percent. Relative efficiency was thus 1.6 percentage points up on the first regulatory period.

 Further information on the efficiency benchmarking for the TSOs can be found at www.bundesnetzagentur.de/effvgl-strom-uenb.

Efficiency benchmarking for gas TSOs

The 2012 efficiency benchmarking for the gas TSOs was updated for 2013 on the basis of recalculating one of the parameters and taking a separate network into account. This resulted in new efficiency values for five of the twelve TSOs. The preliminary unweighted average efficiency value is now 98.3 percent (previously 94.0 percent).

 Further information on the efficiency benchmarking of gas TSOs can be found in the relevant final report, which is accessible at www.bundesnetzagentur.de/effvgl-gas-fnb.

Quality regulation in the electricity sector

Inherent in the incentive regulation system is the risk that network operators will achieve the prescribed or possible reductions in revenue by deciding, for cost cutting reasons, not to do the necessary investment in their networks or by failing to take the required steps to maintain or enhance the quality of their supply operations. In order to prevent the deterioration of

quality which can result, provision was made, via the Energy Act and the ARegV, for the introduction of quality regulation. The method used is to provide a positive or negative response to the supply quality by respectively raising or lowering the permissible revenue cap.

The adjustment factor, the so-called quality element, was laid down for a period of two years when quality regulation was introduced as of 1 January 2012. A new quality element thus had to be determined for the start of the second regulatory period as of 1 January 2014.

The calculation of the quality element made use of the basic elements of the standard quality regulation variants introduced in the first regulatory period, so as to ensure the regulatory framework would be stable and predictable.

The quality regulation encompasses the networks of the low and medium voltage levels which are not covered by the simplified procedure. The key figures from 184 electricity distribution systems were accordingly included in the calculation of the reference values for low and medium voltage. The level of the quality elements calculated at the end of 2013 is geared to the reliability of the particular network in the period 2010 to 2012. Network operators whose supply quality in recent years was demonstrably better than that of other operators are rewarded with a higher revenue cap for the years 2014 to 2016. Those with relatively poor quality incur a reduction in the revenue cap. The level of the quality elements is also influenced by the general economic impact of power cuts and the number of final consumers supplied with electricity. Structural differences between regions are mapped on the basis of the load density, a factor which is derived from the annual peak load of all contemporaneous offtakes divided by the area served by the network operator.

The system is designed to have no effect on total revenues. In this context this means that the total cap increases and decreases across all network operators cancel each other out.

In order to limit the maximum impact on the revenue cap which the quality element could have for a network operator, the adjustment to the cap was set at no more than plus or minus 2 percent of the relevant revenue cap.

133 of the total of 184 network operators were given a bonus and 51 a penalty. The corresponding numbers for the first regulatory period were 143 and 59. The highest increase came to about €4.2m, and the biggest decrease was approximately €3.9m. In both cases the figures were slightly lower than in the first regulatory period.

Section 19 of the Electricity Network Charges Ordinance (StromNEV)

Under section 19(2) sentence 1 StromNEV final consumers are entitled to be offered an individual network tariff by their immediate upstream network operator if it is evident, on the basis of existing or predicted consumption data or technical or contractual conditions, that their peak-load contribution will predictably deviate substantially from the contemporaneous annual peak load of all offtakes at the relevant network or substation level. The individual tariff to be agreed must however not be less than 20 percent of the published tariff.

2013 showed a distinctly smaller number of new applications for an individual tariff under section 19(2) sentence 1 StromNEV than in the previous year. The main reason for the decline was the introduction of an additional requirement for approval, namely that there must be a load shifting of at least 100kW between the peak load of a final consumer and the contemporaneous annual peak load of all offtakes at the relevant network or substation level.

In addition, in the case of 928 individual network tariff agreements which had originally been approved for an indefinite period, the term of approval was set to expire on 31 December 2014, so as to enable the term of these agreements to be brought into line with the new statutory provisions.

The ordinance amending ordinances in the field of energy law of 14 August 2013 has confronted energy-intensive final consumers with far-reaching changes. Retroactively as from 1 January 2012, exemption from network tariffs is no longer possible. In addition there have been changes in the approval conditions stipulated in section 19 (2) sentence 2 StromNEV, which also allows for agreements on individual tariffs between final consumers and network operators. These tariffs must not be less than 10, 15 or 20 percent of the general tariff, the three percentages depending on the number of hours of use by individual final consumers, provided that consumption is in excess of 10 GW. The new regulation is of such recent date that no official notices have yet been issued.

Number of applications under section 19(2) sentence 1 StromNEV						
Year	Applications	Approved	Terminated	Rejected	Pending	Amount of relief in € million
2011	1,226	1,100	190	0	26	55.3
2012	3,149	1,664	174	0	1,311	168.6
2013	1,167	0	8	0	1,159	–

By way of procedural implementation of the changes to the approval criteria under section 19(2) StromNEV, the Bundesnetzagentur published a decision on the appropriate determination of individual network tariffs on 18 December 2013.

This Decision, BK4-13-739, sets out the already existing criteria for the determination of individual network tariffs for atypical use of the grid, thus superseding Decision BK4-12-1656 of 5 December 2012, which had the same function. It also contains regulations for the determination of the individually attributable contribution to a reduction, or to the prevention of an increase, in network costs. As from 2014 the contribution must be considered in the case of energy-intensive undertakings, and it is calculated on the basis of the so-called "physical path". According to this method the individual contribution to cost reductions results from the difference between the costs of using a notional line from the grid connection point to the nearest suitable generation plant or grid node, on the one hand, and the general tariffs that would otherwise have to be paid by the final consumer, on the other. The notional path makes it possible for the calculation of individual tariffs for energy-intensive final consumers to take more accurate account of the network costs they generate. The most important result of the stipulation of all the criteria for determining individual tariffs is the introduction of a procedure of notification to the regulatory authorities, superseding the previous approval procedure. The notification procedure enables the undertakings which are parties to a network tariff agreement to calculate their tariffs immediately, on the basis of the agreement. Having received the notification the Bundesnetzagentur makes an ex post check, applying the accustomed criteria.

Investment measures

Applications for approval of investments relating to expansion and restructuring can be submitted by network operators under section 23 of the Incentive Regulation Ordinance (ARegV). The procedure is aimed particularly at investments which are necessary in order to connect up new power plants, to ensure grid connection of renewable energy sources or to maintain the technical safety of the energy networks.

Due to the re-introduction of section 23(7) ARegV, DSOs have been able since 22 August 2013 to have investments approved for the high voltage level as well, provided that they fulfil the conditions that were previously applicable only to TSOs. A particularly important one is that expansion or restructuring investment in the 110 kV level can be approved under section 23 ARegV if it is necessary for the needs-oriented expansion of the energy supply network as provided for in section 11 of the Energy Act.

This change to the statutory framework and the formal support given to network expansion projects in the network development plan led to a substantial increase in applications for investment approval in 2013. From 2008 to the end of 2013 the Bundesnetzagentur received altogether 1,251 applications, with a total value of around €72bn. 396 of the applications came in just one year, 2013, with a total value of nearly €20bn; 361 of these were submitted by electricity network operators (83 TSOs and 278 DSOs) and 35 by gas network operators.

Gas revenue cap

The second regulatory period for gas DSOs and TSOs started on 1 January 2013 and will continue for five years.

The base level required under section 6(1) ARegV for the gas network operators' revenue cap having been determined in 2012, a start was made in 2013 on determining the revenue caps for 143 undertakings in the simplified procedure, 98 gas network operators in the normal procedure and 12 transmission system operators. The process is still continuing and is expected to be completed in the first quarter of 2014.

Determinations and legal proceedings (pooling, index series, etc)

The Bundesnetzagentur adopted a variety of determinations in the area of electricity network tariffs in 2013. By virtue of the determination on grid losses, the costs for procuring energy to compensate for grid losses are deemed in the second regulatory period, under section 11(5) ARegV, to be costs that cannot be

controlled on a lasting basis. The electricity DSOs under the purview of the Bundesnetzagentur are accordingly obliged under section 4(3) sentence 1 ARegV to effect an annual adjustment of the costs arising from grid losses during the second regulatory period.

Furthermore, on 6 November 2013 the Bundesnetzagentur initiated proceedings for the repeal of determinations covering the billing of a number of offtake points (pooling) in departure from section 17(8) StromNEV. The market players were given the opportunity to submit their comments. In addition, abuse proceedings were instituted in two cases under sections 30 ff of the Energy Act, the determinations on revenue caps for the second regulatory period were prepared, and determinations classifying the costs of system services as costs subject to procedures regulation within the meaning of section 11(2) sentences 4 and 5 ARegV were adopted.

There are also pending and ongoing court cases of significance for the work of the Bundesnetzagentur. Various appeal proceedings, including those before a court of law, were conducted on the revenue cap determinations for the first regulatory period, the redispatch determinations, the pooling determination, the determinations relating to section 19(2) StromNEV, the price indices determinations and the determination on compensation for grid losses.

The Bundesnetzagentur adopted various determinations on gas network tariffs in 2013. One was to stipulate the specific requirements for an application for tariff approval under section 23a of the Energy Act; another concerned the setting of tariffs for transmission system operators under section 30(2) para 10 GasNEV.

The pending and ongoing court cases affecting gas network operators are also important for the work of the Bundesnetzagentur. Various appeal proceedings before a court of law were conducted with regard to the revenue cap determinations for the first regulatory period and the determinations on price indices.

The Bundesnetzagentur filed an appeal against the decision of the Düsseldorf Higher Regional Court (OLG) of 6 June 2012, which set aside the determination on the price indices of 17 October 2007. The Bundesnetzagentur's appeal was dismissed by the Federal Court of Justice (BGH) in its ruling of 12 November 2013.

The price indices serve as a basis for determining the imputed depreciation of property, plant and equipment and are used in order to establish the base level for setting the calendar year revenue caps. The only areas affected by the BGH ruling are proceedings concerned with the revenue caps for the first regulatory period where no legally binding decision has yet been issued. The gas network operators involved, which have filed appeals against both the price indices determined and the decision setting the calendar year revenue caps, are few in number.

In order to set the revenue caps for the first regulatory period, the replacement costs had to be determined as required in section 6(3) of the Gas Network Charges Ordinance (GasNEV). According to this provision, which was amended on 14 August 2013, the price indices set on 26 October 2011 with nationwide effect by Ruling Chamber 9 under section 30(2) para 2 GasNEV in conjunction with section 29(2) of the Energy Act, which were basically an updating of the determination of 17 October 2007, can no longer be applied. Instead the indices must now be determined in accordance with section 6a GasNEV.

Certification of TSOs under unbundling legislation

The scrutiny of unbundling requirements again featured on the Bundesnetzagentur's priority list in 2013. In this context the Agency took eleven decisions on the certification procedures for TSOs over the course of the year. The electricity undertakings involved were TransnetBW GmbH and TenneT Offshore 1. Beteiligungsgesellschaft mbH; in the gas sector the undertakings were GastranspL Gastransport GmbH, Fluxys Deutschland GmbH, Gasunie Ostseeanbindungsleitung GmbH.ort Nord GmbH, Gasunie Deutschland Transport Services GmbH, Gascade Gastransport GmbH, Ontras Gastransport GmbH, Thyssengas GmbH and Open Grid Europe GmbH. In every instance the decision was in favour of certification.

In order to be certified the TSOs must prove that their operation of the network is independent, in legal, organisational and personnel terms, of the energy supply business, and of extraction and production. This independence is the necessary structural precondition for the networks to constitute a neutral platform for competition on the energy market.

There must for example no longer be any geographical, personnel or IT links between a TSO and an energy supply business that may be affiliated to it. The TSO must

moreover be the owner of the transport network. It must also be certain that the TSO has a sound financial basis.

In most cases it was an immense challenge for the TSOs concerned to implement such far-reaching requirements of national and European law. The majority of them set about it with a will.

Undertakings in which the implementation process is not yet complete have been given implementation deadlines. In cases where additional regulation was necessary for the fulfilment of individual requirements under certification and unbundling law, the certification decisions were accompanied by specific conditions.

The first-time certifications of the German TSOs have now in the main, by virtue of the decisions issued in 2013, together with those from the previous year, been completed. This does not mean that there will be no further certification proceedings in the future. Checking on the fulfilment of the certification requirements is an ongoing task for the Bundesnetzagentur.

Brand unbundling

Ruling Chambers 6 and 7 initiated regulatory measure proceedings against a total of 36 DSOs on grounds of suspicion of breach of brand unbundling regulations. Large, vertically integrated DSOs must ensure that their communication activities and branding policies rule out any possibility of being confused with the distribution activities of the vertically integrated energy supply undertakings. The aim of the proceedings is to get the undertakings to give their public image a clearly differentiated form, and in particular to ensure there is no confusion of their own brands and company logos with others. The intention is to make it easier to distinguish between the roles of network operation and the supply of energy to final consumers, so that all the undertakings offering energy supplies in the network area can operate on a level playing field. The proceedings are continuously coordinated by the two chambers with a view to ensuring uniform interpretation of the criteria set forth in section 7a(6) of the Energy Act.

Grid connection for offshore wind farms

One of the major legislative reforms is the so-called "change of system". In the past the individual offshore wind farm was itself responsible for any construction work necessary for its connection to the grid. Now, sections 17b and 17c of the Energy Act provide for an offshore network development plan (ONDP) for the

TSOs, which requires confirmation by the Bundesnetzagentur and which regulates the staggering of the measures designed to optimise, reinforce and expand offshore grid connections in line with requirements. The Act also now contains provisions to regulate the payment of compensation when there are delays or breakdowns in the construction of a grid connection. Furthermore, the lawmakers have assigned to the Bundesnetzagentur responsibility for the allocation and transfer of connection capacities in respect of the offshore wind farms.

Accordingly the Bundesnetzagentur in 2013 published, inter alia, a guideline for the determination of appropiate compensation payments and initiated determination proceedings, by means of which it was possible to regulate the framework conditions for the allocation and transfer of free connection capacities. The ONDP was confirmed by the Bundesnetzagentur for the first time in December 2013.

By the end of 2013 the Bundesnetzagentur had received 27 applications for approval of investment projects for the connection to the grid of offshore wind farms at a total value of around €21.5bn. So far 17 of the applications have been approved, with a volume of nearly €10bn.

Market Transparency Unit and market integrity

The basis for this is the act that came into force on 12 December 2012, setting up a Market Transparency Unit for the wholesale trade in electricity and gas. While the Bundekartellamt focuses on abuses under anti-trust legislation, the Market Transparency Unit established with the Bundesnetzagentur can monitor the bans on market manipulation and insider trading under the Regulation on wholesale energy market integrity and transparency (REMIT) (EU Regulation No 1227/2011).

The establishment of the unit, an independent entity inside the Bundesnetzagentur's energy regulation department, made great strides in 2013, both organisationally and in terms of personnel.

REMIT imposes an obligation on players in the energy market to register with the unit. For this purpose the European Agency for the Cooperation of Energy Regulators (ACER) is developing a registration portal, a project to which the Bundesnetzagentur and other national regulators have contributed.

The EU Commission is to provide implementing acts to specify in detailed form which data trading undertakings must report, under the provisions of REMIT. Data relevant to the monitoring of the German electricity and gas wholesale market will in future be forwarded by ACER to the Market Transparency Unit. The unit will also collect other data needed for the performance of its statutory duties, and for this purpose a wide-ranging IT system and a trade monitoring system will be necessary. An invitation to tender for these systems has been prepared.

At the European level there are a number of project groups and working parties through which ACER, together with the national regulators, is preparing the practical implementation of REMIT and assisting the European Commission – for example by preparing drafts of the above-mentioned implementing acts. The Market Transparency Unit is involving itself actively in the various working groups and helping ACER to fulfil its mission.

The European transparency regulation (Regulation (EU) No 543/2013) came into force in July 2013, and it is the Bundesnetzagentur's task to ensure that its requirements for the reporting of data to ENTSO-E (European Network of Transmission System Operators for Electricity) are complied with. The draft of the implementing act of December 2013 lays down that the data collected in future by ENTSO-E under the aforesaid Regulation for the purposes of REMIT will be forwarded to ACER. The Market Transparency Unit will have access to these data – and to the transaction data – if and when they are relevant to the German market.

Duties of balancing group managers in the correct quarter-hour management of their balancing groups

In September 2013, as part of the further development of the balancing system, the Bundesnetzagentur published a position paper which clarified, at a number of points, the duties of balancing group managers concerning the quarter-hour management of their balancing groups. The move was prompted by the fact that, primarily during the hours of steep increases or decreases in load or production, substantial system imbalances had occurred nearly everywhere. They were due to inadequate quarter-hour management by a number of balancing group managers, some of whom were evidently unaware of the scope of their balancing group duties.

Energy- and balancing-related treatment of feed-in management measures for EEG installations

The number of congestion management measures to maintain system security in the networks is rising continuously, with considerable impact on renewable energy installations in the context of feed-in management under section 11 of the Renewable Energies Act. Under current regulations renewable energy is marketed partly by TSOs and partly by direct sellers. Outside the statutory framework conditions governing the sequence of market-based and grid-related adjustment measures under section 13(2) of the Energy Act and section 11 of the Renewable Energies Act, there is at present a lack of clear regulatory provisions for the energy- and balancing-related treatment of reduced energy feed-in. The Bundesnetzagentur consequently opened determination proceedings in May 2013. A key points paper paved the way for consultation on a target model, which was discussed with the market players affected at a workshop in December 2013. The specific key points decided on will be presented for public consultation.

Determination proceedings for network usage contract / supplier framework contract (electricity)

One of the foundations of a liberalised electricity market is non-discriminatory and procedurally standardised use of the grid. The prerequisites here are not only uniform processes, inter alia for balancing group management, switch of supplier and exchange of data, but also the most uniform possible contractual arrangements. Grid users have a right to conclude a network usage or supplier framework contract with the network operator from whose network electricity is to be obtained or into which it is to be fed. Although the use of the grid is largely governed by statutory requirements and the determinations of the Bundesnetzagentur, and individual conditions are implemented by the market players in comparable manner, so far there has been no uniformity of form or content in the contracts drawn up by the network operators. This results in conflicts and hinders the process of network use. In order to achieve greater harmonisation of contractual arrangements, the Bundesnetzagentur in October 2013 initiated proceedings to determine an electricity network usage contract.

Data exchange processes inside the energy information network (electricity)

The Bundesnetzagentur opened determination proceedings for data exchange processes within the framework of the energy information network for electricity in October 2013. The aim is to lay down binding obligations for operators of generation plants and storage facilities with regard to the forwarding of dispatch data for their installations. The secure operation of extra-high voltage networks by the TSOs makes a vital contribution to the uninterrupted supply of power in Germany. The European Commission's long-term objective of a competition-oriented internal market, together with the growing integration of decentralised generation, necessitates a comprehensive system of data exchange among the market players involved. At the level of national law, therefore, the provisions of section 12(4) of the Energy Act enable the TSO to require the data and information necessary for

safe and reliable operation and for the maintenance and expansion of the networks from operators of generation plants and distribution networks, from industrial and business final consumers and from suppliers (the so-called energy information network). The determination is designed to give concrete form to the relevant data transfer obligations, so as to enable the TSOs, as data recipients, to make more accurate predictions and plans for the utilisation of the grid and measures to eliminate congestion.

Network stability takes priority

*The **Energiewende** has moved electricity generation to the north of Germany to a large extent. But electricity is still being consumed in southern Germany. Without the addition of high-performance networks the existing grid may possibly overload.*

To prevent the electricity grids from being damaged and to ensure that supply security will not be affected, the transmission system operators (TSOs) must have power plants at their disposal in southern Germany to relieve the grid. These reserve power plants are to be activated in an emergency if there is a risk of a grid overload due to excess feed-in in northern Germany. They work to create a kind of "counter-pressure" applied to the dominating

north-south electricity flow, reducing these flows to the point of preventing damage.

The nuclear power plant in Grafenrheinfeld in Lower Franconia is to be taken off the grid in December 2015. Whether the south-west interconnector will actually be in operation according to schedule, though planned, is still uncertain. This is a challenge for the TSOs: Vis-à-vis the Bundesnetzagentur, the TSOs must prove that they always have enough generating capacity available to them from power plants to ensure the secure and reliable operation of the transmission network.

The network operators will manage without the construction of any new power plants in the winter of 2015/16. Whether the situation will stay this way depends highly on the implementation of network expansion.



International cooperation

The procedural rules of the third internal energy market package are fully capable of being developed into sound and binding solutions at European level within a reasonable space of time.

Framework guidelines and network codes in the implementation of the third internal energy market package

Within the framework of the Agency for the Cooperation of Energy Regulators (ACER), the national regulatory authorities, in collaboration with the European Networks of Transmission System Operators for Electricity and for Gas (ENTSO-E and ENTSOG), are developing rules for the safe and efficient operation of the networks.

The process has two phases. In the first ACER works out requirements in the form of framework guidelines, and in the second these are given concrete shape by the network operators' associations as so-called "network codes". The codes are then presented to ACER for in-depth comment. As soon as the Agency has satisfied itself that a particular code conforms to the framework guidelines and will do justice to the aims of the third internal energy market package, it presents the code to the Commission for its acceptance.

The Commission can then, using the comitology procedure, with the participation of the Member States and subject to controls by the European Parliament, give the codes the force of law.

The European Council lent additional weight to this joint approach by setting the EU's heads of state and government the target of completing the internal energy market by the end of 2014, in the sense of ensuring gas and electricity can flow across borders without let or hindrance. To give the accomplishment of this goal concrete form the Commission drew up an annual priority list of the most important network codes in July 2012. It can be foreseen that part of this project will have been adopted in principle by the end of 2014, but not yet put in force.

Network codes in the gas sector

In 2012 ENTSOG developed the first network code for Capacity Allocation Mechanisms (CAM) in the gas transmission systems, basing its work on the framework guideline adopted by ACER in August 2011.

The core of the network code is the standardisation of the time span of capacity products at border and market area interconnection points and the allocation of the capacity products by way of an auction mechanism. Available capacities which have to be reallocated must be offered in bundled form, which enables end-to-end transport between market areas, so there is no risk that the network user will be stranded with

natural gas at a border. The results are that liquidity is bundled at trading points, the risk of the market being sealed off by dominant capacity owners at borders is minimised, and security of supply is enhanced.

This network code was delivered by ACER to the European Commission on 9 November 2012. The Agency recommended acceptance of the code subject to certain necessary adjustments.

On 15 April 2013 the Member States in the competent committee voted in favour of the CAM network code. As neither the European Parliament nor the Council of the European Union entered any objections during the three-month period, the Commission adopted these new CAM rules on 14 October 2013 as the first Europe-wide network code.

An agreement on European rules for the market based, non-discriminatory award of access to gas transport capacity was therefore finally worked out. The Bundesnetzagentur was the driving force for this issue over the last few years. This included the national implementation of capacity allocation procedures and congestion management as well as the details of the now available European network code.

This demonstrated that the procedural rules of the third internal energy market package are capable of being developed into sound and binding solutions at European level within a reasonable space of time.

The network code comes into force 20 days after publication in the Official Journal of the EU and will be applicable as from 1 November 2015. The new rules are already largely in effect in Germany and are currently being implemented in many Member States on a voluntary basis, which means that the capacity allocation procedures, which now have binding force, will soon have a positive impact throughout Europe.

In addition, ACER on 12 December 2013 for the first time recommended an amendment to a network code: regulators and the EU Commission had during the preliminary stages agreed to exclude, for the time being, market-based allocation proceedings in the above-mentioned CAM network code both for incremental capacity and for new capacity. The Council of European Energy Regulators (CEER) and ACER had done preparatory theoretical work on these aspects in 2012-2013. ACER now called on ENTSO-E to develop a specific proposed amendment to the CAM code and submit it for consultation.

The Bundesnetzagentur also participated in the preparation of further priority network codes in the gas sector (gas balancing, interoperability rules, data exchange and rules for harmonised gas transmission tariff structures).

Network codes in the electricity sector

In the electricity sector there are a number of network codes or framework guidelines being developed in parallel.

After ACER, following on the preparatory work done by the regulatory authorities in the relevant working groups, had defined the necessary framework guidelines, ENTSO-E drafted network codes in eight areas by the end of 2013:

- Capacity allocation and congestion management (CACM)
- Requirements for Generators (RfG)
- Demand Connection Code (DCC)
- Forward Capacity Allocation
- Electricity Balancing
- Network operation rules (three separate codes for system management, operational planning and frequency control and reserves).

The national regulatory authorities represented by ACER took a close look at these drafts and, with a view to the fulfilling of the guideline requirements, where necessary called for extensive improvements in the interest of finding consistent and efficient solutions. For its part ACER was in many cases unable to recommend, without qualification, that the European Commission adopt the code – even after it had been revised by ENTSO-E. In these cases it was then up to the Commission to take further concrete changes proposed by ACER into consideration. The interaction between the regulatory authorities, the network operators' associations, market players and the Commission has proved to be exceedingly complex and time-consuming. Nevertheless, all those involved recognise that it is necessary for a balance to be struck among the various interests and appropriate solutions to be found for contentious issues.

By the end of 2013 the Commission had not yet initiated any formal proceedings in the competent comitology committee, but only regular informal discussions. Major factual issues related to the network code which also have an impact on the other codes require thorough-going clarification. The comitology proceedings on this network code will probably be completed in the first quarter of 2014.

On 20 December 2013 ACER forwarded to ENTSO-E an Opinion on the forward capacity allocation network code, focusing on the compatibility of the draft code with the framework guidelines. Work is currently being done on comments dealing with other aspects, and these are also to be sent to ENTSO-E. The Bundesnetzagentur is closely involved in both the formal Opinion and the more extensive comments. ENTSO-E expects to get the new version of the draft network code in spring 2014.

Three days later, on 23 December, ENTSO-E let ACER have the draft of the Network Code on Electricity Balancing. The Opinion will be prepared by the national regulatory authorities, coordinated by ACER, by 24 March 2014 and then forwarded to ENTSO-E. Working in the various bodies, the Bundesnetzagentur is taking an active part in the development of the Opinion.

Market coupling for European electricity (part) markets

At the end of 2013 the launch of the day ahead market coupling of the north western European Member States (the NWE region) was set for 4 February 2014. This represents a further important step in the direction of the European internal electricity market, a project in which the Bundesnetzagentur has played an active role. The creation of a joint platform for intraday trading in the NWE region has also taken on a concrete form. With the Bundesnetzagentur's help the electricity exchanges were able to agree on a single IT provider, and progress was made in the contract negotiations of the power exchanges with each other and with the selected IT provider. The agreements are expected to be concluded in 2014, which would enable a start to be made in the same year on the development of the platform.

The launch of the flow-based calculation method in the CWE region (central and western Europe) is targeted for the end of 2014. In closely interconnected networks the use of this method can lead to a greater degree of overall benefit. The method allows for the calculation of cross-border interconnector capacities to include not only the cross-border lines but also the lines of the complete network. This enables TSOs to calculate network utilisation more accurately and provide more capacity at the borders.

Security of supply in Europe

The Transmission System Operator Security Cooperation initiative (TSC), which was established in 2008, pursues the objective of promoting the regional European cooperation of TSOs with a view to ensuring system security.

The central task of the TSC initiative is to coordinate multilateral remedial actions, that is, measures to guarantee system security which involve more than two countries. Such measures are undertaken when unilateral or bilateral remedial actions do not seem likely to be successful.

The joint office of the members of the TSC initiative was opened in Munich on 25 October 2013. The Bundesnetzagentur was strongly in favour of this move because, quite apart from the fact that having a joint central location for the members of the TSC initiative makes it far easier to coordinate at the local level as well as elsewhere, there is bound to be a positive effect on the public image.

In order to continue to ensure the cross-border coordination of the multilateral redispatch measures and thus do justice to the importance of the TSC initiative, the pilot phase was extended until mid-2014. The follow-up operational phase will be prepared in detail in the intervening time and open issues settled in contacts between the members of the TSC initiative and the regulatory authorities.

Loop flows

In obedience to the laws of physics, electricity always seeks the path of least resistance. One result of this is that electricity which is generated in northern Germany and sold to Austria does not flow exclusively through the German grid but also seeks pathways through the Polish and Czech grids (so-called "transit flows"). By way of contrast, "loop flows" occur when electricity generated in northern Germany and consumed in southern Germany takes the detour through Poland and the Czech Republic back into the German grid. Because transit and loop flows take place involuntarily, but have to be included by the TSOs in their capacity calculations for reasons of system security, there is then less capacity available for commercial electricity trading. In addition, unexpectedly large amounts of electricity generated by wind power can produce situations in which the N-1 security of the grids is in jeopardy.

The most effective solution to the problem of loop and transit flows is to expand the grid in accordance with demand and subject to economic principles. As a great deal of time is required to expand the grid, the network operators at 50Hertz (in Germany) and PSE (in Poland) have reached agreement on a solution which can be implemented at short notice.

The solution provides for grids outside Germany to be relieved of the pressure of transit and loop flows by erecting and operating so-called phase shifting transformers (physical PSTs). The transformers can limit the cross-border flow of electricity via the interconnectors and they are, in the medium term, to be installed at the German-Polish border and probably also at the German-Czech border. As a stopgap until the physical PSTs are set up on the German-Polish border, which are expected to start operation in 2016, the planning for the immediate future is to install an additional cross-border redispatch regime, that is, a virtual phase shifting transformer (vPST). In general terms the vPST has a similar effect to that of the physical PST. It limits unplanned flows of electricity through Poland and the Czech Republic to southern Germany and Austria, thus ensuring the security of Polish and German grids. The vPST also makes it possible for capacity to be made available for commercial electricity trading between Germany and Poland. What normally happens when a virtual PST is employed is that the output of power plants in the 50Hertz control area is ramped down and that of power plants in the PSE control area is ramped up. In case of need it is also possible for further redispatch capacity to be activated in neighbouring grids, eg at TenneT (Germany) or APG (Austria).

The virtual PST mechanism was tested by 50Hertz and PSE in a pilot run from 8 January to 30 April 2013. The project partners assessed the pilot phase as having been, broadly speaking, a success.

The plan now is for the virtual PST mechanism to be converted into regular operations. Negotiations are currently in progress on the formulation of the contractual arrangements for 50Hertz and PSE, with assistance from the Bundesnetzagentur.

Trans-European energy infrastructures

EU Regulation 347/2013 on guidelines for the trans-European networks for energy (TEN-E Regulation) came into force on 15 May 2013. As of the Regulation's effective date, 1 June 2013, the Bundesnetzagentur has been responsible for performing the resulting tasks.

The various rules laid down in the TEN-E Regulation relate to projects of common interest (PCI). The European Commission published a draft Union list on 14 October 2013. This first Union list contains 20 projects of common interest directly related to Germany, 20 in the electricity sector, five in the gas sector and two in the oil sector. The list was given legal form as a delegated legal instrument and came into force on 10 January 2014.

As stipulated by the Regulation, the Bundesnetzagentur on 31 July 2013 brought out the methods and criteria for the assessment of investments in electricity and gas infrastructure. These data form the basis for the development of best practices for the setting of incentives by ACER.

The Bundesnetzagentur continued, in collaboration with ACER, to prepare the interpretative framework for the requirements of a cost allocation decision under section 12 of the TEN-E Regulation. In 2013 it concerned itself with four applications for cost allocation regarding projects of common interest.

The Bundesnetzagentur was designated as the authority with sole responsibility for the approval proceedings concerning projects of common interest on 15 November 2013. Thus it was possible to utilise the synergies resulting from the Grid Expansion Acceleration Act (NABEG) and the Planning Approval Responsibilities Ordinance and to bundle areas of competence. This ought to step up the acceleration of the approval proceedings.

International relations

Last year for the first time, during the Russian presidency of the G-20, the European energy regulators were asked to take an active part in the formulation of the final communiqué for the September 2013 summit. They reached agreement on the following priorities: ensuring the independence of the regulatory authorities, promoting and establishing efficient energy infrastructures, and improving the functioning of the energy markets. They also placed heavy emphasis on public and consumer interests. In this context they felt it was crucially important to press for further evolution of the regulatory authorities' internal working processes and to create effective channels for dialogue between themselves and the other relevant authorities.

Last year also saw another bilateral EU-US round table, now a regular event at which notes can be compared on the challenges faced by both sides. The discussions focused chiefly on the consequences of an altered regulatory landscape, with particular reference to the uncertainties of investment in energy infrastructure, the greater role of consumer interests and the new supervisory responsibilities for wholesale markets. The meeting confirmed how important the independence of the regulatory authorities is for the performance of the new duties.

The first joint workshop of CEER and the Mediterranean Energy Regulators (MEDREG) was held in Grasse on 19 November 2013. It was attended by representatives of regulatory authorities and industrial and financial institutions, who discussed the challenges facing the energy markets in the two regions and incentives for investment in infrastructure in the Mediterranean basin. They also addressed the tasks and problems associated with the integration of renewable energy sources in the market. They agreed that their bilateral cooperation should be widened and that joint working groups should work on technical projects in terms of the exchange of know-how and best practices.



Faster networks, greater transparency

In 2013 broadband rollout and measures to promote transparency with regard to the quality of connections were once again defining issues for the work of the Bundesnetzagentur. Further consumer protection issues such as switching providers, number misuse and telephone spam also played an important role.



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The number of broadband connections increased again in 2013, due mainly to an increase in the number of customers acquired by cable TV network operators. Increasing mobile data traffic is placing high demands on the performance of networks. The data volume rose considerably again last year.

Broadband was a defining issue in 2013 – not only for the telecommunications market, but also for the work of the Bundesnetzagentur. The results of the first broadband measurements were presented and a second measuring campaign was carried out. The Bundesnetzagentur also published key elements to promote transparency for broadband users. These formed the basis for the draft Transparency Ordinance published in February 2014. The discussion about network neutrality was another important topic. Other issues included the provision of additional frequencies for mobile broadband, the definition of framework conditions for the use of vectoring technology, and numerous rulings on charges.

The Bundesnetzagentur also helped consumers to resolve numerous problems once again last year, including problems relating to switching providers. It also took action against number misuse and telephone spam.

Market watch

Broadband continued to be a defining issue for the telecommunications market. The use of smartphones and tablets gave rise to a rapid increase in mobile data traffic. The number of text messages sent fell sharply due to new mobile applications.

Telecommunications services as a whole

External revenue

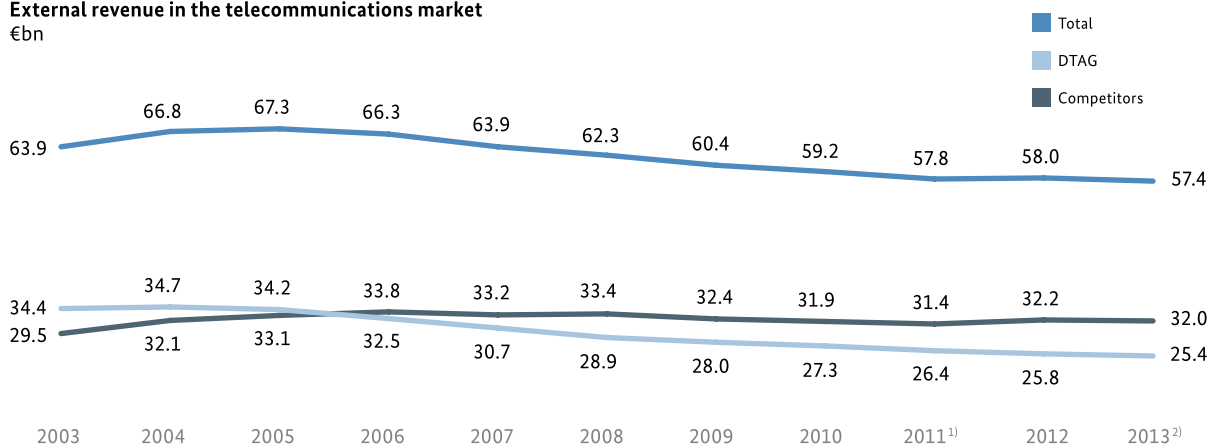
Preliminary calculations put external revenue on the telecommunications market at approximately €57.4bn in 2013, which represents a year-on-year decrease of €0.6bn (one percent).

Alternative providers generated external revenue of €32bn (down 0.6 percent). Compared with 2012, Deutsche Telekom AG (DTAG) was able to slow down the negative development of its external revenue. In 2013 the company generated revenue of €25.4bn (down 1.6 percent compared with a reduction of 2.3 percent in 2012). Owing to the decrease in external revenue experienced by both alternative providers and DTAG, the market share of alternative providers in 2013 remained unchanged on the previous year at 56 percent.

External fixed network revenue decreased in the period from 2011 to 2013. Retail accounts for more than three quarters of this revenue. This includes external revenue generated from services for private, commercial and public-sector subscribers. Wholesale services for fixed-network, cable and mobile operators and service providers outside of the DTAG group accounted for over one fifth of external revenue. These services include wholesale products for voice traffic/telephony, broadband/Internet and infrastructure services.

External revenue generated using the cable TV infrastructure continued to grow. The lion's share of this revenue (90 percent) was attributable to retail.

External revenue in the telecommunications market
€bn



1) Updated figures
2) Forecast figures

External revenue by sector

	2011 ¹⁾		2012		2013 ²⁾	
	€bn	%	€bn	%	€bn	%
External revenue in the telecommunications market	57.8		58.0		57.4	
External revenue in fixed networks	24.97	100	24.40	100³⁾	24.08	100
Via retail	19.15	77	18.93	78	18.21	76
Via wholesale	5.06	20	5.02	21	5.30	22
Other external revenue	0.76	3	0.45	2	0.57	2
External revenue based on cable TV infrastructure	3.99	100	4.30	100	4.52	100³⁾
Via retail	3.61	90	3.91	91	4.18	92
Via wholesale	0.15	4	0.15	3	0.14	3
Other external revenue	0.23	6	0.24	6	0.20	4
External revenue from mobile services	25.85	100³⁾	26.53	100	26.17	100³⁾
Via retail (excluding terminal equipment)	18.55	72	18.88	71	18.80	72
Via wholesale	3.49	14	3.68	14	3.49	13
Via terminal equipment	2.46	10	2.79	11	2.73	10
Other external revenue	1.35	5	1.18	4	1.15	4
Other external revenue	2.98		2.79		2.58	

1) Updated figures

2) Forecast figures

3) Totals may deviate from rounded cumulative figures

More than 70 percent of external mobile revenue was generated from retail business. This figure does not include external revenue from terminal equipment, which is reported separately and accounted for 10 to 11 percent of total revenue in the period from 2011 to 2013. Wholesale business remained constant, accounting for 13 to 14 percent of external revenue in this period.

Investments in fixed assets

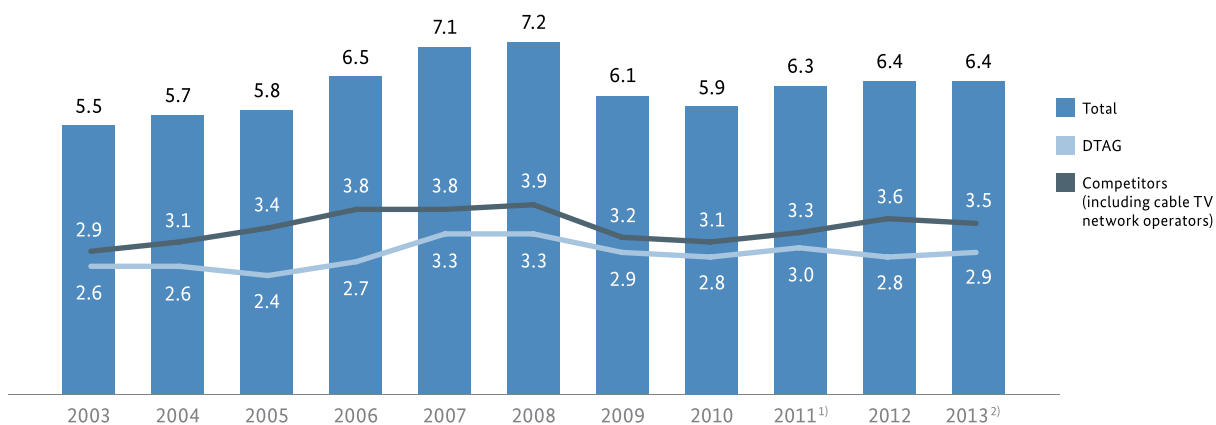
Investments in fixed assets on the telecommunications market came to around €6.4bn in 2013 and therefore

remained on a par with the previous year. Alternative providers invested €3.5bn (down €0.1bn on 2012). DTAG increased its investments by €0.1bn to €2.9bn, while the share of investments made by alternative providers fell from 56 percent in 2012 to 55 percent in 2013.

Investment in cable TV infrastructure amounted to €0.9bn in 2013, or 14 percent of all investment on the telecommunications market.

Investments in fixed assets in the telecommunications market

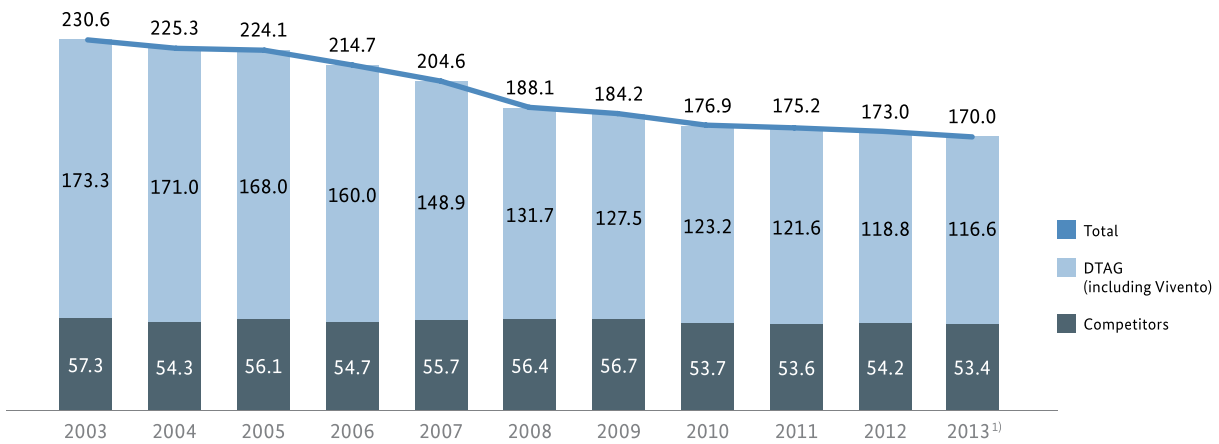
€bn



1) Updated figures

2) Forecast figures

Employees in the telecommunications market
Thousands



1) Forecast figures

In the period from 1998 to 2013, a total of €112.4bn was invested in fixed assets on the telecommunications market. Of this amount, €58.9bn (52 percent) was attributable to alternative providers and €53.5bn to DTAG.

Employment

A total of 170,000 people were employed at companies on the telecommunications market at the end of 2013, 1.7 percent less than in 2012 (173,000). 53,400 people were employed by alternative providers, while staff numbers at DTAG fell to 116,600 (down 2,200).

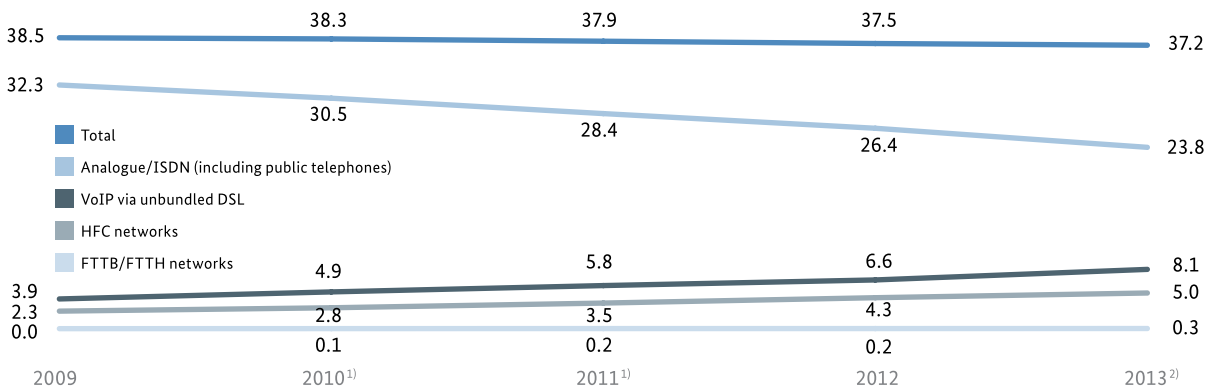
Fixed-line telecommunications services

Voice connections

The last few years have seen contrasting trends in communication using conventional telephone lines (analogue/ISDN) on the one hand and unbundled DSL lines¹⁾ (VoIP) and HFC networks of cable TV network operators on the other hand; demand for conventional telephone lines has fallen, while DSL and HFC telephony have increased. Numerically, optical fibre telephony (FTTB/FTTH) still has relatively little significance. There was a slight overall decrease in demand for voice communication connections in fixed networks.

Voice connections

Telephone connections (m)



1) Updated figures
2) Forecast figures

Figures for 2011 onwards excluding self-supply

1) Provision and operation of the DSL for unbundled DSL connections is not tied to a conventional analogue or ISDN telephone connection.

Telephone connections and competitors' shares in fixed networks

	2011 ¹⁾			2012			2013 ²⁾		
	Total stock	Competitors' share		Total stock	Competitors' share		Total stock	Competitors' share	
	m	m	%	m	m	%	m	m	%
Analogue lines	17.37	1.74	10.0	16.09	1.55	9.6	14.65	1.42	9.7
ISDN basic rate lines	10.83	3.63	33.5	10.10	3.26	32.3	9.02	2.86	31.7
ISDN primary rate lines	0.091	0.03	33.0	0.088	0.03	34.1	0.088	0.03	34.1
Public telephones	0.060	0.001	1.7	0.050	0.001	2.0	0.048	0.001	2.1
Voice access via HFC networks	3.55	3.55	100.0	4.30	4.30	100.0	5.01	5.01	100.0
Voice access via FTTB/FTTH networks	0.160	0.160	100.0	0.213	0.209	98.1	0.268	0.256	95.5
Voice access via unbundled DSL connections used for VoIP	5.83	5.32	91.3	6.64	5.70	85.8	8.08	6.09	75.4
Total connections	37.89	14.43	38.1	37.48	15.05	40.2	37.16	15.67	42.2

1) Updated figures

2) Forecast figures

Figures excluding self-supply

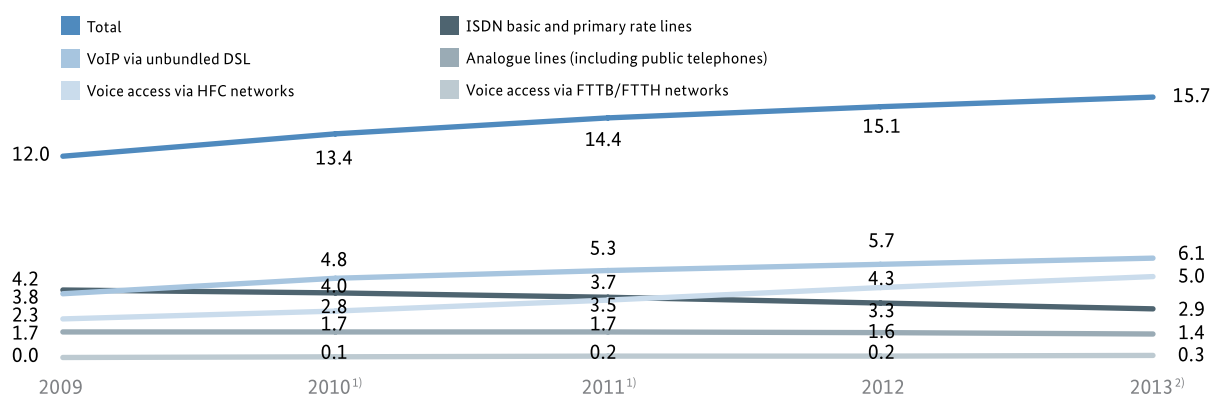
Analogue remained the most widely used connection type in the fixed network in 2013, although the number of analogue lines fell by around nine percent to an estimated 14.7m. At the same time, the number of ISDN basic rate lines fell to around nine million. The total number of ISDN primary rate lines²⁾ stagnated at just under 90,000.

By contrast, there was an increase in the number of unbundled DSL lines used for VoIP (full connections) and in telephony using HFC networks. The total number of unbundled DSL lines for VoIP increased to

an estimated 8.1m in 2013, representing a year-on-year increase of approximately 22 percent. This was mainly due to business from DTAG. The number of HFC connections from cable TV operators used for telephony increased to around five million (up 17 percent). By the end of 2013, the number of voice lines in optical fibre networks had also risen to approximately 0.27m. Conventional fixed-line connections are gradually being replaced by alternative technologies. The total number of public payphones (coin- and card-operated) stood at around 48,000 at the end of the year.

Telephone connections from alternative subscriber network operators

m



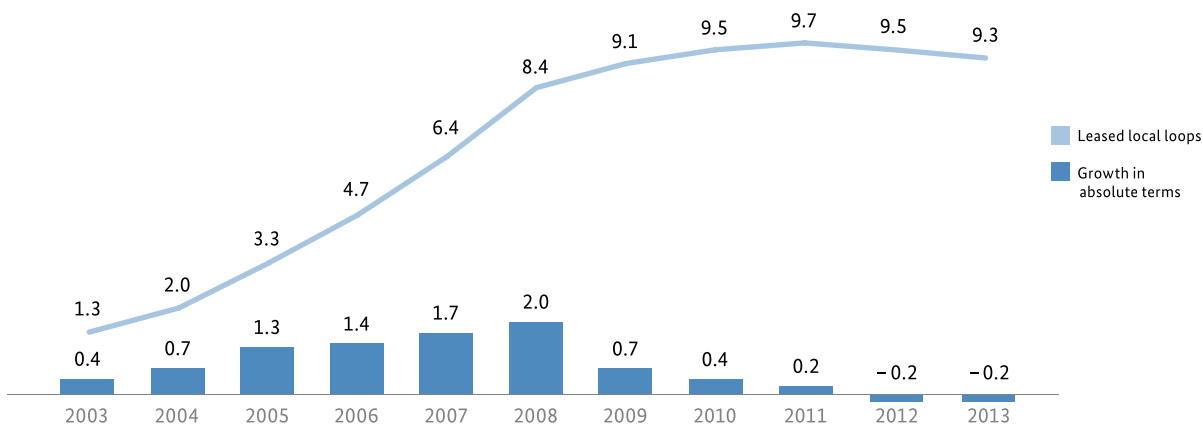
1) Updated figures

2) Forecast figures

Figures for 2011 onwards excluding self-supply

2) Figures for ISDN primary rate lines are based on estimates.

Volume of leased subscriber lines
m



DTAG's competitors had an estimated 15.7m telephone lines at the end of 2013, another year-on-year increase of around 0.6m. While the number of analogue and ISDN basic rate lines of alternative subscriber network operators decreased further, their share of unbundled DSL lines for VoIP and telephone lines in HFC and optical fibre networks continued to grow. The growth rate for VoIP lines in 2013, at approximately seven percent, was significantly lower than that for voice lines in HFC networks (around 17 percent). The number of voice lines in optical fibre networks of DTAG competitors rose to approximately 0.26m.

There were around 190 alternative subscriber network operators³⁾ providing telephone connections at the end of 2013, offering consumers a choice of analogue, ISDN, unbundled DSL for VoIP, and voice lines in HFC and optical fibre networks. The lines offered by alternative providers were operated on the basis of contracts concerning access to the DTAG local loop, on the basis of DTAG's ATM/IP bitstream and resale wholesale products, using the alternative providers' own local loops, or the wholesale products of alternative carriers (bitstream or resale).

Competitors were leasing approximately 9.3m local loops from DTAG at the end of 2013, which represents another decrease. As in the previous year, the number fell by approximately 0.2m in 2013.

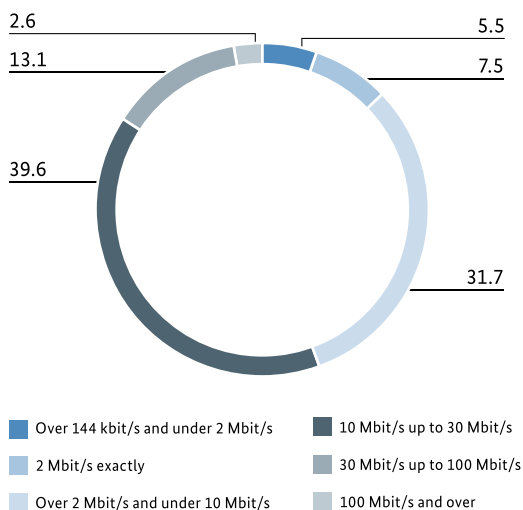
The main reasons for this decrease are likely to be the significant customer gains made by cable TV network operators on the broadband market. In addition, rollout of optical fibre networks in individual cities by alternative carriers is seeing leased copper pairs replaced by these carriers' own optical fibre cables.

Broadband connections

Most broadband connections within fixed networks are based on copper lines (DSL) and HFC cable networks. Other connection technologies include optical fibre cables, satellite, wireless infrastructures (BWA) and powerlines.

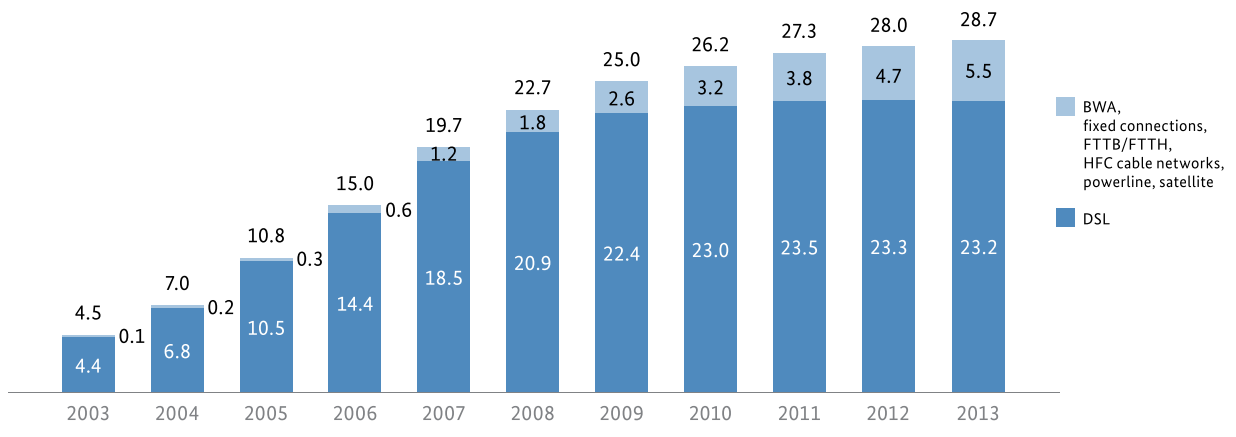
In total, there were around 28.7m operational broadband connections at the end of 2013, with DSL continuing its dominance as the connection technology of choice (23.2m lines and an 81 percent share), followed by broadband lines from cable TV network operators (around 5.2m). All other technologies accounted for some 0.3m connections.

Distribution of broadband connections by speed in 2013
%



3) Operating companies; around 140 from a consolidated perspective.

Broadband connections in fixed networks
m



On a national average, there continues to be a significant discrepancy between the high bitrates on offer and the bandwidths actually demanded by customers. Although providers are increasingly offering speeds of 50 Mbit/s, and even over 100 Mbit/s, just under half of broadband customers still used downstream bandwidths of less than 10 Mbit/s. However, use of particularly high bitrate connections with transmission rates in excess of 30 Mbit/s has increased (2013: 15.7 percent; 2012: 12.1 percent).

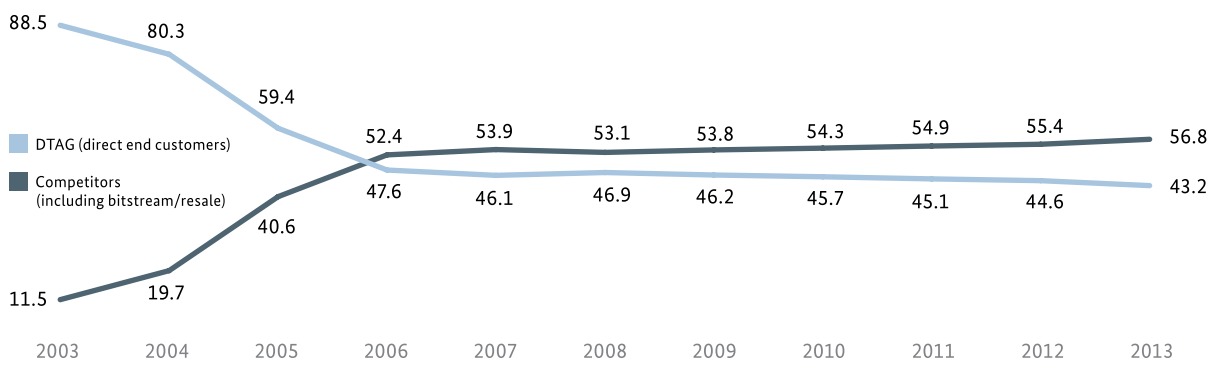
DTAG's competitors achieved a market share of approximately 57 percent of the total number of broadband connections at the end of 2013, thereby expanding their share of the broadband market once again.

DSL connections

There were some 23.2m live DSL connections at the end of 2013, which represents another slight decrease in the total number of DSL connections. 12.3m of these were provided by DTAG and around 10.9m by competitors (47-percent market share). VDSL (DTAG and competitors) accounted for approximately seven percent of the total number of DSL connections in 2013.

Full DSL-based connections once again played an increasingly important role. These connections provide both Internet and exclusively Internet-based telephony (VoIP) via the DSL line. As a result, conventional analogue and ISDN connections are no longer required. DTAG and its competitors were providing an estimated 8.1m full DSL-based connections at the end of 2013.

Share of broadband connections in fixed networks
%

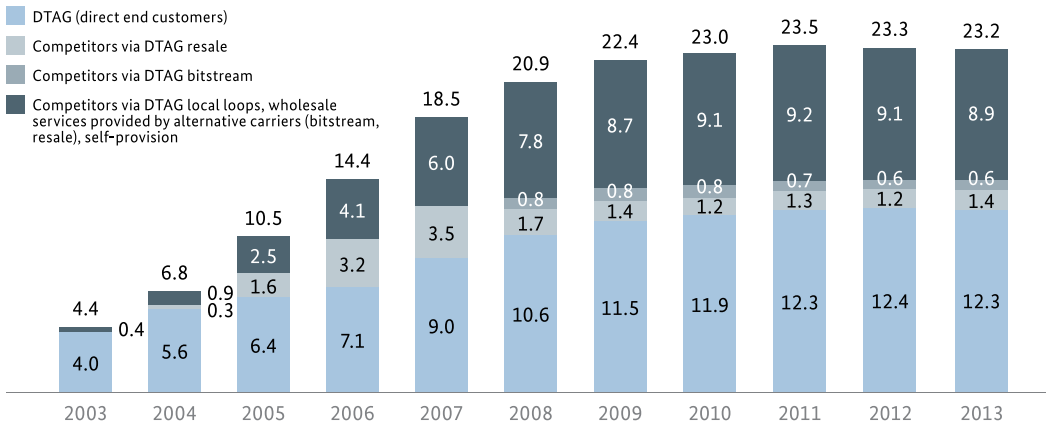


POST

RAIL

DSL connections

m

**Broadband connections provided by cable TV network operators**

At the end of 2013 around 5.2m customers were using Internet connections provided by cable TV network operators. With 800,000 new customers compared with the end of 2012, cable TV network operators continued the upward trend of the previous year.

The bandwidths demanded by customers are significantly higher than the average bandwidths provided by the different connection technologies. At the end of 2013 over 62 percent of customers at one cable TV network operator were using Internet connections with speeds of 30 Mbit/s or more, and almost 14 percent were using connections with speeds of 100 Mbit/s or more. In combination with networks consisting of optical fibre and coaxial lines, the DOCSIS 3.0 transmission standard enables download speeds of up to 150 Mbit/s. The advantage of this infrastructure is that

it can be adapted flexibly to demand. A number of cable TV network operators are already offering state-of-the-art FTTH technology to their customers.

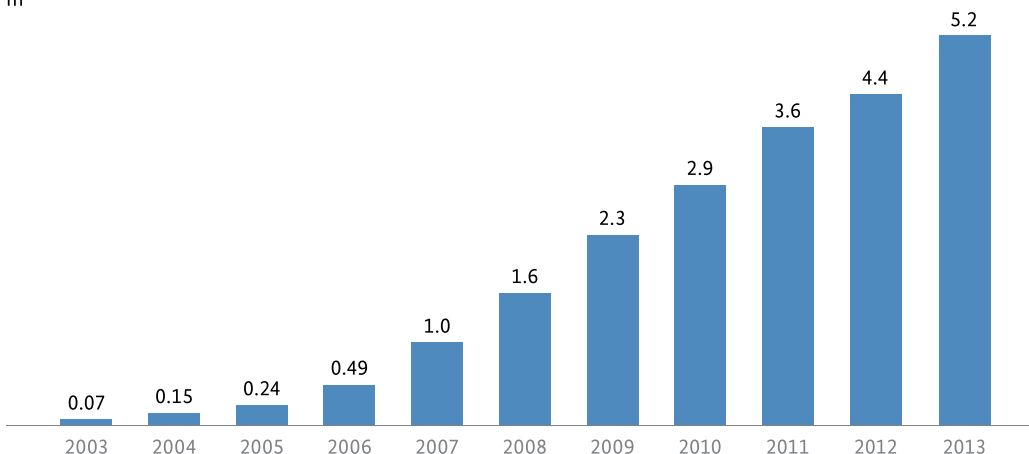
Internet access via optical fibre cables (FTTB/FTTH)

Thanks to their outstanding transmission properties, optical fibres provide the ideal infrastructure for data transmission and are considered to be the transmission medium of the future.

Limited by geographical availability, user figures are still relatively low for both FTTB and FTTH connections, with some 200,000 customers accessing the Internet via FTTB and just under 68,000 doing so via FTTH at the end of 2013. However, the potential is much greater: around 1.4m subscribers could be connected to FTTB/FTTH infrastructures.

Internet access via cable TV network operators

m



Satellite Internet connections

Satellite systems make it possible to access the Internet from virtually any location. At the end of 2013, almost 31,000 consumers were using this technology. Although a new satellite technology introduced in 2011 offers download speeds of up to 36 Mbit/s, demand for this technology remains low due to the cost advantage of connections provided via DSL or cable TV networks. In specific circumstances, however, satellite Internet connection can make a contribution to ensuring full broadband coverage.

Broadband traffic volumes

According to initial estimates by the Bundesnetzagentur, the traffic volume via fixed broadband connections increased significantly to more than eight billion GB in 2013. This corresponds to an average data usage of over 22 GB per month and connection. These figures do not include traffic volumes from DTAG's IPTV service.

Call minutes

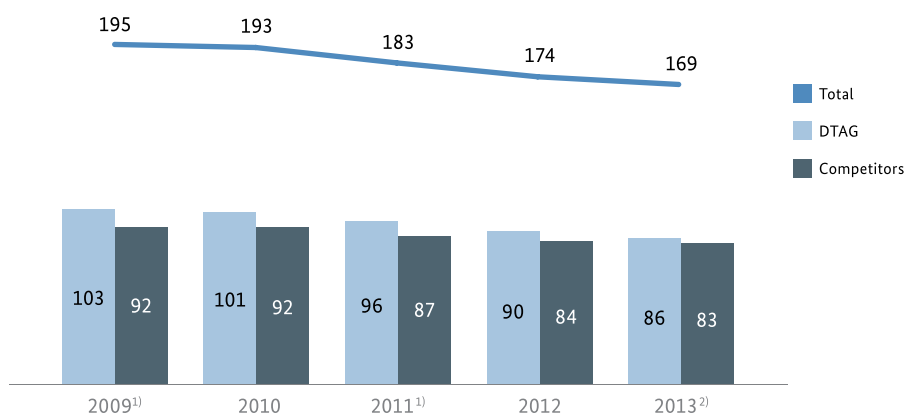
The total volume of outgoing call minutes⁴⁾ via conventional telephone networks and IP-based networks continued to decrease, owing to an increasing shift in traffic volumes to mobile networks. Around 83bn of the estimated 169bn or so total call minutes in 2013 were registered in the networks of DTAG's competitors. This represents a slight increase in the share of call minutes attributable to competitors. Fixed-line call minutes to foreign fixed and mobile networks amounted to around 12.9bn. Calls to national mobile networks accounted for some 10.5bn minutes.

More than half of the call minutes attributable to alternative providers were handled via DSL and cable TV infrastructures. This reflects the continuing shift in call volumes from the conventional telephone network to VoIP networks. A total of approximately 50bn call minutes were made via IP-based networks in 2013 (DTAG and competitors). VoIP technology therefore accounted for roughly 30 percent of all call minutes and this share is likely to increase considerably in the coming years.

Although there has been a sharp decrease in the use of call-by-call and preselection options in recent years, just under half of all call minutes are still handled directly or indirectly via alternative providers.

The volume of indirect calls was around seven billion minutes at the end of 2013, with preselection call volumes significantly exceeding call-by-call. The number of lines with preselection in the DTAG network was an estimated one million at the end of 2013 compared with 1.3m in 2012.

Outgoing call minutes in fixed networks
bn

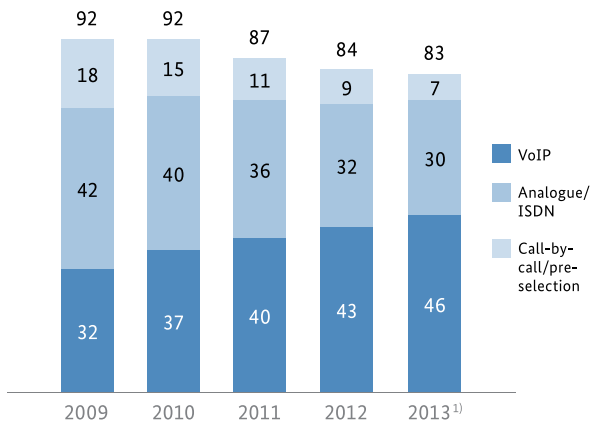


1) Updated figures
2) Forecast figures

4) Calls within Germany, international calls, and calls to German mobile networks

POST
RAIL

Call minutes via alternative providers
bn



1) Forecast figures

Mobile communications

Subscribers

At the end of 2013 there were just over 115m SIM cards⁵⁾ activated by network operators, around two million more than at the end of 2012 (113.16m). This therefore represents a new record. Statistically speaking, each inhabitant now has 1.4 SIM cards. The number of LTE subscribers rose sharply from one million at the end of 2012 to 5.6m at the end of 2013.

The widespread use of two or three devices leads to these devices not being in constant use. If only SIM cards in active use are taken into account, the actual number of subscribers 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 107.65m active SIM cards at the end of 2013 (end of 2012: 99.31m).

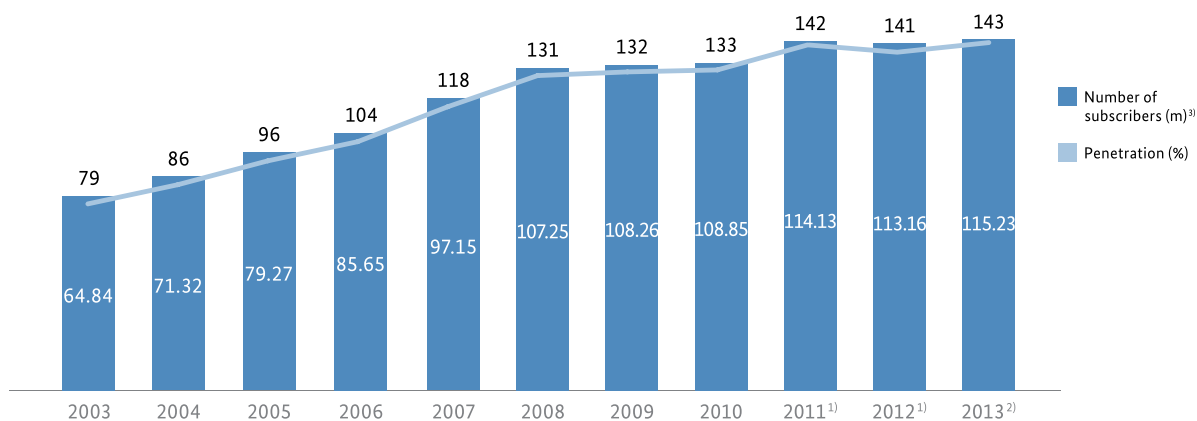
The share of prepaid cards decreased from 47 percent at the end of 2012 to 43 percent at the end of 2013. Service providers saw their percentage share of active subscribers increase to 20 percent in 2013 (2012: 16.5 percent).

An increasing share of SIM cards are being used for data communication between devices (M2M). 4.3m of these cards were in use at the end of 2013 compared with 2.3m at the end of 2012.

Mobile broadband

The increase in mobile data traffic presents major challenges to the performance of the networks. Some 156m GB were transmitted in 2012 and this figure once again rose considerably to 267m GB in 2013.

Subscribers and penetration in mobile communication networks

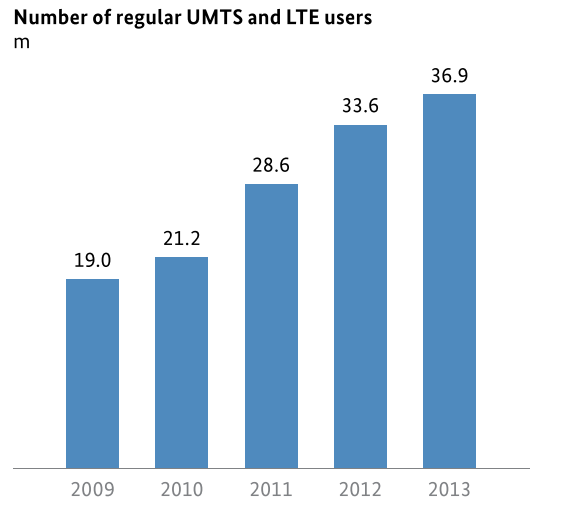
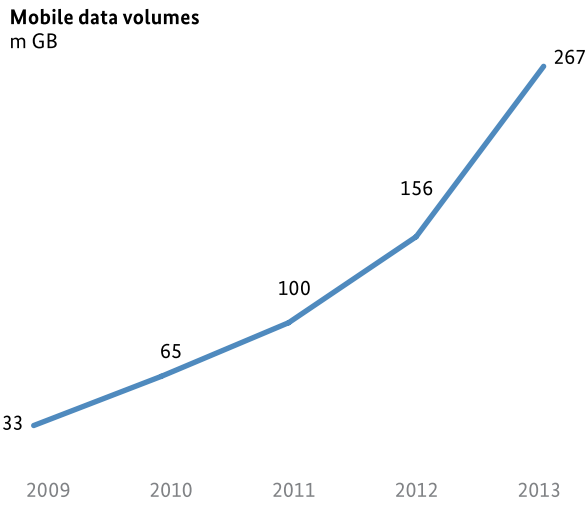


1) Updated figures

2) Forecast figures

3) Number of SIM cards according to network operators' annual reports

5) There is no uniform definition of the number of SIM cards specified in the business reports of network operators. Each company decides independently how to count SIM cards and when adjustments are required. The statistics provided by companies can change dramatically for individual network operators, and the subscriber numbers published in business reports can be incomplete.



A growing number of SIM cards are being employed in devices in order to use mobile data transmission services. At the end of 2013 just under 37m of these cards were being used in UMTS- and LTE-enabled devices.

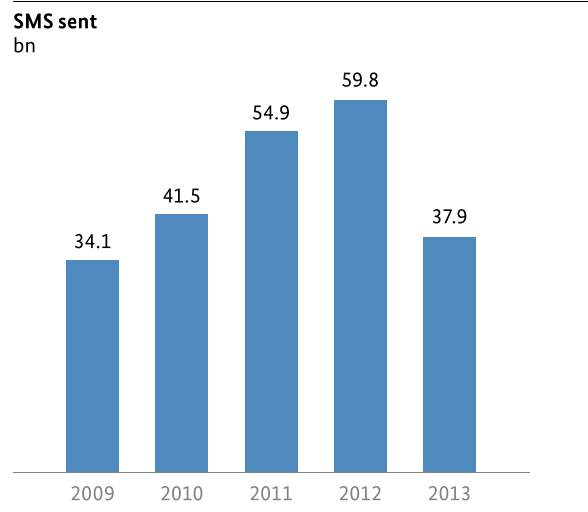
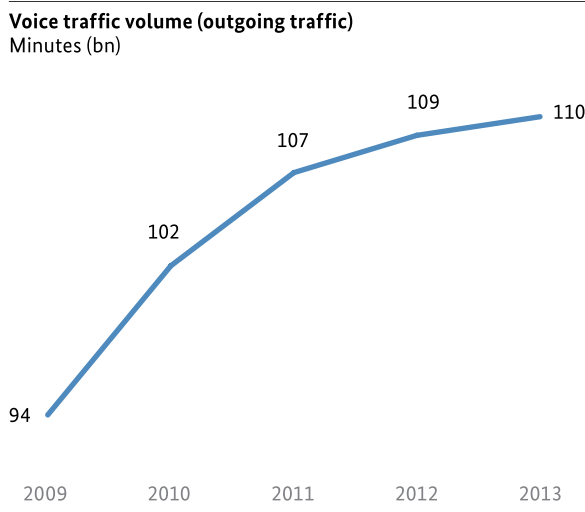
42 percent by the end of 2013. E-Plus began rolling out LTE in March 2014.

Base stations play a key part in the expansion of mobile networks. At the end of 2013 there were 17,800 LTE base stations. As a result of expansion, LTE network coverage in relation to population increased to 67 percent for each of the two largest network operators compared with 46 and 53 percent respectively at the end of 2012. Geographical coverage at the end of 2013 increased to 56 and 65 percent compared with 44 and 59 percent respectively at the end of 2012. Telefónica had achieved LTE population coverage of

According to the German government's broadband atlas, LTE was available to 70 percent of German households by mid-2013.

Text messaging

There was a marked decline in the use of the Short Message Service (SMS) in 2013. Due to the growing number of smartphones, text messages are increasingly being replaced by messaging apps and email. The number of text messages sent fell to 37.9bn in 2013.



Call minutes

According to the figures provided by network operators, the volume of outgoing calls made by mobile subscribers in Germany totalled more than 110bn minutes in 2013, one billion minutes more than in 2012.

Growth rates in mobile telephony are therefore now only marginal. This is likely to be due to a change in communication behaviour, which has seen a rise in the use of email and apps.

Key figures and competitors' shares in the telecommunications market

Key figures	2011	2012	
Revenue (€bn)	57.8 ¹⁾	58.0	
Investments (€bn)	6.3 ¹⁾	6.4	
Employees	175,200	173,000	
Telephone lines/access points (m)	37.9 ¹⁾	37.5	
Analogue/ISDN (including public telephones)	28.4 ¹⁾	26.4	
VoIP via unbundled DSL	5.8	6.6	
Voice access points via HFC networks	3.5	4.3	
Voice access points via FTTB/FTTH networks	0.2	0.2	
Total fixed broadband connections (m)	27.3	28.0	
DSL	23.5	23.3	
DTAG	12.3	12.4	
Competitors	11.2	10.9	
Local loops, wholesale services provided by alternative carriers, self-provision	9.2	9.1	
Bitstream (DTAG)	0.7	0.6	
Resale (DTAG)	1.3	1.2	
Cable TV network operators (competitors)	3.6	4.4	
Broadband penetration rate (% of households) ²⁾	68.8	70.1	
DTAG leased subscriber lines (m)	9.7	9.5	
Mobile subscribers (contracts in m) ³⁾	114.1	113.2	
Mobile penetration rate (% of inhabitants) in % ^{3) 4)}	142.1 ¹⁾	140.5 ¹⁾	
Competitors' shares (%)	2011	2012	
Revenue	54	56	
Investments	52 ¹⁾	56	
Telephone lines/access points	38	40	
Fixed broadband connections	55	55	
DSL (including bitstream/resale)	48	47	47

1) Updated figures

2) Number of households according to Eurostat

3) According to network operators' annual reports


4) Number of inhabitants according to destatis, 2011 Census: 31.12.2011: 80.3m; 31.12.2012: 80.5m; 31.12.2013: provisionally as in 2012

5) Forecast figures

Consumer protection and advice

The Bundesnetzagentur once again helped consumers to resolve numerous problems, including problems relating to switching providers. It also took action against number misuse and telephone spam.

number misuse and telephone spam, the allocation of telephone numbers, the provision of telephone connections, and international roaming.

 For more information on combating number misuse and telephone spamming, see pages 82-86.

Many consumers were not satisfied with the customer service and business conduct of individual telecommunications companies. Common complaints related to the provision of incorrect advice or insufficient transparency when concluding contracts or switching tariffs. Other complaints related to the failure to provide contractually agreed services (eg insufficient data speeds for broadband connections), unwanted contract extensions and lengthy fault clearance. Consumers affected by such problems regularly requested information about cancelling contracts and seeking compensation. However, due to the restrictions of the Legal Services Act (Rechtsdienstleistungsgesetz), the Bundesnetzagentur is only able to provide limited assistance in matters relating to civil law.

Many consumers also contacted the Consumer Advice service with questions relating to individual items on their telephone bills, including call-by-call connections, short code services (premium SMS) and data connections. They expressed dissatisfaction not only with the lack of transparency, but also with the way in which their billing complaints are dealt with. In some cases, the service address of the third-party provider was not stated on the invoice, while in others the telecommunications provider was unable to provide proof of the contentious calls in the form of a technical report. Some companies failed to respond to their customers' complaints and instead began issuing warnings or involved debt collection agencies.

Many consumer enquiries pertaining to relocation related to service provision at the new place of residence and to contract termination in instances where the telecommunications provider is no longer able to provide the agreed services. The most frequent bone of contention in these cases was the application of the statutory three-month notice period.

General consumer enquiries and complaints

Once again many consumers contacted the Bundesnetzagentur's Consumer Advice service in 2013. A total of 66,617 enquiries and complaints were received in connection with telecommunications, energy, postal and rail services. The majority of enquiries related to telecommunications (48,181 complaints and enquiries), followed by energy (8,180).

Almost half (45.8 percent) of all complaints and enquiries pertaining to telecommunications related to switching providers. However, many also related to existing telecommunications contracts (21.7 percent), invoices issued by telecommunications providers (9.1 percent) and relocation problems (five percent). Consumers also sought advice on how to deal with

Many complaints also related to access to the telephone network, irrespective of whether the line was provided by Telekom Deutschland GmbH (Telekom) or its competitors. In many such cases, the Consumer Advice service was able to reverse port blocks and obtain reliable connection dates. Many consumers also contacted the Bundesnetzagentur about keeping their private or business numbers or the reallocation of these numbers.

As in the previous years, the Consumer Advice service also received many enquiries regarding international roaming in 2013. These mostly related to the implementation of the EU Roaming Regulation. In cases where companies failed to implement the regulated European tariffs in line with the Regulation, the Bundesnetzagentur requested that these companies comply with the requirements.

Switching providers

When a switch of providers occurs, telecommunications providers and network operators must ensure that there is no disruption to the service provided to subscribers by the company they are leaving before the contractual and technical requirements for switching to the new provider have been met. In addition, service must not be interrupted for more than one calendar day when switching providers. If the switch to the new provider is unsuccessful, the donor provider is initially obligated to resume service provision.

The Bundesnetzagentur has set up a complaints office that people can contact in the event of problems switching providers. Upon receipt of a complaint, the Bundesnetzagentur approaches the companies concerned with a view to quickly and successfully completing the process of switching providers. The aim is not only to solve the specific problem quickly, but also to identify systematic shortcomings in the process of switching providers and rectify these in cooperation with the companies concerned.

In 2013 the Bundesnetzagentur received more than 22,000 enquiries and complaints about switching providers (including repeat enquiries after the switch). In around 4,500 cases, the Bundesnetzagentur had to push the companies to complete the switch.

Due to the high number of complaints, the Bundesnetzagentur initiated fine proceedings against three companies in 2013. As part of these proceedings, investigations were conducted into whether the companies had failed to meet their obligations as both a donor provider and a recipient provider. The proceedings were completed in February 2014 and the companies in question were fined a total of €225,000.


The Bundesnetzagentur is of the opinion that companies operating on the market need to quickly establish automated processes to reduce the error rate when switching providers. The development of an electronic interface for switching providers was a major step towards facilitating the coordination processes between providers from both a technical and a legal perspective. However, the advantages of an electronic interface can only be realised in practice if the interface is used as widely as possible across the sector. The Bundesnetzagentur is supporting efforts to this end within the industry.

Quality and transparency

In 2013 the Bundesnetzagentur once again conducted a nationwide measuring campaign in which Internet users were able to check the speed of their broadband connection by testing the exact data rate via the website www.initiative-netzqualitaet.de. The results of the measurements were fed into a second study on Internet access service quality in Germany.

The Bundesnetzagentur conducted the first campaign of this kind in 2012. The results of that campaign were published in April 2013. The measurements supported the significant number of customer complaints concerning the differences between contractually agreed and actual bandwidths. Across all technologies, products and providers, the bandwidths recorded by participating users often did not match the maximum possible bandwidths advertised by their providers. With just under a quarter of a million evaluated measurements, the first measurements study was based on an extremely comprehensive volume of data.

To improve the situation for broadband users, the Bundesnetzagentur published key elements for the promotion of transparency in 2013. These key elements contain individual measures that aim to dramatically improve the information available to customers.

 For more information, please see "Rulings, activities and proceedings", beginning on page 88.

Dispute resolution

The Bundesnetzagentur's dispute resolution panel acts as an intermediary in disputes between consumers and telecommunications companies under the German Telecommunications Act (TKG). The aim of the dispute resolution process is to find a solution that is acceptable to both parties and to provide an efficient and cost-effective alternative to legal disputes.

A total of 866 requests for dispute resolution were received in 2013. There were also 270 other enquiries and requests for assistance. This represents a year-on-year increase of approximately 30 percent (2012: 674 requests), thereby continuing the upward trend of recent years. The increasing use of the dispute resolution panel is largely due to the 2012 amendment of the TKG, which gave the panel considerably more power. Dispute resolution proceedings can now also be initiated in the case of contract law disputes pertaining to consumer protection rights defined in the TKG. 15 percent of the requests made were withdrawn; 35 percent had to be rejected because the prerequisites for conducting dispute resolution proceedings were not met as there was deemed to be no violation of rights pursuant to the TKG.

Effective deterrent against nuisance calls

There was once again no let-up in spam calls in 2013. Thanks to a change in the law last year, it is now possible to take more effective action against large companies in particular.

Whether by means of a new mobile phone contract, free trial subscription, cheap electricity or a particularly promising financial product – companies in fiercely competitive industries are pulling out all the stops in the battle for each and every customer. Some are even resorting to unfair practices, such as spam calls without the prior consent of consumers, line identification restrictions or displaying a false number.

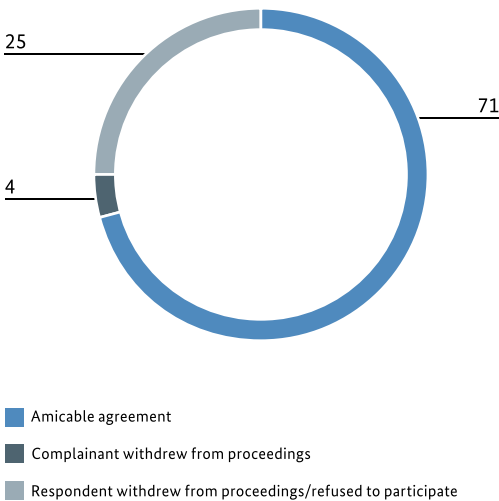


The Bundesnetzagentur received around 30,000 complaints relating to spam in 2013. Until now, the maximum possible fine for each offence has been €50,000 – too little to deter large companies. By increasing the maximum fine to €300,000, the new Improper Business Practices Act (*Gesetz gegen unseriöse Geschäftspraktiken*), which entered into force on 9 October 2013, serves as a more effective deterrent against such violations.

In November 2013, 14 Bundesnetzagentur employees also searched residential and business premises for the first time within the scope of investigations, seizing evidence and questioning witnesses at a company in North Rhine-Westphalia. Based on the complaints submitted by affected consumers and the evidence collected during the search, the company was fined €50,000 in March 2014.

Of the remaining 423 dispute resolution proceedings, the parties reached an agreement in 71 percent of cases. The percentage of proceedings in which the respondent asserted the right not to take part in the dispute resolution proceedings without offering a solution to the issue at hand fell once again as a result, from 31 percent in 2012 to just 25 percent.

Dispute resolution cases in 2013
%



The additional scope granted to the dispute resolution panel has led to both a significant rise in the number of dispute resolution proceedings and a shift in the focus of proceedings. By far the largest share (approximately 40 percent) of proceedings related to contractual disputes, chiefly concerning tariffs, compliance with agreed services, extension/termination of contracts and provision periods. This pushed complaints about billing, which accounted for approximately 25 percent of all complaints, down into second place. At around 23 percent, the share of dispute resolution proceedings relating to problems switching providers, relocation and number portability was almost on a par with the previous year's level.

Combating phone number misuse

As stipulated in the TKG, the Bundesnetzagentur is responsible for combating phone number misuse. It therefore takes action against, among other things, violations of obligations to state call prices and unlawful line identification restrictions. It also monitors compliance with the regulations on call queues. Infringements of competition law, such as spam, are another key focus of the Bundesnetzagentur's work. Its aim is to protect consumers from nuisance calls and

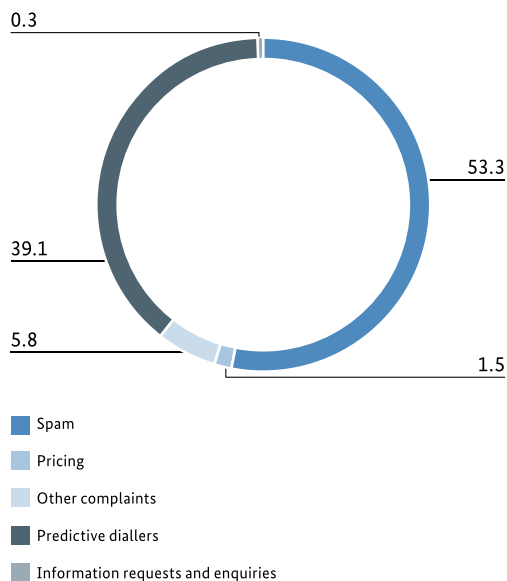
financial disadvantage and other market participants from unfair competition due to illegal activities.

In 2013 the Bundesnetzagentur received a total of 63,874 written complaints and queries regarding phone number misuse, 30 percent more than in the previous year (48,855). This development is principally due to the introduction of a new electronic complaints form in December 2012. This has been very well received and has significantly reduced the level of consumer reticence with regard to submitting complaints.

The Bundesnetzagentur also received 20,690 telephone enquiries and complaints about phone number misuse and telephone spam last year.

The Bundesnetzagentur initiated 3,924 administrative procedures in the area of phone number misuse last year. Extensive investigations were conducted in most instances. The deactivation of a total of 911 numbers was ordered in 173 cases. Bans were also placed on invoicing and payment collection for 63 numbers. An invoicing ban prevents the relevant amounts from being billed, while a payment collection ban protects consumers who have already received bills, but have yet to pay them, thereby preventing the billed amounts from being collected. The purpose of bans on invoicing and payment collection is to make number misuse financially unattractive, therefore curbing spam.

Main subjects of written complaints and enquiries in 2013
%



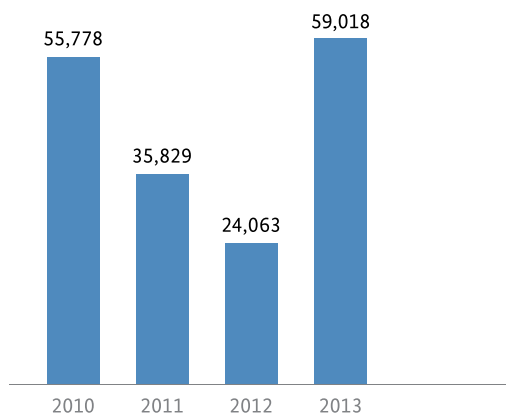
In 2013 a business model was banned in one case. Warnings were also issued in a number of instances, where individuals or companies were deemed to be acting unlawfully, but stopped their illegal activities with immediate effect.

Spam

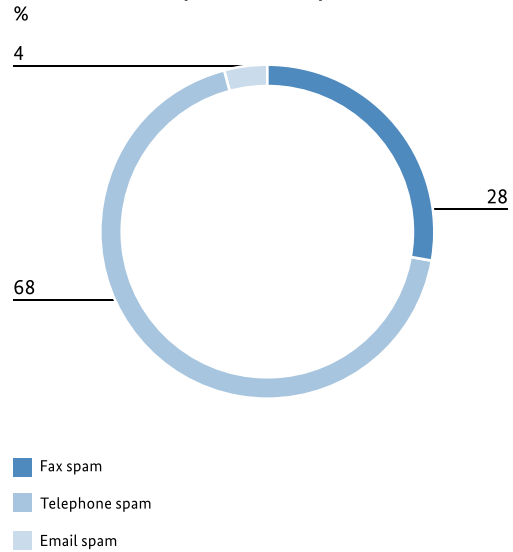
The Bundesnetzagentur's work in the area of phone number misuse focuses on spam, including telephone, fax and email spam. However, the Bundesnetzagentur can only intervene if a telephone number is disclosed. In order to intervene in the case of email spam, a number – for instance, a contact telephone number – must therefore be specified in the email. The most common forms of spam are text-message spam, spam in the form of promises of prizes, ping-pong and predictive diallers. Predictive diallers are usually computer-based programmes that call several numbers at once. As soon as the first subscriber takes the call, the other calls being attempted at the same time are interrupted and these numbers are dialled again later.

The number of complaints relating to spam alone amounted to 59,018 in 2013, more than twice as many as in 2012 (24,063). The majority of complaints received by the Bundesnetzagentur in this area related to telephone spam (68 percent), followed by fax spam (28 percent) and email spam where a telephone number is specified (4 percent). In the area of telephone spam, the number of complaints regarding predictive diallers has increased considerably since October 2013.

Written complaints about spam



Breakdown of complaints about spam in 2013



Call-by-Call

In the area of call-by-call services, the Bundesnetzagentur monitors the legal requirement to provide price information in accordance with the TKG. The TKG does not currently specify maximum prices for call-by-call services. Minute prices are therefore determined at the commercial discretion of providers.

2012 saw a sharp rise in the number of complaints following the introduction of the pricing message regulations. In response the Bundesnetzagentur initiated extensive administrative procedures and issued numerous warnings and individual invoicing and payment collection bans. Due in no small part to the Bundesnetzagentur's intervention, the majority of pricing messages were found to comply with the legal requirements in 2013.

Call queues

Telephone services are not usually rendered in call queues, but rather only when a caller's enquiry is being dealt with. Consequently, the legislator has issued stringent regulations for the use of call queues and tasked the Bundesnetzagentur with monitoring compliance with these regulations.

The definitive arrangement for call queues under the TKG entered into force on 1 June 2013. The legislation governing the use of call queues has been tightened further following the expiry of the transitional arrangement. Call queues can now only be used for special service numbers (such as 0180 and 0900 numbers) if a fixed charge is made for the call or if the call queue is free of charge for the caller. Special information duties must also be fulfilled in such cases.

The first time that a call queue is used during a call to a special service number, the call recipient must ensure that the caller is informed about the likely duration of the call queue as soon as that queue begins. The caller must also be informed about whether the call is subject to a fixed charge or whether it is free of charge to the caller for the duration of the call queue. Call queues can continue to be used for geographic numbers, mobile numbers and freephone numbers. A call queue is considered to exist when a call is taken or held, but the caller's enquiry is not dealt with. Downstream call queues, such as waiting times while a call is transferred after an agent has begun to deal with the enquiry, must also be free of charge.

Telephone hotlines on a tight leash

Call queues, though annoying, are predominantly free of charge as of June 2013. Companies that do not comply with the regulations can expect sanctions to be imposed on them.

"Welcome. Unfortunately, all of our service representatives are busy assisting other customers. Please be patient and stay on the line...". This is, more or less, the standard phrase many service hotlines used, followed by constant exposure to noise via music or advertisements. Minutes often went by before someone responded. Some providers considered it a lucrative business model to keep customers waiting as long as possible in an expensive call queue. As of 2013 this has been put to an end.

A revision of the German Telecommunications Act permits the use of call queues without limitations only for geographic numbers, freephone or local numbers and conventional mobile numbers. In other cases, eg with the special service numbers (0)180 and (0)900, call queues are only permitted if a fixed price applies for the call or if there are no charges for the duration of the call queue. If the provider uses call queues with special service numbers they are additionally obliged to state which of the two possibilities they are using and how long the customer is expected to wait.

If the hotline provider does not adhere to the law, the Bundesnetzagentur may issue warnings, disconnect call numbers or issue a ban on billing and collection for all of the calls for the time at which the violation took place. Moreover, fines of up to 100,000 euros may be imposed.



The Bundesnetzagentur received some 430 general complaints regarding call queues in 2013, a moderate amount compared with the number of complaints relating to other consumer protection issues. This may be explained on the one hand by the active implementation of the provisions by market players and on the other hand by the fact that the disputed charges are often relatively low for individual complainants, providing them with little incentive to pursue their complaints.

The Bundesnetzagentur follows up each complaint it receives and regularly conducts its own investigations. In this context, it checks for compliance with the relevant legislation, making particular use of test calls to this end. Whenever the Bundesnetzagentur has identified violations of the call queue regulations, it has taken appropriate measures. Bans were placed on billing and payment collection in 17 cases in 2013 to prevent unjustified invoices, with 41 warnings issued during the same year. Many of the companies in question corrected the violations, in most cases before proceedings had been concluded.

Regardless of whether or not an order is issued by the Bundesnetzagentur, the right to make call charges lapses in the event of violation of the call queue regulations, pursuant to section 66h of the TKG. According to the legislation, consumers are not required to pay call charges if call queues were used unlawfully or if the announcements about those call queues did not meet the required standards. In such cases, affected consumers are entitled to make efforts to recover the amount paid for the charges, with the support of consumer protection organisations or a lawyer, where relevant.

Smartphone diallers

After receiving consumer complaints in April 2013, the Bundesnetzagentur took action against a premium service number that was making unauthorised use of a dialler on mobile devices. Extensive investigations in cooperation with the police revealed that the consumers concerned had first installed the "Barney Stinson – Das Playbook" app on their Android smartphones. This programme then called the premium service number at set times, in some cases repeatedly, without the active involvement of the user, when the device was switched on. The calls were held for 60 minutes before they were disconnected automatically. Thanks to this automatic disconnection function (as provided for in

the TKG) and the issuing of a ban on billing and collection, the affected consumers were protected in particular from having to pay considerable call charges.

Call-centre business model banned

The Bundesnetzagentur banned a call centre from making spam calls to consumers without first obtaining their consent to receiving such calls. The call centre will face a fine of €1,000 for each violation of the ban. The ruling was upheld by Cologne's Administrative Court in summary proceedings at the end of 2013.

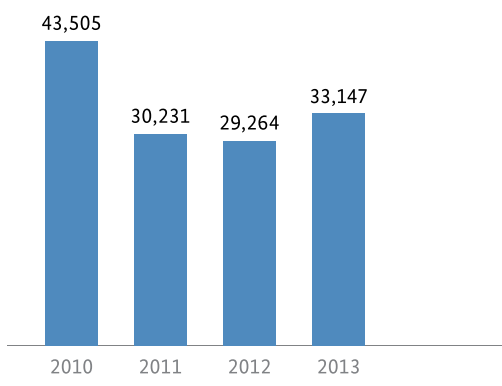
The company concerned had made fundraising calls on behalf of one of its customers without first obtaining the consent of consumers for these calls. According to the complaints received, consumers were alleged during the call to have already donated to the company on a previous occasion. Callers attempted to solicit an additional €10 to €15 from the consumers, asking them for their address and bank account details. The funds were designated for a profit-making company working on projects and individual assignments in the area of health care. As the company is not a non-profit organisation, the funds raised were also used for employee expenses and other expenses, including those of the call centre.

It has not yet been determined at this stage whether the call centre was operating under a false name, as alleged in consumer complaints. At the very least, the company's name and purpose left room for it to be confused with the high-profile German childhood cancer foundation "Deutsche KinderKrebshilfe". As the company is not a non-profit organisation, it was unlawful for it to make the calls without first obtaining the consumers' permission, which is why the Bundesnetzagentur was able to take action against it.

Combating unlawful telephone spam

The Bundesnetzagentur received 33,147 written complaints in 2013 about unlawful telephone spam and line identification restriction, slightly up from the 29,264 written complaints received the previous year. Additionally, the Bundesnetzagentur received 20,690 telephone enquiries and complaints during the last year about phone number misuse and unlawful telephone spam.

Written complaints about telephone spam



A total of 159 fine proceedings were concluded in 2013, with fines being imposed or warnings issued in most cases. A number of proceedings were discontinued as it was not possible to prove any wrongdoing. Many of the initiated proceedings were very time-consuming due to the frequently very difficult and highly complex nature of the investigations and the recourse of fine recipients to appeal.

The Bundesnetzagentur imposed a total of €540,000 worth of fines in 82 cases in 2013 for unlawful telephone spam and line identification restriction. Warnings were issued in 29 instances involving less serious violations. The cases concerned companies and individuals from a range of sectors, frequently involving companies selling energy services over the phone. As in the previous year, proceedings were also concentrated in the telecommunications, insurance and finance sectors.

40 of the 82 fines imposed are now legally binding, while objections have been filed against 42 notices. By the end of 2013, 14 objections had been passed on via the public prosecutor's office to Bonn Local Court, which is then responsible for dealing with them. The court issues a ruling on a fine notice if the Bundesnetzagentur deems the objection to be unfounded. The court has already issued rulings in five of the cases passed on to it in 2013, confirming that unlawful telephone spam calls had been made in all instances. The responsible parties have been required to pay a fine.

The Unfair Competition Act (UWG) was amended in October 2013 with the entry into force of the Improper Business Practices Act. This amendment came in the wake of an evaluation of the Unfair Competition Act conducted by the Federal Ministry of Justice and supported by the Bundesnetzagentur. The Bundesnetzagentur is now permitted to issue fines of up to €300,000 for unlawful telephone spam, six times as much as the previous €50,000 fine limit. In particular, this allows the Bundesnetzagentur to take more effective action where violations result in a large number of unlawful spam calls, such as in the case of commissions given to call centres.

The legal amendment also now makes it possible for the Bundesnetzagentur to issue fines for unlawful spam calls made using automated calling machines. The Bundesnetzagentur has thus been granted broader powers. The Bundesnetzagentur has already taken effective action against telephone spam by ordering the deactivation of numbers used for these calls and issuing bans on invoicing and payment collection.

The Bundesnetzagentur carried out its first searches in November 2013 on suspicion of unlawful telephone spam and line identification restriction. This measure in North Rhine-Westphalia involved 14 Bundesnetzagentur employees who, with the support of local police officers, searched the residential and business premises of a number of companies in a building complex from which a call centre was also being operated. During the search, witnesses were questioned and evidence was secured.

Resolution of radio interference

It is hard to imagine our everyday lives without the extra convenience afforded by radio applications. However, intensive use of the frequency spectrum results in interaction between radio and electronic devices, meaning it is impossible to completely eliminate radio interference and general electromagnetic incompatibility.

The Bundesnetzagentur assists consumers in the event of radio interference. Those affected can contact the Bundesnetzagentur on the 24-hour phone number 04821 895555 or by email at funkstoerung@bnetza.de. The process for resolving radio interference involves advising the affected parties, identifying the cause of interference (carried out by the Bundesnetzagentur's radio monitoring and inspection service) and overseeing the clearance of the interference. The radio monitoring and inspection service uses special vehicles and modern measuring equipment in its work.

The Bundesnetzagentur's radio monitoring and inspection service dealt with a total of 7,340 cases of interference reported by consumers in 2013, with employees making site visits in 4,961 of these cases. The incidences of interference, which generally manifested as problems with transmission and reception, had many different causes, including equipment defects, software errors and faulty system installation.

The radio monitoring and inspection service dealt primarily with cases of interference affecting radio services with safety and security-related functions. Radio applications were affected in the aviation industry, as well as in public authorities and organisations with safety and security-related tasks. Interference to aeronautical radio communication was frequently caused by antenna amplifiers and interfering emissions from radio alarm clocks. This resulted in disruption to radio communication during aircraft landing. Disruption to the safety frequencies of public authorities and organisations with security and safety-related tasks (police, fire and emergency services, German Federal Agency for Technical Relief (THW), etc) primarily took the form of interference from radio headphones from Eastern Europe that transmitted on frequencies not allocated for this purpose in Germany.

The radio monitoring and inspection service investigated numerous cases of interference to public UMTS networks caused by faulty satellite receivers and cordless phones. This interference caused a reduction in the transmission speed. Illegal signal jammers were also taken out of service.

The radio monitoring and inspection service was also frequently contacted to deal with cases of domestic radio and television interference. Several reported cases of interference to radio reception were traced back to LED lighting. Interference occurred due to the limits for electromagnetic compatibility being exceeded. The radio monitoring and inspection service also investigated and decommissioned various illegal broadcast transmitters.

Universal service

Once again, the Bundesnetzagentur received a large number of enquiries about the universal service last year. The universal service, as defined in the TKG, constitutes basic telecommunications services, and is provided by Telekom. As in previous years, most of the enquiries and complaints (around 2,100) concerned connections to the public telecommunications network and access to public telephone services.

As a result of an increase in complaints about delays in the installation of new connections and in the modification of existing ones, the Bundesnetzagentur agreed a separate procedure with Telekom for dealing with these complaints. This allows the Bundesnetzagentur to provide rapid assistance to those affected.

The universal service also includes nationwide provision of public payphones (coin- and card-operated). There were around 48,000 such payphones in operation at the end of 2013. Telekom continued last year to remove payphones from sites where their use was not cost-effective. This is being done in consultation with local authority associations and the Bundesnetzagentur. Payphones can only be removed from individual sites with the consent of the respective local decision-making bodies.

Rulings, activities and proceedings


The Bundesnetzagentur presented the results of its first nationwide measuring campaign last year, and also published key measures for significantly improving transparency in consumer information.

Network neutrality

As a platform for sharing data, the Internet transmits all data on an equal and neutral basis, regardless of its origin, destination, content and application/service, or of the terminal equipment used. This principle is generally referred to as net neutrality. The Internet transports every single data packet, provided the system has sufficient capacity available (best-effort principle).

The announcement made by Deutsche Telekom AG (DTAG) that it would be changing its tariff structure for fixed-line Internet connections from 2 May 2013 has intensified discussion of net neutrality. Under the new tariff structure, the bandwidth of consumer connections will be restricted once a maximum volume limit has been reached, while certain services (such as Entertain) will not count as part of the inclusive volume.

The Bundesnetzagentur reviewed the new tariff structure and published a report on it, taking into account the responses of DTAG to two lists of questions from the Bundesnetzagentur. However, it was not possible to provide a final evaluation of the changes, as DTAG has reserved the right to make numerous changes before the tariff's final implementation in 2016 and a number of key questions (such as those concerning non-discriminatory treatment for wholesale services) were left unanswered.

 *The aforementioned documents are available at www.bundesnetzagentur.de/netzneutralitaet.*

The Bundesnetzagentur does not consider the volume tariff itself to violate the principles of net neutrality and non-discrimination. Only if exceptions were made with regard to volume tariffs would there be a case of discriminatory treatment, raising issues of net neutrality. An example of such a situation would be where specific applications, unlike all the other applications, are not counted in the user's inclusive volume. Consequently, these planned exceptions to the volume restriction of Internet access tariffs for managed services are of vital significance. With managed services, traffic is transported in a logically separated, closed network, rather than via the Internet. Transport and application are provided by a single vertically integrated provider.

The issue of the reference point for net neutrality is relevant in this context. If we understand net neutrality as the equal treatment of all services provided on a broadband connection, then any managed services that reach customers via a quality-assured traffic connection that is logically separated from the Internet (network capacities) would violate net neutrality as part of these services. If net neutrality only referred to Internet access, the answer to the question of whether or not net neutrality had been infringed would depend on whether different applications provided via the Internet connection were treated differently. In such a case, managed services would not violate net neutrality, as they would be realised via a transport platform that is separated from the Internet access point. This could provide an incentive to operate applications as managed services. One of the main challenges is to ensure in practice that managed services do not cause the deterioration and displacement of the best-effort Internet.

The Bundesnetzagentur has always spoken out in favour of a dynamic rollout of the best-effort Internet. However, minimum service-quality standards appear largely unsuitable as an instrument for achieving this goal, as they only ensure a basic level of service, while the best-effort principle requires the best possible performance. Rather, it is adequate network dimensioning that has been and remains the crucial factor, and that must continue to be safeguarded in future. Demand-oriented network rollout is pivotal to preventing Internet quality from falling below its usual standard.

DTAG's tariff plans have rekindled the net neutrality debate in Germany. The Federal Ministry for Economic Affairs and Energy presented two draft ordinances last summer on net neutrality and protection of the best-effort Internet. Net neutrality is also the subject of the draft EU Regulation presented in September 2013 on completing the European single market. BEREC published a response to the draft Regulation in which it also addressed aspects of net neutrality.

Quality study

As part of its Study on the Quality of Service of Broadband Access Lines, the Bundesnetzagentur examined advertised data transmission rates and actual rates to determine the extent to which they differed from one another. This involved examining both fixed and mobile (UMTS) Internet access technologies.

The Bundesnetzagentur published the findings of the study on 10 April 2013. Over 225,000 software-based consumer measurements were evaluated for the fixed network. The Bundesnetzagentur had conducted a nationwide measuring campaign between June and December 2012, enabling Internet users to measure the speed of their broadband lines on the Initiative Netzqualität website. Overall, there was found to be a significant discrepancy between the contractually agreed maximum data transmission rates and the rates actually achieved. In many cases, users of all technologies and products from all providers measured bandwidths that fell below those they had been promised. Only around one fifth of users achieved the maximum agreed data transmission rate.

Against this backdrop, the Bundesnetzagentur published its "Measures aimed at promoting transparency for consumers and on measuring procedures" in May 2013. These key elements were used, along with comments from the industry, as a basis for the draft Transparency Ordinance submitted pursuant to section 45n of the German Telecommunications Act (TKG) on 25 February 2014 and setting out the duties of service providers to supply information about key product features and customer rights. Alongside these proposals, the Bundesnetzagentur will develop a speed test and make it available to the public. This test will provide consumers with an easy way of measuring the performance of their own broadband Internet connection, allowing them to compare the performance and reliability of different providers and decide whether or not to switch provider based on this information.

The Bundesnetzagentur carried out another nationwide measuring campaign in the second half of 2013, during which users could test the speed of their broadband line. The goal of the campaign was to determine whether and to what extent speeds had been improved compared with the previous year. Once again, the participation rate was pleasingly high, with over 150,000 valid measurements taken by users.

The results were essentially the same as those of the previous year, showing that there continues to be significant deviation from the "up to" data transmission rates advertised. Once again, this applied to all technologies, products and providers, although cable TV connections again essentially fared better than DSL and fixed-line LTE. The campaign also confirmed that there was less deviation from promised maximum transmission bandwidth in urban areas than in rural and semi-urban regions.

On a positive note, around 75 percent of users achieved at least 50 percent of the agreed maximum data transmission rate, an improvement on the first study. At the same time, only around 16 percent of users achieved the maximum agreed data transmission rate, slightly less than in the previous year. There was also a slight decrease in customer satisfaction compared with the previous year. This shows the need to create transparency and safeguard it in the long term, which is the goal of the Bundesnetzagentur's planned consumer measurement concept.

Transparency Ordinance

Ever since the amended TKG entered into force in 2012, the Bundesnetzagentur has been using a range of measures to help improve the information that is provided to customers in the telecommunications market. The new transparency regulations in sections 43a and 45n of the TKG are intended to enable consumers to obtain information easily and transparently before deciding on a particular tariff.

In light of the findings of the study on the quality of service of broadband access lines and those of the study on the transparency of fixed-line and mobile telecommunications contracts, the Bundesnetzagentur sees a particular need for action with regard to the reliability of claims about achievable broadband data transmission rates and options for monitoring these rates. So far, consumers have only been given a vague idea of the actual performance they can expect. Even after they have signed the contract and had their line activated, it is only in exceptional cases that consumers are actively provided with a transparent overview of the performance of their particular line.

In order to improve this situation, the Bundesnetzagentur published key elements in May 2013 to promote transparency for broadband users in particular. This series of individual measures is designed to significantly improve the information provided to customers and has been discussed in detail with the industry.

The Bundesnetzagentur published a draft ordinance in February 2014 designed to require fixed-line and mobile providers to commit to being more transparent about the transmission rates of their broadband connections. The proposals are based on the key elements published by the Bundesnetzagentur and also build on a voluntary commitment proposed by the industry, taking many of its points into account and adding new ones.

The ordinance would require providers to issue a clear information sheet to customers in future, when any contract is concluded, informing them of the maximum possible bandwidth and the minimum bandwidth they can expect. The average bandwidth should also be specified for mobile contracts where possible. All consumers would also be legally entitled to information about the transmission rate of their own line. Additionally, providers would be required to inform consumers of options for measuring their bandwidth as soon as the line has been activated. This would include a speed test developed and later provided independently by the Bundesnetzagentur. Providers would also be able to offer their own measuring options.

In order to allow consumers to quickly obtain information about the key elements of a contract (such as transmission rates) before signing it, providers would be required to produce a product information sheet for each contract. Furthermore, customers would have to be provided with precise information about which services would and would not be included in a contractually agreed data volume. Key items would also need to be highlighted in the consumer contract.

Ultimately, the Transparency Ordinance is designed to give consumers a legal right to obtain from their provider the access IDs and passwords needed to use the services on offer, thus enabling consumers to use not only their own provider's router, but also other manufacturers' routers. In this way, the Bundesnetzagentur is promoting free choice of terminal equipment in the long term.

Infrastructure atlas

The Bundesnetzagentur has operated the infrastructure atlas since 2009, making it available to users online since the end of 2012. The atlas, which contains geodata on the infrastructure in Germany that can be used for developing broadband networks, is available to all parties involved in specific broadband rollout projects. These stakeholders must first request access, which is time-limited, to the infrastructure atlas. This access makes it simple and convenient for them to obtain information about existing infrastructures. The infrastructure atlas provides contact details for each of the installations listed in it under the relevant owner's name, allowing users to get in touch with the relevant contact directly. More efficient procedures such as this one are particularly helpful in leveraging synergies as part of broadband rollout projects.

The infrastructure atlas has been consulted for some 650 broadband rollout projects since going online, a significant increase in its use. In particular, the atlas is being increasingly used by network operators looking to expand their networks.

The infrastructure atlas currently operates on the basis of some 450 data-provision agreements concluded with companies and legal entities under public law. Under the TKG, the Bundesnetzagentur can also require telecommunications network operators, for instance, to disclose information about their infrastructure (such as cables, empty ducts and antennas). Some 200 administrative procedures have so far been initiated to this end, with 420 sets of data provided to date. Since November 2013, the infrastructure atlas has also contained data from Deutsche Telekom AG, representing a major milestone in the operation of the atlas

Several companies objected to the requests for disclosure of information about their infrastructure, claiming among other things that the requested geographic data was too detailed and that the collection of post-code data would suffice for the production of the infrastructure atlas. These companies also maintained that all the requested geographic data concerned provision and security-related infrastructure, as well as trade and industrial secrets. They claimed that it would be legally inadvisable in both cases to include this information in the infrastructure atlas.

With its ruling dated 13 November 2013, Cologne's Administrative Court upheld in several summary proceedings the obligation of companies to provide information (case 21 L 966/13, for instance). In particular, the court considered the blanket objection to disclosure of data on the grounds of the data requiring protection to be invalid. It stated that this is not an issue that is reviewed at the level of data disclosure, but rather downstream in individual cases where information is added to the directory or access is granted to information. In such cases, the infrastructure operator must justify why specific data requires protection, which is why it is insufficient to simply classify all data as being worthy of protection.

NGA Forum

Set up by the Bundesnetzagentur in May 2010 to accelerate broadband rollout, the NGA Forum aims to promote dialogue between the Bundesnetzagentur, network operators, manufacturers, federal states and local authorities. Building the high-speed broadband networks envisaged in the German government's broadband strategy requires a coordinated effort on the part of many actors in the telecommunications industry. Consequently, interoperability plays a key role in the success of access provision based on voluntary open-access arrangements. A multilateral agreement on technical interfaces and operational processes is required in order to allow the new NGA networks to realise cross-network services.

The NGA Forum focuses a significant proportion of its work on drawing up standardised wholesale-product specifications for use throughout Germany. Service specifications for a level 2 access product in cable networks were added to the list of specifications in October 2013 based on a document created at the end of 2012 with design principles for layer 2 bitstream access (L2-BSA) for cable networks.

Many market players and associations have responded very positively to the documents adopted by the NGA Forum, and these documents are also well regarded and sought after internationally. Most companies on the market are basing their network models on the L2 BSA specification adopted by the NGA Forum and are working to implement this specification.

The NGA Forum has recommended setting up a uniform interface (S/PRI interface) on the market for business processes governing the processing of orders and management of end customer lines and has created a basis for the interface specification. This would allow telecommunications companies to link up their customer information systems and to automate and quickly implement processes for provision, changing services, termination, fault clearance and switching providers, for example.

A working group for interfaces and processes (see www.ak-schnittstellen-prozesse.de) was set up in 2013 and has created the contractual and technical basis for conducting conformity tests and certifying the interfaces. A systems company selected by the working group has been able to carry out the first certifications since mid-2013. The technical specifications and uniform interfaces developed by the NGA Forum have laid the foundation for setting up national certification processes, providing a sustainable basis for market players to invest in efficient technical interfaces and processes. They enable the different levels of the consumer supply chain to work together smoothly. The ability to implement an interface across all providers is a great step forward in terms of creating an NGA-multicarrier landscape.

 More information is available at www.bundesnetzagentur.de/ngaforum.

Mobile broadband project 2016

Mobile communications can continue to make an important contribution to the further development of high-speed networks that are fit for the future. This requires making all possible frequencies available in line with demand, corresponding to the exponential growth in mobile data enabled by broadband services.

During the early provision of the 800 MHz spectrum, the Bundesnetzagentur had worked to ensure that the great potential of these frequencies – especially to supply rural regions – was used as quickly as possible to the benefit of consumers. The frequencies of the "digital dividend" were the key to the quick and economic expansion of broadband networks in these regions too. In this respect, Germany has taken on the role of a pioneer in Europe. One year after the frequency auction, wireless technologies have made the largest contribution to filling in the white spots. This therefore confirms the important role that wireless technologies can play in the rapid implementation of the broadband strategy of the federal government.

In the 900 MHz and 1800 MHz frequency bands, 170 MHz of spectrum will be available for mobile broadband as from 1 January 2017. Up to now, these frequencies have been used for GSM and LTE. The 900 MHz spectrum is especially well suited to providing services to sparsely populated areas due to its favourable physical propagation conditions. The 1800 MHz spectrum is especially suited to increasing network capacity. Comprehensive networks already exist that can provide services to nearly all consumers.

This spectrum, together with other available spectrum, will be made available for mobile broadband services according to demand. For this purpose, the Bundesnetzagentur published a consultation draft in June 2013 to generate impulses for a transparent discussion on supporting the goals of the broadband strategy. In the consultation draft, the Bundesnetzagentur proposed to provide all available resources for mobile broadband as early as possible in open, transparent and non-discriminatory auction proceedings.

By proposing to include other spectrum, especially in the 700 MHz band, in the proceedings, the Bundesnetzagentur wants to create additional incentives for efficient investments to accelerate the expansion of wireless broadband. This band is expected to have high social and economic potential for broadband rollout. The frequency spectrum has very favourable propagation conditions – especially for the purpose of providing cost-efficient services to rural areas. It can therefore make an important contribution to the implementation of the broadband strategy. By the year 2018, consumers, including those in sparsely populated areas, would then have the possibility to access fast internet with a speed of at least 50 Mbit/s.

At the same time, the Bundesnetzagentur proposed the provision of a "frequency reserve" of one block each in the 900 MHz band, to continue to ensure the close to 100 percent provision of wireless services to consumers – especially in rural areas. The intense competition in the mobile sector will be strengthened in a lasting way and new entrants will have the possibility to enter the market without discrimination.

A national consensus between the central government and the federal states that includes reallocation of the spectrum for mobile broadband is a condition for the early incorporation of the 700 MHz spectrum, currently used by the broadcasting service DVB T. In its evaluation of the high potential of the 700 MHz spectrum for broadband rollout, the Bundesnetzagentur has also

taken into account the social and cultural importance of broadcasting and PMSE as well as public safety. The various interests emerging will have to be reconciled and balanced.

The Bundesnetzagentur has published a strategy paper together with the consultation draft. This strategy paper presents the Bundesnetzagentur's ideas for the short-, medium- and long-term availability of the spectrum resources for the expansion of broadband services in Germany. The primary goal is to provide planning and investment security for all user groups affected, including the broadcasting and wireless microphone sectors.

 *The consultation draft and the strategy paper are available at www.bundesnetzagentur.de/mobilesbreitband.*

Planned merger between Telefónica and E-Plus

In July 2013, Telefónica Deutschland and Royal KPN N.V. signed an agreement on the acquisition of E-Plus, KPN's German mobile operator. The merger, which is currently being examined by the national and European anti-trust authorities and the Bundesnetzagentur, would reduce the number of mobile network operators in Germany from four to three.

Telefónica Deutschland and E-Plus both hold mobile licences and frequency assignments and operate their own infrastructure to provide mobile coverage to consumers throughout the country. The spectrum was assigned in light of the award of scarce frequency resources in open, transparent and non-discriminatory proceedings to competitively independent companies.

It is the Bundesnetzagentur's responsibility to examine the proposed merger from the telecommunications law point of view. The Telecommunications Act (TKG) requires that frequencies be assigned by the Bundesnetzagentur on the basis of objective, transparent and non-discriminatory proceedings. The Bundesnetzagentur's task includes the power to amend existing frequency assignments. Planned mergers or company acquisitions must be examined by the Bundesnetzagentur through the prism of telecommunications law to ensure that a distortion of competition is not to be feared as a result of the companies' volume of spectrum and that efficient use of spectrum can continue into the future.

In September 2013, the Bundesnetzagentur published key elements of the scope of the telecommunications law probe into the proposed merger. To guarantee objective, transparent and non-discriminatory proceedings, the Bundesnetzagentur's examination of the future spectrum holdings will also take into account the regulatory aims and principles as set out in the TKG. Particular attention will be given to the regulatory aims of securing fair competition, promoting markets with sustainable competition, safeguarding user interests, in this case more especially consumer interests, and securing efficient and interference-free use of frequencies.

In view of the complexity of the proposed merger, and in particular in light of the frequency-related, competitive, economic and procedural aspects of the frequency bands concerned, the Bundesnetzagentur consulted on initial frequency-related questions in connection with the spectrum holdings. These key questions addressed essential aspects of the planned merger from the telecommunications law point of view. The consultation was designed to give all the actual and potential market players directly or indirectly affected by the proposed merger the opportunity to state their case.

Since the Bundesnetzagentur saw the need for a closer look at the facts, the legal situation and the interests with a view to the specific assessment of the frequency-related and economic aspects of the proposed merger, further detailed questions were put up for consultation in December 2013. These questions focused on the potential effects of the merger in terms of competitive spectrum packages as seen from the market players' viewpoint. Responses were invited by 15 January 2014.

The Bundesnetzagentur is working closely together with the Bundeskartellamt and the European Commission in its telecommunications law assessment.

 *Read more at www.bundesnetzagentur.de/zusammenschlussvorhaben.*

Interfaces at network termination points

In digital telecommunications networks, an active element is needed on the customer's premises as the network termination equipment (NTE). The purpose of this device – commonly referred to as a "box" – is to adapt the digital signals to be transmitted for the transmission technology used on the network's line, thus enabling the end user to access the network node via the line. Over the last few years, a number of additional service access and end user functionalities (eg firewall, PBX, WLAN) have been integrated into these boxes.

Section 5(1) sentence 1 of the German Radio Equipment and Telecommunications Terminal Equipment Act (FTEG) requires network operators to provide the Bundesnetzagentur with details of their network termination points (NTPs). Depending on the specific network architecture and transmission technology, the NTP is defined either in front of or behind the box on the end user's premises. End users whose network operators define the NTP behind the box criticise the fact that they no longer have functional control of their own infrastructure – with possible negative effects on data protection and security.

The Bundesnetzagentur held a public consultation on this issue from the end of September to the beginning of November 2013. In their responses, the network operators stated that users were still free to choose their terminal equipment as any terminal equipment (eg routers) could be operated at the interfaces on the end user's side behind the box. Differences in the boxes' configurations and functionalities could also mean that optimum adaptation for the transmission technology would not be guaranteed (for instance because of interoperability problems or differences in signal processing quality). Furthermore, there were advantages with regard to fault repair, logistics and administration of end user services if the boxes were part of the network infrastructure. In this case, the operator would have to provide support for only a limited number of equipment types and manufacturers. A free choice of boxes and the requirement to publish the codes required to access networks and services would mean that services might be used that were neither legally prescribed nor part of the contract.

Box manufacturers and consumer protection organisations criticised the fact that defining the NTP and partially linking service access to the multifunctional boxes' interfaces on the end user's side meant that there would no longer be a clear separation between the end user's infrastructure and the network operator's infrastructure. There would also be a risk to competition between manufacturers if network operators were allowed to prescribe specific boxes. The boxes should always be seen as terminal equipment, hence direct access to the transmission medium of the line was defined as the NTP and should continue to be defined as such in the future. In view of this, providers should allow customers to connect and operate any boxes of their choice and would have to provide the codes required for both network and service access.

Consumers also fear that providers may access private data, modify the end user's settings and make changes in general (eg to the boxes' firmware). Moreover, it was not always possible to connect all types of terminal equipment behind the box and use all the functions. In addition, certain box settings could hinder or prevent end user functions or the use of services and applications.

The Bundesnetzagentur considers it important for providers to give end users transparent information about the NTPs as only then can users make an informed decision and choose between the individual offers. After evaluation of the responses to the consultation, the Bundesnetzagentur will, amongst other things, use its powers under the Telecommunications Act (TKG) to foster greater transparency in the market. In light of competition and technology neutrality, any obligations imposed will apply to all access technologies in use.

Ruling Chamber proceedings

Vectoring

After thorough investigation, the Bundesnetzagentur published its decision on the launch of vectoring in Telekom Deutschland GmbH's network on 29 August 2013. Vectoring allows higher transmission rates to be reached in the copper local loop network than has thus far been the case with the already advanced VDSL technology. The new technology reduces mutual interference between adjacent copper pairs in a cable. However, the state of the art only permits access by one company to all the copper pairs in the street cabinet, making unbundled access – where VDSL technology is being used – no longer possible.

The guiding principle of the decision is to make vectoring possible for all market participants and thus drive forward competitive broadband roll-out. The decision states that Telekom must continue to allow its competitors access to the local loop at the cabinets as a general rule. It may refuse access to the "last mile" at street cabinets under certain conditions, however, so as to enable vectoring to be implemented at the cabinet by itself or another company.

The decision therefore ensures that all players in the market will still be able to interconnect at the cabinet using optical fibre and implement vectoring, on condition that they offer an appropriate bitstream product under open access arrangements. This applies both to Telekom and to its competitors. Telekom, however, may not refuse or terminate access to the local loop at a street cabinet if the competitor seeking access would then have to pay back some or all of the state funding received for broadband deployment at the cabinet. Nor will competitors have to fear Telekom automatically regaining control of a street cabinet they have accessed even if a parallel fixed network infrastructure connecting 75 percent of the buildings within the area served by the cabinet has still to be established. Likewise, competitors will benefit from added protection if – at the time the final regulatory decision was announced – they had placed a binding order with Telekom for access at a street cabinet even if they had not yet actually interconnected there. The Bundesnetzagentur will specify the details for and oversee the maintenance of a new vectoring list. The aim of this list is to provide all market players – both Telekom and its competitors alike – with legal certainty and fair conditions in deploying vectoring.

At the end of September 2013, following the decision, Telekom submitted its modified standard local loop access contracts – setting out the details concerning the implementation of vectoring – to the Bundesnetzagentur for review. The relevant Ruling Chamber examined the draft contracts and the specific regulations by way of a transparent regulatory procedure. The review found that several key aspects of the regulations presented by Telekom needed to be revised.

Telekom was therefore instructed on 25 February 2014 to modify its standard contracts for local loop access and for the bitstream product to be offered as an alternative where vectoring is used. The modifications to be made concerned the vectoring list, in particular. Telekom was required to include in its standard contract binding regulations to safeguard the competitors' access projects recorded in the vectoring list by preventing its own network planning and customer sales departments from accessing these records. Other modifications concerned the specific sanctions in the event of anti-competitive practices in reserving cabinets, failure to interconnect at reserved cabinets with vectoring, and non-availability of the required alternative bitstream product, and in particular the penalties to be paid in such cases. They also related to the required alternative bitstream product whose quality is to be based on the local loop unavailable for access as a result of the implementation of vectoring.

Telekom had one month to modify the contracts in line with the decision and presented the Bundesnetzagentur with the revised contracts in March 2014. The Bundesnetzagentur will examine the submissions to ensure that they comply with all the requirements and will, if necessary, align the contracts itself in a second decision.

Decision on shared use of railway infrastructure

The Bundesnetzagentur issued its first decision on the shared use of railway infrastructure by telecommunications companies on 21 March 2013. DB Netz AG, which operates Deutsche Bahn AG's rail network, was given three months to present the Danish telecommunications network operator GlobalConnect A/S with offers to share infrastructure on four specific sections of line.

GlobalConnect A/S had asked DB Netz AG if it could use the infrastructure on four sections of railway line in northern Germany for the planned expansion of its high-speed telecommunications network and had then called upon the Bundesnetzagentur because no agreement could be reached. The aim of the subsequent dispute resolution procedure was to determine which railway infrastructure components on the four sections of line could be shared and whether sufficient capacity was available to allow a fibre optic cable to be laid. It was the first decision for which the Bundesnetzagentur drew on a new provision in the Telecommunications Act (TKG) requiring infrastructure managers majority-owned by the Federation or by a company itself majority-owned by the Federation to allow public telecommunications network operators to share those parts of the railway infrastructure that can be used to build and expand next-generation networks. The previous revision of the TKG introduced similar regulations concerning the shared use of federal waterways and trunk roads.

DB Netz AG failed to present an appropriate offer for the shared use of the Hindenburg Dam between Sylt and the mainland in accordance with the ruling of 21 March 2013. The relevant Ruling Chamber consequently initiated ex officio proceedings against the company in mid-November 2013.

On 28 January 2014, the Ruling Chamber ordered DB Netz AG to submit an offer within one month to GlobalConnect A/S for the shared use of the Hindenburg Dam to lay a fibre optic cable. The company was also warned that it could face a fine of €75,000 should it not fully comply with the order or not comply within the time given.

Final approval for mobile termination rates and fixed line interconnection rates

The Bundesnetzagentur announced the final mobile termination rates – the rates for terminating calls to the German operators' mobile networks – on 19 July 2013. In addition, on 30 August 2013 it gave its final approval for Telekom Deutschland GmbH's new fixed line interconnection rates, with retroactive effect from 1 December 2012.

Both sets of rates had been approved at the end of 2012 on a provisional basis only, as a national consultation procedure and subsequently the European Commission's opinion were required before a final decision could be issued. The European Commission expressed serious doubts about the proposed mobile and fixed line termination rates and asked the Bundesnetzagentur to lower the rates even further.

The reason for this was that the Bundesnetzagentur had not applied the methodology recommended by the European Commission for calculating termination rates. In both cases, however, the Bundesnetzagentur adhered to its chosen and tested method of calculating the rates on the basis of the costs of an efficient operator. The costing methodology recommended by the European Commission is not better suited in Germany to achieving the regulatory aims of the Telecommunications Act (TKG) – such as safeguarding consumer interests and ensuring fair competition – and to promoting sustainable investment. The European Commission had no right of veto over the decisions.

New local loop access rates

In June 2013, the Bundesnetzagentur approved Telekom Deutschland GmbH's new rates for rental of the local loop by competitors. As of 1 July 2013, Telekom may charge its competitors €10.19 a month for rental of the local loop at a main distribution frame (MDF) and €6.79 a month for access to the local loop at a sub-loop distribution frame, or street cabinet.

This increases the gap between the two rates. The cut in the charge for the last mile from the street cabinet and the larger price difference between the two options now makes it even more attractive for competitors to

connect at the cabinet, thus helping to drive forward broadband deployment in Germany. As in previous approval rounds, the charges were determined on the basis of current replacement costs, as this is still the best way to create incentives for investments in modern telecommunications networks. The new rates apply for a fixed period until 30 June 2016.

Review of rates measures in the bitstream market

In mid-September 2013, Telekom Deutschland GmbH notified the Bundesnetzagentur of three rates measures in the IP bitstream market. The measures included the financial conditions relating to the planned discontinuation of Telefónica's local loop platform and subsequent switch to Telekom's bitstream platform. In addition to this individual arrangement, the aim of the measures as a whole is to involve the bitstream users in Telekom's future NGA expansion and the associated risks and at the same time to encourage more extensive use of Telekom's VDSL and ADSL platforms.

The relevant Ruling Chamber made a close examination of the notified rates measures to see if they were compatible with the legal provisions. The review found, however, that the planned rates measures do not considerably prejudice the competitive opportunities of other companies in the telecommunications market, nor do they fail to adequately reflect the costs of the value added difference between access services provided at different levels of the value chain. Nor are advantages created for one particular user in relation to other users of the same or similar telecommunications services without objectively justifiable reason. This also applies especially to the rates measures in connection with the planned cooperation between Telekom and Telefónica. As a result, in December 2013 the Bundesnetzagentur suspended its ex post rates regulation procedure initiated in mid-October, initially on a temporary basis in light of the required participation of the European Commission.

Voice access market

Telekom Deutschland GmbH has a dominant position in the fixed voice access market (market 1) and can therefore be the subject of obligations – such as enabling call-by-call selection – imposed in a regulatory order.

Following the determination by the President's Chamber of 8 August 2013 (BK1-011/006) to lower the annual turnover threshold for contracts with a single customer from €1m to €500,000, the Bundesnetzagentur planned to withdraw its regulatory order of 25 January 2010 (BK2c 09/002-R). The European Commission expressed serious doubts about this in its letter of 4 October 2013 (DE/2013/1500), and a BEREC expert working group was then established to examine the case and prepare an opinion. The working group concluded that the European Commission's serious doubts regarding the Bundesnetzagentur were not justified. The European Commission subsequently withdrew its concerns, enabling the Bundesnetzagentur to revoke the regulatory order.

The procedure for issuing a regulatory order for market 1 on the basis of the established market definition and market analysis was opened in December 2013 (BK2c 13/005). The Bundesnetzagentur consulted with Telekom on the planned regulatory measures and published a draft decision in March 2014. The draft requires Telekom to continue to enable call-by-call selection and carrier pre-selection on its lines.

Leased lines

On 9 August 2012, the Bundesnetzagentur issued a regulatory order (BK2a-12/001 R) concerning terminating segments of leased lines with a bandwidth of 2 Mbit/s to 10 Mbit/s and of leased lines with a bandwidth of above 10 Mbit/s to 155 Mbit/s. The order required Telekom Deutschland GmbH and all affiliated companies within the meaning of section 3 para 29 of the Telecommunications Act (TKG) to grant other companies non-discriminatory access to the leased line terminating segments in need of regulation and to enable collocation. The rates for access to leased line terminating segments were the subject of ex ante approval in accordance with section 31 TKG.

The President's Chamber determination of 3 January 2012 (BK1-09/006) now also covers terminating segments with Ethernet-based interfaces, which had previously been excluded from sector-specific regulation (Federal Administrative Court (BVerwG) case 6 C 13.09, 1 September 2010). Telekom therefore applied for approval of its rates for Ethernet-based carrier leased lines on 9 August 2012. The final rates were approved on 19 March 2013 (BK2a-12/004) for a fixed period until 31 October 2013. On 20 August 2013, Telekom applied

for two new approvals for its rates for terminating segments with conventional interfaces (BK2a-13/002) and terminating segments with Ethernet-based interfaces (BK2a-13/003). Provisional approvals were granted on 29 October 2013 before expiry of the existing approvals. The national consultation procedures in accordance with Article 6 of the Framework Directive (2001/21/EC) ran from 20 November until 20 December 2013. Following evaluation of the responses, the consolidation procedure in accordance with Article 7 of the Directive, involving the European Commission and the other national regulatory authorities, will be opened.

Court rulings

The obligation imposed on the mobile operators in the regulatory orders issued at the end of 2008 and on 19 July 2013 – to obtain the Bundesnetzagentur's prior approval for their rates for termination services – is legitimate. Cologne Administrative Court dismissed the action brought by a mobile operator against this obligation in its ruling of 14 February 2013 (case 1 K 182/09). Leave to appeal was refused, and the objection against this refusal was also rejected by the Federal Administrative Court (BVerwG) in its ruling of 23 October 2013 (case 6 B 16.13). This means that the first instance ruling made by Cologne Administrative Court is definitive, and imposition of the rates approval obligation on the network operator concerned in the 2008 regulatory order is legitimate. The obligation to obtain prior approval for the rates was retained in the regulatory order of 19 July 2013, which became effective at the beginning of 2014.

The majority of the approvals granted to the mobile operators for mobile termination rates for the period from August 2006 to November 2007 were confirmed. Cologne Administrative Court ruled on 17 July and 28 August 2013 that determination of the rates on the basis of international benchmarking was legitimate (inter alia case 21 K 5163/06). Only one action filed was upheld (case 21 K 5214/06).

The actions brought by one mobile operator against the mobile termination rates approval granted for the period from December 2007 to March 2009 – where the rates were determined using national benchmarking – and several actions brought by third parties were dismissed by Cologne Administrative Court (inter alia cases 21 K 5903/07 and 21 K 5786/07). All the plaintiffs filed appeals with the Federal Administrative Court (inter alia cases 6 C 33.13 and 6 C 36.13).

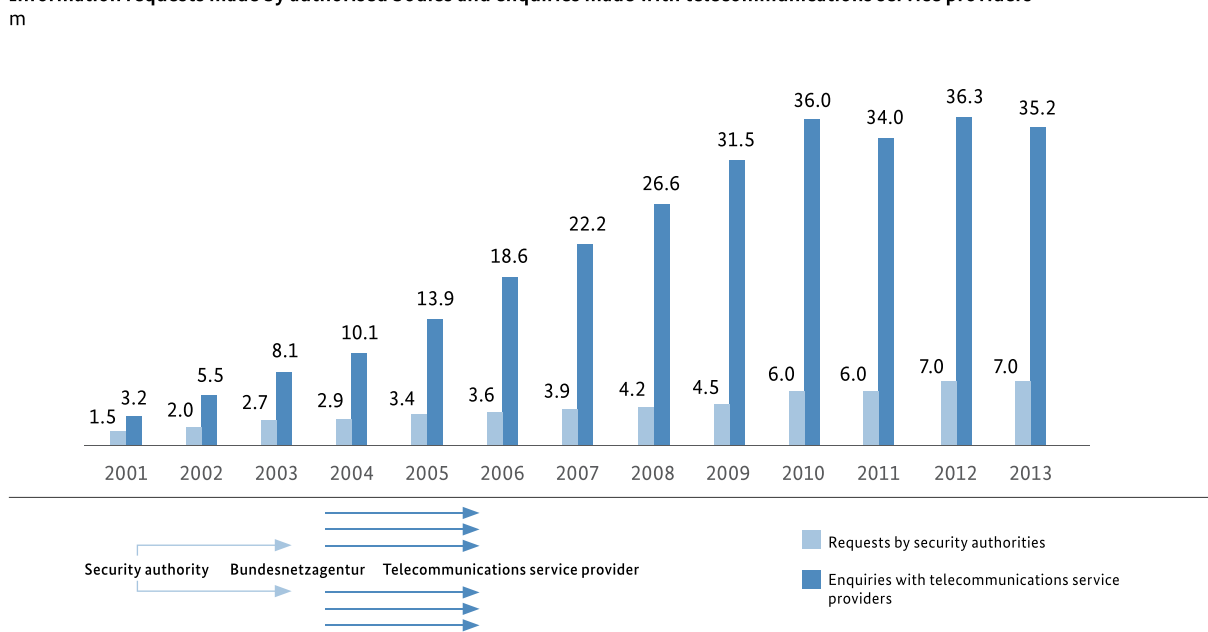
Cologne Administrative Court also issued several rulings in 2013 concerning the rates for local loop leasing, provision and contract termination. The rulings – following on from the Federal Administrative Court's rulings – concerned the Bundesnetzagentur's scope for interpretation in rates regulation and specified, in more detailed terms and in respect of individual cost items, the high requirements for fleshing out such decision-making scope and the scope of discretionary powers. In addition, the Federal Administrative Court issued several rulings on 25 September 2013 concerning the reach of a successful action brought by a third party against a rates approval (inter alia case 6 C 13.12), based on the assumption that rates approvals can be subjectively divided. Should such an action be successful, the court may revoke a rates approval granted under telecommunications law only so far as the approval affects the legal relationship established between the parties concerned by contract or by an interconnection order issued by the regulatory authority.

Public safety

Automated information procedure as per section 112 of the Telecommunications Act (TKG)

The information procedure as provided for by section 112 TKG makes a significant contribution to public safety. Legally authorised bodies, mostly public safety and criminal prosecution authorities, may request specific customer data (name, address, numbers) from the Bundesnetzagentur. The Bundesnetzagentur does not maintain its own databases with this information. Rather, companies providing publicly available telecommunications services and assigning numbers or other identifiers themselves must make it technically possible for the Bundesnetzagentur to retrieve the data required at any time.

Information requests made by authorised bodies and enquiries made with telecommunications service providers



There are currently 102 registered authorised bodies and 127 telecommunications companies obliged to provide data. Work began in 2013 to replace the conventional ISDN base for data access with a modern IP base using hardware encryption certified by the Federal Office for Information Security (BSI).

In 2013, the Bundesnetzagentur received a total of 6.95m requests from authorised bodies, with 6.72m requests providing the customer's telephone number and 234,000 the customer's name. A total of 35.15m enquiries were made with telecommunications companies: 26.7m name-based and just 8.45m number based. The reason for this is that each company needs to be contacted for a name-based enquiry as the customer's provider is not known, while considerably fewer companies need to be contacted for a number-based enquiry as the prefix often gives an indication of the provider.

Ensuring postal and telecommunications services

The new Post and Telecommunications Service Provision Act (PTSG) came into force on 1 April 2011, bringing the regulatory framework into line with market and technological changes. In April 2013, the regulations for circuit-switched services in second-generation mobile networks, drawn up by the Bundesnetzagentur with the participation of the telecommunications companies, were implemented. The technical

requirements for packet-switched services in mobile networks of all generations (eg UMTS, LTE) were finalised in December 2013 and are due to be implemented by the end of 2015.

Technical safeguards as per section 109 of the Telecommunications Act (TKG)

Protecting the privacy of telecommunications and personal data, protecting systems against faults resulting in considerable harm to telecommunications networks and services, and managing the risks to the security of telecommunications networks and services are the key objectives of section 109 TKG.

In 2013, the Bundesnetzagentur examined 114 new and 26 revised security concepts for compliance with the provisions of section 109 TKG, for the first time including concepts also drawn up by public telecommunications service providers. In addition, 25 spot checks were made on public telecommunications network operators.

The national procedure for notifying security violations in accordance with section 109(5) TKG is set out in an implementation concept developed by the Bundesnetzagentur. Version 2.0 came into force on 29 January 2014. Out of the total of 13 security incidents about which the Bundesnetzagentur was informed in 2013, seven were classified as security violations within the meaning of section 109 TKG.

POST
RAIL

Last year, the Bundesnetzagentur formulated a catalogue of security requirements for operating telecommunications and data processing systems and for processing personal data. The requirements, which became effective on 8 May 2013, are to serve as a basis for a security concept to be prepared by the companies.

Qualified electronic signatures

The Bundesnetzagentur is the competent authority under the Electronic Signatures Act (SigG). In 2013, the Bundesnetzagentur's work in connection with supervising the certification service providers once again contributed to further optimising existing secure structures in this field.

One area of focus in 2013 was the extensive work in codeveloping the Regulation of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market, which is due to enter into force in 2014. Not only does the Regulation represent a driving force in implementing the EU's Digital Agenda and a significant addition to the regulatory framework for trust services, it also reinforces the establishment of qualified electronic signatures in the EU.

Another area of focus last year was the introduction of the Bundesnetzagentur's new technical infrastructure for its activities under the Electronic Signatures Act. The infrastructure represents the uppermost trust anchor for qualified electronic signatures in Germany and is used to produce and manage certificates for accredited certification service providers. The certificates are stored in a directory service and are kept readily accessible for retrieval and verification. The new technology provides a more efficient system with increased high availability and greater robustness owing to improved overload protection and more comprehensive system monitoring.

International cooperation

At an international level the Bundesnetzagentur placed the focus in 2013 on international roaming, the recommendation on non-discrimination obligations and costing methodologies, and on the draft regulation concerning a digital single market.

The Bundesnetzagentur's work in recent years has been increasingly concerned with the extensive, detailed EU regulatory framework for telecommunications and its ongoing development. Consequently, cooperation between the national regulatory authorities (NRAs), both within Europe and internationally, is becoming more and more important.

The last revision of the EU regulatory framework for electronic communications in 2009 saw the establishment of the Body of European Regulators for Electronic Communications (BEREC). BEREC became operational in January 2010. It is composed of a Board of Regulators, comprising representatives of the NRAs and of the BEREC Office in Riga, which provides administrative support services and is subject to the control of the Management Committee, which in turn consists of NRA representatives and a representative from the European Commission. The Bundesnetzagentur actively promotes the interests of German telecommunications regulation on the BEREC Board of Regulators by contributing to its numerous working groups and by participating on the Management Committee. The Bundesnetzagentur is involved in carrying out BEREC's duties, most especially in developing regulatory best practices such as common approaches, methodologies and guidelines on the consistent implementation of the EU regulatory framework by the NRAs. It also plays a part in drawing up opinions on measures proposed by the European Commission such as the recommendations.

Since 1997 the Bundesnetzagentur has also been a member of the Independent Regulators Group (IRG) in Europe. The IRG continues to function despite the establishment of BEREC, focusing on various issues that do not fall under the responsibility of BEREC but nevertheless usefully supplement it. The IRG Brussels office serves as the main point of contact with its close proximity to the activities of all stakeholders at Community level, including the EU institutions.

The Bundesnetzagentur also takes part in working groups of the International Telecommunication Union (ITU) and of the European Conference of Postal and Telecommunications Administrations (CEPT). Additionally, it is involved in the work of the Radio Spectrum Policy Group (RSPG) and the Radio Spectrum Committee (RSC).

International roaming

Under the Roaming Regulation that came into force on 1 July 2012, the European Commission is using structural measures to pursue its goal of increased competition on the mobile market, alongside the measures already successfully introduced such as renewed reductions in maximum roaming tariffs and extending protective measures against excessive bills. To this end, as of 1 July 2014, sales of roaming services to consumers are to be separate from domestic mobile packages (decoupling). This will give customers the option of purchasing roaming services for other EU countries from alternative providers while still using their own SIM card and mobile telephone number (single IMSI solution). Consumers should also be able to use the local provision of data services by a visited network operator when abroad ("local break-out"). The procedure for doing this should be similar to the current practice of booking WLAN hotspots.

The structural changes to be made by mobile operators have been set out in a European Commission Implementing Act. The Act entered into force in October 2013. The technical specifications for this, in line with the Roaming Regulation, were to be drafted by BEREC and set out and published in the form of guidelines. BEREC published the technical guidelines on implementing these measures in July 2013 (BoR (13) 81). As well as taking the consumer into consideration, these guidelines include more detailed technical specifications, such as a definition of interfaces or a description of the change of provider process. In this respect BEREC worked closely with various enterprises (mobile operators, software producers, associations, standardisation bodies, platform operators etc.), which came together for this purpose in a stakeholder forum initiated by the European Commission.

BEREC has also revised the Guidelines on the previous roaming regulations and published them at the end of February 2013 (BoR (13) 15). These Guidelines are intended to clarify and explain the practical application of those general requirements of the Roaming Regulation that are not concerned with the structural measures or the access obligation. They are meant to provide useful guidance both for mobile operators and for the Agency in checking compliance with the Regulation.

As in previous years, in 2013 BEREC and the NRAs continued to monitor compliance with the Roaming Regulation. BEREC once again carried out extensive data surveys and submitted two reports on the trends in roaming prices and in data volumes and number of minutes at the wholesale and retail levels. The 11th BEREC International Roaming Benchmark Data Report (BoR (13) 125) and the BEREC International Roaming Compliance Report (BoR (13) 126) confirm the findings of previous reports that the Roaming Regulation provisions were being complied with for the most part with respect to both retail and wholesale prices.

Finally, at the end of November 2013, the BEREC Report on Transparency and Comparability of International Roaming Tariffs was published (BoR (13) 185). According to the report, NRAs had received very few customer complaints about a lack of transparency. The ones received mainly related to issues such as the cut-off limit applied in data tariffs or the services included in bundles. In contrast, providers found it difficult to provide data on real-time consumption due to the more complicated cross-border and cross-network accounting processes. With regard to the comparability of tariffs, BEREC found that the market offered a large variety of different types of tariff with numerous options, which makes comparison difficult. On the other hand, this gives customers the possibility of choosing the tariff that best suits their needs from a wide range of options.

Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment

At the end of 2012, the European Commission published a draft recommendation with precise guidelines concerning regulatory activity following two EU-wide consultations on non-discriminatory access for alternative operators to network infrastructures (market 4) and broadband networks (market 5) of market dominant telecommunications operators and on the cost accounting methods according to which charges payable at the wholesale level for access products (such as local loop and bitstream access) are calculated by national regulatory authorities. BEREC issued a detailed opinion (BoR (13) 41) concerning this draft in early 2013. This was made on the basis of the

responses to the consultations and the revised "Common Positions" (Wholesale Local Access (BoR (12) 127), Wholesale Broadband Access (BoR (12) 128) and Wholesale Leased Lines (BoR (12) 126)).

On the one hand, the proposal's outlined goal to boost the expansion of high-bitrate broadband infrastructure was expressly supported by BEREC. On the other, BEREC fundamentally criticised the instruments proposed to reach this aim and the imposed structuring of the regulatory discretion that goes with it. The main point of criticism here is directed at imposing a restricted regulatory model that, given a strict non-discrimination obligation, forgoes rates approval for next generation access (NGA) products under certain conditions. From BEREC's perspective, the assumption that such a model actually leads to an increase in investments in NGA infrastructure by companies with significant market power (SMP) could not be proven. Serious doubts were also raised with regards to the detailed guidelines for a particular calculation method combined with the specification of a target price range (the monthly rental fee of a copper loop amounting to between €8 and €10).

Even though various BEREC concerns were recognised in the final version of the recommendation, other central points of criticism were not taken into account. In practice, considering the detailed guidelines set out, time will tell whether or not the national regulatory authorities will still have the flexibility required to select a solution from the entire array of instruments that is best placed for the given market situation.

Draft regulation establishing a digital single market

The European Commission published its plans for a regulation to complete the European single market in the telecommunications sector ("Connected Continent") in mid-September 2013. The goal is to bring about a major readjustment to the existing EU legal framework in the electronic communications sector in favour of market consolidation. A uniform "single EU authorisation" for European providers, harmonised EU wholesale products, detailed guidelines on the subject of network neutrality, consumer rights that are harmonised on a European level, coordinated allocation of frequencies, and other specifications for international roaming make up the main elements of the planned regulation.

In its statements (BoR (13) 104, BoR (13) 145) BEREC raised doubts whether the principles of proportionality and subsidiarity were sufficiently taken into account considering the extent of the far-reaching harmonisation of the electronic communications sectors (frequency and market regulation and consumer protection for instance). Moreover, in BEREC's opinion, a detailed analysis of the status quo and of the potential impacts of this planned readjustment must be carried out before the legal framework is changed. BEREC clearly supports the retention of regulation that primarily promotes competition and warns of the dangers that arise when the necessary scope for regulation, tailor-made for each market environment, is substantially limited or even completely removed by moving authority to the European level. Decisions should instead continue to be taken at the level that is close to the relevant markets and players active in it. This is the only way innovative national approaches and leadership roles with regards to market regulation can continue to be possible. This is also in Europe's interest. The EU's global competitive edge starts not least with national markets that are as competitive as possible.

Revision of the Recommendation on relevant markets


More than five years after the issue of the revised Commission Recommendation on relevant markets that are susceptible to ex ante regulation (Recommendation 2007/879/EC), the European Commission is reviewing the Recommendation's list of relevant markets and intends to issue a revised recommendation. This review will take account of underlying market and technological developments (eg internet-based applications). It will also incorporate the convergence of different types of networks and services, and developments in NGA networks and services. BEREC was involved in the EU-wide consultation that started at the end of 2012 and responded with a detailed position paper (BoR (13) 22). In its paper, BEREC called for the basic retention of the current structure and the main items on the Recommendation list, and considered any major restructuring to be inappropriate from a regulatory perspective.


Article 7/7a Procedure

A revision of the EU regulatory framework for telecommunications has led to a restructuring of the consultation and consolidation procedure under Articles 7 and 7a of the Framework Directive 2002/21/EC by which the national regulatory authorities notify any intended regulatory measures to the European Commission and the other national regulatory authorities. In particular, this provides for the formal consultation of BEREC and for a BEREC opinion if the European Commission has serious doubts (initiation of a Phase II procedure) as to whether planned regulatory measures conform to Community law. The aim of this mechanism is to promote the internal market for electronic communications, especially with regards to the consistent regulatory application of the provisions of the EU regulatory framework for electronic communications.

In 2013, the European Commission launched a so-called Phase II investigation in 14 cases, whereupon BEREC formed special teams of national experts. Within just a few weeks, these teams drew up opinions on the question as to whether and to what extent BEREC shared the serious doubts of the European Commission on the planned measures of the respective regulatory authorities and submitted these opinions to the BEREC Board of Regulators for a decision. Specialists at the Bundesnetzagentur were also involved in the individual BEREC investigations of the national regulatory decisions of other national regulatory authorities under the Article 7/7a procedure.

At the same time, various draft measures of the Bundesnetzagentur were also investigated last year by BEREC under the Article 7/7a procedure. Opinions were drafted on the serious doubts of the European Commission regarding the draft measures for voice call termination on individual mobile networks (DE/2013/1424, DE/2013/1460) and on networks provided at a fixed location (DE/2013/1430).

 For more information on this topic see "Rulings, activities and proceedings" on page 88.

 All the documents mentioned above can be found at www.berec.europa.eu or www.ec.europa.eu.

International Telecommunication Union

In 2013, the International Telecommunication Union Radiocommunication Sector (ITU-R) compiled and adopted numerous recommendations. They apply to all radio services and several radio applications. ITU-R WP 5D, for example, effectively adopted the methodology for the calculation of spectrum requirements for mobile broadband with respect to agenda item 1.1 of the 2015 World Radiocommunication Conference (WRC 2015). This agenda item looks at additional worldwide spectrum allocations for mobile broadband. With regards to mobile services in the 694 to 790MHz band, work on a harmonised channel plan began for the ITU Region 1 (Europe, Africa and the Arab countries).

ITU-R WP 7C dealt primarily with agenda item 1.12 of WRC-15 (new frequencies for the Earth exploration service) and the feasibility of an extension of the current allocation to the Earth exploration-satellite service in the frequency band 9,300 to 9,900MHz by an additional 600MHz in the frequency band between 8,700 and 10,500MHz. Other topics looked at by the ITU-R that are also agenda items of the WRC-15 included satellite links in unmanned aircraft systems, remotely-piloted aircraft control systems and the worldwide harmonisation of frequencies for automotive radar applications. These topics were also the focus of national and European preparatory work for WRC-15.

With regard to mobile broadband: In addition to compatibility aspects in the proposed frequency bands, an initial stance on additional possible frequency bands was the focus of attention. A variation with an asymmetrical structure for communications and solutions for wireless production technologies were considered in the discussion on the future use of the 700MHz band.

European Conference of Postal and Telecommunications Administrations

The international harmonisation decisions, especially those in the European region, alongside the national requirements are very important with regard to changes in frequency usages. Pushing the harmonisation of frequency usages in Europe is one of the goals here. The Bundesnetzagentur's spectrum management is active in the corresponding CEPT bodies. The CEPT's Electronic Communications Committee (ECC) is also responsible for radio and spectrum matters in the 48 countries within Europe.

A wide range of various harmonisation measures were taken in 2013. Amongst others they related to the following topics: spectrum for wireless production technologies, technical framework conditions for mobile communication systems and mobile broadband, for ultra-wideband technologies and for short range devices.

The Radio Spectrum Policy Group (RSPG) and Radio Spectrum Committee (RSC)

To promote European policy goals, the Bundesnetzagentur contributed to the RSPG's and RSC's work. The RSPG advises the European Commission on current spectrum issues from a political point of view. RSPG Opinions should be taken into account to the greatest possible extent in the EU's activities.

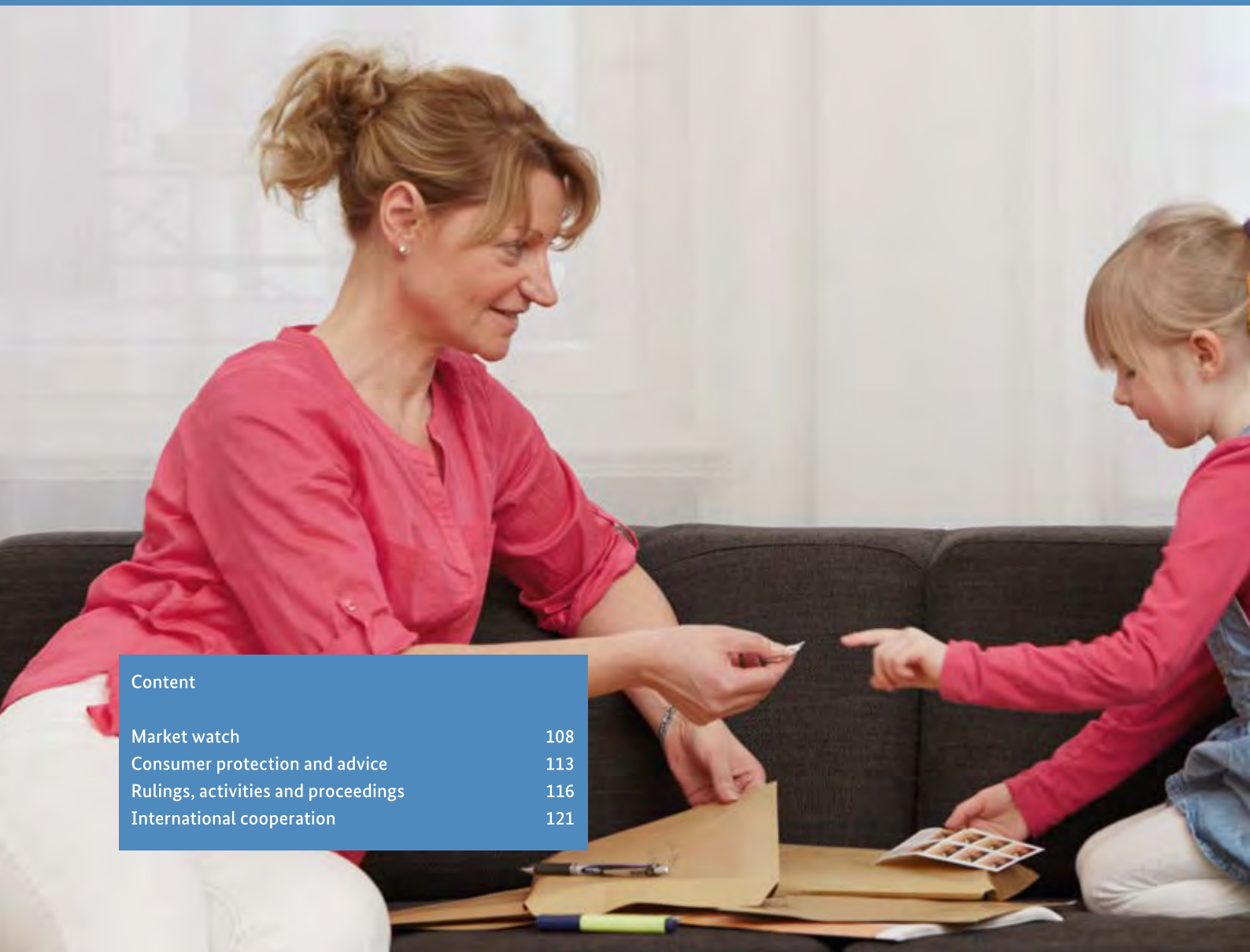
The strategic challenges in the face of growing spectrum demand for mobile broadband and common EU policy objectives to prepare for WRC-15 were dealt with in 2013. Other topics that were also focuses of discussion included: shared spectrum use, radio interference management, spectrum coordination in the event of a reallocation of the 700MHz band, spectrum for mobile broadband and broadcasting services in the frequency range between 400MHz and 6GHz as well as spectrum requirements for other applications.

The RSC assists the European Commission in developing spectrum engineering implementation decisions. Germany is represented by the Federal Ministry for Economic Affairs and Energy and by the Bundesnetzagentur in this body. The "Spectrum Inventory" – a system in which the operator data is stored and made available for all Member States – was a central theme in 2013.



Markets in flux

The turnaround in the postal market continued, with clear indications of a limit to growth in the letter market. The parcel market remained a competition driver as well as a stabiliser for the market overall. The Bundesnetzagentur's interventions to secure competition again ensured a high quality of service.



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Although communication habits are changing, postal services remain an important macroeconomic factor and a firm element of the public infrastructure and community. Transportation volumes are rising, demonstrating how dependent citizens and the economy are on high-quality services in this area.

The increasing popularity of online retail led to higher volumes and revenues in 2013. Providers adapted their structures accordingly and extended the range of delivery options available to consumers. For instance, there has been a considerable increase in the number of acceptance and collection points with consumer-friendly opening hours. Hermes has followed in Deutsche Post DHL's footsteps and launched its own nationwide network of outlets for individual customers. Other providers who previously delivered predominantly to business customers have followed suit and now also offer delivery to consumers.

Since the competitive situation on the letter market has not improved to the point where it allows for fair, well-functioning competition between the providers, it remains subject to monitoring and regulation by the Bundesnetzagentur, albeit only to a fairly limited extent due to current legislation.

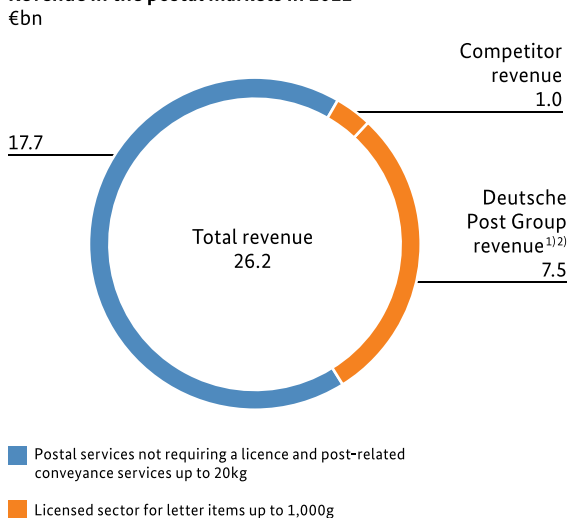
Market watch

There were two sides to the postal market in 2013: while there was little structural change in the letter market, a number of new opportunities opened up in the parcel sector.

Postal market

In 2012 the German postal market generated total revenue of approximately €26.2bn. Of this, around €8.5bn were accounted for by the licensed letter sector (letter items up to 1,000g). Postal services not requiring a licence (notably courier, express and parcel services, or CEP) contributed the remaining approx. €17.7bn.

Revenue in the postal markets in 2012



1) Deutsche Post AG including subsidiaries (DHL, Deutsche PostCom and Deutsche Post InHouseServices)
2) Forecast figure

Source: WIK, Bundesnetzagentur, December 2013

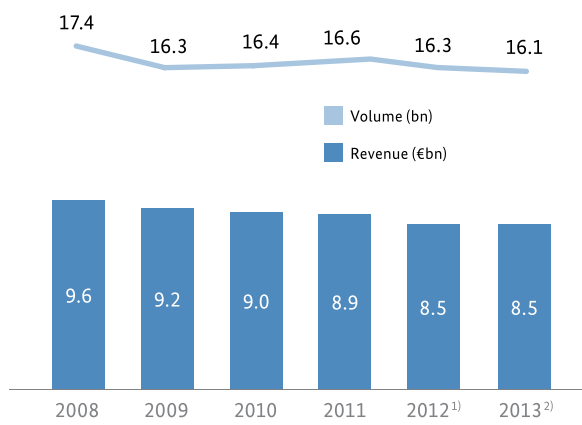
Licensed letter market

Revenue and volumes

Since the letter market was fully liberalised in 2008, revenue in this sector dropped from €9.6bn to €8.5bn in 2012. In 2008, volumes still stood at 17.4bn letters; after a slight increase in the interim, by 2012 they had declined to 16.3bn. Revenue is expected to have reached around €8.5bn¹⁾ in 2013, with volumes of around 16.1bn¹⁾.

Revenue among competitors of Deutsche Post Group rose to just under €1bn in 2012. For 2013 revenue is expected to reach around €1bn.

1) Forecast figure

Revenue and volumes in the licensed sector for letter items up to 1,000g


1) Updated figure

2) Forecast figures

Of the approximately 10.5bn incidental service items handled by DPAG in 2012, 1.7bn items were posted by competitors. The expected number of DPAG incidental service items in 2013 is 10.5bn¹⁾.

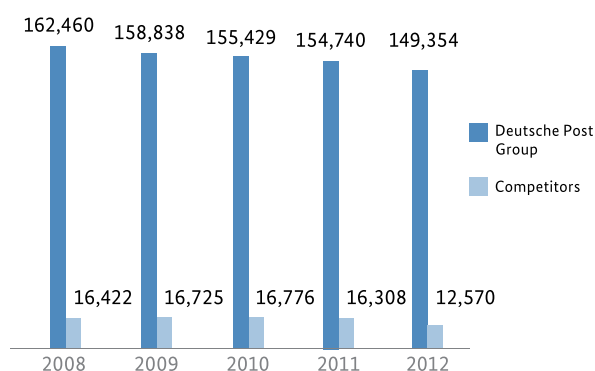
In 2012 Deutsche Post Group generated €4.4bn in revenue in the incidental service sector (2013: €4.6bn). The corresponding revenue generated by competitors in 2012 was €100m. For 2013, a small increase is expected.

Deutsche Post Group's end-to-end volumes in 2012 stood at just under 4.0bn; associated revenue reached almost €3.0bn. The forecast figures for 2013 are 3.5bn items and around €2.8bn¹⁾ in revenue. In 2012 Deutsche Post Group's competitors conveyed 1.9bn items in this segment, a figure that has continually risen since 2008 (approx. 1.4bn items). Between 2008 and 2012, associated revenue rose from around €0.7bn to just under €0.9bn. For 2013, the Bundesnetzagentur has forecast a further increase in volumes and revenue.

Workforce development

The players on the letter market (excluding subcontractors) saw a decline in headcount (expressed in full-time equivalents) from almost 179,000 in 2008 to just under 162,000 in 2012 – a decrease of approximately 10%.

Competitors' workforces grew slightly between 2008 and 2010 before beginning to decline in 2011. By the end of 2012 they had shrunk to below 13,000, a considerable decrease in full-time equivalents compared to 2008 (16,422). The number of Deutsche Post Group employees in this segment (expressed in FTEs) dropped from just over 162,000 in 2008 to just over 149,000 in 2012.

Employees in the licensed letter sector¹⁾


1) Number of employees converted to full-time equivalents in the licensed letter sector; excluding subcontractor activities

Market shares in the licensed letter sector by revenue and volume

%	Market shares				
	2008	2009	2010	2011	2012
Revenue					
Deutsche Post Group	91.5	90.7	89.6	90.0	88.5
Competitors	8.5	9.3	10.4	10.0	11.5
Volume¹⁾					
Deutsche Post Group	91.9	90.8	89.8	89.4	88.6
Competitors	8.1	9.2	10.2	10.6	11.4

1) Volumes for Deutsche Post Group include incidental service items

1) Forecast figures

Number of operators in the licensed sector split by revenue¹⁾ (without Deutsche Post Group)

Revenue in €	Up to €10,000	€10,001 to €100,000	€100,001 to €500,000	€500,001 to €1,000,000	>€1m to €10m	>€10m
2008	~ 250	129	82	38	101	18
2009	~ 200	185	102	44	97	18
2010	~ 150	178	108	44	93	20
2011	~ 150	181	117	42	90	22
2012	~ 150	192	113	36	103	28

1) The number of operators shown here is lower than the total number of licensed operators, as in many cases the parent company or group provided data for all affiliated licence holders.

Market structure

The number of providers handling letters up to 1,000g on their own account has continually declined in recent years to currently just over 600. However, the situation appears to be stabilising somewhat. Some 150 licensees are "micro-companies" that generate revenue of less than €10,000 a year and are managed only by the firms' owners and occasionally their family members.

Letter prices

Since the Postal Act came into force in 1998, prices for single letter items (eg, postcards, standard and compact letters) have remained more or less stable, thanks largely to rates regulation on the part of the Bundesnetzagentur. Adjusted for inflation, real prices for letter services dropped by more than 22% between 1998 and 2013, despite a price increase for standard and maxi letters.

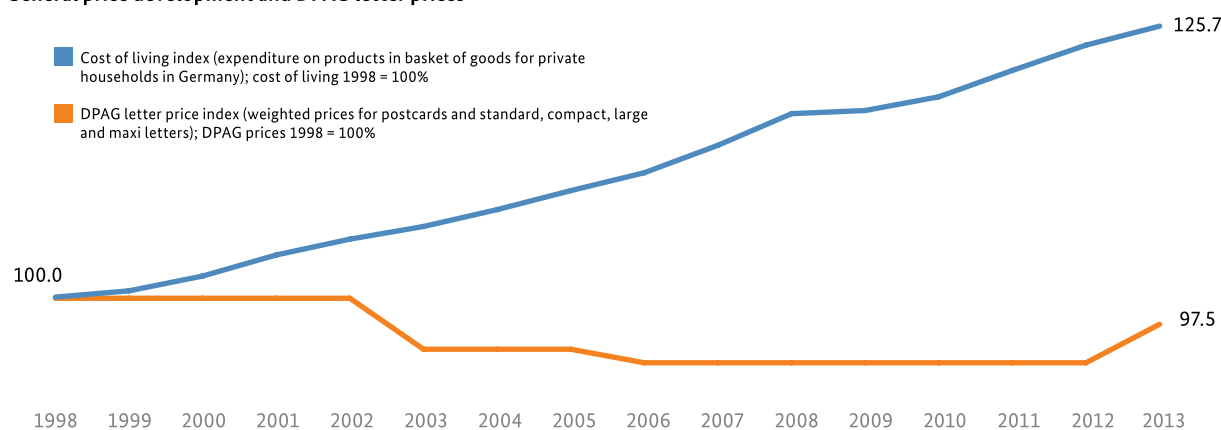
Compared to the rest of Europe, Germany's letter prices (weighted basket consisting of DPAG's national postcard, standard, compact, large-size and maxi letter products) are at the lower end of the scale. Only in six of the 27 EU Member States (in 2012) were the national

incumbents' letter prices lower than those of DPAG, adjusted for the local cost-of-living index. In the remaining 20 Member States letter prices are, relatively speaking, higher.

Postal and conveyance services not requiring a licence**Revenue**

The market for parcels (including goods items) and documents up to 20kg (including courier items and letter items over 1,000g), non-personally addressed and unaddressed promotional material, advertising inserts, classified ad publications and addressed newspapers and magazines generated revenue of €17.7bn in 2012.

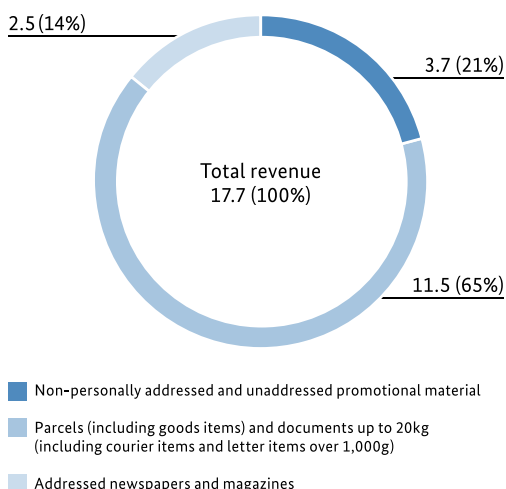
Revenue generated with parcels (including goods items) and documents up to 20kg (including courier items and letter items over 1,000g) in 2012 stood at €11.5bn. The figure is expected to have reached approx. €12.2bn¹⁾ in 2013.

General price development and DPAG letter prices

Source: Consumer price index 2013; as of December 2013

1) Forecast figures

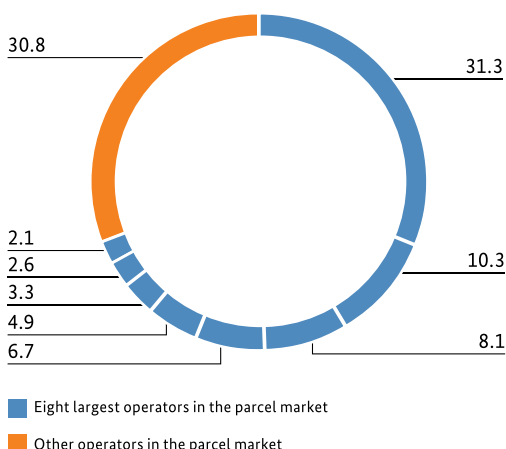
Revenue in the unlicensed sector in 2012
€bn



Source: WIK, December 2013

The providers of services not requiring a licence that generate most of this revenue primarily offer parcel services. In 2012, the eight largest providers of conveyance services for parcels and documents up to 20kg were (in alphabetical order): Deutsche Post DHL, Dynamic Parcel Distribution (DPD), Federal Express Europe, GLS Germany, Hermes Logistik Gruppe, TNT Express, trans-o-flex and United Parcel Service Deutschland (UPS). These eight carriers generated revenue of €8bn in 2012, which equates to almost 70% of total revenue. The top three providers were able to strengthen their leading positions, generating almost half of total revenue in 2012.

Shares in the parcel market by revenue in 2012
%

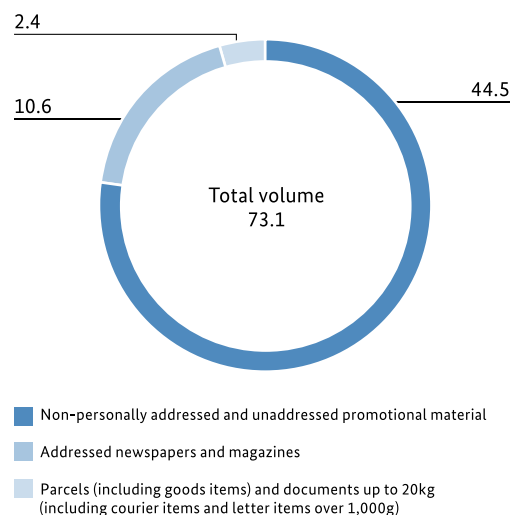


Source: WIK, December 2013

Volumes

In 2012, volumes in the sector for postal and conveyance services not requiring a licence were as follows:

Volumes in the unlicensed sector in 2012
bn



Source: WIK, December 2013

Volumes in the segment for parcels (including goods items) and documents up to 20kg (including courier items and letter items over 1,000g) are expected to reach approx. 2.5bn¹⁾ in 2013 (2012: 2.4bn).

The six largest providers of courier, express and parcel services in terms of volume in 2012 were (in alphabetical order): Deutsche Post DHL, Dynamic Parcel Distribution (DPD), GLS Germany, Hermes Logistik Gruppe, trans-o-flex and United Parcel Service Deutschland (UPS). In 2012 these six carriers jointly handled 1.8bn CEP items up to 20kg, which equals more than three quarters of all items in this category.

RAIL

1) Forecast figures

Incidental services/Licences/ Survey on working conditions

Access to DPAG's network is open to postal service providers as well as consumers subject to the same terms and conditions. In 2013 DPAG signed a total of 172 new incidental service agreements with consumers and competitors. Between 2012 and 2013 the number of agreements with consumers rose from 82 to 127. Similarly, the number of agreements with competitors rose from ten in 2012 to 45 in 2013. In 2013, the number of new incidental service agreements relating to other aspects (eg, use of automatic franking machines) stood at 13,789.

In the year under review, the Bundesnetzagentur issued a new licence to 64 postal service providers. During this time 163 providers withdrew from the market, taking the total number of licensees as at the end of December 2013 to 1,200.

Following a resolution of its Advisory Council, in 2013 the Bundesnetzagentur sent a mandatory questionnaire to all licensees concerning their working conditions. This extensive survey covered a large number of aspects, including collaboration models used by the companies, wages and salaries paid, the type and extent of training offered to employees, and leave entitlements. By the end of 2013 the completion rate of the survey stood at over 90%.

Consumer protection and advice

In 2013 Germany's postal service providers continued to provide basic services across the country, including delivery every working day. The Bundesnetzagentur is on hand to provide a professional response to any complaints or questions from citizens.

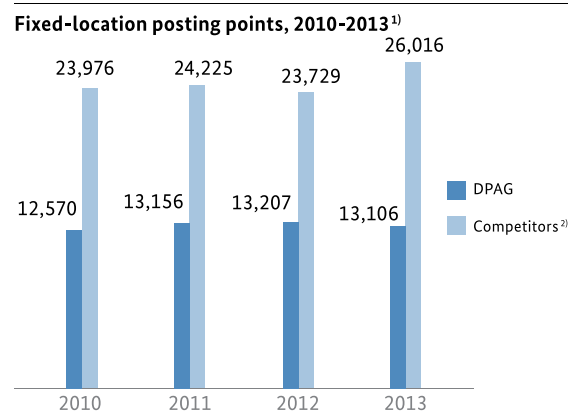
Universal service

All German citizens are entitled to basic postal services under a scheme known as universal service. These services are provided by DPAG and its competitors.

The services that come under universal service are listed in the Postal Universal Service Ordinance (PUDLV). These are the conveyance of letter items up to 2,000g, addressed parcels up to 20kg and newspapers and magazines. The Ordinance also stipulates the quality of universal service. Quality criteria include delivery frequency (eg, six working days a week) and network density (eg, a sufficient number of fixed-location posting points across Germany where letters and parcels are accepted and collected). Finally, the Ordinance also stipulates certain transit times for letters and parcels. The Bundesnetzagentur monitors compliance with these requirements. In 2013 all universal service criteria were fulfilled.

Fixed-location posting points and post boxes

The Ordinance requires that at least 12,000 fixed-location posting points be maintained across Germany. This infrastructural criterion was fulfilled in 2013; no long-term gaps in the network were identified. In light of the fact that parcel services are becoming more significant, the number of outlets and parcel points is expected to rise.



1) Forecast figures

2) Competitors' figures relate predominantly to parcel points

As of 31 December 2013

A sufficient number of post boxes have to be installed in the street or affixed to walls so that the vast majority of residents in built-up areas do not need to travel more than 1,000 metres to reach one. This statutory requirement was also met in 2013. No longer-term gaps in the post box network were found. At the end of 2013 DPAG operated 111,666 post boxes across Germany; the corresponding number in 2012 was 112,052. At the beginning of 2013 the number of competitors' post boxes in Germany stood at 6,253.

Transit times for letters and parcels

According to information available to the Bundesnetzagentur, transit times for letters and parcels also met the statutory requirements in 2013. Averaged across an entire year, 80% of all national letters have to be delivered within one working day, rising to 95% to be delivered within two working days of the posting date. The corresponding rule for national parcels states that 80% have to be delivered within two working days of the posting date.

Delivery

Letters and parcels must be delivered at least once every working day. Unless collection has been pre-arranged, letters are delivered by placing them in a letterbox or handing them over to the addressee or an

alternative recipient. Unless they are collected, parcels, too, must be handed over personally to the addressee or to an alternative recipient.

Taking into account the large number of letter and parcel items each year, the criteria laid down in the Ordinance were deemed to have been met in 2013.

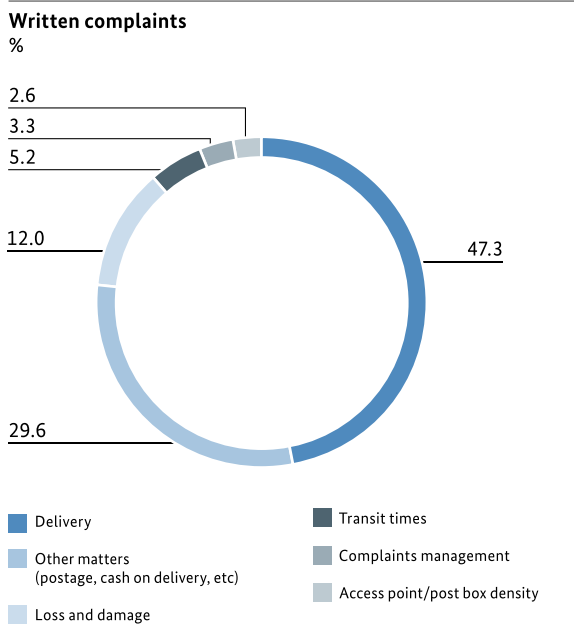
Consumer complaints

All users of postal services are entitled to address any complaints they may have to the Bundesnetzagentur. Within the scope afforded to it by law, the Bundesnetzagentur strives to protect and satisfy the interests of consumers by ensuring compliance with the quality criteria that govern postal universal service. In this context, consumer complaints are a valuable indicator of the quality of universal service.

In the period under review, every day the Bundesnetzagentur received a large number of complaints concerning postal services. A total of 1,228 written inquiries and complaints were received over the course of the year (2012: 1,298). The number of telephone inquiries and complaints rose considerably in 2013.

An increasing number of complaints concerning postal universal service in 2013 related to the quality of letter and parcel delivery. Many stated that delivery was not taking place every working day and that parcels were being delivered to alternative recipients even though the actual addressees were at home. The Bundesnetzagentur will continue to keep a close eye on incoming complaints concerning delivery.

Other contentious issues included the closure of postal retail outlets, the removal of post boxes, and collections from post boxes. In 2013, the Bundesnetzagentur continued to follow up every complaint and worked to address existing shortcomings as far as legislation allowed.



The Bundesnetzagentur also followed up on complaints and inquiries that did not relate to universal service. These ranged from complaints concerning unclear or wrong track-and-trace information supplied by many providers to criticisms about the way complaints were handled by certain providers. Complaints were also received concerning the late remittance of cash-on-delivery amounts.

Dispute resolution

In accordance with Article 10 of the Postal Services Ordinance (PDLV) the Bundesnetzagentur offers a simple, low-cost procedure to settle disputes between end customers (not business customers) and postal service providers. The fee for this service depends on the amount in dispute. For amounts in dispute of up to €25,000 the fee is €25; beyond that, a charge of 0.1% of the amount in dispute is added to the basic fee.

Consumers who consider their rights under the Ordinance violated and who have already unsuccessfully attempted to seek redress may petition the Bundesnetzagentur to intervene. However, this is a voluntary process that requires the cooperation of all parties and aims to reach an amicable settlement for both sides.

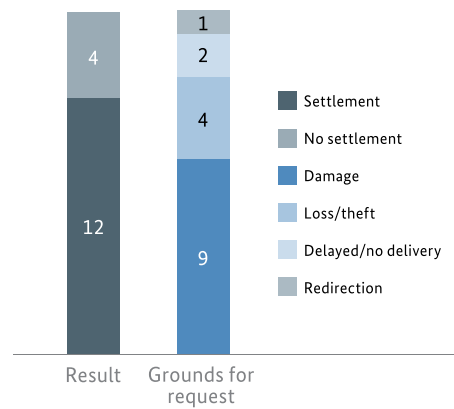
In this context, the Bundesnetzagentur merely functions as an intermediary and has no power to take a final decision on the matter. It hears both sides and

may subsequently present the parties with a suggested solution to the problem. That said, a case may also end without having resolved the dispute.

In 2013 the Bundesnetzagentur received 45 requests for dispute resolution. This represents a 36.36% rise over the figure for 2012 (33 requests). Twelve requests were rejected as they did not meet the preconditions for dispute resolution. In eleven cases the postal service providers in question refused to cooperate in the proceedings; four requests were withdrawn. Two cases are still pending.

In 2013 the Bundesnetzagentur's dispute resolution panel handled 16 cases, of which twelve were settled amicably.

Dispute resolution cases in 2013



As of 31 December 2013

From the Halligen islands to the Alps

Since the full liberalisation of the post market, Deutsche Post's competitors are increasingly contributing to nationwide letter delivery. This drives innovations.



For many companies, as well as private households, it is normal that alternative postal services in addition to Deutsche Post collect and deliver their mail. In this environment, marked by competition, a first-class range of services have developed for final customers, not only in cities, but also in rural communities.

The business models involved are diverse, ranging from regional mail service providers up to parcel carriers that operate nationwide. All are contributing to securing postal services in Germany. Regionally oriented companies often focus on their own geographically limited delivery networks and frequently fall back on the infrastructure of the former monopolist for

inter-regional deliveries. A few even try to expand their offer and become more independent through joint networks. This creates new competitive impulses.

With regards to the parcel services business, it has already been proven that competition on an equal footing leads to innovations and improvements for the customers in the long run. Timed deliveries or especially quickly executed deliveries, delivery tracking and the possibility to flexibly change the delivery destination are just a few examples that are a part of this. The Bundesnetzagentur's commitment to guarantee postal service nationwide is therefore assured, with quality improving all the time.

Rulings, activities and proceedings

The new price cap benchmark decision is a milestone in that it ensures that DPAG will continue to offer high-quality letter mail services for the next five years. Owing to declining volumes, however, a slight increase in postage rates was deemed justified.

Price cap benchmark proceedings

Under the price cap mechanism, every year DPAG's postage rates for letter items up to 1,000g are approved by the Bundesnetzagentur. The underlying criterion in this regard is the benchmark decision that, in advance of the actual approval, sets the scene for the multi-year approval period.

The new prices are fixed based on the difference between the rate of inflation and the productivity increase as determined in the benchmark decision. The productivity increase is determined on the basis of the cost of efficient service provision on the one hand and what are known as neutral expenses on the other. Under the Postal Act, these neutral expenses represent a special financial burden on DPAG that results from having to maintain a nationwide infrastructure, pay social insurance contributions, and form provisions for retirement benefits.

On 14 November 2013 the Bundesnetzagentur set the price cap regulation benchmarks that would apply for the following five years. Accordingly, DPAG is assumed to be subject to a productivity increase of 0.2% per annum. Following this decision, any further postage rate increases will have to remain under the expected increase in consumer prices. In return, the company benefits from planning security for the next few years and has sufficient scope for continuing to offer good-quality universal service across the country – an important consideration for consumers. The productivity increase was set at a lower level than in previous years, mainly due to the decline in single piece letter volumes which in turn is the result of the substitution of traditional mail by electronic communication. Developments in this market are hence incomparable with volume changes taking place in other areas, such as parcels.

Approval of rates for 2014

In price cap proceedings, on 29 November 2013 the Bundesnetzagentur approved DPAG's rates for letter items up to 1,000g for 2014, clearing the way for an increase in standard letter rates by 2 cents to currently €0.60. Prices for registered letters increased by 10 cents to €2.15 and for registered letters with proof of delivery to a mailbox by 20 cents to €1.80.

2013 saw the first, moderate, increase in letter rates in 15 years, namely by 3 cents to €0.58. The renewed increase in 2014, this time to €0.60, takes letter rates to just 4 cents above what they were in 1998, namely €0.56.

Increase in incidental service discounts effective 1 January 2013

The rates charged by DPAG in return for incidental services are closely connected to the price cap decision. An incidental service is a service that is normally offered as a full conveyance service by DPAG but in this case, minus those parts that are rendered by the requesting provider. These include the pre-sorting (eg, by region) of customer-franked, machine-readable items and transportation of these items to DPAG's mail sorting centres. The incidental service scheme is predominantly used by DPAG's key account customers or competitors, mainly consolidators. Depending on the preparatory services they provide and the volumes they send, they are offered lower rates in the form of a certain discount on standard postage rates. This discount on the standard rate (eg, from 1 January 2014, €0.60 for a standard letter up to 20g) is referred to as an incidental service discount.

In the course of raising its postage rates for standard items effective 1 January 2013, DPAG also increased its incidental service discounts for certain types of item. Despite a nominal increase in these discounts, on balance the measure resulted in a 2.2% increase in incidental service rates for standard letter items, since the higher discounts are granted on the standard rates, which also went up, albeit to a greater extent.

As the Ruling Chamber's prior examinations on the proposed changes in incidental service discounts revealed no violations of the Postal Act, there was no need to open formal abuse proceedings. The examination of the cost information provided by DPAG confirmed what the Bundesnetzagentur had already established when it investigated the bigger discounts that came about with the introduction of VAT on business customer items in 2010, namely that the cost of efficient service provision was covered as required by the Postal Act. It was shown that the majority of the costs under Article 20(2) sentence 2 of the Postal Act had been considered in the incidental service rates, in line with the requirements of the latest price cap benchmark proceedings.

The fact that the price increases in the consumer segment were not implemented to the same degree in the business customer segment is the result of a business decision by DPAG that is fully acceptable from a regulatory point of view. There is no obligation to give equal treatment to private and business customers; neither do the non-discrimination rules require this.

Approval of rates for access to P.O. boxes

On 28 November 2013 the Bundesnetzagentur approved the rates payable by competitors for access to DPAG's P.O. boxes for the period 1 January 2014 to 31 December 2016.

DPAG is obliged to enable alternative delivery service providers to deliver items that are addressed to a P.O. box. Access is granted by having DPAG employees deliver competitors' items that are dropped off at the relevant P.O. box facility to the correct P.O. box.

The fee for this consists of an acceptance charge that is payable per item and covers the work associated with accepting the item, plus a per-item sorting charge payable for the act of placing each individual item into the correct P.O. box. The sorting charge was raised from 3.0 cents to currently 3.6 cents per item. By contrast, the acceptance charge was lowered from €1.14 to €0.98. This approved rate is hence considerably lower than the acceptance charge of €3.81 for which DPAG had originally applied.

Approval of rates for access to change-of-address information

The Ruling Chamber also decided on DPAG's application for rates approval concerning change-of-address information. DPAG is obliged, in return for a fee, to grant alternative providers access to its records on change-of-address information that it receives when customers request the redirection of their mail. Access to this information makes it easier for other providers to deliver wrongly addressed items to the right recipient.

On 28 November 2013 the Ruling Chamber approved a rate of 18 cents per successful address match for the period 1 January 2014 to 31 December 2016, which is considerably lower than the fee of 22 cents per match that DPAG had applied for. As the process has since been adjusted to reflect modern technical standards, no hardware costs were included in the approval.

Approval of rates for the E-Postbrief product

On 20 December 2013 the Ruling Chamber approved a follow-up application filed by Deutsche Post E-POST Solutions GmbH, a subsidiary of DPAG, concerning the product "E-POSTBRIEF mit klassischer Zustellung", effective 1 January 2014.

E-Postbrief items are posted electronically by senders who have to register with DPAG in advance of using the service. The items are subsequently delivered either electronically to addressees who have also signed up to the service, or physically. In the case of physical delivery, the content of the item is transmitted electronically by the sender to Deutsche Post E-POST Solutions GmbH or one of its subcontractors, which prints out the item, folds it, inserts it into an envelope and franks it with the postage applicable to a comparable DPAG standard product, ie €0.60 for a standard letter, for example.

These items are subsequently handed over to Deutsche Post InHaus Services GmbH, the consolidator that injects them into DPAG's system, for delivery to their addressees.

The rates to be approved only related to the portion of the service provided by the applicant, that is, the physical conveyance of licensed letter items. In other words, the rates do not correspond to the full charge payable by the customer. Senders also have to pay for electronic posting, letter production and VAT, so the rate payable by them is, eg, not €0.40, the approved rate for the "Standard-E-Postbrief", but rather €0.60.

In examining the rates proposed, the Ruling Chamber ensured that Deutsche Post E-POST Solutions GmbH is not given preferential treatment over external customers when they make use of services provided by other

subsidiaries within the same group. Such preferential treatment would violate the non-discrimination rules under the Postal Act and would have been rejected as anti-competitive behaviour. The approved rates are valid until 31 December 2014.

Renewed decision: Rates for access to change-of-address information

In 1999 DPAG began to grant access to change-of-address information having been requested by the Ruling Chamber to do so on the basis of section 31(2) of the Postal Act; competitors had repeatedly applied to the Bundesnetzagentur for access.

Since then, the Ruling Chamber has approved the rates for such access seven times. Two of these rates approvals – dated 30 June 2004 and 30 June 2006 – were repealed by the Higher Administrative Court of the state of North Rhine-Westphalia. The Bundesnetzagentur was requested to issue a new decision.

Accordingly, on 3 and 8 May 2013 the Ruling Chamber approved a rate per match of 23 cents (previously 16 cents) for the period 1 July 2004 to 30 June 2006, plus a set-up charge of €55.95 (previously €48.77) for the period 1 July 2006 to 31 December 2008.

DPAG is entitled to recover the shortfall from the competitors in question.

Rates for the service of documents

In 2013 the Bundesnetzagentur issued 25 rates approvals relating to the service of documents. All service providers, not just the incumbent, are obliged to apply for rates approval for this service. 36 first-time applications were filed in 2013, as many as in previous years, after a short-term decline in 2012. Applications were filed both for rates for single items and for rates on a sliding scale. The highest approved rate for the period 2013 was €3.45, the lowest was €1.80.

In their applications licensees demonstrated that they had been able, to a varying extent, to cut costs by using economies of scale and denser collection and delivery networks. Some applicants had nationwide operations, some were regional, and all served areas with varying population densities. They had established joint delivery networks and partnerships allowing them to respond to public requests for tender on a larger scale. Providers of this kind of service continued to consolidate in the period under review.

Examination of rates for business consumer parcels

In the period under review the Ruling Chamber received complaints from competitors that suggested that DPAG's B2C¹⁾ parcel rates were potentially below cost. B2C parcels, it was alleged, were being cross-subsidised by the rates payable for C2X²⁾ parcels, notably over-the-counter parcels, the prices of which were said to be above cost.

Generally, before the Chamber can begin to investigate cost-coverage issues it has to conduct a market review. The Ruling Chamber therefore carried out a special survey of the parcel market to verify the definition of the relevant market. The outcome: owing to current market developments and in light of differences regarding conditions of production, stop factors, delivery time windows, delivery attempts, returns and rates, it appears that the market should no longer be divided into two segments – B2X and C2X – but into three, namely C2X, B2B³⁾ and B2C.

The conclusion of the special survey was that if DPAG/DHL were to operate on an independent B2C parcel market, it would have a dominant position. The Ruling Chamber subsequently investigated the allegations of below-cost rates and requested DPAG/DHL to submit relevant documentation. Whether or not a formal rates review will be initiated was still unclear at the time of writing; the investigations had still not been concluded in the period under review.

Preferential treatment of Compador by DPAG

In late 2012 DPAG acquired a stake in two competing firms, Compador Technologies GmbH (CT) and Compador Dienstleistungs GmbH (CD). CT had previously collaborated closely with PostCon Deutschland GmbH, a subsidiary of TNT.

Amongst other things, it was alleged that DPAG had given preferential treatment to Compador over other rival market players in the shape of, eg, better terms and conditions, more favourable access and special assistance.

Accordingly, in July 2013 the Ruling Chamber initiated formal abuse proceedings against DPIHS, a DPAG subsidiary. The subject matter in these proceedings is the potential preferential treatment granted to CD over other competitors that inject letter items to DPIHS, which then hands them over as incidental service items to DPAG under a consolidation arrangement.

The main contentious issue is whether DPIHS has been assigning CD later posting slots and more favourable posting terms and conditions than it does to CD's competitors. If so, this would put CD in a position to offer its own customers later collection times and still manage to meet the overnight delivery requirement for letters. At the time of writing the matter had not yet been fully investigated.

Court cases

Federal Administrative Court ruling on P.O. box access

On 29 May 2013 the Federal Administrative Court (reference: 6 C 10.11) handed down a last-instance ruling on the rates for P.O. box access that had been approved for the period 1 April 2002 to 30 June 2004 in a decision dated 6 February 2002 (reference: BK 5b01/110). The Ruling Chamber had only given partial approval to the rates submitted by DPAG. Approval had been granted for a flat rate of DM1.14 (€0.58) for each posting plus a variable rate of DM0.08 (€0.04) per posted item.

DPAG had appealed to the Federal Administrative Court to compel the Bundesnetzagentur to approve the rates that it had originally applied for, namely DM3.17 (€1.62) and DM0.15 (€0.08), respectively.

1) B2C = business-to-consumer; ie, parcels sent by businesses to consumers (through online mail order, etc.)

2) C2X = customer-to-any, ie, parcels sent by consumers to any type of recipient (also known as over-the-counter parcels)

3) B2B = business-to-business, ie, parcels sent by businesses to businesses

The Court partly rejected DPAG's appeal and rejected the Bundesnetzagentur's appeal. It subsequently ordered the Bundesnetzagentur to approve rates in the amount of DM2.04 (€1.04) per posting plus DM0.08 (€0.04) per posted item.

Higher Administrative Court rulings on price-cap rates approvals from 2003 to 2005 (subject to appeal)

In a decision dated 9 December 2013 (references: 13 A 476/08; 13 A 477/08; 13 A 478/08) the Higher Administrative Court of North Rhine-Westphalia rejected appeals filed by a registered association representing the interests of courier and express service providers.

The association, a customer of DPAG, had brought three actions for rescission against rates approvals granted under price cap proceedings for the period 2003 to 2005 (references: BK 5b-02/090; BK 5b-03/101; BK 5b-04/083). In three proceedings (references: 22 K 3808/03; 22 K 8715/03; 22 K 9007/04) the Administrative Court in Cologne on 16 November 2007 had rejected the association's actions for rescission in the first instance. The Higher Administrative Court of North Rhine-Westphalia initially refused the association leave of appeal, but then granted it after the association lodged a constitutional complaint.

The Court subsequently rejected the appeals as unfounded. It followed existing case law in arguing that the rates approvals granted to DPAG for the period 2003 to 2005 did not directly violate the association's rights. The aim of the Postal Act in general and of rates regulation in particular, it stated, was to enable equal and well-functioning competition, with consumer protection a subordinate concern. The rates approval mechanism hence did not grant individual customers any subjective rights that they could enforce before an administrative court. The markets for postal services, continued the Court, would no longer benefit from a stable framework if any user of these services could bring legal action against rates approvals in an attempt to change the rates in question. If this were allowed to happen, neither DPAG nor its competitors would have the certainty they needed to calculate and plan investments.

Finally, the Court stated, the disputed rates approvals were lawful. The benchmarks used in the decision underlying the final rates approvals (26 July 2002, reference: BK 1b-02/002) had been correctly applied. The plaintiff has lodged an appeal against the decisions.

Postal data privacy

In the period under review, the Bundesnetzagentur carried out a variety of routine and incident-related data postal secrecy and data privacy compliance checks on postal services. A total of 614 reports were issued, 230 of these after incident-related checks. 22 checks were dedicated exclusively to data privacy issues.

On account of the growing public awareness of data privacy, during these checks the licensees frequently asked questions on data protection and postal secrecy, sometimes with reference to certain specific circumstances and the necessity for licensees to meet certain quality criteria. The Bundesnetzagentur also performed a follow-up whenever questions were left unanswered.

In 2013 the Bundesnetzagentur conducted further checks in cooperation with the Federal Commissioner for Data Protection and Freedom of Information. Thanks to regular, efficient communication on fundamental issues relating to data privacy and postal secrecy, plus regular dialogue with postal market players, the Bundesnetzagentur ensures that all postal service providers comply with their obligations proactively.

International cooperation
The Bundesnetzagentur contributes towards maintaining a coherent regulatory framework across Europe and around the world. Owing to the rise in online retail, today transnational agreements and uniform technical standards are more important than ever before.

Universal Postal Union

In 2013, on behalf of the Federal Ministry of Economics and Technology, the Bundesnetzagentur again contributed to the work of the Universal Postal Union (UPU), a UN Specialized Agency, and of its councils, the Council of Administration (CA) and the Postal Operations Council (POC).

UPU mandates run for a term of four years. At the 25th Universal Postal Congress in 2012 in Qatar, Bishar A. Hussein from Kenya was elected Director General of the International Bureau, the body responsible for managing the UPU's business between Congresses. The International Bureau's Deputy Director General is Pascal Clivaz, a Swiss national. Both will serve from 2013 to 2016.

The CA, which consists of 41 member countries, ensures the continuity of the UPU's work between Congresses, supervises its activities and studies regulatory and legal issues. At its first meeting of the session in April 2013 the representatives concentrated on setting up the committees and associated project groups. At its meetings in October and November 2013 the CA agreed on the principles that will guide its work during the present session. Other dominant items on the current agenda are the safety of postal conveyance, compatibility with WTO rules, and the importance of boosting awareness of regulatory issues. In connection with the latter, a Forum on Postal Regulation took place in November 2013 that will henceforth be convened on a yearly basis. The first Forum focused on universal service, its financing, and the possibility of it being scaled back in future.

The POC is the technical and operational body of the UPU and consists of 40 member countries that are elected during Congress. Its first meeting of the session took place in April 2013 under its newly elected chair, Masahiko Metoki from Japan. During this meeting the POC outlined the work programmes for its committees and project groups for the present session and defined its objectives in line with the budgetary framework.

CERP

The European Committee for Postal Regulation (CERP) counts all 48 European countries among its members. It is currently chaired by Germany, which in turn is represented by the Bundesnetzagentur. CERP held its 2013 annual plenary meeting on 23 and 24 May in Kristiansand, Norway. During this session the delegates drew up a work programme for the coming years that reflects the recently signed Memorandum of Understanding between CERP and the UPU.

Under this MoU, the experience gathered in Europe in connection with the liberalisation of postal systems will be opened up to decision-makers in other regions, too, in an effort to achieve as coherent an approach towards regulation as possible around the world. The Bundesnetzagentur has repeatedly seconded national experts to UPU member states, most recently Afghanistan, to assist them in developing postal policies for the future.

TAIEX projects

In spring 2013 the Bundesnetzagentur implemented a TAIEX project (Technical Assistance and Information Exchange Instrument) for the national regulatory authority of the Former Yugoslav Republic of Macedonia (FYROM). The aim was to share experience gathered in connection with postal market monitoring. The Bundesnetzagentur presented its own insights as well as those of other European countries and explained the various approaches used. This is to assist FYROM in meeting its obligations concerning European legislation in the postal area as the country prepares to join the European Union.

European and international standardisation

Since 1993 the European Commission has contributed towards technical standardisation in Europe's postal sector by giving mandates to CEN, the European Committee for Standardisation. Most of the work being done in this field relates to the Community-wide harmonisation of technical processes to measure the quality of universal service (eg, letter transit times) and to improvements in the interoperability of all national postal networks.

To this end, a dedicated Technical Committee (CEN/TC 331) has been established that develops European standards and technical specifications for postal services. CEN/TC 331 currently consists of four working groups, each of whom have a "shadow" working group within the German Institute for Standardization (DIN).

In the year under review, the Bundesnetzagentur specifically monitored compliance with national and European legislation and ensured that providers' dominance in the market for physical postal services could not be transferred to the electronic sphere so as to prevent the creation of new monopolies. It also promoted greater transparency in the standard-setting process, communication with all market players, and ensured equal access to the market for all competitors by means of a universally applicable set of standards. The Bundesnetzagentur has established that postal service providers consider the application of relevant standards to be a mark of quality that, similarly to certification, inspires consumer confidence.

The Quality of Service working group was recently requested by the European Commission to draw up uniform methods to measure various quality criteria that are relevant to consumers, such as the frequency of misdirected delivery, redirection quality and damage to postal items.

The revised version of EN 13850⁴⁾ which relates to the measurement of letter transit times for single piece priority and first class mail, was adopted and published by CEN. Work also began in 2013 on a new letter transit time measurement standard for a multi-operator environment that will enable the measurement of quality across the entire letter market, not just for one company.

Hybrid postal services are becoming more popular. CEN's Hybrid Mail working group is currently focusing on harmonising the various, sometimes broadly varying definitions of hybrid mail that are in use in the individual countries. In this area, harmonisation is to be achieved on the basis of a technical specification, CEN/TS 16326, rather than a standard. The specification will be temporary, but may be extended where necessary, and will stipulate harmonised criteria relating to the authenticity and integrity of and confidence in hybrid postal services to ensure the interoperability of services and providers, also where

4) EN 13850:2002, "Postal services - Quality of service - Measurement of the transit time of end-to-end services for single piece priority mail and first class mail"

digital communication is concerned. In this context, e-delivery and certain aspects of electronic cross-border identification have been deemed relevant to interoperability. These efforts will contribute towards the continued development of the postal network, which is rapidly becoming a multi-channel system.

Having identified overlaps between the work programmes of CEN/TC 331 and the UPU, the two bodies have signed a Memorandum of Understanding to facilitate cooperation and avoid duplication of effort. The rise in online retail volumes around the world has led the Working Group to dedicate more effort to setting standards for international parcel conveyance, specifically those relating to returns management, aviation safety, and track-and-trace involving several carriers, which in turn requires the use of a uniform system of bar codes.

ERGP

Founded in 2010, the European Regulators Group for Postal Services (ERGP) is responsible for providing advisory services and assistance to the European Commission as the internal market for postal services consolidates. In this context, it is particularly concerned with the consistent application of postal services legislation across all EU Member States. The Group consists of representatives of the national regulatory authorities of the EU Member States, the European Economic Area and EU candidate countries, with the European Commission in an observer role. Only the national regulatory authorities are entitled to vote, with each authority having one vote.

The ERGP's work programme is managed by five sub-groups, each with their own area of expertise: (1) Allocation of common costs, price regulation, (2) Cost of universal service obligation/effects of VAT exemption, (3) End user satisfaction, (4) Cross-border parcel delivery, and (5) End-to-end competition and access regulation (chaired by the Bundesnetzagentur).

The sub-groups have produced reports and joint opinions that deal with topical issues relating to common cost allocation, VAT exemption as a benefit or burden for USO providers, the quality of postal services, market surveillance indicators, and access to the postal infrastructure. Both the reports and the opinion were subject to public consultation, meaning that interested market participants were entitled to

consult and comment. It is noteworthy that the ERGP produced its first report on best practices in consumer protection, specifically quality and complaints management, in 2013. In line with the remit of the ERGP, this report will help to ensure consistent regulation through the development of a set of best-practice principles.

Although ERGP reports and opinions have no legal force and compliance with them is not mandatory, they are indeed effective in promoting the consistent application of the regulatory framework governing postal services in the Member States (known as "soft law").

 For more information on the ERGP reports and consultation procedures, go to www.ec.europa.eu/internal_market/ergp/index_en.htm.



More competition in the rail sector

Staff shortages at the signal box in Mainz was just one of the issues addressed by the Bundesnetzagentur in 2013. It endeavoured to enhance access possibilities for companies operating in the railway market in a number of legal proceedings. And it has done so with considerable success given that competition continues to grow.



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Deutsche Bahn AG's competitors managed to expand their market share in all segments once again last year. It was the first time around one-third of rail freight traffic services were provided by competitors. It is also worth noting that the revenue generated by railway undertakings rose specifically in the highly competitive regional passenger transport segment and rail freight segment.

The activities undertaken by the Bundesnetzagentur in 2013 covered many areas, including the problems DB Netz AG is having with signal boxes, amendments to framework agreements, congestion proceedings, the operational and technical regulations of DB Netz AG, incentive systems for passenger stations as well as access of freight forwarders to the railway infrastructure. Furthermore, the Bundesnetzagentur monitored the further development of the transport performance factor of DB Station&Service AG and entered into talks with DB Netz AG to review the track access charges.

The market players gave developments in access to the infrastructure and customer friendliness of infrastructure managers in particular high scores

Market watch

The revenue generated in the railway transport market reached new record heights once again in 2013. Competitors managed to greatly increase their market share in rail transport services.

Key trends

Railway undertakings (RUs) managed to grow their revenue once again in 2013. Revenue increased sharply particularly in regional passenger transport and in rail freight traffic. Revenue in regional passenger transport rose by two percent to ca. €10bn and by 4 percent in rail freight traffic (2013: €4.9bn).

Revenue in the rail transport market
€bn



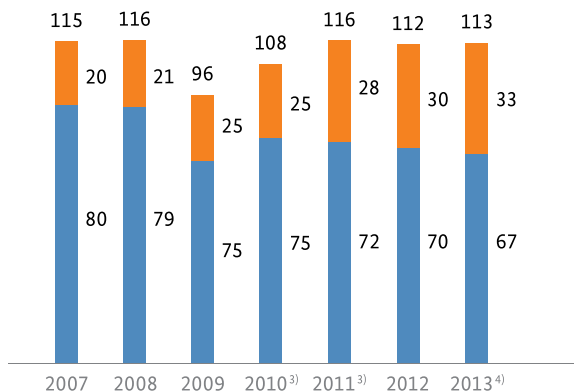
1) Forecast figures

The volume of traffic generated by rail freight transport stabilised in 2013. In 2012, it had fallen by 3.4 percent. The share of competitors rose sharply once again and now accounts for one-third of revenue generated. The traffic generated by long-distance passenger transport reached a stalemate in 2013, accounting for just 37bn pkm.

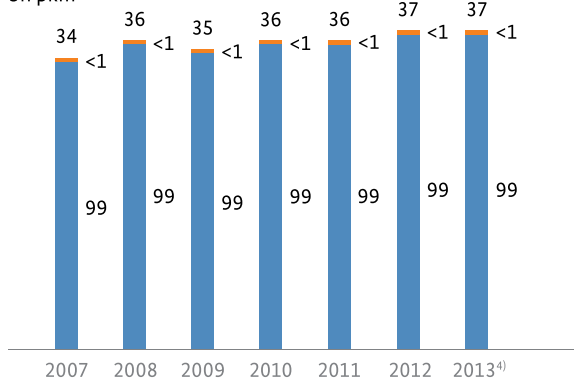
Once again, competitors' share was just under one percent. The volume of traffic generated by regional passenger transport remained the same as the previous year at 53bn pkm. Competitors' share rose slightly (2013: 19 percent).

Traffic volume and competition in the rail market

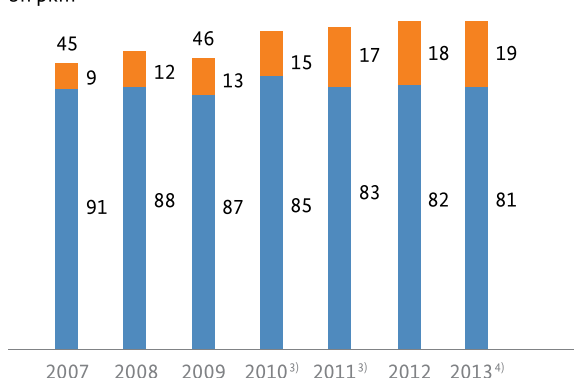
Freight transport
bn tkm¹⁾



Long-distance passenger transport
bn pkm²⁾



Regional passenger transport
bn pkm²⁾



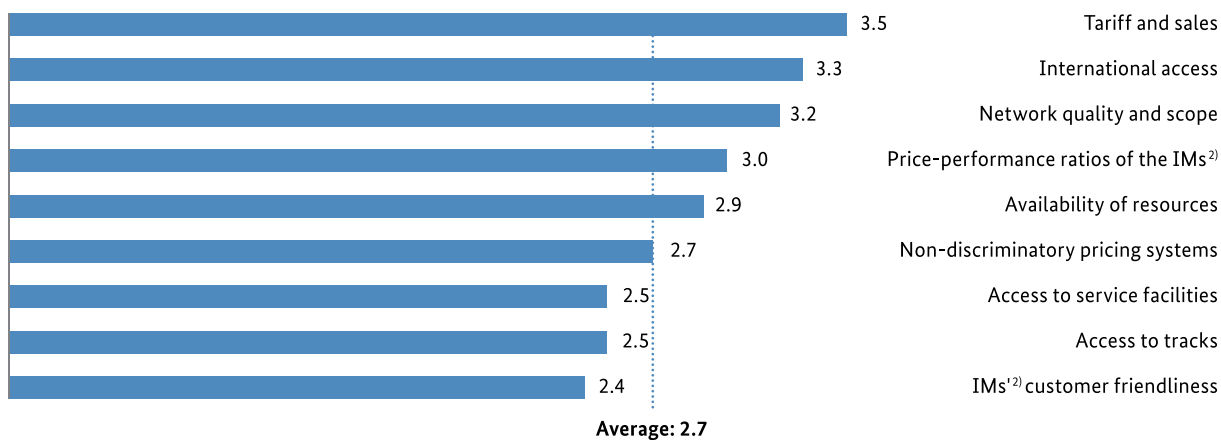
Percentage competitors
Percentage DBAG

- 1) Tonne-kilometres
- 2) Passenger kilometres
- 3) Updated figures
- 4) Forecast figures

Sources: Bundesnetzagentur, DBAG, Federal Statistical Office

Factors influencing the railway market

Rating¹⁾ by railway undertakings
(1 = excellent, 5 = inadequate)



1) Mean values of the critical aspects (individual values) in the listed areas.
2) Infrastructure Managers

Market assessment

As part of the Bundesnetzagentur's annual market survey, railway undertakings (RUs) are requested to rate certain market aspects. On average, the scores awarded in 2013 remained similar to the previous year at 2.7.

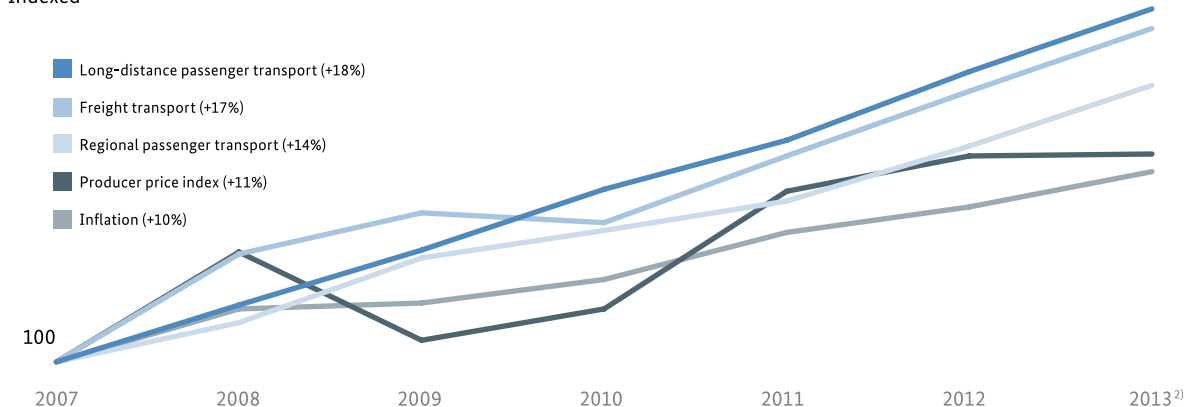
From the RUs' viewpoint, there were both improvements and deteriorations in their rating of the individual segments compared to the previous year. RUs see a slight improvement in the "customer friendliness of infrastructure managers (IMs)", "access to tracks" and "network quality and scope". By contrast, the scores for "availability of equipment" and "international access" were lower. The scores for

"access to service facilities", "non-discriminatory pricing systems" and "infrastructure managers' price-performance ratios" remained the same.

Infrastructure access charges

The charges for use of the railway infrastructure continued to rise in 2013 as in previous years. Compared to the average track access charges in the base year 2007, the average track access charges in long-distance passenger traffic rose by 18 percent, in rail freight traffic by 17 percent and in regional passenger transport by 14 percent. The producer price index rose by around 11 percent during the same period whereas inflation rose by around ten percent.

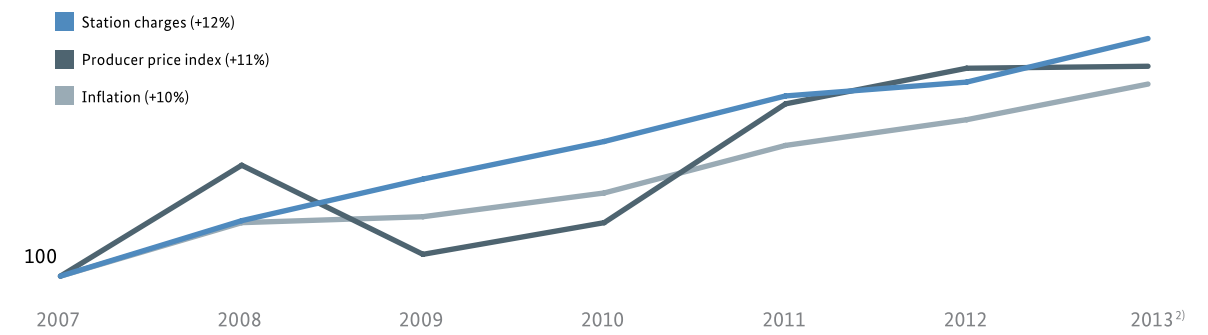
Average track access charges per train kilometre Indexed¹⁾



1) Calculated as quotient of track access charges and operating performance
2) Forecast figures

Sources: Bundesnetzagentur, Federal Statistical Office

Average revenue per station stop
Indexed¹⁾



1) Calculated as quotient of station charges and station stops
2) Forecast figures

Sources: Bundesnetzagentur, Federal Statistical Office

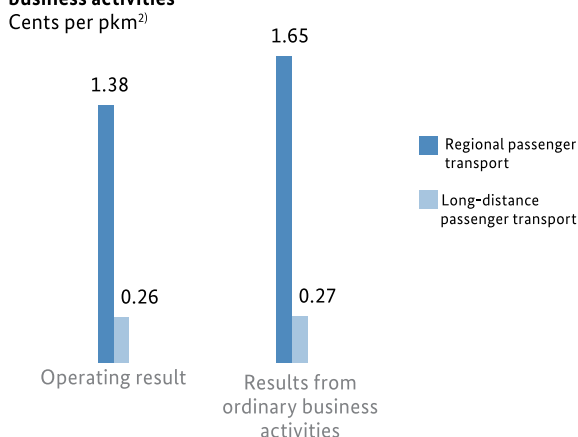
The rate of increase of the average station charges was around 12 percent compared to the base year 2007. This increase is also higher than the rate of increase in the producer price index and the general rate of inflation.

Operating result and results from ordinary business activity

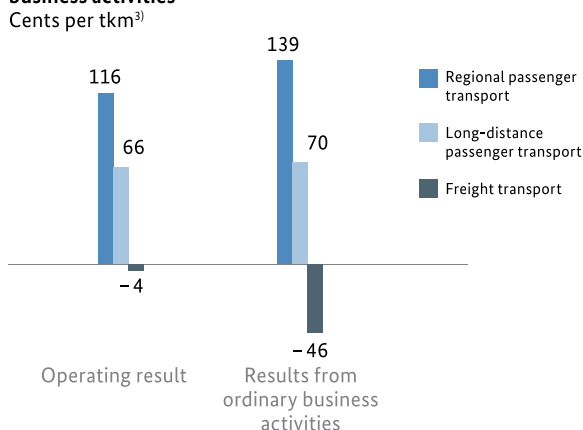
In order to be able to assess the varying profit situations of RUs in the individual transport segments, both the operating result and the results from ordinary business activities per pkm and train kilometre are examined. It became evident that regional passenger transport in particular generated a positive result. The regionalisation funds are proving to be a stable source of income for RUs. By contrast, the revenue margins in long-distance passenger transport are comparatively low, although on average they do contribute to a positive operating result. Rail freight traffic comes last, generating a negative operating result per train kilometre on average. When the financial result and the operating result (sum total of the expenses and income from financing) are added to the result from ordinary business activities, it becomes evident that there was actually a loss of 46 cents per train kilometre which highlights the economically tense situation in rail freight traffic.

Specific results based on modes of transport¹⁾

Comparison of operating result and results from ordinary business activities



Comparison of operating result and results from ordinary business activities



1) The companies under review operate exclusively in the respective market segment
2) Passenger kilometres
3) Train kilometres

Rulings, activities and proceedings

Problems at the signal boxes in Mainz led to numerous trains being cancelled, compelling the Bundesnetzagentur to take action. The review and revision of Deutsche Bahn AG's pricing system is well underway.

Track access

Signal box problems in Mainz and Bebra

Since October 2012, the Bundesnetzagentur has received complaints from RUs about disruptions in access to the railway infrastructure owing to a shortage of dispatchers who were on sick leave or on holidays especially at signal boxes. It emerged as the Bundesnetzagentur carried out its investigations that the understaffing caused by train dispatchers being sick or on holidays were by no means isolated incidents that were unforeseeable and unpreventable but that this has become a basic, and indeed, nationwide problem.

The difficulties affecting first and foremost the signal box in Bebra to begin with reached a climax in August 2013 both at the railway station in Bebra and Mainz. As numerous train journeys had to be cancelled in Mainz on one of Germany's most important railway lines, problems associated with signal boxes attracted nationwide publicity.

The Bundesnetzagentur obliged DB Netz AG as the infrastructure manager on 15 August 2013 to eliminate the service disruptions and restrictions to access to the railway infrastructure at the main station in Mainz. It also threatened to impose a penalty of €250,000 if it failed to do so. DB Netz AG lifted the operational restrictions at the Mainz main station in early September 2013. Furthermore, additional staff underwent training for the signal box at the main station in Mainz in order to prevent additional service disruptions.

DB Netz AG is now obliged to notify the Bundesnetzagentur on an ongoing and nationwide basis of any staff shortages as they arise and of the risk of services being cancelled owing to understaffing at signal boxes.

 *For more information, please read "Everything grinds to a halt" in the magazine on page 23.*

Access to the railway infrastructure and review of Network Statements

According to DB Netz AG approx. 12,000 conflicts caused by the scheduling process were solved by mutual agreement in 2014. The Bundesnetzagentur only received one notification of the intention to refuse a train path request in relation to the working timetable for 2014. In non-scheduled rail services, DB Netz AG notified the Bundesnetzagentur that it was not planning on refusing any train path requests.

The Bundesnetzagentur reviewed the envisaged amendments to DB Netz AG's Network Statement (SNB 2015) in October 2013. As not all the envisaged provisions were compatible with the railway legislation, the Bundesnetzagentur issued an objection to several provisions on 8 November 2013 and ordered that some provisions be supplemented. They specifically involved the planned roll-out of the train path portal "Trassenportal Netz" as the sole medium for the online ordering of train paths, the envisaged introduction of operational usage requirements for Berlin-Spandau railway station and the necessary supplements to the provisions governing Rail Freight Corridor 1 (Zeebrugge-Antwerp/Rotterdam-Duisburg-(Basel)-Madrid-Genoa).

In its ruling handed down on 19 July 2013, Cologne Administrative Court reaffirmed the decision taken by the Bundesnetzagentur regarding the provision in DB Netz AG's Network Statement restricting shippers' right of access (Ref. 18 K 4277/12) back in 2011. DB Netz AG has filed an appeal against the ruling.

The Bundesnetzagentur obliged other IMs in 2013 to draw up terms of use in line with statutory provisions. It checked that any existing regulations comply with the railway legislation.

Framework agreements

The next five-year framework timetable period will begin at DB Netz AG in mid-December 2015. To this end, a few specific provisions ("standard agreements") were amended that have to be published early on owing to the long lead times. This is the only way access beneficiaries can comment on the new regulations and can familiarise themselves with their content.

In 2013, DB Netz AG and the Bundesnetzagentur therefore discussed adjustments that need to be made to the regulations regarding the notification and award of framework agreements in a comprehensive work process and a mutually agreeable solution was found. Important amendments relate to the award system in which a processing fee is charged if the framework agreement on offer is rejected, how to deal with framework agreements for congested sections of the railway infrastructure, the approval of long-standing framework agreements and the introduction of a succession system in the event that the offer of a periodical framework agreement is turned down.

Further amendments were made with regard to contractual penalties and, if applicable, the cancellation of framework agreement capacity in the event of non-use and the need for adjustments to framework agreements if conflicts arise with so-called pre-arranged paths on rail freight corridors.

Congestion proceedings Wunstorf – Minden and Spandau

DB Netz AG declared the section Wunstorf – Minden of the line between Hamm and Hanover congested in late 2012, submitting both a capacity analysis and the Plan to Increase Railway Capacity to the Bundesnetzagentur and the Federal Railway Authority within the given time period in 2013. Bottlenecks occur in the congested section owing to track sharing by long-distance passenger transport, regional passenger transport and rail freight traffic which travel at very different speeds meaning that there are hardly any train paths available during the day. Newcomers in particular had little or no chance of being allocated attractive train paths. The situation is only more favourable at night time when the majority of trains are freight trains whose speed can be adjusted, facilitating better utilisation of capacity. In its reviews, DB Netz AG arrives at the conclusion – as in all previous congestion proceedings – that it is not worthwhile carrying out infrastructure measures as they are more likely to enhance the operational situation than to raise capacity. The company has therefore proposed diverting freight trains in order to free up the capacity.

Regarding the congestion at Berlin-Spandau railway station, DB Netz AG is planning on introducing operational usage specifications for the SNB 2015 which the Bundesnetzagentur rejected in 2013. The reason for this assessment is the development of the Plan to Increase Railway Capacity based on the operational situation back in 2011; 2012 represented an exceptional situation owing to the construction work carried out. However, from the 2014 working timetable onwards, the situation will improve noticeably owing to the changed order patterns of regional transport authorities. This is why the Bundesnetzagentur deemed it necessary to update the Plan to Increase Railway Capacity in order to justify the usage specifications for the SNB 2015. However, DB Netz AG has refused this update for the time being.

Operational and technical regulations

In its ruling of 7 October 2013, the Higher Administrative Court of North Rhine-Westphalia (OVG NRW, Ref. 13 A 1444/12) decided that the operational and technical regulations are to be considered mandatory content of the SNB. The Court explained this decision by referring in particular to section 4(2) sentence 1 of the Rail Infrastructure Usage Regulations (Eisenbahninfrastruktur-Benutzungsverordnung – EIBV), which provides that the SNB must include, inter alia, the general terms and conditions for use of train paths. As the operational and technical regulations are considered to be general terms and conditions, they are part of the mandatory content of the SNB in accordance with the above-mentioned provision. The Court states explicitly in its ruling that it has departed from its previous, narrow interpretation of the term access.

As there is no provision for service facilities statements (NBS) that is comparable to section 4(2) sentence 1 of the EIBV, the Higher Administrative Court of North Rhine-Westphalia ruled – similar to Cologne Administrative Court – that the contested operational and technical regulations are not mandatory content of the NBS. In the opinion of the Higher Administrative Court, the only provisions that are mandatory content of the NBS are those that relate specifically to service facilities and the wide range of services they provide and that are needed on a regular basis by access beneficiaries in order to take business decisions on the use of such facilities. If and when operational and technical regulations apply primarily within service facilities, access beneficiaries are already aware of them, given that they have already used or are planning to use the track.

Both DB Netz AG and the Bundesnetzagentur have filed an appeal against this decision. At the same time the parties conducted negotiations to find a viable solution by way of a settlement. These led to the conclusion, on 7 March 2014, of an agreement under public law which provides that the operational and technical regulations form part of the SNB and NBS. The agreement concludes the administrative proceedings.

Access to service facilities

Incentive systems for passenger stations

The operators of service facilities are obliged to create incentives to enhance the quality and efficiency of their facilities (incentive system). At passenger stations this can, for instance, relate to faulty lighting, lifts and escalators, cleanliness of railway stations or mistakes in passenger information provided. In practice, the large German station operators have so far opted for a system of contractual penalties. The Bundesnetzagentur had doubts whether this was effective as the penalties were often too low to act as an incentive for station managers to avoid disruptions.

That is why the Bundesnetzagentur drew up key elements for a new incentive system in a working group comprising representatives of RUs, station managers, regional transport authorities and associations. These were published in December 2013. The stakeholders were then given the opportunity to submit their comments by 31 January 2014. The Bundesnetzagentur will use the findings gained to enhance the effectiveness of incentive systems for passenger stations.

Access of freight forwarders to the railway infrastructure

In rail freight traffic, it is not just RUs but also the manufacturing industry, freight forwarders and companies providing combined transport services that have an economic interest in having an independent right of access to the railway infrastructure. These parties, having business models that are different from those used by traditional RUs, boost rail as a mode of transport. The General Railway Act (AEG) therefore grants this group of companies ("shippers") an independent right of access to the public railway infrastructure.

Deutsche Umschlaggesellschaft Schiene Straße mbH (DUSS), which belongs to the DB Group, is the largest transshipment terminal operator in Germany. This company wanted to conclude usage agreements exclusively with RUs in future. This means shippers would have no independent contractual rights vis-à-vis Deutsche Umschlaggesellschaft Schiene Straße mbH. The Bundesnetzagentur has prohibited the exclusion of shippers. In the lawsuit that subsequently ensued, Cologne Administrative Court reaffirmed the view of the Bundesnetzagentur (ruling of 17 May 2013;

Ref. 18 K 3168/12). In the Bundesnetzagentur's opinion, giving freight forwarders and companies providing combined transport services an independent right of access is an important contribution towards strengthening rail freight transport.

The company has appealed the decision.

Light maintenance depots

Light maintenance depots are an integral part of RUs' operating concept above all in passenger transport but also in freight transport. In the regional transport concepts of RUs, the exact whereabouts of the depot in the respective network is important for minimising the times during which trains are not available for maintenance and cleaning purposes. RUs are therefore very keen to ensure they can use suitable facilities. The General Railway Act has taken this into account and

has subjected light maintenance depots to regulation. From the Bundesnetzagentur's perspective, this results in obligations to draw up terms of use and to grant RUs non-discriminatory access.

DB Regio AG, an operator of light maintenance depots, has appealed relevant decisions by the Bundesnetzagentur. In a ruling handed down on 18 February 2013 (Ref. 13 A 474/11), the Higher Administrative Court of North Rhine-Westphalia reaffirmed the decision-making practice of the Bundesnetzagentur: RUs operating maintenance facilities are subject to regulation.

Irrespective of this, the Bundesnetzagentur spoke to market players about the market for light maintenance depot services. There are signs indicating that unlike other railway infrastructures, competitive market structures are slowly but surely emerging in this

Whispering on the rails

By 2020, rail noise should be reduced by several decibels – the Bundesnetzagentur is also doing its part here. Fitting freight trains with more quiet brakes plays a key role here.

Noise is considered to be one of the most significant environmental problems. According to a survey carried out by the Federal Environment Agency, about one-third of the population is bothered by rail noise. This is why the retrofitting of freight wagons with low-noise brake technology has been supported by the federal government since the end of 2012. Shortly afterwards, DB Netz AG presented a noise-differentiated train path pricing system through which additional incentives were created to retrofit freight wagons. The system has been in use since June of 2013 after an examination was carried out by the Bundesnetzagentur and its approval was given.

The first German freight wagons were fitted with whisper brakes that very month. Prior to this they were tested and approved by 30 European partners participating in a joint research project. Companies from the rail sector and rail industry put together various freight wagons for a project train, the "Europe Train", that would conquer more than 200,000km travelling across Europe while being tested through exposure to various geographic, climatic, and operational conditions.



Wagon keepers have time until 2020 to retrofit freight wagons with the new whisper brakes. Once the deadline passes, operators of loud trains can expect considerably higher costs or even a limitation on the operation of their wagons.

segment. A further development in the law, for instance, reducing the regulatory obligations for infrastructure managers once a relevant market test has been completed, would enable the Bundesnetzagentur to respond adequately to further competition in market trends.

Decisions on conflicts arising from access to the railway infrastructure

IMs are obliged to grant all requests for use of service facilities wherever possible. If there is any overlapping in the times at which usage is requested and if it is not possible to reach a compromise, the infrastructure manager may have to reject one and perhaps several usage requests. In this event, the IM is obliged to notify the Bundesnetzagentur before notifying the applicant concerned. This gives the Bundesnetzagentur the opportunity to review the intended decision and, if necessary, to object to it.

Applications for use of capacities in the service facilities of DB Netz AG were filed for the working timetable period 2014 (December 2013 to December 2014) between early July and late August 2013. In six cases, it was not possible for access beneficiaries to reach a compromise when a conflict over usage arose so that DB Netz AG was compelled to take a priority decision. In two cases, DB Netz AG took its decision following proceedings on the maximum price as specified in its service facilities statement. This means it granted priority access to the company offering to pay the higher charge for future use of the capacity in the next working timetable period.

The Bundesnetzagentur examined the envisaged refusal of requests and did not file any objection

Review of service facilities statements

DB Netz AG amended its product and pricing system in the NBS that entered into force in April 2014 and will apply from December 2014 when the working timetable will be changed. The pricing system that was previously based on the number of track metres (charge per metre of track used) is now based on product categories. Tracks in the service facilities will be allocated to certain categories in future, for instance, marshalling or train formation, regardless of their length. Access beneficiaries can also ask for the technical facilities to be of a certain quality.

This transformation has far-reaching consequences for access beneficiaries both in terms of the allocation of capacities and charges levied. The Bundesnetzagentur

did not object to the new system as a whole. However, in the view of the Bundesnetzagentur, the NBS do not state clearly under what preconditions DB Netz AG may deviate from the orders submitted by access beneficiaries and how certain usage-related conflicts are to be solved. The Bundesnetzagentur imposed the obligation on DB Netz AG to take remedial action in this respect.

Infrastructure access charges

Further development of DB Station&Service AG's station pricing system

DB Station&Service AG's station price list that took effect on 1 January 2014 was subject to ex-ante review by the Bundesnetzagentur last year. The Bundesnetzagentur did not object to the changes in the station prices.

Against the backdrop of the special relevance of station prices and the existing uncertainty among market players, the Bundesnetzagentur focused mainly on the reasons for the intended price increase in its review as DB Station&Service AG was planning to raise its prices by more than the average 2 percent for the first time. It gave particularly cost-intensive individual projects as the reason for the price increase. These special effects would ultimately account for several million euros meaning that the nationwide price increase would be just under 3 percent on average. As DB Station&Service AG was able to furnish proof of the high level of costs incurred by the individual projects, including the City-Tunnel Leipzig, for instance, the Bundesnetzagentur did not file any objections.

The Bundesnetzagentur will continue to monitor the transport performance factor introduced on 1 January 2013 in order to ensure initial results will be available on the level of the future factor before negotiations on the regionalisation funds begin. Talks were held between DB Station&Service AG and the Bundesnetzagentur to this end last year. The currently applicable factor of 2.4 for long-distance passenger transport will continue to apply until 31 December 2014.

Review of DB Netz AG's track access charging system

The Bundesnetzagentur and DB Netz AG began developing a new track access charging system in 2013. An agreement under public law to be concluded in 2014 could provide the basis on which the administrative procedure for reviewing track access charges will be concluded. A concrete track access charging system is to be gradually developed on the basis of a so-called milestone plan using an already established concept.

Review of prices charged by DB Netz AG

The Bundesnetzagentur continued reviewing the price levels of DB Netz AG's track access charging system.

The review was conducted in a number of steps questioning, inter alia, the allocation of costs to mandatory services. As such, DB Netz AG is required to issue separate financial statements using a survey sheet developed by the Bundesnetzagentur to facilitate the transfer of corporate accounting data. To this end, the company developed a special concept that enables the costs incurred by the infrastructure to be allocated to certain clusters. In cases in which costs could not be allocated direct, the company used allocation keys. This major part of the review is likely to be completed in the spring of 2014.

Basic infrastructure usage contract

For some years now, the discussion about how DB Netz AG calculates its access charges has increasingly become a focal point for access beneficiaries. The Bundesnetzagentur has already intervened in a few particularly serious cases and actually brought about changes to the track access charging system (for instance, lowering prices where performance was poor, regional factors and a mark-up factor for heavily used railway infrastructure). Most recently, access beneficiaries won a number of civil proceedings because the Court found that DB Netz AG failed to prove that the access charges it was levying were reasonable.

In the summer of 2013, it came to the attention of the Bundesnetzagentur that 24 access beneficiaries who had considerable market share were only willing to conclude their infrastructure usage contracts on condition that they would be reimbursed for any excessive track access charges levied. The access beneficiaries were attempting to place the burden of proof of the reasonableness of track access charges on DB Netz AG, in their view creating the prerequisites for suing the company in civil proceedings for reimbursement of potentially excessive charges levied.

DB Netz AG's response to these reservations was to threaten to cease offering individual usage contracts, thereby effectively denying these companies access to the railway infrastructure.

This prompted the Bundesnetzagentur to institute proceedings. From the Bundesnetzagentur's perspective, a notice of charges being paid on the proviso of reasonableness cannot prevent a contract from being concluded. Before the Bundesnetzagentur had to impose a relevant obligation, DB Netz AG declared its

willingness to honour the conclusion of contracts also in cases where reservations were voiced. This meant the proceedings could be terminated.

Drawing up and publishing the lists of charges

In principle, all infrastructure managers are obliged to submit their lists of charges to the Bundesnetzagentur before they can enter into force. They are then obliged to publish their charges. The intention behind this is to protect access beneficiaries from having to pay unlawful charges and to ensure they receive transparent information.

Not all infrastructure managers fulfilled their obligation to notify the Bundesnetzagentur and to publish their lists of charges in the past few years. The Bundesnetzagentur therefore instituted proceedings to enforce the notification and publication obligations.

At the same time, the Bundesnetzagentur will examine within the framework of the proceedings whether certain companies can be exempt from the notification obligation. Any such exemption might be considered for companies whose activities are not expected to affect competition, for instance, because the railway infrastructure they operate is small and has little or no impact on competition. The benefit of this approach for all stakeholders, market players and the Bundesnetzagentur alike, is that it saves time and costs and that price regulation can be designed as effectively as possible.

International cooperation

International cooperation is becoming ever more important. The Bundesnetzagentur is not just a member of the Independent Regulators' Group – Rail (IRG-Rail), it is also a member of the new European Network Rail Regulatory Bodies (ENRRB).

IRG-Rail

Three additional regulatory bodies joined IRG-Rail last year. IRG-Rail now has 24 members. This is an indication that the goal of promoting the exchange of experience, developing common positions and in particular of speaking with one voice throughout Europe is being successfully implemented by IRG-Rail once again in the third year since it was established.

IRG-Rail Working Groups drew up a number of position papers in 2013. IRG-Rail also became heavily involved in the discussions on the Fourth Railway Package and published its position on the EU Commission's proposals and on the amendments proposed by the rapporteurs of the European Parliament (EP). In this context, IRG-Rail has focused on proposals on the corporate structure of infrastructure managers, opening up passenger transport services and on awarding public service agreements.

In particular it has embraced the prime goal of opening up the market for national rail passenger transport services, the plan to strengthen independence and the role played by infrastructure managers and the principle of awarding service agreements on a competitive basis. IRG-Rail supports the proposal put forward by EP rapporteurs to allow the Member States to decide independently which market liberalisation model to opt for. The mandatory introduction of joint ticketing systems and the establishment of a European regulatory body are viewed with criticism in relation to market liberalisation and enhanced competition.

IRG-Rail continued its work in international rail freight traffic in 2013 with a view to developing a common understanding of and joint strategies on important aspects of the so-called Freight Transport Regulation. As such, a position paper was drawn up to facilitate monitoring of the rail freight corridors. IRG-Rail also conducted an evaluation of the allocation of capacity and use of Network Statements.

The Charges Working Group continued with the exchange on charging principles with a view to developing best practices. In addition, a position paper on the costs that are incurred directly as a result of operating trains was published.

The first Market Monitoring Report published by IRG-Rail in 2013 provides an overview of the European infrastructure and of the market for rail passenger transport and rail freight.

 The position papers and Market Monitoring Report are available at: www.irg-rail.eu.

European Network Rail Regulatory Bodies (ENRRB)

When the amendment to the First Railway Package (Recast) was adopted, the Working Group of European Regulatory Bodies convened by the European Commission was transformed into a formal European Network Rail Regulatory Body under the auspices of the European Commission, the so-called ENRRB. The main purpose of the network is to provide a forum for a regular exchange of information.

At a total of three meetings, the respective regulatory bodies reported on the decisions they were currently taking and market trends observed in the past year. They also discussed topical issues such as the Fourth Railway Package, progress made in the establishment of rail freight corridors and recent rulings handed down by the European Court of Justice. Talks also focused on plans and the status quo in relation to the various implementing acts planned by the EU Commission, for instance on the issues of *Economic Equilibrium* and *Principal Purpose, Direct Costs, Market Monitoring* and *Framework Agreements*. IRG-Rail also used this forum to report on the progress it has made in work performed, for instance, the results of the plenum and position papers that have been approved.

Strategic Plan 2014

The Bundesnetzagentur is required under section 122(2) of the Telecommunications Act (TKG) to include a strategic plan in its Annual Report, listing matters of legal and economic policy in telecommunications to be addressed by the Bundesnetzagentur in the current year. We are also reporting on all our main projects in all our fields of activity in which issues of fundamental importance are expected in 2014.

Energy

Besides the regular tasks assigned to it by law the Bundesnetzagentur in 2014 will implement the energy policy course of the new government in those regards that fall under its remit. It will take a proactive stance in this and advise the political decision-makers where required.

Price regulation

Evaluation of incentive regulation and proposals for its progression

Under section 33(1) of the Incentive Regulation Ordinance (ARegV) we are required to submit to the Federal Ministry for Economic Affairs and Energy, by 31 December 2014, a report evaluating incentive regulation and giving proposals for its progression. The report will focus on whether more measures are needed to avoid obstacles to investment, and if so, what these measures should be. Besides looking at the actual situation and the impact of the Incentive Regulation Ordinance on investment behaviour, we will also consider the Bundesrat resolution to replace the current provisions of the Ordinance on the inclusion of investment costs in the revenue caps for the particular calendar year by a new mechanism.

We plan a broad-based, open evaluation process that takes in the views of the regulatory authorities of the federal states, the network operators and their industry associations as well as academia and network user associations.

A kick-off evaluation meeting was held in Bonn on 25 November 2013 with a view to providing maximum transparency for the report. Further public events on individual issues under particular scrutiny by the experts will be held in 2014, securing the broad participation of all interested communities, the federal states included.

Working groups have been set up to evaluate incentive regulation and to frame proposals. They will address a host of relevant aspects and objectives of the Incentive Regulation Ordinance and analyse the following, for instance:

- network operator costs and revenues under the constraints of the Ordinance,
- the extent of simplification of administrative procedures under the Ordinance,

- the extent to which investment in innovative, intelligent network systems is worthwhile under the Ordinance,
- what framework conditions have changed to such an extent since the Ordinance was introduced that adjustments appear necessary,
- what international developments would have to be taken into account in an amended Ordinance,
- how the Ordinance has affected efficiency and coverage quality,
- what new scientific findings on incentive regulation schemes there are, and
- whether, in the circumstances, the introduction of a yardstick regulation put forward in the report on the introduction of incentive regulation really is an option.

Preparing the report will tie up considerable resources both within the Bundesnetzagentur and in parts of the industry. In the industry, this is especially true for companies drawn at random to take part in our data collection. The data collection is necessary if the evaluation mandate is to be carried out properly in all aspects. The time and work involved is justified in light of the aim of a transparent evaluation and progression of the Ordinance, particularly as the evaluation is being carried out for the first time.

Setting the revenue caps

In 2014 we will complete the procedures for setting the revenue caps for electricity and gas for the calendar year. Paving the way for these decisions, we looked at the costs of all the gas suppliers under our remit for the calendar years 2011 and 2012 and those of the electricity suppliers for the calendar years 2012 and 2013 respectively against the requirements of the Gas Network Charges Ordinance and the Electricity Network Charges Ordinance. Cost drivers for the costs of the gas and electricity suppliers were then established to enable efficiency benchmarking across the country. This required the utmost care to secure the comparability of the network operators, given their specific supply duties. To identify the parameters the Incentive Regulation Ordinance requires the application of state of the art qualitative, analytical and statistical methods.

Identifying suitable parameters was key to reliable efficiency benchmarking and caused delays on account of the complexity of the procedures followed. The final step determines the balances of the incentive regulation accounts and incorporates these in the determination of the revenue caps.

Report evaluating the effect of section 19(2) sentence 2 of the Electricity Network Charges Ordinance (Strom-NEV) on the operation of supply networks (section 32(11) StromNEV)

In 2014 we will examine the effect of section 19(2) sentence 2 of the Ordinance on the operation of electricity supply networks and submit a report to the Federal Ministry for Economic Affairs and Energy.

We will focus on the extent to which, if at all, flexibility in respect of adjusting consumption to generation availability at the time should be incentivised not just through the electricity price but also through the network charges.

We are doing so because the share of renewables in electricity generation is continuing to grow and generation, as a result, becoming more volatile. Given the changing generation landscape it is questionable whether high, steady offtake has a positive effect on the network. Thus it is entirely possible that more flexible offtake patterns would be more likely to achieve this outcome. We will also be looking at the effects on flexibility of demand in addition to the effect on the networks.

Grid expansion

Network development plans

Again, one of our main tasks in 2014 will be network development planning.

We are required to draw up a network development plan for the German electricity transmission network and an offshore network development plan under sections 12b and 17b of the Energy Act (EnWG) respectively. The transmission system operators (TSOs) are required to submit their draft plans by 3 March 2014. We approved the scenario framework 2014 on which these are based under section 12a of the Act, in August of last year.

We are concerned to structure the process of drawing up the electricity network development plans to allow not just for formal completion as required by the Act but also for the possibilities opened up by the coalition agreement in respect of modified grid planning to be incorporated and consulted on with the public at large. For this to happen, all the stakeholders must be willing to redouble their efforts and to be flexible.

In conjunction with our network development planning 2014 we will also draw up the scenario framework for the network development planning 2015. We will also see whether it is possible to include a tighter definition of the energy policy objectives of the coalition agreement and the stipulations agreed in early summer 2014 in place of, or in addition to, the current three scenarios.

Section 15a of the Energy Act also requires a gas network development plan to be submitted annually. Thus we approved the necessary scenario framework and the explicit modelling requirements in 2013 already. Once the draft network development plan 2014 has been submitted by the transmission system operators we will endeavour in 2014 to complete the consultation process earlier than in previous years so that any modifications provided for by section 15b(3) of the Act do not cause overlaps once more with the next network development plan. This may mean that the scenario framework for the network development plan 2015 is confirmed a little later in 2014 than would otherwise be the case.

Federal sectoral planning

Every three years, at least, the proceedings identifying the requirements for measures to optimise, reinforce and expand the extra-high voltage network provide the basis for a Federal Requirements Plan Act. The first Federal Requirements Plan Act entered into force on 27 July 2013. It sets out the energy industry projects that are necessary and particularly urgent, and provides the legal basis on which the Bundesnetzagentur can begin federal sectoral planning as per the Grid Expansion Acceleration Act (NABEG) for projects involving more than one federal state and for cross-border projects as designated in the Federal Requirements Plan Act.

Under federal sectoral planning, 500m to 1000m-wide corridors for the future power lines are made binding, upon application by the transmission system operators (project developers). These corridors must be environmentally safe and compatible with regional planning. The focus here is the high voltage direct current transmission corridors (HVDC corridors) as the central pillars and an important component of the Federal Requirements Plan.

Federal sectoral planning begins with the project developer's application. The application sets out the path of the preferred corridor, gives possible alternatives and provides information on the likely impact on man and the environment.

As soon as the application has been received, the Bundesnetzagentur holds a scoping conference with public agencies, industry associations and the interested public. Mainly, the conference aims to establish the extent of (possible) compliance of the proposed corridors with the requirements of the federal states concerned and the extent to which the data should be included in the environmental report. Then the study scope is determined. This involves deciding which route corridors and alternatives should be looked at more closely and specifying the documents and reports that the project developers must submit.

The next step for us is to hold public participation proceedings on the application documents and the environmental report. Objections received are settled in public inquiries. Federal sectoral planning then ends with our determination and identification of a route corridor that is compliant with regional planning and environmental concerns. These routes are recorded in a so-called network plan. The basis for the subsequent planning approval process in which the exact route of the lines is determined – with extensive public participation – is now given. These approval processes are also carried out by the Bundesnetzagentur.

Public dialogue / information

We have taken note of the public's wish for more information than is provided by statutory participation and so are making a conscious effort to go beyond the formal requirements.

It is a prime concern for us to enter into a dialogue with the public, with institutions and associations, and include them in our processes from the outset. Only by doing so can we succeed in providing clarification, in gaining public acceptance for our work and in reconciling the different interests.

We are therefore continuing on our chosen path, informing a wide public on all aspects of grid expansion and including them in our discussions, to complement our upcoming processes and the specific participation options they envisage. More of our dialogue and information events (eg the Technology Dialogue, the Science Dialogue) are planned for 2014, for example. The positive feedback on our information events on the draft network development plan and environmental report have encouraged us to continue these next year.

The public will be given information in the form of printed publications and short films in addition to the information provided on the Internet.

Network development plan for distribution networks

The experience of the last few years has shown that distribution network operators now performing similar transmission tasks to the transmission system operators at the 110kV level in particular, are facing challenges as a result of the considerable increase in the number of renewables facilities and combined heat and power plants in their network area. A network development plan at distribution network level (VNB-NAP) could prove a suitable instrument for transparent expansion planning in many cases, and as such be an appropriate response to this issue.

Transparent expansion planning is important not just for the network operators themselves but also, increasingly, for those wanting to make investment decisions on the basis of the particular situation in a particular network area. Users wishing to connect to the grid (whether for generation and feed-in or for consumption and offtake) need information well in advance about whether, for instance, investments in renewables can turn in a profit in a particular area. Transparent grid expansion planning is therefore a signal of where to invest.

And so in 2014 we will request network development plans from the distribution system operators in justified cases, on the basis of the reports required under section 14(1b) of the Energy Act. The main endeavour in this will be to suitably adapt all the planning instruments of the network development plans that have been tailored to the transmission system operators – procedures, consultations and confirmation – to fit the distribution level.

Security of supply

Reserve power plants

Notwithstanding all the efforts to expand the grid to schedule and in accordance with requirements, it will again be necessary in 2014 to identify the need for reserve power plants resulting from the inadequate scope to move generating capacity, sufficient in itself, to the centres of demand.

The entry into force of the Reserve Power Plant Ordinance has given us a key role in determining and confirming reserve power plant requirements for the next winter and for the five years thereafter. Together with the transmission system operators we agree the input parameters for the system analysis and then, where appropriate, confirm the reserve power plant requirements the TSOs have identified.

If reserve requirements are identified and confirmed, the TSOs invite expressions of interest from operators of generating installations in signing an agreement for their plant to be included in the reserve capacity. The Bundesnetzagentur provides support for the TSOs in their contractual negotiations with the power plant operators, paving the way for the signing of reserve power plant contracts.

In 2014 the reserve requirements for winter 2017/18 will be examined. The scheduled closure of the Gundremmingen nuclear plant might possibly increase requirements. And so it will be necessary to decide whether the requirements can be met from existing plants, as hitherto, or whether new plant will be needed.

Improving the fuel supply of system-relevant power plants

We will continue to take accompanying measures to improve fuel supply for system-relevant power plants. This means, most notably, a secure supply of natural gas with possible back-up through oil provisioning.

Examining the system-relevancy of power plants

If we receive further notices in 2014 of planned closures of power plant blocks from individual operators and the TSOs responsible then designate these plants as systemically relevant and apply to the Bundesnetzagentur for approval of these designations, we will take a decision on these applications as per section 13a(2) of the Energy Act. If system relevancy is confirmed, a closure prohibition of up to 24 months takes effect. This prohibition can be extended following a renewed application.

Energy information network

Network stability and security of supply in Germany depend not just on grid expansion and a sufficient number of power plants, but also to a great extent on the accuracy of the feed-in and load flow forecasts. The changes in the generation mix and the policy of aligning load more to generation mean that the empirical data and the general data basis for the forecasts have reached their limits. All concerned, the TSOs in particular in light of their statutory system stability responsibilities, are reliant on a data basis that is sufficiently detailed to enable them to discharge these responsibilities properly. Section 12(4) of the Energy Act allows the TSOs to request all data and information needed for secure and reliable operation and the maintenance and expansion of the networks from operators of production facilities and distribution networks, from industrial and commercial consumers and from suppliers.

Last year, in 2013, we made sure that this exchange of data and information between the individual stakeholders got off the ground and the energy information network was set up quickly. In the past we experienced repeated delays and difficulties in implementing the necessary data exchanges. We therefore saw reason to use our legal powers to issue a determination, and opened proceedings to this end on 17 October 2013. In 2014 the determination proceedings will plot the course for the successful integration of renewables. The first step will address the data and information requirements in respect of power plant scheduling. Other data exchange areas will follow.

Protection of telecommunications and electronic data processing systems used to control supply networks (catalogue of security requirements in accordance with section 11(1a) EnWG)

The protection of telecommunications and electronic data processing systems is becoming ever more important for the secure operation of the energy supply networks – both electricity and gas. This holds good especially for network control. The use of modern information and communications technologies (IT) has a number of advantages. Yet growing dependence on these systems is not without risk to security of supply. So as not to forego the benefits of modern information and communications technologies it is important to establish good protection against possible threats to network control. This is the background against which, in 2014, we will publish a catalogue of security requirements under section 11(1a) of the Energy Act, drawn up in consultation with the Federal Office for Information Security (BSI). The draft catalogue will be the subject of a public consultation beforehand.

Upgrading requirements on account of declining L-gas availability

One of the biggest projects in the gas industry in the coming years will be upgrading to H-gas in further network areas in the north-west of Germany. This H-gas will come primarily from Norway and Russia but also, for instance, from Qatar via the new European LNG terminals. Upgrading is necessitated by falling domestic production and lower volumes of L-gas, low-calorific gas, imported from the Netherlands. If this big long-term project is to be successful, a considerable amount of information and coordination will be necessary. At the same time, legal certainty must be created for the network operators and end customers affected by the changeover as regards the matter of who pays. We will therefore continue in 2014 to drive the upgrading process together with the gas industry and the industry associations and to make sure that the regulatory environment is conducive to doing so.

Market Transparency Unit for Wholesale Electricity and Gas

Closely following and analysing activity in the energy markets and making sure manipulation is absent is the task of the Market Transparency Unit for Wholesale Electricity and Gas Markets, set up at the Bundesnetzagentur following amendments to the Restraints of Competition Act (GWB). The Bundesnetzagentur and the Bundeskartellamt (Federal Cartel Office) act in concert to perform the Unit's tasks. The Unit will be further consolidated in 2014.

An important basis of the Unit's work is the European REMIT (Regulation (EU) No 1227/2011), which prohibits insider trading and market manipulation in the wholesale electricity and gas markets and requires trading and fundamental data to be provided to the Agency for the Cooperation of Energy Regulators (ACER). New implementing acts from the European Commission will require transposition in 2014. ACER is also expected to provide the Unit with data relevant to monitoring the German wholesale electricity and gas markets for the first time in 2014. The data provided by ACER will be processed and analysed in an extensive IT system to be introduced in the course of the year and which will meet the special security requirements in place for the sensitive market information. Trading and market monitoring will then be carried out on the database created thus, which is scheduled for completion in late 2014.

Another key task for the Market Transparency Unit in 2014 will be the registration of all market participants in the German wholesale electricity and gas markets. These market participants must have registered by the time the REMIT implementing acts have been in force for six months. The Unit will provide further information on the registration process in good time.

Installations register

Besides monitored trading, there will also be systematic recording of the generating installations in Germany in 2014. The requirements set out in the coalition agreement regarding modified subsidies for new installations, control of the number of renewable energy installations and the introduction of capacity mechanisms in the medium term call for a reliable and complete register of generating installations. As yet, there is no such register in Germany. Authorisations in ordinances will therefore provide the basis for both a register of renewable energy installations and a register of conventional production facilities.

We are making preparations for wind power plants, biomass installations and other renewable energy technologies to be registered online in a suitable and customer-friendly manner. This also applies to conventional electricity production facilities, storage facilities and variable loads. Likewise, it will be necessary to enter them uniformly in a master data register. We want to make sure that market players do not have to provide their data to a number of different offices but that the relevant information can be collected in an efficient, customer-friendly manner.

Selling of renewables

We greatly welcome the direct selling obligation in the coalition agreement. However, as this is not applicable initially to all installations and, moreover, the option of third-party selling by the TSOs is expected to continue in respect of existing installations, there will also be the question in 2014 of a revision of the laws.

The Equalisation Mechanism Ordinance details how the TSOs should sell electricity from renewables on the exchange. One of the central provisions preventing the TSOs from having to sell electricity at extremely negative prices will expire on 28 February 2015.

If necessary, we will begin a legislative amendment process to extend or modify the selling rules, taking into consideration the emerging shape of the new Renewable Energy Sources Act.

European energy regulation

European market integration is becoming more urgent in light of the challenges facing supply systems as a result of the transition to renewables / low carbon generation. Fluctuations in loads and production can be evened out and price spikes avoided by making optimum use of exchanges between the electricity networks of the Member States, Switzerland and Norway. This potential is to be further tapped in future, in the interests of German consumers and producers. The aim in the natural gas sector, too, is further integration of the national markets. The importance of European integration can be seen from the fact that more than four-fifths of the natural gas consumed in Germany flows over one national border, at least.

At European level the Bundesnetzagentur is represented in all the relevant working groups of ACER (Agency for the Cooperation of Energy Regulators) and CEER (Council of European Energy Regulators) and helps to progress important issues concerning the regulation of electricity and natural gas markets. One of the outcomes of this work is, for instance, the network codes, which provide detailed harmonised rules for the electricity and gas networks.

Electricity network codes

The regulation of the electricity markets will be largely shaped in 2014 by the finalisation and implementation of the network codes. The comitology procedure for the CACM (Capacity Allocation and Congestion Management) Network Code began in 2013 and will be finalised in 2014. As the Lead Regulator for day-ahead electricity trading the Bundesnetzagentur is heavily involved in developing and implementing the projects. Day-ahead market coupling is starting in 2014 for North Western Europe (NWE market coupling). This project is a continuation of the successful market coupling in Central West Europe, launched in 2010.

We will continue in 2014 to be involved in the comitology procedure for the Grid Connection and the System Operation Network Codes. These will be taken forward in the coming year, as will be the procedures for the Balancing and Forward Network Codes.

Cross-border cooperation between TSOs

We will continue to support the German TSOs at European level, encouraging them to push on with projects aiming at closer cooperation both with each other and with their European partners. We are involved in the TSO Security Cooperation (TSC) initiative in developing a cost allocation mechanism for cross-border multilateral redispatch and are seeking to have an objective, transparent model that properly reflects the laws of physics put in place.

Remedies for loop flows in concert with the German TSOs and their European partners

Electricity always follows the path of least resistance. That is why internal north-south flows sometimes pass through Germany's neighbour countries (so-called loop flows). The situation is similar with trading between Germany and Austria. Electricity does not automatically take the direct path over the Austro-German border but can quite possibly flow again via the neighbour countries (these flows are known as transit flows).

We are well aware of German responsibility for this phenomenon, and are currently working on measures to counter the negative effects of the loop flows together with the German TSOs and European partners. These measures include comprehensive monitoring in order to make visible the causes, the duration and the geographic component of the flows.

Gas network codes

Crucial code procedures for the regulation of the natural gas markets were either completed or initiated in 2013. Congestion Management Procedures (CMP) to reduce congestion in European gas transmission pipelines, a network code on Capacity Allocation Mechanisms (CAM) and one on Gas Balancing (BAL) are now binding EU-wide. We have made a substantial contribution to this through chairing the working group and advocating its position accordingly. Such rules have been successfully introduced in Germany in recent years, making a vital contribution to the opening of the gas markets. Trading at the NCG and Gaspool trading points is steadily increasing and the price differences with the neighbouring wholesale markets such as the TTF in the Netherlands are usually below the transport costs. This shows that entry barriers are being dismantled, and the national gas markets in north west Europe are well integrated already. This success also underpins European acceptance of the network codes.

The year 2014 will be a period for implementing the network codes and completing the set of rules. The network codes on interoperability and data exchange rules and on tariff structures in gas transmission networks will be drawn up. Also planned is an amendment to the network code on capacity allocation mechanisms to allow market-based signals for network expansion.

Implementation of the network code on balancing

The European Network of Transmission System Operators for Gas, ENTSOG, has drawn up a network code on balancing. This will provide a set of binding, harmonised requirements for the rules and procedures for gas balancing and the procurement of system balancing energy. The main provisions concern the following:

- charges for portfolio balancing energy
- the hourly incentive system
- procurement of system balancing energy (procurement on the wholesale market, product standardisation), and
- the provision of information.

Implementation of the balancing code at national level will be a central issue in 2014. In a dialogue with the gas industry we will explore the scope for implementation and discuss how GABi Gas (the gas balancing system) can best be taken forward. To this end we will hold determination proceedings.

Telecommunications

The following telecommunications activities should be highlighted from the large number scheduled for 2014.

Broadband deployment

Modification of the standard contracts for local loop access and for bitstream for the introduction of vectoring in Telekom Deutschland GmbH sub-loop distribution frames

Following the policy decision last year to introduce vectoring in Telekom Deutschland GmbH sub-loop distribution frames, the procedure for modifying the standard contract for access to the local loop and for bitstream will be completed in 2014 without delay.

This will finalise the details for the introduction of vectoring, allowing it to go ahead. The details concern the contractual, operational and technical conditions and also the necessary mechanisms applicable in respect of "empty expansion promises", etc. The Ruling Chamber has checked the draft contracts in a transparent regulatory procedure and asked Telekom Deutschland GmbH to make modifications to ensure that all the conditions meet the legal criteria of reasonableness, fairness and timeliness (section 23 TKG). The modifications must now be submitted to the Ruling Chamber for a second check.

Vectoring allows higher transmission rates in the existing copper local loop network than VDSL, although VDSL is already well advanced. It reduces mutual interference between adjacent copper pairs in a cable. However, the state of the art permits access by one company only to all the copper pairs in the street cabinet, making unbundled access – where VDSL technology is used – no longer possible.

Award of spectrum for mobile broadband – Project 2016

In July 2013 the Bundesnetzagentur published a draft document for consultation on the provision of spectrum for broadband deployment in Germany in support of the goals of the federal government's broadband strategy, and invited views on the draft (Communication No 169/2013, Bundesnetzagentur Official Gazette 12/2013 of 3 July 2013, page 1787ff).

The document makes provision for the frequency usage rights expiring on 31 December 2016 in the 900/1800 MHz bands to be made available together with all the frequencies available for broadband rollout in the foreseeable future. To this end the 700 MHz and the 1.5 GHz spectrum is to be auctioned along with the 900/1800 MHz spectrum in open, transparent and non-discriminatory proceedings. The draft also provides for a "frequency reserve" of 2 x 5 MHz in the 900 MHz band for each mobile operator. The intention is to take today's almost complete mobile coverage into the future by securing the four existing infrastructures in rural areas, in particular. Inclusion of the 700 MHz spectrum, currently used primarily by the broadcasting services, requires a national consensus between the federal government and the federal states for the planning law conditions to be met.

We plan to take a decision well in advance of expiry of the assignments in the 900/1800 MHz bands on the provision of spectrum for broadband wireless access.

Coverage obligation in the 800 MHz band

The coverage obligation on the 800 MHz frequency assignees had been met in 2012 in every federal state, but the march of wireless broadband continues. This is documented by the network operators' annual rollout reports and verified by random checks by our radio monitoring service

State aid for broadband deployment

The state aid guidelines of the European Commission, the federal government and the federal states give the Bundesnetzagentur a key role in limiting the distorting effect of state aid for broadband deployment on competition. Currently, therefore, we are included in the state aid processes. Specifically, the rules give us the following tasks:

- 1 looking at the possible use of ex ante input before the invitation to tender,
- 2 securing open access in the contracts, and,
- 3 with regard to open access in cases of dispute, particularly as regards rates proposed in advisory opinions, stating whether the input charges are reasonable and consistent.

In light of the federal government's goal to provide 75 percent of German households with speeds of 50 Mbit/s and more by 2014 and to have these speeds available everywhere in the country by 2018, aid programmes will become ever more important. The number of funding applications submitted to the Bundesnetzagentur rose markedly in 2013. And a further increase can be expected, given that municipalities and administrative districts are actively seeking support for the rollout of high speed networks.

In connection with the amendment of the federal government's Ducts Framework Regulation and related federal state regulations necessitated by the revised version of the EU state aid guidelines that took effect on 1 January 2013, we will in 2014 amend our implementation guide for the funding offices accordingly.

Infrastructure atlas

Use of the national infrastructure atlas has risen sharply since the end of 2012 following the introduction of an online version. This also greatly improved the database in 2013. A large number of companies, predominantly telecommunications network operators and energy suppliers, have undertaken to provide data or have been required by the Bundesnetzagentur to do so.

The process of collecting data will be continued in 2014 to make the infrastructure atlas as comprehensive as possible. For instance, public law legal persons are to be addressed increasingly as potential infrastructure owners. The legislative intent is for their installations to be included in the infrastructure atlas too. Thus we will successively approach potential infrastructure holders in 2014 for their data and make these data available to users of the infrastructure atlas for their rollout planning.

Progression of the regulatory framework conditions for an additional sub-loop distribution frame on the distribution cable

We have already begun to examine the extent to which we need to modify the regulatory framework conditions put in place in 2010/2011 for the additional sub-loop distribution frame on the distribution cable so that even remote communities can enjoy state of the art broadband services. Should the competitors and Deutsche Telekom fail to reach agreement and competitors then apply for an access order, we will lose no time in deciding whether it is necessary to modify the regulatory requirements for opening up the sub-loop distribution frame in order to provide enhanced broadband coverage in this regard.

Net neutrality

The amended TKG 2012 introduced net neutrality into our sphere of activity. Facilitating consumer choice in respect of services and applications is one of our general regulatory aims, besides gaining a wide set of instruments for transparency requirements and minimum quality levels.

In 2013, questions of how, and how much, net neutrality could be secured featured increasingly on the agenda. The Federal Ministry for Economic Affairs and Energy was working on a draft ordinance for safeguarding net neutrality before the federal election, and the new government will also address the issue. Net neutrality is also addressed in the European Commission's Single Telecoms Market Package of 11 September 2013. All the contributions for discussion highlight the important role of the regulatory authorities, the Bundesnetzagentur too, in safeguarding net neutrality. This is the main connection in which possible monitoring mechanisms are being discussed.

Monitoring mechanisms are likely to feature prominently in the debate in 2014. Any determinations – whether in the form of a national ordinance, a law or an EU Regulation – will affect the action we take. We will continue to advocate dynamic development of a best effort Internet and to lead discussions on possible ways of implementing a monitoring system.

Market regulation

Market definition and analysis

A further market analysis procedure was initiated in 2013 with the request for information for the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location (Market 4 of the Relevant Markets Recommendation 2007). Publication of the draft for consultation is planned for 2014 once the requested information has been evaluated.

Similarly, a market analysis procedure was launched and a formal request for information carried out in 2013 for the complementary market for wholesale broadband access (Market 5 of the Relevant Markets Recommendation 2007). Publication of the draft for consultation is scheduled for 2014 after evaluation of the data, which were also widely collected at regional level.

Finally, a consultation draft was prepared in late 2013 concerning the provision of terrestrial transmission facilities for broadcasting analogue VHF radio signals to content providers (Broadcasting transmission services, to deliver broadcast content to end users; Market 18 of the Relevant Markets Recommendation 2003). This will be concluded in the course of 2014.

A new joint review of the market for call origination on the public telephone network provided at a fixed location (Market 2 of the Relevant Markets Recommendation 2007) and of the market for call termination on individual public telephone networks provided at a fixed location (Market 3 of the Relevant Markets Recommendation 2007) will be due in 2014.

This process will also begin for the market for wholesale terminating segments of leased lines and the market for voice call termination on individual mobile networks (Markets 6 and 7 of the Relevant Markets Recommendation 2007).

Regulatory procedures

In 2014 Ruling Chambers 2 and 3 will address the following:

- Regular updating of the regulatory order for Market 1 (Access to the public telephone network at a fixed location for residential and non-residential customers)
- Approval of interconnection charges
- Approval of mobile termination rates
- Regular updating of the local loop access regulatory order
- Regular updating of the bitstream regulatory order
- Review of the local loop access reference offer
- Review of the bitstream access reference offer
- Finalising the review of the PSTN / IP interconnection reference offer
- Finalising the review of the carrier leased lines reference offer
- Regular updating of the broadcasting regulatory order.

Consumer protection

Transparency in the retail market

An assessment of the Internet access service levels study and of the request for information on the content of standard contracts has shown how important it is for consumer confidence that consumers really know what they can expect to get.

With this in mind we proposed in 2013 specific measures, in the form of key elements, for improving transparency in the retail market, and discussed these with the industry. Building on these discussions, we then drew up a draft transparency ordinance largely reflecting the views of the industry. Other aspects were then added, supplementing these views.

Our wish is for customers, in future, to be able to choose their provider in full knowledge of the speed of their line. Customers must also be able to check the speed of their broadband Internet access. This calls for a customer-friendly test that delivers reliable results.

We will also be following the discussion launched by the European Commission on the creation of European consumer protection cooperation. Then agreement will be sought with the federal ministries and the German Bundestag for the final version of the transparency ordinance.

Switching telecoms provider, section 46 TKG

In light of the consistently high number of complaints received we will continue our efforts to stop interruption to service when customers switch provider. We will redouble our efforts to make this process as quick and easy as possible for the consumer. Drawing on our experience, we will work together with providers to find common approaches. We will also be on hand to help, where needed, with the industry's introduction of the automated and standardised process. Implementation of the interface is designed to reduce the switching error rate in the long term.

Combating number misuse

Combating number misuse is another focus for 2014. A core element of this is nuisance calls from call centres using predictive diallers. Predictive diallers are computer programmes that dial several numbers at one go. If one of the calls is answered, the others are abandoned and made again later. Predictive dialling is used for better agent efficiency for the company. The disadvantage is an accumulation of attempted calls to the complainants, widely perceived as a nuisance. The volume of complaints in this regard has been consistently high for years, in the mid-five-digit range. There are no legal rules on the use of predictive diallers. Aggressive predictive diallers can, in particular cases, be deemed a nuisance in view of the number of call attempts made and the circumstances in which this is done (time of day, repeated attempts, etc). Such practices constitute a breach of section 7(1) of the Unfair Competition Act (UWG), a possible consequence of which is deactivation of the telephone number under section 67(1) TKG.

In 2014 we will be concentrating on this issue, calling on the market players concerned for their input. This will encourage the market to find solutions to rectify the nuisance caused by predictive diallers.

Cold calling and calling line identification restriction

We will continue in 2014 to punish breaches of the cold calling ban and the calling line identification restriction ban by imposing severe fines. Our powers have been extended by the entry into force on 9 October 2013 of the Improper Business Practices Act, which raises the level of fine from 50,000 euros to 300,000 euros and makes cold calls generated by an automatic answering machine punishable by fine.

Frequency management

Telefónica Deutschland and E-Plus merger

The mobile companies Telefónica Germany GmbH & Co. OHG and E-Plus Mobilfunk GmbH & Co. KG intend to merge. If the merger goes ahead, we have to make sure that the spectrum continues to be used efficiently and effectively by the assignees.

To establish the facts, the legal situation and the interests involved we drew up key questions (Communication No 565/2013, Bundesnetzagentur Official Gazette 20/2013 of 23 October 2013 page 3261ff) in a first step and invited views on these.

To assess a possible merger we will draw up a framework that accommodates both our supervisory duties in respect of the spectrum and the legitimate interests, in light of the regulatory aims of the TKG, of the actual and potential market players involved in and affected by the merger.

We are working closely together with the Bundeskartellamt (Federal Cartel Office) and the European Commission in our telecommunications law assessment.

Trunked radio

In August 2013 proceedings were opened allowing applications for an extension of the term of the trunked radio assignments set to expire on 31 December 2015. Affected were more than 5,100 assignments in 250 networks of companies in such diverse industries as chemistry, energy, local public transport, airports, local government authorities, security services, etc. They are often operators of vital infrastructures and so depend on secure, reliable communication in a crisis.

Against the background of frequencies already assigned and continuing demand versus available spectrum for trunked radio, special importance is attached to a review of the networks, most of which were set up more than 10 years ago, in connection with assignment extension duration. This review will encompass frequency usage, network utilisation and stated demand, all in terms of spectrum efficiency, based on the updated trunked radio administrative rules.

Applications for extension were requested by the end of 2013. This is to ensure that final decisions on the applications can be taken in 2014, there having been enough time to make the necessary technical changes. Also, the assignees will have the necessary planning and legal certainty beyond the current expiry date.

International telecommunications duties

The European Commission's telecoms single market package

In September 2013 the European Commission presented its proposals for its telecoms single market package, which provides for extensive changes in the current regulatory situation in telecommunications in Europe. The Commission's proposals affect every area of European telecommunications regulation and its legal instruments (directives and subordinate regulation), and will ultimately entail a wide-ranging revision of the regulatory framework. This legislative package covers most notably spectrum management, market regulation, net neutrality, consumer protection, international roaming and institutional matters (eg regarding BEREC, etc).

The European Parliament began its deliberations in 2013. Detailed negotiations at Council level began in January 2014 and are likely to continue into 2015.

The fundamental review of the EU regulatory framework and the large number of areas affected will necessitate significantly more coordination and agreement in 2014 for the legislative process both within the Bundesnetzagentur and within the European IRG/BEREC and also – upon request – with the Federal Ministry for Economic Affairs and Energy.

Technical regulation

Interfaces at network termination points

When digital telecoms networks were introduced an active element (box) was needed at the subscriber's, at the end of the line. The box adapts the digital signals to the transmission technology on the subscriber line, allowing the subscriber to access network nodes via the subscriber line (eg when xDSL is used by synchronising the modems between the subscriber and the DSLAM on the network side).

Some operators define the subscriber interfaces (for the telephone, LAN, WLAN, etc) of the boxes as access interfaces and give the subscriber no, or only a limited, choice of box.

Last autumn we conducted a hearing on this to find out more. We began our evaluation of the hearing before the end of the year and expect to have a result by the end of the first quarter of 2014 at the latest. Consumers are keen to have a choice of box and to know that their data protection and communications security will not be compromised. This is what we aim to achieve.

Industry 4.0

The term Industry 4.0 stands for the introduction of new communications structures (Internet of Things and Services) in industrial production and along the entire value chain, from development via manufacturing and logistics to operation and consumption. Existing and new communications systems and structures within factories and companies are to be linked and optimised as modular systems. Horizontal and vertical structures, network topologies, technologies, production volumes and qualities, time and cost factors and security and data protection aspects must all be taken into account, depending on the application. Solutions are required for instance for communication architectures, sensor technology, identification, localisation and tracking, and range from mobile radio solutions for short-range communication to global applications for fixed and mobile broadband infrastructures (eg LTE). This communication (M2M – machine to machine) must be able to meet individual requirements in terms of function, security, availability and data protection.

International standards guarantee interoperability, flexibility and technology neutrality, and are therefore essential for market-driven solutions.

We will work closely with the Federal Ministry for Economic Affairs and Energy on the "Industry 4.0" project in all matters of standardisation, and actively support its aims. Specifically, this means analysing the standardisation activities for communications and wireless applications, coordinating subscriber activities and widening participation in the national and international standardisation bodies.

Radio compatibility studies

We will be involved in the radio compatibility studies scheduled for 2014 in the international CEPT and ITU-R bodies. These include, for instance

- studies on opening up new spectrum for PMSE "Programme Making and Special Events" use (wireless microphones and cameras), eg in the 700 MHz or 2 GHz bands and beyond
- studies to enable better characterisation of unwanted emissions from broadband wireless digital systems for better use of adjacent spectrum in the long term, and
- preparatory studies for the World Radiocommunication Conference 2015. The topics include the compatibility of mobile communications in the 694 - 790 MHz band with digital TV and the compatibility of broadband mobile radio services with other radio services (eg radar systems, satellite systems, earth exploration systems, etc) in unspecified sub-bands of the 450 - 6000 MHz band.

Electromagnetic compatibility standardisation

We will give continued support and assistance in 2014 to IEC/CISPR's international standardisation activities. These are, in the main,

- power line communications in energy supply networks, the compatibility of PLC data communications in the range from 2 kHz to approx 80 MHz with the provision and supply of electrical energy, wireless power transmission (WPT) applications (100 mW to 200 kW) and xDSL data communications in telecoms networks and CATV networks

- EMC requirements for facilities for charging electric vehicles (wireless charging, too) and for the vehicles themselves
- EMC requirements for radio equipment intended for use and possibly installation in motor vehicles, as the new EU regulation currently under legislative passage is likely to introduce more stringent EMC requirements in 2014
- EMC requirements for network elements and charging devices operating with wireless energy transmission
- equivalence of alternative EMC measuring methods
- work on completion of basic EMC standards.

Radio Equipment (RE) Directive

The European Commission, in October 2012, published a draft Radio Equipment Directive (COM (2012) 584) which is to take the place of the Radio and Telecommunications Terminal Equipment Directive (1999/5/EC). The new Radio Equipment Directive is expected to take effect in the first half of 2014. This means that the German Radio Equipment and Telecommunications Terminal Equipment Act (FTEG) will have to be amended accordingly. The Bundesnetzagentur, as the competent authority in relation to the Federal Ministry for Economic Affairs and Energy, will be called upon in this.

A new Market Surveillance Regulation that is directly applicable in the Member States is also expected to enter into force in the first six months of 2014. Regulation EC No 765/2008 will be replaced and widened by the new Regulation.

Cooperation with the other market surveillance authorities in the EU is to be strengthened further in order to harmonise procedures. Greater cooperation with the customs authorities, in line with the European requirements, is also envisaged. This is in response to the increase in online trading, allowing products

classed as non-compliant in the EU to be ordered on the Internet in third countries. Only close cooperation with the customs authorities and the other market surveillance authorities will prevent non-compliant products from third countries from finding their way into the internal market.

Multi Stakeholder Platform on ICT Standardisation (MSP)

The European Multi Stakeholder Platform on ICT Standardisation was set up by the Commission in late 2011. As a first review of the Regulation on European standardisation is scheduled for the end of 2014, the new instruments and procedures in the Regulation are likely to undergo initial critical scrutiny in 2014 in which the MSP will also be involved. Thus an MSP subgroup was set up at the end of 2013 to take a critical look at the experience to date with the new arrangement in Articles 13 and 14 of the Regulation (Identification of ICT technical specifications eligible for referencing). In particular, the study will focus on whether there are ways of simplifying the procedure and whether it really does offer added value for public procurement. The Bundesnetzagentur is involved in the MSP as the representative of the Member State of Germany by direction of the Federal Ministry for Economic Affairs and Energy.

Broadcasting interoperability

We will continue to help minimise interoperability deficits in services, networks and equipment in the standardisation bodies addressing broadcasting issues. Hybrid terminals mean that it is absolutely necessary to find common technical solutions for broadcasting, broadband and OTT applications.

The Action Pact for Consumer-Friendly Terminals for Horizontal Markets – Interchangeable CA/DRM Systems, headed by the Bundesnetzagentur, will have a key role next year, too. Besides the interoperability issues arising from use of different CA/DRM systems and threatening to fragment the markets, we will be looking more closely at the problems posed by the further spread of multiscreen offers and the use of proprietary middleware. Consumer protection will take centre stage here. The standardisation activities are carried out by the ITU and within the framework of the DVB project.

Electromagnetic decoupling of cable networks and broadcast receivers

The World Radiocommunication Conference 2012 (WRC 12) decided to allocate the sub-band 694 – 790 MHz in the VHF band after WRC 15 to the mobile service, for Europe too, on a co-primary basis. Moreover, the work on white spaces and the deployment of cognitive radio technologies in the VHF band make it necessary to step up the EMC standardisation activities again, both as regards immunity and the emissions from broadcast receivers, electronic entertainment devices and cable TV networks, in the international (IEC/CISPR), European (CEN/CENELEC) and national (DKE) arena. In this, we will be keeping a close eye on radio compatibility and consumer protection. One of our aims will be to have the necessary limits and appropriate measuring methods, eg for the input selectivity of DVB-T receivers, included in the EMC standards. And efforts to have receiver connecting cable covered by the EMC Directive will continue.

Setting up an ICT early warning system and a contact/coordination office for SMEs

Access to standards and participation in ICT standardisation activities is to be facilitated for SMEs. An "early warning system" and a contact office for SMEs is to be set up at the Bundesnetzagentur at the wish of and in agreement with the Federal Ministry for Economic Affairs and Energy.

Emergency calls

The Emergency Calls Technical Directive lays down the technical details for routing emergency calls on the basis of administrative borders. Implementation is expected to begin in 2014 now that the requirements for routing emergency calls on this new basis have been clarified with the federal states, the database at the Bundesnetzagentur is in place and the data records provided, for the most part. The aim is for the local emergency call answering position to be reached more reliably than in the past. This is vital for the rescue operations, when every minute counts.

Standards must be drafted at European level to ensure that the location data are established and transmitted for nomadic telephone services as well. The existing international standards on this, particularly in the IETF, are incompatible with the data protection requirements in Germany.

Billing accuracy

The technical billing accuracy requirements for calls incurring time-based and/or distance-based prices are to be updated to reflect, in particular, developments in IP-based networks and services such as the Network Time Protocol. The adjustments are to be made via a draft new order replacing Order No 168 issued in 1999. A public consultation will be held on the new version in 2014.

Given the changing tariff structures in the retail markets (cf Deutsche Telekom's plans to introduce volume-based Internet access services in the fixed network as well), we will also step up our checks on the billing accuracy of volume-based services in line with Order No 43.

Post

Survey of basic working conditions

In 2014 we will complete our survey of the basic working conditions in companies providing licensed postal services. A licence is required by anyone commercially providing a letter post service for items weighing no more than 1000g (section 5(1) of the Postal Act – PostG). The survey aims to establish the extent of gaps in wage levels, working hours, holiday entitlements, etc between particular branches or regions. (Reference is made to the Bundesnetzagentur Advisory Council Decision of 28 January 2013).

Universal services

The findings of a study commissioned by the WIK consultancy on consumer research methods for establishing the need for postal universal services will be to hand in the first quarter of 2014, in all probability. In light of the changing letter and parcels markets the study is intended as a first step in consolidating the debate on adapting requirements for a minimum set of postal services so as to reflect demand. First of all, we will evaluate the findings of the study and, building on this, identify any need for action and decide on the next step.

International cooperation in the postal sector

The European Commission in 2012 issued a Green Paper on cross-border parcel delivery. In response to the views submitted by various market participants the Commission then, in December 2013, published a roadmap setting out further options for improving cross-border parcel delivery.

To support and advise the Commission, the European Regulators Group for Postal Services will address the issues identified. The aim initially is to examine the need for regulatory intervention generally and, if deemed necessary, to make recommendations on the extent of the regulatory measures in agreement with the other EU regulatory authorities. A report setting out the findings is scheduled for the end of 2014, under the lead responsibility of the Bundesnetzagentur.

Rail

We will be involved in 2014 in the discussions on the national transposition of the recast of the First Railway Package and in the Commission's work in issuing implementing acts.

As regards rail operations, we will be dealing especially with the costs connected with difficult working conditions and restricted infrastructure caused by engineering work, complaints management on European freight corridors, incentive systems to improve quality levels at passenger stations, track operators' schedules of charges, the level of charges of DB Netz AG and DB Station&Service AG and recalculation of the transport service factor.

Internationally, we will continue to engage in the Independent Regulators Group–Rail and the European Network of Rail Regulatory Bodies, and also assist in the completion of the regulatory framework, the Fourth Railway Package.

The activities set out below are just some of those that rail regulation will address in 2014.

Policy issues

Transposition of the recast / new rail regulation laws

After the draft Rail Regulation Act (ERegG) failed to gain approval in 2013 it is not clear what approach the new federal government will take. One possible option is the "small solution", which envisages transposing solely the recast of the First Railway Package (Directive 2012/34/EU) into the General Railway Act and the Rail Infrastructure Usage Regulations. Regardless of the solution chosen, however, we will assist the Federal Ministry of Transport and Digital Infrastructure in the legislative process to the greatest possible extent and, for the recast, act in a supervisory capacity with regard to the regulations on separate accounting for network and operations. For this we must identify the legal and economic principles and procedures and carry out data checks.

Access regulation

Signal box staffing

In 2013 staff shortages at DB Netz AG led to some signal boxes, in Mainz and Bebra for instance, being temporarily non-operational and to a large number of train cancellations as a result. As the situation at DB Netz AG has not fundamentally eased, we will continue to watch and respond as necessary. We will also – if need be – look into whether insufficient signal box staffing has affected the interests of access beneficiaries.

Coordination for the working timetable when the infrastructure is restricted due to engineering work

Conflicting use of some 20 percent of the path allocations becomes apparent when the working timetable is drawn up, and has to be resolved under the coordination process set out in section 9 subsection 3ff of the Rail Infrastructure Usage Regulations. Many of these conflicts are caused by construction measures that greatly restrict use of the infrastructure and which must be taken into account in the timetable under the "Running Trains during Engineering Work" regulations. Current access procedures show that the legal instrument of coordination as per section 9(3) of the Rail Infrastructure Usage Regulations is not enough to allocate train paths in a non-discriminatory manner when the infrastructure is significantly restricted due to operating constraints. So as to give train operators and other access beneficiaries planning certainty and be able to incorporate a transparent coordination procedure in the Network Statement for times of

restricted infrastructure we have set up a joint working group with DB Netz AG whose aim is to develop a special coordination process that is compatible with the current legal provisions by the time of the comments procedure for the Network Statement 2016.

Complaints management on European freight corridors

On 10 November 2013, in accordance with Regulation (EU) No 913/2010, freight corridor 1, Zeebrugge – Antwerp/ Rotterdam – Duisburg – Basle – Milan – Genoa became operational. This involves infrastructure from the Netherlands, Belgium, Italy, Switzerland and Germany. The regulatory bodies concerned, in a cooperation agreement, have settled the details of their cooperation on the corridor. Each regulatory body is responsible for the infrastructure managers resident in their territory, and thus ensures non-discriminatory access to the corridor. The Bundesnetzagentur is responsible for complaints from access beneficiaries about decisions taken by the one-stop-shop as the point of contact for train path allocation (C-OSS) in freight corridor 1. Complaints can be submitted to any regulatory body in the corridor. Complaints made regarding C-OSS or an infrastructure manager resident in Germany would then be passed on to the Bundesnetzagentur as the authority responsible. This cooperation agreement is to be put into practice in 2014 in order to deal with incoming complaints in conjunction with the regulatory bodies concerned. Another aim for 2014 is to work out the details for monitoring competition and non-discriminatory access in the corridor in conjunction with other regulatory bodies.

Including the costs for working in difficult conditions caused by construction work

When construction work is necessary, access beneficiaries typically incur higher costs for their operations. Due to the need for alternative routes for instance, they are faced with higher costs for train paths, staff and energy and with additional costs for the use of more carriages and engines. When trains do not run, costs are incurred for replacement bus services and transport companies have to spend more on additional storage.

Infrastructure managers must carry out maintenance in such a way that the interests of the access beneficiaries are not unduly affected. Accordingly, the costs arising for the access beneficiaries must be taken into account when the construction work is planned. This can only be done, however, if the infrastructure managers are informed of the costs by the access beneficiaries. To be able to include the costs of construction work in the comments process required by the "Running Trains during Engineering Work" regulations, the access beneficiaries must be able to assess their costs, based on the information available at the time.

As problems have often arisen in this connection, it is necessary to develop procedures that accommodate the interests of all concerned.

Compatibility of *Deutschland-Takt* and non-discriminatory access to infrastructure

The *Deutschland-Takt* initiative aims to provide passenger rail services as an integrated whole, in accordance with an agreed regular interval timetable, for both local and long distance services. It will also cover freight routes. In the medium term, at least, *Deutschland-Takt* would lead to optimum use of existing track capacity, in line with the needs of every transport segment. For the long term, *Deutschland-Takt* is an opportunity to expand the infrastructure in a more efficient manner. No longer will – often unsuitable – infrastructure dictate the timetable but, conversely, the timetables will determine the need for infrastructure enhancements and expansion.

The outcome of *Deutschland-Takt* will be the construction of all the train paths independently of train operators' orders; the paths would be constructed by independent track operators, in line with market requirements, for some five to eight different "specimen" trains. Current European and German law, by contrast, provides for train operators to order the paths they want in an open access procedure and to receive offers, following a process of coordination and, if necessary, subsequent decision-taking. However, the fact is that around three quarters of all the train paths today are subject to a regular interval timetable and the adjustments made when the annual working timetable is drawn up are a matter of minutes only.

With the *Deutschland-Takt* initiative, more or less all the train paths would be predetermined so that train operators would choose from the available offer. The key issue is whether this choice satisfies the open access requirement; the merits and demerits must be weighed, and it is necessary to examine the extent to which German rail legislation can be amended on the basis of the European regulatory framework and whether amendments to European legislation might also be needed. Predetermination should likewise be subject to regulatory checks.

Incentive system to improve service levels at passenger stations

Current rail regulation law requires operators of service facilities to set up incentive systems. The aim is to set financial incentives to lessen disruption and improve service levels at passenger stations, for instance. This requirement will contribute to improving the quality of service at passenger stations, and is targeted at both station operators and train operators. From April 2012 to August 2013 the Bundesnetzagentur chaired a working group of representative market players that, following best practice, agreed on important elements for better, more efficient incentive systems. Core elements that are particularly important if operations at passenger stations are to run smoothly (eg information for travellers, winter service) and that can be incorporated relatively easily in an incentive system were listed and benchmarks for framing penalties drawn up.

The group's work was carried out to deliver results applicable to all station managers. Attention was paid to the different concerns of large, medium and small companies, in some cases by finding suitable compromises. However, other – slightly different – solutions are also conceivable for very small passenger station managers on grounds of proportionality. Individual elements could be left out, or applied in a modified form, for instance.

The group's results are to be put into practice in 2014. This requires agreement with the biggest station managers, most notably DB Station&Service AG. We will follow, and assist in, the implementation process, together with the other market participants. The aim is the continued cooperation of the station managers, assuming that the improved incentive systems can take effect some time in 2014.

Price regulation

Level of prices charged by the DB infrastructure companies

Besides the review of DB Netz AG's track access charges the controls in 2014 of the DB group's infrastructure companies will include a review of the station prices raised on the basis of DB Station&Service AG's pricing system. What we learn from the review of the track access charges will be applied to this, as far as possible, to avoid too great a gap in time. The regulatory review of the level of charges, in particular, is crucial to competition, in light of the market players' not insignificant expenditure on the use of passenger stations. Standardised steps for review procedures are to be drawn up, based on the lessons learnt from the two reviews.

Recalculation of the transport service factor in station pricing

The conclusion of the public law contract discontinuing use of the train length factor commits DB Station&Service AG to introduce, from 2015, a transport service factor calculated on a qualified basis. Introduction of the new approach this will entail for DB Station&Service AG is planned for 2015. High on the agenda is a modification of the Service Facilities Statement, with input from the market and review by us.

International affairs

Independent Regulators Group – Rail

We will continue to provide input for the work of the Group in 2014. As in the past year, work will continue in the areas of access, charges, market monitoring and legislative proposals. Since it was set up in 2011 IRG-Rail has become an important body at European level whose declared aim, for 2014 as well, is to continue to take harmonisation and consistent regulation in the European rail market forward.

IRG-Rail will contribute further to the discussions on the legislative proposals put forward by the European Commission. As in the past, it will draw up position papers which serve as valuable input for negotiations between the European institutions.

It will also continue to monitor the markets. The methods drawn up by the national regulators will be supplemented and refined by statistical and econometric analyses to improve monitoring of developments in the national rail markets and to enable joint response to challenges. We will likewise work closely together with the IRG-Rail members in setting up and supervising the freight corridors.

Implementing acts of the European Commission

The First Railway Package recast gave the European Commission various powers to issue implementing acts. The Commission has announced its intention of issuing these in a number of areas, for example, cross-border freight corridors, directly allocable costs, and market monitoring. As far as the cross-border freight corridors are concerned, the issues are the design of the framework agreements between the infrastructure companies and the train operators and the requirements to be met by companies applying to use the corridors. Where the directly allocable costs are concerned, the underlying principles are to be determined. As regards market monitoring, IRG-Rail will participate in the process of issuing the implementing act, if appropriate. The Bundesnetzagentur will be involved in the legislative procedures for all three issues.

European regulatory framework

In close cooperation with the Federal Ministry of Transport and Digital Infrastructure and in our activities within IRG-Rail we will continue to engage in discussions on taking the European regulatory framework forward. The proposals for this (Fourth Railway Package) concern the full liberalisation of national rail traffic, the structural separation of rail infrastructure and railway undertakings, technical interoperability, vehicle authorisation and a bigger role for the European Railway Agency (ERA). We will be an active participant in the discussions in 2014.

European Network Rail Regulatory Bodies

The European Network Rail Regulatory Bodies (ENRRB), the formal body provided for by the recast of the First Railway Package that took over from the informal group of regulatory bodies led by the Commission, will continue its work next year on, amongst other things, the many implementing acts. One of its activities will be to discuss the drafts before they are submitted to the Single European Rail Area Committee (SERAC). This will allow the experience of the national regulatory bodies to be made use of. We will provide ENRRB with input and continue our work within IRG-Rail to this end.

The Bundesnetzagentur's core tasks and organisation

The Bundesnetzagentur is primarily responsible for promoting competition in the regulated areas and ensuring non-discriminatory access to networks. In doing so it profits from a task-oriented organisational structure, which meets the many and varied requirements and at the same time allows the Bundesnetzagentur to respond to new tasks in an open and flexible manner.

Functions 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 ministry known today as the Federal Ministry for Economic Affairs and Energy. It took over the responsibilities of the former Federal Ministry of Post and Telecommunications and the Federal Office for Post and Telecommunications. On being assigned responsibilities under the Energy Act and the General Railway Act, the Regulatory Authority for Telecommunications and Post was renamed in 2005 into the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway, commonly known as the Bundesnetzagentur.

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 state borders in the context of the *Energiewende*. In the telecommunications and postal sectors it ensures appropriate, adequate and nationwide services and, on the basis of various pertinent laws and regulations, provides frequency usage regulation

and numbering arrangements. Furthermore, the Bundesnetzagentur is the competent authority under the Electronic Signatures Act (SigG).

The Bundesnetzagentur's tasks are complex and highly diversified. They range from cases addressed in quasi-judicial proceedings in regulation areas, to reporting requirements and planning authority responsibilities, consumer protection and information activities in the regulated areas, right down to the nationwide presence for investigating and processing frequency interference complaints.

Below the management level the Bundesnetzagentur comprises ruling chambers and departments. The President's chamber takes decisions 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 chamber responsible decides 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 Energy Act (EnWG) gives the

ruling chambers decision-making powers on issues of general and individual access to electricity and gas networks and on network tariffs.

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 from the gas and electricity network development planning, from the Market Transparency Unit for Wholesale Electricity and Gas Markets/REMIT Enforcement set up in 2013, and from its responsibility for ensuring security of supply. A major departmental function overall is to provide ruling chambers with specialist assistance in their decision-making. All relevant rail regulation tasks are performed by the rail department, as the General Railway Act does not yet provide for a ruling chamber.

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 international functions are mostly concentrated in one department.

In the telecommunication sector the Bundesnetzagentur is mainly responsible for the key decisions and objectives that promote investment, innovations and competition for the benefit of all citizens. Consumer protection remains another key focus area in the telecommunications sector. For this purpose, emphasis is placed on investigating problems that hinder a trouble-free change of supplier. In addition, the Bundesnetzagentur continues to vigorously combat misuse such as infringements of competition law, the unlawful use of telephone numbers and cold calling, for instance by carrying out searches. 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 frequency interference, the dispute resolution procedure under section 47a of the Telecommunications Act (TKG) and section 10 of the Postal Services Ordinance (PDLV) and the general consumer advice service. Under

part 7 of the TKG, the Bundesnetzagentur plays an important 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 directory enquiry 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, in particular through unbundling and regulating non-discriminatory access to the energy networks, including rates regulation. The statutory decision in 2011 to phase out nuclear power as part of the *Energiewende* and the continued expansion of renewable energy require additional state measures with respect to the various market players. These include, for instance, monitoring the electricity and gas wholesale markets, supervising the redistribution mechanism under the German Renewable Energy Sources Act (EEG), registering photovoltaic systems to determine the progressive reduction in the EEG-regulated feed-in tariff and any interventions necessary to safeguard security of supply, for example if systemic power plants are to be decommissioned. The latter task is statutorily limited in duration to 2017. 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 *Energiewende* 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 planning law. Planning law 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 a part of network development planning, key decision-making information was prepared and presented to the legislator as a basis for determining the priority needs of network expansion set by the energy sector. Following the adoption of the Federal Requirements Plan in 2013, planning procedures for extra-high voltage lines crossing federal state and national borders take place as part of the federal sectoral planning process and the subsequent approval procedure. As part of the iterative planning process set out by statute, 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. In doing so, one of its main tasks is to ensure the non-discriminatory use of rail infrastructure for 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 examining the amount 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 well. To ensure consistency the Bundesnetzagentur's regional offices, the contact point with consumers and the industry, are managed and coordinated centrally by a single department.

The regional offices are mainly responsible for technical matters. They provide information, for instance, on compliance with the Telecommunications Act, electromagnetic environmental compatibility provisions and the Electromagnetic Compatibility of Equipment Act (EMVG). 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 and carrying out radio monitoring and inspection orders under the Telecommunications Act and the Electromagnetic Compatibility of Equipment Act.

Additional executive tasks are carried out by specific regional offices. In particular this involves activities in number administration, number misuse and cold calls, consumer protection and information, the registration of photovoltaic systems and the registration of railway infrastructure. Moreover, they also carry out some personnel 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 and 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 not only excellent specialist knowledge, but also 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 2,900 specialists, including legal experts, economists, engineers and scientists from various fields, to ensure the efficient, proper performance of tasks in all areas.

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. Vocational training is available for office communication trainees, electronic equipment and systems trainees, and for IT trainees in system integration and applications development. Since 2011 the Bundesnetzagentur has also offered a practice-oriented study programme to qualify students (Bachelor of Engineering/Electrical Engineering and Bachelor of Science) to work as technicians for electronic equipment and systems at the Bundesnetzagentur. Moreover, since 2012 two civil servants preparing for the rank of *Regierungsinspektor* are selected annually to take the university degree "IT in Public Administration". Vocational training courses are offered at a total of eight Bundesnetzagentur locations, in particular at the regional offices.

In 2013, a total of 172 young people were trained at the Bundesnetzagentur in various occupations. Of the 41 trainees who successfully completed their training in 2013, 37 decided to stay with the Bundesnetzagentur.

Budget

The Bundesnetzagentur's income and expenditure is budgeted for in the federal budget in the departmental budget of the Federal Ministry of Economic Affairs and Energy. The table below shows the income for 2013 (target and performance) and 2014 (first government draft budget).

Type of income	Target 2013 in €000	Performance 2013 in €000	Target 2014 in €000
Telecoms fees, contributions and other charges	77,158	88,492	81,968
Fees and other charges in the postal sector	5	41	6
Fees and other charges in the rail sector	86	- 37	87
Fees and other charges in the energy sector (electricity and gas)	851	4,925	852
Fees and other charges under the Grid Expansion Acceleration Act (NABEG)	7,500	0	11,250
Other administrative income, eg fines, rents and disposals	1,090	4,298	1,117
Administrative income	86,690	97,719	95,280

Higher income than the respective amounts estimated is partly due to an increase in the number of applications (for instance in radio relay systems) and partly to fees being collected for previous years (for instance for interference protection contributions and fees in the energy sector). Court rulings resulted in reimbursements being made (for instance in the railway sector).

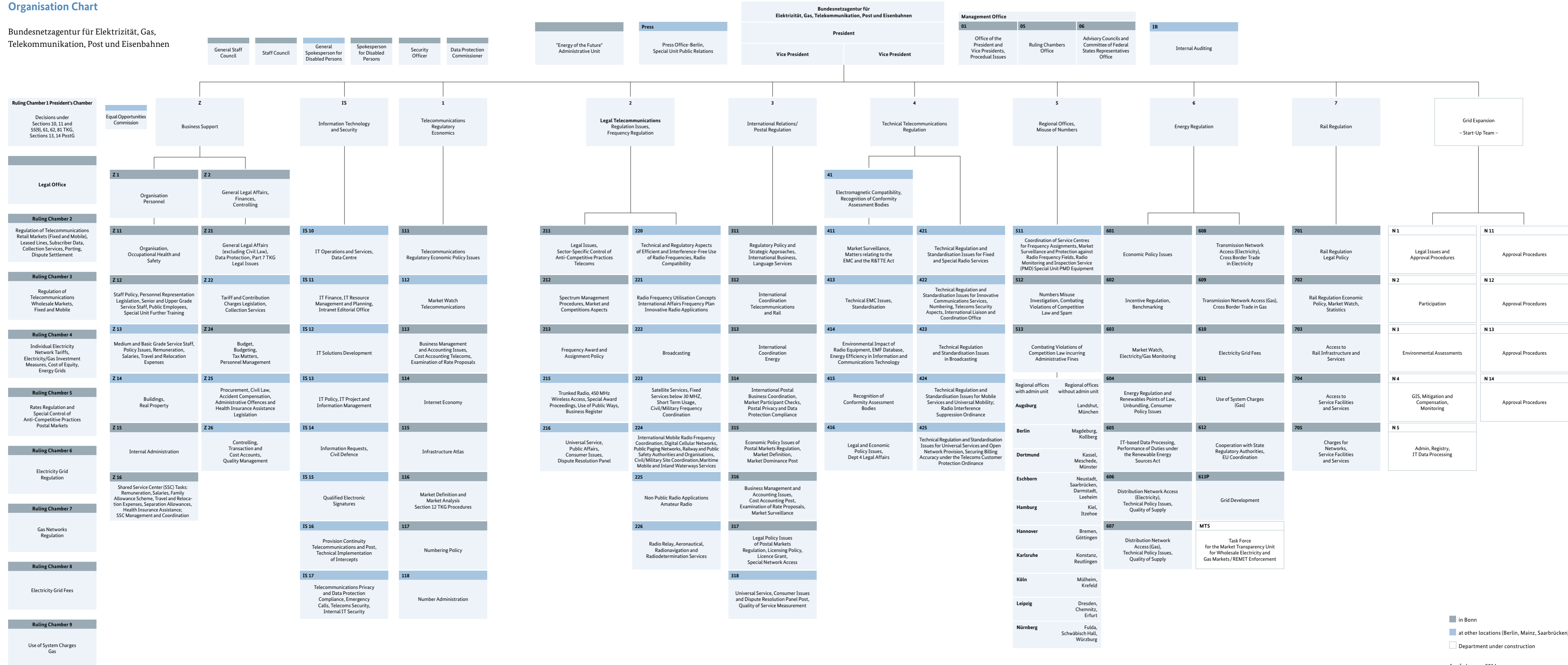
In connection with network expansion, the 2013 budget estimates income of €7.5m. As applications for federal sector planning will probably be submitted in 2014, no fees have been levied as yet. The expected income will therefore be delayed until subsequent financial years.

The chart below shows the expenditure for 2013 (target and performance) and 2014 (first government draft budget). The increase in budgeted expenditure for 2014 is attributable to building up and extending the human and material resources in organisational units in response to the transfer of an extensive range of new tasks, especially in network expansion.

Type of expenditure	Target 2013 in €000	Performance 2013 in €000	Target 2014 in €000
Personnel costs	122,400	115,572	130,502
General administrative expenditure, appropriations	51,353	46,143	54,964
Investment	14,049	13,208	10,875
Total expenditure	187,802	174,923	196,341

Organisation Chart

Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen



List of abbreviations

3

3 GPP 3rd Generation Partnership Project

A

AC Alternating voltage

ACER Agency for the Cooperation of Energy Regulators

ADSL Asymmetric digital subscriber line

AEG General Railway Act

AFuG Amateur Radio Act

AGB General terms and conditions

ANCOM Romania's telecommunications regulator

ARegV Incentive Regulation Ordinance

AusglMechV Equalisation Scheme Ordinance

Az File number

B

BAFA Federal Office of Economics and Export Control

BBPIG Federal Requirements Plan Act

BEMF EMF Controls Ordinance

BEUC Bureau Européen des Unions de Consommateurs

BfDI Federal Commissioner for Data Protection and Freedom of Information

BEREC Body of European Regulators for Electronic Communications

BGH Federal Court of Justice

BIPT Belgian regulatory authority for telecommunications and post

BKV Balancing group manager

BMWi Federal Ministry for Economic Affairs and Energy

BSI Federal Office for Information Security

BVerwG Federal Administrative Court

BWA Broadband wireless access

C

CA UPU Council of Administration

CACM Capacity allocation and congestion management

CA/DRM Conditional access/digital rights management

CAM Capacity allocation mechanisms

CbC Call by call

CD Compador Dienstleistungs GmbH

CEER Council of European Energy Regulators

CEN European Committee for Standardization

CENELEC European Committee for Electrotechnical Standardization

CEPT European Conference of Postal and Telecommunications Administrations

CERP European Committee for Postal Regulation

CFV Carrier leased lines

CISPR Comité International Spécial des Perturbations Radioélectriques, International Special Committee on Radio Interference

CR Cognitive radio

ct/kWh Cent per kilowatt hour

CT Compador Technologies GmbH

CWE Central-West Europe

D

DBAG Deutsche Bahn AG

DCC Demand connection code

DEA Data envelopment analysis

De-Mail Legally secure platform to exchange letters electronically

DHL Deutsche Post DHL

DIHK German Association of Chambers of Industry and Commerce

DIN German Institute for Standardisation

DOCSIS Data over cable service interface specification

DPAG Deutsche Post AG

DPD Dynamic parcel distribution

DPIHS Deutsche Post Inhouse Services

DSL Digital subscriber line

DSO Distribution system operator

DTAG Deutsche Telekom AG

DUSS Deutsche Umschlaggesellschaft Schiene Straße mbH (German Road-Rail Transshipment Company)

DVB-T Digital video broadcasting - terrestrial

E

e expected/expected value

E+1 Date of posting plus one day

EBSAG Electricity Balancing Stakeholder Advisory Group

ECC Electronic Communications Committee

EEG Renewable Energy Sources Act

EEX European Energy Exchange

EG European Community

EIBV Rail Infrastructure Usage Regulations

EMF Electromagnetic Fields

EMV Electromagnetic Compatibility

EMVG Electromagnetic Compatibility of Equipment Act

EnLAG Power Grid Expansion Act

ENTSOG European Network of Transmission System Operators for Gas

ENTSO-E European Network of Transmission System Operators for Electricity

ENRRB European Network of Rail Regulatory Bodies

EnWG Energy Act

EP European Parliament

EPEX European Power Exchange

ERA European Rail Agency

ERG European Regulators Group

EREGG European Regulators Group for Electricity and Gas

ERGP European Regulators Group for Postal Services

ETSI European Telecommunications Standards Institute

EU European Union

F

FTEG Radio Equipment and Telecommunications Terminal Equipment Act

FTTB Fiber to the building

FTTH Fiber to the home

FYROM Former Yugoslav Republic of Macedonia

G

GB Gigabyte

GasNEV Gas Network Charges Ordinance

GG Basic Law

GHz Gigahertz

GLDB Geolocation Databases

GPL Gaspool

GSM Global System for Mobile Communications

GW Gigawatt

H

HFC Hyper Fiber Coax

H-Gas High calorific value gas

HKX Hamburg-Köln-Express (railway company)

HSPA High speed packet access

HT Peak price

HVDC High voltage direct current transmission

HVt Main distribution frame

I

ICSMS Internet-supported information and communication system for pan-European market surveillance

IEC International Electrotechnical Commission

ILR Luxembourg regulatory authority for electricity, gas, telecommunications, post and railway

IM Infrastructure manager

IMSI International Mobile Subscriber Identity

IMT International Mobile Telecommunications

IP Internet Protocol

IPTV Internet Protocol Television

IRG Independent Regulators' Group

IRG-Rail Independent Regulators' Group – Rail

ISDN Integrated Services Digital Network

ISDN-PMx Primary rate multiplex access

IT Information technology

ITU International Telecommunication Union

K

kbit/s Kilobit per second

KEP Courier, express and parcel services

km Kilometre

KPI Key performance indicators

KVz Cable distributor

KPN Koninklijke PTT Nederland

kW Kilowatt

kWh Kilowatt hour

KWK Combined heat and power

KWKG Combined Heat and Power Act

L

LFZ Gas flow commitments

L-Gas Low calorific value gas

LED Light emitting diode

LTE Long term evolution

L2-BSA Layer2-bit stream access

M

M2M Machine-to-machine

Mbit Megabit

Mbit/s Megabit per second

MEDREG Mediterranean Energy Regulators

MHz Megahertz

MMS Multimedia messaging service

MoU Memorandum of understanding

MW Megawatt

MWh Megawatt hour

N

NABEG Grid Expansion Acceleration Act

NAV Low Voltage Network Connection Ordinance

NBS Service Facilities Statement

NCG NetConnect Germany

NDAV Low Pressure Network Connection Ordinance

NEP Gas Gas Network Development Plan

NEP Strom Electricity Network Development Plan

NGA Next generation access

NGN Next generation network

NKP Network interconnection point

NOVA-Prinzip Network optimisation ahead of expansion

NRW North Rhine-Westphalia

O

OLG Higher Regional Court

ONEP Offshore Network Development Plan

ORR Office of Rail Regulation

OTC Over the counter trading

OVG NRW Higher Administrative Court of North Rhine-Westphalia

OWP Offshore wind farm

P

PCIs Projects of Common Interest

PDLV Postal Services Ordinance

PDSV Postal Data Protection Ordinance

PEntgV Postal Rates Regulation Ordinance

Pkm Passenger kilometre

PlfZV Planning Approval Responsibilities Ordinance

POC UPU Postal Operations Council

PostCon TNT subsidiary in Germany

PostG Postal Act

pPST Physical phase-shifting transformer

PSTN Public switched telephone network

PTS Swedish regulatory authority for telecommunications and post

PTSG Law Ensuring the Provision of Posts and Telecommunications Services

PUDLV Postal Universal Service Ordinance

R

REMIT Regulation on wholesale energy market integrity and transparency

RfG Requirements for generators

RRS Reconfigurable radio systems standardisation

RSC Radio Spectrum Committee

RSPG Radio Spectrum Policy Group

RSPP Radio Spectrum Policy Program

R&TTE Radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity

RU Railway undertaking

S

SDR Software defined radio

SEA Strategic environmental assessment

SFA Stochastic frontier analysis

SGV Rail freight traffic

SigG Electronic Signatures Act

SIM Subscriber identity module

S/PRI Supplier/partner requisition interface

SMS Short messaging service

SNB Network Statement (conditions on usage of railway infrastructure)

Stand-Alone ATM Stand-alone asynchronous transfer mode

SSC Shared Service Center

StromNEV Electricity Network Charges Ordinance

T

TAL Local loop

TAIEX Technical Assistance and Information Exchange Instrument

TC 331 CEN Technical Committee

TEN-E Trans-European Energy Networks - Europe

THW Federal Agency for Technical Relief

TK Telecommunications

TKG Telecommunications Act

tkm Tonne-kilometre

TPS Track pricing system

TSC Transmission System Operator Security Cooperation

TSO Transmission system operator

TYNDP Ten-Year Network Development Plan

TV Television

TWh Terawatt hour

U

UMTS Universal mobile telecommunications system

UNECE United Nations Economic Commission
for Europe

UPS United Parcel Service

UPU Universal Postal Union

UVPG Environmental Impact Assessment Act

UWG Unfair Competition Act

V

VDS Compressor station

VDSL Very high speed digital subscriber line

VDV Association of German Transport Undertakings

VG Administrative court

VoIP Voice over Internet Protocol

vPST Virtual phase shifting transformer

vzbv Federation of German Consumer Organisations

W

WIK Wissenschaftliches Institut für Infrastruktur
und Kommunikationsdienste

WLAN Wireless Local Area Network

WRC World radiocommunication conference

WTO World Trade Organization

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