Federal Network Agency

Annual Report 2009

Federal Network Agency for Electricity, Gas,
Telecommunications, Post and Railway

New services through new networks

Consumer protection and advice

Table of contents

International cooperation

Telecommunications

Post

Electricity and gas

Railway

President's message

For decades now, there have been visions of a “smart home” with networked lighting, heating, window blinds, refrigerators and washing machines, providing us with home automation that is smart enough even to restock our refrigerators. The smart home can assess storm warnings, detect burglars, decide when repairs are needed and order them to be carried out. And the vision of a robiotic home still able to perform its tasks even after its owners have passed away goes right back to the 50s of the last century.

Many visions, however, do not become reality and remain but visions decades later. Yet aspects of some are already possible today, or can become reality within a foreseeable period, with efforts by many. Realistic, above all, are the possibilities that energy policy provides. The home of the – near – future will automatically adapt to the electricity prices on the exchange. Refrigerators will use off-peak electricity and store it in the form of cooling energy. Electric cars, too, will run on this electricity. And since smartphones, in ever increasing numbers, have more computing power now than was needed to land on the moon, innovative and creative applications are possible.

The environment must first be created, however, for all this to happen. Thus last year, the Federal Network Agency stepped up its smart metering activities, partly as a result of the need to integrate renewables. The benefits, too, of integrating energy and telecommunications networks to create a smart grid are taking centre stage in our work. What is good for the home cannot be wrong for the electricity grid: control networking technology has great efficiency potential for both.

The next generation of networks may produce entirely new synergies. There will not need to be separate meter readings for gas, water and electricity; instead, the future may bring new service and business models implemented by people from completely different industries.

Being responsible for a number of networks, the Agency therefore has the option of joint strategies. For instance, costs can be saved and investment in new networks encouraged if ducts are jointly built and their use shared. Activities that provide the networks with more intelligence and the population with more widespread broadband Internet access can already be seen in some re-

gions. And the “infrastructure atlas” created by the Agency can support these activities by providing specific information in response to information requests.

All this shows how important it is that the Agency regulates not just one sector or one market, but is able to create the framework for a future-proof renewal of much of our infrastructure. Is this not industrial policy? Is it wrong in economic governance terms, because innovation and progress should emanate from entrepreneurial and research activities, and not from state bureaucrats? The underlying undifferentiated thinking shows that many are still fighting the battles of the century just gone.

We have progressed further, because not all the divergent forces in networks come together automatically, as it were, without consensus. The worst thing would be to have everyone pulling in different directions. The fear that everyone will do his own thing, to the detriment of coordination, is not entirely unjustified. Welcome as it is that communities want fibre to the home, it is not good that many only ask themselves after the fibre has actually been installed whether it can also carry television and video signals and whether the new infrastructure is suitable for digital homes and smart grids.

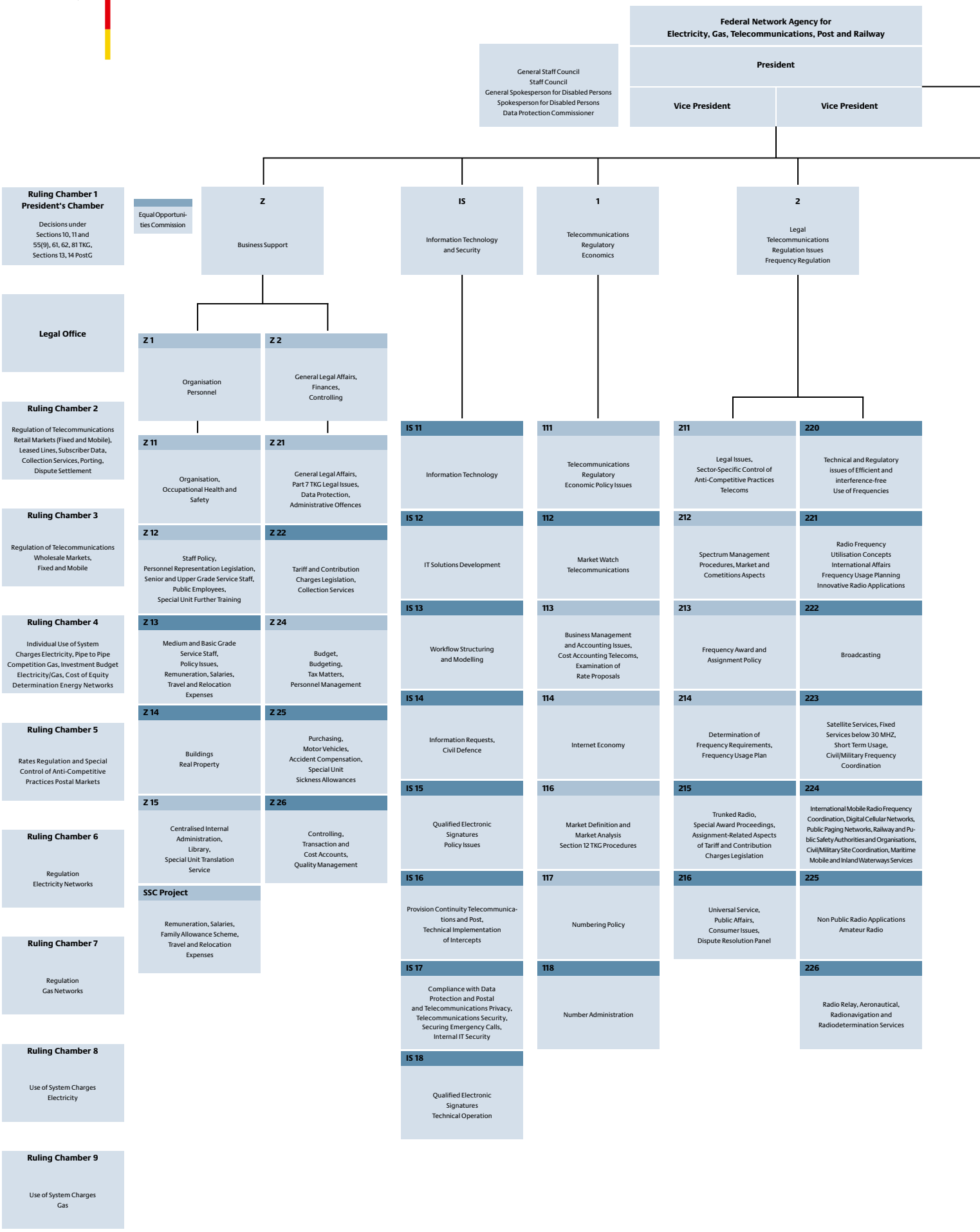
Agreeing some of the framework, a joint platform, before the roads are dug up, is not a bad thing. A common considered approach is needed, and no one here is presumptuous enough to believe that we alone have the best insights.

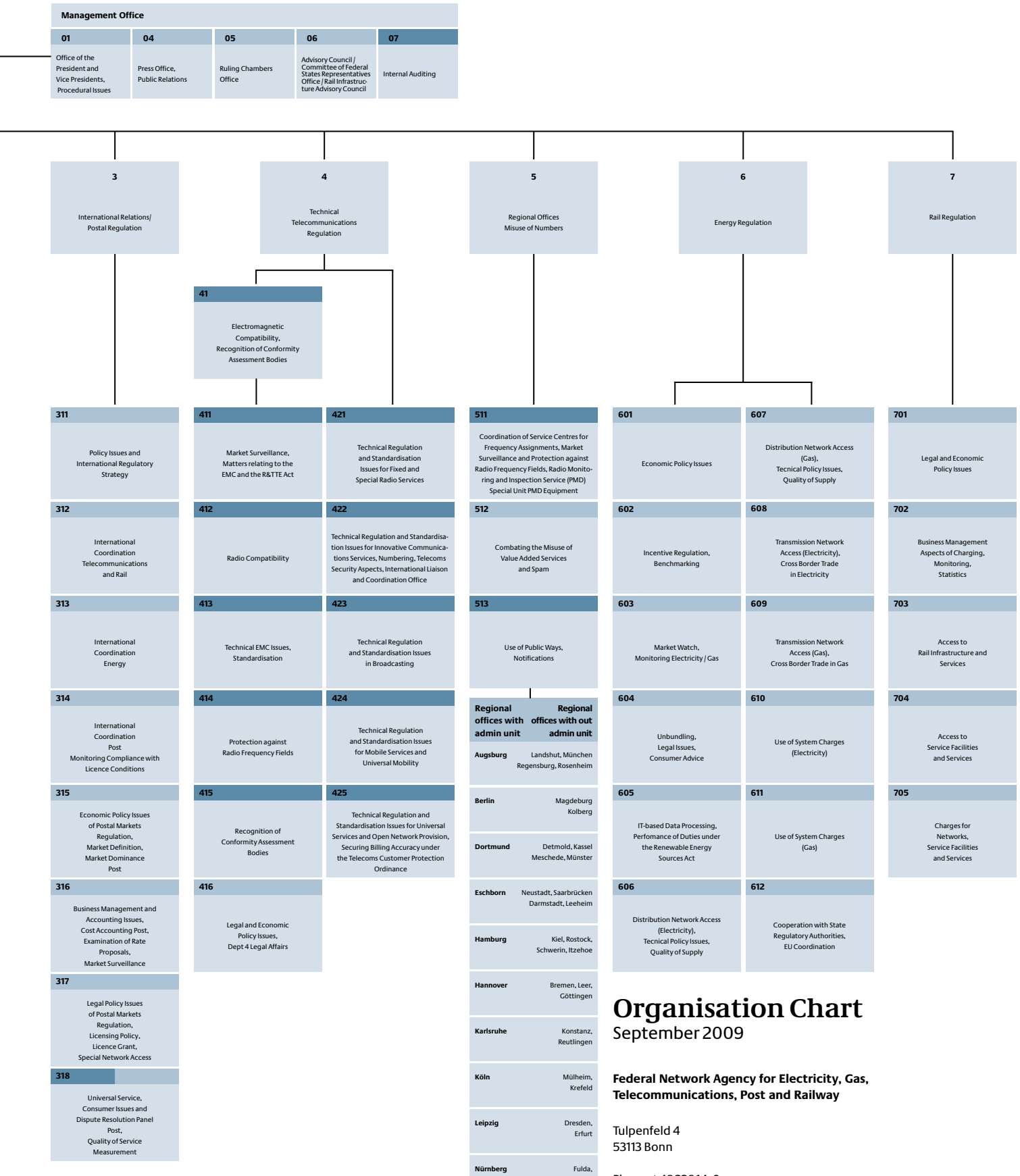
But it is vital to ask questions and to look for answers together with the market participants, and not to slacken. We are seeking to do this in the different areas of our remit, taking a cross-sectoral, integrative approach more and more often and bringing, for instance, telecommunications and energy experts together in joint initiatives.

The smart home, the smart company, smart regulation and smart infrastructures can become a way of life more quickly than did the visions of old. The Agency has progressively opened the old monopolies. And it is now fashioning the framework for the innovative networks of the 21st century.

Matthias Kurth
President

Federal Network Agency





Organisation Chart

September 2009

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New services through new networks

SYNERGIES BETWEEN TELECOMMUNICATIONS AND ENERGY

In recent years the expansion of broadband has become a significant topic of public discussions. For companies and private individuals alike, broadband Internet access and the thus related opportunities for use are becoming more and more essential. From the perspective of regional authorities, the local provision of broadband is increasingly becoming a locational advantage.

The Federal Network Agency is aware of the significance of the expansion of broadband networks for the development and competitiveness of the German economy. It will therefore, within the scope of its possibilities, support all initiatives that contribute to this and in particular provide the right incentives for this objective.

New networks allow for new services. Thus broadband connections are no longer used just for broadband Internet access, but increasingly also for telephone services. Recently the extent of television services on offer has also increased.

However, the expansion of broadband networks has not just positive effects on the telecommunications industry, but also on other sectors of the economy. Nowadays small and medium-sized enterprises are particularly reliant on a broadband connection; it has become a necessary prerequisite for efficient and smooth interaction with customers and business partners and is therefore of macroeconomic importance.

Broadband expansion also has significant influence on other network sectors. Concepts for a so-called smart grid are conceivable not least of all, because the use of broadband transmission technology opens up new opportunities for communicative networking.

This, as well as the use of the energy suppliers' infrastructure, capital and know-how, creates synergy effects between the telecommunications and the energy industry, which facilitate the broadband expansion. Energy suppliers are involved in manifold ways in broadband expansion, in particular in local and regional projects.

The Federal Network Agency welcomes and supports this development. The following information aims to advance the discussion about the positive interaction between the telecommunications and energy industry in the expansion of the broadband network.

EXPANSION OF BROADBAND NETWORKS

Current and planned expansion measures will lead to significant changes in the German telecommunications landscape in the next few years. While the beginning of liberalisation in 1998 saw competitors building up their own infrastructure on the basis of access to the former monopolist's connection network, thus enabling them to provide telecommunications services, the fixed line network now sees competitors developing their own connection networks, which are largely based on fibre optics.

This requires considerable investments in existing as well as new networks. Investments of that volume cannot be borne by an individual company, but only by the efforts of a multitude of - sometimes also medium-sized - companies. An observation of the market reveals different expansion strategies, which differ in particular in the extent of the use of fibre optics. In order to facilitate the financing of the necessary

investments, there are different possibilities that are already being used by different countries; these include the allocation of public funds (of the relevant country or the EU), financing by means of special funds (as for example in Great Britain or Australia), and preferential bank loans.

The expansion of broadband networks is characterised in particular by the phenomenon of diversity. This diversity applies to the factors that influence the cost-effectiveness of broadband expansion. In this context population density, topography, demand potential, competition, and infrastructural requirements are relevant.

The specific development plans are also very different. On the one hand existing networks are expanded, for example in the case of the VDSL expansion of Deutsche Telekom AG or the changeover of the cable network operators to the DOC-SIS 3.0 standard. This allows for the provision of broadband connections with very high bandwidths. On the other hand there are additionally a multitude of regional and local initiatives and projects, some of which also include the construction of new networks. In these cases the regional authorities, sometimes in cooperation with local energy suppliers and other local suppliers, are among the driving forces.

The Federal Network Agency expressly welcomes this development. It considers such a diversified approach the best opportunity to improve the provision of broadband relatively quickly and furthermore an opportunity for more competition and innovative broadband services. The sometimes very fragmented development process is an important part of broadband expansion. Because at least in the so-called “white spots” local and regional initiatives should result in achieving service coverage much more quickly than any centrally planned efforts. At the local level the distances and decision processes are shorter; the population and the local trade can be integrated. At the end of the chain are regional operators that have ties to the location. These medium-sized solutions are also much more flexible, allowing them to react quickly to further developments. In this respect the local and regional projects, as well as the expansion of the network of Deutsche Telekom AG and of the cable and mobile phone networks, play a major role in the provision of broadband.

Networking the local approaches will be an important factor in this. Diversity always results in more complexity, too. Isolated solutions need to be interconnected as well as being connected to networks across Germany. Attention should be paid to ensuring the necessary interoperability, thus allowing a multi-network implementation of modern telecommunications services right from the start. This way the relevant developments can unfold their full potential in the interests of the consumers; at the same time costly technical upgrades can be avoided.

In this respect the consumer or user has a great interest in a forward-looking, open network architecture.

THE FEDERAL GOVERNMENT’S BROADBAND STRATEGY

National broadband expansion programmes are under discussion in numerous countries. The issues are concrete targets and specific details, matters of implementation, the designation of areas with no provision or insufficient provision, regulatory aspects, and cost and financing parameters.

The federal government's broadband strategy, published on 18 February 2009, also reflects this discussion. This strategy provides for a comprehensive provision of 75 percent of households with 1 Mbit/s by 2010 and 50 Mbit/s and more by 2014. A prerequisite for this is the appropriate expansion with fibre optics closer to the end customer. The broadband strategy contains a total of 15 measures, which are to contribute to further advancing the provision of broadband connections to the population, in order to achieve the stated targets.

The Federal Network Agency is directly involved in four of these measures. In cooperation with the Federal Ministry of Economics and Technology it has drawn up an infrastructure atlas that is to be expanded by a construction site database in the long term. Other activities of the Federal Network Agency are the quick utilisation of the potential of the digital dividend and the definition of the main features of growth and innovation-oriented regulation.

NATIONWIDE INFRASTRUCTURE ATLAS

The Federal Network Agency launched the nationwide infrastructure atlas on 8 December 2009. Since then *Länder*, districts and self-governing towns have been able to use the infrastructure atlas as authorised users. Municipalities belonging to a district, telecommunications companies and planning offices can access the information contained in the infrastructure atlas as authorised users via the authorised users responsible for their region.

The infrastructure atlas is a measure of the federal government's broadband strategy and aims to help identify synergies in the expansion of the infrastructure. By sharing already existing infrastructure, for example, the costs of broadband expansion—in particular in remote areas—can be reduced.

In the early stages of the infrastructure atlas the applicants will receive information about the type of available infrastructure, the owners and a contact. At present the infrastructure atlas therefore serves primarily as a contact exchange and allows the local planners to systematically contact owners of infrastructure.

There is great interest in the infrastructure atlas. By the end of February 2010 85, sometimes very extensive, applications for use of the infrastructure atlas were received. With the first 40 processed applications the Federal Network Agency has already been able to provide information about the notified infrastructure in around 900 towns, communities or urban districts. The applications range from the development of a planned industrial estate with broadband connections to the preparation of feasibility studies for entire administrative districts. Priority is given to applications that relate exclusively to the first-time provision of broadband connections, i.e. the elimination of white spots. The Federal Network Agency thus actively supports the local efforts to further expand the provision of broadband.

The infrastructure atlas currently comprises the details of 110 companies or institutions that participate in this project either voluntarily or on the basis of contracts concluded with the Federal Network Agency. The infrastructure is to be expanded substantially. The Federal Network Agency wants to encourage as many infrastructure owners as possible to participate, in order to continuously improve the quality of the information provided. This requires not

only the companies' willingness to participate in the infrastructure atlas, but also their general willingness to make existing infrastructure available for shared use.

In addition the options for using the infrastructure atlas are also to be extended. The aim is to grant the authorised users online access and to link the current database to the construction site database yet to be created.

The further development will also depend on the ways and means by which the legislator will transpose the related current European stipulations. Section 12 (4) of the amended framework guidelines obliges the member states for the first time to draw up legal bases for the creation of an infrastructure atlas. Although the voluntary approach has generally proven successful for creating the infrastructure atlas, a statutory basis will nevertheless ensure clarity and legal certainty as well as a broader database. This ensures that broadband expansion can be supported by the infrastructure atlas in the long term, too.

DIGITAL DIVIDEND

Wireless connections are another way of providing broadband to the population, especially in remote areas. Particularly suitable for this purpose are frequencies called "digital dividend", because these frequencies require only a few antenna locations. This is the frequency spectrum used for analogue broadcasting, i.e. the range between 790 MHz and 862 MHz. In order to support the federal government's broadband strategy, the allocation procedure for these frequencies was linked to a procedure already in process for frequencies in the ranges 1.8 GHz, 2 GHz and 2.6 GHz.

The Federal Network Agency has already ordered the allocation procedure, chosen the bidding procedure and set out the allocation conditions and auction rules. The auction for a total of 360 MHz is planned for the second quarter of 2010.

GROWTH AND INNOVATION-ORIENTED REGULATION

The definition of the main features of growth and innovation-oriented regulation—a measure of the federal government's broadband strategy—has several elements: The formulation of key points by the Federal Network Agency, the clarification of basic regulatory and competitive issues regarding cooperation by the Federal Network Agency and the Federal Cartel Office, as well as the further development of the main features of consistent regulation for charges by the Federal Network Agency. Results are now available for all three topics.

On 13 May 2009 the Federal Network Agency published a draft version of key points on the regulatory framework conditions for the further development of modern telecommunications networks and the creation of an efficient broadband infrastructure and made these available for consultation. Following that the numerous and sometimes very extensive comments were analysed and evaluated. On 11 January 2010 a revised draft version was made available to the Federal Minister of Economics and Technology and to the Advisory Council of the Federal Network Agency.

Following a consultation of the market, the Federal Network Agency published notes on the consistent regulation of charges on 4 November 2009 and defined the term "consistent" therein.

The result shows that ensuring a consistent regulation of charges presents a challenge of increasing complexity. This applies even more since the relation of the different charges to each other has significant influence on ensuring adequate and efficient investment incentives and fair competition. The Federal Network Agency therefore still considers it one of its central tasks to simultaneously fulfil the different legally standardised objectives by ensuring that its decisions also contribute to the promotion of efficient investments in powerful infrastructure by creating sustainable competition. That ensures at the same time that the innovation potential in terms of communications and IT applications can be realised.

On 19 January 2010 the Federal Cartel Office published information on the evaluation of co-operations for fibre optic expansion in Germany under competition law. This provides companies willing to co-operate with guidelines for an evaluation of their cooperation plans under competition law. The main focus of this paper are co-operations between Deutsche Telekom AG and competitors for upgrades of already existing broadband connections in order to provide bandwidths up to 50 Mbit/s and more. Co-operations that serve exclusively to develop broadband services for white spots for the first time are not usually subject to concerns under competition law. Whether a planned cooperation for broadband expansion leads to a restriction in competition depends primarily on the type of cooperation and the market position of the companies involved.

With its activities the Federal Network Agency contributes to more planning certainty and transparency. It will design the regulatory framework conditions in accordance with the details outlined in the key points, so that the entire telecommunications sector can continue its positive development under competitive terms and conditions.

FEDERAL NETWORK AGENCY'S DECISIONS PROVIDE CLARITY AND CERTAINTY

In its decisions regarding market regulation the Federal Network Agency is also focused on improving the expansion of broadband.

On 4 December 2009 the Federal Network Agency set out for the first time the concrete terms and conditions according to which Deutsche Telekom AG has to grant other network operators access to its connection infrastructure. This decision was necessary because negotiations between Deutsche Telekom AG and competitors, which had already begun in the summer of 2008, had not resulted in consensual, voluntary solutions, despite intense efforts.

This decision is based on a forward-looking determination, which the Federal Network Agency had already passed in June 2007 and which had obliged Deutsche Telekom AG to offer the relevant access.

Following this decision competitors will now have access to so-called primary connection points. These are special cable distributors which Deutsche Telekom AG has erected along roads during the expansion of its broadband network. Furthermore the network operators will have access to cable ducts of Deutsche Telekom AG. This will now enable competitors, too, to lay a fibre-optic-based infrastructure for high-speed broadband use, without the time consuming and costly development and digging works otherwise required—which

Deutsche Telekom AG has already implemented as part of its VDSL expansion.

The rules set out for access to Deutsche Telekom's connection infrastructure are another important milestone for more competition in the expansion of the broadband network and for an even better provision of broadband to the end users.

With this decision the Federal Network Agency proves to be, once again, a major driving force behind broadband expansion in Germany, thus fulfilling its responsibility to employ regulation in order to ensure more competition in the interest of end users. Numerous companies now have clarity for their investment plans and it is to be hoped that the expansion plans of the competitors will now be implemented without delay.

The remuneration payable to Deutsche Telekom AG for using the access services now ordered will be determined in 2010 in separate proceedings about the regulation of charges, based on cost-efficient service provision.

In early March 2009 the Federal Network Agency had already announced a decision that is to permit competitors of Deutsche Telekom AG a simpler development and provision of white spots with fast Internet connections. According to this Deutsche Telekom AG must also grant its competitors access to the local loop (TAL) at a cross connect. By being able to access the TAL at a cross connect, the length of the lines between the provider's active technology and the end user is reduced, which is a prerequisite for providing Internet connections with high bandwidth. Furthermore the bundling of the required DSL technology at just one central point makes it easier to provide services in remote areas. This eliminates in particular the otherwise necessary connection of each individual cable distributor and the extensive civil engineering works needed for this. That provides sufficient clarity and certainty for all competitors willing to invest and wishing to provide services for white spots via a cross connect.

BROADBAND INFRASTRUCTURE PROMOTES RESTRUCTURING OF ENERGY NETWORKS

Investments in the broadband infrastructure also lay the foundations for supporting and accelerating the necessary structural changes in the energy sector. Because in the future so-called smart grids will be the lifeline of the economy.

The grids in Germany are increasingly faced with new challenges. These are primarily:

- the creation of a common market for electricity, with a correspondingly growing trade volume across national borders,
- the increase of remote generation and the transport of large volumes of power across long distances, and
- the integration of fluctuating generation sources with great power (wind energy onshore/offshore) into the transmission systems

In the existing structure the networks will no longer be able to cope with future requirements. In the electricity sector an increasing number of decentralised generators (wind power plants, combined heat and power plants etc.) are going online. This leads to a change in the flow, which will no longer just move from high voltage to low voltage networks, but can now also move in the opposite direction. In order to do justice to these changed conditions, the networks must be equipped with smart controls. A

comprehensive provision of broadband provides an excellent basis for this.

SMART GRIDS PROMOTE EFFICIENT, SAFE AND ENVIRONMENTALLY SOUND ENERGY SUPPLY

With the 2009 Renewable Energy Sources Act (EEG) the legislator set the course to ensure that in 2020 at least 30 percent of electricity and 14 percent of heat in Germany can be generated from renewable energy sources. Electricity from renewable energy sources is to become competitive and gain acceptance on the market.

Electricity generated in powerful offshore wind parks will play a crucial role in this. With its position paper on the integration of offshore wind projects (OWP), published in October 2009, the Federal Network Agency ensured a quick, efficient and non-discriminatory implementation of OWP.

It is in particular the diversity and decentrality of energy generation and energy consumption that require innovation and creativity. The grid plays a crucial role in this context. OWP can only transport their electricity to the consumers if the appropriate grids are available. Industrial enterprises can only rely on the grids if they are efficient and failsafe. Continued stability and security of supply in the energy market will only be ensured if the grid is able to accommodate the ever more complex challenges posed by wind energy, trade and fluctuating demand.

The Federal Network Agency supports the restructuring of the traditional grids towards smart grids within the scope of its competencies, because in the future these grids will provide an energy supply that is as safe, cost-effective, efficient, environmentally sound and thus consumer friendly as possible.

The technical implementation of the expansion into smart grids is realised by the consolidated application of information and communications technology (IKT), which couple the grid more closely with (decentralised) generators, integrate virtual power plants and thus ensure better networking with consumers.

IKT improves information for the grid on the one hand, while on the other hand allowing a closer alignment of consumption and generation, thereby ultimately reducing the demand for expensive system balancing energy and portfolio balancing energy. In addition this information allows for the early detection and rectification of instabilities, thereby avoiding extensive power failures for example.

The future introduction of electromobiles also requires a reinforcement of the grid by IKT, as well as smart metering systems and procedures. Electromobiles could be integrated into the network by running their batteries preferably with electricity from renewable energy sources. This could in particular help to absorb the sometimes greatly fluctuating feed-in of wind energy; in addition the eco-balance of the vehicles would be improved further. The smart grid can also ensure that the charging of a vehicle is allocated and invoiced to the respective customer, irrespective of where the vehicle is charged.

SMART METERING SYSTEMS AS A KEY TO THE FUTURE-PROOF GRID

The potential that can be utilised through IKT can only be exploited fully and efficiently if global energy management is installed, which extends across all value-added steps. This includes in particular the integration of not just the decentralised energy feeders, but also the end consumer into the information flow between energy generator, grid operator and supplier.

The model for the Federal Network Agency is the informed and critical consumer. The electromechanical meters used almost exclusively in households do not provide an accurate reflection of the customer's energy consumption, provide information on the actual time of use, allow remote meter reading or electronic data transfer. The current method of recording energy consumption in Germany is technically outdated. Smart metering systems can realise "customised" variable tariffs and give the customers a direct feedback on their electricity consumption. They help raise awareness for energy efficiency, which is so important, and can reveal potential for savings. The smart metering system is ultimately the consumers' key to the energy supply grid of the future.

By further liberalising metering in Germany, the legislator and the issuer of the ordinance have laid the foundation for the creation of an attractive offer of modern meters; at the same time the implementation of the first obligations to install modern meters has created a basis for the expansion into modern metering systems.

The liberalisation of metering opens up a market-driven process towards a comprehensive introduction of smart metering systems. The objective is for the market to develop, within a reasonable period of time, to a point where the so-called smart meters will be used extensively.

The Federal Network Agency plays an important role in this dynamic process. On the one hand it defines the legal framework for the market players through its determinations, while on the other hand giving expert advice to the decision makers. In March 2010 for example it submitted to the issuer of the ordinance a report on the viability and effectiveness of the legislative approach chosen to date. In this report on the development of competition and on scope for action in the area of metering and variable tariffs, the Federal Network Agency has pointed out perspectives in the interest of a safe and sustainable supply of energy and in the interests of the consumer, and has thereby given this innovative topic a predictable and clear direction.

In its report the Federal Network Agency points out that reasonable changes, which can be implemented relatively quickly, as well as readjustments of the legal framework can remove major obstacles, thereby stimulating and advancing the market-driven process. The Federal Network Agency opposes a fundamental change of strategy towards regulatory stipulations and an economically inefficient, compulsory comprehensive installation of new meters. Instead it emphasises the superiority of a competitive solution. The important factor is the consumer's conscious decision for the use of new meters, without having any technical reservations about such meters. Only then will the consumer change his consumption behaviour and the overall energy efficiency will be increased.

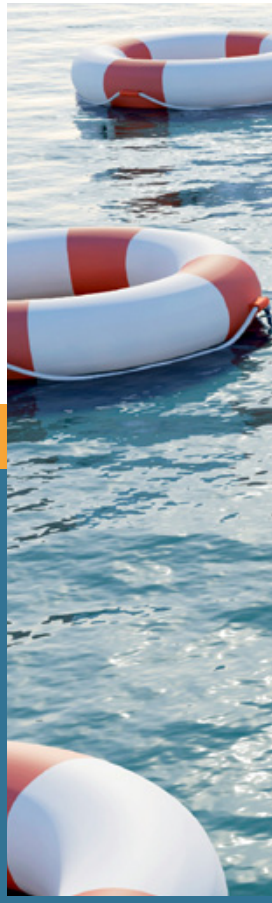
In its report the Federal Network Agency suggests:

- an extended catalogue of cases for a mandatory installation of a modern meter as the basis of a future-proof metering system
- the creation of incentives for the implementation of companies' own comprehensive roll-out strategies for grid operators and metering service providers
- close strategic networking of the areas "metering systems" and "variable tariffs" exclusively for customers with modern metering systems
- a definition of minimum requirements for an open, modern metering system that complies with liberalisation and is fit for use across various industries; to be provided by law, ordinance or a determination by the Federal Network Agency

The Federal Network Agency will actively involve the market players in the review of the report, just as it did during its preparation. This approach is in line with the Agency's understanding of dialogue-oriented regulation and offers considerable opportunities for everyone.

The issue of "metering" will continue to preserve its momentum. The Federal Network Agency is a crucial player, supervises the application of regulations, sets the course and defines the legal framework more closely. By promoting intense competition the momentum can be maintained. Grid operators should be enabled to adequately fulfil their statutory obligations to install and offer more modern meters. At the same time a sensible market entry must be possible for competitors.

The future challenges for the supply of energy and the efficiency of the grids can only be mastered with smart grids: IKT provides the basis for the energy markets of the future. The federal government's broadband strategy leads Germany to a comprehensive provision of powerful broadband connections, an infrastructure advantage that the competition should actively seize, especially for using the potential of smart metering systems. First cross-over activities in the market, i.e. cooperation between companies in the areas of energy supply and telecommunications, are an encouraging sign; the same applies to tentative strategic networking in joint roll-outs for smart metering systems and broadband connections.



Consumer protection and advice

Consumer advice service

The fact that competition is firmly established in the constantly developing telecommunications, energy, postal and railway sectors means consumers need more information. The Federal Network Agency's consumer services continue to act as a source of the relevant information, and they also provide channels for the resolution of disputes.

EU Roaming Regulation II came into effect on 1 July 2009. It adds to parts of the predecessor regulation and regulates roaming charges in the European Union (EU) and in the countries which have agreed to abide by the regulation. The effect of the new regulation is a gradual reduction of the retail charges for incoming and outgoing roaming calls, and, for the first time, the retail charges for text messages sent from countries outside the EU into the German mobile network and the wholesale prices for data roaming (internet, MMS). It also introduced details of the obligations to provide information on the roaming rates and charges to be applied, and thus further strengthens the position of the consumer. To protect the consumer more effectively from the so-called billing shock that can follow data roaming, the states involved must, no later than 1 March 2010, install a data roaming cut-off mechanism which will automatically terminate the data roaming when the amount or data volume stipulated by the customer in advance is reached.

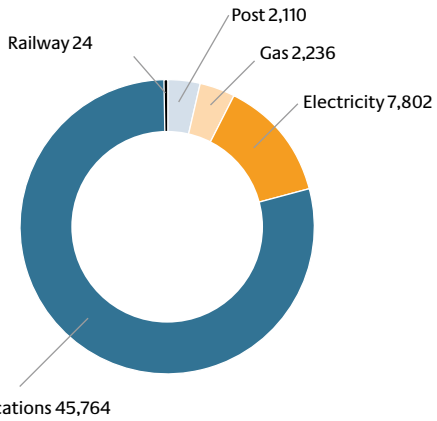
The First Act Amending the Telecommunications Act (TKG) and the Anti-Telephone Spam Act having come into force on 4 August 2009, it is now possible for the Federal Network Agency to enforce the above regulations under section 126 of the Telecommunications Act and to conduct arbitration proceedings in cases of EU roaming disputes under section 47a TKG. As a follow-up to an information survey conducted among the companies involved, the Agency's consumer service actively supported the companies in their implementation of the new roaming regulations.

The formal approval by the European Parliament of the Third EU Package for the Internal Energy Market on 22 April 2009 gave a significant boost to the rights of energy consumers. In particular, any change of supplier is in future to be effected within three weeks, and it is stipulated that the final billing must be done no later than six weeks after the change of supplier.

The member states must now transpose the European regulations into national legislation, a process that will be closely observed in Germany by the Federal Network Agency.

The Federal Network Agency's consumer advice service received 57,936 enquiries and complaints from consumers in 2009, the year under review, an increase of ten percent over the previous year.

Enquiries and complaints received in 2009, broken down by sector



Total number of enquiries and complaints 57,936

TELECOMMUNICATIONS

The number of complaints relating to contractual disagreements between consumers and their providers is still very high. The most frequently cited problem areas involve disputes about the conclusion of what customers see as unwanted contracts for a telephone or Internet service and difficulties encountered when switching provider. Consumers also complained about the lack of clarity in notifications of corporate mergers.

The problems connected with a switch of provider relate for the most part to the provision of subscriber lines (telephone and/or DSL connection), and the causes are many and varied. They can be rooted in contractual, technical or operational and administrative problems occurring in the tripartite relationship between "the old undertaking, the new undertaking and the customer". The consumers complain that lines and/or the DSL portal are not freed up promptly and that contracts are terminated by the provider—but not as desired by the customer—resulting in interruptions of service. There is also criticism of systematic discrepancies, in the case of broadband connections, between the transmission speeds contractually guaranteed and those in fact delivered (the so-called "up to..." problem). In connection with a switch of provider, occasioned by a change of address or when a line is connected for the first time, customers complain about the inconvenience resulting from the repeated failure of service engineers to arrive on schedule and about the lack of customer service. In the same connection, the largest number of complaints about numbers refer to the difficulty of porting. It is striking, in general, that the problems relating to a switch of provider are becoming more complex and intricate all the time. The difficulties were particularly intractable when customers terminated the contract direct and not via the new provider, and when they tried to switch provider again because of a delay in the implementation of the initial switch.

The focus of the problems related to bills has shifted from disagreements about specific items to disputes about the exact contents of contracts. The previous year's trend, with flat rate offers causing fewer billing problems, thus continued into 2009. The complaints were

mainly concerned with disputes over conveyance services, i.e. number, quantity, volume and duration, and disagreements about the use of short code services (premium SMS/MMS), premium services and data services.

Many customers use the consumer service as a channel for telling the Federal Network Agency about unwanted telephone marketing. Once the Anti-Telephone Spam Act, to combat unlawful telephone marketing and to improve consumer protection against specific selling techniques, came into force, accompanied by media references to the Agency, there was a rise in the number of those seeking contact. For the measures taken against telephone number misuse and telephone spam, see page 33.

There were more enquiries about numbering issues than in the previous year, but most of the enquiries and complaints were still about the assignment of numbers. However, enquiries were also prompted by the withdrawal of numbers by the providers in pursuance of decisions by the Federal Network Agency regarding eleven-digit local numbers and the required length of special rate numbers. There was also a larger number of enquiries about the availability or unavailability of local network and special rate numbers. Certain providers of telecommunications services blocked specific local numbers which had been used frequently by the so-called calling-card services for calls to other countries. Enquiries about assignees (requests for information about the identity of the service provider hidden behind the number on the telephone bill or making a marketing call) remained at nearly the same high level as in the year before.

ENERGY

The consumer service received 10,038 enquiries and complaints from energy customers in 2009, nearly twice as many as in the previous year. Owing to increased competition in this sector, a larger proportion than before was concerned with contractual issues. The amendment to the Renewable Energy Sources Act (EEG), which became effective as of 1 January 2009 and requires notification by operators of photovoltaic installations, also resulted in an appreciable increase in enquiries and complaints about renewable energy sources. But the expected rise in enquiries and complaints related to the Metering Access Ordinance, which came into effect in 2008, failed to materialise.

In the electricity sector, most complaints were concerned with electricity bills and the related contractual irregularities. Such complaints showed a sharp increase, which was due to long delays in sending the annual or final bill and the concomitant questions about allowing payment of bonuses and amounts credited. Customers also reported a larger number of discrepancies in their meter readings. As in 2008, there were repeated delays and difficulties when switching supplier.

In the gas sector, too, problems connected with switching supplier were centre stage. The explanation lies in the growth of competition: the more suppliers there are, the more likely consumers are to consider a switch.

Last year the Federal Network Agency took action to protect consumer interests at the European level by collaborating in the ERGEG Customer Working Group, to which are attached two taskforces, the Customer

Empowerment Taskforce and the Retail Market Functioning Taskforce. In particular, work was done on preparing European policy documents both on smart metering and on the provision of basic and back up services.

POST

The total number of complaints received in the postal sector in 2009 was, at 2,110, significantly higher than in the year before. Most of them were about delivery problems.

The bulk of the complaints was directed at Deutsche Post AG (DPAG) and was primarily concerned with late deliveries, non-delivery, delivery to the wrong address and failure to forward mail as requested. Customers also felt that DPAG had failed to respond flexibly to complaints about the closure of local post offices. The parcel delivery service was found to be unsatisfactory, and in certain districts the collection point for parcels was felt to be too far away from the customer's address.

There were also some complaints which evidently involved infringement of consumer rights. These were passed on to the Consumer Service Centres, which are distinctly better equipped to deal with them.

RAILWAY

As in previous years, few enquiries and complaints about the railways were received by the consumer advice service. The complaints were chiefly concerned with substandard customer service. There were also queries as to whether the Federal Network Agency is in fact responsible for this area, and requests for assistance in realising claims against the railway undertakings.

Universal service

Universal services are those which are generally regarded as indispensable and which should therefore be made universally available. Basically this is done through the operation of the markets. The universal services provided in 2009 were in line with statutory requirements.

TELECOMMUNICATIONS

In the period under review a number of consumers approached the Federal Network Agency with enquiries and complaints about the provision of subscriber lines. It proved possible to find mutually acceptable solutions in conformity with statutory regulations.

In its 2008/2009 Activity Report the Federal Network Agency addressed the question of whether broadband connections should be included as a universal service. It looked at actual and legal developments in this area and decided such inclusion could not be recommended at present.

The Federal Network Agency operates at the European level as a member of the IRG/ERG's "Enduser Working Group". The aim is to check on the extent to which the solutions proposed by other European regulatory authorities can be applied to purely national problems. The idea is to formulate, for submission to the Commission, an "ERG Opinion" on the scope of the universal service and in particular on whether it can or should include broadband connections. With that end in view the ERG developed a questionnaire and sent it to the various national regulatory authorities in the member states. The evaluation of the responses will be completed in 2010.

The fully comprehensive provision of public payphones falls within the scope of universal service as defined in law (section 78(2) para. 4 TKG). Deutsche Telekom AG (DTAG), which currently provides this universal service, continued to cut back on on public payphones in 2009. DTAG agreed with the Federal association of local-authority umbrella organisations that a total of 11,000 public phones at highly unprofitable locations would be removed, in each case subject to the approval of the local government authority concerned. The local authority always has the alternative of requiring DTAG to provide a public telephone for basic services. See page 77 for information on the total stock of public telephones.

The cuts were carried out on the basis of mutual agreement and did not cause any problems in the review period, but the Federal Network Agency will continue to keep the matter under close observation. The requirement of comprehensive provision of public payphones will be the subject of further discussion in 2010, involving DTAG and the above-mentioned Federal association. In the view of the Federal Network Agency, no further steps are needed at present.

POST

Since 1 January 2008 DPAG has no longer been under a statutory obligation to provide the universal services laid down in the Postal Universal Services Ordinance (PUDLV). The core principle of the Postal Act, which is based on article 87 ff of the Grundgesetz (German constitution), allows for universal services to be performed by other, private providers as well.

The PUDLV serves as the yardstick for determining whether the postal markets do in fact offer a universal postal service. For a postal service to be universal it must be able to deliver letters, parcels, newspapers and magazines. It must also maintain a certain number of stationary facilities (branch offices, agencies and the like) where postal services can be offered and used, and it must provide post boxes as well. The service must include quality of service targets for letter transit times and methods of delivery to addressees.

The universal postal service provided in 2009 was in conformity with the provisions of law and the PUDLV.

Even though DPAG is no longer under a statutory obligation to do so, it continues to fulfil its voluntary commitment to provide universal postal services throughout Germany. In the parcel delivery segment, however, the Hermes Logistik Gruppe offers an alternative to Deutsche Post AG that now supplies almost fully comprehensive coverage. Letter delivery is only in the very early stages of such a development, and there has been no success in building up a comprehensive structure parallel to DPAG. Private customers and small commercial mailers are therefore still to a large extent dependent on the services offered by DPAG. The same applies to the delivery of newspapers and periodicals.

The minimum number of stationary facilities prescribed by the PUDLV is 12,000. DPAG alone ran more than 12,500 of them in 2009. And DPAG's competitors now also operate an appreciable number of parcel acceptance points. To give just one example: Hermes offers parcel services from about 14,000 "parcel shops".

The provision of post boxes in 2009, with a total of about 113,000, met the target stipulated by the PUDLV. The data available to the Federal Network Agency on the average transit times for letters and parcels indicate that there was no deviation from the statutory service quality targets in the year under review.

The Federal Network Agency welcomes all the initiatives of providers who aim at lining up their services more closely with the targets set by the PUDLV. Every contribution to ensuring that the service offered is truly universal is of importance. Whether a universal service is provided by all players is largely dependent on the competition situation at any given time. If the market situation is such that competition functions properly, there is a long-term chance that the postal services offered will be of a quality,

concentration, price level and degree of differentiation that conform to the conception and definition of a universal service as set forth in the Postal Act.

The PUDLV must adapt to developments in technology and society, and it must stay in tune with demand. To that end the Federal Network Agency has developed proposals designed to keep the PUDLV updated. Proposals have also been made to tighten up the universal service by scrapping services for which there is little demand. It has not so far been possible to take account of the hybrid forms of communication which, while showing dynamic growth, are not yet solidly enough established on the market for most people to regard them as indispensable.

Text and video relay service for deaf and hearing-impaired persons

In the year under review the Federal Network Agency commissioned Tess GmbH to provide a text and video relay service for deaf and hearing-impaired persons and ensured that the service would be financed by the telecommunications undertakings.

The relay service enables deaf and hearing-impaired persons to call, and be called by, any other subscriber, whether in the fixed network or by mobile phone, thus guaranteeing them freely accessible telephone service with family members, friends, doctors, authorities, and so on. The service gives them video access, via a computer, to a technical relay platform where a sign-language interpreter calls the desired subscriber. Once that subscriber accepts the call, the interpreter translates the sign language of the deaf or hearing-impaired person into spoken language and vice versa.

The establishment of the text and video relay service was laid down in the Act to Amend the Provisions of Telecommunications Law of 18 February 2007. In order to give the service a secure financial basis it was necessary to amend section 45 of the Telecommunications Act (TKG), and this was done on 29 July 2009 by way of the First Act Amending the Telecommunications Act and the Electromagnetic Compatibility Act. The effect is to oblige every provider of publicly available telephone services to set up its own relay service and thus give deaf and hearing-impaired persons access to its telephone services.

On that formal basis the Federal Network Agency, having determined that there was demand for a relay service, carried out a needs analysis on the scope and degree of coverage it would have to have. The talks the Federal Network Agency had with the trade associations in the telecommunications sector and the statements it received made it clear that the organisations at which section 45 subsection 2 TKG was directed would not be able to provide a fully comprehensive relay service independently, ie on their own. Consequently it became necessary for the Federal Network Agency to commission one specific service provider to do the job, and the commission was put out to public tender. The contract was awarded to Tess - Sign & Script - Relay Dienste für hörgeschädigte Menschen GmbH (Tess GmbH). The relay service has been formally in existence since 1 January 2009, and as from

2010 Tess GmbH will be responsible for operating and delivering it. In addition, in the first half of 2009 the Federal Network Agency took the steps necessary to ensure that the financing of the relay service would come from the telecommunications undertakings.

Further information on the relay service can be found on the Federal Network Agency's website at www.bundesnetzagentur.de.

Special control of anti-competitive practices

The Federal Network Agency continued to take action against phone number misuse in 2009, ordering the deactivation of many numbers on grounds of violations of the Telecommunications Act. On 4 August 2009 the Agency acquired new powers to combat unlawful telephone marketing and was thus able to offer consumers greater protection against telephone spam.

In 2009 the Federal Network Agency received a total of 108,141 written and telephoned enquiries and complaints from consumers in connection with phone number misuse and cold calls. As from August 2009 the average number of complaints about just one problem, unlawful telephone marketing, was running at 5,000 per month, which demonstrated that legislative action to protect consumers was imperative. The number of complaints relating to the misuse of phone numbers - such as spam and competition prizes offered on stated numbers, and incorrect pricing for numbers given - again showed a significant increase.

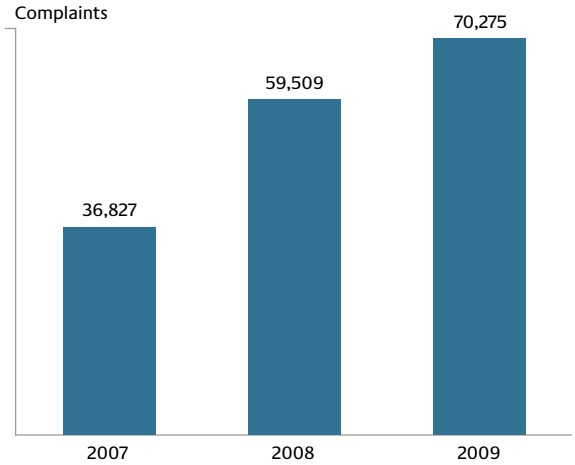
The Federal Network Agency will continue, unswervingly, to pursue its policy of rigorously protecting consumers and guaranteeing fair and lawful competition on the telecommunications market.

COMBATING NUMBER MISUSE

Overview

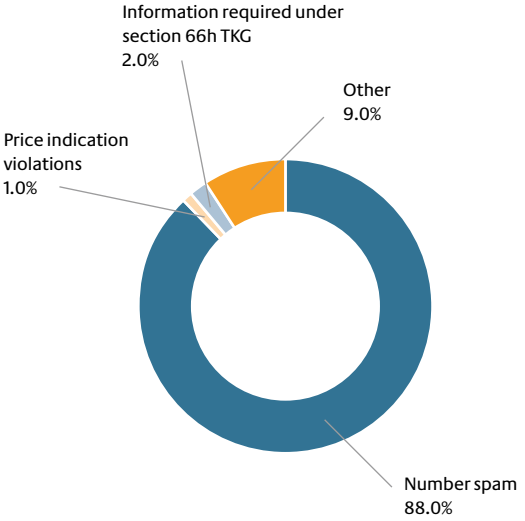
The year under review saw a further increase in the number of complaints about number misuse compared with previous years: the figure for 2009 was 10,766 up on 2008.

Complaints about number misuse 2007-2009



The subjects of complaints and enquiries can be broken down as follows:

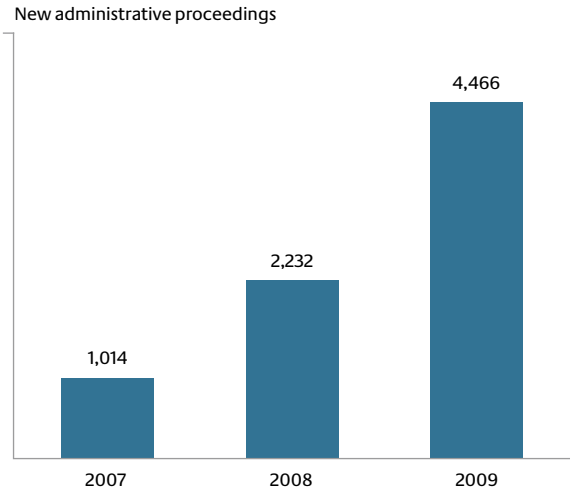
Complaints and enquiries about number misuse in 2009



Many spam cases included price indication violations. The latter are here placed in the number spam category

Parallel with the increased volume of complaints, there was also a rise in the number of administrative proceedings conducted and the other measures taken. All told, the Federal Network Agency instituted 4,446 such proceedings in 2009.

Number of administrative proceedings 2007-2009



Section 67 of the Telecommunications Act (TKG) furnishes the basis in law for the Federal Network Agency to take action when it has certain knowledge of number misuse. The action it can take is to issue orders and take other measures designed to ensure compliance with statutory provisions and with the conditions it has laid down for the assignment of numbers. The measures include warnings, orders to network operators to deactivate unlawfully used numbers, cancelling unlawfully used numbers and issuing prohibitions on billing and collection. A ban on specific business models also proved effective in certain misuse scenarios. As a rule the bans issued had the effect of forbidding specific service providers to use a business model which was unlawful in that it constituted a form of advertising in breach of section 7 subsection 2 of the Unfair Competition Act (UWG). A total of ten such prohibitions were issued against undertakings or private persons in 2009.

The most frequently used measure continues to be the deactivation of numbers, with a total of 4,718 deactivation orders being issued in the review period. This figure includes 4 blocks of 1,000 local numbers each. In the case of 234 numbers, all network operators and service providers were prohibited from billing and collecting, as a way of protecting consumers from unjustified demands for payment.

In the case of large-scale lottery scams giving numbers for premium rate services, there were several proceedings where the Federal Network Agency for the first time took an additional step: as well as ordering the deactivation of already used numbers it prohibited the activation of a total of 44 numbers not yet activated or actually shown. These steps were applied simultaneously to all network operators and service providers and were intended to have a preventive effect.

The investigations conducted in this regard had shown that recorded messages with "information on prizes" had already been installed even for numbers that had not been actively used. It was therefore very likely that the numbers for the illegal lottery scams were going to be activated, partly because a number of measures had already been taken against the undertakings concerned.

In every case when the measures to combat number misuse were challenged in the courts by the undertakings in question, the administrative courts ruled in favour of the Federal Network Agency.

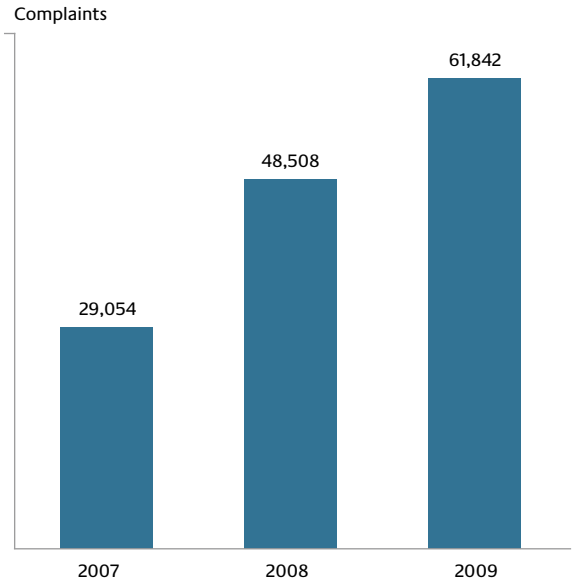
Number misuse in the form of incorrect price indications and pricing messages

Numbers can be deemed to be used legally only if there is compliance with the regulations on price indications and pricing messages set forth in sections 66a ff TKG. Breaches of these regulations constitute number misuse, which means the Federal Network Agency must act. Complaints about this kind of number misuse were also received during the period under review. It became clear that, particularly when (0)180 numbers were shown, there was still uncertainty in some cases about the legal obligations. In a number of cases, therefore, the Federal Network Agency only issued warnings and supplied information on the relevant legal obligations. Depending on particular circumstances, however, orders were also issued to deactivate numbers, and administrative offence proceedings were instituted.

In a large number of cases the investigation of other complaints - particularly those related to number spam - brought to light infringements of the regulations on price indications and pricing messages. In the administrative proceedings that were instituted, the rule was for action to be taken on all infringements, ie breaches of both the Unfair Competition Act (UWG) on grounds of spamming and the Telecommunications Act (TKG). If for example an unsolicited direct marketing text message gave a number with an incorrect price indication or none at all, this was deemed to be a breach of section 66a TKG and prosecuted as a breach of the UWG.

Combating number spam

Total complaints about number spam 2007-1009



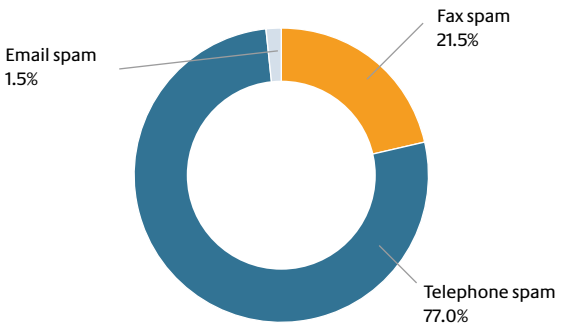
Together with the rise in total complaints there was also a further increase in complaints about number spam in 2009. The total received by the Federal Network Agency was 61,842.

The number spams are subdivided into telephone, fax and email spams. Telephone spams accounted for the bulk of complaints, these often including criticism of the lack of price indications for the number given. As in previous years there were many complaints from consumers who had launched personal ads or car ads in the Internet and then received emails

giving value added service numbers, the idea being to provoke a return call on the pretence of genuine interest in making contact.

Phone number spam is a breach of the UWG and therefore constitutes illegal number use as defined in section 67 subsection 1 TKG. It is also illegal to state the numbers of directory enquiries, mass calling, innovative and premium rate services as the caller's numbers.

Breakdown of complaints into the various types of number spam 2009



Total number spam complaints: 61,842

A case of telephone spam that attracted a great deal of attention in 2009 concerned consumers who - mostly at night - received calls from what purported to be a "European Central Institute for the Combating of Epidemics". The caller left a pre-recorded message on the answering machine with personal information on swine flu. The consumers were urged to call a (0)900 number "for their own safety". What they then heard was a rambling, non-committal recorded message with general information about swine flu. Very soon after the first complaints came in it was possible, without any prior hearing, to order the two numbers that had been used to be deactivated, in the public interest and for the protection of the numerous consumers affected. This was followed, almost immediately, by a comprehensive ban on billing and collecting for the calls that had been made.

In 2009 the Federal Network Agency stepped up its war on spam, particularly telephone spam. In the previous year the Agency, as part of a barrage of counter-measures, had issued an increased number of billing and collection prohibitions in respect of unlawfully used numbers, not only against core network operators but also against access network operators and service providers. To protect subscribers from unjustified demands for payment, direct action continued to be taken on companies' payment flows in 2009 in the effort to combat spam. The billing and collecting prohibitions were issued in response to consumer complaints about phone spam, especially promises of prizes. The aim was and is to make this kind of number misuse so commercially unappealing that few will bother to attempt it. The Federal Network Agency imposed a prohibition on 234 phone numbers in 2009, a further rise compared with the199 of the year before. The billing and collection prohibitions are dispatched to all network operators at the same time.

On its website the Federal Network Agency has published a list of the measures taken against number misuse, giving details both of the billing and collection prohibitions issued and of the deactivated numbers. The list is available at www.bundesnetzagentur.de under Rufnummermissbrauch - Dialer - Unerlaubte Telefonwerbung.

Selected proceedings

Promises of prizes with return call to value added service numbers

The review period saw several cases of thousands of subscribers being subjected to the nuisance of unsolicited calls with promises of prizes. What usually happened was that a recorded message informed the party called that she (or he) was the "lucky winner" of eg a convertible. To arrange delivery of the prize the party called was asked to dial a value added service number.

The numbers in question were deactivated at once, and billing and collection were prohibited. This gave subscribers protection against unlawful billing and put an end to the scam in short order.

The mass nuisance of dialling computers

In the period under review the Federal Network Agency received a vast number of complaints to the effect that the phone would ring several times a day, but there was never an answer from the other end. Intensive investigation by the Federal Network Agency revealed that call centres were using so-called predictive diallers. These devices are programmed and predictive dialling computers which, to make better use of call centre employees' time, dial several numbers simultaneously. As soon as the first subscriber accepts the call, the other dialling processes are interrupted and the numbers transferred to a waiting list and re-dialled later. When the parties called tried to return the call, they usually found they had no connection or they just heard a recorded message.
The Federal Network Agency repeatedly took action against this nuisance, which in some cases occurred on a massive scale, as an unlawful use of phone numbers under section 67 subsection 1 of the TKG. To protect consumers, eight numbers were ordered deactivated. Both the users and other operators were also expressly warned not to give tacit approval to a widespread nuisance that had been generated by the purported and merely short-term need for more efficient use of the workforce.

Circumvention models

In response to numerous complaints the Federal Network Agency took action against phone sex services which are offered via local numbers or (0)180 numbers, ordering the numbers in question to be deactivated. In terms of content these services are comparable with the phone sex services otherwise usually offered at (0)900 numbers, and they are consequently a premium rate service within the meaning of the TKG. In the specific cases in question, in addition to the ordinary telecommunications service, further services were provided in the form of phone sex. The only difference as against traditional premium rate services was that the (phone sex) service was charged separately. Whereas the telecommunications service was charged by the network operator via the phone bill, there was a separate bill for the extra service.

An undertaking petitioned for reversal of the deactivation orders issued by the Federal Network Agency in this connection on grounds of the right to expedited relief. In January 2010 the North Rhine Westphalia Higher Administrative Court (OVG NRW) confirmed the orders of the Federal Network Agency in summary proceedings at the final appeal stage. The court held that the conditions required for a ban on circumvention, as laid down in section 66lTKG, were fulfilled because the actual form given to the service circumvented the consumer

protection provisions of the TKG. As the statutory requirements for consumer protection in relation to price transparency and maximum prices had not been fulfilled, the Federal Network Agency's order to deactivate the phone numbers was found to be valid in law.

Administrative offence proceedings and charges under section 67(3) TKG

In the period under review 23 new fine proceedings were instituted with reference to phone spam and obligations to give price indications and messages; some of them are still pending. Eleven orders to pay fines were issued; nine of them are already effective in law. Most of the breaches prosecuted had to do with failure to state prices, or stating them inadequately, when offering (0)900 premium rate services. Some of the violations were penalised for missing or inadequate price messages related to the corresponding services.

National and international cooperation in the combating of number misuse

There continued to be active cooperation with other authorities and institutions at national and international level in 2009 aimed at combating number misuse. Such contacts have borne fruit in recent years and brought many advantages. At national level, for example, there is intensified cooperation with consumer advice centres. Notes are compared and training courses conducted with a view to optimising consumer advice services and the processing of complaints.

At the international level the Federal Network Agency is involved in the work of various bodies such as the IARN (International Audiotext Regulators Network), the ECC (Electronic Communications Committee) and the CNSA (Contact Network of Spam Authorities). The work of these bodies makes it possible to exchange views on misuse methods, companies operating illegally at international level and effective strategies for combating number misuse. There are also presentation and discussion of legislative and judicial solutions to the relevant problems, some of which have already passed into law in certain countries. Some of the administrative proceedings involve regular cooperation with European and international authorities and similar organisations.

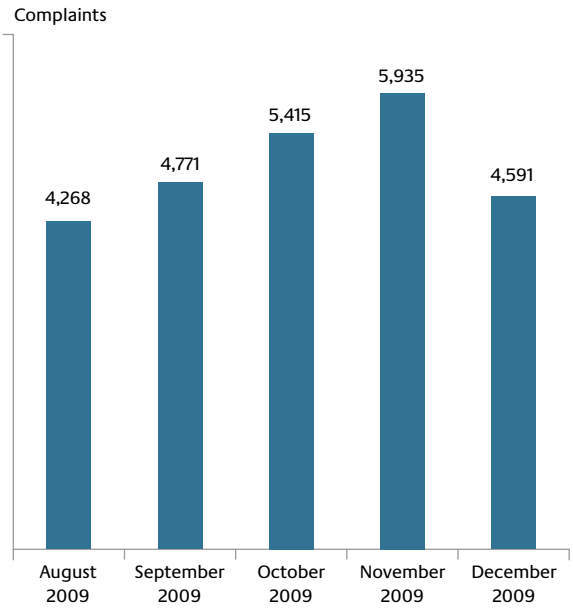
COMBATING ILLEGAL TELEPHONE SPAM

Since the Anti-Telephone Spam Act came into force on 4 August 2009, illegal telephone spam and failure to fulfil the calling line identification presentation requirement for cold calls have been administrative offences. The Act effected amendments to the TKG (Telecommunications Act) and the UWG (Unfair Competition Act), which made it possible to impose fines on all the parties involved in spam activities. These include: the principals organising cold calls, the call centres making the calls, and sole traders. Under the TKG the Federal Network Agency can impose fines of up to 10,000 euros for cold calls made without calling line identification, and under the UWG fines of up to 50,000 euros in each instance for breaches of the ban on illegal telephone spam. Illegal telephone spam punishable by fine is deemed to have been perpetrated if and when a subscriber receives a cold call without having given express prior consent. This must be distinguished from other forms of number misuse which are not punishable by fine, such as recorded messages promising prizes.

Since the new provisions of the UWG came into effect the Federal Network Agency has responded to the large number of subscriber complaints by instituting numerous preliminary proceedings directed against illegal telephone spam. After extensive investigations in connection with nine proceedings, fines totalling 500,000 euros were imposed in December 2009 and January 2010.

The passage into law of the new Act on 4 August 2009, and the media publicity it received, triggered a significant increase in the number of complaints about illegal telephone spam. All told, the Federal Network Agency received approximately 38,000 complaints, written and by phone, in 2009.

Number of written complaints about telephone spam in 2009



To these must be added another 8,987 complaints by phone and a total of 3,899 from the months before the new law came into force

A special difficulty faced by the Federal Network Agency when investigating cold calls is that of restricted line identification. The Federal Network Agency has no authority to inspect the traffic data of network operators, and does not itself have the necessary information. It cannot establish the identity of the originator of the calls without access to the traffic data, and these data are protected by the privacy of telecommunications as defined in article 10 of the Basic Law. This applies also to proven breaches of the prohibition on illegal phone marketing, spam and other breaches of the TKG and the UWG. It is therefore important for complainants themselves to have detailed information.

ACTIVITIES OF THE RADIO MONITORING AND INSPECTION SERVICE

The Federal Network Agency's radio monitoring and inspection service (PMD) makes an important contribution to consumer protection. It is the primary job of the PMD to ensure both the efficient and interference-free use of the frequency spectrum and electromagnetic compatibility with the environment (EMVU) throughout the country, and to do so it uses not only cutting-edge stationary and mobile measuring technology but also the Federal Network Agency's service centres at many locations in Germany. The PMD's complex and comprehensive radio monitoring and inspection activities include eliminating interference, monitoring frequency use, market surveillance, EMVU measurements and the identification of unauthorised frequency use. Some of these duties can only be performed in the context of international cooperation.

Interference elimination

Dealing with cases of electromagnetic and radio interference (investigating interference) continues to be one of the PMD's core tasks. This activity is particularly concerned with the

safety-related radiocommunication services and applications in the aviation sector, the authorities and organisations concerned with public safety (BOS) and other public bodies. Depending on the needs of particular cases, purpose-built monitoring vehicles and various specially equipped vehicles are used, in addition to stationary measurement and direction-finding stations, in order to identify domestic and foreign sources of interference.

As in previous years the bulk of the processed interference cases related to radio broadcast reception and other transmitters and receivers. However, there were also many cases of interference in safety-related radiocommunication services, well over 700 of them affecting aeronautical radio alone, and the latter cases are always given top priority by the PMD. Only a relatively small proportion concerned electromagnetic incompatibilities in "other" electrical and electronic equipment, eg faulty heating controls.

An increasing number of reports are received from operators of UMTS networks in the conurbations that other frequency use impairs the services of their base stations, preventing them from meeting their network quality parameters. The PMD's investigations revealed that the sources of interference are satellite receiving equipment with insufficient attenuation of interference radiation and cordless telephones (DECT phones) transmitting in the UMTS reception band because of faulty equipment. Those responsible for the sources of interference were required to remove them.

The PMD has a special anti-interference function to fulfil at major events. At certain events the PMD is present for the entire duration and can thus start investigating any interference immediately, while the event is in progress and even before it starts. The fact that the PMD is there on the spot means that the causes of interference are found and dealt with in nearly all cases, which helps to ensure trouble-free radio and TV broadcasts of important events. It is also vitally important that the organisers and security organisations present at such events can communicate without interference.

The Leeheim satellite radio monitoring station (located between Darmstadt and Mainz) gives the PMD the technical facilities to investigate radio interference and monitor the frequencies used by the satellite radio services. This is of direct benefit to consumers who use satellite receiving equipment, GPS navigation systems and (in future) Galileo services. The Leeheim monitoring earth station also performs a number of functions directed at the trouble-free and efficient use of communication and broadcasting satellite systems.

The commissioning of the multiband antenna, which covers frequencies from 1 to 26.5 gHz, and the so-called transmitter location system have brought about significant improvements in the identification of radio interference. A source of interference on the ground, which impairs the uplink to a satellite, also causes interference in the downlink, ie the link from the satellite back to earth. The efficiency of the system was demonstrated when there was interference to reception from a communications satellite and the system located the source of the interference so precisely (in Cologne) that there was no need to use a measuring vehicle for the purpose.

The Leeheim satellite radio monitoring station not only performs the measuring functions

required by German law. It can also, up to a point, perform measuring functions for other European administrative bodies. The formal basis for the service, for which a fee is charged, is a memorandum of understanding, to which the relevant bodies in five countries have so far signed up: France, the UK, the Netherlands, Switzerland and Spain.

Interference to radio broadcasts can be reported to the Federal Network Agency by private individuals, companies and institutions on a 24-hour basis. The service number, 0180 3 232323, applies all over Germany; fixed network calls cost 9 ct/min and the maximum charge for calls from mobile networks is 42 ct/min. Heavy use was again made of the number in 2009, with several hundred thousand calls.

Market surveillance under the EMVG and FTEG

The Federal Network Agency conducts tests on electrical appliances available on the market. The tests are performed subject to Directive 2004/108/EC of the European Parliament and of the Council on the approximation of the laws of the member states relating to electromagnetic compatibility (EMC Directive) and Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive). These two Directives were transposed into national law by the Electromagnetic Compatibility Act (EMVG) and the Radio Equipment and Telecommunications Terminal Equipment Act (FTEG).

In fulfilment of its market surveillance function the Federal Network Agency checks whether products falling under the two Directives comply with administrative requirements, eg correct marking. It also checks on the plausibility of EC declarations of conformity, the information given on operation and intended use, and possible restrictions applicable to general and radio equipment and telecommunications terminal equipment (TKEE).

The EU-harmonised tests done by the PMD on the technical features of the relevant products make a significant contribution to ensuring efficient and interference-free use of frequencies. Electrical equipment available on the market, such as TV sets, kitchen appliances, power tools and mobile phones, is tested at specially equipped laboratories in the Agency's regional offices or at the accredited test laboratory in Kolberg. Products covered by the FTEG are tested as to their functional parameters, and in the case of mobile phones the special absorption rate (SAR) is measured as well. These measurements make it possible to determine whether the essential requirements laid down in the FTEG for the protection of user health are being fulfilled. The Federal Network Agency carried out a total of some 7,300 market surveillance activities in 2009, with measuring or administrative tests on 2,886 series/single devices. 1,810 of these devices came under the EMC Directive and 1,076 under the R&TTE Directive. Internet research turned up 75 European and 15 international providers of devices which did not conform to requirements, and a total of 488 Internet offers, covering 8,626 products, were terminated by order.

Under the terms of an administrative agreement with the Federal Environment Agency (UBA) the Federal Network Agency also checks that marking conforms to Directive 2002/96/EC on waste electrical and electronic equipment. It

should be noted here that the rate of marking deficiencies for products placed on the market subject to the new EMC Directive was much higher than for products subject to the old EMC Directive (14 % as against 1.6 %).

In 2009 1,307 series and 196 single devices were tested using measuring equipment. 346 series and 21 single devices tested positive in the sense that they failed to meet prescribed requirements, a percentage rate of 26.4 % and 10.7 % respectively.

One reason for the high percentage of unsatisfactory products was that the selection of devices for testing focused on those that seemed most likely to fail to meet the requirements. 31 products were tested for compliance with the essential requirements for device and product safety; 39 percent were found wanting. In 2009 the focus was again on radio sockets and on certain mobile phones which, because of failure to comply with the essential requirements for product safety, were a potential and material danger to life and limb.

During 2009 a total of 579 follow-up measures were taken on non-compliant products, with 251 sales bans and 328 notices of assessment. As the Federal Network Agency does not test all the products on the market, these data and statistics do not allow any conclusions about the German market as a whole. But the non-compliance rate emphasises how important the testing is, in the interest and for the protection of consumers.

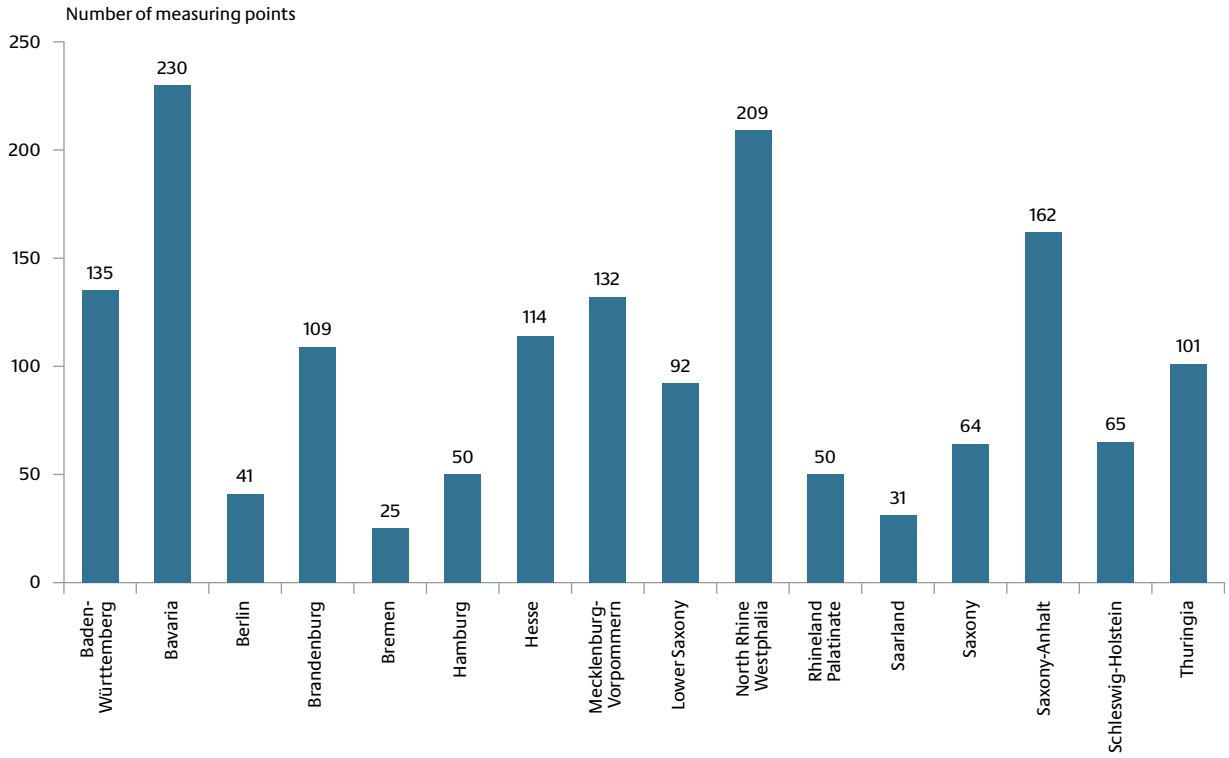
Notice of radio equipment which operates on frequencies whose use is not harmonised throughout the EU must, in pursuance of the FTEG, be filed with the Member State authorities responsible for frequency management at least four weeks before it is intended to be placed on the market. The Federal Network Agency gives the person placing it on the market information on the type of frequency assignment necessary for the operation of the radio equipment (general or individual assignment) and, where appropriate, specifies any existing restrictions on frequency use in Germany. The number of such notices received by the Federal Network Agency (since 2008 they can be sent electronically) averaged 110 per month in 2009.

Electromagnetic compatibility and the environment (EMVU)

Under the heading of EMVU the annual measurement activities and the checks on certified, fixed radio transmitter stations were continued, subject to the Ordinance concerning the Controls for the Limitation of Electromagnetic Fields, or EMF Controls Ordinance. These checks are one of the most important tasks of the PMD, the Federal Network Agency's radio monitoring and inspection service.

The high-frequency radio spectrum is tested and evaluated at 1,610 measuring points in Germany as a check on whether the prescribed limits are being exceeded. The checks showed that the limits were being observed. The measuring points were located and the measuring activities conducted in cooperation with the federal state authorities.

Number of measuring points per federal state 2009

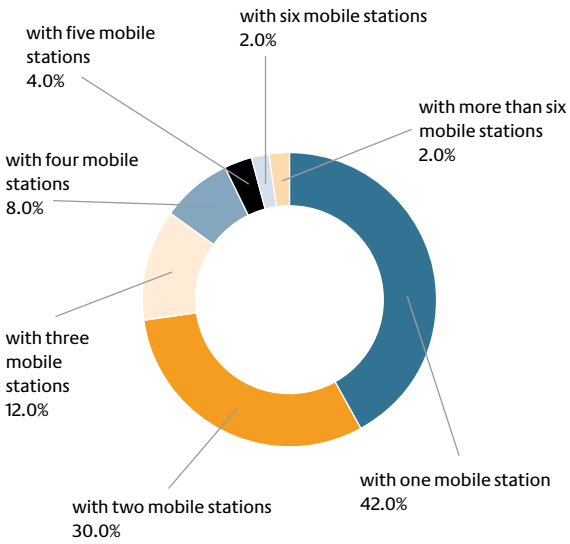


In 2009 the Federal Network Agency made progress on various projects related to the standardisation and monitoring of electromagnetic fields (EMF) with a view to ensuring the protection of persons in such fields. One of the EMF standardisation projects is directed at the integration of the site certification procedures in the standards harmonised on a Europe-wide basis. The procedures used in Germany since 1992 to monitor compliance with the limits to protect persons exposed to electromagnetic fields from radio equipment would thus be placed on an international footing. A draft produced by the Federal Network Agency has been submitted to the relevant standardisation bodies, and they are working on refining it.

One of the other standardisation projects concerns the automatic measurement system. The Federal Network Agency seeks to establish general conditions for automatic measurement systems that will make it possible to compare measuring results on an international basis. The system used by the Federal Network Agency was taken as the basis for a draft recommendation which was submitted to the International Telecommunication Union (ITU).

The Federal Network Agency issued a total of 16,620 radio transmitter site certificates in 2009. The certificates are made available for downloading by municipalities and local and federal state authorities, which make prolific use of the service. The downloading is via the local-authority database, in which 2,350 users are registered. All the information in the certificates, except the site address, is accessible to the general public via the Federal Network Agency's so-called EMF database.

Shared use of mobile equipment locations 2009



In 2009 the PMD measured the immissions of radio transmitting equipment at more than 1,600 measuring locations in Germany. Its findings are supplemented by the automatic measurement system, in operation since 19 March 2007, which measures such immissions round the clock at 12 measuring stations. Since that date the twelve stations have been in operation for a total of 177,600 measuring hours, transmitting about 1 million measurement packages for evaluation by the EMF database. In view of the upcoming introduction of long-term evolution technology (LTE) the Federal Network Agency plans to install the automatic devices at the planned LTE locations in good time. Once the LTE is in operation it will be possible to compare the field strength levels ascertained.

Further information can be found on the Federal Network Agency's EMF website (http://emf.bundesnetzagentur.de/).

DATA PROTECTION IN TELECOMMUNICATIONS AND POST

The confidentiality of postal and telecommunications services, together with the pertinent data protection regulations, are important aspects of consumer protection. In this context it is the job of the Federal Network Agency to ensure compliance with the relevant standards. The stringent provisions of the Telecommunications and Postal Acts are directed at the commercial service providers and give concrete form to the customers' right to have both their communications and the framework in which they are delivered kept strictly confidential. There has been extensive liberalisation of the communications markets, but the state has not absolved the commercial providers from the obligation to keep postal and telecommunications services confidential. The Federal Network Agency keeps the commercial operators and the public informed about data protection regulations and ensures that the consumer protection standards are observed.

In the telecommunications sector the year 2009 was marked by data protection problems involving DTAG - here the state prosecutors have not yet completed their investigations - and by various data protection mishaps. DTAG made massive efforts to fill the data protection gaps that had opened up. There were also data protection failures in other sectors, and the resulting public debate on the issue prompted the lawmakers in Berlin to take action.

Another matter of importance was so-called data retention, where there were a number of legal and technical issues to clarify. Certain undertakings challenged the data retention obligation before the administrative courts. In only

one case, in which it was doubtful whether the undertaking was in the obligation category in the first place, was it ruled, on the basis of a temporary injunction, that the obligation was not effective. In all other cases it was ruled to be binding in law. The undertakings are therefore obliged to implement the data retention regulations until further notice. The Federal Administrative Court dealt with the fundamental issues raised by data retention in oral proceedings in December 2009. A final ruling is expected for spring 2010.

As in previous years, various telecommunications providers approached the Federal Network Agency before introducing new services in order to make sure in advance that their offerings would conform to data protection requirements. With a view to telecommunications security the Federal Network Agency checked 115 security concepts by way of written procedures and carried out on-site checks, 41 regular and 52 incident-related, in the year under review.

In the postal sector in the same period, regular, routine checks were made all over Germany on data protection and the confidentiality of postal deliveries. A total of 364 reports on such checks were generated in 2009, three of them referring to incident-related on-site checks.

2009 saw the continuation of the successful collaboration between the Federal Network Agency and the Federal Commissioner for Data Protection and Freedom of Information. It was characterised by close coordination on policy matters with a view to achieving effective data protection.

Dispute resolution

The Federal Network Agency's dispute resolution services continue to be used extensively for disputes in the postal and telecommunications sectors. Changes to the law have significantly broadened the scope of such facilities in the telecommunications sector, making it easier for consumers' rights to be enforced.

Under section 74a of the Telecommunications Act (TKG) and section 10 of the Postal Services Ordinance (PDLV), consumers can request the Federal Network Agency to settle disputes with a provider of telecommunications services or postal services for the general public in cases of infringement of the rights defined in the TKG and/or the PDLV. For this purpose the Federal Network Agency has set up a dispute resolution service for each of the two sectors. To make use of this service it is necessary for complainants to assert an infringement of the rights to which they are entitled by statute or ordinance. It is also necessary for there to be no legal or other arbitration proceedings pending at the time, and for an attempt to have been made beforehand to reach agreement with the opposing party.

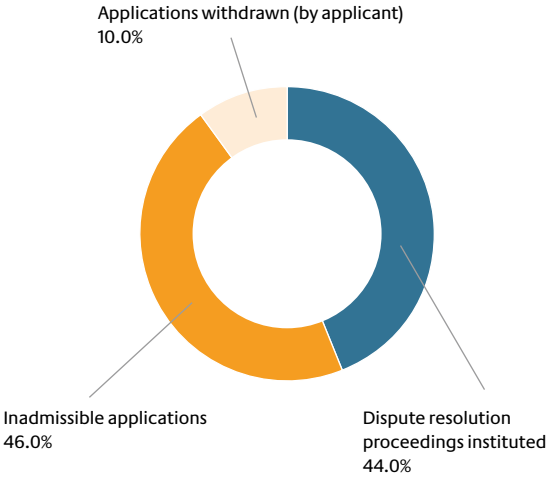
Disputes are as a rule resolved by way of written proceedings. Participation in these proceedings is voluntary, which means inter alia that the proceedings are closed as soon as one party refuses to participate in them. Hearings of the parties involved are conducted with the aim of reaching amicable agreement. The dispute resolution body can make a concrete proposal aimed at settling the dispute. The result of the proceedings largely depends on the extent to which both parties help to clarify the facts of the case and are prepared to reach agreement on a settlement.

Fees are charged for the use of the dispute resolution service. The fees are regulated in section 145 sentence 2 TKG in pursuance of section 34 subsection 1 of the Court Costs Act (GKG) or alternatively section 18 subsection 2 of the Postal Act. The fee amount depends on the sum at issue, with a minimum of 25 euros. The fee becomes due as soon as the opposing party formally agrees to take part in the dispute resolution proceedings.

TELECOMMUNICATIONS

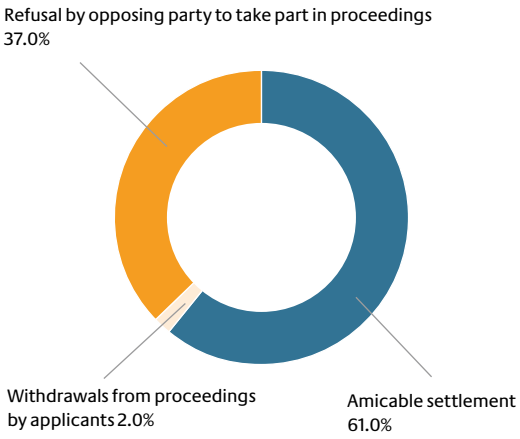
In 2009 the dispute resolution service was requested to conciliate in 537 cases. In addition 154 other requests for help reached the service, which advised and informed the applicants on the possible next steps or alternatively found solutions by way of direct contact with the providers. Ten percent of the requests were withdrawn by the applicants in response to the information given by the service relating to the requirements for the dispute resolution proceedings or to the facts of the case. The proportion of conciliation requests which had to be refused on grounds of inapplicability - ie there was no infringement of rights under the TKG - continued to be very high, at 46 percent. In most of the cases it was the conclusion, alteration or termination of contracts that was in dispute. Such matters fall under general civil law and cannot at present be submitted to the dispute resolution service. However, the EU Telecoms Reform, which is due for implementation before long, will have the effect of broadening the scope of the dispute resolution service. The reform package will make it possible for many of the cases currently turned down to be dealt with under the dispute resolution procedures. What has been done so far is for the service to set aside formal proceedings and use its contacts with the telecommunications undertakings to achieve agreement wherever possible in individual cases.

Decisions on applications for dispute resolution in the telecommunications sector 2009



In 37 percent of the applications for dispute resolution in 2009, the opposing parties saw no basis for a clarification of the facts with a view to amicable settlement and refused to take part in dispute resolution proceedings. In 96 percent of all the other cases it proved possible - continuing the trend of good results in the past - to achieve agreement between the parties. There were only isolated cases of proceedings which had been opened having to be terminated because the application was withdrawn or the opposing party revoked its consent to take part part in the proceedings. The success rate for admissible dispute resolution proceedings was therefore 61 percent, matching the high level attained in recent years.

Results for admissible and completed proceedings in the telecommunications sector 2009



POST

In the year under review 26 applications were made to the postal dispute resolution service and formal proceedings were opened in 13 cases. Four of the 26 applications had to be turned down because the conditions for the opening of proceedings had not been met. Seven of the proceedings were successfully concluded, and in four cases the dispute was not resolved. In one case the application was withdrawn, and one case is still pending.

International cooperation

Telecommunications

2009 was dominated by the Federal Network Agency's presidency of the Independent and European Regulators Group. The revision of the European legal framework for electronic communications networks and services came to a successful conclusion and incentives were created for the expansion of the next generation networks.

INDEPENDENT REGULATORS GROUP AND EUROPEAN REGULATORS GROUP

For twelve years now, the Independent Regulators Group (IRG) has been coordinating, on a voluntary basis, the regulatory practice of national authorities in EU and EFTA states as well as the EU accession countries. In 2009 the Federal Network Agency further strengthened its intensive involvement and participation in the regulatory group and decisively shaped it within the scope of the German presidency. One of the focuses was on revising the European legal framework for electronic communications networks and services.

In addition, there is also the advisory body founded by the Commission of the European Union (EU) in 2002: the European Regulators Group (ERG). Its task is to bring about greater coordination of national regulatory practices by applying the European legal framework for electronic communications networks and services as uniformly as possible in order to thus foster the further development of the internal market in this area. For this reason, this group is made up of the independent national regulatory authorities (NRA) for electronic communications of the EU member states. Added to this are the representatives of the Commission, who are not entitled to vote.

IRG/ERG Presidency of the Federal Network Agency in 2009

In January 2009 the President of the Federal Network Agency, Matthias Kurth, took up the one-year presidency of the IRG, after having been a member of the elected IRG Board the year before. At the same time, he also carried out the role of President of the ERG in 2009. These functions entail many tasks, including leadership in developing and monitoring the working programme, planning and organising Plenary and technical group meetings and press relations work at European level. Furthermore, the President represents the IRG and ERG at official meetings and conferences, in particular vis-à-vis the EU Commission. He

prepares the ERG's Annual Report, which is directed to the European Parliament (EP) via the EU Commission.

In the ERG, the Federal Network Agency and other NRAs draw up legally non-binding Common Positions (CPs) on relevant issues, in which it jointly develops Best Practice and Opinions, where it expresses its views on certain regulatory issues. For example, the EU Commission requests the latter for drawing up new legal acts. To increase transparency, the documents are presented for public consultation before they are adopted.

REVISING THE LEGAL FRAMEWORK FOR ELECTRONIC COMMUNICATIONS NETWORKS AND SERVICES

As in the previous year, in 2009 work on statements about the EU Commission's legislative proposals for revising the existing legal framework for electronic communications networks and services of 13 November 2007 was to the fore. The following subjects in particular concerned the IRG/ERG: The Article 7 Consolidation Process (EU Commission's demand for an expansion of its veto to remedies) and the closely associated proposals for the reorganisation of the institutional shape (replacing the ERG by a European regulatory authority—European Electronic Communications Market Authority, EECMA) and strengthening the independence of the NRAs. Furthermore, the EU Commission's legislative proposals comprised far-reaching shifts in responsibility in the field of frequency regulation as well as significant changes to the universal service.

In the first half of 2009 the Body of European Regulators for Electronic Communications (BEREC) was devised as a new model. This realised the concept of an actual advisory body (Board of Regulators, replaces the current ERG) with a separate office, which has a legal personality under Community law. At the same time, BEREC in its entirety is not an agency, but rather the umbrella for the Board of Regulators as an advisory body (without its own legal personality) and the office. The latter is controlled by the Management Committee, made up of representatives of the 27 NRAs from the EU member states and one representative of the EU Commission. The substructure for the detailed work is still performed by the working groups, where the experts from the NRAs draw up the documents and prepare the decisions for the Board of Regulators.

In its statement of 26 February 2009[1], which was adopted at the Plenary in Berlin, the IRG/ERG firmly called upon the EU institutions to reach a quick and effective agreement during the second reading of the Telecoms Package. It also made it clear that the IRG/ERG supports a strong and independent system of European regulators—a viewpoint that was shared by the EP and the European Council. Finally, the IRG/ERG spoke in favour of the Council's shared position of 27 November 2008, according to which Article 7 of the Framework Directive should act as a balanced means for improved and consistent regulatory practice in Europe.

In the trilogue meeting (Council Presidency, EP rapporteurs, representatives of the EU Commission) of 30 March 2009 all involved agreed to BEREC and the co-regulatory process for the consolidation process, whereby BEREC issues positions to the notifications of the market regulatory decisions planned by the NRAs. However, the EU Commission will still not have

[1] IRG/ERG Statement "Strengthen the ERG for further harmonisation—IRG/ERG's view on the Review".

a veto for the remedies. Moreover, those involved agreed to make incentives for the expansion of the Next Generation Access (NGA), ie the replacement of copper wires by fibre optic cables, eg by giving operators the opportunity to expand the networks jointly.

In the area of frequency regulation, the comprehensive transfers of responsibility from the member states to the EU Commission mainly proposed by the EU Commission did not meet with agreement, either in the Council or in the EP. In their rejection of the proposals, both bodies agreed in principle with the criticism expressed by the member states, namely that there has been a tried and tested means of frequency harmonisation at international and European level for many years (incl. ITU and CEPT) and therefore the EU Commission's proposed growth in responsibility at European level would result in an increase in bureaucracy not justified by the matter.

In the negotiations on the Universal Service Directive, agreement was achieved with far-reaching changes within the scope of the trilogue. In the field of the "classical" universal service entitlement (connection to a public telephone network), the previous restriction of the "functional Internet access" to a narrowband Internet connection is to be replaced by a more flexible solution. This means that the individual member states are given greater scope to make broadband connections the subject of the universal service.

Marked expansions and deliberations are planned in the field of consumer-protection regulations in the Universal Service Directive. To increase transparency, the standard contents of contracts will be further defined and the publication duties of the telecommunications providers extended. Furthermore, it should be made easier to change provider (activation of the number within a single working day). Finally, equal access of disabled people to telecommunications services is to be guaranteed with a number of regulations.

Following the IRG/ERG Plenipotentiary at the end of May 2009, the Council of Ministers met in Brussels on 11 and 12 June 2009 and once again considered the Telecommunications Package. On 12 June 2009 the IRG/ERG published its position[2], in which it welcomed the results of the second reading with respect to the institutions and the regulatory framework to be set up. In the view of the IRG/ERG this will result in greater independence of the NRAs and, at the same time, ensure closer cooperation between the authorities as well as with the EU Commission. By the same token, a system of this kind can bring about a higher degree of harmonisation, while the specific regulatory decisions will be taken by the individual regulatory authorities in future and, as a result, benefit from their many years of expertise and profound knowledge of the market. This means that an appropriate balance is maintained that is in accordance with the principle of subsidiarity.

The results of the trilogue were to have been adopted in the meantime in the second reading of the EP Telecommunications Package on 6 May 2009. And it was almost completely adopted. However, the EP voted against an amendment proposal (so-called Amendment 138, which refers to the conditions for blocking Internet access after downloading illegal content) that the compromise version from the trilogue had contained, with the result that a negotiation process was started. After the Council of Ministers adopted the Citizens' Rights Directive (contains

[2] IRG (09) 12

Universal Service and Data Protection Directive) and the BEREC Regulation on 26 October 2009, a compromise with respect to Amendment 138 was found in the meeting of the Negotiation Committee of 4 November 2009. It includes the obligation to conduct a fair trial before an Internet access is blocked, but does not include the need for a judicial decision. After this, the Council of Ministers approved the Better Regulation Directive (includes Framework, Access and Approval Directive) on 20 November 2009, as did the EP on 24 November 2009, with the result that the entire package was published in the EU Official Journal on 18 December 2009. In its third statement on the review[3] at its Plenary in Warsaw on 4 December 2009 the IRG welcomed the adoption. In particular, it emphasised that the NRAs have full control of BEREC and advocated Brussels as the location for the Office.

Roaming Directive

As in 2008, in 2009 the IRG/ERG continued to monitor compliance with the International Roaming Regulation (No. 717/2007), which entered into force on 30 June 2007, by mobile telephone operators and other providers of roaming services. In this connection, the ERG conducted extensive data surveys among the relevant providers and has so far submitted four reports with data on roaming development.

In the Third Roaming Report the Group of EU Regulators was able to cover a full summer holiday season (1 April 2008 to 30 September 2008)* for the first time, during which, typically, most roaming calls are made. A comparison on the basis of a full year was possible for the first time, too. Thus, the final consumer prices in two thirds of member states were exactly or just below the specified upper threshold. The ERG noticed hardly any changes to the prices for the Short Message Service (SMS), whereas the final consumer prices for roaming data connections underwent a downward trend. The Fourth Roaming Report (October 2008 to March 2009) showed hardly any changes.

In the revision of the Roaming Regulation in 2009 the IRG/ERG had demanded that the balance between the interests of the consumer and those of the companies be maintained. It therefore stated that regulatory measures should not, among other things, entail upheavals in mobile communications markets where competition prevails. In addition, flexible procedures should foster investments and innovation.

In its proposals, the group of regulators firstly called for an extension of the measures in voice roaming and an expansion to SMS roaming. Secondly, it noted a similar situation in data roaming to that which prevails with SMS roaming. Although mobile data connections are steadily gaining in importance, falling wholesale prices had not been passed on to customers. Although a downwards trend had been observed in the previous quarters, this had not changed anything about the marked discrepancies between the individual EU member states. However, the IRG/ERG put forward the idea that, in particular for data access abroad, there are various means of access with prices well below the models available in mobile telecommunications; for example, cheap Internet access is often available via Wireless Local Area Networks (WLAN). Moreover, new price models for mobile data access can be seen at national level in several countries due to the growing demand. For this reason, the IRG/ERG was in favour of waiting for future developments before coming to a decision on extending the Eurotariff to data connections.

[3] IRG (09) 33, IRG Statement "IRG welcomes the adoption of the revised Regulatory Framework".

But the IRG/ERG saw an immediate need for action with respect to the so-called bill shock, i.e. unexpectedly high mobile phone bills due to data roaming connections. For example, the customer may be able to find out what prices are charged per MB, but it is often difficult to understand when an MB has actually been "consumed". The IRG/ERG therefore advocated rapid action, for example by means of active agreement by the customer to further data connections when a certain invoiced amount has been reached or a software solution that displays to the customer, if possible in real time, the data volumes currently being consumed.

The revised Roaming Regulation (No. 544/2009) entered into force on 1 July 2009. For example, it contains a further reduction in the price-per-minute in the Eurotariff and, for the first time, upper limits for sending text messages. The wholesale charges for data roaming are still limited. In future the IRG/ERG will continue to monitor compliance by the mobile network operators.

IRG/ERG publications

In 2009 the work of the IRG/ERG was characterised by the input and the—sometimes critical—commentary of the draft recommendations published by the EU Commission on the "Regulatory treatment of fixed and mobile termination rates in the EU" and "Regulated access to NGA networks". The group of NRAs has a rather critical view of the proposed accounting methods for charging cost-oriented termination fees and considers them to be too detailed. The report on Mobile Termination Rates (MTR) in mobile telecommunications[4], published by the IRG/ERG every six months, shows that the rates in Europe are falling gradually and, in parallel, the differences between the rates in the individual countries are also falling.

Other future-oriented subject areas where the IRG/ERG works concern issues of convergence (eg fixed network-mobile network convergence) as well as frequency regulation and its interaction with market regulation. As far as the latter is concerned, ERG and the Radio Spectrum Policy Group (RSPG) submitted two reports, "Transitional spectrum issues"[5] and "Spectrum competition issues"[6], in June 2009. In the same month, the ERG published a "Statement on digital dividend: a once-in-a-lifetime opportunity for Europe"[7]. Even though the main focus of the IRG/ERG's work lies on issues of wholesale regulation, the bodies are also concerned with matters of consumer protection and in early 2009 presented a report on "Transparency of tariff information"[8].

Report on NGA

In the field of future networks, in June 2009 the IRG/ERG submitted the "Report on NGA—Economic Analysis and Regulatory Principles"[9]. Against the background of the progressing expansion of NGA networks, it examines the extent to which the findings from the "ERG Opinion on Regulatory Principles of NGA"[10], published in 2007, apply.

The ERG's economic analysis makes it clear that expansion of the NGA will probably strengthen the importance of advantages of scale and density. This makes it more difficult for potential competitors to establish their own networks; as a result there is a reduced

4 ERG (09) 23
5 ERG (08) 60 rev1
6 ERG (09) 22
7 ERG (09) 26
8 ERG (08) 59 rev2
9 ERG (09) 17
10 ERG (07) 16 rev2. This ERG Opinion was also adopted as a Common Position at the same time.

capacity to replicate infrastructures and permanent bottleneck factors are strengthened. More recent studies, which analyse the expansion of NGA in some member states, for example, confirm these findings. An analysis of regulation shows that the concept of the investment leader and the principle of fostering competition to the lowest possible level will continue to be as valid as the distinction between Market 4 (market for unbundled access to subscriber lines) and Market 5 (bit stream market).

In price control, regulators need flexibility above all when applying cost accounting principles. A consistent application of cost methods and price principles is also necessary if price-cost gaps and cost-cost gaps are to be avoided. Appropriate interest on capital that adequately reflects the risk is necessary to induce efficient incentives to invest. Regulators can facilitate investments by means of predictable regulatory action (eg by revealing the regulatory strategy) or by specifying the length of regulatory periods.

In principle, every investment is associated with a certain risk, for example uncertainties with respect to future demand or willingness to pay. However, overall regulation has only a limited influence on investment risks. Investors themselves can reduce risks with the most varied approaches; these include bundling demand, one-off charges, a project-based NGA roll-out or co-investment projects.

Currently there are marked differences between the member states with regard to the means of imposing symmetrical measures (ie irrespective of the existence of market dominance). Some countries smooth this way with special national legislation that imposes certain obligations on providers of consumer connections.

In summary, the IRG/ERG comes to the conclusion that the principles of the applicable European regulatory framework continue to be suitable for meeting the challenges of development towards NGA.

Commenting on the draft recommendations on regulating access to NGA networks

In addition, on 12 June 2009 the IRG/ERG stated its position on the second draft recommendations on regulating access to NGA networks published by the EU Commission[11]. In this, the IRG/ERG supports the draft's aim of creating reliable regulatory framework conditions to promote efficient investments and competition.

Nevertheless, the very tight targets are criticised by means of which the scope for the national regulators to assess whether to impose suitable remedies on companies with considerable market power to overcome the competition problems existing on the national markets are excessively limited.

[11] ERG (09) 16 rev3.

EUROPEAN FORUM FOR MEMBER STATES AND EUROPEAN PUBLIC-PRIVATE PARTNERSHIP FOR RESILIENCE

In the international sphere, the Federal Network Agency was also active in the "European Forum for member states" (EFMS) and the "European Public-Private Partnership for Resilience" (EP3R) in 2009. Both of these initiatives date back to a notification from the Commission (COM(2009) 149) on a "Policy Initiative on Critical Information Infrastructure Protection".

The planned activities are carried out under —and in parallel to—the broader framework of the European Programme on Critical Infrastructure Protection. EFMA is a forum for the exchange of information and best practice in the field of Critical Information Infrastructures (CII). Participation is limited to representatives of state agencies, for example on behalf of the Federal Office for Information Security and the Federal Network Agency.

The aim is to protect Europe against large-scale power failures and Internet attacks by increasing the security and robustness of the critical information and communications technology infrastructures. In Germany, the network operators are required under the Telecommunications Act (TKG) to implement a number of security measures. It is the task of the Federal Network Agency to ensure that the companies meet these statutory requirements.

EFMS should furthermore be seen as a supplement to EP3R, which set itself the goal of encouraging cooperation between the public and private CII sector at EU level. The European Network and Information Security Agency (ENISA) will perform a coordinating role. In this connection, ENISA is based on experience gained in studies, workshops and interviews on the subject of "Resilience in e-communications networks" since 2007; the Federal Network Agency has been actively involved in these. In the eyes of the EU Commission, pan-European exercises should be conducted in the communications sector. From 2010 there will be two meetings of EFMA and EP3R every year.

Post

In the postal sector, the Federal Network Agency plays a firm part in European and international bodies on regulatory issues. This reflects the fact that decisions made there are increasingly having an impact on current national issues, such as the electronic postal service or strengthening consumer rights.

UNIVERSAL POSTAL UNION

The "Nairobi Postal Strategy 2009–2012" was adopted at the 2008 Universal Postal Congress in Geneva. All measures and activities of the Universal Postal Union's Postal Operations Council (POC) and the Council of Administration (CA) are incorporated in this strategy. They aim to improve the efficiency of the worldwide postal network, to foster and adapt the universal service, to promote the sustainable development of the postal sector and to promote the growth of postal markets. At its first meeting after the 2008 Universal Postal Congress, the POC revised the "Supplementary Provisions on the Universal Postal Convention" and the "Agreement on Financial Services" in spring 2009.

Within the scope of its responsibility, the POC makes recommendations to member states with regard to the standardisation of technological, operation and other processes. This is where the greatest possible uniformity in application is in the interests of smooth postal traffic for the countries involved.

Furthermore, the POC's commitment at the moment is very heavily directed towards environmental policy. The postal companies are committed to recycling programmes and are introducing new, environmentally friendly products, such as climate-neutral letters. They are also issuing stamps that have environmental protection or species protection as a subject matter.

In autumn 2009, 950 delegates took part in the meetings of the most important body of the Universal Postal Union, the CA. Within the context of the CA, four committees and their relevant working groups discussed issues of regulation, development and cooperation, finance, administration and strategy.

For example, under the heading of Governance issues, the CA also dealt with innovative projects, such as the new domain "post". With this domain, the UPU is pursuing the goal of fulfilling its

original mandate of creating a worldwide space without borders for communications in a secure environment. The corresponding domain names for all companies that come into consideration will probably be available for the postal sector from mid-2010. The UPU, with the support of the CA, will monitor the Governance rules for the development, implementation and allocation of the domain names.

During the CA meeting, there was a regulatory forum where various models of regulation were presented. Possible methods for financing the universal service were also discussed against the background of the economic crisis and liberalisation.

Another important decision was made when the CA gave its consent to a project for the development of (physical) addresses. In this way, the Universal Postal Union wants to draw the attention of governments, regulators and other international organisations to how important it is to have a complete address so that all citizens can participate in life in society. An international summit is to be held on this subject in 2011.

EUROPEAN COMMITTEE FOR POSTAL REGULATION

In addition to the European Committee for Postal Regulation (CERP), which meets under the chairmanship of the Federal Network Agency, as the umbrella organisation the European Conference for Post and Telecommunications Administrations (CEPT) has two other committees, the Electronic Communications Committee (ECC), also under the chairmanship of the Federal Network Agency, and the Committee for ITU Policy (Com-ITU) with a Swedish chair. Since the reorganisation of the CEPT, which was completed in spring 2009, the chairmen of the three committees have formed the joint presidency.

As a "closely related association" of the Universal Postal Union, CEPT takes part in the meetings of the CA and the POC. As such, it represents the regional interests of CERP members in the Universal Postal Union. On the occasion of the CEPT's inaugural visit to the Universal Postal Union it was agreed in autumn 2009 that in future CERP is to be consulted by the UPU as an advisory body for regulatory issues, in particular involving developing countries.

In 2009 organisational issues were less to the fore and the focus was more on the results achieved with the new structure. For example, in spring 2009 the recommendations for cost accounting were adopted by the CERP Plenary, as were the guidelines for price approval in autumn 2009. In future, the results will act as a guide for the old and new EU member states as well as potential accession countries in making their own moves in this area.

As far as cost accounting is concerned—and all of the other subjects discussed (universal service, consumer issues, political affairs)—it has been shown that there can be no universally applicable solution. Here, CERP is still required to promote and consolidate mutual understanding between the relevant national situations and to make recommendations to bring them closer together and thus contribute to eradicating barriers to market entry for the development of the internal market. This CERP approach will make a major contribution to realising harmonised implementation of the third EU directive in all member states.

In this context, the structure decided just a year ago is once again being put to the test. A CERP survey is currently examining whether the structure meets the full extent of the requirements of the third EU directive.

EUROPEAN COMMITTEE FOR STANDARDISATION

The European Committee for Standardisation (CEN) draws up standards for the postal sector in Technical Committee 331. Standards for quality measurement are developed in Working Group 1, which is particularly important from a regulatory point of view and which was chaired by the Federal Network Agency until autumn 2009. Thus, the standard for measuring delivery time (EN 13850) has been under revision since early 2008; its application within the EU is required. The revision is necessary so that the member states can apply the current standard after the market has been opened, possibly with several participants on the market.

COMMITTEE ACCORDING TO ARTICLE 21 OF THE POSTAL SERVICES DIRECTIVE

This committee, whose work the Commission supports, meets twice a year. The additional working groups set up in 2008 specifically dealt with the cost accounting systems used in the member states and the associated audits.

In the Committee, the Federal Network Agency has supplied its experience with gradual market opening in particular. It mainly pointed out the positive experience gained in the telecommunications sector and parallels that were used with the promise of success in the postal sector.

With respect to implementation of the directive, Germany emphasised the need for greater coordination between the regulatory authorities. An initially informal European body of independent postal regulators that builds upon the existing body in the telecommunications sector, the IRG, would be conceivable in a first stage. This approach appears practical because in most EU countries regulation for posts and telecommunications are housed in a single authority, as in the Federal Network Agency.

Electricity and gas

Cooperation between the Federal Network Agency and EU energy regulatory authorities enabled the adoption of a new EU legal framework supported by the energy regulators as well as a constructive exchange of experience.

Since 2004 the Federal Network Agency has been a member of the Council of European Energy Regulators (CEER) and the European Regulators Group for Electricity and Gas (ERGEG) founded by the Commission in November 2003[12] The aim of these European institutions is, for example, to use recommendations, statements and studies to draw up best practice standards or guidelines in the electricity and gas sector to guide market participants with respect to regulatory issues. Furthermore, cooperation between the national energy regulatory authorities and between the regulatory authorities and the EU Commission has been further developed by means of these bodies.

The Federal Network Agency has been involved in several CEER/ERGEG working groups on gas and electricity regulatory issues and on unbundling and consumer protection (cf p 176). The involvement of the Federal Network Agency within CEER/ERGEG was very successful at European level in the working group it headed on regulating energy trading activities (financial services) because, together with the group of finance market regulators, it drew up proposals for a customised EU market integrity and transparency regime, which were welcomed and accepted by the NRAs and the EU Commission.

PARTICIPATION OF THE FEDERAL NETWORK AGENCY IN ADOPTING AND IMPLEMENTING THE THIRD ENERGY INTERNAL MARKET PACKAGE

The electricity and gas directives and the electricity and gas regulations were substantially amended and expanded with the adoption of the Third Energy Internal Market Package in July 2009. In addition, a new regulation on the founding of an EU Energy Agency for the Cooperation of Energy Regulators (ACER) was adopted. During the discussion on the Third Energy Internal Market Package, the Federal Network Agency actively contributed to shaping the unbundling proposals, the decision-making process within ACER and the legally binding nature of the network codes.

After adoption of the Third Energy Internal Market Package, within the scope of the CEER/ERGEG working groups, the Federal Network

[12] www.energy-regulators.eu

Agency was intensively involved in drawing up proposals for application of these legislative regulations by the NRAs and, in particular, took the lead role in drafting the rules of procedure of ACER. Furthermore, proposals were made concerning the internal structure and organisation of ACER and concerning specific legal questions.

Moreover, implementation of the new unbundling legal framework has been treated with priority at the Federal Network Agency and far-reaching proposals on this have been drawn up within the CEER Unbundling Task Force, especially on the shaping of the Independent Transmission Operator (ITO) model. Finally, the Federal Network Agency successfully completed compiling the first draft of "Framework Guidelines" in the gas sector on the subject of "Capacity Allocation Management". The draft was submitted to all market participants and is in the consultation phase.

ACTIVE PARTICIPATION OF THE FEDERAL NETWORK AGENCY IN EUROPEAN GAS, ELECTRICITY AND CONSUMER FORA

The Federal Network Agency is represented in the most important fora for electricity (Florence Forum), gas (Madrid Forum) and consumer affairs (London Forum) and intensively contributes to their work. In the gas sector, attention was directed to the transparency of market data and the allocation of network capacities as well as to infrastructure investments. With considerable involvement of the Federal Network Agency, ERGEG has drawn up and consulted on a concept on capacity management and presented the first results at the Madrid Forum on 14/15 January 2010.

In the electricity sector, the energy regulators drew attention to the necessary progress of the "Market Integration Design Project" in Florence. The Federal Network Agency will continue to be involved in drafting first framework guidelines as a pilot project and further framework guidelines[13] and in drafting the first ten-year network investment plan.

CONSTRUCTIVE EXCHANGE OF EXPERIENCE IN INTERNATIONAL COOPERATION

The heads of state and government of the seven biggest industrialised nations (USA, Canada, Japan, Germany, UK, France, Italy) and Russia spoke up in favour of more efficient regulation of energy markets during the G8 summit in Italy in July 2009. For the first time, the EU energy regulators were invited by the Italian government to issue a statement. The Federal Network Agency drew particular attention to the need to reduce the administrative effort in setting up infrastructure (eg by simplifying the planning procedures). In addition, it called for better monitoring of energy trading activities and a more efficient coordination of work between the competent authorities (eg finance market regulatory authorities).

Moreover, every three years the EU NRAs in cooperation with the regional associations of energy regulators, organise a forum, the World Forum on Energy Regulation, to enable a worldwide exchange of experience between regulators. This year the event was held in Athens and gave the NRAs a platform to present different regulatory procedures and methods. Furthermore, the International Confederation of Energy Regulators (ICER) was founded, which brings together eleven regional regulatory associations with over 200 NRAs from every continent.

[13] Art. 4 of EC Regulation 713/2009 of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators.

As its results the forum published conclusions on the following four major issues: “Reliability and security of supply”, “The role of regulators in responding to climate change”, “Competitiveness and affordability” and “The independence, powers, responsibilities, best practices and training of regulators”. In addition, a “Climate Change Declaration” and an “Energy Regulators’ Statement” were adopted for the Climate Conference in Copenhagen in December 2009. On the subject of energy trading regulation, the Federal Network Agency presented its concept on a future customised market integrity and transparency regime at European level.

Railways

The further development of Community law is an important foundation for the regulation of the ever more interlinked European transport markets. It is only with coordination of national railway systems that rail-based goods and traffic flows can hold their own in competition with other means of transport.

According to Article 31 of directive 2001/14/EC the European railway regulators cooperate by exchanging information about their work, their decision-making practice and their principles. To deepen this exchange of experience with other regulatory authorities, in 2009 the Federal Network Agency conducted a workshop with the Austrian regulator, Schienen-Control GmbH, on dealing with framework agreements. With the help of these agreements, companies can ensure rail capacity for several years in advance within the context of a specific bandwidth.

WORKING GROUP RAIL REGULATORY BODIES

The Working Group Rail Regulatory Bodies is a particular exchange platform for rail regulators in the EU. Within this working group representatives of the European regulatory bodies and representatives of the EU Commission take part in quarterly meetings.

This year the subjects of the meetings were the varied activities of the EU Commission. Among other things, it presented its plans for the new version of the First Railway Package, which comprises three directives passed in 2001 (incl. Directive 2001/14/EC). The aim is to ensure discrimination-free access to the railway infrastructure. Furthermore, within the context of the Working Group meetings, a study on usage conditions was presented and the Commission draft of a regulation on creating a European railway network for competitive freight transport and the effects on the member states' regulatory activities were discussed.

RAILNETEUROPE

RailNetEurope (RNE) is an association of European railway infrastructure companies that is designed to take account of the many flows of traffic within Europe. One of the tasks of RNE is to coordinate international rail traffic. That is why RNE has developed an online tool called Pathfinder to support cross-border path requests that is available to companies on the Internet. Since access to the rail infrastructure is affected by this instrument, the European regulators pay particular attention to the

transparency and freedom from discrimination of the use of Pathfinder.

For this reason, representatives of RNE, the Federal Network Agency and other regulatory bodies signed a Memorandum of Understanding in November 2009. This was an agreement between RNE and the NRAs to pass on information about the refusal of path requests within the context of the annual network timetable. This enables the relevant local regulator to inspect these path refusals and thus creates more legal security and transparency for all participants on the market.

INTERNATIONAL GROUP FOR IMPROVING THE QUALITY OF RAIL TRANSPORT IN THE NORTH-SOUTH CORRIDOR

In the "International Group for Improving the Quality of Rail Transport in the North-South Corridor" (IQ-C), a working group of the regulatory bodies of the states bordering the freight transport corridor from Rotterdam to Genoa, also discussed the practical impacts of the announced regulation on creating a European rail network for competitive freight transport. Another subject was in the field of the means of access to the operating headquarters where rail transport is scheduled every day. This is where the infrastructure operators and the rail companies come together at very close quarters, meaning that particular attention should be paid to compliance with the rail law ban on discrimination.

TECHNICAL SPECIFICATION FOR TELEMATIC APPLICATIONS FOR FREIGHT

The Technical Specifications for Telematic Applications for Freight (TAF TSI) are regulations for the implementation of a technical standard for a pan-EU exchange of commercial and operational data in rail transport. TAF TSI applications are to enable a smooth transition between the infrastructures of various countries in future, further improving the competitiveness of rail as a means of transport. Because of this importance for competition, the Federal Network Agency continuously works on the development of TAF TSI in the specialist bodies in order to ensure a transparent and discrimination-free application of this specification from the outset.

Bilateral projects

The close partnerships between the Federal Network Agency and other regulatory authorities encourage mutual understanding and, at the same time, show that the authority is in demand as a contact on all continents.

TWINNING PARTNERSHIPS

Twinning projects are financed by the EU and represent an instrument to foster partnerships between authorities from the EU member states and public administrations in potential accession countries. The aim is to establish administrative structures that are capable of implementing European legal regulations in practice so that they are fit for accession. Corresponding projects are also conducted with neighbouring European countries that aim at passing on the European administrative standards.

In 2008 the Federal Network Agency together with the Italian regulator AGCOM won an invitation to tender for a two-year twinning project in Egypt. Regular workshops have been held in Cairo with experts from the Federal Network Agency since early 2009. They support the Egyptian colleagues in setting up and further developing the sector-specific regulation of the telecommunications market and adapting the statutory foundations.

TECHNICAL ASSISTANCE INFORMATION EXCHANGE

As part of the EU's Technical Assistance Information Exchange (TAIEX) programme, the Federal Network Agency carried out a study visit by the Turkish Electricity Market Regulatory Authority (EMRA). The EMRA experts found out about "Procurement and Pricing System Services in the Electricity Market". In addition to specialist presentations on the relevant tasks by the Federal Network Agency, the participants also visited the system management networks of Amprio GmbH in Brauweiler.

STUDY VISITS

In addition to twinning and TAIEX projects, in 2009 the Federal Network Agency hosted many foreign authorities (regulators from all sectors, as well as competition authorities) and other state organisations (such as ministries) as part of study visits lasting one or several days. The focus of interest was mainly on specific regulatory practice in the individual sectors, but also on

the common features in regulating various sectors. The Federal Network Agency was in demand as a contact in its capacity as a multi-sectoral regulator.

In the telecommunications, electricity and gas sector alone 20 major delegations from all four corners of the earth (eg Ukraine, Sierra Leone, Japan) visited Bonn; the Federal Network Agency's experience and procedure were presented to them in lectures and workshops. Telecommunications issues, such as the way towards Next Generation Networks (NGNs), questions on the digital dividend or principles of cooperation between EU, NRAs, the federal government and the Länder were in particular demand. In the energy sector, the functioning of incentive regulation or the development of the competition situation has often been to the fore since the introduction of energy regulation. This broad interest underlines the good reputation that the authority has earned for itself beyond the borders of Europe.

In the postal sector, representatives of regulatory authorities in other countries (including China, France, Switzerland and Tanzania) obtained information from the Federal Network Agency about the structure of the authority and sector-specific regulatory approaches, such as cost accounting systems, universal service and network access regulations. In the consultations, some of which go on for several days, the various concepts are presented and discussed intensively. In these talks, the foreign experts are given opportunities to set up a regulatory authority or to solve specific problems in their own countries. At the same time, the Federal Network Agency obtains information about other regulatory approaches for specific issues, eg licensing systems or financing the universal service. Such an exchange of thoughts thus regularly offers the opportunity to take a critical look at our own regulatory practice and not to be closed to new possible solutions.

In the rail sector, in addition to the workshop organised with the Austrian regulator (Schienen-Control GmbH), there were other meetings with European regulators, such as Luxembourg. The French regulator, founded this year, Autorité de Régulation des Activités Ferroviaires, also turned to the Federal Network Agency to find out about its structure and fundamental procedure in regulating the rail sector.

Telecommunications

Market watch

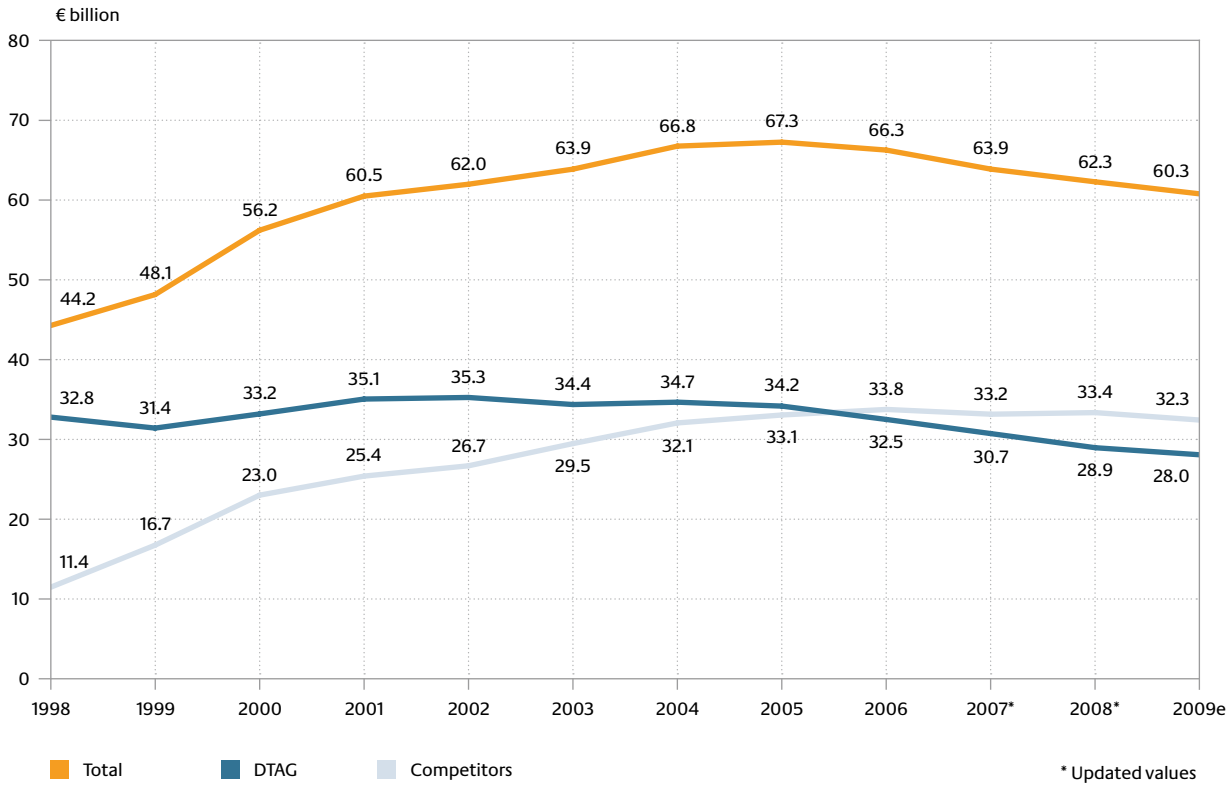
Sustained growth in the broadband market—stiff competition for full connections and bundled products and services—cable providers grow their market share—Internet access becomes even faster—increased data transmission and Internet access via mobile communications—falling prices and revenues—high level of investment

TELECOMMUNICATIONS SERVICES AS A WHOLE

Revenues

Revenues[1] on the German telecommunications market topped €62.3 billion in 2008. Compared to the previous year, this corresponds to a decline of 2.5 percent. Provisional figures suggest that they dropped further to €60.3 billion by the end of 2009.

Revenues generated on the German telecommunications market 1998–2009



[1] Cumulative revenues comprising revenues of DTAG and alternative providers in Germany.

Alternative providers managed to increase their revenue by €0.2 billion over the previous year, with revenue totalling €33.4 billion in 2008. For 2009 revenue is expected drop to €32.3 billion.

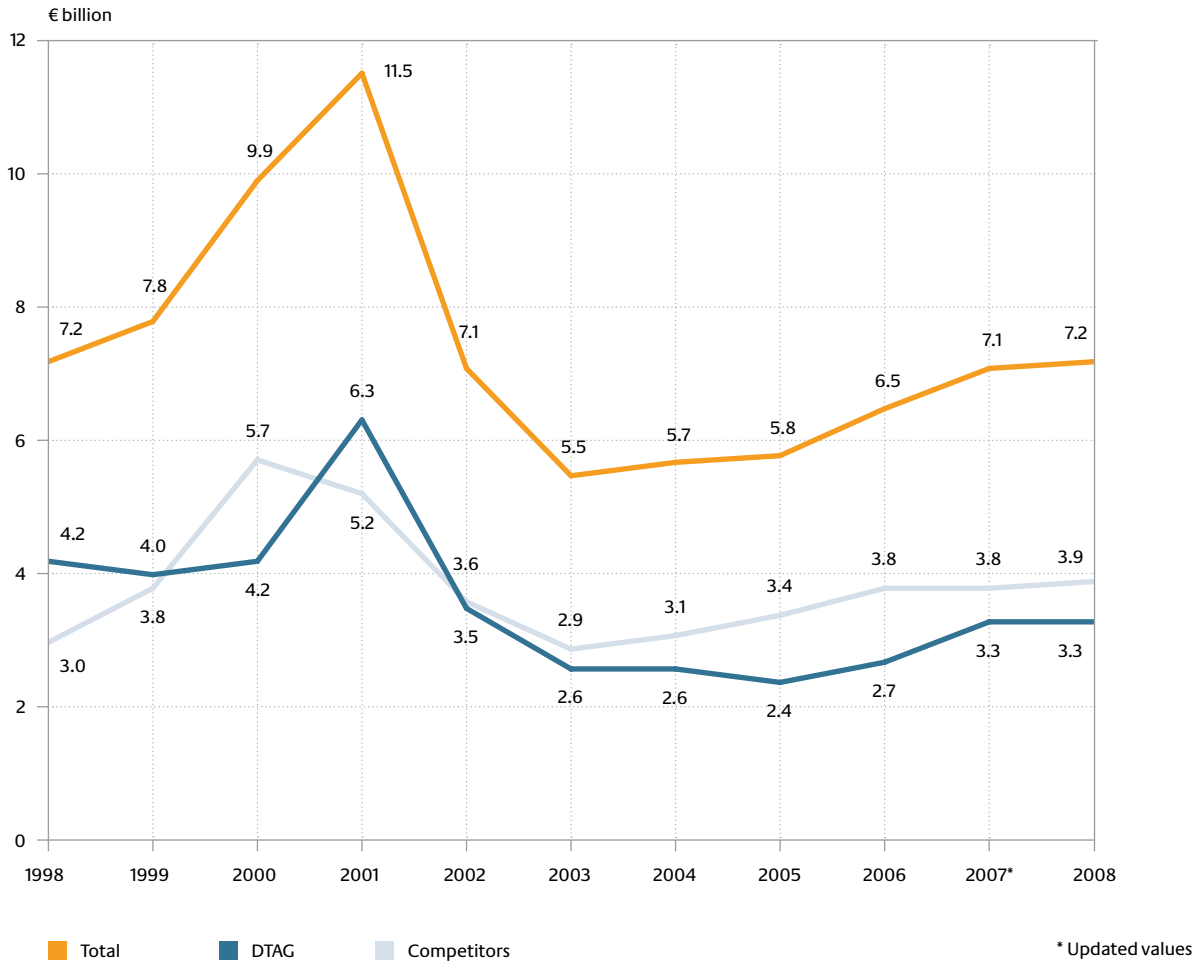
At Deutsche Telekom AG (DTAG), the downward trend of recent years continued. Revenue generated in 2008 fell by €1.8 billion to €28.9 billion. In 2009, revenue is expected to fall to €28 billion.

Real investment

Investments in fixed assets on the German telecommunications market in 2008 totalling €7.2 billion were slightly up year-on-year (€7.1 billion). Whether it was possible to sustain this trend in 2009 cannot be predicted on the basis of the figures currently available.

Alternative providers increased their capital spending in 2008 slightly by €0.1 billion to €3.9 billion while DTAG sustained its level of investments at €3.3 billion year-on-year. Alternative providers' share in total investments was 54 percent.

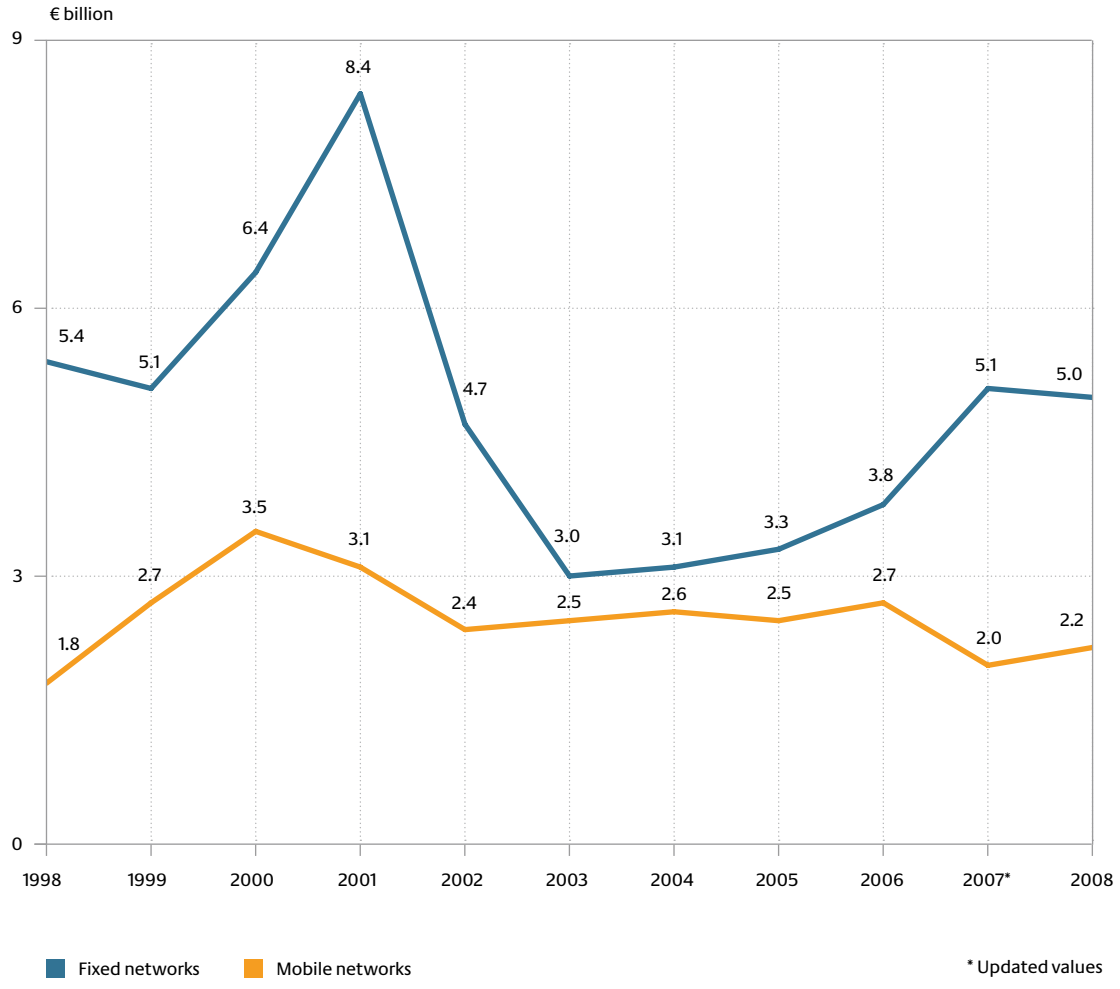
Investments in fixed assets on the German telecommunications market 1998–2008



Total investments made since 1998 had reached €82.7 billion by the first quarter of 2009, with alternative providers accounting for €43.1 billion (52 percent) and DTAG accounting for €39.6 billion.

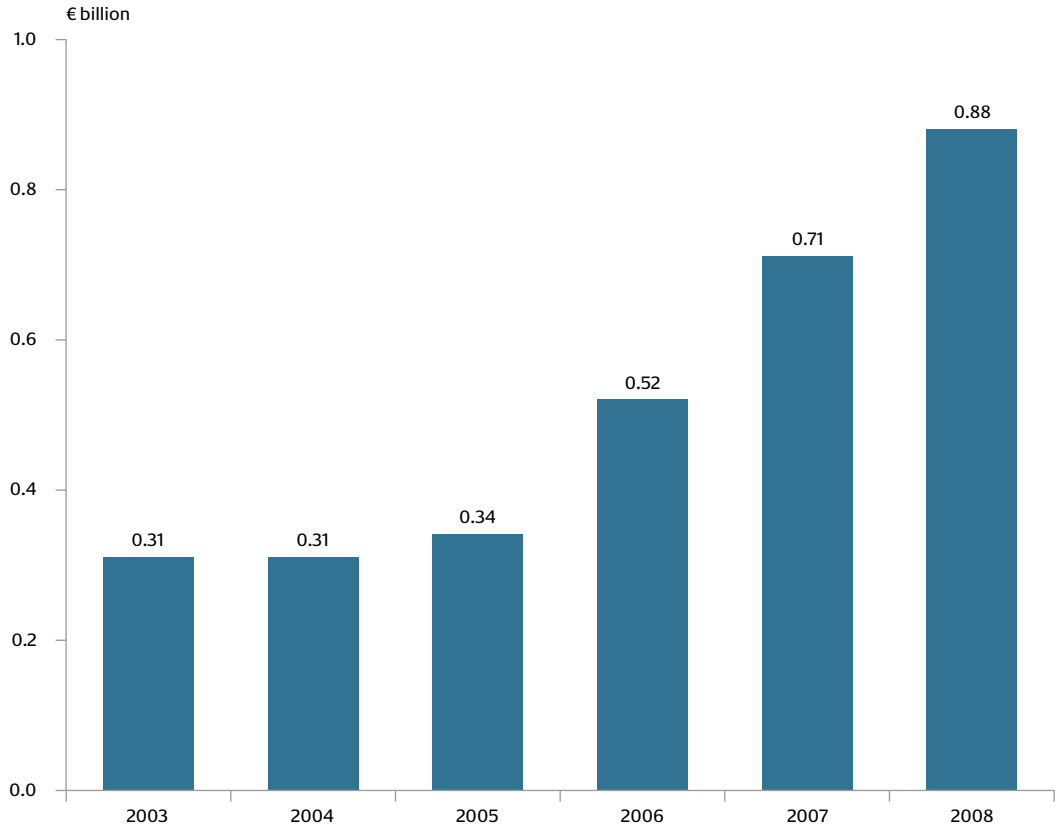
Investments in fixed networks and mobile networks went in opposite directions in 2007 and in 2008. While investment in fixed networks had peaked out in 2007 at €5.1 billion achieving a growth rate of 34 percent, having grown steadily for four years, investment in mobile networks fell by 26 percent to €2 billion in 2007. In 2008, investment in fixed networks fell by around €0.1 billion to €5 billion. By contrast, investments in mobile networks rose by €0.2 billion to €2.2 billion. This means the share of investments in fixed networks rose by 58 percent to 72 percent in 2007 compared to the previous year. In 2008, it decreased slightly to 69 percent.

Investment in fixed assets in fixed networks and mobile networks 1998–2008



Investments made in the cable TV infrastructure have risen sharply since 2006. They reached two-digit figures each year although growth rates have certainly levelled off. Investments made in 2008 totalled €0.88 billion. This corresponds to a share of around 18 percent of total investments made in fixed networks.

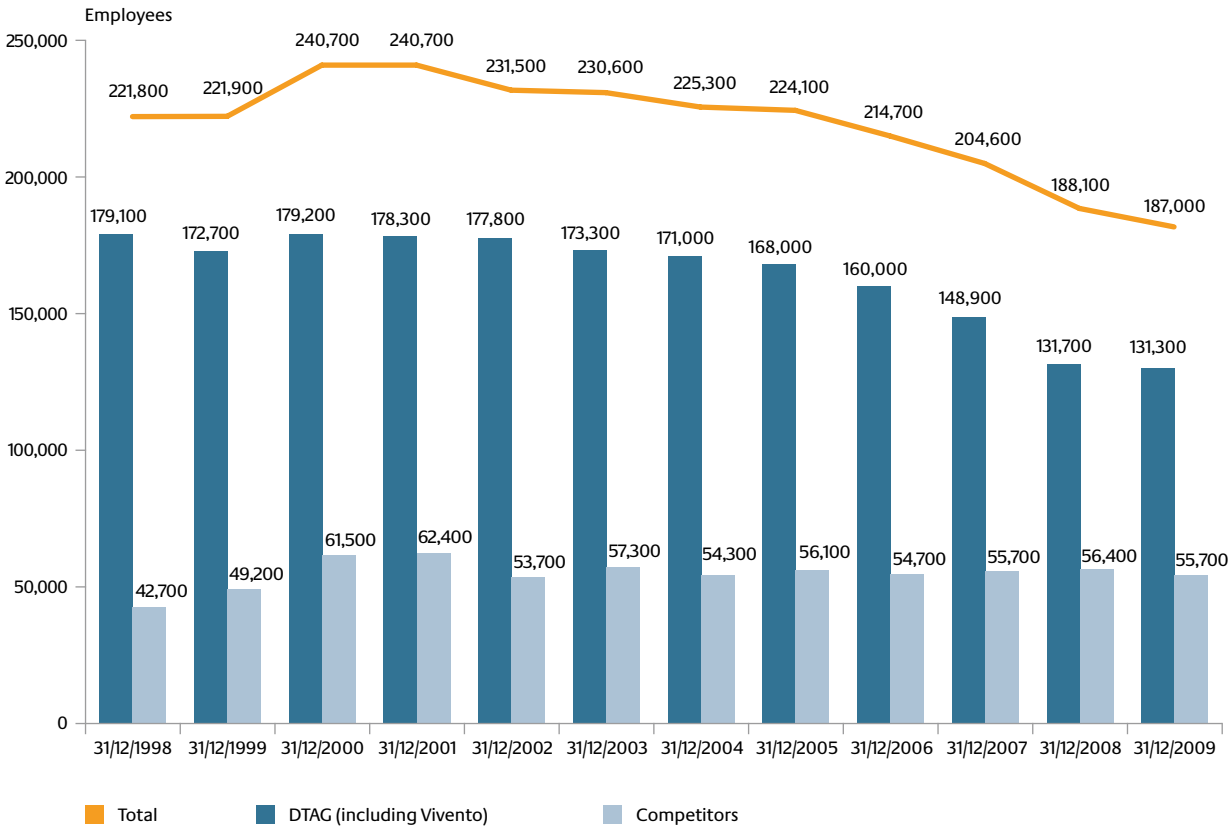
Investment in fixed assets in the cable TV infrastructure 2003–2008



Employment

At the end of the first quarter of 2009, 187,000 people were employed by telecommunications companies in Germany. This represents a decline of around 17,600 jobs compared to late 2007. Jobs were only lost at DTAG. By the end of the first quarter of 2009, the Group had reduced its workforce in Germany to 131,300. The number of employees at alternative providers maintained a fairly steady level. The number of employees at the end of the first quarter of 2009 remained the same as in late 2007.

Employees on the telecommunications market 1998–2009



TELECOMMUNICATIONS SERVICES BASED ON FIXED NETWORK CONNECTIONS

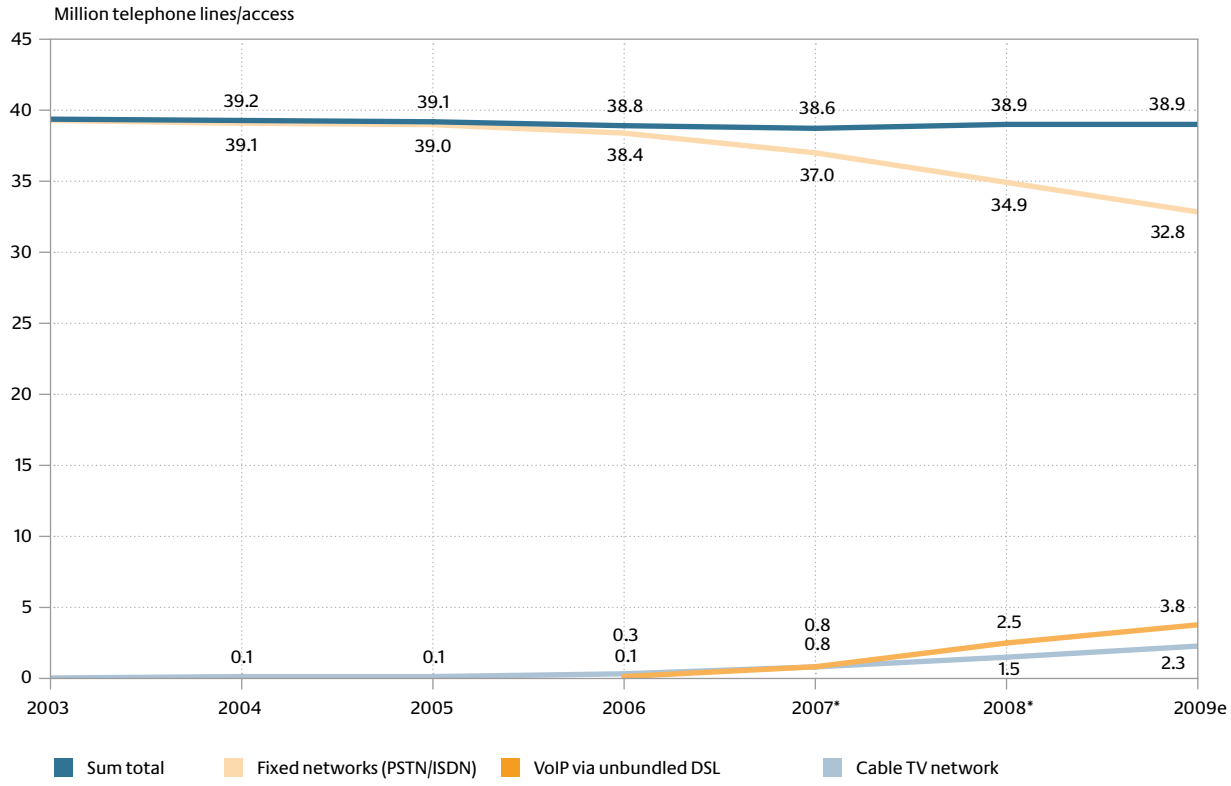
Access points for voice communication

Access points for landline voice communication via traditional telephone connections (PSTN/ISDN) on the one hand and VoIP via unbundled DSL connections and telephony via the cable TV infrastructure on the other have developed differently in recent years. While it is obvious that the importance of the traditional telephone connection is declining, telephony via DSL and cable TV is gaining momentum. In general, access possibilities of voice communication in fixed networks have remained relatively steady, accounting for approx. 38.9 million in the past few years.

By the end of 2009, the number of unbundled DSL connections used for VoIP (full connections) totalled 3.8 million.[2] The number of cable TV lines used for telephone calls had risen to approximately 2.3 million by the end of 2009. These positive developments managed to compensate for the loss of approx. 6.3 million telephone lines between 2004 and 2009 in traditional fixed networks.

[2] In the case of unbundled DSL connections, the provision and operation of DSL connections is not bound to a traditional analogue or ISDN telephone connection. By mid-2009 DTAG's competitors had witnessed a sharp decline in the number of bundled DSL connections with switched VoIP that simultaneously had a traditional DTAG telephone connection.

Access possibilities for voice communication 2004–2009



* Updated values

The following table contains a breakdown of the types of telephone line/telephone access in fixed networks.[3]

Telephone lines/access and competitor shares in fixed networks 2007–2009

	2007*			2008*			2009e		
	Total basis	Competitor share		Total basis	Competitor share		Total basis	Competitor share	
	Million	Million	%	Million	Million	%	Million	Million	%
Analogue connections	23.85	1.368	5.7	21.65	1.594	7.4	19.76	1.730	8.8
ISDN basic lines	12.86	4.166	32.4	13.04	4.739	36.3	12.89	4.932	38.2
ISDN-PMX connections	0.117	0.0290	24.8	0.110	0.0291	26.4	0.06	0.0291	27.4
Public telephone stations	0.107	0.0022	2.1	0.102	0.0019	1.9	0.094	0.0018	1.9
Voice access points via cable TV networks	0.810	0.810	100	1.530	1.530	100.0	2.300	2.300	100.0
Voice access via unbundled DSL connections used for VoIP	0.831	0.830	99.9	2.471	2.460	99.6	3.780	3.700	97.9
Total connections/access	**38.58**	**7.21**	**18.7**	**38.91**	**10.35**	**26.6**	**38.93**	**12.68**	**32.6**

* Updated values

Data including personal needs

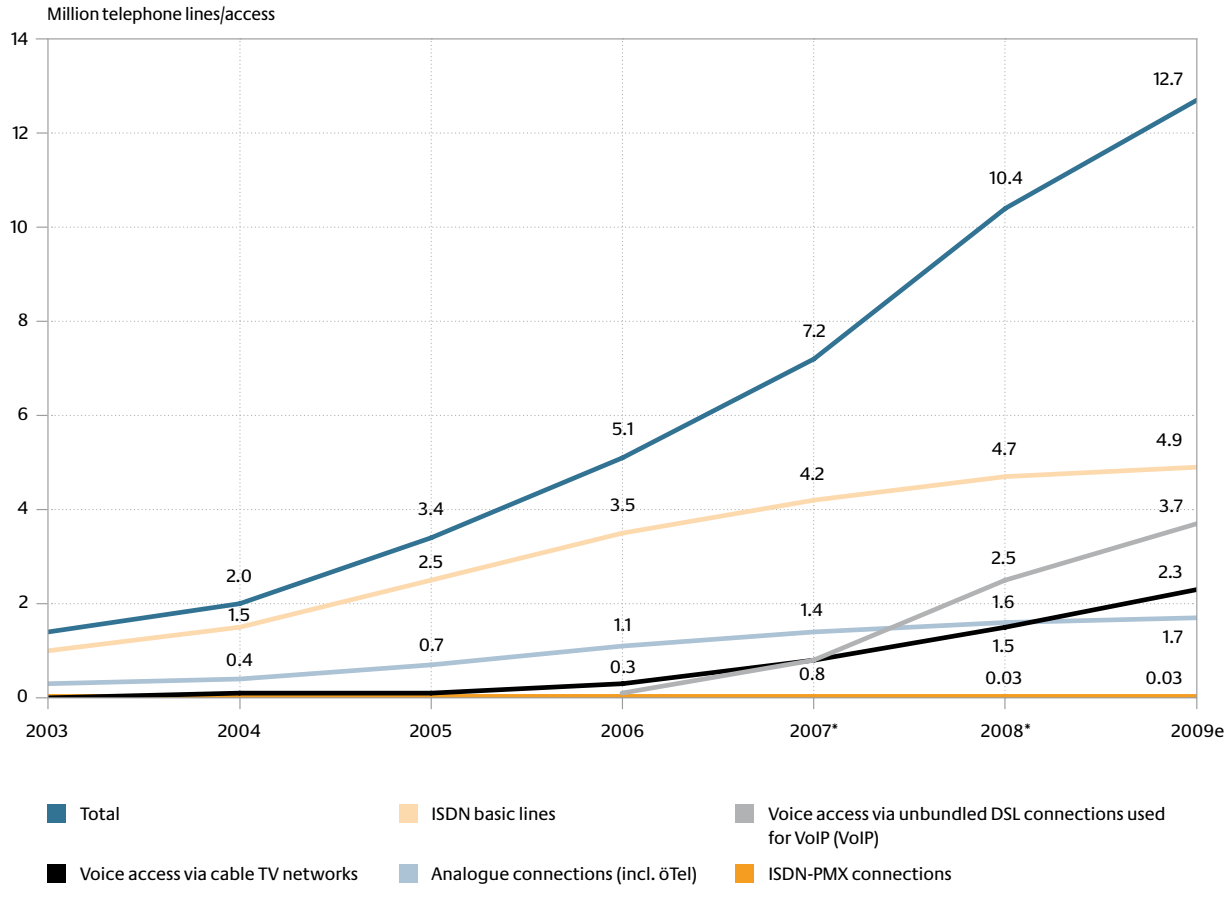
The sum totals indicated in tables and charts may deviate from the cumulative value of individual values because they have been rounded up or down.

[3] Given the growing importance of VoIP, access possibilities to voice communication are not presented as so-called telephone channels as in former activity and annual reports of the Federal Network Agency. This needs to be taken into account when comparing the figures with those of former reports.

The total number of analogue lines has declined sharply in recent years but still represented the most important type of connection totalling approx. 19.8 million at the end of 2009. There has also been a decline in the total number of ISDN primary multiplex lines (ISDN-PMX).[4] At approx. 12.9 million, the existing number of ISDN basic access points no longer seems to be rising either. Dynamic growth rates can, however, be noted for voice access points via unbundled DSL connections used for VoIP and for voice access points via cable TV networks.
In 2009, the number of VoIP via unbundled DSL rose by just under 50 percent to an estimated 3.8 million, exceeding the number of cable TV lines used for telephone calls at approx. 2.3 million. Accordingly, traditional fixed network connections were replaced by alternative technologies. The total number of public telephone payphones including coin and card telephones at the end of 2009 is estimated to have been around 94,000, representing a slight decline.

In particular the technology VoIP via unbundled DSL and cable TV telephony has experienced dynamic growth rates among alternative subscriber network operators. The number of their traditional analogue and ISDN basic access points has risen too, albeit at a slightly slower pace compared to previous years.

Telephone lines/access of alternative subscriber network operators 2004–2009

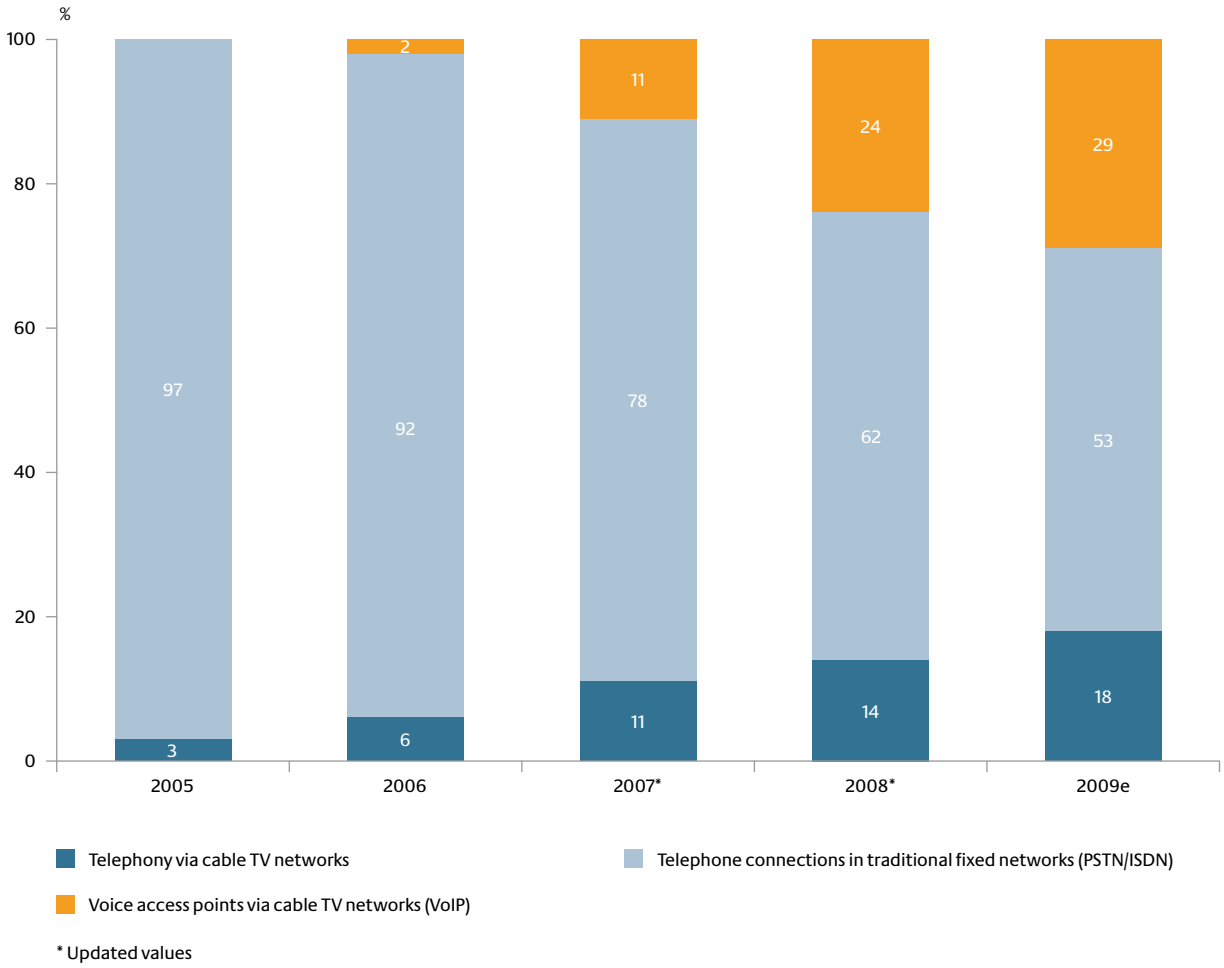


* Updated values

[4] The figures provided on ISDN-PMX connections are based on an unreliable database in respect of DTAG's competitors.

Fixed networks of alternative subscriber network operators had an estimated total of 12.7 million telephone connections/access points at the end of 2009. This number hence increased by 2.3 million in 2009 compared to the increase of 3.2 million the previous year. VoIP via unbundled DSL was mainly responsible for this growth, DTAG's competitors' share of telephone connections/access points rose to around 29 percent in 2009. At the same time, VoIP via unbundled DSL also greatly exceeded the share of voice access points via cable TV networks. By contrast, the share of analogue and ISDN telephone connections in the fixed networks of alternative providers declined by 97 percent in 2005 to an estimated 53 percent in 2009.

Share of telephone connections/ access points in the fixed networks of alternative subscriber network operators 2005–2009

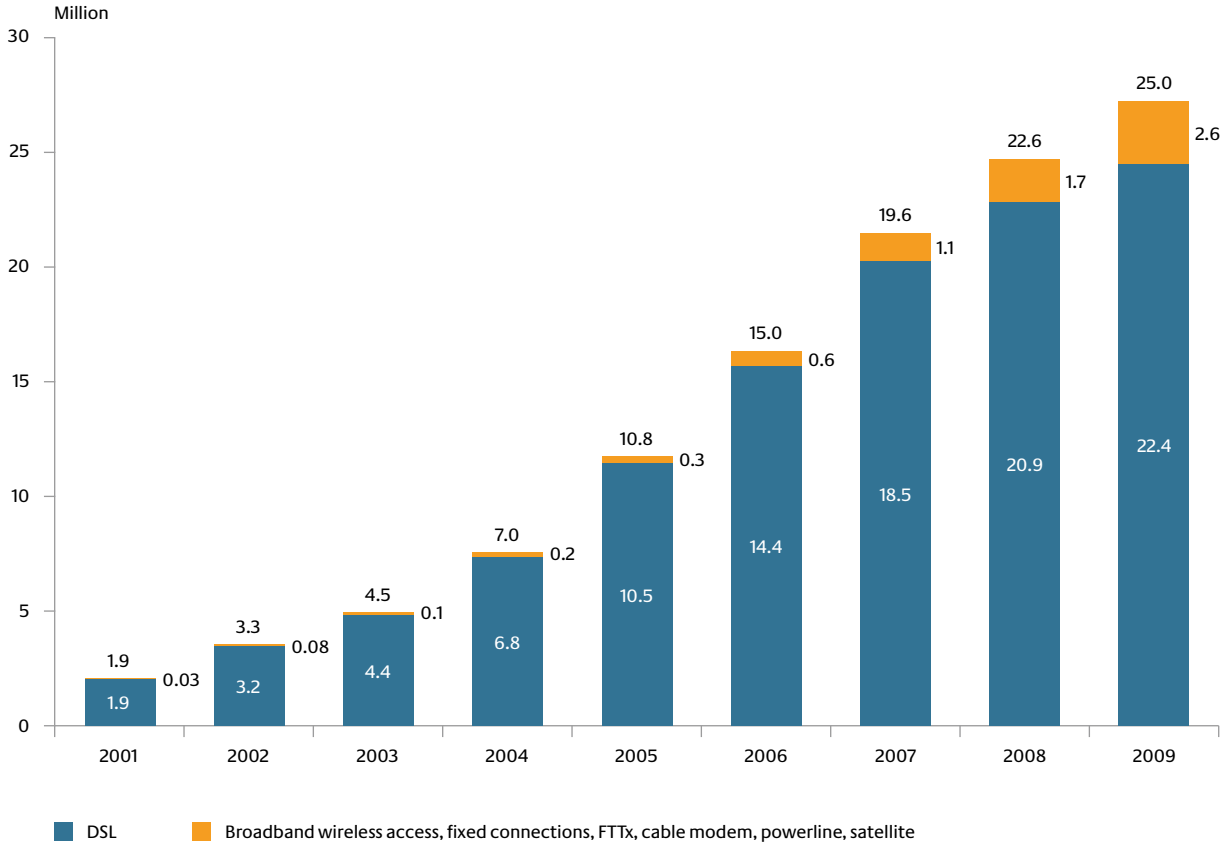


At the end of 2009, around 110 alternative subscriber network operators were offering analogue access points, ISDN access points, voice access points via cable TV networks or voice access points via unbundled DSL connections and DSL connections used for VoIP. The products were provided on the basis of contracts on access to the subscriber line, their own subscriber line or based on DTAG's new "stand alone ATM/IP bit stream" and "stand alone resale" wholesale products.

Broadband access technologies

In Germany, broadband access is provided above all via digital subscriber lines (DSL) and cable TV connections (cable modem). Broadband access is also provided via fixed connections, satellite, power lines as well as glass fibre or radio-based infrastructures. The total number of broadband connections in operation at the end of 2009 was around 25 million. Most of these connections currently offer a download rate of between 2 Mbit/s and 10 Mbit/s. Around 25 percent of broadband connections offer a download rate of more than 10 Mbit/s.

Total number of broadband connections 2001–2009



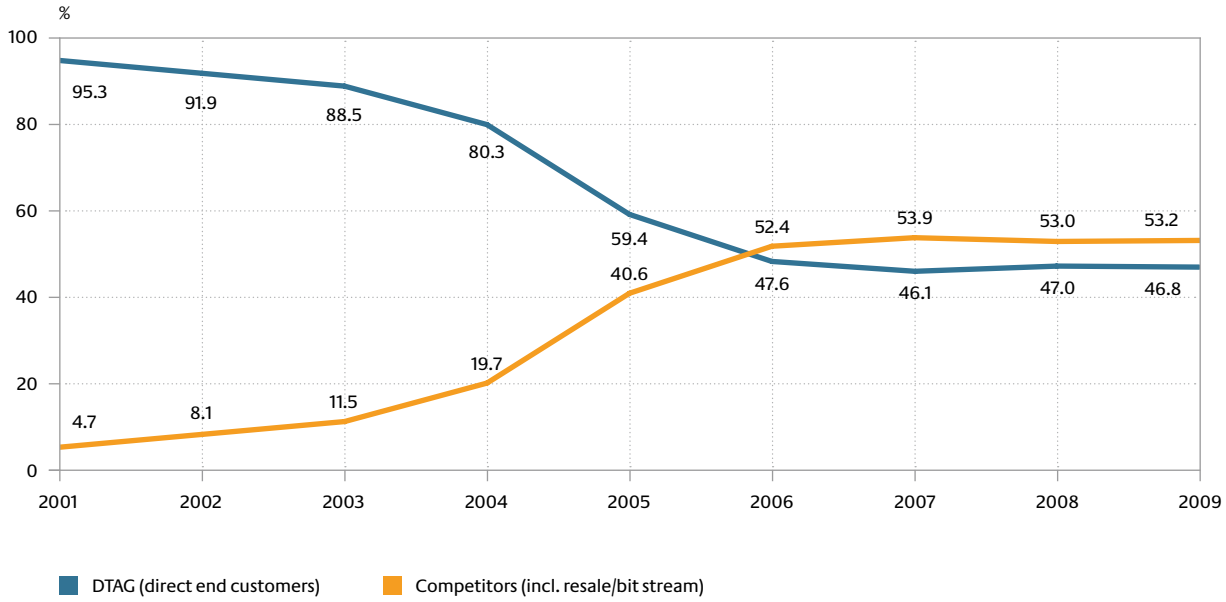
The demand for broadband connections began to level off between 2008 and 2009. These years were marked by growing saturation of the broadband market. With around 2.4 million new broadband connections being installed in 2009, this worked out to be around 0.6 million fewer new connections than the previous year. The information available at present suggests that this trend is likely to continue.

At the end of 2009, DSL technology accounted for just under 90 percent of all broadband connections. With a total of 22.4 million connections, DSL remains the dominating access technology followed by broadband connections via the cable TV infrastructure. This technology has recorded strong growth in recent years. With broadband connections via cable modem totalling around 2.3 million, this connection technology is gaining momentum and is hence stimulating intermodal competition.

The remaining fixed network and radio-based technologies account for around 0.3 million connections.

DTAG's competitors accounted for around 53 percent of broadband connections sales by the end of 2009.

Share of broadband connections sold 2001–2009



Despite growing market saturation, the growth in broadband connections in Germany is remarkable by international standards. Statistics provided by the European Commission[5] prove on the one hand that Germany had a far higher growth in fixed network broadband connections relative to the population than other big European countries like France, Great Britain or Italy between July 2008 and July 2009. Furthermore, comparing the total number of broadband connections to the total number of households, Germany has a higher penetration rate than any of these countries. In July 2009, Germany had a penetration rate of just under 30 percent which means it clearly outperformed the average penetration rate of the member states (EU 27) of 23.8 percent.

If the total number of broadband connections is compared to the total number of households in Germany, it becomes evident that by the end of 2009, Germany had achieved a penetration rate of around 62 percent. It is hence foreseeable that the growth on the market for broadband connections is set to slow down increasingly over the years to come.

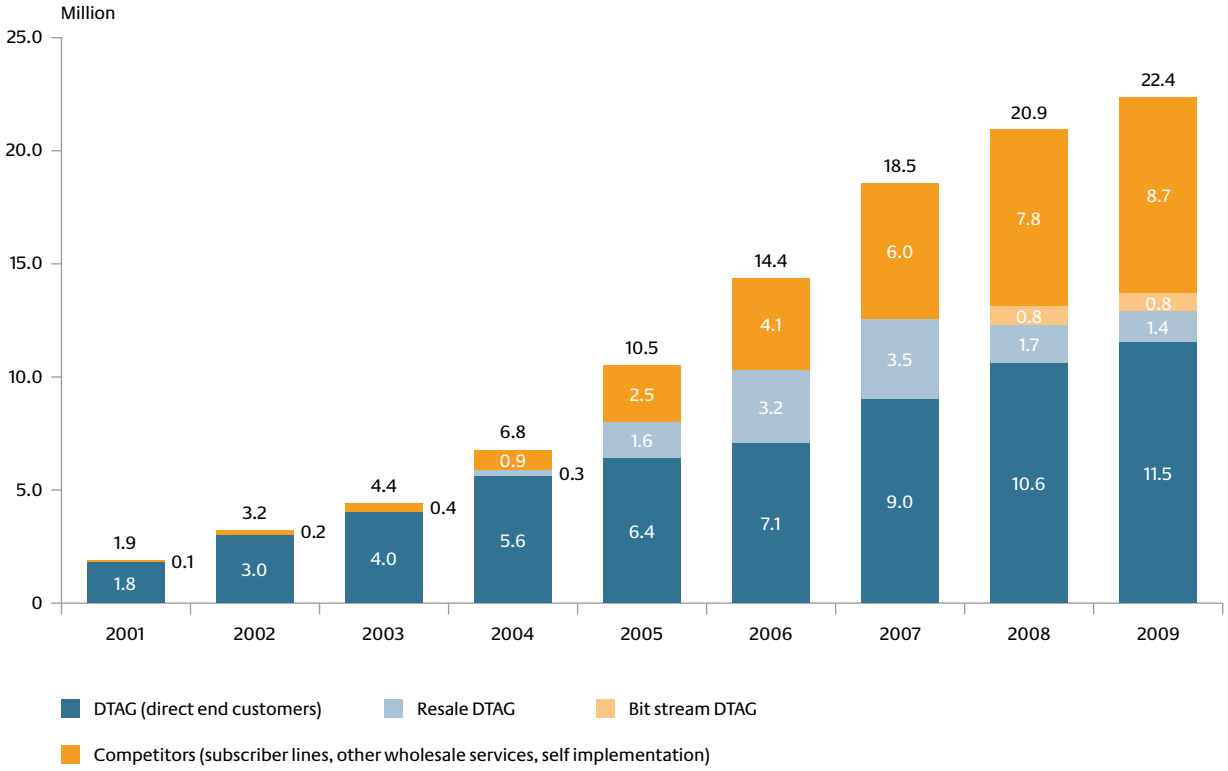
DSL lines

After the DSL market had clearly lost momentum in 2008 despite 2.4 million new DSL lines being added to the total 20.9 million lines, the figures for 2009 prove that this trend is stabilising.

At the end of 2009, there were around 22.4 million DSL lines in operation in Germany. Compared to the previous year, the number of new DSL lines was down by around 0.9 million.

[5] European Commission, broadband access in the EU (COCOM09-29).

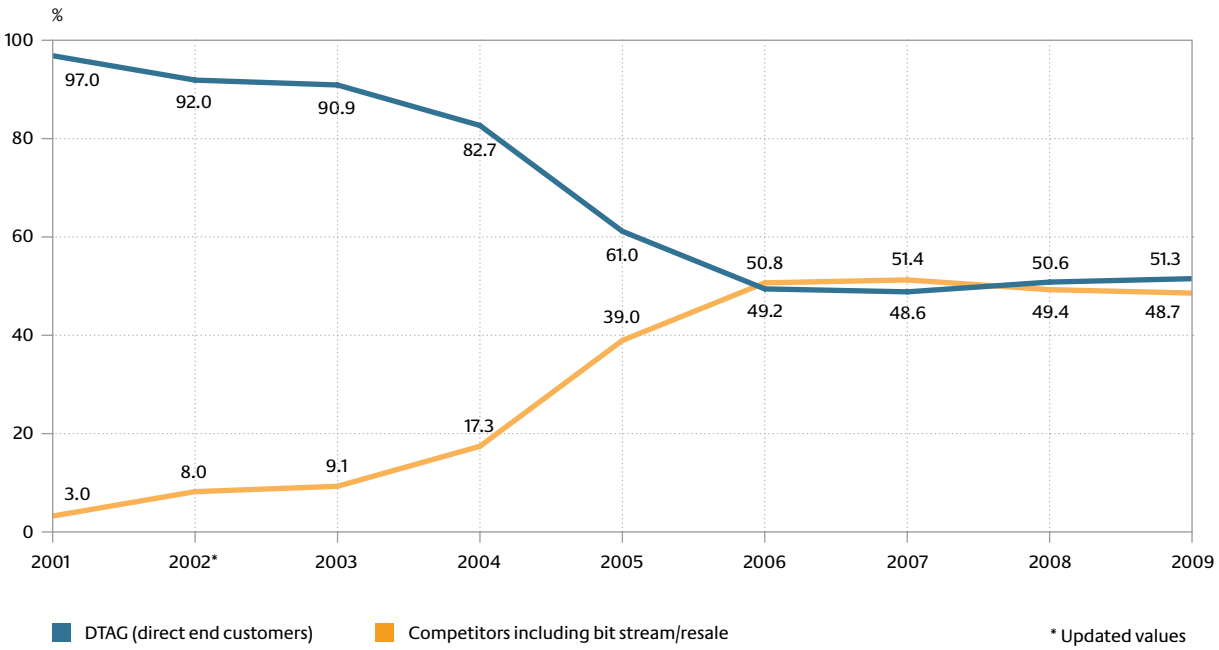
DSL connections in operation 2001–2009



In terms of customer relations, DTAG accounted for around 11.5 million DSL lines at the end of 2009. This means DTAG accounted for a market share of around 51 percent.

The chart illustrating the development of shares shows that DTAG has managed to stabilise and slightly expand its position in the DSL business over the past few years.

Share of DSL lines sold 2001–2009



In the area of DSL lines sold by alternative providers, DTAG's resale segment recorded a sharp decline. Having accounted for around 19 percent of DSL business in 2007 , DTAG's share had fallen to a mere 6 percent by December 2009. This trend can be attributed in particular to a shift in wholesale demand among alternative DSL providers towards the bit stream products provided by DTAG. At the end of 2009, around 800,000 DSL connections sold by alternative providers were based on DTAG's bit stream offer which has been available since July 2008.

In addition, wholesale products provided by alternative network operators have increasingly gained momentum. They provide their own wholesale products (bit stream, and connection and service resale) to DSL providers on the basis of access to the subscriber line. In particular unbundled DSL lines (so-called full connections) are based on the wholesale products of alternative network operators or on access to the subscriber line. There is no traditional telephone line available for these type of lines in parallel and telephony is handled exclusively on the basis of an IP backbone. According to estimates by the Federal Network Agency around 3.1 million such full connections had been installed by mid-2009.

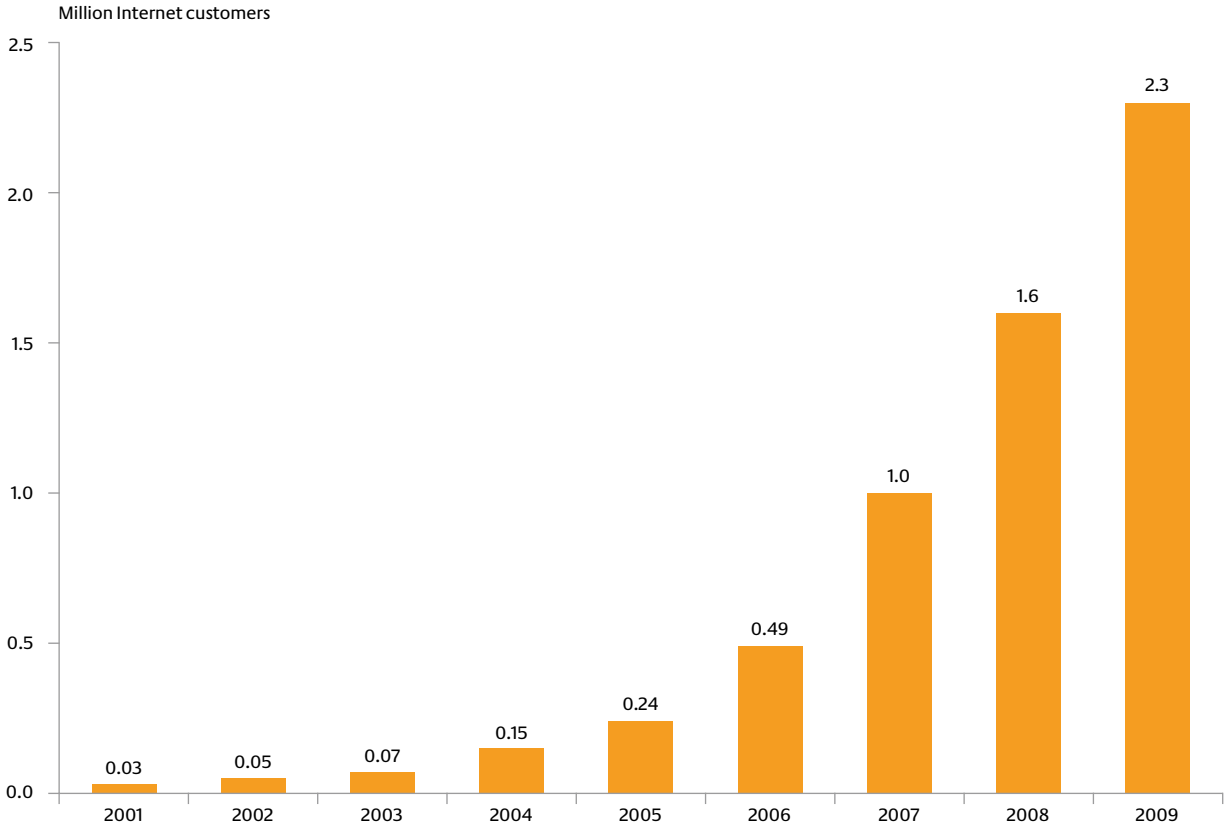
DTAG's competitors who also have a concentrated access network in addition to an IP backbone managed to install around 0.9 million lines by the end of 2009. Accounting for a total of 8.7 million lines, they hence managed to gain a share of around 39 percent in the total number of DSL lines which they either sold on directly to their own end customers or as wholesale products to other providers for retail customer marketing purposes.

Broadband Internet via the cable TV infrastructure

The modernised cable networks that are capable of receiving back channel signals have become a real access alternative to traditional fixed networks both in terms of price and technology in recent years. The swift modernisation of this infrastructure is almost complete and was in theory able to provide 24 million households with fast Internet access offering transmission rates of up to 120 Mbit/s by the end of 2009. The trend towards higher bandwidths is shown by comparing the demand for broadband. Whereas at the end of 2008, 50 percent of cable customers had Internet access offering transmission rates of over 10 Mbit/s, this figure had risen to 70 percent by the end of 2009. By the end of 2009, 2.3 million customers of around 60 cable network operators[6] had opted for this type of Internet access. At present, around every third new broadband customer is opting for Internet access provided by cable TV network providers.

[6] This figure includes all individual companies regardless of whether they belong to the same group.

Internet access points via cable modem 2001–2009



Powerline

Broadband Internet access with which data is transmitted to households via the power network can also be realized via powerline technology. At the end of 2009, approx. 10,000 customers were using this variant. A total of 300,000 customers were connected directly using this type of Internet access. The use of powerline has hardly changed in the past six years.

Satellite

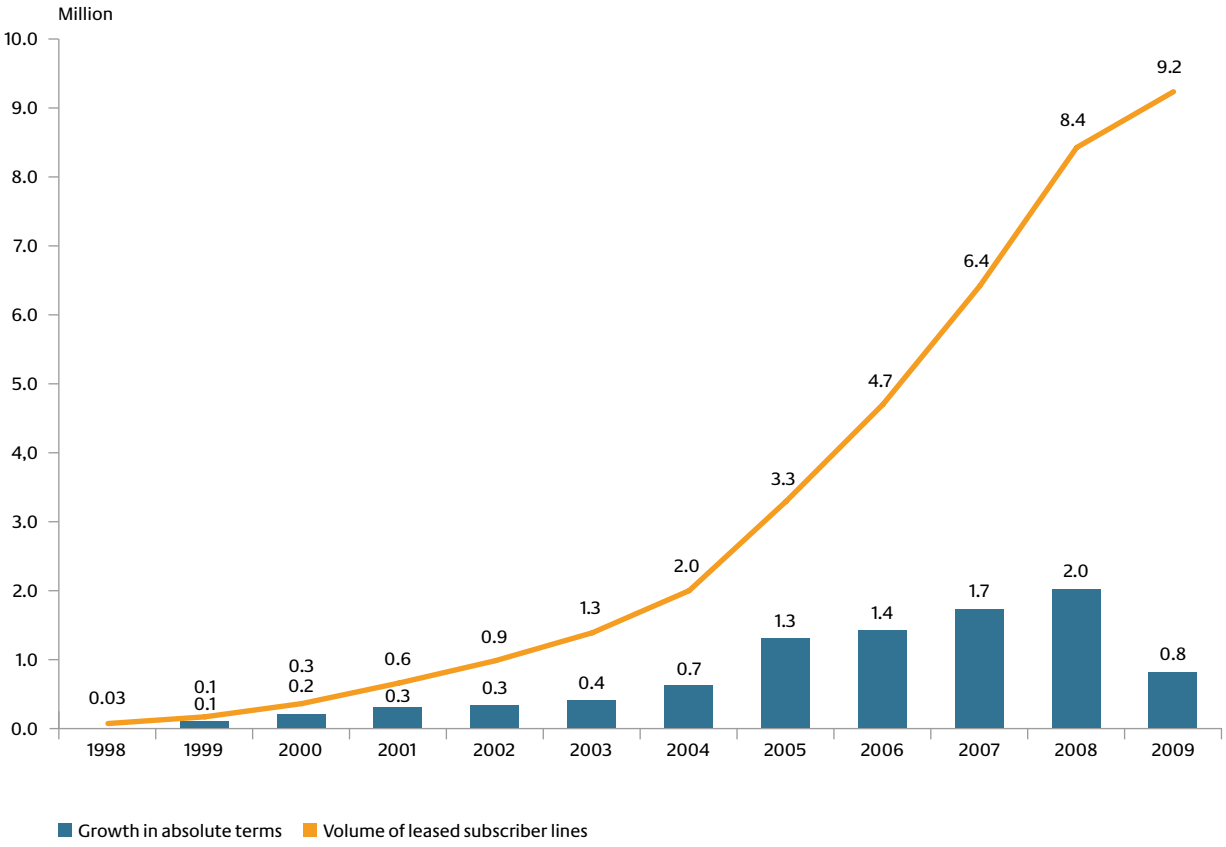
The satellite systems of Astra and Eutelsat have made a small but important contribution to nationwide broadband coverage in Germany in providing Internet access via satellite. They provide almost independent Internet access in regions that are not developed by DSL or TV cable networks that are capable of receiving back channel signals. There are two types of Internet access available via satellite. Bidirectional services involve a technology in which data is transmitted in the uplink and downlink via satellite. While the hardware costs of these systems comprising a modem and antenna used to be extremely expensive, they are meanwhile available for €200. The monthly rates which have also dropped mean this type of Internet access has also become attractive for residential customers. By the end of 2009, approx. 35,000 customers of around ten providers were using this system. By contrast, hybrid services that realise the back channel via the telephone line and only the uplink via satellite are continuing to lose momentum. At the end of 2009, only approx. 7,000 customers were using this option.

Wholesale access services

In addition to self-installed subscriber lines and radio-based solutions, the majority of DTAG's competitors use DTAG's existing subscriber lines to provide telephone and broadband connections. Alternative providers purchase these lines that tend to be made of copper as a wholesale service from DTAG. This is subject to conclusion of a contractual agreement with DTAG.

DTAG's wholesale service encompasses various subscriber line products, with unbundled copper pairs wires accounting for the majority of leased lines.

Subscriber line volumes 1998–2009



2009 was the first year in which it was not possible to outperform the growth rates of the preceding years. By the end of 2009, around 9.2 million subscriber lines were being leased from DTAG's competitors. This corresponds to an increase of 0.8 million new leased lines.

The high bit rate subscriber line product option that is suitable in particular for the provision of DSL connections continues to be the main growth driver. The growing saturation of the DSL market is reflected in the decline in the absolute growth rate in 2009. This decline in growth can probably be attributed to the fact that competitors have almost fully developed regions offering favourable economies of scale whereas it is less profitable or even unprofitable to develop rural areas.

Access to subscriber lines is subject to there being geographical access (collocation) to DTAG's Main Distribution Frames. DTAG provides its

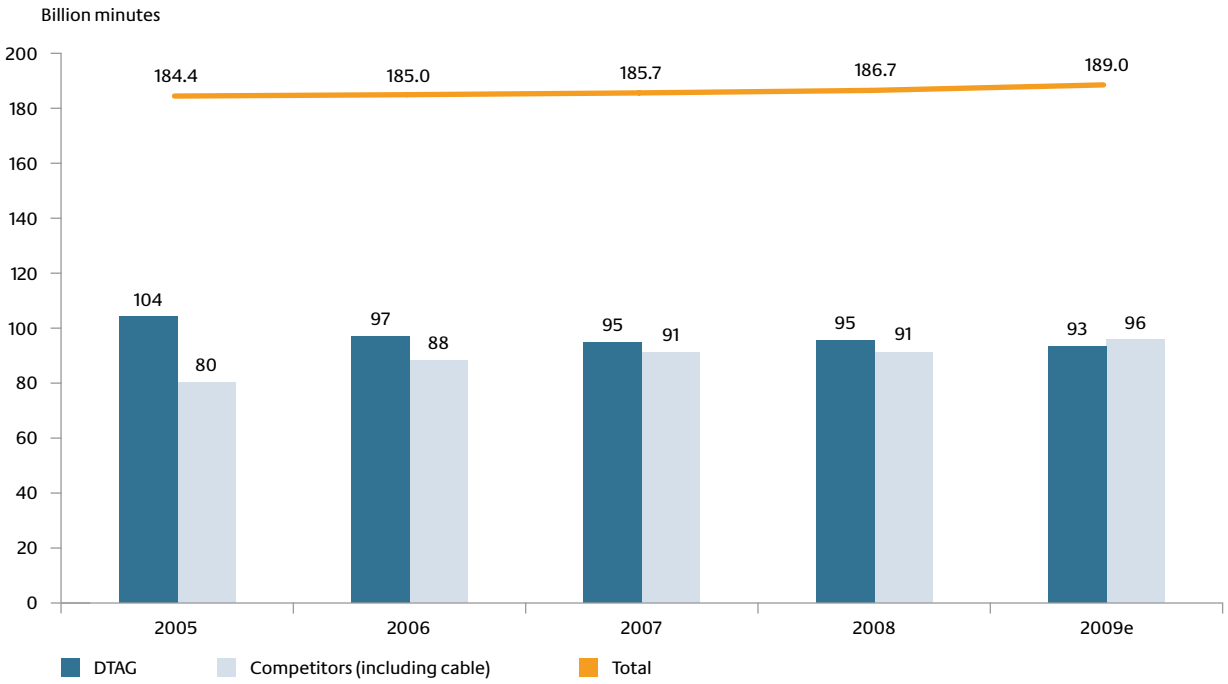
competitors with a special collocation room at the Main Distribution Frame sites of the respective access areas subject to a relevant fee. The number of Main Distribution Frames developed by alternative providers has grown steadily in the period under review. Whereas by the end of 2007, around 3,400 Main Distribution Frames had been developed, this number had risen to around 3,800 Main Distribution Frames by the spring of 2009.

As networks migrate towards Next Generation Access (NGA) and Next Generation Networks (NGN), there is likely to be a decline in the number of Main Distribution Frames. This may weaken demand for wholesale access via subscriber lines. For in the medium to long term, network migration is bound to threaten business models based on access via subscriber lines and hence also alternative wholesale products and services as Main Distribution Frames represent the access node for business models based on access via subscriber lines. Up to now competitors have had a demand for subscriber lines particularly in regions in which VDSL expansion has taken place.

Traffic development

The overall volume of domestic and international calls[7] transported via the traditional telephone, cable and IP-based networks that is measured in minutes has risen steadily over time. According to preliminary calculations undertaken by the Federal Network Agency, the volume of domestic and international calls had risen to 189 billion minutes by the end of 2009 compared to 187 billion minutes the previous year. It can be assumed that by the end of 2009, DTAG accounted for around 93 billion minutes of domestic and international calls whereas DTAG's competitors accounted for around 96 billion minutes.

Volume of domestic and international calls 2005–2009



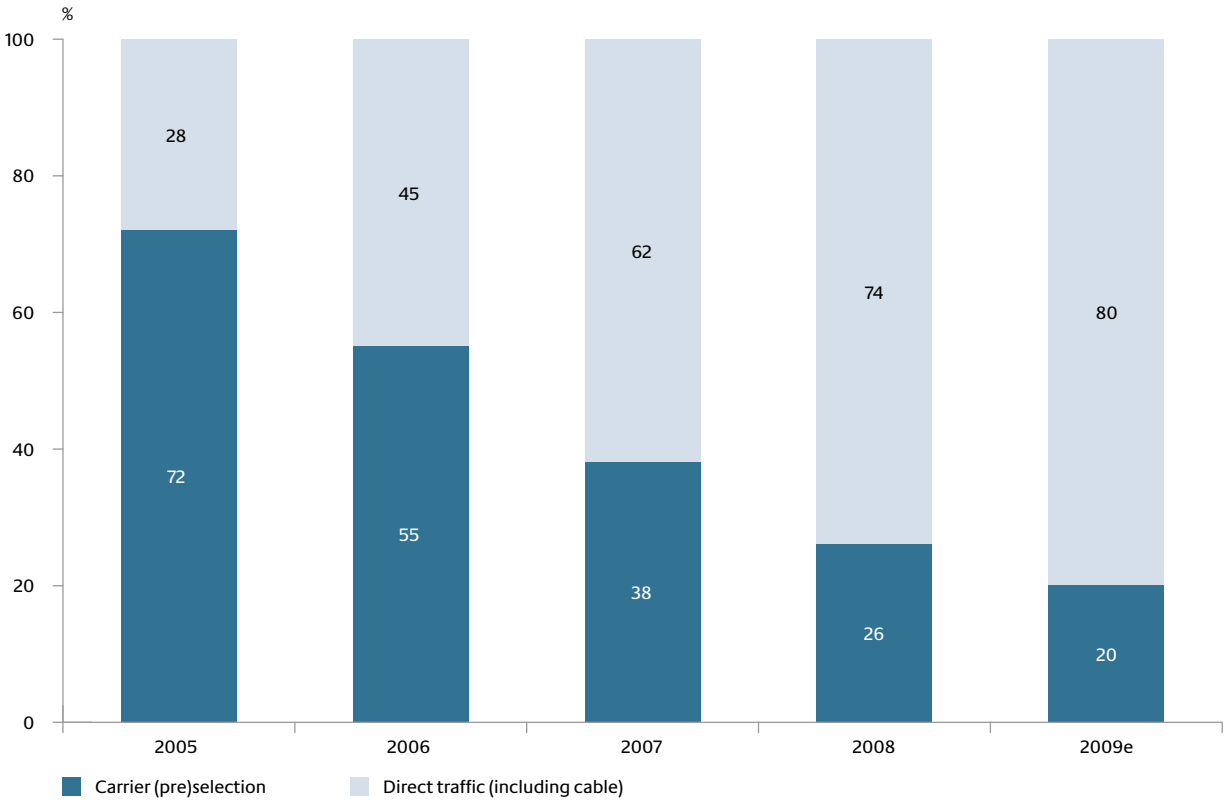
[7] This does not include calls made on the basis of so-called peer-to-peer technologies.

The increase in the overall volume of traffic resulted first and foremost from direct lines operated by alternative providers. The increase in the use of fixed network telephony can be explained partly by the flat rates charged as part of bundled products. At the end of 2009, some cable providers were offering bundled products—comprising a telephone access with a broadband connection including a flat rate for telephone calls and Internet access for as little as €30 per month, inter alia, depending on what bandwidth the broadband connection chosen was offering. The range of services available is increasing while prices are remaining relatively steady.

By contrast, there has been a sharp decline in the volume of domestic and international calls transported indirectly by DTAG's competitors via call-by-call or preselection. Whereas at the end of 2007 around 4.7 million customers had preselected alternative connection network providers, this number had dropped to approx. 3.3 million by the end of the first quarter of 2009. Despite the decline in the number of preselection customers, the volume of calls routed via preselected alternative connection network providers has exceeded the volume of traffic handled via call-by-call.

In 2008, approx. 74 percent of all telephone calls[8] transported by DTAG's competitors were transported via these competitors' direct lines. By the end of 2009, their share had risen by an estimated 80 percent.

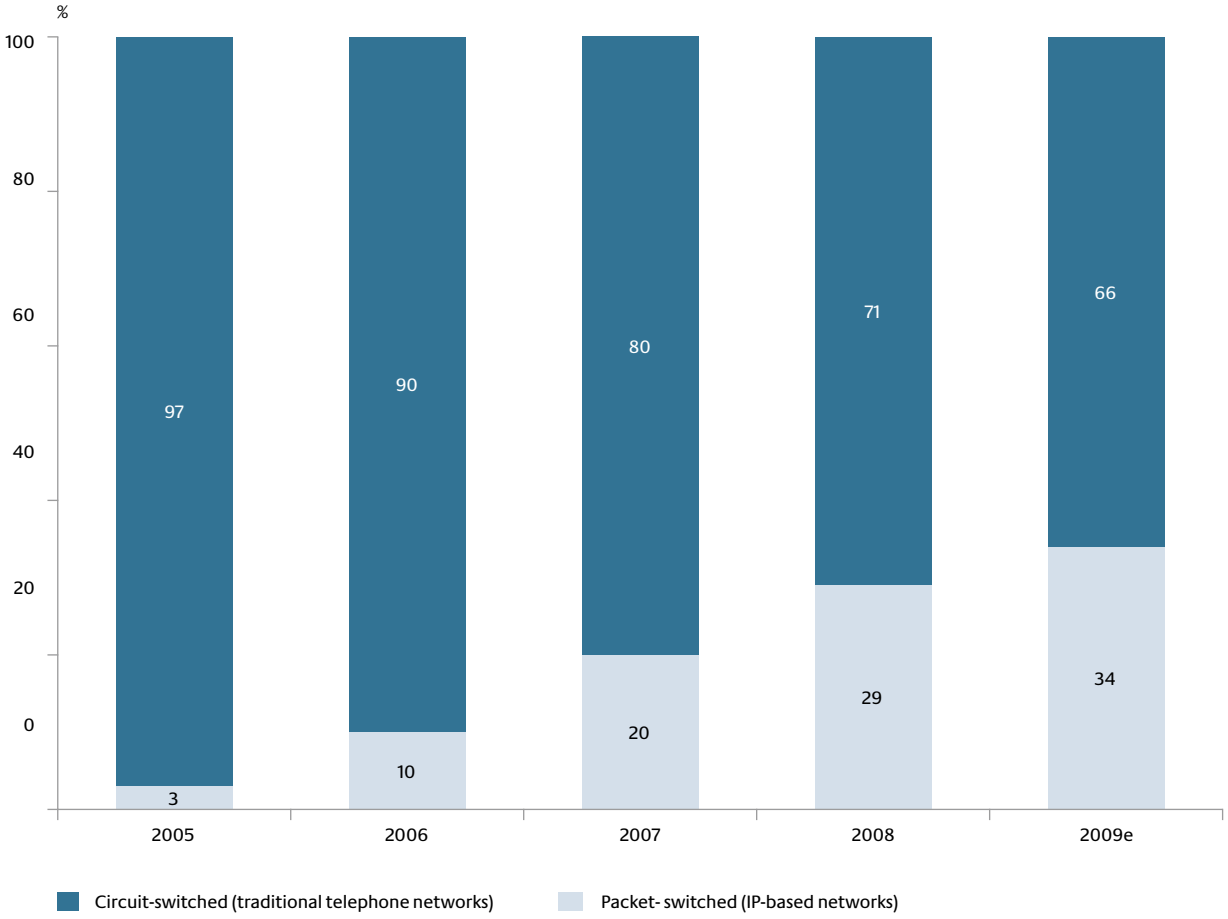
Traffic ratios of access variants with alternative providers 2005–2009



[8] Not including calls to directory enquiries and value-added services.

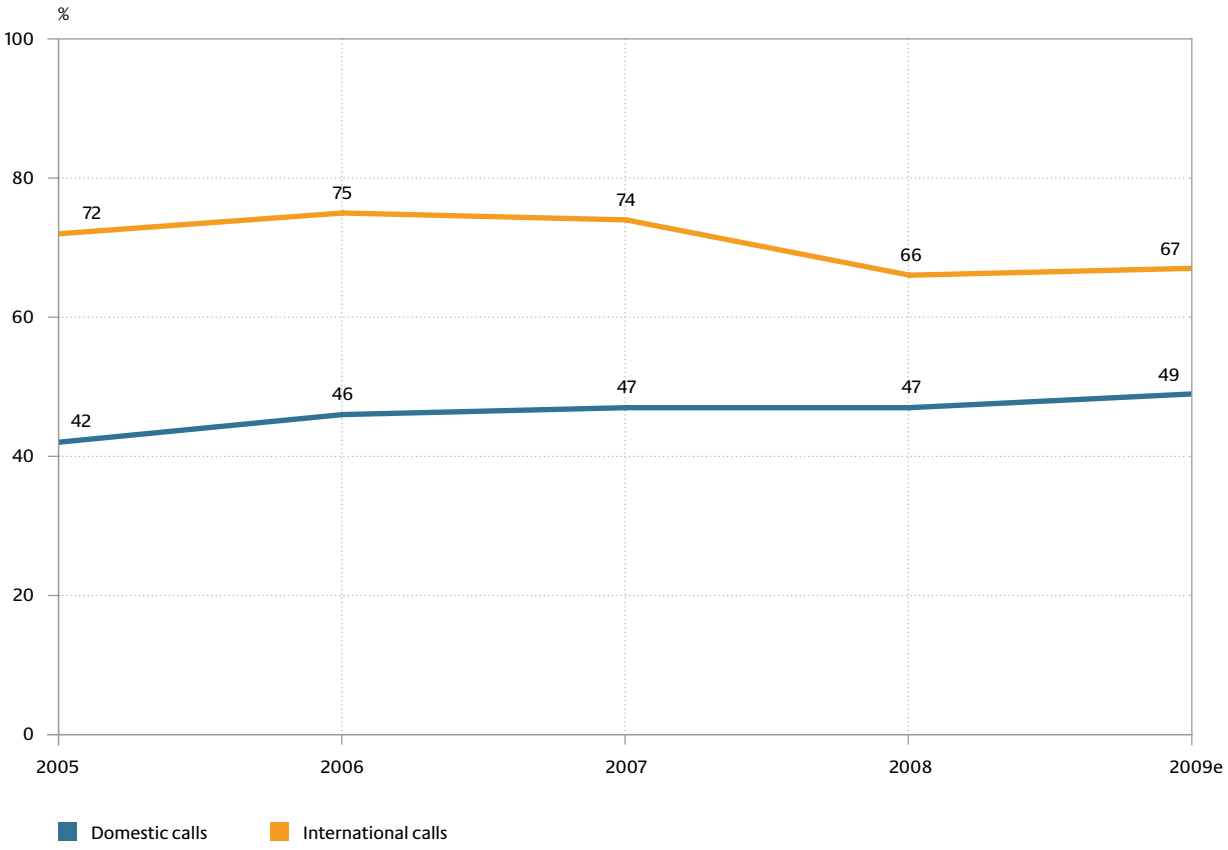
The opposite trend has been observed in relation to the technical implementation of call minutes via direct lines. Whereas the total volume of calls generated via traditional telephone lines (analogue/ISDN) has decreased steadily since 2005, more and more calls are being made via cable and IP-based networks. There has hence been a migration in traffic volumes from traditional circuit-switched telephone networks to packet-switched networks. At present, DTAG's competitors in particular are largely responsible for this development. In 2008, for instance, 29 percent of domestic and international calls transported by alternative providers were being handled via cable and IP-based networks. By the end of 2009, preliminary information indicated that packet-switched networks accounted for every third minute of domestic and international calls transported.

Share of packet-switched technologies in domestic and international calls transported by alternative providers 2005–2009



In the area of domestic calls, DTAG's competitors probably managed to increase their share slightly in 2009. According to estimates made by the Federal Network Agency, DTAG's competitors had a share of approx. 49 percent in the area of domestic calls in late 2009 as opposed to 47 percent the previous year.

Competitors' share in domestic and international calls 2005–2009



In the period under review, competitors' share in international calls remained almost constant at around 67 percent. However, it must be borne in mind specifically in the segment of international calls that so-called peer-to-peer technologies were not taken into account in respect of data transmission.[9] These providers probably account for a considerable volume of traffic in the international calls segment.

MOBILE TELEPHONE SERVICE

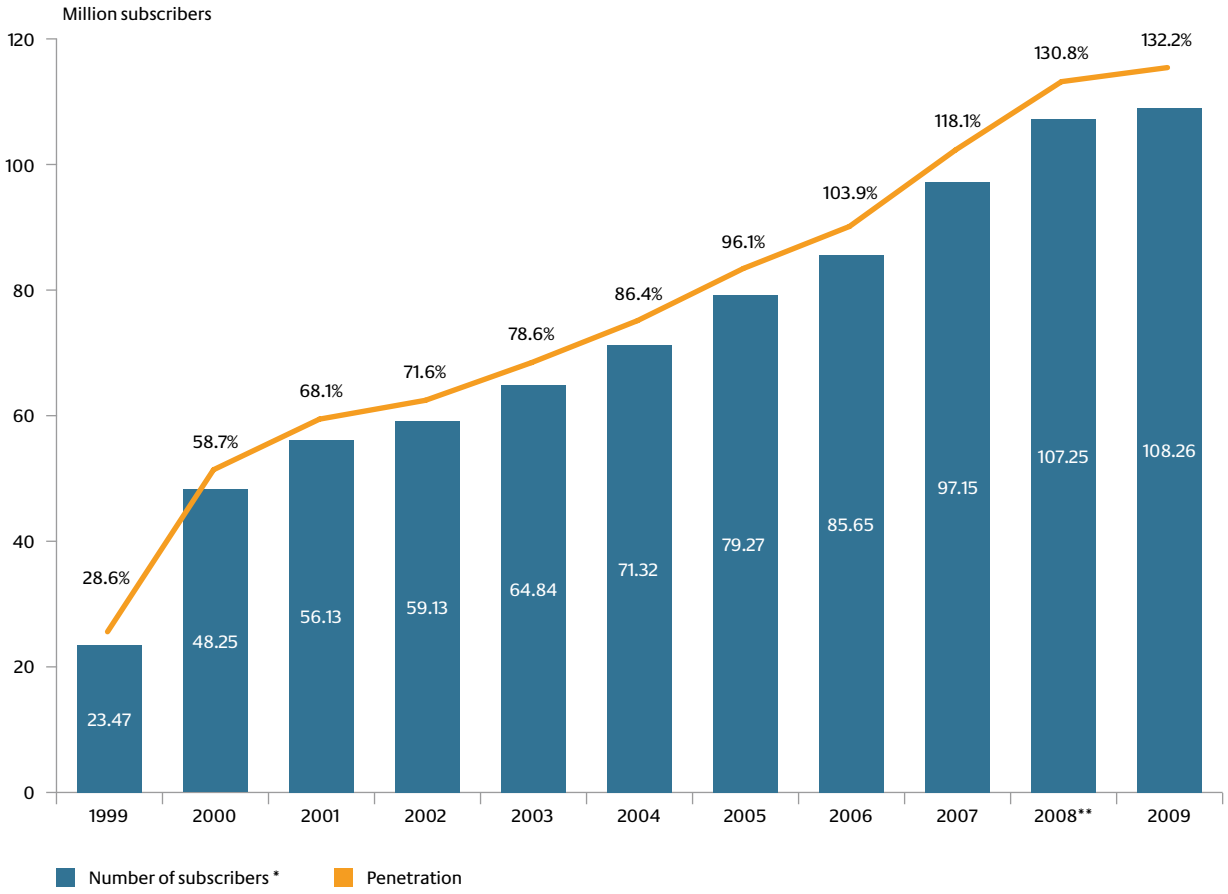
Subscribers

Since 2008 the number of subscribers has not risen as sharply as in the preceding years and is gradually reaching saturation point. It was above all the growing circulation of SIM cards for mobile Internet access that led to the increase in the number of subscribers. However, the number of subscribers was curbed in 2009 as the removal of the number of inactive prepaid customers from the subscriber base by several network operators exceeded the slight increase in new users. This effect also impacted on the distribution of contract and prepaid customers so that by the end of 2009 approx. 56 percent of subscribers were using a prepaid SIM card. Nonetheless, the share of prepaid cards has risen compared to 2007 when it totalled 55 percent. In 2008, the share of prepaid cards was just under 57 percent.

By the end of 2009, the number of subscribers had risen to 108.255 million, meaning that each inhabitant accounted for around 1.3 SIM cards.

[9] These include providers like Skype, for instance. However, as it was not possible to include this traffic in the Federal Network Agency's data survey, this effect cannot be accurately quantified.

Subscriber development and penetration in German mobile communication networks 1999–2009



* Contract conditions. A user can maintain several contract relations. Data up to 2000 incl. C-network.
** Updated values

As in the preceding years, "small" network operators managed to continually expand their market share. Telefónica O2 Germany has more than doubled its market share since 2001. Compared to late 2007, E-Plus managed to raise its market share by 15 percent by the end of 2009.

The number of discount providers'[10] customers continued to rise. While at the end of 2007, discount providers accounted for around 12 million customers, they were catering for more than 20 million customers by the end of the first quarter of 2009. This means discounters have a market share of almost 19 percent. It was above all network operators providing lower and more transparent minute prices who recorded the largest increase in subscribers whom they attracted via affiliated companies and second markets.

The independent service providers including a growing number of fixed network providers who focus on local markets are already catering for 23 percent of all customers, with the restructured service provider freenet AG accounting for more than 70 percent. In 2006, service providers had a market share of 25 percent. This means network operators managed to win back customers by introducing new brands.

[10] The provider with the largest share by a wide margin in this segment is E-Plus, *inter alia*, with the BASE brand.

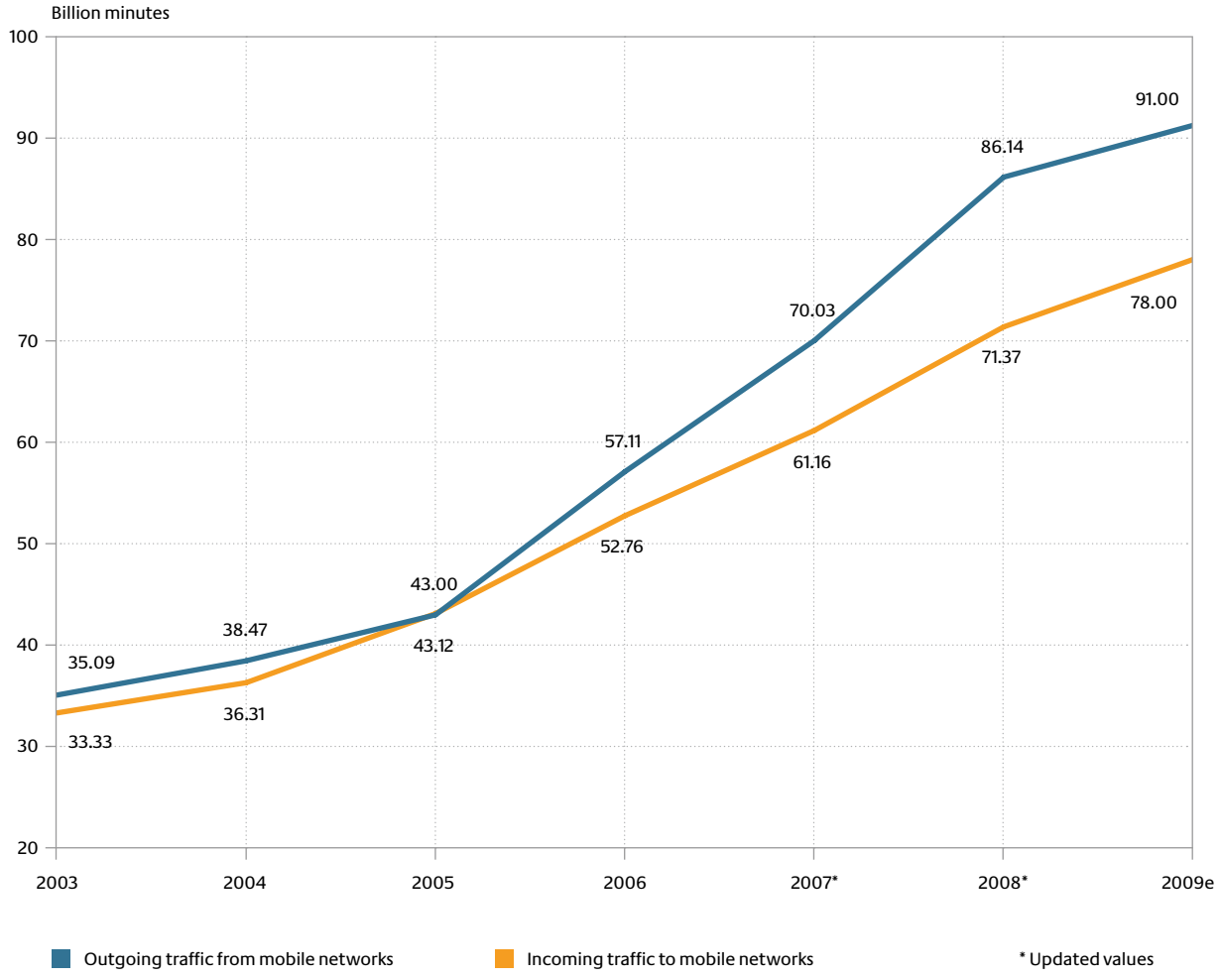
Mobile call minutes

The growing range of flat rates available resulted in a further sharp increase in mobile communication traffic, with the traffic volume reaching over 86 billion minutes in 2008. Whereas each subscriber made approx. 64 minutes of calls each month in 2007, this figure had increased to approx. 71 minutes per month in 2009. The importance of flat rates is also mirrored by the fact that over 80 percent of call minutes were made to fixed networks or to subscribers' own mobile communications network (on-net). This corresponds to the usual scope of application for flat rates. The remaining 20 percent were distributed among the three other mobile communication networks in Germany, international fixed networks and mobile communication networks as well as service numbers.

Flat rates for on-net calls and calls made to fixed networks are available for as little as €2.99 per month[11], many companies are offering flat rates of between €10 and €20 per month.

In 2009, the volume of outgoing calls totalled around 91 billion minutes. The volume of incoming calls amounted to around 78 billion minutes.

Volume of calls made in mobile networks 2003–2009



[11] As at: October 2009. This involves a so-called cash-back tariff in which part of the invoiced amount is transferred back to the customer.

Around 50 percent of call minutes (excluding service numbers) in the first quarter of 2009 were invoiced via flat rates. In 2007, the share of flat rates accounted for one-third, in 2008 this share had risen to 45 percent.

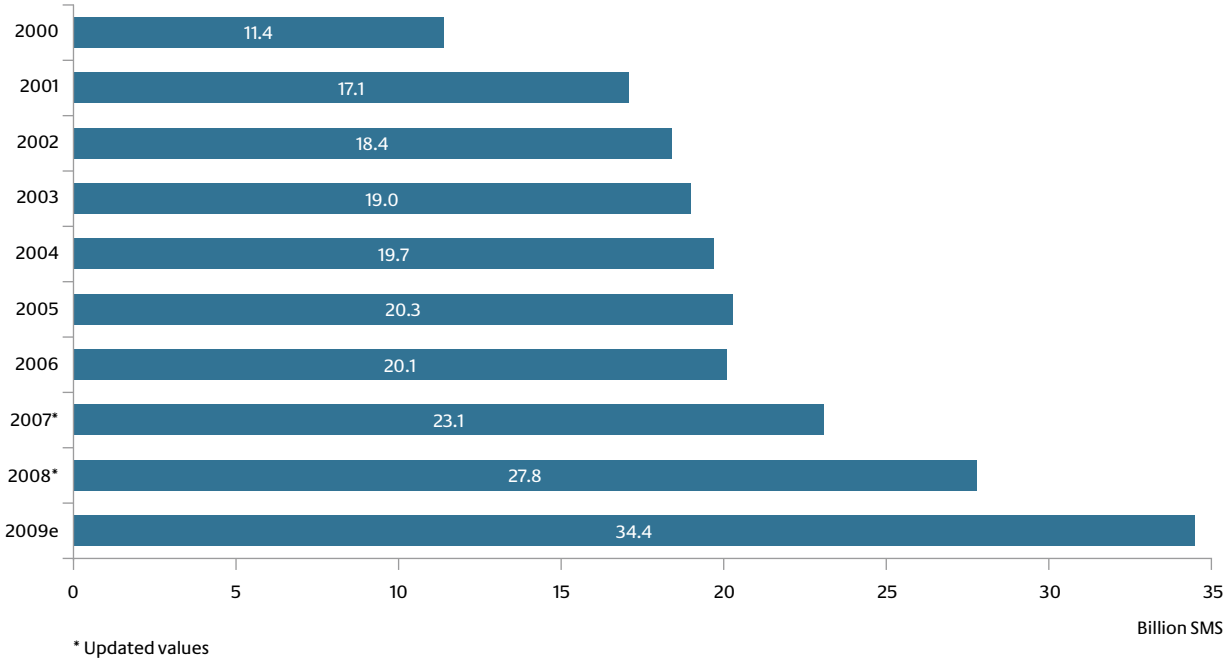
The relative importance of home-zone rates which three of the four network operators are offering declined even though the volume of calls has risen. Whereas the volume of calls made by the end customers of network operators handled within a home-zone accounted for over 23 percent in 2007, this share dropped to 20 percent in 2008 and to just under 18 percent in the first quarter of 2009.

Text and multimedia messaging

Although there was little change in the number of text messages sent between 2003 and 2006, there has once again been a sharp increase since 2007. With the total number of text messages sent in 2007 reaching 23.1 billion, the number of text messages sent in 2007 was about 15 percent higher than in 2006.

In 2008, the number of text messages sent via SMS (short message service) rose by 20 percent. 2009 saw a further sharp increase of 24 percent compared to 2008. This means the number of short messages sent has trebled since 2000. This development can be attributed to the majority of text messages being sent on-net which is actually overcompensating for the decline in the number of text messages sent in other mobile networks. Whereas the share of on-net text messages sent in 2007 was just under 47 percent, this share had risen to almost 64 percent by the first quarter of 2009. This can be attributed to the common tariff structure that allows a large number of on-net text messages to be added at an affordable cost. This means there is a noticeable difference between rates charged for on-net text messages sent and text messages sent to other networks. While it cost less than 10 cents to send an on-net text message in 2007 and around 4 cents by the first quarter of 2009, not including the monthly standing charge, the cost of sending a text message to another network was approx. 19 cents or just under 17 cents by the first quarter of 2009.

SMS sent 2000–2009



* Updated values

The number of MMS (multimedia messaging service) messages sent has remained more or less constant for the past two years. Just under 187 million multimedia messages were sent in 2008, around 1 million more than in 2007. In 2006, more than 154 million multimedia messages were sent.

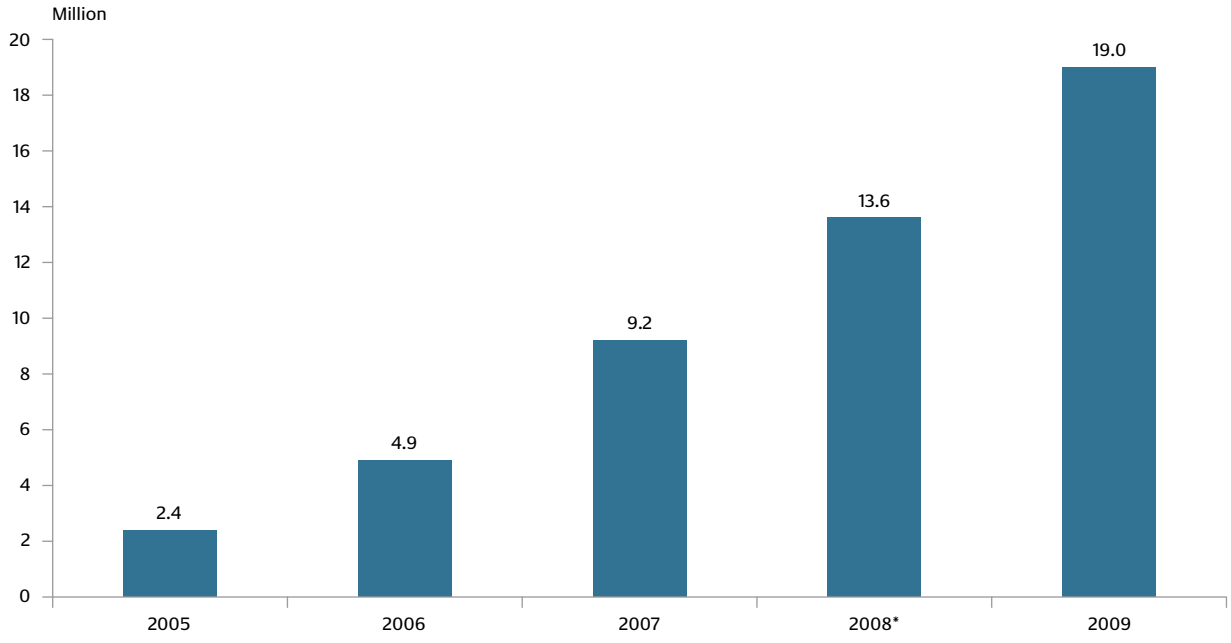
The number of premium text messages sent remained stable, similar to the number of multimedia messages sent. In 2008, around 285 million premium text messages were sent, 1.4 percent more than in 2007. Premium text messages are sent to short dial numbers and are used to provide value-added services such as entries into competitions or downloading ringtones and music.

Mobile broadband

The expansion of third generation networks is well advanced. By the end of the first quarter of 2009, the mobile communication infrastructure comprised, inter alia, around 39,000 Universal Mobile Telecommunications Systems (UMTS) radio base stations and around 120,000 active UMTS radio cells. This means that in theory UMTS services are offering coverage of just under 70 percent.[12] Relative to the population, network coverage varies between 59 percent and 81 percent depending on the respective network operator.

However, this potential has not yet been fully tapped as not all subscribers have UMTS-enabled terminal equipment. By the end of the year 2009, mobile networks had around 26 million UMTS terminals of which around 19 million subscribers used UMTS services on a regular basis. In 2007, the number of subscribers totalled 9.2 million.

Number of regular UMTS users 2005–2009



* Updated value

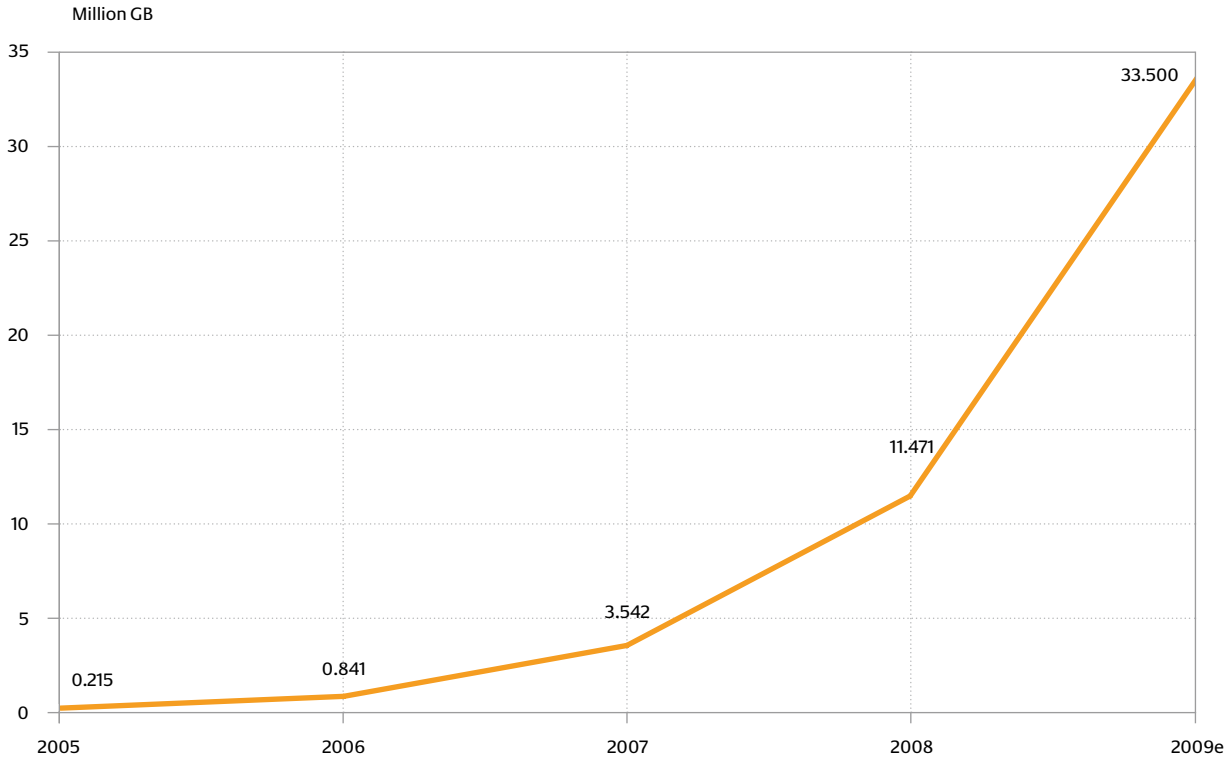
[12] Source: study published by HSDPA-UMTS-verfuegbarkeit.de in September 2009.

More and more subscribers are using the Internet and e-mail services while they are on the move. The data transmission rates of the GPRS expansion technology EDGE (Enhanced Data Rates for GSM Evolution) are sufficient to facilitate mobile use of these services. In the meantime, more than 2.6 million cards are in circulation which are used exclusively for data transmission purposes. While EDGE offers a maximum transmission rate of 220 kbit/s per cell, downstream rates of up to 14.4 Mbit/s per cell are available in respect of HSDPA (High-Speed Downlink Packet Access) in selected locations such as airports and railway stations. However, the average data transmission rates are way below this. In a test conducted by the magazine Connect in October 2009, the test winner Vodafone was offering an average data transmission rate of over 2,000 kbit/s meaning that it was offering the same speed as DSL.

The introduction of LTE technology (Long-Term Evolution) that some network operators are already testing is intended to facilitate downstream transmission rates of up to 340 Mbit/s per cell in the long term.[13]

The strong growth in the area of mobile Internet usage can be attributed above all to the rapid fall in rates charged for data transmission. Monthly flat rates are already available for less than €20, daily flat rates (24 h) are available for less than €2.50. This meant the average price per MB fell to less than 10 cents (including VAT but excluding the monthly standing charge) in the first quarter of 2009. In 2007, the average charge for one MB was around 40 cents. Accordingly, the volume of data transmitted in 2008 totalled 11.5 million GBytes, corresponding to a three-fold increase year-on-year. This trend continued in 2009 albeit showing a slight dip with the volume of data transmitted totalling approx. 33.5 million GBytes.

Data volume in mobile communication networks 2005–2009



[13] http://www.teltarif.de/telefonica-lte-test-deutschland/news/35929.html

INTERNET

Internet use

A wide range of surveys on Internet usage have confirmed the importance of Internet communication in everyday life, with all of the surveys arriving at similar conclusions. The most recent structural data provided by the research group Wahlen e. V. shows that in the fourth quarter of 2009, 72 percent of all German adults over the age of 18 were using the Internet at home, at work or elsewhere. According to ARD/ZDF-Onlinestudie 2009 conducted at the beginning of the year, 67.1 percent or 43.5 million Germans over the age of 14 had Internet access. This shows that the steady rise in demand for multimedia applications is characteristic of the latest Internet trend. 62 percent (compared to 55 percent in 2008) of all Internet users were downloading videos, for instance, via video portals or media libraries and were watching TV on the Internet either live or recorded. 51 percent (compared to 43 percent in 2008) listened to audio files such as music files, podcasts and radio programmes on the Internet. According to (N)ONLINER Atlas 2009, a regular study carried out by the D21 initiative implemented by TNS Infratest from February until May 2009, the share of persons (over the age of 14) who use the Internet in Germany was four percentage points higher than the previous year at 69.1 percent. This is hence the second-highest growth rate recorded in the past six years. In 2009 the broadband boom was the key driver of Internet growth. Two-thirds of all Internet users had broadband access, the majority of them DSL connections.

According to the Federal Association for Information Technology, Telecommunications and New Media BITKOM, 42 percent of the German population went shopping on the Internet in 2009. This means Germany ranks fourth behind Great Britain, Denmark and the Netherlands compared to other European countries. In 2008, according to the market research company Gesellschaft für Konsumforschung (GfK), 2.2 million people downloaded films from the Internet. Given that the annual increase rate is 80 percent, it can be anticipated that in 2009 the number of downloads is set to top almost 4 million. Daily use of the Internet via PC is rapidly approaching 40-minute sessions.[14] A recent report[15] showed a global increase of 30 percent for mobile data services in the second quarter of 2009. In Europe, the increase was 28 percent. The report also showed that users expect to be able to access the same websites and expect the same level of service in mobile networks as they do in fixed networks. The British market researchers at Informa Telecoms and Media expect the USA to continue to be the most important broadband market until 2013. The number of mobile broadband users is expected to rise from 62 million in 2008 to 252 million by 2013.

Bundesverband digitale Wirtschaft (BVDW) e. V. (the organisation that represents the interests of companies in the field of interactive marketing, digital content and interactive added value) has also identified strong growth potential for mobile Internet usage in Germany. An initial survey carried out as part of the study "BVDW Mobile Meter" revealed that even now 35 percent of all respondents use mobile Internet, receive e-mails and download music and videos on their mobile phones. 6 percent avail of online offers on their mobile phones several times a day, another 6 percent do so several times a week. Around

[14] Markt-Media-Studie Verbrauchs- und Medienanalyse VuMA (www.vuma.de)
[15] Global Mobile Broadband Traffic Report, Allot Communications, July 2009

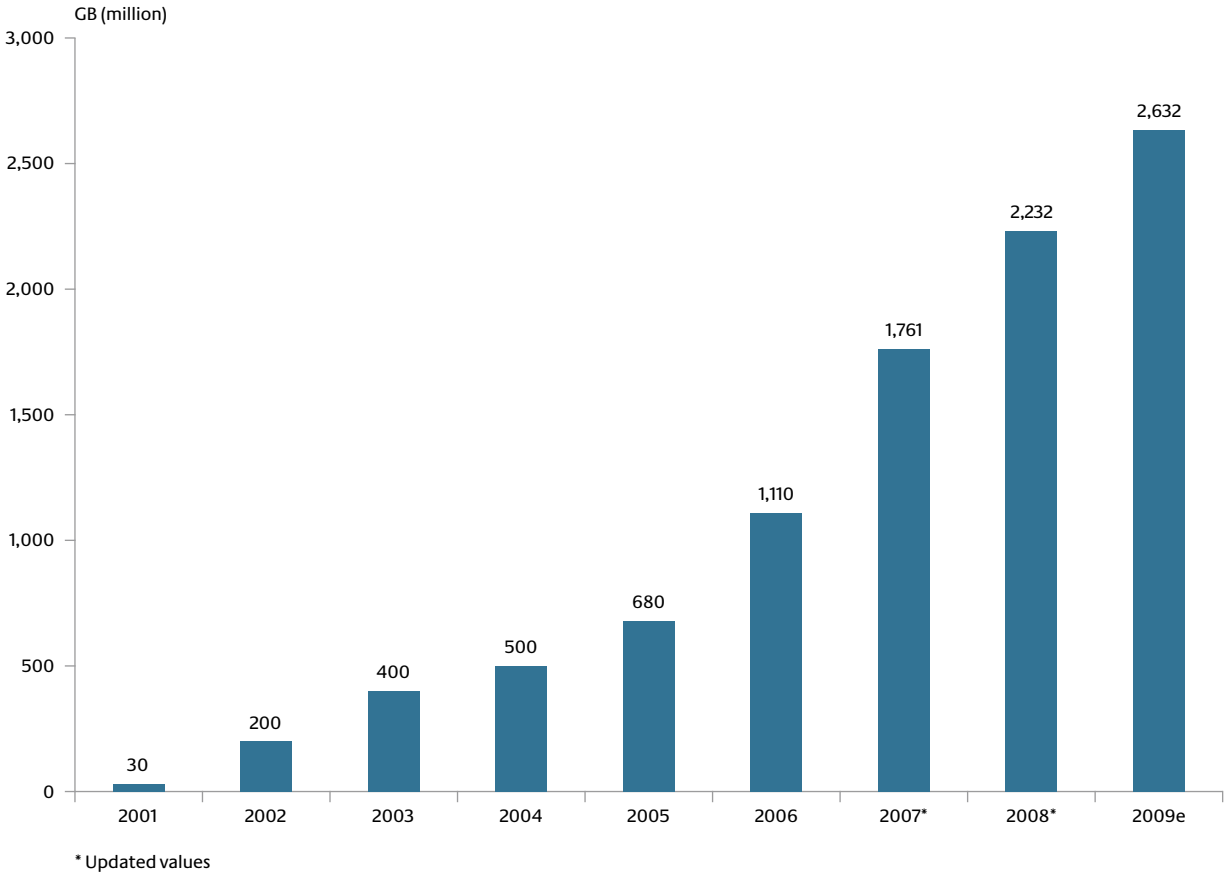
21 percent are planning on using mobile services within the next year—8 percent actually have firm plans to do so.

Internet traffic

The growing number of call minutes to the Internet generated via traditional telephone lines clearly highlights the migration of narrowband dial-up connections towards broadband access technologies. The volume of traffic generated by narrowband connections had dropped further to an estimated 10 billion minutes by the end of 2009.

By contrast, the volume of broadband traffic measured in GBytes will continue to increase sharply. Information available at present indicates that the data volume increased to around 2.6 billion Gbytes by the end of 2009.

Traffic volume broadband 2001–2009



The increase in traffic can be attributed in particular to the fact that more and more data-intensive applications such as TV (IPTV) and video-on-demand (VoD) are being implemented via broadband applications. In addition, IP-based telephone services are also contributing to the above-mentioned trend.

The average traffic per broadband connection (GBytes/month) was around 8.8 Gbytes in 2008. It can be assumed that this value increased slightly once again in the course of 2009.

Voice over IP

VoIP is a service allowing voice transmission via a packet-switched network based on Internet Protocol. The use of VoIP services generally requires broadband access to the Internet.

While VoIP has been commonly used in company networks for quite some time now, this service gained huge momentum for private use in the period under review. At the end of 2008, around 75 providers were already offering VoIP services on the basis of DSL lines or Internet access via the cable TV infrastructure oriented to private use.

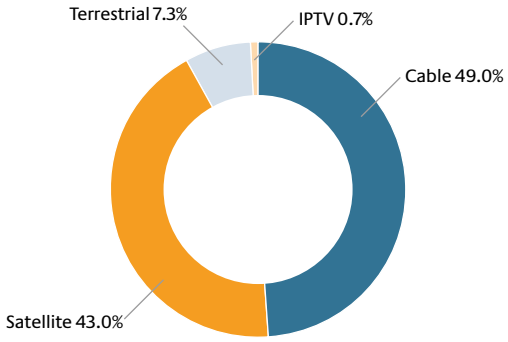
By the end of 2008, these providers were catering for more than seven million VoIP customers. However, it must be taken into consideration that only telephony customers of cable TV providers (1.5 million) and customers of the providers of so-called full connections (approx. 2.5 million) were using VoIP technology exclusively for voice connections. Owing to the traditional practice of bundling DSL and telephone lines, a large number of customers had a traditional analogue or ISDN line in addition to the VoIP service. Information available to the Federal Network Agency suggests that the share of this customer group declined sharply in the first half of 2009. Internet service providers in particular were trying to encourage their customers to switch to full connections on the basis of new wholesale products such as bit stream.

In total, VoIP users generated a domestic and international call volume of around 27 billion minutes via IP-based networks in 2008. For 2009, it is estimated that this value will increase to around 33 billion minutes. In the IP-based voice connection segment, DTAG's competitors had a share of over 90 percent in the period under review.

Broadcasting/cable TV

According to figures provided by Société Européenne des Satellites (SES), 49 percent of the around 38 million German households with television received their signal via cable by year's end 2008 (this includes households with shared satellite systems or their own satellite receiver). 43 percent received their signal via their own satellite dish and 7.3 percent were using terrestrial DVB-T. Internet television via a DSL connection (IPTV) played a minor role at just 0.7 percent.

Infrastructural connection of TV households in 2008



Source: SES/ASTRA

More detailed analyses show the growing trend towards digitisation. The decline in analogue customer numbers in favour of digital cable and satellite reception meant that more than every second household in Germany had digital reception, at over 20 million

households with television. Migration from analogue to digital reception is likely to vary—depending on the level of reception available. The public broadcasting corporations ARD and ZDF are planning to discontinue analogue broadcasting of their programmes via satellite on a specific date, namely 30 April 2012, whereas with cable TV the two systems will probably be used in parallel over an extended period. Cable networks which were originally intended for use only to broadcast TV programmes have been upgraded to make them capable of receiving back channel signals in many locations in the past few years which means they can provide voice telephony and Internet access. The standard conversion currently being undertaken by a large number of cable network operators to DOCSIS 3.0 (Data Over Cable Service Interface Specification) means it will soon be possible to offer customers bandwidths of over 100 Mbit/s. Yet the costs of upgrading are less than 30 percent of the costs that would be incurred by fibre optic connections (FTTH) in traditional fixed networks.[16]

[16] Source: Arthur D. Little: The Moment of Truth: Cable Infrastructure as a Competitive Next Generation Access (NGA) Platform in A Financial Crunch?

KEY FIGURES AND COMPETITORS' SHARES IN THE GERMAN TELECOMMUNICATIONS MARKET

Key figures	2007	2008	2009e
Revenues (€ billion)	63.9	62.3	60.3
Investment (€ billion)	7.1	7.2	–
Employees	204,600	188,100	187,000[1]
Telephone lines/access points (million)	38.58	38.90	38.93
– PSTN/ISDN (incl. öTel)	37.00	34.90	32.85
– Telephony via cable TV networks	0.81	1.53	2.3
– Voice access points via unbundled DSL connections used for VoIP	0.83	2.47	3.78
Total broadband connections (million)	19.6	22.6	25.0
Penetration rate (relative to households)	49.3%	56.4%	62.4%
– DSL	18.5	20.9	22.4
> Deutsche Telekom AG (DTAG)	9.0	10.6	11.5
> Competitors	9.5	10.3	10.9
of which * Subscriber lines	6.0	7.8	8.7
* Bit stream (DTAG)	0.0	0.8	0.8
* Resale (DTAG)	3.5	1.7	1.4
– Cable modem (competitors)	1.0	1.6	2.3
Subscriber lines leased from DTAG (million)	6.4	8.4	9.2
Mobile subscribers (million contractual relationships)	97.2	107.2	108.3
Penetration rate (relative to households)	118.1%	130.8%	132.2%

Competitors' shares	2007	2008	2009e
Revenues	52%	54%	54%
Investment	54%	54%	–
Telephone lines/access points	19%	27%	33%
Broadband connections	54%	53%	53%
DSL (including resale/bit stream)	51%	49%	49%
Mobile subscribers (relative to networks)	63%	64%	64%

[1] As at 31 March 2009

The sum totals indicated in tables and charts may deviate from the cumulative value of individual values because they have been rounded up or down.

Ruling Chamber decisions

Flexibilisation and allocation of frequencies—removal of markets from sector-specific regulation—measures in the area of price regulation—rates charged by DTAG for access to the local loop—mobile network termination rates—rates charged for IP bit stream access

RULING CHAMBER 1

Wireless network access for the provision of telecommunications services in frequency bands 800 MHz, 1.8 GHz, 2 GHz and 2.6 GHz

So far, the President's Chamber has issued three decisions on the allocation of frequencies in the bands 1.8 GHz, 2 GHz und 2.6 GHz for wireless network access for the provision of telecommunications services in relation to the ordering and selection of the auction procedure and on the allocation conditions. Frequencies in the bands 790 to 862 MHz (the so-called digital dividend) were included in this procedure.

In June 2009, the President's Chamber of the Federal Network Agency had held a hearing on the draft of a decision to combine the procedures to allocate frequencies in the frequency bands 790 to 862 MHz and 1.710 to 1.725 MHz and 1.805 to 1.820 MHz with the procedure to allocate frequencies in the frequency bands 1.8 GHz, 2 GHz and 2.6 GHz for wireless network access for the provision of telecommunications services.

In addition, the President's Chamber organised a hearing in late July 2009 on the determinations and regulations on the procedure involved in allocating frequencies for wireless network access for the provision of telecommunications services in the frequency bands 800 MHz, 1.8 GHz, 2 GHz und 2,6 GHz (auction rules).

After evaluating the comments submitted on the consultation drafts, the President's Chamber issued decisions on

- Combining the procedures to allocate frequencies in the frequency bands 790 to 862 MHz and 1.710 to 1.725 MHz and 1.805 to 1.820 MHz with the procedure to allocate frequencies in the frequency bands 1.8 GHz, 2 GHz and 2.6 GHz for wireless network access,
- ordering the allocation procedure,
- the selection of the auction procedure,
- the terms and conditions of allocation
- the auction rules.

An auction for a total of 360 MHz has been scheduled for the second quarter of 2010.

Flexibilisation and award of frequencies

The following decision was made by the President's Chamber of the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway on the flexibilisation of frequency usage rights for wireless access for the provision of telecommunications services in the bands 450 MHz, 900 MHz, 1800 MHz, 2 GHz and 3.5 GHz.

The existing frequency usage rights in these bands are to be adapted in order to achieve the objectives of technology and application neutrality.

This decision pressed ahead with implementation of the wireless access policy for electronic communications services (WAPECS) adopted by the EU Commission's Radio Spectrum Policy Group (RSPG) in Germany. In its comments on WAPECS, the RSPG ascertained that that service and technology neutrality are policy goals aimed at achieving more flexible frequency usage and that use of the frequency bands mentioned in the statement (inter alia the frequency bands relevant in this respect) should be subject to as few frequency restrictions as possible.

RULING CHAMBER 2

Removal of markets from sector-specific regulation

With regulatory order BK2a 09/001-R of 22 April 2009, the current obligations for domestic calls made in fixed networks at retail level and for calls made from national fixed networks to national mobile networks were revoked. This specifically means that the market for dial-up at a fixed location and call termination (cf. regulatory order BK2a 06/-001-R of 23 June 2006) as well as the market for calls made in domestic mobile networks at a fixed location (cf. regulatory order BK2a 07/001-R of 14 December 2007) are no longer subject to sector-specific regulation under the Telecommunications Act (TKG).

The revocation was made on the basis of market analysis conducted by the President's Chamber of the Federal Network Agency which came to the conclusion that the relevant markets are no longer deemed to be in need of regulation pursuant to Section 10 subsection 2 sentence 1 TKG. The prerequisites for sector-specific market regulation hence do not apply.

Issue of a regulatory order on access to the public telephone network at a fixed location (Market 1 according to Relevant Market Recommendation 2007)

The regulatory order for the access market issued in 2006 (BK2a 06/001 R) continued to apply in 2009. The draft of a revised regulatory order was published in the Official Gazette of the Federal Network Agency on 18 March 2009. 23 companies and associations submitted written comments on the draft which were subsequently evaluated. The oral hearing was held on 24 April 2009. On 16 November 2009, the European Commission was notified of the draft regulatory order. Regulatory order BK2a 09/002-R of 25 January 2010 imposed the obligation on DTAG and all of its affiliated companies to offer call-by-call and preselection immediately also in respect of IP-based connections (so-called full IP connections). The obligation to indicate rates for products subject to general terms and conditions and the obligation to give notice of individual contracts imposed with regulatory order BK2a 06/001-R were not upheld as the ex-post rates regulation provided for under TKG was deemed adequate. The resale obligation for connections which had been the topic of discussion for several months did not need to be imposed as a regulation as DTAG had agreed

in advance to develop an offer specifically for service providers.

Measures in the field of rates regulation

Giving notice of individual contracts

By virtue of regulatory order BK2a 06/001-R of 23 June 2006, DTAG was once again obliged in 2009 pursuant to Section 39 subsection 3 sentence 4 TKG to notify the Federal Network Agency of any newly concluded individual contracts upon conclusion of any such contracts, i.e. individually agreed services that are not easily transferable to a large number of other end users. The Federal Network Agency examines the contracts submitted in order to establish whether there are any reasons to suspect a breach of Section 28 TKG. In the year under review, a total of 57 contracts were submitted and examined by the Ruling Chamber. In one case, proceedings pursuant to Section 38 subsection 2 and Section 28 TKG were suspended, however, in another case involving a contract for which notice was given in 2008, proceedings were instituted. Furthermore, eight complaints were received about contracts that had already been concluded, with proceedings being instituted in two cases. In six cases, the Ruling Chamber held hearings on penalty proceedings pursuant to Section 149 subsection 1 (7) TKG. The new regulatory order BK2a 06/001-R no longer stipulates that notice must be given on the conclusion of individual contracts.

Giving notice of price measures

Regulatory order BK2a 06/-001-R of 23 June 2006 in conjunction with Section 39 subsection 3 sentence 2 TKG imposed the obligation on the companies belonging to DTAG to give the Federal Network Agency two months' notice of any rates measures for access to the telephone network at a fixed location before these measures enter into force. In the course of 2009, the Federal Network Agency was notified of two price measures. The Federal Network Agency examined these measures to ensure they were clearly compatible with the requirements set forth in Section 28 TKG. However, it was not necessary to prohibit tariff measures owing to foreseeable violations of the law on competition. Unlike approval procedures, examination of rates indicated is not conclusive and leaves open the option, despite notice being given, of the rates being subsequently reviewed pursuant to Section 39 subsection 3 sentence 1 in conjunction with Section 38 subsections 2 to 4, 28 TKG. This applies in particular if the Federal Network Agency becomes aware of facts, for instance, through complaints filed by competitors justifying the assumption that a company is abusing its dominant position in the market. The new regulatory order BK2a 06/001-R will not uphold the obligation to give notice of price measures.

Special control of abusive practices

In the area of special control of abusive practices pursuant to Section 42 TKG, proceedings were instituted in one case at the petition of competitors to examine steps taken by DTAG to discontinue certain types of connections (ISDN-Standard, ISDN-Komfort, T-Net-100). The proceedings are still pending.

Access regulation on leased lines

According to regulatory order BK3b-07/007, the rates which DTAG charges for access to termination segments of leased lines at wholesale service level are subject to approval as defined in Section 31 TKG. The Ruling Chamber had already approved rates for a new pricing system for leased lines back in the autumn of 2008 submitted for approval by DTAG. This new pricing

system has applied since 2009. According to this, the former length-dependent rates were replaced by lump-sum rates particularly in the subscriber line area. DTAG filed two more rates approval applications in 2009. For the first time, rates approval was requested and granted for access to leased lines with an Ethernet interface.

RULING CHAMBER 3

Rates charged by DTAG for access to the subscriber line

On 31 March 2009, new rates were fixed for access to DTAG's subscriber lines, the so-called last mile. Since 1 April 2009, competitors have had to pay €10.20 per month to DTAG to lease subscriber lines—previously they were charged €10.50. In January 2009, DTAG had filed an approval application to raise the rates for access to DTAG's subscriber lines to €12.90. The monthly rate is intended primarily to cover the necessary investment, for instance, in material and deployment on the last mile.

The slight reduction in the rates charged for access to the subscriber lines was the result of a carefully conducted, transparent approval procedure. When implementing the examinations prescribed by law, it became apparent that on the one hand the price of civil engineering and copper that are crucial in calculating the value of investment for the subscriber lines had risen since the last decision had been taken two years previously. Yet this trend was overcompensated for by opposite effects, on the other. For instance, the weighted average cost of capital after tax was lower than before at 7.19 percent, even though the return on equity had been calculated at just under 15 percent before tax. Although the Federal Network Agency is now acknowledging much higher procurement costs for loan capital of over 6 percent in view of the financial crisis, this led to a decline in the return on equity. In addition, the effects of the 2008 corporate tax reform which had eased the burden are now being taken into account for the first time. A further reduction in the rates charged for access to the subscriber line which competitors are mainly pressing for was rejected. The Federal Network Agency adhered to the well-established approach it has adopted for the past ten years of calculating rates on the basis of the current replacement costs because this is the best way of creating incentives for investment in state-of-the-art infrastructure. By contrast, rates that are too low would devalue investments already made, would hamper new investment and would therefore contravene regulatory aims.

Rates charged for access to the subscriber line are calculated and approved on the basis of the cost model for the first mile used in previous proceedings and developed by Wissenschaftliches Instituts für Infrastruktur und Kommunikationsdienste (WIK) (Scientific Institute for Communication Services) and on the basis of the cost documentation submitted by DTAG. As the quality of cost documentation has improved, it has been used more so than ever before also in respect of subscriber lines. The monthly rates charged for access to the subscriber lines will apply for a period of two years until 31 March 2011.

Mobile communication termination rates

Once again on 31 March 2009, the Federal Network Agency notified the four German mobile network operators T-Mobile Deutschland GmbH, Vodafone D2 GmbH, E-Plus Mobilfunk GmbH & Co. KG and Telefónica O2 (Germany) GmbH & Co. OHG of the decisions it has taken on

the new rates for call termination in their respective mobile networks, so-called mobile communication termination. According to these decisions, the termination rates for calls made in mobile networks introduced on 1 April 2009 are 6.59 cent/min for the two D-networks and 7.14 cent/min for the E networks.

This means the new rates for T-Mobile and Vodafone D2 are a good 16 percent lower and for E-Plus and Telefónica O2 just under 19 percent lower than the previous rates of 7.92 cent/min and 8.80 cent/min. The rate reduction was based by and large on the sharp rise in traffic in mobile networks that can be attributed in particular to on-net and data traffic compared to the last decision. This positive trend for mobile communications showed that more and more people are using mobile voice and data services than ever before. This led to a stable cost situation, efficient networks and lower rates per minute. In this respect, the approved rates are the result of a redistribution of costs owing to migration in traffic to mobile networks. The reduced termination rates will also prevent fixed network operators from cross-subsidising mobile networks and are therefore taking the aspect of fair competition more effectively into account. It is now up to fixed network operators to pass the reduced wholesale rates on to the consumer.

After the rates of just one E network operator had been determined on the basis of cost documents submitted in the last round of approval in late 2007, which the costs of D network operator were derived from, it was now possible also to determine the costs for D network operators direct on the basis of informative cost documents submitted. When the termination rates were calculated, the ancillary costs and once again the costs for UMTS licenses were also taken into account on the basis of the current valuation. When the interest on capital was determined for mobile networks, the same effects were taken into account as those used to determine the interest on capital for subscriber lines. At 8.29 percent, it was slightly lower than the previous level but slightly higher than the relevant rate of interest for fixed networks.

The distribution of termination rates between D and E network operators has been slightly reduced once again compared to the last rates approval. The reduction takes the fact into account that the disadvantages which E network operators face vis-à-vis D network operators will become less and less significant as time moves on. The approval of mobile communication termination rates has hence been limited to 30 November 2010.

Regulatory order for network interconnection

In April 2009, the Federal Network Agency announced a decision to withdraw partly from regulation at the level of wholesale services. Owing to a comprehensive market survey that had been conducted, the Federal Network Agency arrived at the conclusion that transit services between different networks could also be provided by other providers because alternative network infrastructures are already available. It also ruled that DTAG no longer has significant market power in relation to any such transit services. This explains why the majority of transit services provided via DTAG's infrastructure are no longer subject to regulation. Nonetheless, DTAG is still obliged to route calls through its network for the purposes of call termination.

With this decision, the Federal Network Agency confirmed once again that far from adhering

rigidly to regulation, it is actually willing to abstain from regulation wherever the general conditions allow it to do so. By removing transit services from regulation, the transit rates charged by DTAG are no longer subject to approval by the Federal Network Agency.

By contrast, DTAG will still have to apply to the Federal Network Agency for ex-ante approval of transit rates for routing calls and for call termination in future. Furthermore, it is obliged to ensure that calls made from its network are routed to the networks of its competitors, in particular call-by-call and preselection as well as calls made to value-added telephone numbers in alternative networks.

Within the framework of the regulatory order on network interconnection, the type of services covered were also adapted to technical developments. In future, call services will be subject to regulation that are made to and from domestic subscriber telephone numbers in the number range 32 or to broadband connections in DTAG's network and that terminate via a traditional fixed network interconnection.

Prices of IP bit stream access

In a decision taken on 14 September 2009, the Federal Network Agency approved new rates for the wholesale product "IP bit stream access". Competitors now have to pay DTAG the basic monthly rate of €18.32 compared to €19.15 previously charged for the stand-alone variant. DTAG itself had worked out a price of €18.32. With the stand-alone variant, retail customers no longer require a separate telephone connection in addition to the DSL connection. The price reduction resulted from adjustments that had been made since the last approval of rates owing to changes in the rates charged for other wholesale services that are included in the calculations. The new rates safeguard both stable general conditions for investment in broadband expansion as well as stable price levels for DSL wholesale services.

IP bit stream access is of special relevance for the telecommunications market as DTAG provides competitors with DSL access points and routes the relevant data stream via its concentrator network to the pertinent point-of-presence (POP) where it hands it over to its competitors. IP bit stream enables competitors to offer broadband Internet access to their end customers and is geared mainly towards the mass market. The approval is limited until 30 November 2010 by which time the Federal Network Agency will have conducted a new market analysis and will have issued a new regulatory order for IP bit stream access on the basis of this market analysis.

Access conditions for DTAG's infrastructure

On 7 December 2009, the Federal Network Agency specified the exact terms and conditions under which DTAG is obliged to grant other network operators access to its infrastructure. The fixed networks division of Vodafone AG & Co. KG (Vodafone) had submitted a relevant order application to the competent Ruling Chamber of the Federal Network Agency in early August 2009. Negotiations launched in the summer of 2008 between DTAG and its competitors did not lead to voluntary solutions being found that were agreeable to all parties despite intensive efforts being made. As a result of this decision, competitors now have access to so-called multi-functional casings. These grey casings are special cable distributors which DTAG installed on public roads and paths as part of its broadband expansion.

Furthermore, network operators also have access to cable conduits and, if no conduit capacity is available, to unconnected fibre-optic cables of DTAG. This means competitors can now deploy fibre-optic-based infrastructures for special broadband applications without having to carry out the time-intensive and cost-intensive installation and digging work DTAG was required to perform with its VDSL roll-out. In the regulatory decision between DTAG and Vodafone, the concrete technical and operational terms were specified on which DTAG is obliged to grant access to its infrastructure. It says in future that network operators will be allowed to deploy their own active transmission systems to provide broadband access, so-called DSLAMs (Digital Subscriber Line Access Multiplexer), in the multi-functional casings of DTAG. To this end, DTAG is obliged to grant competitors access to its multi-functional casings. In addition, DTAG is obliged to permit network operators to deploy fibre-optic cables in the cable conduits themselves and to grant access to the cable conduits in order to do so. DTAG had previously refused to do both.

The rates Vodafone will now have to pay DTAG for access services DTAG is henceforth obliged to provide by virtue of the regulatory order will be determined in separate rates regulation proceedings in the spring of 2010 based on the cost of efficient service provision. The pricing benchmark has also been specified by a regulatory order issued in mid-2007.

Further decisions

Dynamic development of business models in the telecommunications market—the Federal Network Agency creates number resources and adapts usage conditions—owing to the increase in demand for wireless communication, the international coordination of spectrum usage is gaining momentum—international tasks also performed in the area of electro-magnetic compatibility and standardisation—radio monitoring and inspection service assists with and paves the way for frequency regulation decisions—database for management of emergency calls established

NUMBERING

Various number resources are inevitably required for the operation of telecommunications networks and for the provision of telecommunications services. The Federal Network Agency ensures that all resources required on the liberalised telecommunications market are available on a non-discriminatory basis, in good time and in sufficient quantities. It also determines the purposes for which and the framework conditions under which each type of number is to be used and allocates numbers in blocks or individually to providers and retail customers. Given the ceaseless, dynamic development of technologies and business models on the telecommunications market, the Federal Network Agency reviews on a regular basis whether existing arrangements need to be adapted or new number resources need to be created in order to promote competition and technological developments and to protect consumers' interests.

Allocations made in 2009

In the range of local network call numbers and national subscriber numbers (number range (0)32), allocations developed as follows up to 2009:

Year	Blocks of 1,000 local numbers assigned	Total number of blocks of 1,000 local numbers assigned	Total number of assignees by year end
1997/1998	3,088	3,088	53
1999	3,662	6,750	72
2000	44,111	50,861	89
2001	8,511	59,372	86
2002	4,281	63,653	81
2003	5,190	68,843	76
2004	11,440	80,283	74
2005	14,000	94,283	85
2006	31,571	125,854	94
2007	22,349	148,203	96
2008	11,995	160,198	99
2009	15,445	175,643	103

In terms of the most important service telephone numbers, allocations have developed as follows over the past four years:

Service	Numbering range	Numbers allocated in 2006	Numbers allocated in 2007	Numbers allocated in 2008	Numbers allocated in 2009	Total number of phone numbers allocated
Freephone services	(0)800	11,500	9,216	16,105	9,512	185,964
Shared cost services	(0)180	11,005	9,620	9,564	13,561	149,154
Premium rate services	(0)900	7,378	10,497	5,819	6,737	87,049
Personal numbers	(0)700	3,166	2,177	1,774	2,042	101,143

In addition to telephone numbers, numbers were also allocated that are required for technical addressing and traffic management. This is where porting codes, National Signalling Point Codes (NSPC), International Signalling Point Codes (ISPC), International Mobile Subscriber Identities (IMSI) and Individual TETRA Subscriber Identity (ITSI) are given as an example.

Type of number	Numbers allocated in 2008	Numbers allocated in 2009	Total number of phone numbers allocated
Porting codes	13	12	232
National Signalling Point Codes (NSPC)	106	150	2997
International Signalling Point Codes (ISPC)	28	16	486
Blocks of International Mobile Subscriber Identities (IMSI)	2	2	33
Blocks of Individual TETRA Subscriber Identity (ITSI)	25	16	109

Numbering concept

In November 2009, a numbering concept was published for the very first time after being preceded by a hearing. The numbering concept analyses developments in the telecommunications sector and indicates what changes are to be made to the numbering plan. As such, all types of numbers are considered and all developments are placed in an overall context. The aim of this concept is to create greater planning security for the operators of telecommunications networks and for the providers of telecommunications services. At the same time, the measures to be implemented under the concept are intended to enhance consumer protection.

According to Section 2 of the Telecommunications Numbering Regulations (Telekommunikations-Nummerierungsverordnung), the Federal Network Agency is obliged to publish a numbering concept on levels of occupancy and to provide information on the development of demand for each type of number. As such, the numbering concept identifies the individual numbering spaces, numbering ranges and numbering sub-ranges for which resources are expected to become scarce in the years to come. The concept makes provision to amend regulatory specifications for a range of numbers. The Federal Network Agency will, for instance, be required to examine thoroughly before telephone numbers are allocated to value-added services whether unlawful use of the numbers is to be expected. Consumer protection has been strengthened by ruling out so-called chain allocations in the area of value-added services, as it is easier to determine who the service provider is when disputes arise if no chain allocations have been made. Although mobile service providers will continue to be responsible for managing mobile short dial numbers, the aim is to create a generally binding legal framework. This is intended to simplify the sales of short dial services by specifying, for instance, that a service provider will be able to use the number allocated by the network operator in all mobile networks. The Federal Network Agency will publish a numbering concept each year from now on.

Introduction of directory enquiries in the number range 118

An amendment made to the TKG will allow service providers in future to use subscribers' inventory data in order to notify them that another user wishes to talk to them. This also applies to the inventory data of subscribers whose numbers are not listed in public telephone directories provided this does not affect the subscriber's request for confidentiality. Calls may only be put through to the requested subscriber if he/she has explicitly consented in advance to accepting call requests.

These type of directory enquiry services may only be provided in the 118 number range in future owing to a decision taken by the Federal Network Agency in August 2009. Up to now, the only services that could be provided in the 118xy number range were directory enquiries. They were always permitted to provide telephone numbers when people asked for them. From now on, these numbers will not only offer a directory enquiries service but also a service that puts calls through to subscribers whose telephone numbers are not listed but who have already given their consent to calls being put through. The 11800x numbering sub-range will be used exclusively to provide any such directory enquiries.

Enquiries about number management

In 2009, the number management call centre of the Federal Network Agency at Fulda received no less than 26,768 enquiries, the majority of which concerned the allocation of telephone numbers. As a rule, the number management call centre answered queries about local numbers and valued added service ranges (0)800, (0)180, (0)900 and (0)137, with a large number of enquiries being received about charges for calls made to these numbers. Enquiries were also received on other matters such as call charges for the individual number ranges and commissioning a service provider to activate telephone numbers that have been allocated.

Theme	Number of enquiries received in 2008	Number of enquiries received in 2009
Allocation of telephone numbers	19,061	24,818
Allocation charges	1,213	883
Other matters	1,386	1,067
Sum total	21,660	26,768

FREQUENCY REGULATION

The well-balanced and efficient use of the frequency spectrum is an important infrastructure prerequisite for any modern industrialised country. Owing to the ever increasing demand for wireless communication options and the physical features of wave propagation, the international coordination of the spectrum is steadily gaining momentum. The Federal Network Agency performs a wide range of tasks in the field of international frequency regulation that have both conceptual and implementing characteristics in a wide range of areas.

Wireless network access to facilitate the provision of telecommunications services in the bands 800 MHz, 1.8 GHz, 2 GHz and 2.6 GHz

In Germany, the entire spectrum available in frequency bands 1.8 GHz, 2 GHz und 2.6 GHz is supposed to be available simultaneously for wireless network access for the provision of telecommunications services.

In addition, parts of the frequency spectrum in 800 MHz hitherto used for analogue broadcasting is being released in order to enhance mobile broadband coverage. These frequencies which are referred to as the “digital dividend” are particularly suitable for providing mobile access to the Internet in rural regions because they only require a few radio masts. The higher frequency spectrum at 1.8 GHz, 2 GHz and 2.6 GHz is more suitable for small cells than for cities and densely populated areas owing to their dissemination features. In the interest of promoting a swift, unbureaucratic procedure, the frequencies in frequency bands 1.8 GHz, 2 GHz und 2.6 GHz were incorporated into the procedure for allocating frequencies in the frequency bands offering wireless network access for the provision of telecommunications services in line with the federal government’s broadband strategy. The joint auction of frequencies from various frequency bands means that a total of 360 MHz have been freed up.

Further information can be obtained from the comments submitted on the underlying decisions taken by Ruling Chamber 1 (cf. page 100).

Flexibilisation and allocation of frequencies

In order to accomplish the goals of technology and application neutrality, the President's Chamber of the Federal Network Agency issued the decision on the flexibilisation of frequency usage rights for wireless access for the provision of telecommunications services in the bands 450 MHz, 900 MHz, 1800 MHz, 2 GHz and 3.5 GHz. This decision has taken the trend in telecommunications markets into account that are marked by growing convergence of services and technologies, the integration of markets that had previously been separate, a rapid surge in demand for broadband access to telecommunications networks and by the comprehensive flexibilisation of frequency regulation.

Further information can be obtained from the comments submitted on the underlying decisions taken by Ruling Chamber 1 (cf. page 100).

Key elements for the allocation of frequencies in frequency band 790 to 862 MHz for wireless network access for the provision of telecommunications services

The Federal Network Agency has developed key elements for the allocation of frequencies in the band from 790 to 862 MHz (the so-called "digital dividend") that outline the framework conditions for frequency allocation. The potential of the digital dividend is to be leveraged swiftly in order to promote the provision of broadband Internet access for the population, particularly in rural areas. The Federal Network Agency has therefore drawn up key elements in order to structure the debate early on and to provide all stakeholders with concrete proposals. The framework conditions basically envisage the frequency suitable for use in rural areas being allocated together with frequencies in frequency bands 1.8 GHz, 2 GHz and 2.6 GHz. By incorporating the preparations for the allocation of higher frequencies that are well underway, a special opportunity exists to allocate frequencies swiftly in the 800-MHz frequency bands.

Further implementation of action complex II (adjustment of remaining terms) from the GSM concept

Action complex II that is part of the concept for allocating further spectrum below 1.9 GHz (GSM concept) for wireless network access for the provision of telecommunications services on the basis of the decision taken by the President's Chamber on 21 November 2005 was implemented when the Federal Network Agency published it in its Official Gazette on 28 November 2007. Action complex II provides for a standard term being available for the GSM mobile communication service and offers GSM network operators the opportunity to extend the term until 31 December 2016.

To press ahead with the implementation of action complex II that is part of the Federal Network Agency's GSM concept, agreements were initially concluded with the relevant network operators T-Mobile Deutschland GmbH (D1 network), Vodafone D2 GmbH (D2 network) and E-Plus Mobilfunk GmbH & Co. KG (E1 network) on the payment of a fee pursuant to Section 142 subsection 1 sentence 1 (1) TKG. The level of payment is based on the Frequency Fee Ordinance of 23 November 2006.

Once T-Mobile Deutschland GmbH and Vodafone D2 GmbH had paid the final instalment which was due mid-year, the Federal

Network Agency approved the extension of the limited term of the D1 and D2 licence until 31 December 2016 in accordance with Section 55 subsection 8 TKG.

General assignments

The tool of general assignments allows frequency to be used in accordance with the conditions specified for the respective general frequency allocation. General assignments are made through official channels and are published in the Official Gazette of the Federal Network Agency and on the Internet. Pursuant to Section 55 subsection 2 TKG, general frequency allocation represents the norm. In 2009, for instance, general assignments were issued for multiple Gbyte WAS/WLAN systems used to transmit large volumes of data such as IT systems and entertainment electronics, intelligent transport systems (ITS), i.e. applications aimed at enhancing road safety and so-called warning systems for construction sites in order to prevent collisions.

Private mobile radio

Private mobile radio (PMR) is used by and large for in-house communication of companies and organisations. What distinguishes PMR from commercial mobile radio such as GSM is that users have full functional control over the radio network. This enables them to cater for their own individual communication needs and to make necessary adjustments at short notice. Great importance is attached to frequency coordination by the Federal Network Agency not least because of the individual nature of PMR and because there is no external network operator involved. Private mobile radio is the backbone of trunked radio systems. It is used for in-house communication in the industrial and commercial sector, for instance, by transport and logistics companies and in the field of administration.

Other important areas are, for instance, voice messaging and outside broadcasting (wireless microphones, broadcasting lines, wireless cameras) as well as remote data and remote control (remote control of machinery, remote data retrieval, traffic management systems, alarm systems). More than 5,700 operations were processed in private mobile radio in 2009.

Amateur radio

Persons who wish to participate in amateur radio services must furnish proof that they have special technical know-how and have their own personal amateur radio admission and call sign. In order to prove they have the necessary know-how, the Federal Network Agency issues amateur radio certificates and other calls signs. In 2009, over 1,200 amateur radio admissions and additional call signs were issued.

Satellite radio

Satellite radio includes all facilities that are required for technical communication via or using satellite-supported networks. Typical applications involve the broadcasting of radio and TV programmes, data transmission, space research, weather and earth observation and navigation. In 2009, the Federal Network Agency submitted 297 coordination requests on behalf of German satellite operators to the International Telecommunications Union (ITU) for hundreds of frequency allocations. Bilateral negotiations were subsequently conducted with the satellite operators of other countries in order to safeguard the interference-free operation of all satellite systems in the frequency spectrum.

Narrowband trunked radio

Demand for narrowband trunked radio continued to rise. As in the previous years, user groups' interest is focused on trunked radio frequencies. The commonly applicable TETRA standard meets users' need for a high security standard in voice and data transmission. Meanwhile a distinction is no longer made between public and private trunked radio at the level of allocations. This means that applications for public trunked radio networks will no longer be considered and granted in relation to specific regions but in relation to locations. User groups are mainly in the transport industry (airports, harbours etc.), industry, energy (company fire brigades, energy companies, chemical parks etc.), municipal utilities and transport services.

Short-term assignments

Short-term assignments are made by the Federal Network Agency when sporting and cultural events, state visits and other occasions that attract significant media coverage are held. In 2009, the Federal Network Agency issued a total of 2,345 short-term assignments, providing a total of 13,607 frequency uses in extremely varied frequency ranges between 40 MHz and 22 GHz for 1,423 events. The majority of short-term assignments were issued for motor sports events, cycling races, music events and winter sport events. To ensure interference-free and efficient use of these frequencies, the Federal Network Agency attended 178 events with measuring vehicles.

Frequency allocations for innovative radio applications (experimental radio)

Based upon Section 58 TKG, approx. 795 frequencies were allocated in 2009 for developing and testing new technologies and as part of frequency research projects etc. Deviations from the Frequency Band Allocation Plan and the Frequency Usage Plan are permitted for frequency allocations to provide innovative radio services. However, the radio services and frequency uses entered into the plans must not be affected. The following issues were the focal points of new developments in 2009: systems providing subscriber lines with broadband mobile access in a wide range of frequency bands below 1.000 MHz as well as LTE systems in the frequency bands 800 MHz, 2 GHz and 2.6 GHz.

Preparations for the World Radiocommunication Conference and European harmonisation

The World Radiocommunication Conference 2012 (WRC-2012), as the only body responsible for amending the radio regulations, will be taking important decisions about the global organisation of the use of the frequency spectrum. Major topics will be unmanned aircraft, state-of-the-art radio applications for climate observation and new applications for the safety of international maritime trade. Another focal point will be rendering international agreements on frequency management more flexible. The preparations for WRC-2012, in particular the organisation of European activities within the European Conference of Postal and Telecommunications Administrations (CEPT) are being implemented by the conference preparatory group (WG CPG) in cooperation with the working group on frequency management (WG FM) and the working group for spectrum engineering (WG SE) within the framework of the CEPT Electronic Communications Committee (ECC), with the Federal Network Agency also participating in the bodies of the ECC. This also includes the coordinated representation of European interests at the meetings of working group of the radio

sector on the Radiocommunication Sector of the International Telecommunication Union (ITU-R) in Geneva.

As with previous World Radiocommunication Conferences, national preparations were made in a national group which specifies Germany's positions under the auspices of the Federal Ministry of Economics and Technology. Three subordinate working groups that deal with the specifics of the technical work are chaired by the Federal Network Agency and are accessible to the interested professional public. The Federal Network Agency supports and advises the European Commission in the radio spectrum policy group (RSPG) and the radio spectrum committee (RSC). Harmonising the use of the "digital dividend" and the pan-European allocation of frequencies for mobile satellite communication were among the much-discussed issues.

European Frequency Information System (EFIS)

The European Frequency Information System (EFIS) continued to be further developed in the year under review. It is now possible to import the data on usage rights from the results of previous auction procedures via an external interface.

Frequency Band Allocation Plan

The Frequency Band Allocation Plan Ordinance provides the legal basis for all frequency uses in Germany. It is based on the international allocation plan from the ITU Radio Regulations. This explains why the Frequency Band Allocation Plan Ordinance needed to be revised after amendments had been made to the international allocation plan. At the same time, specific European and national features were taken into account when the plan was drawn up. The most important amendment to the Frequency Band Allocation Plan of 14 July 2009 is that frequency bands between 790 and 862 MHz were identified for international mobile telecommunications (IMT), creating the basis for the scheduled allocation of this frequency band for the use of wireless network access. A further amendment is allocation of the frequency band between 3,400 an 3,800 MHz for mobile radio which can now also be used to provide wireless network access.

Frequency Usage Plan

The Frequency Usage Plan provides a comprehensive overview of all frequency uses in the frequency band between 9 kHz and 275 GHz in the Federal Republic of Germany. It is drawn up by the Federal Network Agency pursuant to Section 54 TKG on the basis of the Frequency Band Allocation Plan adopting the procedure specified in the Frequency Band Allocation Ordinance of April 2001. The Frequency Usage Plan contains information about frequency band allocations for radio services, the terms and conditions of use set forth in the Frequency Band Allocation Ordinance and on the frequency uses and terms and conditions of frequency use permissible in the individual frequency sub-plans.

Once the Frequency Usage Plan was completed in April 2008, amendments were made to the general part of the Frequency Usage Plan and numerous updates, amendments and revised entries were made in a number of frequency use sub-plans in order to expand the flexibilisation to further frequency bands and frequency uses in accordance with the WAPECS concept of the RSPG, to implement the new specifications of

the European Commission and to implement the decisions taken by the ECC.

An initial package of amendments was completed and published n August 2009 in accordance with the procedure specified in the Frequency Band Allocation Plan Ordinance (in consultation with the advisory committee at the Federal Network Agency, the supreme authorities of the federal government and Federal Länder and interested parties among the public) (as regulatory order 33/2009 in Official Gazette 15/2009 of 12 August 2009, p. 2985 ff., and as a notification in the Federal Gazette no. 121, p. 2820 ff. of 18 August 2009). This introduced the frequency use "wireless network access for the provision of telecommunications services" in the frequency bands between 450 and 470 MHz and between 3,400 and 3,800 MHz. The amendments take the Council Decision "on the harmonisation of the 3,400-3,800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community" of 21 May 2008 (Official Journal of the European Union No. L 144 S. 77) into account. By amending other entries, the "mobile components" for Broadband Wireless Access (BWA) now offer wireless network access in the frequency band between 3,400 and 3,800 MHz. Entries in frequency band 26 GHz were amended in order to adapt the frequency usage plan to the changes in market demand for point-to-point and point-to-multi-point radio relay. In addition, international regulations for radio applications for intelligent transport systems (ITS) were implemented in frequency band 5.9 GHz and 63 GHz.

The prime goal of introducing a second package of amendments in the period under review was to open up the frequency band between 790 and 862 MHz for "wireless network access for the provision of telecommunications services". In doing so, the Federal Network Agency consistently pursued its course—adopted by the federal government in its broadband strategy of 18 February 2009 in the cabinet and supported, inter alia, at the level of the Frequency Band Allocation Plan—to use frequencies released by the "digital dividend" for all types of wireless network access observing the principle of technology neutrality. The second package of amendments containing revised entries in the frequency band between 790 and 862 MHz and in the frequency bands from 1,710 to 1,725 MHz and from 1,805 to 1,820 MHz that are now dedicated to "wireless network access for the provision of telecommunications services" was completed once the consultation process had been brought to a conclusion in October 2009 and was published (as regulatory order 57/2009 in Official Gazette 20/2009 of 21 October 2009, p. 3570 ff., and as notification of 21 October 2009 in the Federal Gazette no. 158, p. 3598 ff.). The problems associated with the use of radio microphones were also solved. The further use of radio microphones was permitted in the frequency band between 790 and 862 MHz and alternative frequencies were made available in frequency sub-bands from 1,452 to 1,477.5 MHz and from 1,800 to 1,805 MHz for the use of radio microphones.

A copy of the Frequency Usage Plan can be ordered from the Federal Network Agency or can be viewed on the Federal Network Agency's website at: www.bundesnetzagentur.de.

ELECTROMAGNETIC COMPATIBILITY (EMC) AND STANDARDISATION

One of the focal points of the Federal Network Agency's activities in the area of developing and updating harmonised European electromagnetic compatibility product standards was to manage the project implemented by the International Electrotechnical Commission (IEC) to define electromagnetic compatibility requirements for products in the area of Powerline Communication (PLC) which use low-voltage networks and house installations for broadband communication. Major progress was made here in 2009, taking in particular the interests of the ITU in safeguarding the protection of radio reception in respect of the operation of PLC products in rural areas into account. In addition to typical in-house networks, PLC products are also to be used in the area of smart metering.

For industry, a new issue of the EN 55011 standard is now available which the Federal Network Agency was heavily involved in developing. It contains electromagnetic compatibility requirements to be met by industrial, scientific and medical electrical equipment. At the IEC the scope of application of this standard has been expanded, with the support of the Federal Network Agency, to include inverters for photovoltaic plants in order to close the regulatory gap for interference emissions in the frequency band from 150 kHz to 30 MHz and to ensure the plans are safely integrated into smart grids in future. By contrast, recent developments on the IEC are giving cause for serious concern. The electromagnetic compatibility product standards allow multiple test procedures to be used under the same law because this reduces the value of these standards for conformity assessment procedures, a move that is bound to shatter users' confidence in the standards.

Radiocompatibility of transmitting and receiving equipment

In the year under review 2009, technical compatibility examinations for new radio services were launched, continued or completed once again in close cooperation with other administrations, industry and radio users. They included, for instance, comprehensive studies on harmonised general technical conditions for the use of the frequency band from 790 to 862 MHz (the so-called digital dividend) and other frequency bands that are to be auctioned off in Germany in 2010. For base stations and mobile radio terminals, so-called block-edge masks were developed in the interest of flexible frequency uses and technology and service neutrality. The results of these studies were incorporated into CEPT reports, into ECC decisions and into decisions taken by the European Commission. In order to enhance the spectrum efficiency of radio equipment and accessories that work in the same frequency band as the "digital dividend" (e. g. Digital Video Broadcasting - Cable DVB-C), steps were launched in international bodies to harmonise the standards. Other studies dealt, for instance, with the compatibility of GSM (Global System for Mobile Communications) on board ships, radio LANs on board aircraft, the expanded frequency band for GSM-R on trains, GSM multicarrier systems for base stations and with a range of ultra-wide-band applications.

The Ordinance on the Protection of Public Telecommunications Networks and Transmitting and Receiving Equipment that is used in defined frequency bands for security purposes entered into force on 14 May 2009. In

order to implement the new tasks, the Federal Network Agency set up two coordination groups in which the relevant stakeholders (public authorities, associations and network operators) cooperate. Implementation measures are planned and evaluated in these groups where any follow-up activities required to eliminate potential interference are also undertaken.

Involvement in the Telecommunications Conformity Assessment and Market Surveillance Committee (TCAM)

TCAM is both an advisory and regulatory body in the area of European conformity assessment and market surveillance for products in the telecommunications industry and radio equipment. Every EU Member State is represented by authorities that deal with the transposition of Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).

In 2009, the Federal Network Agency assisted the European Commission in drawing up guidelines on the R&TTE Directive for manufacturers. The document has meanwhile been published by the Commission and goes further than the Directive by providing information for the bringing into circulation of R&TTE products , giving relevant examples.

The European Commission has commissioned an examination to establish whether the implementation of a central equipment register for R&TTE equipment could eliminate the problem frequently encountered in the past of there being a lack of traceability, making it possible to identify who is responsible for bringing this equipment into circulation in the European Community. In 2009, the Federal Network Agency organised a workshop on this issue in cooperation with German-speaking businesses and relevant associations in order to initiate a dialogue with all stakeholders.

Technical regulation for aeronautical radio, maritime radio and radio service on internal waterways

Radio equipment used for aeronautical radio, maritime radio and radio service on internal waterways (e.g. radio telephones, radio navigation systems, wireless location tracking systems) are subject to numerous national and international regulations in the telecommunications and transport industry—not least owing to their global nature and relevance for security that are undergoing continual changes depending on what new radio technologies and services are involved.

In the period under review, experts from the Federal Network Agency were involved in a number of standardisation bodies in order to safeguard efficient and interference-free use of frequencies. It was also a matter of harmonising procedural regulations in a practice-oriented and user-friendly way such as new radio systems and applications like Advanced Surface Movement Guidance and Control System (A-SMGCS), Data Link Services (DLS), Long Range Identification and Tracking (LRIT), satellite-based recording of data in the Automatic Identification Systems (AIS data), man-overboard systems and for certain digital selective calling (DSC).

Interoperability of broadcasting

The limited toleration of the use of set-top boxes issued in 2006 that do not meet interoperability requirements and conditional access systems and digital right management (CA/DRM systems) by operators who provide closed networks via IPTV (IPTV via DSL connections) was extended until 30 March 2012 at the latest in particular owing to the ongoing standardisation work being performed on these systems, with new conditions being imposed on privileged companies. They are intended to make a visible contribution towards the statutory interoperability objective of the work that is oriented to the above-mentioned regulation in the standardisation bodies. The Federal Network Agency will step up the efforts made within the framework of its standardisation activities in future to enforce interoperability from the end users' perspective, thereby facilitating and strengthening horizontal markets for radio receiving equipment. In doing so, the aim is for digital TV sets to make use of radio broadcasting independently of network access carriers, accessing at least specific transmission paths if not all transmission paths, and also to be able to display encrypted and non-encrypted contents when using a CA/DRMs system.

A project group that has been dealing intensively with the issue of configuring CA/DRM systems over the past two years within the framework of the Committee on Technical Regulation in Telecommunications (ATRT) that has been advising the Federal Network Agency proposes in its final report that an interchangeable system be standardised. This suggestion needs to be addressed and explored.

Mobile communications of the fourth generation (IMT-Advanced)

At present, the evaluation process for standards of the fourth mobile communications generation is underway at the telecommunications division of the International Telecommunications Union (ITU-R). At a meeting of the competent ITU-R working group (WP5D), hosted by Germany in the city of Dresden, new proposals were presented and discussed by over 200 participants. A total of six proposals that are based on two different technologies were submitted.

It is envisaged that these proposals be incorporated into the ITU-R specifications in late 2010 following successful evaluation. The ITU is keen to find global solutions, a process which the Federal Network Agency will be involved in. Efficient use of the spectrum facilitating large numbers of terminals that are available at affordable prices can only be achieved via global solutions. General regulatory conditions are being defined at the ITU that facilitate free movement of goods and hence the interference-free operation of terminal equipment at global level.

In parallel to the work performed at the ITU-R, work continued to further develop the technical specifications at the standardisation organisations 3rd Generation Partnership Project (3GPP) and Institute of Electrical and Electronics Engineers (IEEE).

Intelligent Transport Systems (ITS)

In 2009, the Federal Network Agency was heavily involved in standardising the air interface of the future radio system for ITS applications relevant for road safety at the European Telecommunications Standards Institute (ETSI). This radio interface will be used both in car-to-car and car-to-infrastructure applications and

is a key element of the minimum set of standards aimed at creating full interoperability.

Radio Frequency Identification (RFID) in the UHF frequency band

In 2009, the Federal Network Agency actively monitored the activities undertaken by the ETSI to develop proposals for the future use of the spectrum by RFID by carrying out measurements in its laboratory based on the market studies and information available. Cognitive systems are on the cusp of being standardised for UHF-RFID in a group of ETSI experts in order to find the most efficient yet interference-free and demand-oriented spectrum identification in the long term. There is every reason to anticipate that once the work has been successfully completed it will be possible to press full speed ahead with market growth for RFID applications thanks to the harmonisation with spectrum use of UHF-RFID in other regions of the world.

Mobile phone base stations

Mobile phone base stations, so-called femtocells are intended to provide mobile phone coverage in areas providing little or no mobile coverage, helping to enhance local coverage density in areas that already have mobile coverage. The Federal Network Agency will monitor activities in relation to the envisaged application areas, the potential portability of mobile phone base stations and will ensure that the existing requirements are met by mobile networks within the framework of technical regulation and standardisation.

Emergency call

Database for managing emergency calls

In the draft directive on emergency calls announced on 6 March 2009, it was specified that DTAG was obliged to provide the allocation of telephone exchanges in the respective catchment area of telephone service providers by 31 October 2009 at the latest. On the basis of this specification, the Federal Network Agency developed a suitable IT infrastructure by 31 October 2009 as well as a suitable system for accessing information pursuant to Section 3 subsection 2 of the Ordinance on Emergency Calls and introduced the system accordingly. The introduction of any such system presupposes that the information that had hitherto been managed by DTAG pursuant to Section 7 subsection 5 of the Directive on Emergency Calls will also be incorporated into the system to be developed by the Federal Network Agency. Owing to the importance of emergency calls for the public, it was necessary to define and implement suitable security measures both in respect of data import and also regarding the development of the system used to provide the directory pursuant to Section 3 subsection 2 of the Ordinance on Emergency Calls. To protect the system from unauthorised access and unauthorised changes, access and retrieval were protected by a state-of-the-art access authorisation system as well as state-of-the-art encryption. In addition, the Federal Network Agency added another alphanumerical value (hash value) to the accessible information. This means it is possible for the company accessing the information to verify the integrity of the information provided at any time.

Comprehensive tests were carried out to examine the suitability and required quality criteria of the system developed by the Federal Network Agency. Further tests were carried out while the data was imported that also involved data cleansing. After the tests had been completed, the data provided by DTAG was imported and clearance was issued on schedule for the application to access the directory pursuant to Section 3 subsection 2 of the Ordinance on Emergency Calls. Since then, registered telephone service providers and network operators have been able to access the information via a secure connection pursuant to Section 3 subsection 2 of the Ordinance on Emergency Calls.

The first amendment to the catchment area pursuant to Section 3 subsection 1 of the Ordinance on Emergency Calls including the pertinent provision of an updated directory was made on 16 December 2009. Network operators and telephone service providers were notified that the directory had been updated by two different media in accordance with the Ordinance on Emergency Calls (notification was issued in the Official Gazette of the Federal Network Agency and individual e-mails were sent to all registered providers). The underlying system for downloading information and information about what data can be downloaded from the directory was published in the Official Gazette of the Federal Network Agency. The Federal Network Agency also developed and published the transitional procedure for describing emergency call catchment areas in accordance with Section 7 subsection 4 of the Ordinance on Emergency Calls.

Abuse of calls made to emergency numbers from mobile phones limited

In order to limit abuse of emergency calls made from mobile phones to the emergency telephone number 112, the Ordinance on Emergency Calls specified that since July 2009 112 emergency telephone calls can only be made from mobile terminal equipment that has a ready-to-go SIM card. In its regulatory order 23/2009 published in its Official Gazette no. 12 of 1 July 2009, the Federal Network Agency specified relevant details following consultation with the German mobile network operators. This led to a sharp decline in the number of cases involving abuse of emergency calls made from mobile phones.

Obligation to provide customers with information about emergency call options

In late 2008, the Federal Network Agency reminded the providers of publicly accessible telephone services using new technology (VoIP) of their obligation to facilitate emergency calls pursuant to Section 108 TKG. The response from service providers showed that there are a few VoIP services and products that do not have the technical possibility of enabling the local emergency call centre to establish the whereabouts of the person placing the emergency call. This applies, for instance, to the nomadic use of VoIP services and to access to VoIP services over the Internet. Compared to the traditional circuit-switched telephone service, some providers are also unable to reliably identify changes in the location of VoIP stationary users. As a result, the vast majority of emergency calls placed by stationary VoIP users are transmitted to the competent emergency call centres. If the user has changed location without notifying the service provider, it is, however, possible that calls may reach the previous emergency call centre that may no longer be responsible. The

technical obstacles were further analysed in talks with individual providers. As a result of this survey, the Federal Network Agency proposed at a public hearing that the providers who are unable to guarantee that the responsible local emergency call centre will be reached need to notify their customers explicitly before concluding a contract and thereafter once a year of this deficiency and must otherwise transmit the emergency calls to the emergency call centre responsible at the customers' home address. The discussions with the relevant emergency call organisations and telephone service providers are still underway.

Technical directive for emergency calls

The Ordinance on Emergency Calls contains a number of requirements to be met by telephone service providers and network operators that require detailed technical specifications. The Federal Network Agency is responsible for defining these specifications in the form of a technical directive for emergency calls and intends to develop this directive gradually. First of all, a new format for describing the catchment areas is to be specified and the features of traditional emergency telephone numbers are to be described so that all providers have to meet the same requirements when catering for the market. In this context, the rules for transmitting emergency calls also need to be specified. As such, the case-by-case forwarding of emergency calls to another emergency call centre and the forwarding of all emergency calls (if an emergency call centre is not available) to an alternative emergency call centre will be taken into account. Work is set to continue on development of the technical directive for emergency calls.

eCall

Another topical issue that is being promoted by the European Commission is the specifications for emergency calls made from motor vehicles (eCall). The aim is to implement an on-board system in motor vehicles that works throughout Europe, enabling emergency calls to be transmitted to the competent emergency call centre, transmitting additional emergency data at the same time (e.g. information on location). Now that standardisation is almost complete, eCall is to be deployed in all new motor vehicles in the years to come. The Federal Network Agency is involved in the national and European eCall platforms.

General information about emergency calls

A general information page on the issue of emergency calls on the Federal Network Agency's website contains, inter alia, information about the legal basis, the stage emergency call standardisation has reached and about the European eCall initiative. Specific queries about the issue of emergency calls can also be e-mailed direct to the competent section at the Federal Network Agency.

RADIO MONITORING AND INSPECTION SERVICE

In the area of frequency regulation, decisions taken by the radio monitoring and inspection service (PMD) are prepared and supported in numerous ways. Measurements are used generally and in specific cases to safeguard efficient and interference-free use of frequencies and to support important decisions on frequency development.

Automatic measurements in the short wave band to determine frequency occupancy

The measuring stations of the Federal Network Agency took part in a measuring campaign once again in 2009 which was launched in early 2008 and is due to end in late 2010. Within the framework of this recent campaign, measured values obtained using the Federal Network Agency's automatic measuring devices are processed. This data on the occupancy of short wave frequency bands between 1.6 and 27 MHz sheds light on the development of use in the entire short wave band and will be used for WRC-2012. On the basis of the data, decisions can be taken about potential future uses at national and international level.

Measurements carried out in the short wave frequency

The PMD also carried out measurements in certain sub-areas of the short wave frequency band during 2009. These measurements will be used both by the Federal Network Agency for further plans and as the basis for frequency allocation and will be made accessible after an international agreement of the ITU has been concluded in Geneva where they will also be published. The measurements will include, inter alia, the identification of transmitter locations, the transmission system used as well as the time of transmission.

Protection of amateur radio against interference from abroad

In order to protect the frequency bands some of which are assigned exclusively for amateur radio, around 30 interference reports were sent to foreign administrations in the course of the year on whose territory interfering transmitters were detected; according to international agreements, they are not permitted to use amateur radio frequencies for any other purposes. Some of the transmitters causing interference were shut down or repaired in the interest of radio amateurs.

Measurements on frequencies of short range devices

As part of an international measurement campaign, the PMD of the Federal Network Agency is taking part in measurements carried out in the frequency band from 863 to 870 MHz for short range devices (e. g. headphones, microphones, chips used to identify goods). The measurements allow conclusions to be drawn on the current occupancy of this frequency band and on the need for changes in the allocation of frequencies to the individual applications.

Compatibility tests for Long Term Evolution (LTE)

The operators of mobile telephone networks are planning to introduce mobile communications of the fourth generation that will also provide very fast Internet access for mobile applications. However, it needs to be clarified in advance, inter alia, whether the use of the system in the frequency band from 790 to 862 MHz that is also used in cable TV networks is likely to cause interference with TV reception. Relevant compatibility tests are to shed light on this. The work performed in this area is to be continued.

Measurement of mobile coverage along the border of the Federal Republic of Germany

As part of a comprehensive measurement campaign, the PMD of the Federal Network Agency measured the radio coverage on the territory of the Federal Republic by international GSM mobile network operators. This enabled regions in the Federal Republic where

nationwide coverage is offered by international mobile network operators to be identified at the sections of the border where measurements were carried out, some at a distance of ten kilometres from the border. They revealed that even quite a distance away from the border, the mobile phones of customers in the Federal Republic may log into an international network. When calls are connected this means customers are not only required to pay the usual call charges but also the significantly higher roaming charges. From the technical perspective, it is possible to avoid these levels of coverage. The Federal Network Agency will therefore continue to monitor this problem closely and will conduct talks at international level to find out how this problem can be solved in the interest of mobile phone customers.

Technical measurement tests within the framework of the "digital dividend"

Medienanstalt Berlin-Brandenburg (the regulatory authority for private broadcasting in Berlin and Brandenburg) launched a pilot project at the end of 2008 to test whether frequencies can be used to provide broadband Internet access in rural areas that have been allocated for terrestrial broadcasting. The pilot project was implemented in Wittstock/Dosse in the north of Brandbenburg. The PMD initially had to carry out measurements to find a free terrestrial broadcasting transmission channel at the envisaged transmission location of the base station, taking the current channel occupancy at this location into account (co-channels and neighbouring channels) .

On the basis of the results of the measurements, a suitable TV and radio broadcasting channel was quickly found to implement this pilot project in which an adapted commercial 3G-TD-CDMA system was used that is operated in a similar manner as frequency band 450 to 470 MHz in other countries (such as the Czech Republic). As part of this pilot project , the PMD conducted further laboratory measurements in order to determine the required signal-to-noise ratio under laboratory conditions that is required for interference-free DVB-T and DVB-C reception. Over the course of 2009, further tests were carried out in the vicinity of Berlin (Rauhner Berge). The PMD also monitored these tests metrologically. In addition to carrying out laboratory measurements, the PMD also determined the required minimum signal-to-noise ratio and conducted further measurements at the absorber measuring hall of the Federal Network Agency in Kolberg. By carrying out these measurements, the PMD has made an initial contribution towards implementing a compatibility test. These tests will need to be carried out in greater detail.

Monitoring frequency uses

In the course of its work to monitor frequency uses last year, the PMD checked approx. 6,000 frequency assignments nationwide for a variety of radio applications in order to ascertain whether operators were complying with the provisions on the assignment of frequencies. This is based on Section 64 TKG. The monitoring of frequency uses makes it easier to gain a clear picture of the current situation and to monitor compliance with regulatory standards in the field of frequency management. The monitoring provides essential information about the actual usage situation and therefore supplements the administrative elements of frequency regulation (Frequency Band Allocation Plan, Frequency Usage Plan, frequency allocations), integrating them into a self-regulating system. Negative effects on frequency use are supposed

to be identified early. This is a prerequisite for minimising interference. There is hence a preventative aspect to monitoring.

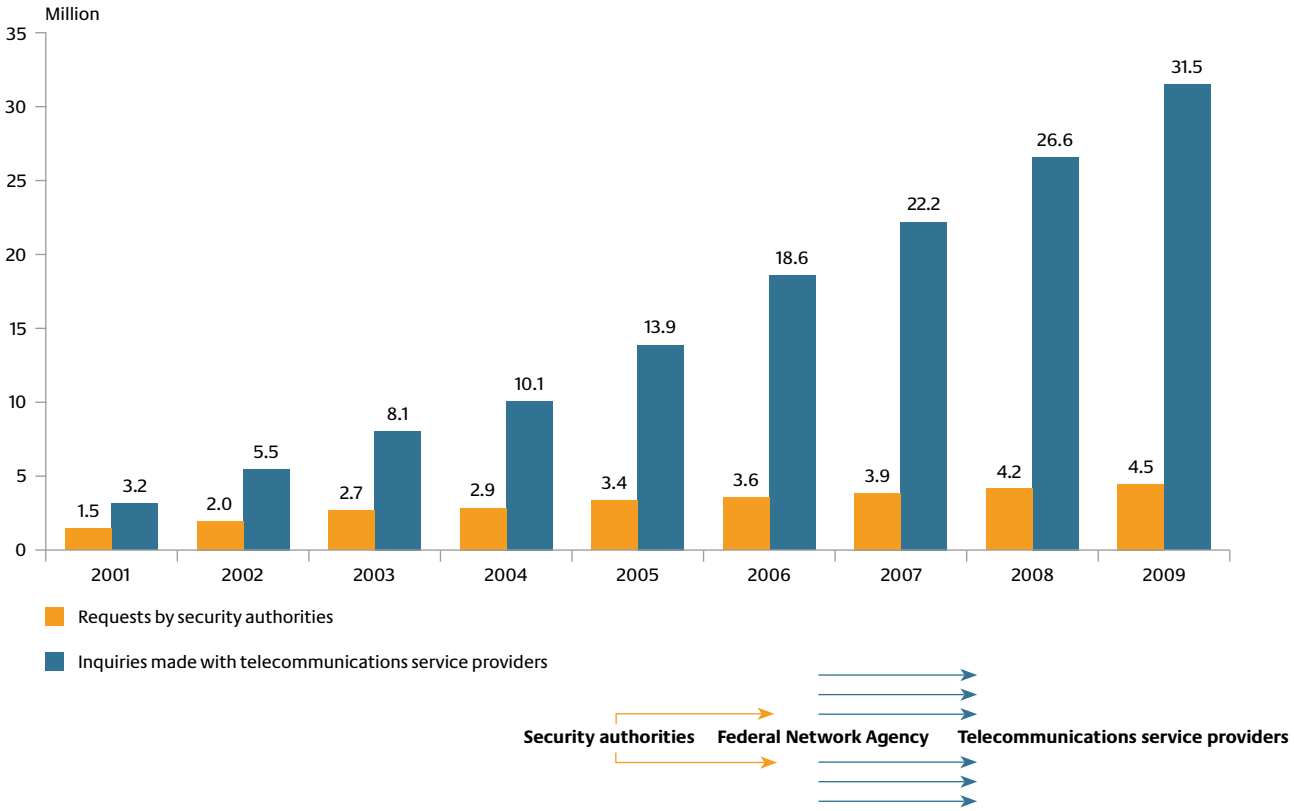
The reviews are generally performed on the basis of a statistical procedure with the help of which test values are determined. The calculation test values include the total stock and the failure rates of the previous random samples (percentage of deviations from the frequency allocation provisions). This statistical procedure represents an efficient and economical way of monitoring frequency uses. With this procedure only as much testing is carried out as necessary, i.e. as little as possible.

PUBLIC SECURITY

Automatic information procedure under Section 112 TKG

Following the liberalisation of the telecommunications market, customer data is longer held by a monopolistic, state-owned enterprise but is collected by a large number of telecommunications companies. To assist the security authorities in the performance of their statutory duties, these telecommunications companies provide information from their customer files about the names and addresses of individuals with telephone numbers to the authorities via the Federal Network Agency. The number of telecommunications companies involved in this system is still on the increase owing to legal requirements. At present, around 1,000 authorities registered with the Federal Network Agency are able to access customer data from 130 telecommunications companies.

Information requests made by security authorities and inquiries made with telecommunications service providers 2001–2009



Qualified electronic signature

The Federal Network Agency is the competent authority under the Act governing Framework Conditions for Electronic Signatures (SigG). The duties associated with its role in this capacity include, in particular, the accreditation of certification service providers, the supervision of certification service providers , the operation of the state Trust Centre as the supreme certification authority (root authority), the administration of a directory of certificates issued and revoked, the recognition of evaluation and certification bodies, the determination of relevant algorithms for qualified electronic signatures and the provision of support for legislative procedures.

In 2009, a further certification service provider registered with the Federal Network Agency. The Trust Centre run by the Federal Network Agency issued accredited certification service providers with the certificates they required to perform their duties during 2009 and kept a record of them in a directory service that is open to the public. The large number of supervisory measures implemented in respect of certification service providers ensured that the Act governing Framework Conditions for Electronic Signatures and the Ordinance governing Framework Conditions for Electronic Signatures were observed.

The Federal Network Agency was particularly involved in the adjustment of the technical implementation of the communication paths between uniform points of contact in preparation for transposing the European Services Directive. In addition it published comprehensive information material for uniform points of contact on the Internet.

The amount of advisory work performed on the topic of qualified electronic signatures is mounting both at national and international level. Advisory services are provided to industry, authorities and users. To this end, the English pages of the website on qualified electronic signatures have been updated.

In 2009, the Federal Network Agency continued to cooperate with CAST e. V., a competence centre for IT security in Darmstadt. It also resumed its involvement in the legal working group of Teletrust e. V.. The Federal Network Agency continued to chair the working group of the Association of Recognised Evaluation and Certification Bodies (AGAB), thereby providing a platform for the coordination and development of work processes used by the evaluation and certification bodies.

Efforts were also undertaken in the relevant bodies at European level to press ahead with the development of qualified electronic signatures. As such, special focus was attached to drawing up so-called trusted status lists (TSL) indicating all the accredited certification service providers in each Member State with a view to checking international, qualified electronic signatures.

In 2009, the Federal Network Agency complied with its statutory obligations and published the following information: product certifications for qualified electronic signatures, manufacturers' declarations that comply with the Act governing Framework Conditions for Electronic Signatures and the Ordinance governing Framework Conditions for Electronic Signatures as well as suitable algorithms and the associated parameters for qualified electronic signatures.

Technical implementation of intercepts and provision of information pursuant to Section 110 TKG

In carrying out its duties in relation to the technical implementation of intercepts, the Federal Network Agency makes an important contribution to maintaining public security in Germany. In particular, the Technical Directive pursuant to Section 110 subsection 3 TKG is an important basis for the development of interception technology by the telecommunications companies, manufacturers and security authorities involved. The Directive is amended to take new telecommunications technologies into account whenever it becomes necessary to do so. To this end, the Federal Network Agency—as required by legislation - contributes to the discussions about the new topics initially in the standardisation bodies. Industry associations, authorised bodies and manufacturers were all involved in the preparation of version 6.0 of the Technical Directive that was extended in order to cover the areas of providing information on traffic data and the electronic transmission of orders. The new version entered into force in December 2009 when it was published in the Official Gazette and on the Federal Network Agency's website.

For the field of IP-based multimedia services (such as VoIP) , the implementation of the Technical Directive (version 5.1) drawn up in 2008 was pressed ahead with. It covers VoIP communications, by and large. The results of a survey on devices for communication technology systems conducted by Berlecon Research GmbH and Fraunhofer Institute for Communication Systems ESK for the complete monitoring of VoIP communication were used initially in order to press ahead with standardisation in this area.

Court proceedings

Judicial proceedings in 2009 once again covered a wide range of issues. This is demonstrated by the large number of court decisions on regulatory orders, rates approval and rate orders as well as frequency-related issues based on these decisions. Court decisions also related to other issues such as data retention and the forwarding of subscriber data. In the vast majority of proceedings, the decisions taken by the Federal Network Agency on the disputed issues were confirmed as being lawful.

Overall 105 main proceedings and 29 summary proceedings were instituted before Cologne Administrative Court against decisions taken by the Federal Network Agency in the telecommunications sector in 2009. 64 main proceedings and 16 summary proceedings were brought to a conclusion before the end of the year. 48 main proceedings and 11 summary proceedings ended with a positive result for the Federal Network Agency, six main proceedings ended with a draw. The court proceedings dealt with issues ranging from basic market regulation right up to frequency disputes.

DECISION TAKEN BY THE FEDERAL ADMINISTRATIVE COURT ON THE REGULATORY ORDER FOR MARKET 12 OF THE MARKET RECOMMENDATION (BROADBAND AND BIT STREAM ACCESS)

In its decision adopted on 28 January 2009 (ref. 6 C 39.07), the Federal Administrative Court partly revoked the regulatory order for market 12 of the Market Recommendation (broadband and bit stream access). In the Court's view, the Federal Network Agency had established, without making any legal errors, that the nationwide market for IP bit stream access on which the plaintiff company has significant market power is in need of regulation within the meaning of Sections 10 and 11 TKG. It ruled that the vast majority of regulatory obligations imposed on the company were also lawful. In relation to the regulations governing mandatory rates approval (Section 30 subsection 1 TKG), however, it should have been taken into account that Community law grants national regulatory

authorities certain discretionary scope whether and how to impose rates regulation. The Court said that rates regulation prescribed by law should not rule out this regulatory discretion. The Federal Network Agency had assumed also in relation to the provisions governing reference offers (Section 23 subsection 1 TKG) that in a regular case like this one its hands were tied even though Article 9 para. 2 sentence 1 of the Access Directive—Directive 2002/19/EC of the European Parliament and of the Council, Official Journal L 108/7 of 24 February 2002—allows the national regulatory authorities the discretion in each individual case to impose an obligation to publish a reference offer. In this regard, this case involved an error of judgement. The judgement is final.

ORDER PURSUANT TO SECTION 35 SUBSECTION 5 SENTENCE 2 TKG

With its final judgement of 25 March 2009 (reference 6 C 3.08), the Federal Administrative Court sustained the action filed by a competitor against a preliminary approval of rates charged for the T-DSL-ZISP Basic product, overruling the judgement handed down by Cologne Administrative Court on 24 May 2007 (1 K 3109/06). The Federal Network Agency was ordered by the court to approve the rates temporarily that were the subject matter of the litigation within the framework of summary proceedings pursuant to Section 35 subsection 5 TKG until a final decision has been handed down in the main proceedings, at the latest when the rates approval period lapses. In the Federal Administrative Court's view, Section 35 subsection 5 sentence 2 TKG 2004 does not, however, oblige the Federal Network Agency to issue a new notification. Rather, Cologne Administrative Court itself must issue a new order on the temporary payment of higher rates.

RATES APPROVAL FOR LINE SHARING

With its judgement of 24 June 2009 (reference 6 C 19.08), the Federal Administrative Court annulled and overruled a decision taken by Cologne Administrative Court on 14 February 2009 (reference 1 K 3043/07). The subject of the decision was the action for rescission filed by a company requesting the elimination of a rate position in the notification issued on 29 June 2007 (rates charged for joint access to the subscriber line—line sharing from 1 July 2007). By way of derogation from the company's petition, the Federal Network Agency had approved a separate, reduced cancellation fee for the cancellation of line-sharing with simultaneous takeover of the relevant subscriber line, bearing efficiency aspects in mind. Contrary to Cologne Administrative Court, the Federal Administrative Court held the view that the rates approval had been covered by the rates application filed by the plaintiff. It said that it would need to be assessed on the basis of an overall analysis whether the rates approval protected the identity of the service definition on which the rates application was based, taking the actual working processes of the company filing the application into account on the one hand and its legal embedding in the company's contractual external relations with its customers on the other.

RATES APPROVAL FOR SUBSCRIBER LINES FROM 2001 AND 2002

In its judgements of 27 August 2009 (reference 1 K 3481/01, 1 K 3479/01 and 1 K 3427/01), Cologne Administrative Court revoked the rates approved for subscriber lines in 2001. In relation to the approval of monthly access rates, the Court established once again, as in its judgement of 27 November 2008 (1 K 1823/99) on the rates approval for subscriber lines of 1999, that the way in which the value of investments is determined in order to calculate the costs of capital (interest and depreciation) is incompatible with the requirements of cost orientation under European law. The Court objected to the methods chosen for process times regarding one-off rates (installation and cancellation rates), saying no representative average value had been determined for individual processes. It said this deficiency could not be offset by resorting to the level of pricing terms of pre-approved rates: at the time, a decision on rates charged for subscriber lines had to be taken within 14 days on a limited assessment basis owing to the judicial decision. This situation no longer applied to the subsequent rates approval that is the subject matter of the litigation. The Federal Network Agency lodged a formal protest against the denial of leave to appeal.

The rates approval for subscriber lines of 2002 was also revoked with the decisions of 19 November 2009 (reference 1 K 4341/02, 1 K 4167/02 and 1 K 4166/02) that are not yet final since they refer to installation and cancellation rates as well as rates for installation at special times. Cologne Administrative Court criticised the fact that the Federal Network Agency had taken over the information provided by DTAG on hourly rates and overheads on the basis of facts that were inaccurate. Both the Federal Network Agency and DTAG, which had been summoned to attend the proceedings as a third party, lodged a formal protest against the denial of leave to appeal.

DENIAL OF LEAVE TO APPEAL THE DECISION TAKEN BY COLOGNE ADMINISTRATIVE COURT ON THE 1999 RATES APPROVAL FOR SUBSCRIBER LINES

With two decisions of 5 October 2009 (reference 6 B 17.09 and 6 B 18.09), the Federal Administrative Court rejected the appeals filed by the Federal Network Agency and DTAG against the denial of leave to appeal the decisions taken by Cologne Administrative Court on 28 November 2008 (reference 1 K 1749/99 and 1 K 1823/99). This means these two decisions in which Cologne Administrative Court revoked the rates approval for subscriber lines granted on 8 February 1999 for monthly access rates are non-appealable. In the view of the Federal Administrative Court, the questions raised do not meet the requirement of being of essential importance because they do not clarify the issues for the future. The Court ruled that it was not obvious that the basic legal issues would arise under currently applicable law as under the law that is no longer in force.

SUBSCRIBER DATA

In proceedings 6 C 20.08, the Federal Administrative Court confirmed the Federal Network Agency's construction of Section 47 TKG according to which all providers of telephone services are obliged to disclose all subscriber data in their possession or that they are intending to publish vis-à-vis competing providers of subscriber directories and directory

enquiries. The obligation to pass on data had been contested by the plaintiff company when it related to data that is published in the company's own directories but that originated from the subscribers of other network operators (so-called third carrier data). The plaintiff had agreed to pass on the data only if neither the relevant subscriber nor his or her network operator wanted the data to be published exclusively by the plaintiff itself. The Federal Administrative Court thought these restrictions could compromise the purpose of the obligation to pass on data which is aimed at facilitating and sustainably promoting viable competitive structures on the markets for subscriber directories and directory enquiries. However, the Federal Administrative Court was doubtful whether the broad construction of the obligation to pass on certain subscriber data to rival companies for publication purposes was compatible with European Community law. The Federal Administrative Court hence took the decision on 28 October 2009 to refer the matter to the European Court of Justice in Luxembourg for clarification and suspended the proceedings until the latter has adopted a decision.

STANDARDISED RATES HAVE PRIORITY OVER COST-BASED RATES WITHIN THE FRAMEWORK OF SECTION 31 TKG

In its judgement of 25 November 2009 (reference 6 C 34.08), the Federal Administrative Court annulled and overruled a decision taken by Cologne Administrative Court on 23 April 2009 (reference 21 K 7580/05). A competitor filed a petition to revoke a cost position that was based on the costs incurred. In its judgement, the Federal Administrative Court established that in principle standardised rates had priority over cost-based rates within the framework of Section 31 TKG. It ruled that the purpose of Section 31 TKG (mimicking "as-if competitive prices") is to calculate rates subject to approval as extensively as possible in the form of tariffs, namely fixed prices for certain services of service components and to submit them for approval. Companies that have significant market power can and must submit cost-based rates for approval only if and when a lack of experience (as yet) or diverging production processes render it impossible to find a single standardised definition of the activities required to provide the service.

DATA RETENTION

Following the judgement of Cologne Administrative Court (reference 21 L 1107/09), the Higher Administrative Court of North Rhine-Westphalia turned down the application filed by a telecommunications company in its judgement of 2 November 2009 (reference 13 B 1392/09) which had objected, by way of temporary relief, to the obligation imposed by the Federal Network Agency to immediately create the technical prerequisites for implementing the obligation to retain data pursuant to Section 113a TKG and to submit a relevant implementation concept. Referring to the constitutional complaints pending, the Court did not specify whether the obligation to retain data was compliant with the Constitution and European Community law, ruling, however, that in the concrete case at hand it was in the public interest to enforce the obligation. In the Court's view, the data retention obligation was not affected by the constitutionality of the legislative decision that no compensation could be claimed for creating the technical prerequisites for data retention.

ENQUIRY ORDER ON DYNAMIC IP ADDRESSES

In its decision of 17 February 2009 (reference 13 B 33/09), the Higher Administrative Court of North Rhine-Westphalia confirmed the lawfulness of two enquiry orders after having carried out a summary examination as part of summary proceedings. These enquiry orders had obliged DTAG to provide information about customer data (e.g. name and address) that are part of dynamic addresses indicated by an authorised agency in accordance with Section 113 subsection 1 sentence 1 TKG in the future even if this means traffic data has to be evaluated. It stated that the internal evaluation of traffic data does not represent indirect intervention in Article 10 para. 1 of the Basic Law. Providing information about a static IP address is comparable to being able to identify the holder of a motor vehicle from the vehicle's official registration number.

As such, the only reason for rendering traffic data anonymous is to identify the name of the subscriber.

NUMBERING

The Higher Administrative Court of North Rhine-Westphalia handed down a final decision on 2 January 2009 (reference 13 A 1194/08) confirming the revocation of the allocation of two directory enquiries numbers as lawful. The Senate defined the term "using" a telephone number which the Court had previously dealt with when taking decisions in the past. In these other cases, the Senate had decided that a telephone phone number should only be allocated in the first place if it is needed and if the number is to be used as soon as possible in accordance with its functions. The Court took up this definition of the term "use" adding for the area of directory enquiries numbers that in addition to activating the telephone number in the network, the service would also need to be available 24/7. At the same time, the Higher Administrative Court of North Rhine-Westphalia confirmed that the regulations setting deadlines for the allocation rules and the number plans would have to be strictly adhered to in the interest of safeguarding efficient use by all subscribers.

FREQUENCY DISPUTES

In its judgement of 1 September 2009 (reference 6 C 4.09), the Federal Administrative Court clarified important procedural issues regarding legal protection in respect of the allocation of frequencies by way of the allocation procedure. Without actually addressing the substantive issues relating to the lawfulness of the measures implemented, the Federal Administrative Court decided that even the interim decisions adopted by the Federal Network Agency to hold an auction to allocate frequencies in accordance with certain terms and conditions for awarding frequencies could be objected to by parties claiming the specification had infringed upon their rights to non-discriminatory access to frequencies. The matter has been referred back to Cologne Administrative Court for decision-making.

As the court of first instance, it had dismissed the action against the interim decision in preparation for the allocation of frequencies, inter alia, in the 2.6 GHz frequency band arguing that this does not involve procedural activities within the meaning of Section 44a sentence 1 of the Code of Administrative Court Procedure that can be contested as isolated issues.

The Federal Administrative Court referred two further proceedings back to the Higher Administrative Court of North Rhine-Westphalia for renewed decision-making in which the plaintiff company objected to the frequency usage rights being extended in frequency band 2.6-GHz (decisions of 24 September 2009, reference 6 B 5.09 und 6 B 6.09). In its decisions of 30 October 2008 (reference 13 A2394/07 und 13 A 2395/07), the Higher Administrative Court of North Rhine-Westphalia rejected the claims to extend the frequency allocations beyond 31 December 2007. The Federal Administrative Court based its decision solely on procedural errors, criticising, inter alia, that the Higher Administrative Court of North Rhine-Westphalia had adopted its decision without organising an oral hearing.

With its judgement of 30 June 2009 (reference 13 A 2069/07), the Higher Administrative Court of North Rhine-Westphalia confirmed the legitimacy of the revocation of a UMTS licence that had been issued at auction in the summer of 2000. The license had been tied to the condition that the license-holder would actually develop a UMTS infrastructure offering coverage for at least 25 percent of the population by 31 December 2003. The plaintiff company failed to meet this obligation despite being issued with several reminders. The court ruled that the plaintiff was not entitled to demand reimbursement of the sum of approx. €8.5 billion paid at auction, indicating that the company itself was responsible for failing to develop an infrastructure even though it was aware that the license had been contingent on it doing so. In addition, the court ruled that the auction and payment notices on which the payment was based were final and absolute, The plaintiff was refused the right to claim retroactively that the auction had been unlawful. The Federal Administrative Court now has to decide on the plaintiff's appeal against the denial of leave to appeal.

The Higher Administrative Court of North Rhine-Westphalia confirmed two judgements handed down by Cologne Administrative Court (reference 11 K 3270/06 and 11 K 5392/06) in which cases against decisions taken by the Federal Network Agency on frequency translations had been dismissed. The frequency translation notices of 3 February 2006 were the subject matter of both proceedings in which frequencies in frequency band 900 MHz had been allocated to E-Plus Mobilfunk GmbH & Co. KG and Telefónica O2 Germany GmbH & Co. oHG. In return, the two companies were obliged to cease using the frequencies in frequency band 1.800 MHz previously assigned to them as and from 31 January 2007. In its decisions, the Senate rejected the claim, stating that the plaintiffs could not claim a breach of their rights to frequency assignment under Section 55 subsection 1 Sentence 3 and subsection 9 in conjunction with Section 61 TKG owing to failure to conduct an assignment procedure because they do not belong to the persons protected by this regulation. The fact that the plaintiff had not indicated its desire or intention to participate in an allocation procedure in advance of the frequency translation was crucial for the decision of 26 May 2009 (reference 13 A 424/08). The plaintiff did not invoke the breach of the ban on discrimination ensuing from Section 55 subsection 1 sentence 3 TKG until administrative appeal proceedings had been instituted. The Federal Administrative Court now has to decide on the plaintiff's appeal against the denial of leave to appeal.

In the second decision of 16 September 2009 (13 A 161/08), the plaintiff failed to use the frequency in accordance with the use indicated in the Frequency Usage Plan which the Higher Administrative Court of North Rhine-Westphalia did not object to. In particular, the Court saw no evidence of an error of judgement having been made. In its view, it was in particular not wrong to assign a key role to European harmonisation within the framework of CEPT and the EU for the benefit of public mobile radio in the considerations. In the opinion of the Higher Administrative Court of North Rhine-Westphalia, the relevant regulatory aims had been taken adequately into account. This decision is final and absolute.

In its final judgement of 21 October 2009 (reference 21 K 5789/08), Cologne Administrative Court once again confirmed the lawfulness of the frequency translation notices issued on 3 February 2006. The plaintiff company requested that these notices be revoked because it was interested itself in the allocation of frequencies in the frequency spectrum 900-MHz. Cologne Administrative Court did not agree that the plaintiff had been denied its right to a non-discriminatory procedure because the translation and hence the allocation of frequencies in frequency band 900 MHz to E network operators had not been preceded by an allocation procedure. The Court stated that it was crucial that the Federal Network Agency intended to reallocate the frequencies returned from frequency band 1.800 MHz which are equal-ranking in legal terms. Given the fact that frequency bands are equal in legal terms, Cologne Administrative Court holds the view that there is no entitlement to conduct an allocation procedure regarding specific "frequency wishes". By contrast, it ruled that technical equality is irrelevant.

REACH OF THE OBLIGATION TO SUBMIT AGREEMENTS PURSUANT TO SECTION 22 SUBSECTION 3 TKG

With its judgement of 21 January 2009 (reference 21 K 3967/07), Cologne Administrative Court overruled a notice issued by the Federal Network Agency obliging a cable network operator to submit access agreements. In the Court's view, Section 22 subsection 3 TKG does not require signal carrier agreements concluded before the regulatory order (market 18) entered into force to be submitted. The obligation to submit agreements does not apply to old agreements. It is at the discretion of the Federal Network Agency to impose relevant obligations pursuant to Article 9 of the Access Directive and Section 20 TKG. The Federal Network Agency waived its right of appeal also regarding this option. The decision is final and absolute.

REGULATORY ORDER ON MARKET 18 OF MARKET RECOMMENDATION (BROADCASTING SERVICES)

With its non-final judgement of 21 January 2009 (reference 21 K 2048/07), Cologne Administrative Court for the most part overruled an action filed by a cable network operator objecting to regulatory order market 18 (broadcasting services). In the Court's view, both the feeding and the signal carrier market have been correctly demarcated and the cable network operator was rightly found to have significant market power. It ruled that the transparency obligation imposed on the feeding signal market was lawful whereas the obligation to subject feeding services to ex-post regulation was unlawful. According to case law

of the Federal Administrative Court, which Cologne Administrative Court is following, departing from its previous case law, Section 39 subsection 3 sentence 1 TKG must be construed against the backdrop of the provision under Community Law set forth in Article 17 of the Universal Service Directive 2002/22/EC of the European Parliament and the Council, Official Journal L 108/51 of 24 April 2002—that the ex-post rates regulation for feed-in services calls for a regulatory decision by the Federal Network Agency requiring it to exercise its regulatory discretion.

MOBILE COMMUNICATION TERMINATION RATES

Once again in 2009, Cologne Administrative Court rejected the urgent applications lodged by three mobile network operators pursuant to Section 123 of the Rules of the Administrative Courts in conjunction with Section 35 subsection 5 TKG to the temporary approval of higher termination rates than those approved in the rates approvals of 31 March 2009 (decisions of 7 October 2009, reference 1 L 967/09, 26 October 2009, reference 1 L 961/09, and 10 December 2009, reference 21 L 952/09).

With its decisions of 17 June 2009 (reference 21 K 5357/06 and 21 K 5382/06), Cologne Administrative Court rejected two applications against rates approved in the area of mobile communication termination for so-called home-zone products. The approval allows lower mobile communication termination rates to be charged than those approved if a call made to a home-zone telephone number is terminated. Cologne Administrative Court denied that there had been a breach of the ban on abusive practices set forth in Section 28 subsection 1 TKG. It did not consider the significant market power to be crucial to the success of the home-zone products available and denied the causality between significant market power and the plaintiffs' assertion that their competitive position as the providers of fixed connections was being compromised. The plaintiffs have lodged an appeal against the decisions.

ACCESS TO SUBSCRIBER LINES USING A DISTRIBUTOR TO BE INSTALLED IN THE MAIN CABLE

With its decision of 13 November 2009 (reference 21 L 941/09), Cologne Administrative Court rejected the urgent applications filed by DTAG to order delaying effect of the action (reference 21 K 4150/09) lodged against two decisions taken by the Federal Network Agency ordering that access be provided to subscriber lines via a distributor switch to be installed in the main cable pursuant to Section 25 TKG as well as the rates that can be charged for this service. Cologne Administrative Court gave priority to the public interest in enforcing the order within the framework of its summary decision regarding the regulatory aims set forth in Section 2 subsection 2 TKG. Cologne Administrative Court took the interests of end users in particular into consideration who would otherwise not have had any access to a range of high bit rate telecommunications services temporarily or with a considerable time delay in regions affected by the order that is the subject matter of litigation. It would also contravene the regulatory aim of safeguarding equal competition if DTAG was able to develop its access technology without competition and managed to gain a competitive edge before a decision was taken in the main proceedings which competitors would have huge difficulty catching up with.

HANDLING OF NEUTRAL EXPENDITURE WITHIN THE FRAMEWORK OF SECTION 31 SUBSECTION 3 SENTENCE 1 TKG

With a final decision of 21 October 2009 (reference 21 K 5902/07), Cologne Administrative Court confirmed the view of the Federal Network Agency that no obligation exists to take verified neutral expenditure into account within the meaning of Section 31 subsection 3 sentence 1 TKG and to impinge on the prices determined accordingly if rates were approved on the basis of comparable market analysis rather than on the basis of cost documentation.

REGULATORY ORDER ON MARKETS 13 AND 14 OF MARKET RECOMMENDATION (LEASED LINES)

With its decision of 26 March 2009 (reference 1 K 5114/07), Cologne Administrative Court revoked the regulatory order for markets 13 and 14 of the original market recommendation which is not yet final insofar as it applies to any bandwidths up to 2 Mbit/s other than traditional leased lines. This revocation applies to all Ethernet-based and conventional leased lines offering bandwidths greater than 2 Mbit/s. It stated that in defining the market, the Federal Network Agency should have sub-divided market 13 (local termination segments of leased lines) into several submarkets offering different bandwidths and should have furnished proof that a substitution chain exists between the markets for leased lines that differ according to capacity for each of these sub-markets.

Selected decisions in the area of abuse of telephone numbers are discussed in the Chapter on Consumer Protection (cf. page 33).

Post

Market watch

Despite the challenging market environment, competition in the letter segment is expected to pick up. Competition in the parcel market is already developing encouragingly overall, while electronic letter services are a promising new opportunity.

UNEVEN DEVELOPMENT OF COMPETITION IN THE CEP AND LETTER MARKETS

Over the last few years the courier, express and parcel services sector, or CEP, has become a serious driver of growth in the postal markets. The severe competition in this area has brought forth high-quality services at stable prices. Parcel services for private consumers and small-scale senders have developed particularly encouragingly so far. For instance, Hermes Logistik Gruppe is the second German provider besides Deutsche Post DHL to have rolled out a network with virtually nationwide coverage.

Two years after full liberalisation and the elimination of Deutsche Post AG (DPAG) monopoly there is still no self-supporting competition in the German letter market. Measured in terms of revenue DPAG is still the dominant player with a market share of almost 90 percent. Still, where 2009 is concerned other licensees are expected to report a slight improvement in revenue and volumes over 2008.

That said, the CEP and letter sectors were unable to defend themselves against the weak economy in 2009. Volumes have declined sharply in some areas. A market turnaround is expected, however, in anticipation of a gradual improvement in the economy in the course of 2010, aided by the possible elimination of a number of barriers to competition such as equal treatment concerning VAT on postal services, or the introduction of a minimum wage for the postal sector.

The market will also be influenced by the impending (partial) transition to electronic letter services from 2010 onwards. Existing services will be complemented and in some cases replaced by their electronic counterparts. What is currently a rigid supply-side market may be broken up by the arrival of new competitors selling innovative services and popularising online applications among the general population. New business opportunities, such as hybrid mail and authenticated electronic letters, will open up for all market players.

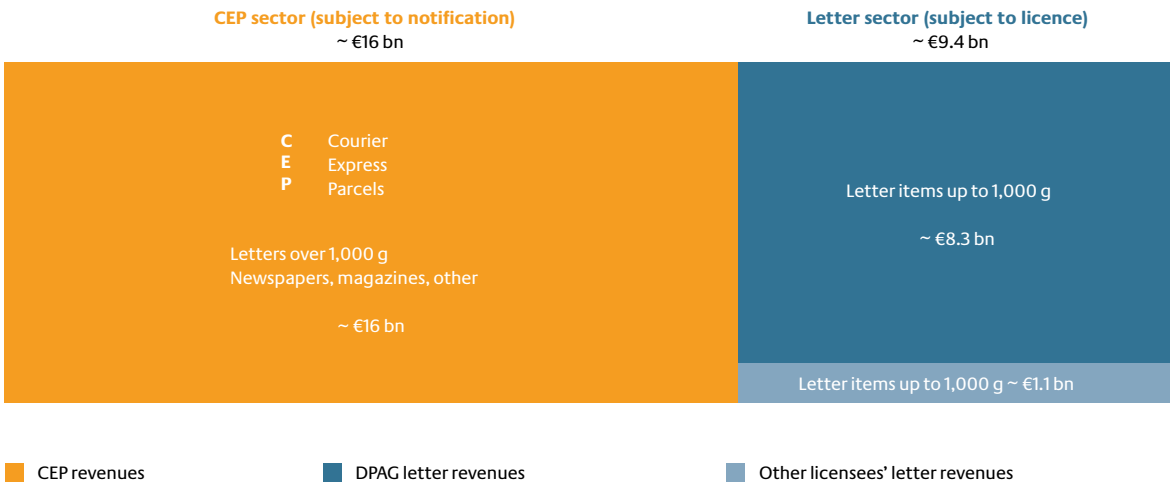
The Federal Network Agency will use the regulatory instruments at its disposal to continue encouraging greater competition in this market, for which the right legal framework is an indispensable prerequisite. To benefit from the

opportunities offered by more competition, consumers—be they private individuals or businesses—ought to give greater consideration to switching providers.

THE POSTAL MARKET IN 2009—FACTS AND FIGURES

On balance the German postal market is expected to have declined in 2009. Both the licensed area and the CEP segment have reported pronounced revenue decreases in some areas. The market is expected to post total revenues of approximately €25.4 billion, of which some €16 billion is accounted for by CEP services and the remaining approximately €9.4 billion by the licensed letter market.

The German postal market in 2009e

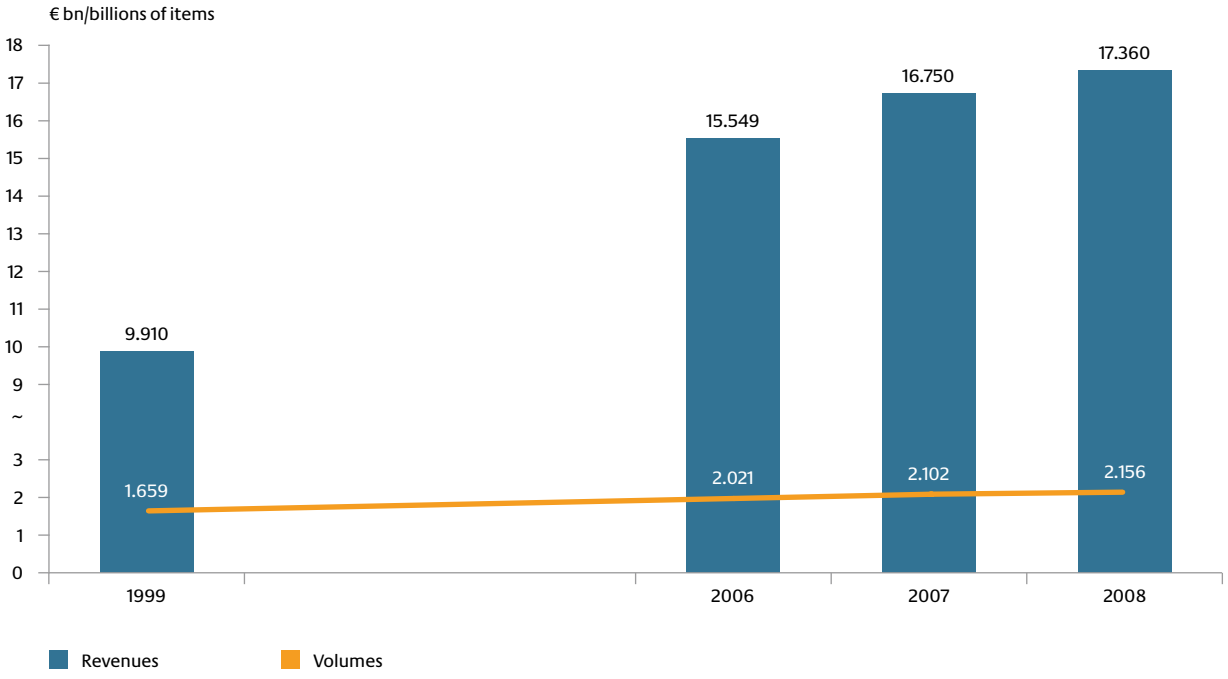


The CEP sector

Until 2008 all three CEP segments had reported revenue growth from one year to the next, yet by 2009 the economic crisis had gained a firm grip on this market, too, with some providers in all three segments posting considerable revenue losses. Express was particularly hard hit with expected declines of up to ten percent, and even the Parcel segment was unable to continue its strong performance of previous years. Despite growth in e-commerce services and improved transit times compared to Express this segment, too, is expected to post revenue declines of around seven percent for the full year.

The Federal Network Agency expects the CEP sector to post revenues of around €16 billion in 2009, compared to total revenues of around €17.4 billion in 2008 and approximately €16.8 billion in 2007.

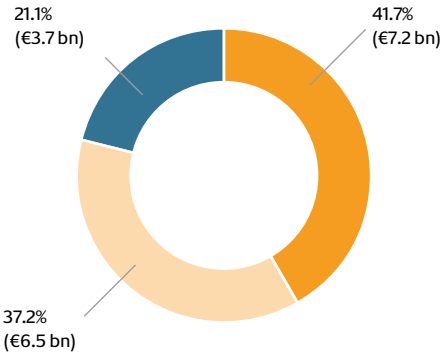
Revenues and volumes in the CEP sector (1999–2008)



Source: Manner-Romberg Unternehmensberatung (MRU)

In 2008 the Parcel segment generated more than 41 percent of CEP revenues (approx. €7.2 billion) and hence accounted for the largest part of the CEP market. At around 37 percent Express came in second (approx. €6.5 billion), while Courier generated just over one fifth of CEP revenues (approx. €3.7 billion).

Structure of CEP revenues in 2008



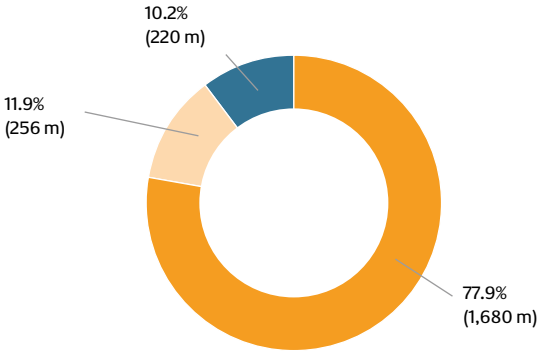
Total revenues: approx. €17.4 bn

Courier Parcels Express

Source: MRU

The German CEP sector transported 2.156 bn items in 2008, around 54 million or just under 2.5 percent more than in the prior year. Volumes in 2008 were structured as follows:

Structure of CEP volumes in 2008



Total number: 2.156 bn

Courier Parcels Express

Source: MRU

Parcel service providers are traditionally the largest players in the CEP sector. The main players in Germany are Deutsche Post DHL (DHL), Hermes Logistik Gruppe, Dynamic Parcel Distribution (DPD), General Logistics Systems (GLS) and United Parcel Service (UPS). The smaller providers do not play a major role in this segment. Until 2009, the year of the crisis, the Parcels segment posted stable growth and was generally a reliable driver of growth in the CEP market, not least owing to the continued rise in mail-order and online volumes.

DHL remains the largest parcel service provider. Hermes Logistik Gruppe now has a strong footprint in the private consumer business with around 14,000 drop-off points across Germany. La Poste has acquired a controlling interest in DPD, while GLS is now part of the Royal Mail Group. DHL now faces serious competition from these two major European providers as well as from UPS, which has caused its market share to shrink in recent years.

Meanwhile, parcel transit times have become ever shorter. The service is now very similar to the Express service, which is encouraging the substitution of express services with parcels. In a challenging economy many senders are increasingly turning away from express in favour of parcels in order to cut costs.

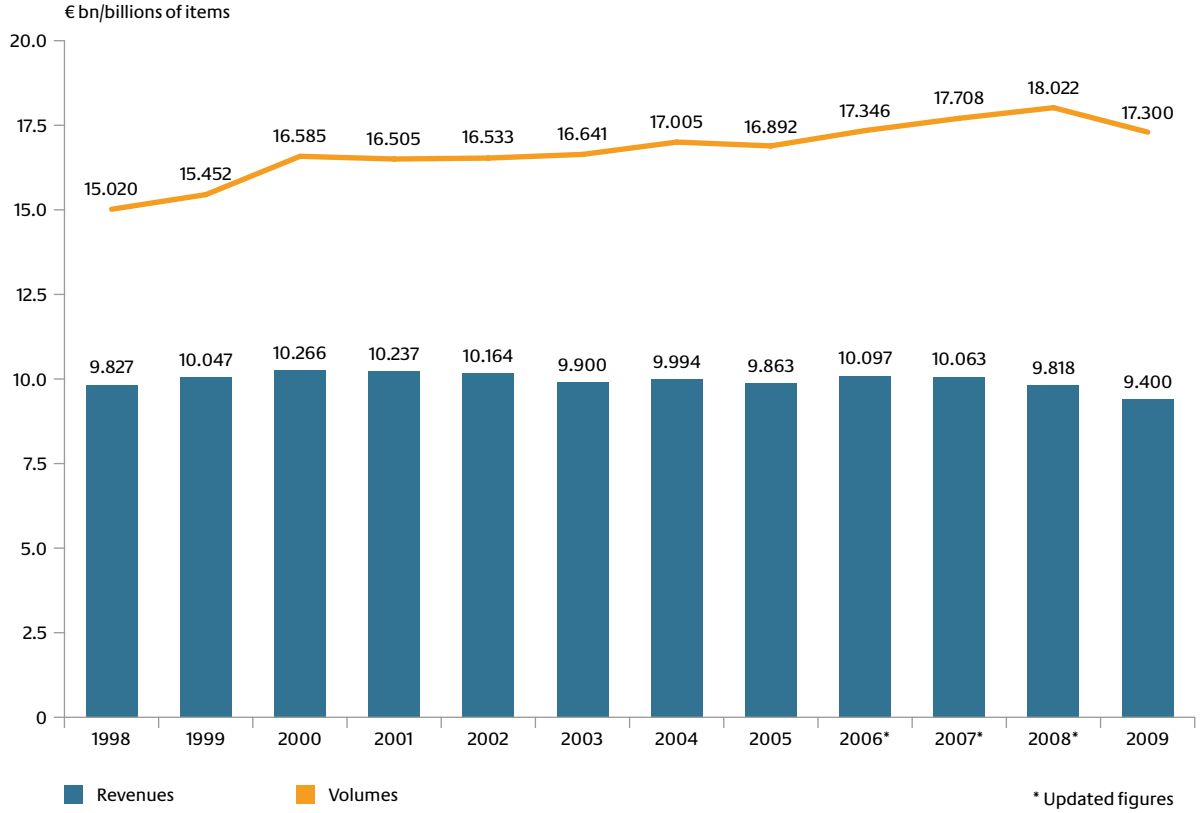
The Courier segment has undergone a profound structural change. Today only a small proportion of its revenues is generated in the traditional city courier business, while national and international direct delivery routes are rapidly gaining significance. Thanks to these structural changes the segment has posted clear revenue increases despite shrinking volumes. In 1999 the average revenue per item was €6.45; by 2008 the introduction of premium direct delivery routes had caused that figure to rise to €16.61.

The licensed letter market

In 2009 the licensed letter market is anticipated to have generated declining total revenues of around €400 million. Volumes are expected to have shrunk, too. While around 18 billion items were transported in 2008, the expected figure for 2009 will be around 700 million lower (approx. 17.3 billion). DPAG's forecast is less optimistic than that of its competitors, which are anticipating a slight recovery in volumes and revenues for 2009 after negative growth in 2008.

Industry insiders had anticipated full market liberalisation to lead to an upturn in business for DPAG's competitors, yet so far their expectations have not been fulfilled. This may be due to the unresolved issues of minimum wages and VAT on postal services. Other reasons for the revenue decline are more generous discounts and greater price competition.

Revenues and volumes in the licensed letter market 1998–2009



After a decline in 2008 DPAG's approximately 750 active competitors, most of them small, are expecting a slight gain in market share for 2009.

Market shares in the letter segment in terms of revenues 2002–2009

	2002	2003	2004	2005	2006	2007	2008*	2009e
Other licensees' market share**	3.0%	3.9%	5.3%	7.6%	10.7%	11.3%	10.4%	11.8%
DPAG's market share***	97.0%	96.1%	94.7%	92.4%	89.3%	88.7%	89.6%	88.2%

* Updated figures
** Including services rendered under worksharing agreements with DPAG
*** Including subsidiaries

Measured in revenues, DPAG (including subsidiaries) is expected to have achieved a share in the letter market of just over 88 percent in 2009 (2008: 89.6 percent); in terms of volumes it is anticipated to have decreased slightly to around 90 percent (2008: 91 percent).

In 2009 the other licensees transported a total of around 1.73 billion items (excluding those posted under worksharing agreements), 110 million more than in the prior year (1.62 bn), and generated around €1.1 billion in revenues (2008: €1.0 bn).

The number of consolidated items posted at DPAG's letter sorting centres for further conveyance passed the one billion threshold for the first time in 2008. For 2009 competitors expect to report another clear increase in consolidated volumes to approximately 1.5 billion items.

WORKFORCE DEVELOPMENT

Since 2007 DPAG's competitors have registered a continuing decline in workforce size. At the end of 2008 they employed around 31,000 staff (end of 2006: 48,000; end of 2007: 35,000). The decline has to a large part been due to several insolvencies in the PIN Group.

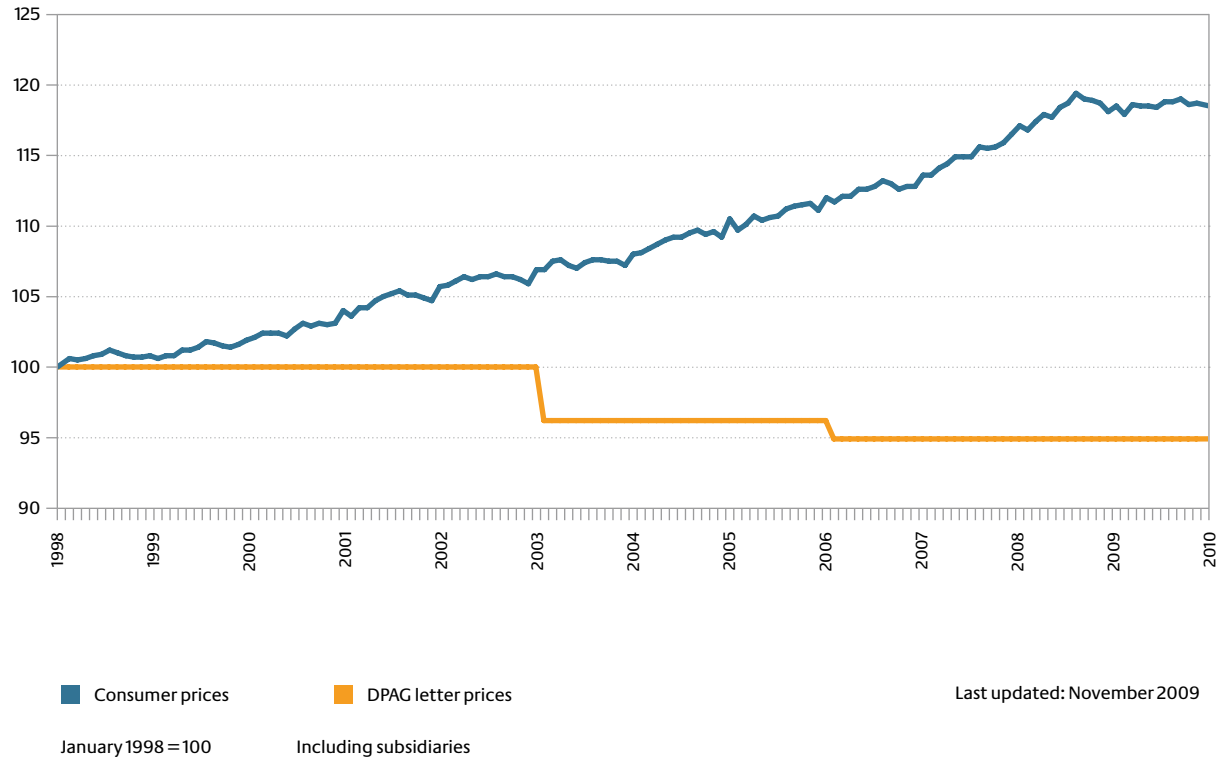
Workforce figures at DPAG (including subsidiaries) have also declined. In 2008 the company employed around 166,000 staff (2007:167,500) in the letter segment, including a pro rata share of administrative and overhead staff (a calculation first applied in 2006).

Until 2007 the rising volume of mostly end-to-end letter items had caused DPAG's competitors to grow their workforce quite considerably, yet a large number of market exits and a pronounced long-term trend towards contracting out delivery services have since interrupted the trend. The increasing use of DPAG's networks and in turn, the transfer of downstream conveyance services to DPAG has been another factor. DPAG is also increasingly contracting out delivery services and, despite a slight increase in volumes since 1999, has continually reduced its workforce. By contrast, the number of employees in the postal services market as a whole (licensed area plus CEP services) has grown further to currently around 450,000.

PRICE LEVELS

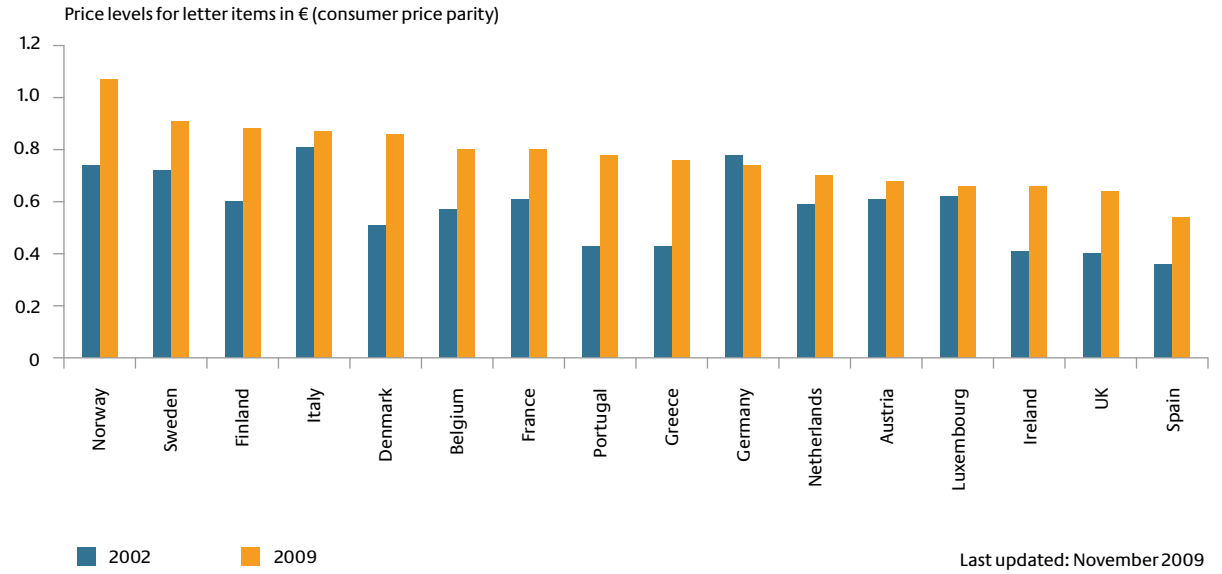
Since the German Postal Act came into force in 1998 average prices for single national letter items (eg postcards, standard and compact letters) have either declined slightly or remained stable thanks to intervention from the Federal Network Agency, whose rates regulation is based on the cost of efficient service provision and stipulates productivity gains under the price cap regulation procedure. Adjusted for inflation, real prices for letter services dropped more than 20 percent between 1998 and 2009.

Development of general price levels and DPAG's letter prices between 1998 and 2009



Unlike in Germany, price levels in most European countries have risen substantially since 2002. In a European comparison Germany occupies a mid-field position. In November 2009 prices for individual letter items in Germany were around five percent lower than in 2002.

International comparison of letter prices in 2002 and 2009



LICENSEES

Between 1998 and the end of 2009 the Federal Network Agency granted almost 2,600 companies a licence for the conveyance of letter items up to 1,000 g. 1,110 providers withdrew from the market during this time. Of the approximately 1,500 licensees that remain, some 750 are still active and are generating revenues.

The Agency granted 85 licences in 2009. By contrast, 70 providers exited the market. After the number of withdrawals peaked towards the end of 2007, levels have returned to normal.

In 2009 a rising number of DPAG's competitors formed alliances and partnerships in a move to consolidate their interests and leverage synergies. The expectation is that this will help the partners to gain greater coverage and enable them to handle eg large-scale commissions.

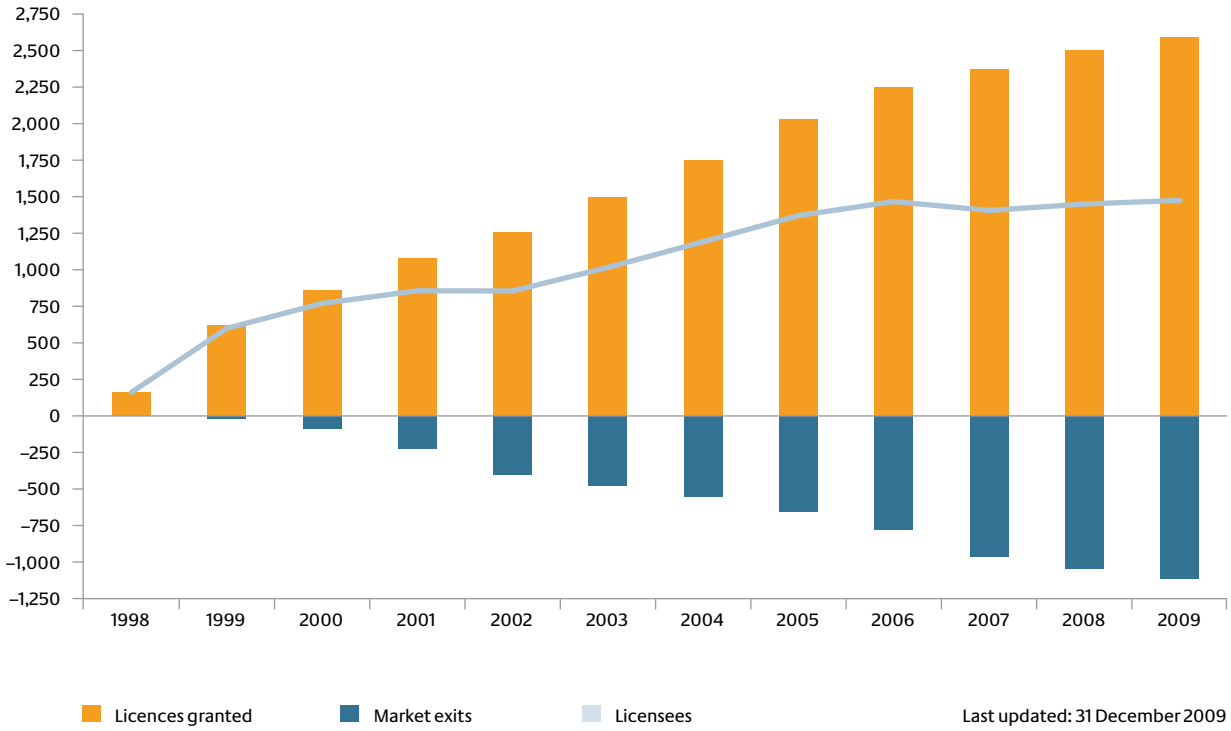
Market exits 2006–2009

	Q1	Q2	Q3	Q4	Total
2006	15	10	64	30*	119
2007	28*	13	65	81	187
2008	55*	2	11	15	83
2009	47	4	7	12	70

* Updated figures

Last updated: 31 December 2009

Licences—Market exits—Licensees 1998–2009



Last updated: 31 December 2009

ACCESS TO WORKSHARING SERVICES, CHANGE-OF-ADDRESS INFORMATION AND PO BOXES

Access to worksharing services

To encourage competition in the market for licensed postal services the incumbent (here, DPAG) is obliged to grant other providers access to its network, a process referred to as worksharing. A worksharing service is a service that is normally offered as a full conveyance service under licence but in this case, minus those parts that are rendered by the requesting provider itself. The incumbent's worksharing agreements are subject to approval from the Federal Network Agency. Access to worksharing services is available to all competitors and end users under equal terms and conditions. More than 330,000 worksharing agreements have been signed since 1 January 1998.

By order of the Federal Network Agency DPAG offers both customers and competitors access to worksharing services in its outbound mail sorting centres (BZA), where outbound mail for recipients in other regions is consolidated, and the inbound mail sorting centres (BZE), which handle the delivery of incoming mail for recipients in that region.

Worksharing agreements (access to mail sorting centres) in 2009

	Type of item			
	Individual items		Infopost	Total
Point of access	BZA	BZE	BZE	BZA/BZE
Contracting party				
End users	54	128	61	243
Competitors	22	33	11	66
Total	**76**	**161**	**72**	**309**

Last updated: 31 December 2009

Besides agreements on access to mail sorting centres, DPAG also offers other kinds of worksharing agreements. Its obligation to submit these, too, to the Agency for approval was confirmed in a ruling by the Federal Administrative Court dated 20 May 2009 (reference BVerwG 6 C 14.08). Under the ruling, the incumbent DPAG must submit all worksharing agreements that the Federal Network Agency has defined as such to the Agency for approval (cf. page 151).

Other worksharing agreements in 2009

Type of agreement	Number of agreements
Franking of items	20,434
Electronic franking (letter service)	139
Electronic franking using mail dispatch systems	31
Infopost cooperation agreements	69
Supplementary agreements on Infopost cooperation	23
Total	**20,696**

Last updated: 31 December 2009

Access to change-of-address information and PO boxes

The incumbent is also obliged to grant competitors, for a fee, access to any information it may have on changes of address. In 2009 DPAG submitted 15 agreements on access to change-of-address information to the Agency for approval. Similarly, an incumbent must grant competitors, for a fee, access to the incumbent's PO box facilities so they can post items addressed to a PO box number. In 2009 DPAG submitted 14 such agreements to the Agency for approval.

Ruling Chamber decisions

DPAG's prices for domestic private customer letters remain stable since the incumbent has not exercised its theoretical scope for raising prices. The Federal Network Agency has approved competition-inducing rates for access to PO box facilities and change-of-address information, a crucial prerequisite for equal competition in the letter market.

PRICE CAP REGULATION

In price cap proceedings the competent Ruling Chamber has approved DPAG's rates for letter items up to 1,000 g. Under the price cap formula DPAG would theoretically have been entitled to raise its rates by 0.5 percent for 2009, yet decided not to fully exercise its scope in its request for approval. Since DPAG's request made no reference to an increase in domestic letter rates, these have remained stable. That said, DPAG did request a 0.1 percent increase in its international letter rates, which the Ruling Chamber approved.

In a request approved in 2009 DPAG decided not to fully exercise its scope for an increase in rates for 2010. Instead, it applied for a rate increase for certain international letter items of around half of what it could have demanded under the price cap formula, meaning that domestic rates will again remain stable in 2010. The current rates approval is valid until 31 December 2010.

The price cap formula was reset in 2007 and applies until the end of 2011. It obliges DPAG to ensure an annual productivity increase of 1.8 percent in correspondence to the rate of inflation as calculated by the Federal Statistical Office.

As the exclusive licence expired effective 1 January 2008, ex ante rates regulation is now limited to individual letter items which are mainly sent by private individuals and small businesses. Unlike in prior price cap proceedings, the Agency now creates only one basket since the services hardly vary in terms of competitiveness or substitutability. In accordance with section 19 sentence 2 of the Postal Act, since 1 January 2008 rates for bulk items—conveyance services involving a minimum mailing volume of 50 letter items—have been subject only to ex post control of anticompetitive practices on the part of the Ruling Chamber. This has effectively removed the business customer and bulk mail business from the scope of ex ante regulation since 2008.

RATES FOR ACCESS TO PO BOXES

DPAG is obliged by law to grant its competitors access to its PO box facilities to enable them to post items addressed to PO box numbers. The fees that DPAG may impose for this are subject to approval from the Federal Network Agency. In 2009 the Ruling Chamber issued a follow-up approval for the fees payable by competitors wishing to access DPAG's PO boxes which runs from 1 January 2010 until 31 December 2012.

DPAG had applied for a one-off acceptance fee of €2.70 per posting plus €0.06 per posted item. The Ruling Chamber approved an acceptance fee of €0.80 plus €0.05 per posted item. The increase from the previously approved acceptance fee of €0.53 to €0.80 was primarily justified by a realistic rise in personnel costs.

The approved rates correspond to the cost of efficient service provision and hence encourage competition. They are no barrier to market entry. The fact that the acceptance fee has gone up presents no disadvantage to competitors. Since the average number of items per posting has risen sharply over the past few years, the acceptance cost per item of €0.04 remains low. The average rate per posted item has undergone only a slight increase.

RATES FOR THE SERVICE OF DOCUMENTS

The rates approval procedure for the service of documents is a special form of rates regulation. In this case, the regulatory requirements that normally only apply to incumbents must be met by all providers offering this type of service. The Agency conducted around 85 rates approval proceedings in 2009. More than half of the applications it considered were for the nationwide provision of this service; the remainder had a local focus.

To optimise and simplify the procedure the Ruling Chamber has uploaded an application form to its website specifically for competitors intending to offer the service locally. Providers applying to provide it on a major scale need to complete a multi-page form that is available by post on request.

Besides the classic service of documents, in 2005 DPAG and one of its competitors began to offer an electronic variant where the completed form is scanned, digitised and made available for download by the sender. The paper forms are later compiled and returned to the sender. The fee for this service varies according to volume, with discounts granted for large posting volumes.

The service of documents market is continuing to consolidate, with competitors forming alliances in order to respond to major public calls for bids. As the majority of commissions are today put out to public tender, the Ruling Chamber has adjusted its approval procedures accordingly. For instance, some time ago it stopped publishing the approved fees so the bid process could remain confidential.

SPECIAL CONTROL OF ANTI-COMPETITIVE PRACTICES

Since 1 January 2008 DPAG has no longer had to gain *ex ante* approval for rates for posting volumes of 50 items or more. This specifically applies to rates for postal items that have been prepared by the poster under a worksharing agreement.

DPAG has raised all of the worksharing discounts it grants to bulk customers and competitors by five percent and considerably reduced the posting volumes necessary for gaining a discount. The Ruling Chamber has verified that the new discount regime does not distort competition. Specifically, it involves no anti-competitive discounts. Discounts are only available for items that are prepared under worksharing agreements; there is no indication that they are being granted for all products. Neither are they tied to downstream or upstream services.

The Federal Network Agency is not aware of any instances where DPAG may have put individual posters or groups of posters at a disadvantage by not granting them equal terms and conditions. Similarly, there is no indication that individual posters have been given preferential treatment in the shape of higher discounts or an exemption from certain preparatory services.

The increase in worksharing discounts and the Agency's efforts to improve the terms and conditions of posting caused demand for worksharing services to rise once again in 2009. This is particularly true for the posting of letter items by 'consolidators'—providers that collect and post items that have been prepared by their own customers under worksharing agreements at DPAG's sorting centres.

RATES APPLICATION FOR HYBRID ONLINE LETTERS

In 2009 Deutsche Post Com GmbH, a subsidiary of DPAG, submitted a rates application to the Ruling Chamber concerning a hybrid online letter product. In a sense, the application may be perceived as having launched the new age of the electronic letter.

Electronic letters offer all the advantages of traditional paper letters plus the benefits of e-mail, since they can be produced, posted and received electronically. Unlike e-mail, however, they cannot be forged, and they are delivered in a legally binding form.

The application refers to only one part of this new service—the conveyance by post of letters that are posted electronically with DPAG. If a letter cannot or should not be delivered electronically to the addressee in question, it is printed out and processed as a regular letter. An incumbent planning to provide this part of the service, which is subject to licence, requires a rates approval decision.

The hybrid letter product will be offered in formats and with special services that are similar to those offered for traditional letter products.

Court proceedings

The lawfulness of the Federal Network Agency's inquiry orders has been confirmed by the administrative courts.

The Federal Network Agency is pleased to report a wholly positive picture with regard to its administrative court proceedings involving postal regulation. The courts verified and confirmed the lawfulness of two inquiry orders that were issued by the Agency. Inquiry orders are a powerful information-gathering tool that the Agency can use to exercise its regulatory responsibilities effectively.

In its ruling dated 20 May 2009 (reference 6 C 14.08) the Federal Administrative Court confirmed the Agency's entitlement to request the submission of a number of worksharing agreements and rejected an appeal lodged by DPAG. DPAG had refused to submit the agreements in question, arguing that they were not worksharing agreements as defined under section 28 of the Postal Act. At the core of the dispute were the legal definition of the term 'worksharing' and the clarification of what constitutes "conveyance" in this context. The Senate confirmed that the Agency's interpretation of the terms was correct.

Accordingly, worksharing services are services that are normally offered as a full conveyance service under licence but in this case, minus those parts that are rendered by the requesting provider itself. In this context "conveyance" is not limited to the physical transportation process, but in fact covers the entire value chain from the sender to the addressee.

The incumbent's obligation to offer parts of the conveyance chain as services in their own right serves to increase the degree of the division of labour in the postal market, and encourages competition by assisting smaller and medium-sized providers, in particular, in entering the market. If these providers take up the opportunity to render such services, the overall conveyance is the sum total of the service provided by the incumbent plus those partial services rendered by the provider. The latter is considered a worksharing service because it saves the incumbent from having to perform that part of the overall conveyance service.

In two test cases the higher administrative court of the state of North Rhine-Westphalia ruled that the Agency's repeated inquiry order concerning working conditions in the postal sector must be responded to by the companies it was

addressed to (ruling dated 5 October 2009, references 13 B 1056/09 and 13 B 1057/09). This follow-up to an inquiry order originally issued in 2006 is part of a (continued) investigation into working conditions which, according to section 6 (3) sentence 1 No. 3 of the Postal Act, is fundamental to the issue of a licence and as such, a sovereign task for the Agency under the Postal Act. The follow-up inquiry order requested details on subcontractors, too, in order to gain information on all providers active in the licensed area and subsequently consider whether to issue a licence or not.

The court confirmed the Agency's opinion that subcontractors are increasingly and fundamentally shaping the postal market in general and the letter segment in particular, one which is normally characterised by the presence of licensees. Since a large number of the providers active in this field are actually subcontractors, the Agency crucially requires information on them, too, in order to fulfil its obligation to monitor the licensed part of the postal market. If a licensee commissions a subcontractor or a subcontractor provides services for several licensed providers, the activities of both the licensee and the subcontractor are performed in the licensed area, not outside it, since the licensee commissions the subcontractor to work on its behalf and the subcontractor is active on behalf of the licensee.

Electricity and gas

Market watch

With its work in the energy sector the Federal Network Agency aims in particular at the creation of market structures and framework conditions that ensure fair access to the energy supply networks in a way that increases competition.

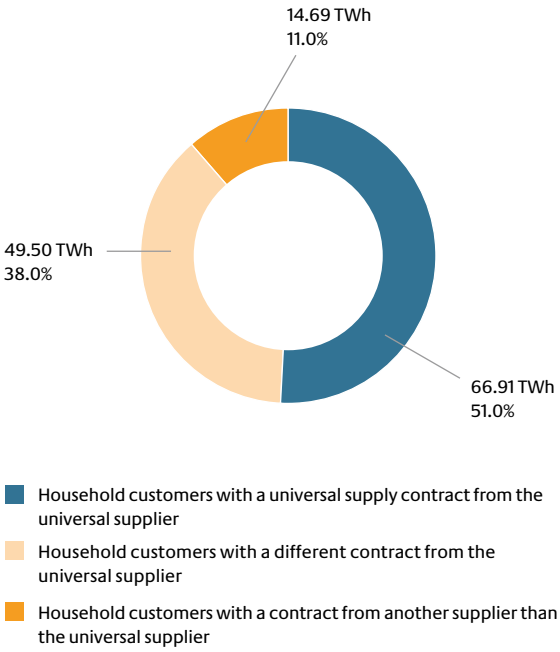
To increase market transparency and to fulfil its regulatory responsibilities, the Federal Network Agency performs annual monitoring tasks. These focus on competition from the final consumers' point of view as well as the development in the regulated and competitively organised areas of the value-added chain in the energy industry.

CHANGE OF SUPPLIER FOR ELECTRICITY

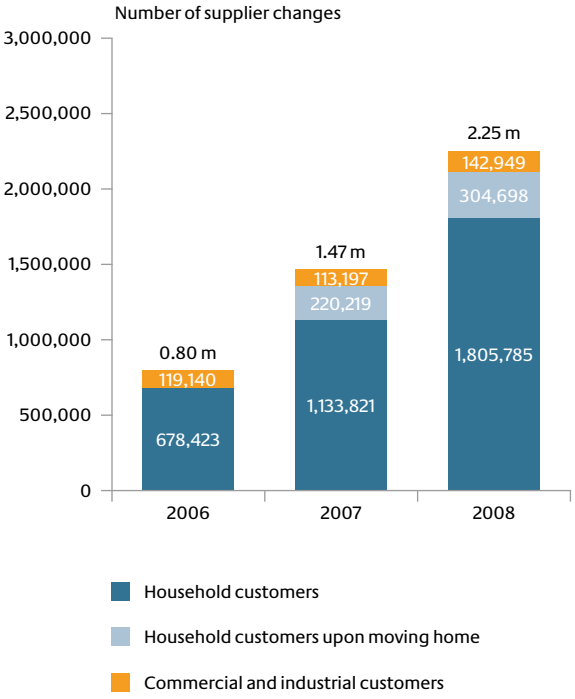
The Federal Network Agency's work carried out in the interests of the consumers and competition continues to prove successful. In the case of industrial and commercial customers, the number of supplier changes in 2008 rose by nearly 30,000 to approx. 143,000, when compared to the previous year. The volume-weighted supplier change ratio for small commercial customers increased by 0.8 percent to 6.3 percent. For large commercial customers the ratio remained almost constant at 12.6 percent. For industrial customers a decline by 2.6 percentage points to 10.6 percent was recorded.

For household customers the share of customers with a universal supply contract revealed a particularly marked decrease by 8 percentage points to around 51 percent. On the one hand this reflects the continually increasing supplier changes by household customers. On the other hand around half the household customers have not yet made any use of competition on the electricity market, either for changes of their contract or supplier. Of the household customers who had cancelled their universal supply contract, the majority decided in favour of another contract from their universal supplier. For this reason the regional dominance of the universal suppliers for supplying household customers continues, with a share of nearly 90 percent.

Electricity contracts household customers 2008



Change of electricity suppliers 2006–2008

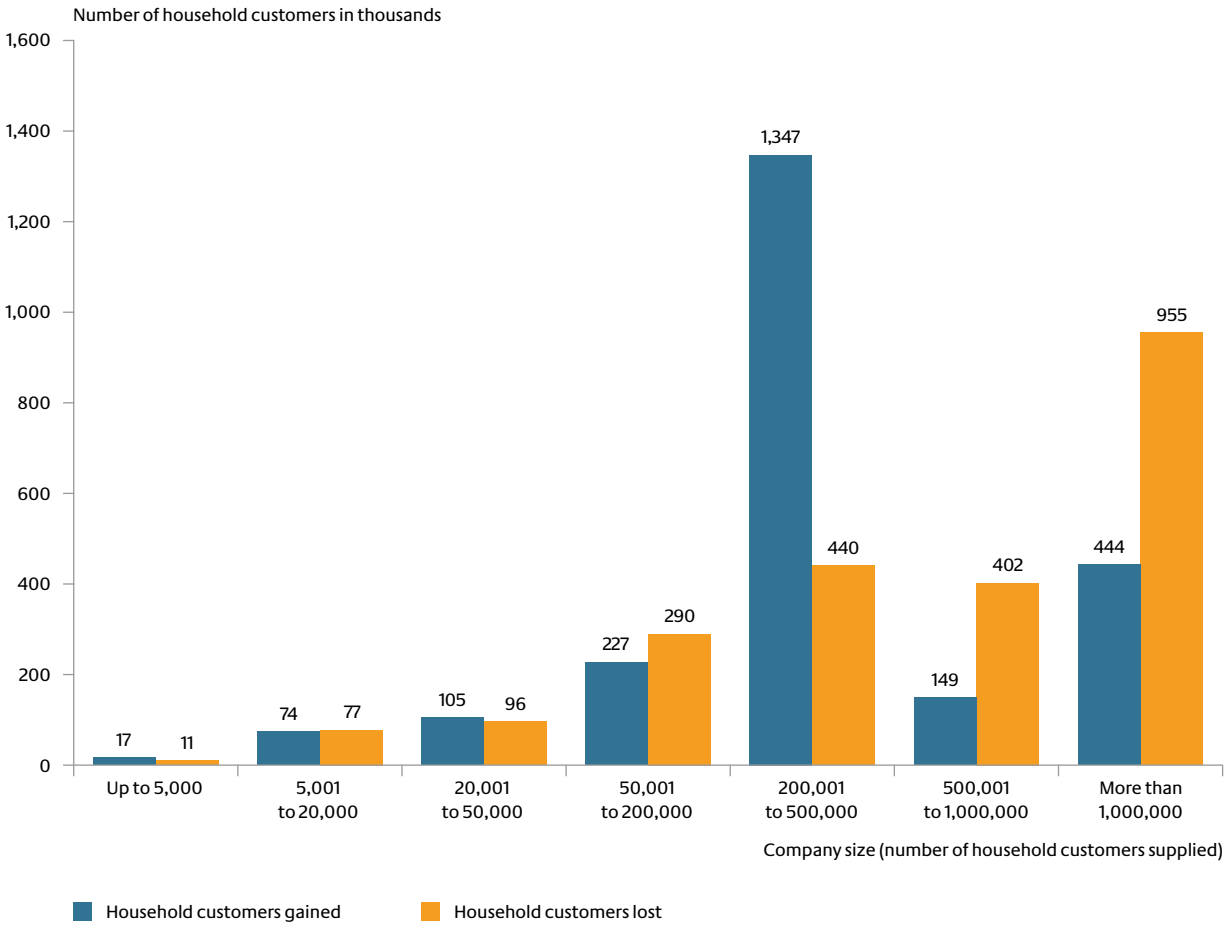


For "household customers upon moving home" no data was available for the year 2006.

In 2008 the volume-weighted supplier change ratio for household customers stood at around five percent, which is around one percentage point higher than in the year before. The share of other electricity suppliers in the supply of household customers rose from 6.4 percent to 11.2 percent. In 2008, 2.1 million household customers changed their supplier, which was almost 800,000 more changes than in the year before. In the same year around 300,000 customers changed their supplier in connection with moving home and around 200,000 customers changed their supplier repeatedly in 2008.

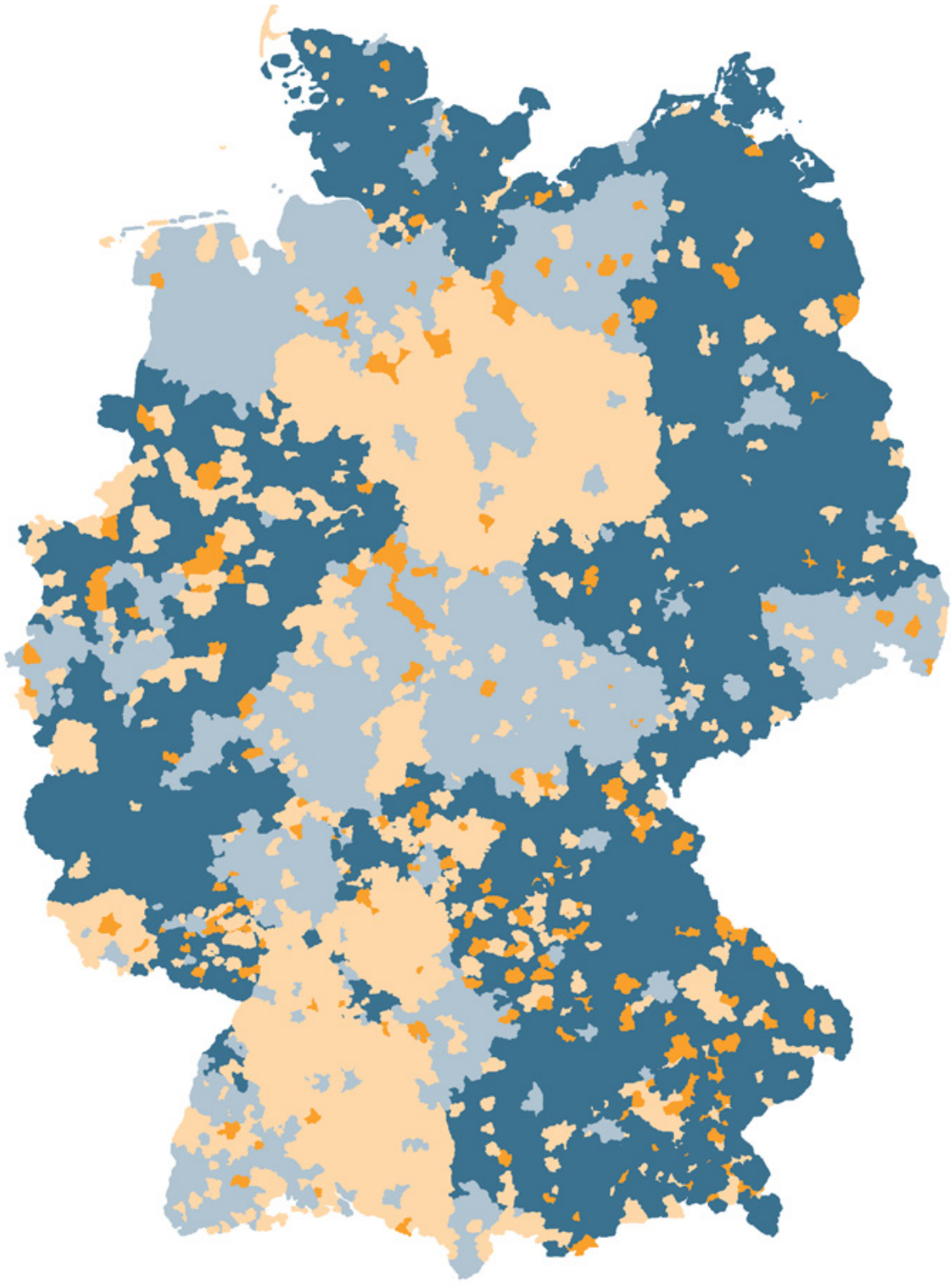
More than 75 percent of the 2.1 million supplier changes by household customers concentrate on ten providers. In 2008 the four largest suppliers in Germany held a share of approximately 52 percent in the overall volume of supplier changes by household customers. With that their share in the market segment for supplying new customers reached a market share that is comparable to the overall retail segment.

Household customer gains and losses in the electricity market 2008



In 2008 it was in particular the large electricity suppliers that suffered great customer losses. However, many of these undertakings were also able to realise significant customer gains through other sales changes (such as subsidiaries), so that the customer losses and gains balanced out in most cases. In the case of undertakings supplying up to 200,000 household customers, the sum total of customer losses and customer gains almost balanced out again. However, that does not mean that the customer losses and gains balanced out for each undertaking, but rather that some undertakings of this magnitude had to accept some considerable customer losses, while other undertakings recorded some significant customer gains.

Competition in the electricity market 2008



Number of suppliers supplying household customers, per network area

101 to 200 51 to 100 21 to 50 1 to 20

Map basis: Federal Agency for Cartography and Geodesy
Data basis: Federal Network Agency

WHOLESALE PRICES FOR ELECTRICITY

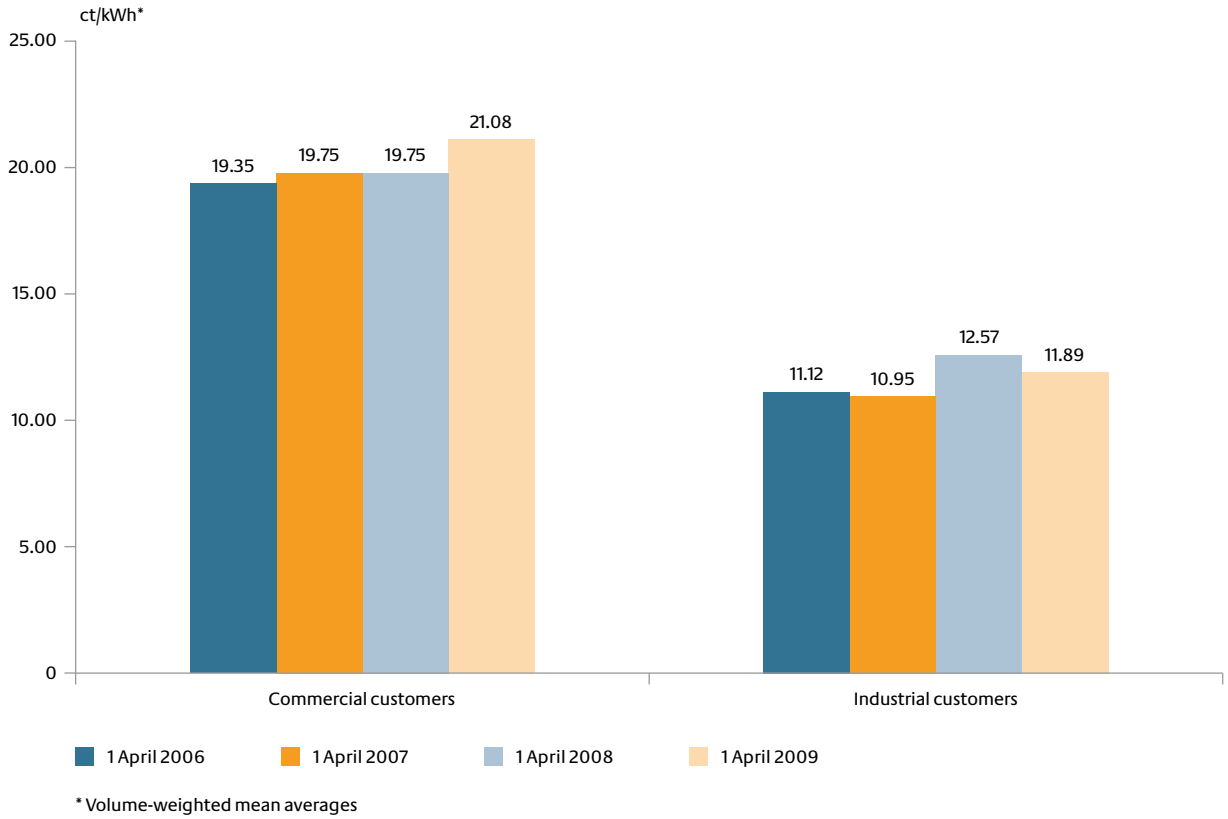
In 2008 the day-ahead spot market of the European Energy Exchange AG (EEX) recorded significant price increases. The annual mean averages of the relevant indices (Phelix Day Base and Phelix Day Peak) for example were respectively 73.1/62.9 percent higher in 2008 than in 2007. However, after a rise until October 2008 and the subsequent decline, the mean averages in 2009 were once again comparable with the annual mean averages of these indices for 2007.

In 2008 the annual mean averages on the EEX futures market had also increased significantly by 26 percent (Phelix Base Year Future) and 25.3 percent (Phelix Peak Year Future) for the baseload forward prices, compared to 2007. However, a short-term analysis of the price development of the Phelix Year Futures reveals a peak price at the beginning of July 2008, followed once again by significant price decreases until the end of February 2009. In 2009 the average price level of the Phelix Year Futures for 2010 stood at around 12 or 13 percent below the annual mean average of the comparable Phelix Year Futures in 2007 for the subsequent year 2008.

RETAIL PRICES FOR ELECTRICITY

In the retail sector the electricity prices for the period 2006 to 2009 have risen by around seven percent and nine percent respectively for industrial and commercial customers. A comparison of the prices on 1 April 2009 with the prices on 1 April 2008 shows that the prices for industrial customers have decreased by five percent, while the prices for commercial customers have increased by seven percent.

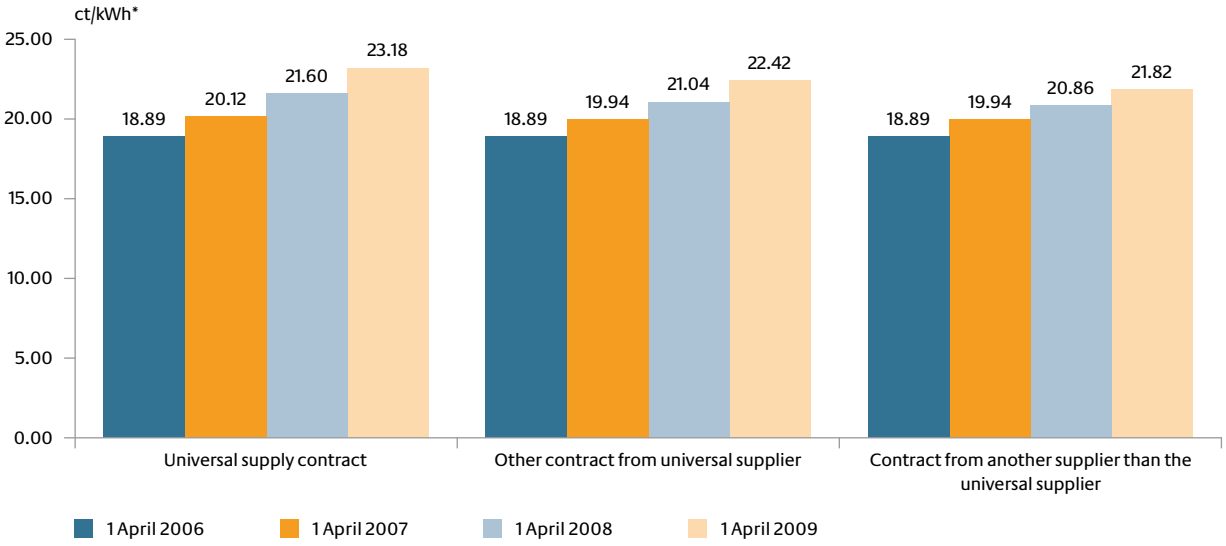
Electricity prices for commercial and industrial customers 2006–2009



* Volume-weighted mean averages

Unlike household customers, industrial and commercial customers pay the same or even lower prices at their universal supplier than the prices demanded by competitors. The decline in wholesale prices has also affected retail prices for industrial customers far more than the retail prices for small commercial and household customers.

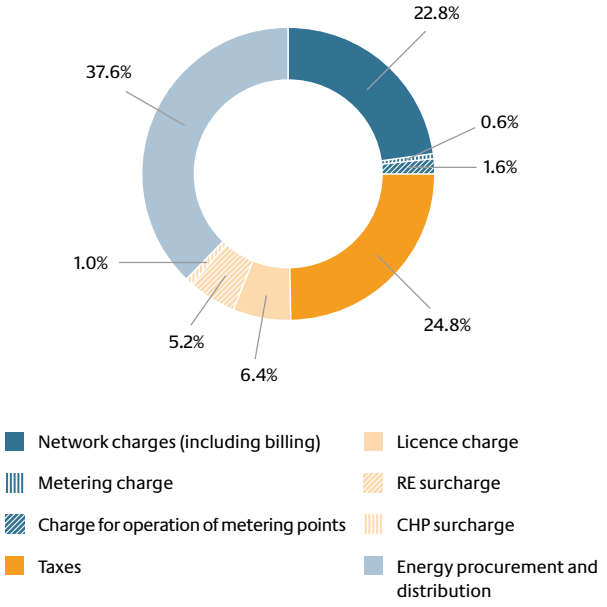
Electricity prices for household customers 2006–2009



* Volume-weighted mean averages

On 1 April 2006 the mean averages for the electricity price for household customers with a universal supply contract, with another contract from the universal supplier or with a contract from another supplier than the universal supplier are identical, since no distinction was made between these categories at the time of collecting this data.

Composition of the electricity price for household customers 2009

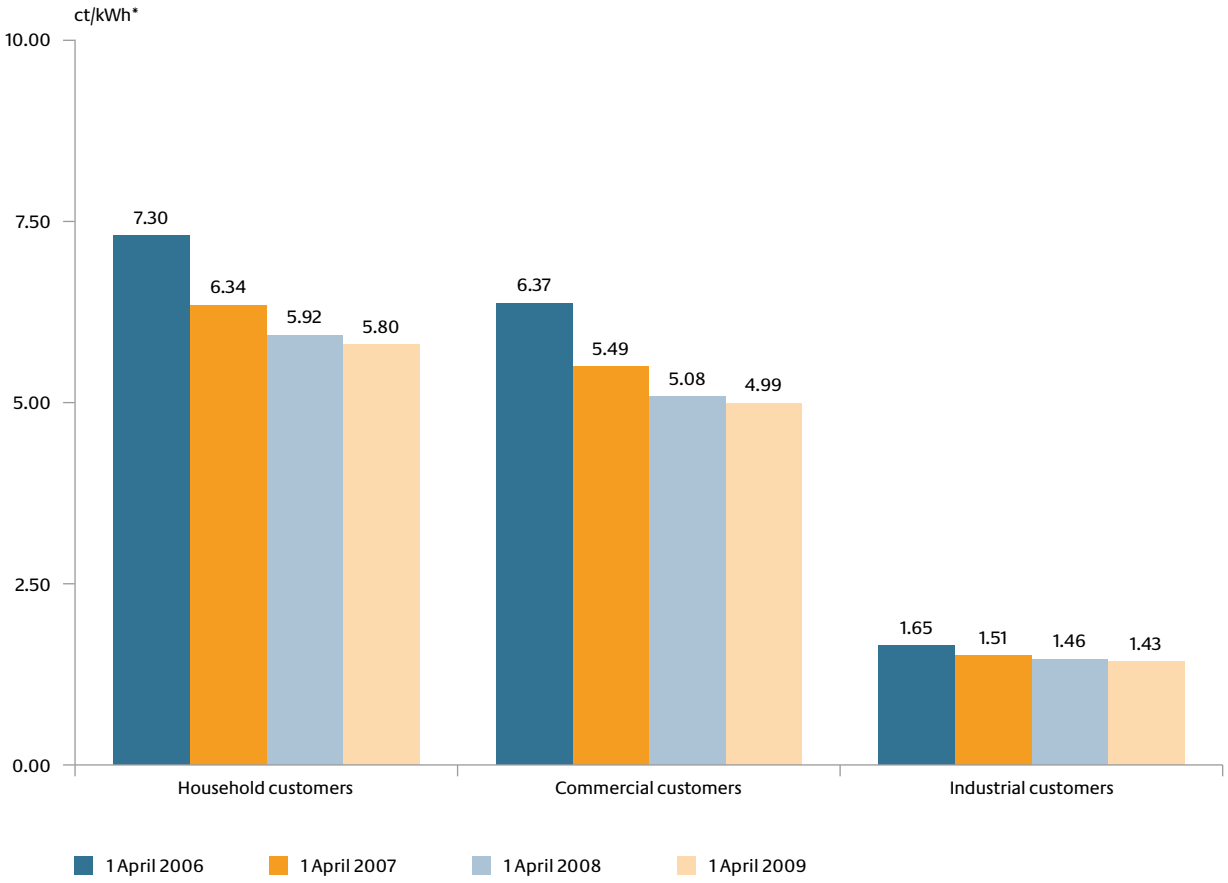


As of: 1 April 2009

For household customers the retail prices have increased by 23 percent between 2006 and 2009—a significantly higher increase than for industrial and commercial customers. A comparison of the prices on 1 April 2009 with the prices on 1 April 2008 shows that the prices for household customers under universal supply have risen by 7.3 percent. However, in cases of supply by a competitor the price increase was only 4.6 percent. Particularly noteworthy at this point is the fact that around half the household customers have still chosen universal supply, which is the most expensive form of electricity supply, where prices rise the most.

For a household customer under universal supply, with an annual electricity consumption of 3,500 kWh, the prices in the period from 1 April 2006 to 1 April 2009 increased by an average 4.3 ct/kWh, which is equivalent to approximately €150 per year. For household customers taxes contributed 1.1 ct/kWh and other price components required by the government (licence charge, RE and CHP surcharge) 0.4 ct/kWh to the average price increase. The majority of the average price increase was due to increased costs of the price element "energy procurement and distribution", which rose by 4.2 ct/kWh. Without the reduction of network charges by around 1.5 ct/kWh, the prices would have risen by an average of 5.7 ct/kWh, which would have been around €200 per year. The regulation of network charges therefore resulted in a significant reduction of the electricity price.

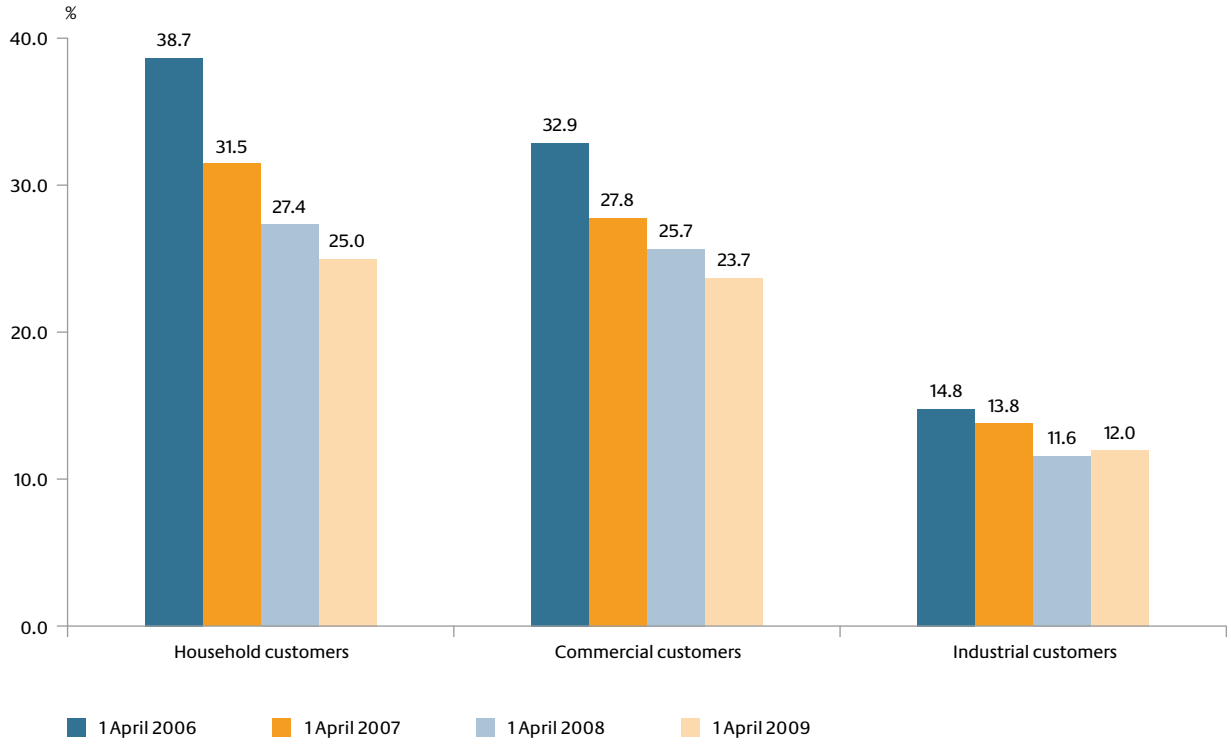
Network charges for electricity 2006–2009



* Volume-weighted mean averages

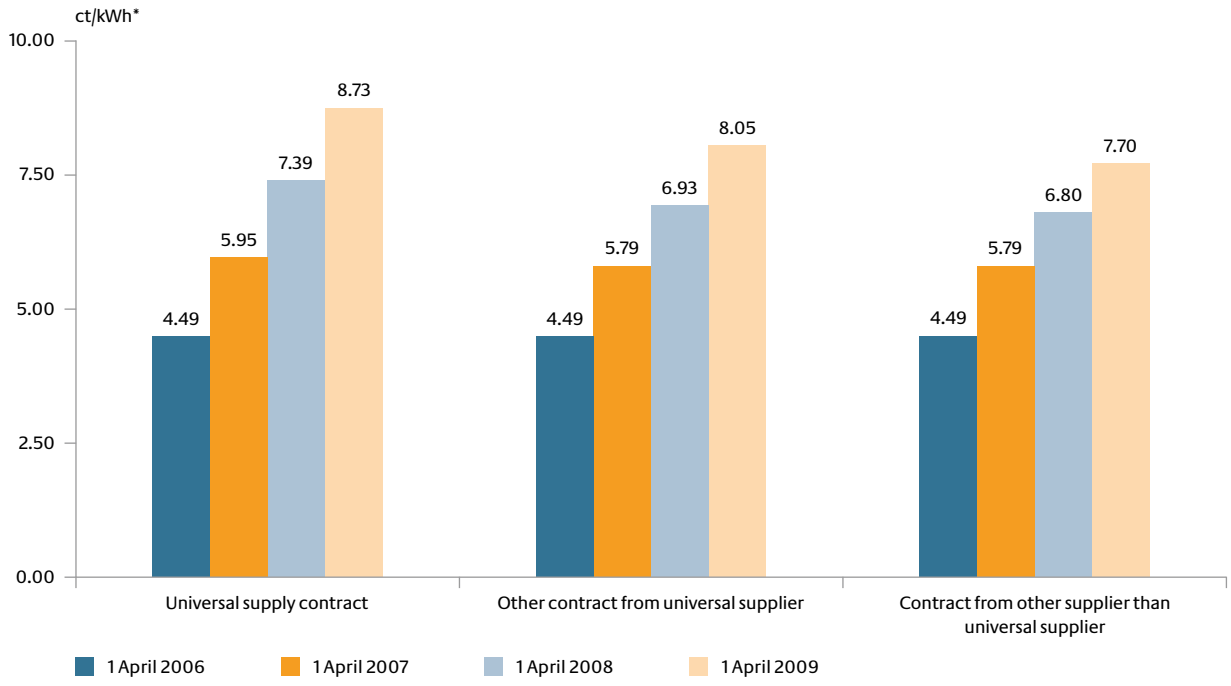
Network charges including charges for billing, metering and metering point operation

Share of network charges in the electricity price 2006–2009



Network charges including charges for billing, metering and metering point operation

Price element "energy procurement and distribution" for electricity 2006–2009



*Volume-weighted mean averages

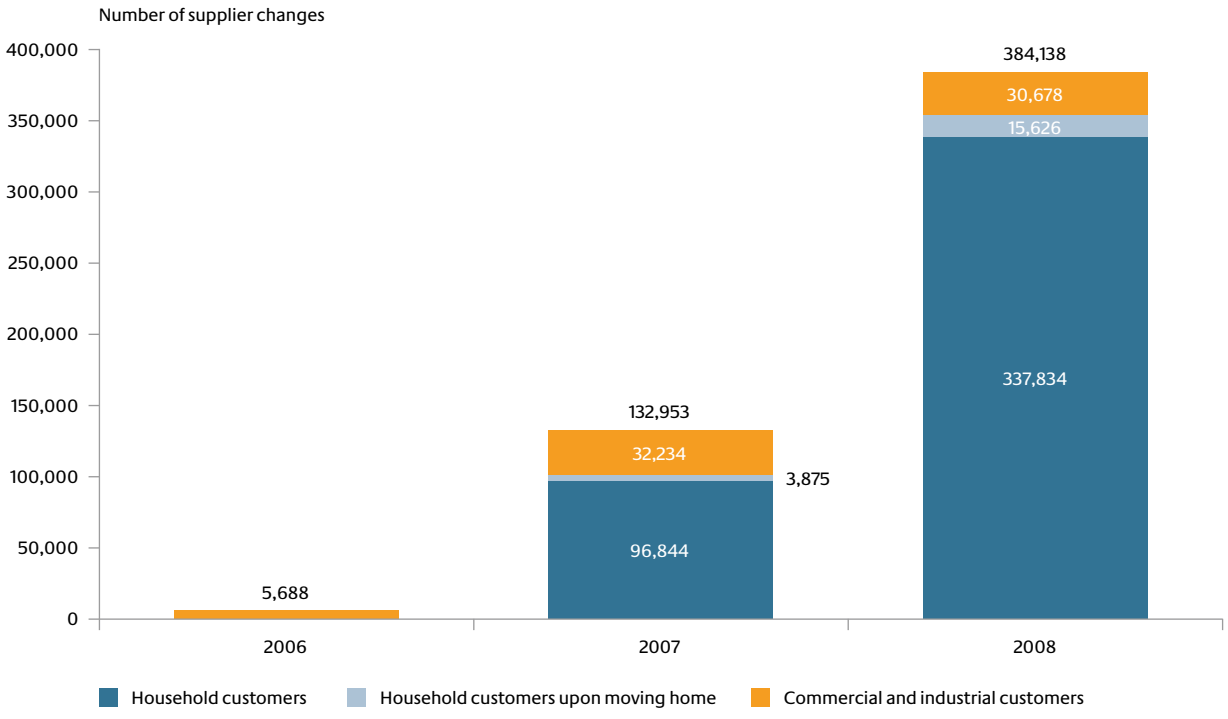
On 1 April 2006 the mean averages for "energy procurement and distribution" for household customers with a universal supply contract, another contract from the universal supplier or a contract from another supplier than the universal supplier are identical, since no distinction was made between these two categories at the time of collecting this data.

In 2008 the price element "energy procurement and distribution" for the household customer segment showed the greatest increase across all three categories of contracts, when compared to previous years. For universal supply for example the price element "energy procurement and distribution" rose by 1.34 ct/kWh between 2008 and 2009. In case of another contract from the universal supplier the increase of this price element for the same period stood at 1.12 ct/kWh. If a contract had been concluded with another supplier than the universal supplier, the share of "energy procurement and distribution" only rose by 0.90 ct/kWh between 2008 and 2009. The fact that the universal supply contract is more expensive than the other contract options can therefore be primarily attributed to differences in the price element "energy procurement and distribution". While the network charges, taxes and other price elements required by the government are almost identical across all three household customer categories, there is a difference of almost 1.03 ct/kWh for the price element "energy procurement and distribution" in the year 2009.

CHANGE OF SUPPLIER FOR GAS

The Federal Network Agency has laid important foundations for intensifying competition, in particular by setting out the standardised Business Processes for Switching Gas Supplier (GeLi Gas) and the new Basic Model for Balancing Services and Balancing Rules in the Gas Sector (GABi Gas). The increase in the change of suppliers reflects the increase in competition. In 2008 around 337,800 household customers changed suppliers. Compared to 2007 this means an almost threefold increase in the number of household customers changing suppliers. A further 30,678 supplier changes were made by final consumers such as commercial and industrial customers.

Change of gas suppliers 2006–2008



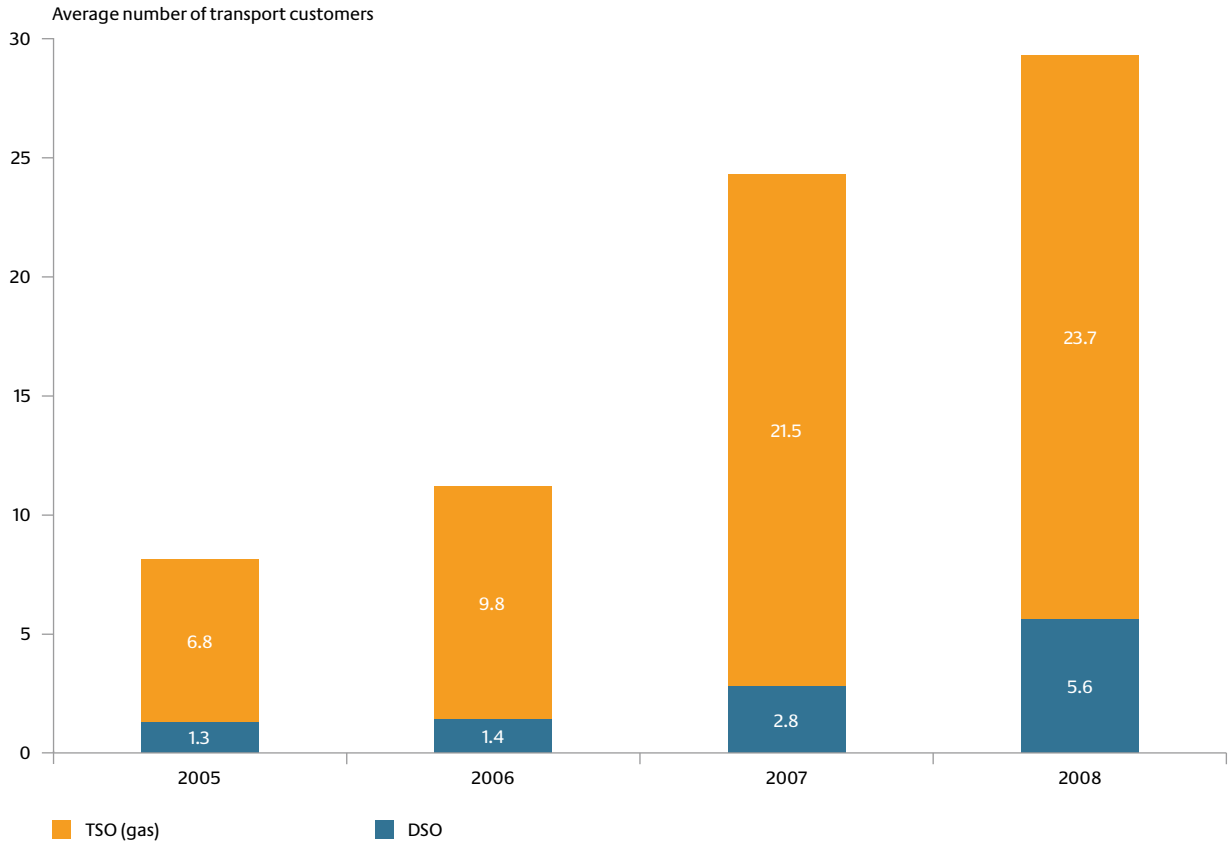
For household customers no data is available for the year 2006.

The amount withdrawn by customers that changed their supplier in 2008 stood at 42.57 TWh. This is equivalent to 4.35 percent of the overall amount of gas withdrawn in 2008. The volume-weighted supplier change ratios for "large and very large industrial customers", standing at 6.82 percent and 10.14 percent and 3.45 percent respectively for "medium-sized industrial customers" and "commercial customers" and 2.57 percent for household customers and small commercial customers were higher than in 2007.

7.69 percent of the gas withdrawn in 2008 went to household customers with a contract from the universal supplier and 18.39 percent to household customers with a special contract from their universal supplier. The share of universal supply contracts declined from 36.24 percent in 2007 to 29.48 percent in 2008. This continues the trend toward special contracts.

One indicator for increasing competition in the gas trade is the growing number of a network operator's transport customers. An upward trend of the average number of transport customers can be recorded both at the level of transmission system operators (gas) and distribution system operators.

Competition in the gas market 2005–2008



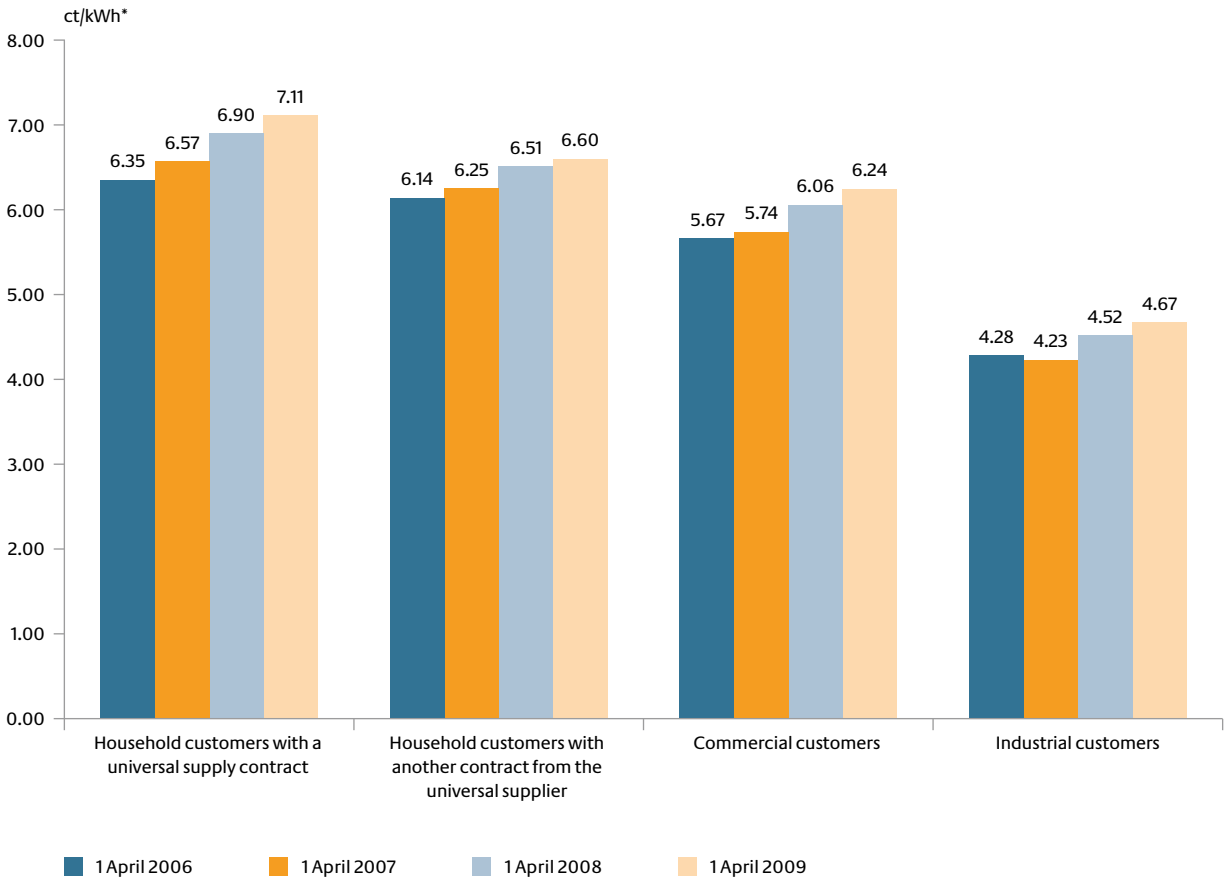
WHOLESALE PRICES GAS

The wholesale prices for gas varied not just between the European states, but also between the individual trading points in the Federal Republic of Germany. To date there is no rough comparable reference price. An exact calculation of the price differences is currently not possible, because the prices are, for the most part, not published at the individual trading points. The price differences result primarily from the location of the trading points as well as the different availability of capacity in the relevant market zone. The day-ahead gas prices at the European trading points showed significant regional differences despite predominantly comparable developments.

RETAIL PRICES GAS

In 2009 the volume-weighted mean average of the gas price for household customers with a universal supply contract stood at 7.11 ct/kWh, while the price for household customers with another contract from the universal suppliers was only 6.6 ct/kWh. For commercial customers the volume-weighted mean average stood at 6.24 ct/kWh, for industrial customers at 4.67 ct/kWh.

Gas prices 2006–2009



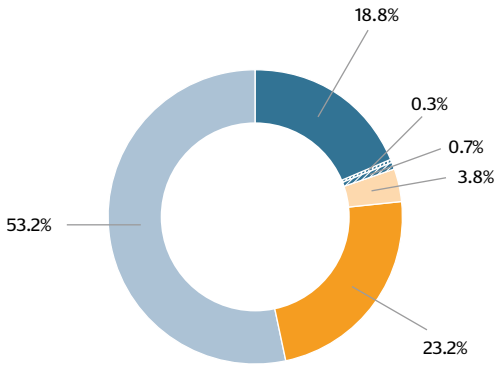
* Volume-weighted mean averages

For gas no data is available for the supply by another supplier than the universal supplier.

The percentage breakdown of the gas price in 2009 was largely identical with that for the year 2008. For household customers with a universal supply contract the price element "energy procurement and distribution" held the largest share in the gas price, with 53.2 percent. Taxes held a share of 23.2 percent. The share of network charges (including the charges for metering point operation and metering) ranked third in 2009, just as in the year before, standing at 19.8 percent. For industrial customers the share for "energy procurement and distribution" was 66.7 percent, taxes held a share of 27.5 percent and network charges 5.8 percent.

In 2009 the network charges have increased across all customer categories. On the one hand this can be attributed to the fact that the costs of upstream network levels and the costs for system services have, for the first time, been fully taken into consideration for the network charges. On the other hand the increases are based on the decline in the consumption of natural gas, compared to the year before.

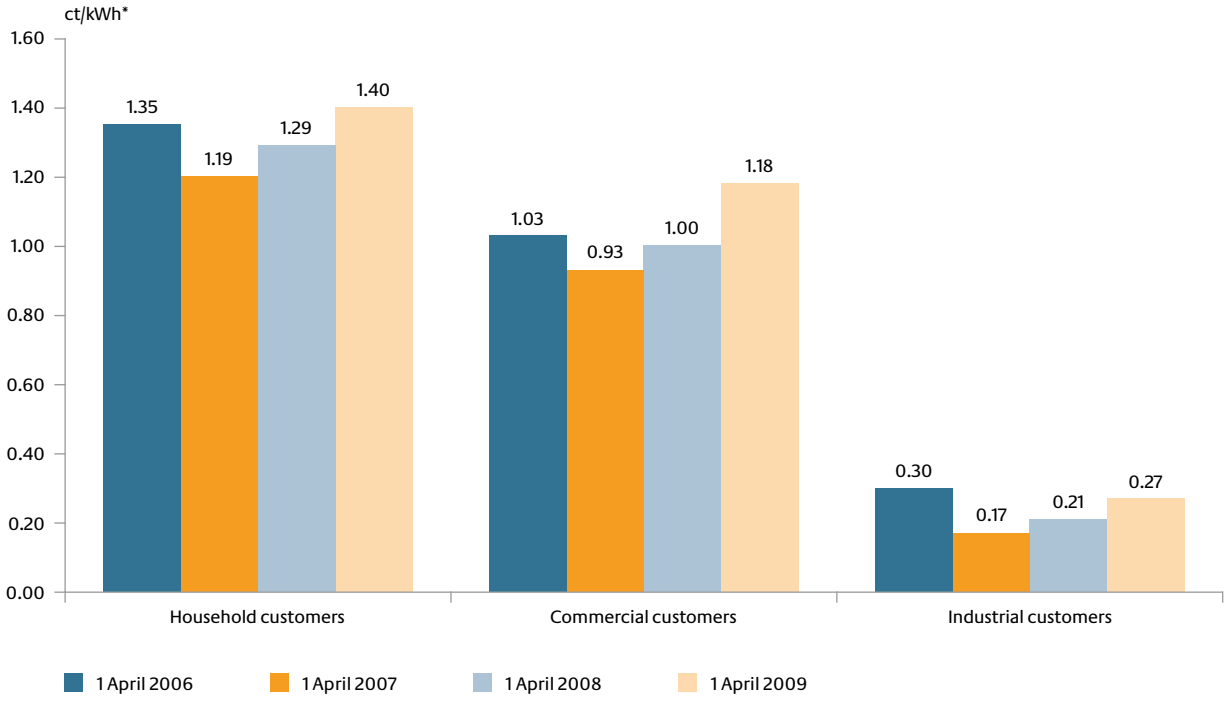
Composition of the gas prices for household customers 2009



- Network charges incl. charge for billing
- Charge for metering
- Charge for metering point operation
- Licence charge
- Taxes
- Energy procurement and distribution

As of: 1 April 2009

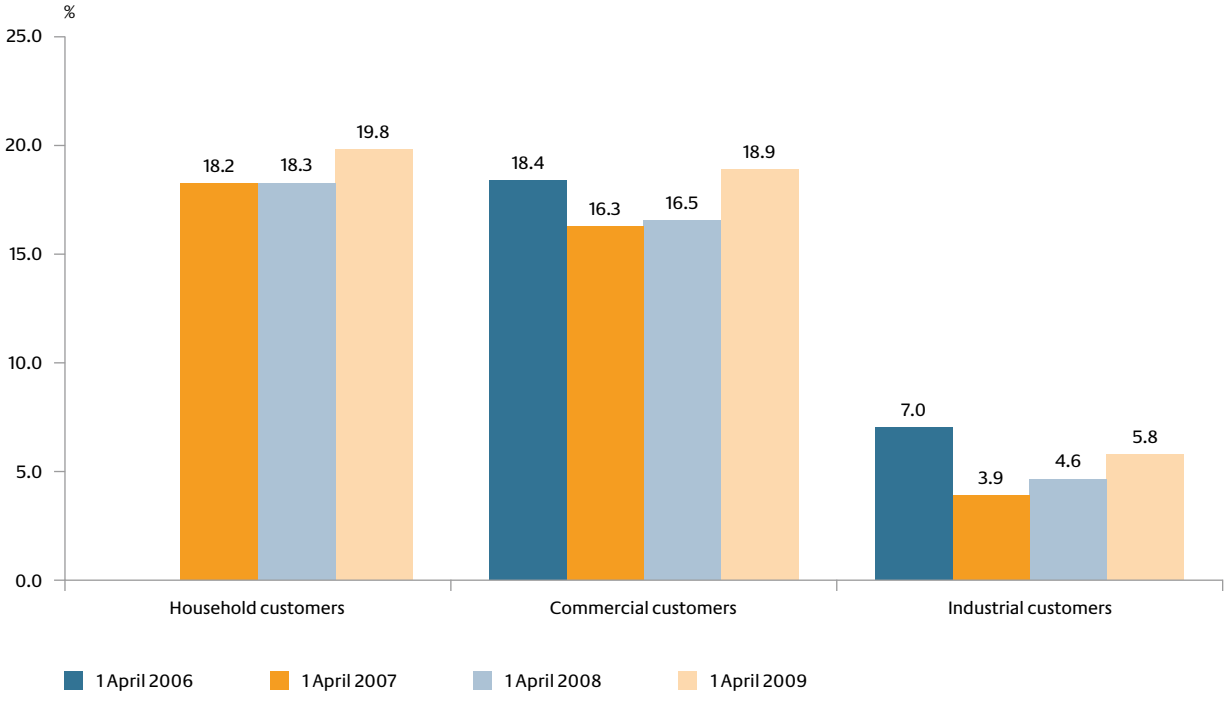
Network charges gas 2006–2009



* Volume-weighted mean averages

Network charges incl. charge for billing, metering and metering point operation

Share of network charges in the gas price 2006–2009



Network charges incl. charge for billing. metering and metering point operation

On 1 April 2006 no data was collected for network charges for the gas price of household customers.

INVESTMENTS

Starting in 2006 the Federal Network Agency has been collecting annual data from the network operators about actual and planned investments for the electricity and gas sector. The analysis of the data collected for 2008 reveals a detailed picture of the investments made to date.

Electricity

In 2008 the German transmission system operators (TSO) spent approximately €994 million on the network infrastructure (including cross-border connections) for the areas new construction/expansion/development, preservation/renewal as well as repairs/maintenance. Approximately €741 million of that amount were allocated to investments within the first two categories and approx. €253 million for expenditure in all three categories. The actual expenditure for the network infrastructure was therefore below the total amount of €1,377 million budgeted for 2008. This discrepancy can largely be attributed to lower investments in the area new construction/expansion/development and the still large number of delayed network expansion projects.

For the period 2010 to 2018 the transmission system operators are planning investments for new construction/expansion/development as well as repairs/maintenance of the network infrastructure totalling approx. €7,801 million. This amount is significantly higher than specified in the year before for the reference period 2009 to 2017, which was stated as approximately €5,405 million. A look at the figures confirms the trend towards an increased expansion of cross-border connections. For this area the TSOs have estimated approximately €681 million. In the reference period stated this figure stood at only €100 million.

In 2008 the investments and expenditure of the distribution system operators (DSO) for electricity stood at a total of approximately €5,574 million. This included approximately €412 million for meters, control equipment and communications infrastructure. In the case of investments for new constructions/expansion/development and preservation/renewal (amounting to a total of approximately €2,393 million) a continuing upward trend was noticeable. However, the expenditure for the network infrastructure (amounting to a total of €3,181 million) revealed a rather unbalanced development in the individual areas. The expenditure for new constructions/expansion/development and preservation/renewal for example have decreased slightly in 2008 compared to 2007, while the expenditure for repairs/maintenance has increased. The discrepancy of the actual amounts for new construction/expansion/development and preservation/renewal in 2008 (€ 1,270 million) is relatively small compared to the budgeted amounts (€ 1,196 million). However, the actual amounts spent on repairs/maintenance in 2008 (€ 1,911 million) exceed the budgeted amount (€ 1,656 million) more noticeably.

The amounts budgeted by the DSOs for the investments and expenditure planned in 2009 stood at €5,767 million, including €456 million for meters, control equipment and communications infrastructure.

Gas

In 2008 the TSOs (gas) made investments to the value of €301 million. Of those nearly €268 million was spent on new construction/expansion/development and €33 million for preservation/renewal. The expenditure for repairs and maintenance in 2008 amounted to a total of €525 million. That indicates a decline of 36 percent in investments in the German transmission system compared to 2007.

However, for the next few years a greater increase in investments is looming on the horizon. The investments planned for the years 2009 to 2011 for new construction/expansion/development amount to a total of €1,783 million according to information by the undertakings. Together with the budgeted amounts for preservation/renewal, amounting to €151 million, investments of nearly €1,934 is planned. For the years 2012 - 2014 investments of approximately €1,589 million are envisaged. For the period 2009 to 2011 expenditure amounting to €1,560 million is planned for repairs/maintenance.

In case of the DSOs (gas) a comparison of the actual figures for the investment volumes 2008 (€441 million for new construction/expansion/development and €290 million for preservation/renewal) with the corresponding forecast for 2009 shows a trend towards increasing investments (€488 million for new construction/expansion/development and €354 million for preservation/renewal). In the case of expenditure for repairs/maintenance the forecast for 2009 (€778 million) matched the actual amount for 2008.

For the first time figures are available on the investments in meters and communications infrastructure in the gas sector. According to these the amount invested in meters in 2008 stood at €53.9 million (estimate for 2009: approximately €60 million) and for expenditure €107.50 million (estimate for 2009: approx. €102 million). €13.1 million was invested in the communications infrastructure (estimate for 2009: approximately €17 million); the expenditure for these investments stood at €14.6 million (estimate for 2009: approx. €14 million).

Activities and proceedings

The work of the Federal Network Agency in the energy sector was largely characterised by the implementation of incentive regulation, which entered into force on 1 January 2009, and the further reduction of structural obstacles to access to the gas network. In addition the regulation of system services in the electricity sector and matters of the integration of offshore wind parks into the grid were main focuses of work.

GENERAL INFORMATION

Development of the company structures

The structure of the energy supply networks in Germany is undergoing a profound transformation. The reasons for this are complex. Two major drivers of this development are aspects of efficiency and unbundling requirements. In addition the local authorities are re-evaluating the distribution systems from a perspective of public services.

The sale of the network companies transpower stromübertragungs gmbh and 50Hertz Transmission GmbH as well as Thyssengas GmbH is to ensure the ownership unbundling of two of the four DSOs and one TSO (gas). In November 2009 E.ON AG had announced that it was to sell its subsidiary transpower stromübertragungs gmbh, which owns E.ON's extra high voltage network, to the state-run Dutch network operator Tennet TSO B.V., effective 31 December 2009. E.ON and RWE AG are acting on the basis of a commitment decision vis-à-vis the European Commission. Motivated by these developments, forms of cooperation between the German network operators are increasingly discussed, the strongest form of which is the establishment of a "Deutsche Netz AG" (German network AG) or a "Netzgesellschaft in Deutschland" (network company in Germany). Viewed from the perspective of the energy industry the Federal Network Agency expressly welcomes a joint regulation of the German network.

One noticeable observation is the fact that the cost pressure on network operators promotes cooperation. At the same time local authorities are rediscovering the supply of energy as a task to perform themselves and are establishing new utility companies. This is happening at a time when numerous concession agreements across Germany are expiring. It appears that the business model "municipal utility with network" is still as attractive as ever. However, from the Federal Network Agency's point of

view care must be taken that the legal unbundling regulations are also adhered to by the so-called small utilities and that the creation of inefficient network structures is avoided. The efficiency comparisons carried out to date in the context of incentive regulation show that efficiency and size are not necessarily related.

Involvement in planning procedures

Large infrastructure projects are always planned with the three objectives of security of supply, efficiency and environmental sustainability. This applies in particular to the construction of new grids that face particular challenges through the integration of renewable energy sources and the increasing transit of electricity. In addition to the framework of energy laws, the successful implementation of such infrastructure measures also requires accompanying measures outside the energy law. Due to its competencies in the review of the cost effectiveness of the transport systems and for aspects of security of supply, the Federal Network Agency is increasingly perceived as a public agency and formally involved in planning procedures. For the authorisation of investment budgets in the context of incentive regulation, for example, the Agency determines the energy demand of pipeline projects. In order to bring together all parties involved in the planning and expansion processes, the Agency—in cooperation with the Energy Research Centre of Lower Saxony (EFZN)—invited experts from undertakings, environmental associations, science and authorities in June 2009 to attend an interdisciplinary conference on "Current issues of planning law - expansion of the German transmission systems".

A consistent and speedy planning law is of vital importance. The Federal Network Agency has repeatedly reiterated this fact, both at national and European level. It therefore welcomes the new Grid Expansion Act (EnLAG) that entered into force on 26 August 2009.

For the implementation of infrastructure projects different interests must be reconciled. The fact that to date there is no superordinate plan for the development of transmission systems presents a particular challenge. In this respect the approach of the Third Package concerning Common Rules for the Internal Energy Market, which envisages a European coordination of the future network expansion plans in terms of an overall concept, is to be welcomed.

Security of supply

According to section 52 of the Energy Act (EnWG) operators of electricity and gas supply networks are obliged to submit to the Federal Network Agency by 30 June of each year a report about any and all interruptions of supply that occurred in their networks in the previous calendar year.

The security of supply in Germany is measured on the basis of an internationally accepted method using the so-called SAIDI value (Systems Average Interruption Duration Index). The SAIDI value provides the "average interruption in minutes per end customer connected".

In the electricity sector the data of 813 network operators and 834 networks was analysed. According to this analysis non-availability in 2008 stood at 16.89 minutes per final consumer. Compared to previous years (2006: 21.53 minutes, 2007: 19.25 minutes) this represents another improvement and testifies to the high degree of

supply security in Germany, also in a European comparison (eg Austria 2008: 43.69 minutes).

The SAIDI index does not include any interruptions that are due to "force majeure". The network operators consider these beyond their control and therefore do not take them into account. In contrast to the previous year, where hurricane "Kyrill" had resulted in a significant rise in notifications attributable to "force majeure" and average interruptions of 16.42 minutes per end consumer connected, the figure for 2008 stood at only 1.2 minutes.

In the gas sector the analysis of reports from 704 gas network operators revealed that the average non-availability of gas in Germany was only one minute per end consumer in 2008.

The Federal Network Agency's analysis in connection with the interruption of the Russian gas supply to Ukraine in January 2009 revealed that it had ultimately been possible to resolve this serious situation without problems for the consumers, albeit with considerable efforts by the network and storage operators as well as the gas traders. In addition it had been possible to supply the Southern European states that had been particularly affected by the crisis via a physical flow reversal in the South-east of Germany. This had been possible through a great increase in the withdrawal of gas from German storage systems and slightly increased imports from North Western Europe via Norway, Belgium and the Netherlands. Due to the voluntary measures of the market players and—as an analysis of the price developments shows—market price signals, the system has already worked well. For this reason the creation and improvement of competition on the gas market should remain a central issue, not least of all with respect to security of supply.

Implementation of the unbundling regulations

In proceedings under section 65 of the Energy Act (EnWG) about the implementation of legal and operational unbundling of vertically integrated utilities, the Federal Network Agency has taken a fundamental look at the expression "customers connected to the network" in its decision dated 28 August 2009. This expression is not just found in the unbundling regulations but also in other regulations of the EnWG and the associated regulations, such as that on the competence of authorities. The number of customers is to be determined on the basis of the existing delivery points measured in the network area, which regularly match the number of all existing metering points. In order to determine the number of customers the number of meters connected in the network area generally provides a reliable key figure.

Furthermore the Federal Network Agency initiated supervision proceedings against E.ON AG and six of its seven regional utilities at the end of 2009, based on structural violations of the unbundling regulations. The central issue in this case is whether or not network companies are allowed to hold shares in distribution companies.

Liberalisation of measurement and metering

The amended Energy Act (EnWG) and the Metering Access Ordinance (MessZV), which entered into force in October 2008, aim to achieve the use of smart meters and competition in measurement and metering. The Federal Network Agency actively accompanies the liberalisation of measurement and

metering and strives for the maximum possible promotion of competition in accordance with the interests of the consumer. The Agency has initiated various consultations in connection with determination proceedings on the "standardisation of contracts and business processes in the area of metering". The object of these consultations are draft decisions about non-discriminatory access of competitors to the operation of meters and to measuring, to standardised framework agreements in metering as well as business processes and data formats. The proceedings are run jointly for the electricity and gas sector. In addition the Agency has also published a position paper on the requirements for meters.

At the beginning of 2010 the Federal Network Agency submitted to the Federal Ministry of Economics and Technology (BMWi) a report on all relevant legal, technical, and economic aspects of the comprehensive use of smart metering systems. In addition to the results from two expert opinions that had been commissioned on this issue, this report includes the insights gained in 2009 from the market watch, discussions with experts and the Agency's monitoring data.

INTERNATIONAL ASPECTS

Unbundling

At European level one of the issues the Federal Network Agency is, inter alia, actively involved in is unbundling. In this context it is involved in the European energy regulation bodies CEER (Council of European Energy Regulators) and ERGEG (European Regulators Group for Electricity and Gas) in the CEER task force URB TF (Unbundling, Reporting and Benchmarking Task Force). This task force deals with unbundling issues that are determined in an annual work schedule agreed with the EU Commission. Current developments at European level are incorporated into the relevant tasks for the task force.

At the beginning of 2009 the effectiveness of the guidelines on operational and informational unbundling, drawn up and published by URB TF in 2008, was tested on the basis of a survey among the national regulatory authorities (NRB). This revealed that the unbundling of distribution network operators across Europe is not yet at the level aimed at by the NRBs.

The discussion about the different unbundling models, which has been going on since the end of 2007, resulted in the adoption of the Third Package concerning Common Rules for the Internal Energy Market of 13 July 2009. The new directives 2009/72/EC (electricity) and 2009/73/EC (gas) envisage a tightening of the unbundling framework. Besides ownership unbundling, the main focus is on the unbundling options ISO (independent system operator) and ITO (independent transmission operator).

In 2009 the discussions about the unbundling models led to a concrete work order for the URB TF, in agreement with the EU Commission. Its objective is to clarify in particular the pan-European standards for the implementation and monitoring of the ITO. The Federal Network Agency is actively accompanying this process.

This reveals that the unbundling of utilities results in the creation of a type of specialist company law. The unbundling requirements pose questions regarding corporate governance in the broader sense and regarding the unrestricted compliance statement for the Corporate Governance Codex under section

161 of the German Company Law more specifically. The unbundling models ISO and ITO oblige the undertakings to release the control over their network company as a vertically integrated company on a large scale, in order to thus avoid discrimination. How this can be agreed with the stipulations of corporate governance is the subject of intense discussions, inter alia as part of an international workshop between ERGEG, regulatory authorities, scientists and company representatives held in September 2009 in Berlin.

Congestion management and cross-border trade in electricity

Pursuant to section 56 of the Energy Act (EnWG) in conjunction with article 9 of Regulation (EC) 1228/2003 the Federal Network Agency ensures that this regulation and its guidelines are adhered to. As member of the four regional initiatives Northern Europe (Denmark, Germany, Finland, Norway, Poland and Sweden), Central Western Europe (Benelux countries, Germany, and France), Central Eastern Europe (Germany, Austria, Poland, Slovakia, Slovenia, Czech Republic, and Hungary) and Central Southern Europe (Germany, France, Greece, Italy, Austria, and Slovenia) the Agency is committed to ensuring that congestion management in the regional initiatives continues to be improved. Progress is already noticeable in the regional coordination of congestion management.

In this context the Agency is predominantly involved in ensuring that market transparency is improved, in particular in the area of generation data. One specific target of its work is to ensure that all legally required data is published by the German transmission system operators. The European regulatory authorities are also involved in harmonising the data of the different TSOs, and therefore different markets, thereby making them comparable. For this purpose the regulatory authorities of all four regional initiatives have set out a joint interpretation of the stipulations in the congestion management guidelines in so-called transparency reports. Due to the Agency's involvement it was possible to achieve fundamentally the same benchmark for all regions. At national level the Federal Network Agency accompanies the implementation of the transparency requirements by the German TSOs.

As part of the BMWi's transparency initiative a transparency platform was set up on the website of the German electricity exchange "European Energy Exchange" (EEX) on 30 October 2009, which uses the data identified by the transparency reports as relevant for the generation of electricity. The progress in the implementation of transparency will be documented in the second report of the regulatory authorities from the Northern region and in the report of the regulatory authorities from Central Western Europe.

Procedures regulation of the ITC mechanism

On 10 March 2009 the Federal Network Agency passed a resolution with which the procedure for compensation payments as part of the ITC contracts (ITC—Inter TSO Compensation) under article 3 of Regulation (EC) 1228/2003, set out in the voluntary agreement (FSV) between the four TSOs, is determined as an effective procedures regulation in terms of section 11 (2) of the Incentive Regulation Ordinance (ARegV). This allows the costs and revenue incurred in this context to be declared as cost elements that are permanently non-controllable. These

costs are exempt from the efficiency targets of section 16 ARegV and can be passed on to the network users "par for par". Taking into account the stipulations of section 4 (3) sentence 1 No. 2 ARegV the transmission system operators can then adjust the revenue cap with a two-year delay accordingly.

The basic thought of the models mapped in the FSV is the determination of the transit load, which is the utilisation of the network infrastructure and the network losses caused by cross-border flows of electricity, as well as the calculation of the financial payment obligations or pecuniary claims of the TSOs resulting from the transit load. Due to the lack of a binding EU guideline the understanding about the calculation methods in ITC agreements is still common practice among the European ITC parties involved in this compensation mechanism (34 participants in the European agreement 2008/2009). For balancing compensation claims among the ITC parties in the German control block (consisting of the four German TSOs, the two Austrian operators TIWAG Netz AG and VKW-Netz AG and the Luxembourgian CEGEDEL Net S.A.), internal agreements are also concluded about the implementation of the multilateral European ITC agreements. The annual claim or obligation for payment for each respective party of the European ITC agreement results from the sum of the payments to be made or received based on the utilisation of the network infrastructure and the network losses caused. In 2008 the German transmission system operators received payments amounting to a total of €17.8 million.

At the end of 2009 the EU Commission presented draft guidelines for a compensation mechanism, which are currently being discussed by the competent committee. For 2010 the TOSs have once again signed an ITC agreement, which is valid until legally binding guidelines enter into force.

Further activities—electricity

In 2009 the CEER task force for incentive regulation (Workstream Incentive-Based Regulation and Efficiency Benchmarking—WS EFB), which is chaired by the Federal Network Agency, concluded a project dealing with an international efficiency comparison of the TSOs. Nineteen NRBs took part in this project, which was aimed at determining reliable statistical and dynamic efficiency results on the basis of empirical data and with the help of proven and sound methods. The WS EFB also serves as a platform for the exchange of information and experiences between the NRBs on the topic of incentive regulation. During regular workshops different regulatory authorities present their regulatory concept as well as current developments and problems. In addition the WS EFB conducted a survey about the research and development costs of the introduction of smart grids in the individual member states.

Furthermore the Federal Network Agency is represented in the EQS TF (Electricity Quality of Supply Task Force), which deals primarily with matters of security of supply in the grids.

Further activities—gas

In the gas sector the Federal Network Agency is represented in ten task forces of ERGEG and/or CEER. In 2009 the Agency headed up the task forces for network expansion planning, investments, capacity and congestion management and security of supply. In addition

the Agency heads up a steering group that supervises a European flow simulation study.

In 2009 the Federal Network Agency and the European regulators worked closely together on implementing the Third Package concerning Common Rules for the Internal Energy Market. This included the development of framework guidelines which are to provide the European gas network operator organisation "ENTSO Gas" with a framework for the development of codes and rules. In the first instance guidelines were developed for the areas of capacity allocation and balancing. Similar to the national level, special attention was paid to an allocation of cross-border transport capacities, which was more in line with competition. Central aspects of this draft guideline submitted in December 2009 are the improvement of the cross-border cooperation of network operators in the area of capacity management, the standardisation of capacity products, the simplification of the cross-border gas trade by bundled products and the establishment of transparent, non-discriminatory allocation procedures. The Federal Network Agency strives for a close link between European and national developments.

An important part of the work in the international sector dealt with matters of network expansion planning. One such example is a model-based analysis of the European gas infrastructure, which is being drawn up under the aegis of the Agency. It is the objective of this study to provide the European regulators with detailed knowledge and independent advice on future challenges in the European natural gas transport sector. In addition the study provides an important basis for the cooperation of the European agency ACER with the national regulatory authorities.

As part of the Security of Supply Task Force the effects of the gas crisis between Russia and the Ukraine in January 2009 were discussed and recommendations for future measures passed.

NETWORK CHARGES

The regulation of network charges has been subject to incentive regulation since 01 January 2009. The network costs determined for the year 2008 provided the basis for determining the permissible revenue cap in the first regulation period of incentive regulation. Each regulation period lasts five years, for gas network operators the first period last four years. The aim of incentive regulation is to set incentives for increased efficiency. An undertaking that manages to reduce its costs below the level set for the revenue cap will increase its profit.

Skimming off additional proceeds

In its decision of 14 August 2008 regarding so-called "skimming off additional proceeds" the Federal Court of Justice (BGH) clearly affirmed the position of the Federal Network Agency, according to which the "additional proceeds" earned during the period between the receipt of the first application for approval and the issuance of the first approval in the year 2006 or 2007 may not remain with the network operator. Instead, the BGH clarified that these proceeds must be settled with the network users in a subsequent period. In doing so an individual, retrospective settlement of the individual network usage conditions is not to be carried out as a matter of principle; rather, the excess revenue earned is to be considered as cost-reducing revenue of the individual network

operator. That way all customers will, in future, benefit equally from skimming off additional proceeds.

In 2009 the Federal Network Agency did skim off the additional proceeds of the network operators under its remit (federal responsibility and official power of delegation), as set out in section 34 (1) of the Incentive Regulation Ordinance (ARegV) in conjunction with section 11 of the Electricity Network Charges Ordinance (StromNEV) and section 10 of the Gas Network Charges Ordinance (GasNEV). Due to the complexity and multitude of the legal and actual issues in connection with skimming off additional proceeds, the Agency calculated the additional proceeds by means of a simplified procedure.

As stipulated by the BGH, the additional proceeds were always calculated as the difference between the sales proceeds and the costs admitted in the first notification of the approved charges. By way of simplification a corrective factor of one third was then deducted from the difference. This amount in favour of the network operators takes into account the aspects that the BGH had granted the network operators in its decision as well as the possible future rulings of the BGH and any uncertainties in connection with the calculation of the amount of additional proceeds. This way any additional proceeds that had arisen were fully skimmed off. The Federal Network Agency only used the simplified calculation of additional proceeds in cases in which agreement was reached about this procedure.

For transmission systems and electricity distribution systems the additional proceeds to be skimmed off amount to a total of around €1.5 billion. For the gas distribution systems the additional proceeds amount to around €350 million. The additional proceeds of the supra-regional TSOs (gas) will not be determined until 2010, due to the later start of incentive regulation. The undertakings were given the opportunity to spread the respective proceeds to be skimmed off across a maximum period of nine years, taking into account the relevant interest payments. The average repayment period in the electricity sector is approximately three years, in the gas sector around 2.5 years.

Expansion factor

Pursuant to section 4 (4) No. 1 in conjunction with section 10 ARegV, the distribution system operators can apply for an adjustment of the revenue cap on the basis of an expansion factor. The expansion factor is to ensure that the costs for expansion investments, which arise during the course of a regulation period in case of a long-term change in the supply responsibility of the network operator, will be taken into account when determining the revenue cap. A long-term change in the supply responsibility exists if the parameters stated in section 10 (2) sentence 2 ARegV change permanently and to a significant extent. A simply temporary change of these parameters is not sufficient. Network takeovers by other network operators are not covered by this regulation. On 30 June 2009 the network operators had the first opportunity to submit an application for the approval of an expansion factor. Overall 116 applications for the electricity sector and 76 for the gas sector were received. By the end of 2009 115/61 respectively of the procedures were concluded.

Investment budgets

Network operators can apply for investment budgets for expansion and restructuring investments. These are in particular investments that are required to connect new power plants, to ensure the connection of regenerative energy sources, such as the feed-in of electricity from offshore wind parks, or to maintain the technical safety of the grids. Due to the start of incentive regulation in 2009 the network operators were able to submit investment budgets for the three calendar years 2007, 2008, and 2009.

In 2008 the Federal Network Agency received a total of 300 applications for the approval of an investment budget. The total amount applied for was around €9 million, of which €7.2 million can be allocated to the transmission system operators (electricity), €1 million to the distribution system operators (electricity), and around €800 million to the gas network operators. Of the investment budget proceedings initiated in 2008, around 200 were concluded by the end of 2009. In these proceedings investment funds amounting to around €4.3 billion were approved.

Due to the experiences gathered in the reviews, the Federal Network Agency published new guidelines for the application for investment budgets in May 2009. This aims to provide transparency regarding the Agency's decision making as well as providing clarity about the authority's requirements for an investment budget application. This is to ensure that the documents submitted are of a minimum quality in order to make sure that the applications can be processed as quickly as possible.

Individual network charges pursuant to section 19 StromNEV

According to section 19 (2) sentence 1 StromNEV operators of electricity supply networks must offer individual network charges to a final consumer, if his peak load contribution is predicted to differ significantly from the contemporaneous maximum demand per annum of all withdrawals from this withdrawal or substation level. Section 19 (2) sentence 2 StromNEV obliges network operators to offer individual network charges in particular to network users requiring large amounts of electricity, if their consumption data is characterised by a continuous and very high volume of electricity purchased.

By the end of September 2009 the Federal Network Agency had issued a total of 50 approvals of charges pursuant to section 19 (2) sentence 1 StromNEV. One application had to be rejected because the requirements for approval had not been met. Twelve proceedings were dropped because the applications had been withdrawn. 57 charges were approved pursuant to section 19 (2) sentence 2 StromNEV. Five applications had to be rejected because the requirements for approval had not been met. Five proceedings were dropped.

In connection with the individual network charges for resources used exclusively by one party, as set out section 19 (3) StromNEV, which require no *ex ante* approval, the Agency dealt with a number of abusive practice complaints in the period under review, as set out in section 31 of the Energy Act (EnWG). Particularly noteworthy is the decision of 11 August 2009, in which the Federal Network Agency dealt in great detail with the issue of which standards should be applied to the

calculation and transparency of individual network charges. According to this decision a generalised consideration is possible to a certain extent for the calculation of individual network charges for resources used exclusively by one party.

Network charges pursuant to section 14 StromNEV (pancaking)

According to section 14 (2) sentence 2 StromNEV final consumers connected to a network or substation level and distributors as well as the downstream network or substation level are considered network customers of the relevant network or substation level and generally treated the same in terms of the roll-over of costs. In derogation of this, section 14 (2) sentence 3 StromNEV provides for the opportunity to make special arrangements under certain conditions, which will usually result in a reduced network charge. Appropriate special arrangements must be made between the operators of electricity networks for universal supply, which operate directly interconnected networks on the same network or substation level, if there is any undue hardship or if the networks are interconnected in such a way that only their joint operation would be safe. This kind of connection is called "pancaking".

The network operators had very different ideas about the circumstances in which such special arrangements are required. For the purposes of clarification the Federal Network Agency has published guidelines, aimed at rendering more precisely the interpretation principles of section 14 (2) sentence 3 StromNEV. According to this an undue hardship in the sense of section 14 (2) sentence 3 StromNEV exists, if the aggregation of the network charges for the same network level (pancaking effect) results in users of a downstream network having to pay network charges that are at least 15% higher than those for the exclusive use of the upstream network. This benchmark, based on a position paper by the Federal Association of German Energy and Water Industries (BDEW), seemed verifiable—since it was derived from cartel law—and balanced in terms of the different interests.

Network transfer according to section 26 (2) ARegV

During the course of 2009 the Federal Network Agency received 21 applications from the electricity sector and 38 applications from the gas sector for the transfer, merger or division of networks pursuant to section 26 (2) ARegV. In 2009 a decision was made about two of those applications in the electricity sector and 14 applications in the gas sector. The network operators must specify in their applications which revenue share is to be allocated to the network part being transferred and which revenue share is to be allocated to the remaining network part. The Agency must ensure in particular that the sum total of both revenue shares does not exceed the fixed revenue cap. For future proceedings the Agency is preparing guidelines and a data entry form to simplify consideration of the applications.

Pipeline competition

In 2008 the Federal Network Agency had decided in the case of ten operators of supraregional TSOs (gas) that they are not subject to existing pipeline competition. Therefore these network operators were also obliged to calculate their network charges on the basis of their costs and to submit an application for approval of their network charges within two months.

By January 2010 the Higher Regional Court (OLG) Düsseldorf had rejected eight appeals against the Agency's decision on pipeline competition. One TSO (gas) had already withdrawn his appeal at the beginning of November 2009. The remaining appeals are expected to be concluded by March 2010.

The undertakings can appeal against this decision of the OLG Düsseldorf before the Federal Court of Justice (BGH). Irrespective of this the undertakings have the opportunity to notify pipeline competition once again two years before the start of the next regulation period, i.e. at the end of 2010.

Based on the costs requiring approval the network operators have submitted applications for charges, which were reviewed by the Federal Network Agency and approved with effect from 1 October 2009. The reviews focused, inter alia, on integrations of networks operators and pipeline companies, service contracts with associated companies, costs of fuel gas, flow commitments and the admission of current assets as a requirement for operations. In the case of the large supraregional TSOs the costs were reduced by up to 28 percent compared to the amounts applied for. The approved network charges provide the basis for the transition of the companies to incentive regulation by 1 January 2010.

In order to determine the revenue cap of each individual supraregional TSO, an efficiency comparison is performed. As there are only ten companies to compare, the cost driver analysis required for the efficiency model is performed not just on the basis of statistical methods. In addition a cost driver analysis based on engineering science is used. It may be possible to conclude the proceedings for determining the revenue caps for supraregional TSOs in Q1 of 2010.

Quality regulation

Incentive regulation bears the inherent risk of network operators realising the prescribed revenue reductions by not making the required investments in their network, which will result in a deterioration in the supply quality. In order to prevent this, the ARegV provides for the introduction of quality regulation by means of a quality element, which is part of the formula for the revenue cap. Those network operators, whose network is of good quality compared to other network operators, will be allowed a supplementary revenue cap. Network operators with comparatively poor quality must accept deductions (bonus/penalty system).

For electricity supply networks, quality regulation pursuant to section 19 (2) ARegV can begin right at the start of or during the first regulation period, provided sufficiently reliable statistical series are available. Quality regulation must be implemented no later than the start of the second regulation period. According to section 19 (1) ARegV the quality element can be applied to network reliability as well as to network performance.

It is the responsibility of the Federal Network Agency to develop and implement a concept for the specifics of the quality element. For the electricity sector the Agency commissioned consultancy projects for the two aspects mentioned above in the spring of 2009. The timing of the quality element's introduction is dependant on the insights gained from the consultancy projects. Of fundamental importance in this context is the existence of a sufficiently

reliable data base. The Agency strives to introduce a quality element for the electricity sector before the end of the first regulation period.

For the gas sector the ARegV provides for the introduction of quality regulation at the beginning of or during the course of the second regulation period. It is intended to introduce the quality element at the start of the second regulation period; preparations for its introduction were made in 2009. Furthermore the Agency is involved in fundamental investigations regarding network reliability and network performance for gas supply networks.

Incentive system for system services

In the electricity sector the Federal Network Agency has introduced a binding incentive system for the system services of the transmission system operators. It regulates both the type and extent of admissible costs. The basis of this determination is a voluntary agreement (FSV) of the transmission system operators. The determination of 30 November 2009 confirms that the costs for system services, which were calculated as set out in the FSV and in line with the procurement guidelines, are "permanently non-controllable" in the sense of section 11 (2) sentence 4 ARegV. The TSOs must adjust their revenue caps accordingly.

The TSOs carry particular responsibility for maintaining the stability of the system. They have the duty to continually harmonise the feed-in and take-off of electricity and to offset any imbalances. For short-term differences the TSOs must hold a reserve of the so-called balancing power and use this, if required, as system balancing energy. On the other hand the TSOs must balance the losses occurring in connection with the transmission of electricity.

And finally the prevention of network congestion may require financial investments for modifications of the power plant use planned by its operator (so-called redispatch). The incentive model applies to services, balancing power, transmission losses and redispatch. Other system services, such as the so-called black-start capability or the provision of reactive power, are not covered by the FSV.

The important criterion for this determination was, inter alia, that nearly 50 percent of the total network costs at transmission level consist of the costs for balancing power, transmission losses and redispatch and that these costs are subject to some severe changes, in particular through fluctuations of the market price. It is undisputed that the transmission system operators have already achieved significant cost reductions by means of an increased reserve of balancing power across Germany. However, this must be continued until the potential for cost reductions has been exploited to the greatest possible extent. The system now determined will ensure that the cost reductions are also passed on to the consumer.

In future, each year the amount allowed for system services in the revenue cap of the following year will be adjusted to the development of the market prices for the relevant system service. In addition the amount will be reduced by 1.25 percent per year. This amount is oriented towards the productivity progress, which is taken as the basis of incentive regulation and represents potential efficiency increases. A bonus/penalty system provides further incentives for the TSOs to reduce their specific costs: each time he exceeds the amount fixed for the previous year, the transmission system operator bears 25 percent of

the additional costs, while each time he remains below the target he may keep 25 percent of the savings. The remaining 75 percent of additional or reduced costs are incorporated into the revenue cap. The overall expectation is that the consumers will benefit in particular from the cost reductions, which result from the joint reserve of balancing power.

The determination combines four central regulatory tasks: the creation of sufficient planning certainty, an adequate reimbursement of costs, the setting of incentives for efficient behaviour and the passing-on of realised cost reductions to the network users. The new regulations are valid from 2010, initially until the end of the first regulation period in 2013.

NETWORK ACCESS ELECTRICITY

Network connection of offshore windparks

The timely connection of the offshore windpark projects (OWP) in the North Sea requires the integration of different interests of the project operators and the transmission system operators. After an extensive consultation the Federal Network Agency published a position paper on the integration of OWP in October 2009. The paper provides specific details of the network connection obligation pursuant to section 17 (2a) of the Energy Act (EnWG) and thus fulfils the desire of the market players to ensure the diverging construction times of OWP on the one hand and the necessary connection pipelines on the other hand are subject to a reasonable coordination process.

At the heart of the regulations is a solution involving a cut-off date. The transmission system operator launches a call for tenders for the connection cables for all OWP that are required to meet initial, very modestly defined connection criteria by a certain cut-off date. Conditional assurance of access to the grid is issued for these OWP. The call for tender has to be completed six months later and the connection cables have to be ordered for all the OWP that henceforth meet so many connection criteria that their implementation is deemed sufficiently likely. Unconditional grid access assurance is issued for these OWP.

By introducing this solution involving a cut-off date, it will be ensured that TSOs who are obliged to provide connection to the grid will not have to continually adapt their plans to the varying levels of progress made by the individual OWP and that the offshore windpark developers/operators will be able to orient their plans to a time schedule they are familiar with. This procedure will benefit all stakeholders and is in particular necessary in order to render the implementation of efficient collective connections feasible.

Homogeneous control area

One of the main tasks of the transmission system operators is to balance the permanent imbalance in the capacity generated and consumed. To date this task was fulfilled by each transmission system operator employing balancing power on their own authority for their own network. In practice the separate balancing of control areas can result in contradirectional use of balancing power—also referred to as contradirectional non-harmonised use of balancing energy. In 2008 the Federal Network Agency had initiated determination proceedings with the objective of avoiding such situations arising, thus reducing the demand for system balancing energy and the amount of the balancing power held in reserve

and consequently the overall costs for system balancing energy. The Federal Network Agency presented two alternative concepts for consultation. The first concept envisages the establishment of a central regulation authority (so-called central regulator) and amounts to the establishment of a homogenous control area for Germany. The second concept suggests the online netting of the individual control area balances via a data connection (so-called grid control cooperation). In this case responsibility for the withdrawal of system balancing energy would remain with the relevant TSO. For the final evaluation of the concepts the comments received during consultation and the results of an expert opinion commissioned by the Federal Network Agency will be taken into account.

Determination of market rules for balancing group settlement

In a decision of 10 June 2009 the Federal Network Agency set out stipulations for the settlement of balancing groups vis-à-vis the transmission system operators, the distribution system operators, the balancing group managers and the suppliers. The rules, most of which are to be applied from 1 April 2011, stipulate how the costs that the TSOs incur through the use of system balancing energy, are to be settled with the balancing group managers. The provisions also set out how and within what time limits the DSOs must aggregate and pass on the data required for settlement. In doing so the Federal Network Agency has, for the first time, determined a settlement standard that is binding across Germany and eliminates major contentious issues of the settlement practice used to date.

Procedures regulation for congestion management

Based on a voluntary agreement (FSV) of the transmission system operators, the Federal Network Agency determined procedures regulations for congestion management in October 2009. According to this, revenue from congestion management is also considered a permanently non-controllable cost element in the sense of the ARegV.

The FSV sets out the methods applicable to capacity calculation, auctions and distribution of revenue. According to Regulation (EC) 1228/2003 on the cross-border exchange in electricity and the associated congestion management guidelines the maximum capacity of the interconnections and/or the transmission networks affecting cross-border flows shall be made available to market participants, complying with safety standards of secure network operation. In auction procedures the TSOs allocate to the market participants the technically available capacity, determined with the help of the capacity calculation procedures, as usage rights. The usage rights acquired by way of auction entitle the market participants to transport electric energy between the markets separated by network congestion.

Under certain conditions regulated by the FSV costs that the transmission system operators incur in the case of critical network situations (eg threat to system security) for maintaining allocated capacity can be financed through congestion management revenue. This also applies to compensation payments that market participants receive for necessary curtailments of already allocated capacity. In 2008 the revenue German transmission system operators

earned from congestion management amounted to a total of approximately €220 million.

NETWORK ACCESS GAS

Merger of market zones

A gas market zone consists of many interconnected networks from different network operators. Larger market zones facilitate the gas transport for transport customers. One advantage, inter alia, is the elimination of booking and nomination procedures for the gas transport to former market zone borders within a new, larger market zone cooperation. The reduction of market zones therefore results in higher liquidity on the gas markets, which in turn further stimulates competition on the wholesale and retail markets.

After the previous years had already seen some market zone mergers, further transmission system operators (gas) merged their market zones with effect from 1 October 2009. These mergers are the result of difficult cooperation negotiations that were actively accompanied by the Federal Network Agency. The number of market zones has therefore been reduced to six.

The merger involved the H-gas market zone of Gasunie Deutschland Transport Services, DONG Energy Pipelines GmbH and StatoilHydro Deutschland GmbH (formerly the market zone "H-gas Norddeutschland") with the market zone of ONTRAS - VNG Gastransport GmbH and the market zone of Wingas Transport GmbH & Co. KG. The new market zone is called "Gaspool". The balancing group management will be performed by GASPOOL Balancing Services GmbH, which was established for this purpose. A further merger of TSOs with market zones spanning multiple networks was completed between the H-gas market zones of NCG NetConnect Germany GmbH & Co. KG (bayernets GmbH and E.ON Gastransport GmbH), GVS Netz GmbH/Eni Gas Transport Deutschland S.p.A. and GRTgaz Deutschland GmbH (uniformly known as market zone "NCG").

A review of previous years reveals a positive development in the cooperation of market zones which has contributed to breaking down a significant barrier to unhindered access to the gas network. The Federal Network Agency will closely observe the continuation of this process and continue to support it.

Gas market zones in Germany 2006–2009

	1 October 2006	1 October 2007	1 October 2008	1 October 2009
H-gas	14	9	7	3
L-gas	5	5	5	3
Sum total	**19**	**14**	**12**	**6**

Procedures regulation for flow commitments

The reduction of gas market zones in Germany leads to an elimination of market zone borders between the networks involved. In exceptional cases this may cause technical problems in endeavours to abide by existing freely assignable capacity agreements, because the free assignability now applies to a larger network area. Flow commitments, which the network operator obtains from transport

customers, serve to ensure an increase or reduction of the physical gas flow—depending on the current level of gas in the affected networks—at the points at risk of congestion, in order to permanently ensure network stability in the entire market zone. These flow commitments ensure adequate interconnection capacity between parts of the network of the new market zone and reduce the gas flow at points of physical congestion. They therefore help to prevent a reduction of the freely assignable capacity in the market zone.

In a decision dated 10 August 2009 the Federal Network Agency laid the foundations, for the first time, for the admission of costs for flow commitments in the context of the market zone cooperation NCG. The cooperation partner bayernets GmbH had committed itself vis-à-vis the Federal Network Agency to observe certain principles for the calculation and procurement of the flow commitments that are imperative for the market zone cooperation. The Agency has accepted the voluntary agreement as a basis for effective procedures regulation. In the context of incentive regulation the relevant costs are therefore considered permanently non-controllable costs.

In its voluntary agreement (FSV) bayernets GmbH had undertaken to procure flow assurances in a market-led, non-discriminatory and transparent manner. There will be regular public invitations to tender to which all providers capable of entering into such commitments affecting the bayernets GmbH network may respond. In addition ongoing documentation requirements for the calculation of necessity ensure that only such flow commitments are secured which serve to eliminate congestion in the market zone cooperation. This data is regularly transmitted to the Federal Network Agency.

In a further decision of 27 November 2009 a comparable arrangement was made for the flow commitments of GVS Netz GmbH.

Capacity management

In the German and European gas networks there is a lack of bookable transport capacity in many places. Obviously the currently existing management procedures are not suitable for defusing this situation. Against this background the Federal Network Agency has devoted itself to the development of key points for a new capacity management system both at national and international level. The objective is to improve the usability of existing infrastructure, to facilitate access to firm capacity, and to make short-term gas trade possible. This is to further improve the liquidity of the trading points and to actively drive ahead the integration of bordering gas markets.

At international level these considerations are to result in European guidelines. At national level the objective is to bring about improvements in the area of capacity allocation and congestion management, using the framework existing law, to reduce in particular congestion at cross-border coupling points and at the borders of market zones. At the end of May 2009 a benchmark paper on the reorganisation of capacity management in the German gas market was published for public consultation. Central aspects of the benchmark paper are the standardisation of capacity products, the specifics of transparent non-discriminatory allocation procedures, the dynamic capacity calculation, and the possibility of overbooking in combination with granting a repurchase of

capacity and the establishment of a day-ahead capacity market. The results of the consultation will lead to a determination by the Federal Network Agency for a capacity management system.

Exemptions for new infrastructures

Under the exemption rules of section 28a of the Energy Act (EnWG), new interconnections between Germany and other states, LNG and storage systems as well as certain increases in the capacity of existing infrastructures can be temporarily exempt from the regulations for access and charges. In addition to improved competition and security of supply section 28a EnWG demands, inter alia, such a high investment risk that the investment would not be made without this exemption.

In 2008 the Federal Network Agency received two applications under section 28a EnWG. The applicants were OPAL NEL Transport GmbH and E.ON Ruhrgas Nord Stream Anbindungsgesellschaft mbH. Both applications concerned the new pipeline projects OPAL ("Ostsee-Pipeline-Anbindungs-Leitung") and NEL ("Norddeutsche Erdgasleitung"), which are to continue the planned Baltic Sea pipeline (Nord Stream) from Greifswald onshore. The OPAL is set to run from Greifswald to the Czech Republic, near Brandov, the NEL from Greifswald to Rehden in Lower Saxony. Before making its decision the Federal Network Agency came to an agreement with the Federal Cartel Office, as required by section 58 EnWG, and consulted the other affected member states, as intended in article 22 of Directive 2003/55/EC (gas). In its decisions of 25 February 2009 the Agency largely exempted OPAL from the regulation of network access and charges for a period of 22 years from commissioning; however, this is subject to some supplementary conditions. The exemption of OPAL only applies to those gas transports that transmit the gas from the Nord Stream pipeline directly south to the Czech Republic. The exemption does not apply to domestic transports or a possible reverse flow from the Czech Republic to Germany. The applications for NEL were rejected in their entirety since NEL would be a purely national pipeline, which cannot be exempt under section 28a EnWG. In its decisions of 7 July 2009 the Federal Network Agency has supplemented the previously mentioned decisions in accordance with the advisory opinion of the European Commission of 12 June 2009 by an additional condition for competition.

Injection of biogas

Over the years companies have become increasingly interested in injecting biogas into the natural gas network. This is particularly obvious by the growing number of network access requests for biogas processing plants. The Gas Network Access Ordinance (GasNZV) states as one of its objectives the substitution of six billion m3 of natural gas by biogas by 2020 and ten billion m3 by 2030. The GasNZV envisages privileged access and transport conditions to or into the natural gas network. In addition the network operators must grant the injectors of biogas extended annual balancing at favourable conditions. Network operators must pay a remuneration for the injection of biogas, which is independent of the pressure rating, because the injection is decentralised, thus avoiding network charges. Compared to other European states Germany is at the forefront of regulating the injection of biogas into the natural gas network; so far there are no comparable regulations in other EU states.

Of the 309 network access requests in 2008 around two thirds came from distribution system operators and one third from transmission system operators. In eight cases network access was refused due to incompatible gas quality. In addition 26 wholesalers or suppliers have requested network access for biogas. The overall injection volume for 2008 stood at 42 m3 of biogas with an average injection capacity of 510 m3 per hour.

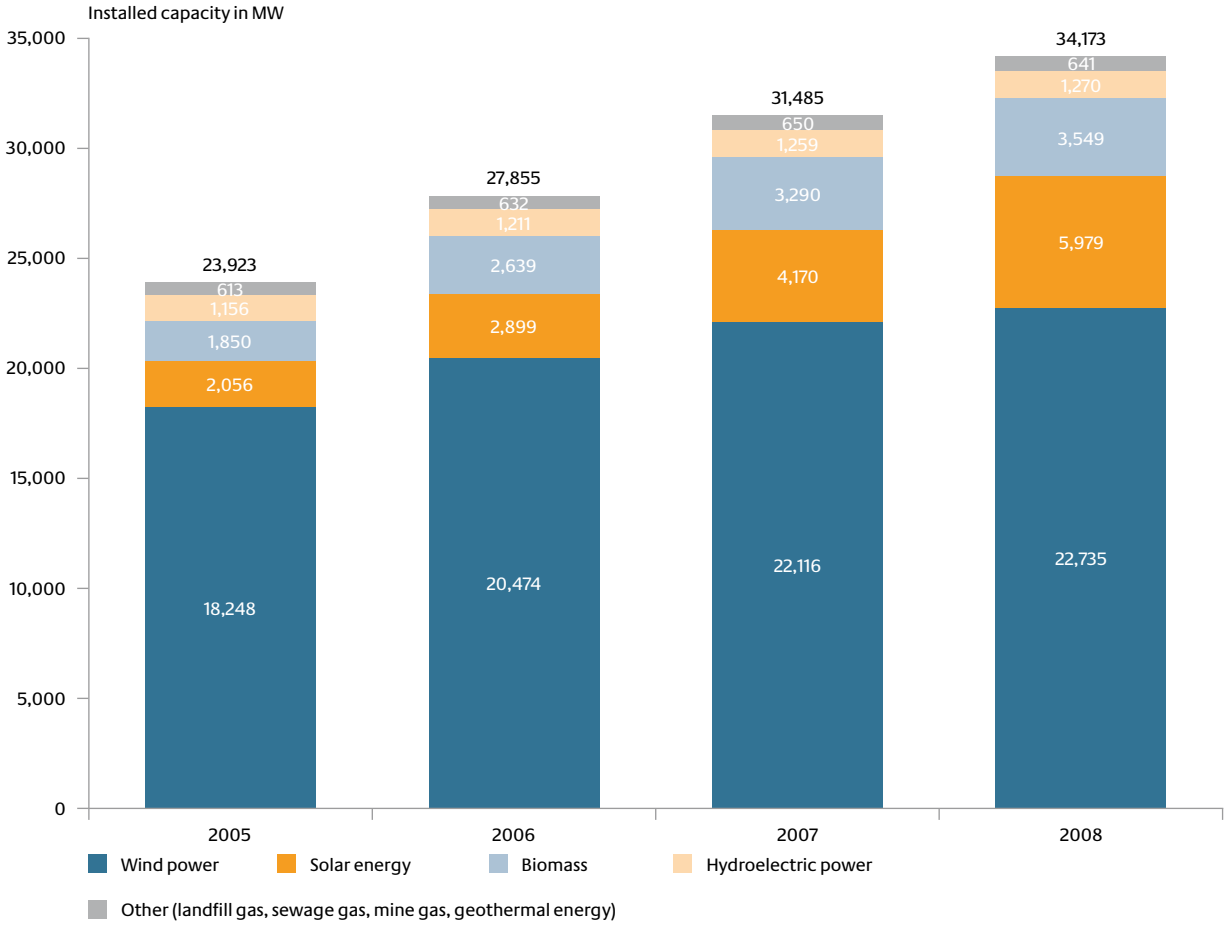
RENEWABLE ENERGY SOURCES

Monitoring of the equalisation scheme

In the context of monitoring the passing on of the costs of remuneration, as required by the Renewable Energy Sources Act (EEG), the Federal Network Agency checks, inter alia, whether the electricity suppliers were really only charged the remuneration paid in line with the EEG, minus the network charges that were avoided. Around 900 network operators and over 1,000 electricity suppliers are obliged to electronically transmit to the Federal Network Agency the EEG end-of-year bill of any given year by the 31 May of the following year. The network operators have to submit this information accurately for each plant.

In order to ensure more transparency in connection with the EEG data collection and to accommodate public interest in information, the Federal Network Agency publishes the main results of the EEG data collection in an aggregated format. The statistical reports of the end-of-year bills contain, inter alia, information about the installed capacity, injected annual power and remuneration paid.

Plants remunerated according to EEG, 2005–2008



Notification of photovoltaic plants

Since 1 January 2009 operators of photovoltaic plants (PV plants) have been obliged to notify the Federal Network Agency of the location and capacity of their plant. Otherwise the network operator is not obliged to pay remuneration for the electricity. This obligation of notification applies to all PV plants commissioned since 2009. From January to mid-December 2009 the Federal Network Agency has received around 150,000 data notifications. The Agency now provides a registration form on its website.

Based on the sum total of the notified installed capacity, the Agency calculates the degression and remuneration rates for PV plants being newly commissioned in the following year. On 30 October 2009 the Agency, in consultation with the competent Federal Ministry, published the digression and remuneration rates for PV plants being commissioned in 2010 in the Federal Gazette. The sum total of the newly installed capacity in the reference period significantly exceeded the threshold envisaged by the law for an increased digression so that, in line with the provisions of the EEG, the remuneration rates for 2010 are respectively nine or eleven percent lower, depending on the type and size of the plant.

Direct marketing of RE power

The amended Renewable Energy Sources Act (EEG) gives plant operators the opportunity to directly market RE power. Each calendar month the operators can sell the power from renewable energy sources (RE power), generated in their plant, to third parties, provided they have notified the network operators of this at the beginning of each preceding calendar month. For plant operators who do not claim remuneration in accordance with the regulations of the amended EEG for electricity from renewable energy sources, but instead sell this to third parties, an obligation was imposed in 2009 to notify the Federal Network Agency electronically by 31 May each year about the amount of electricity concerned.

A first analysis of the EEG data collection for 2008 reveals some trends in the direct marketing of electricity from renewable energy sources. In 2008 it was mostly electricity from hydroelectric power, biomass, gas and wind energy plants that was marketed directly, in particular from wind energy plants older than ten years. In their role as buyers of directly marketed EEG amounts, less than one percent of electricity suppliers use the opportunity to apply for exemption from the mandatory purchase of electricity remunerated in line with the EEG.

Equalisation mechanism ordinance

The objective of the Equalisation Mechanism Ordinance of 17 July 2009 (AusglMechV) is to pass on RE power to the final consumers as efficiently and transparently as possible.

Since 1 January 2010 there has been no physical transmission of RE power from transmission system operators to the electricity suppliers. Since then there has only been a financial equalisation. The abolition of the physical equalisation and the related enhancement of the EEG band lead to a more cost-effective and for the electricity suppliers less risky RE equalisation. The electricity suppliers are no longer obliged to purchase RE power from the transmission system operators. Instead the TSOs sell RE power directly at the exchange. The revenue from the sale of RE power at

the exchange is likely to be less than the sum total of the marketing costs and the remuneration paid to the plant operators. As part of the RE surcharge the transmission system operators can pass on the remaining difference to the electricity suppliers.

The AusglMechV empowers the Federal Network Agency to pass an implementation ordinance in agreement with the competent federal ministries. The subject of this implementation ordinance will be in particular the requirements for the marketing of the quantities of electricity and the incentives for the best possible marketing of RE power. If strict adherence to the marketing obligations was, for once, to result in extremely negative exchange prices due to an initial market failure, and thus to undue burdens, a short-term interim solution should provide the opportunity for a deviation from the provisions for marketing under certain conditions.

Furthermore the AusglMechV has assigned the Federal Network Agency direct responsibilities and powers for monitoring the marketing of RE power and for the calculation, determination, publication, and passing on of the RE surcharge.

Significance of the RE surcharge for the electricity price

On 15 October 2009 the transmission system operators have, for the first time, calculated the RE surcharge pursuant to the AusglMechV. The RE surcharge is incorporated into the calculation of the electricity price of the electricity suppliers for the year 2010. In November/December 2009 some companies held out the prospect of a price reduction to their customers. However, many providers announced an increase of their prices and justified this in many cases with an increase in the RE surcharge.

For 2010 an amount of 2.047 ct/kWh was calculated for the RE surcharge. In 2009 the RE surcharge stood at about 1.2 ct/kWh (as of Nov. 2009). In isolation this would be an increase of 0.8 ct/kWh. The increase of the average RE remuneration from 13.52 ct/kWh to 14.0 ct/kWh and the increased RE injection from 74 TWh to 90 TWh increase the RE surcharge by just under 0.4 ct/kWh. An increase of approximately 0.3 ct/kWh in the so-called differential costs contributes further to the rise of the RE surcharge. These differential costs are the result of the difference between the average RE remuneration and the average electricity purchasing costs. The cause for the increase in the differential costs is primarily the decrease of the energy exchange prices from 6.88 ct/kWh to 5.37 ct/kWh. The so-called profile service costs of approximately €384.5 million increase the RE surcharge approximately by a further 0.1 ct/kWh. To date these costs were included in the network charges.

However, for the overall calculation of the electricity prices reverse effects must also be taken into account. With the abolition of physical equalisation from 1 January 2010 network charges will no longer include the costs of EEG enhancement, resulting in a reduction of approximately 0.3 ct/kWh for an average household customer. In addition the decrease of the average energy exchange prices resulted in a decrease of the general procurement costs of electricity suppliers. A rational procurement strategy would therefore at least neutralise the effect of decreasing

energy exchange prices on the development of the differential costs.

After netting the reverse effects it can be assumed that the costs for the consumer in 2010 will be approximately 0.2 ct/kWh, caused by the increasing expansion of renewable energy sources. By changing over to electricity suppliers that have announced or carried out price cuts, the consumer can still benefit from the increased procurement conditions, despite a slight increase in the RE surcharge. Otherwise the price development at the energy exchange in recent years indicates that the final consumer prices for electricity would have to decrease in 2010, if the energy suppliers had opted in 2009 and 2010 for a simply linear, i.e. rather conservative procurement strategy for two or three years in advance and in doing so had consistently purchased electricity from the energy exchange.

Court proceedings

For the year 2009 the Federal Network Agency can once again look back at a successful year for court proceedings. The lawfulness of the regulatory decisions appealed was large affirmed.

NETWORK CHARGES

Approval procedures pursuant to section 23a EnWG

In 2009 the Federal Supreme Court (BGH) once again decided upon a number of appeals on points of law regarding the approval of network charges under section 23a of the Energy Act (EnWG). The BGH affirmed the Federal Network Agency's interpretation of the law on major points.

According to the ruling of the BGH the network operators are subject to substantial duties of cooperation and elucidation in many areas, as set out in section 23a EnWG.

Planning costs for repair and maintenance work, for example, are only to be admitted on the basis of consolidated findings. Pursuant to section 3 (1) sentence 4 clause 2 of the Gas Network Charges Ordinance (GasNEV) consolidated findings exist if objective evidence can be used to infer conclusively that costs equivalent to the budgeted amount are highly likely to arise (ref. EnVR 06/08).

In the context of calculating the actual replacement value of the fixed assets the network operator is obliged, with respect to the allocation of individual groups of assets to certain series and the correctness of the individual index series, to designate individual groups of assets, to point out their incorrect allocation to the WIBERA index series and to reprimand as a procedural error any failure by the court of appeal to pass on information (ref. EnVR 06/08).

Book values of the current assets must be corrected on the basis of their requirement for operations. As part of his duty of cooperation pursuant to section 23a EnWG the network operator must present and prove in a transparent manner the circumstances from which the requirement of the current assets for operations result. The network operator must offer a feasible explanation why the accounts receivable are necessary for the network operations (ref. EnVR 27/08, EnVR 06/08 and EnVR 76/07).

In the context of determining the equity in the case of a lease, network operators hiring capital equipment necessary for operations can only claim those costs or cost elements, in line

with section 4 (5) GasNEV, that would arise if the operator was the owner of the equipment (ref. EnVR 79/07).

The costs of an energy saving promotion (energy saving vouchers for the purchase of particularly energy efficient household goods) cannot be admitted as costs of the network (ref. EnVR 16/08).

The Federal Network Agency's interpretation of the law in terms of the annual depreciation of the fixed assets (ref. EnVR 6/08 and ref. EnVR 76/07), of the valuation of the equity required for operations (ref. EnVR 79/07) and the level of interest rate for equity that exceeds the permissible equity ratio (risk loading) (ref. EnVR 6/08, EnVR 76/07 and EnVR 79/07) was not affirmed by the BGH.

After a remittal by the Federal Supreme Court (BGH) the level of interest rate for equity that exceeds the permissible equity ratio (risk loading) shall now be determined by the original courts, the Higher Regional Courts Koblenz and Nuremberg (ref. 6 W 594/06 Kart, 6 W 595/06 Kart, 6 W 605/06 Kart; 1 W 1516/07). The Higher Regional Court (OLG) Koblenz is taking evidence by requesting an expert opinion. The decisions are still pending.

The OLG Schleswig-Holstein has decided that the Federal Network Agency shall (once again) determine the interest rate on borrowings in accordance with the provisions of section 5 (2) GasNEV. Contrary to the BGH's opinion the Agency has some limited methodical discretion as set out in the provision of section 5 (2) GasNEV and the standards of socio-scientific correctness (ref.: 16 Kart 1/09). This decision is not yet final and absolute.

In its decision of 21 December 2009 (ref. 1 BvR 2738/08) the Federal Constitutional Court refused to make a decision on the constitutional complaint of a company against the BGH's decision on skimming off additional proceeds. In the opinion of the Federal Constitutional Court the order regarding retrospective netting of additional proceeds neither violates the fundamental rights of the network operator (articles 12 and 24 German Basic Law (GG)) nor does it infringe the constitutional principle that measures should not have retroactive effects or the principle of protection for reliance on existing law.

Individual network charges

In 2009 the BGH also debated about the requirements for the approval of individual network charges pursuant to section 19 (2) sentence 2 of the Electricity Network Charges Ordinance (StromNEV). It addressed in particular the question of which year is the last complete calendar year. The BGH decided that the last calendar year in terms of section 19 (2) sentence 2 StromNEV shall be interpreted as the last calendar year completed before the offer of an individual network charge. The Federal Network Agency was compelled to revoke its notice and to issue a new notice (ref. EnVR 15/09).

Approval requirement pursuant to the Energy Act (EnWG)

The Higher Regional Court (OLG) Düsseldorf has decided that the traction network is subject to the regulation of charges pursuant to the EnWG. Therefore DB Energie GmbH must apply to the Federal Network Agency for an approval of its charges based on costs (ref.: VI-3 Kart 61/09 [V]). DB Energie GmbH has appealed against this decision.

The Federal Supreme Court affirmed the Federal Network Agency's interpretation that the withdrawal of electricity from the transmission system by means of pumped storage plants must be taken into consideration for the approval of network charges (ref. EnVR 56/08).

NETWORK CONNECTION OBLIGATION PURSUANT TO SECTION 17 ENWG

The BGH affirmed in the last instance that the notice by the Federal Network Agency regarding the network connection obligation set out in section 17 (1 and 2) EnWG is lawful (ref. EnVR 48/08). The Agency denied the right to refuse connection, without making any errors of law. Section 17 (1) EnWG forms the basis for a comprehensive right of connection to the network. The user has the basic right to determine the network or substation level at which he is to be connected to the upstream network. Pursuant to section 17 (2) EnWG a connection to the network may be denied in exceptional cases, if the network operator proves that in a specific case the connection is impossible or unreasonable for him.

FACILITY NETWORKS PURSUANT TO SECTION 110 ENWG

The BGH had to decide whether an industrial park had the characteristics of a facility network in terms of section 110 EnWG.

Following the decision of the European Court of Justice (cf. EuGH ruling of 22 May 2008 C-439/06) the BGH left open whether section 110 (1) No. 1 EnWG (operational network or company network) is not applicable in its entirety due to violations of Community law, whether the regulations in section 110 (1) No. 2 and 3 EnWG comply with European law and whether their interpretation in line with directives would be possible.

Instead the BGH based its decision (ref. EnVR 55/08) on the fact that in any case the substantive requirements of the national standard of section 110 (1) No. 2 EnWG do not exist. The BGH denied the existence of a "common superordinate business purpose". This would assume a functional connection between the final consumers connected to the network, which would have to be aimed at providing interrelated and interdependent services for which the final consumers act as one unit on the outside.

It would not be sufficient for users to cooperate with the objective of simply realising their own individual purposes with mutual benefits. With this ruling the BGH affirmed the Federal Network Agency's interpretation of the law.

Following this ruling by the BGH, the OLG Düsseldorf also denied the facility network character of one energy supply network for a shopping centre (ref. VI-3 Kart 45/08 [V]). The matter of the unlawfulness of the regulations section 110 (1) No. 2 and 3 EnWG in terms of European law was left open, since the substantive requirements of the only element qualified for an exemption under section 110 (1) No. 2 EnWG did not exist. The appeal to the BGH was not admitted. An appeal for refusal of leave to appeal was lodged against this decision.

GABI GAS

The OLG Düsseldorf has rejected two appeals against a determination on the Balancing Services and Balancing Rules in the Gas Sector (GABi Gas) as inadmissible due to lack of the

right to appeal. In addition the OLG has decided that the appeal against the model for the central procurement of system balancing energy, described in appendix 2 of the determination, is not permissible because—as the determination states very clearly—it has no legal effect. The Federal Network Agency had simply used its competence to issue recommendations and suggested a specific procedure to the market (ref. VI-3 Kart 25/08 [V], VI-3 Kart 26/08 [V]). In both proceedings appeals on a point of law were filed at the Federal Supreme Court (BGH).

GELI GAS AND GPKE

After the Higher Regional Court (OLG) Düsseldorf had already rejected the appeal of a universal supplier against the determination regarding "Business Processes for Switching Gas Supplier" (GeLi Gas)—in particular against the allocation of an active unassigned take-off point to the balancing group of the universal supplier—because the allocation was in line with the assessment by the legislator in sections 36 and 38 EnWG and did not show any signs of abuse of discretion (ref. VI-3 Kart 213/07 [V]), the universal supplier's appeal to the BGH was now also unsuccessful (ref. EnVR 14/09). The BGH has therefore affirmed the lawfulness of the Federal Network Agency's decision.

Of the original seven appeals against the threatened imposition of an administrative fine for the non-implementation or late implementation of the provisions contained in the Business Processes for Supplying Customers with Electricity (GPKE), one appeal was decided upon in the main matter. This decision is already final and absolute (ref. VI-3 Kart 45/08 [V]). The OLG Düsseldorf found that the Federal Network Agency has used its discretion in the application of administrative coercion lawfully. The Agency intended to create a lawful status quo already by this enforceable order, which imposes upon the affected party an obligation to act, tolerate or desist. In order to prevent its enforceable order coming to nothing, the Agency can use means to enforce administrative acts. The remaining appeals were withdrawn and are therefore resolved.

DETERMINATION OF REVENUE CAPS

In 2009 the Federal Network Agency received a large number of complaints (approximately 400 proceedings including the participation procedures pursuant to section 79 (2 EnWG)) against the determination of revenue caps and the preceding calculation of efficiency values.

In 2009 appeals against this determination were already dealt with in oral hearings before the Higher Regional Courts (OLG) Stuttgart, Thuringia, and Naumburg. All appeals before the OLG Stuttgart against the determination of revenue caps were withdrawn after the hearing.

By the end of 2009 the OLG Naumburg had ruled in two cases (ref. 1 W 1/09 and 1 W 6/09). With the exception of the general productivity factor in that sector, the OLG Naumburg affirmed the lawfulness of the Agency's position in the points appealed. The Agency as the interested party has appealed against this decision to the Federal Supreme Court (BGH).

The other competent OLGs will deal with the appeals against the determination of revenue caps in oral hearings, starting in early 2010.

PENDING PROCEEDINGS

In 2009 the Federal Network Agency's determination on the price indices for the calculation of actual replacement values pursuant to section 6 (3) StromNEV and GasNEV and the Agency's determination on the equity interest rate pursuant to section 7 (6) Strom NEV and GasNEV were heard by the OLG Düsseldorf. The OLG Düsseldorf is currently taking evidence in these proceedings by requesting expert opinions. In a decision of 1 October 2009 (ref. 16 Kart 2/09) the OLG Schleswig-Holstein already affirmed the lawfulness of the determination on the equity interest rate in most points. The only objection was the inclusion of two companies in the calculation of the risk factor, which is relevant to the assessment of the risk supplement. The Federal Network Agency has appealed against this decision to the Federal Supreme Court.

The OLG Düsseldorf heard a further eight, of originally ten, appeals by transmission system operators on the matter of the calculation of tariffs pursuant to section 3 (2) in conjunction with section 19 GasNEV. In six cases the court has already affirmed the Agency's interpretation of the law. According to this the complainants have failed to provide the necessary evidence that their supraregional transmission systems are, for the most part, exposed to effective existing or potential pipeline competition. They are therefore obliged to submit an application for approval of their charges for access to the gas network, as set out in section 23a EnWG (ref. I-3 Kart 48, 57, 58, 59, 63, 73/08 [V]). The appeal to the BGH was admitted. One hearing will be dealt with in an oral hearing in early 2010, while another appeal was withdrawn.

Two main proceedings against the exemptions for the gas pipeline OPAL pursuant to section 28a EnWEG are also still pending. The summary applications against the exemptions were dealt with in an oral hearing by the OLG Düsseldorf in mid-December 2009. After the OLG Düsseldorf had expressed considerable concerns regarding the admissibility of the summary applications, these were withdrawn (ref. VI-3 Kart 193, 194/09 [V]).

44 network operators have appealed to the OLG Düsseldorf against the refusal by the Federal Network Agency to accept the voluntary agreement on the procurement of transmission losses as an effective procedures regulation in terms of section 11 of the Incentive Regulation Ordinance (ARegV). Following hearings nine appeals have already been rejected.

Furthermore, 29 appeals against the approval of investment budgets pursuant to section 23 ARegV are still pending at the OLG Düsseldorf.

At the end of 2009 a total of 770 court proceedings in the energy sector were still pending. 547 appeals were directed against the Federal Network Agency. In 223 proceedings the Agency is legally involved pursuant to section 79 (2) EnWG.

Railway

Market watch

The economic crisis hit rail freight transport particularly hard last year. However, in the rail passenger transport sector, revenues and transport performance largely held firm. Nonetheless, competition in the rail transport sector still displayed a positive trend in a difficult market environment.

KEY TRENDS

The year 2009 for railways was characterised by the general economic crisis. Rail freight transport experienced significant declines in traffic volumes and sales revenues. Nevertheless, Deutsche Bahn AG's (DB AG) competitors in the rail freight transport sector managed to hold their own and further expand their market share even in this difficult market environment. Rail passenger transport, however, was little affected by economic developments.

The globalisation of the railway market continued in 2009. DB AG took over two freight transport companies in Poland and won a tender for the operation of suburban railways in Sweden. SNCF, the French state railway, took over the business activities outside of France of a major private competitor of DB AG in the rail freight transport sector, thereby strengthening its position in the international freight business. Furthermore, it announced its intention to offer long-distance rail passenger transport services in Germany in the future via a German subsidiary.

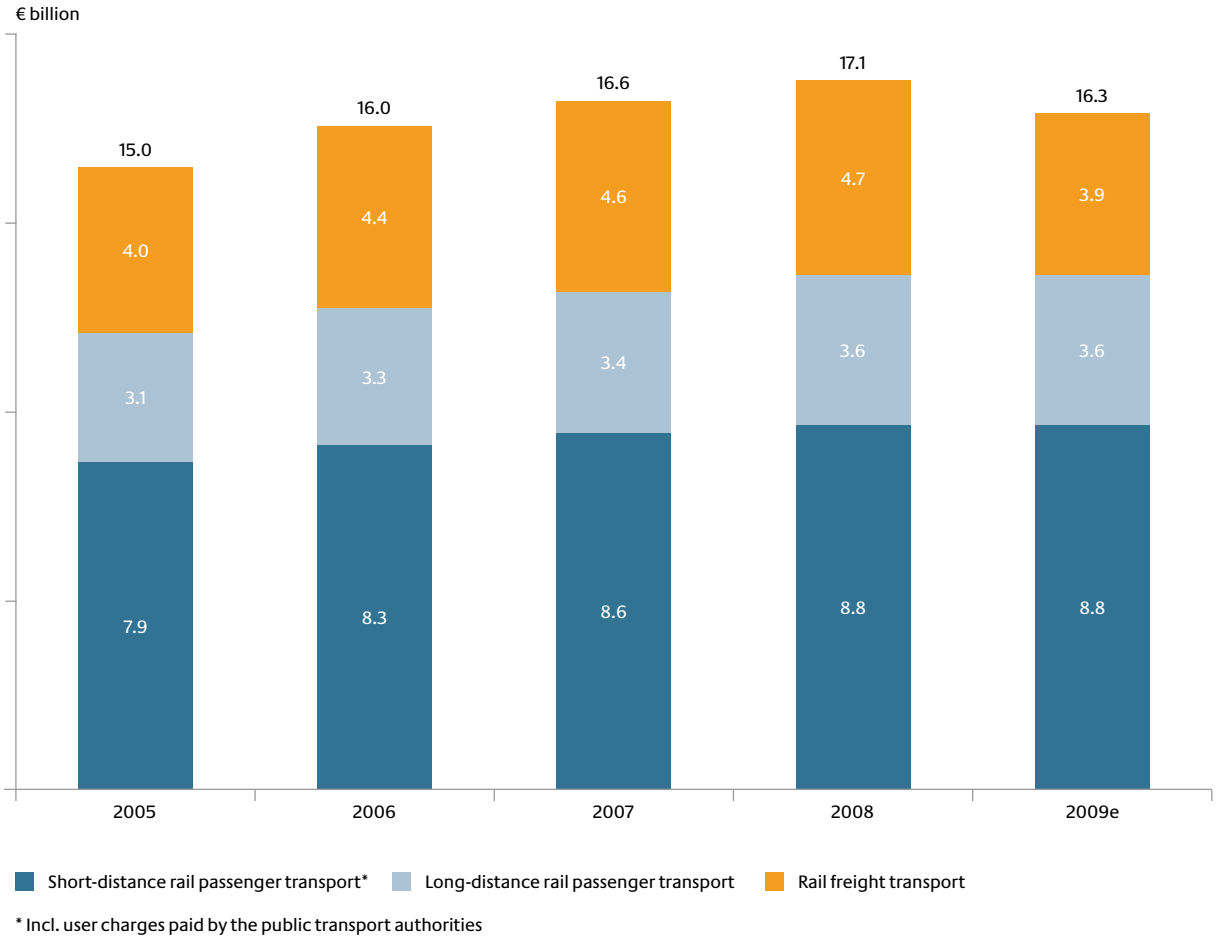
SALES REVENUES

For 2009, the Federal Network Agency expects to see a decline in revenue for the German rail transport market of just under 5 percent by €0.8 billion to €16.3 billion. The decline is attributable solely to the trend in the rail freight transport market. According to initial estimates, revenue in this sector decreased from €4.7 billion (2008) to €3.9 billion. This represents a 17 percent reduction. As far back as the last quarter of 2008, the rail freight transport sector had to contend with significant declines in new orders. The difficult situation deteriorated further in the first half of 2009. Signs of a slight recovery did not appear until the second half of 2009. However, even in this sector, revenues were significantly lower than those of the corresponding period in the previous year.

In the long-distance rail passenger transport sector, revenue stagnated at €3.6 billion. A slight decline in passenger numbers was offset by rail fare increases at the time of the timetable switch in December 2008. In the short-distance

rail passenger transport sector, railway undertakings generated revenue of €8.8 billion. As services in the short-distance passenger transport sector are normally ordered on behalf of the Länder and receive financial subsidies, this sector proved resistant to the economic crisis. Transport contracts that are generally of a lengthy duration in conjunction with steady passenger numbers helped to ensure that the revenue volume remained constant in this market segment.

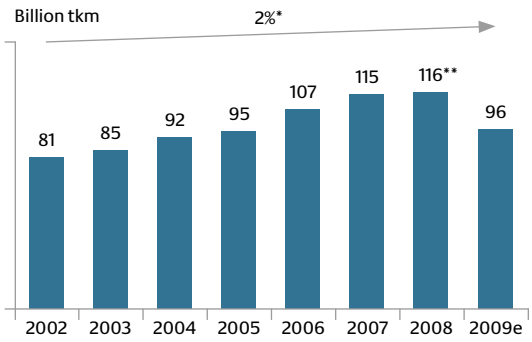
Revenue in the rail transport market 2005–2009



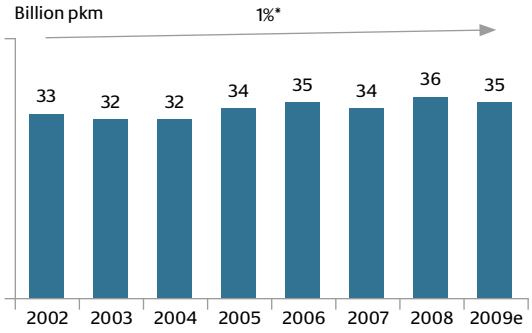
* Incl. user charges paid by the public transport authorities

Transport performance in the railway market 2002–2009

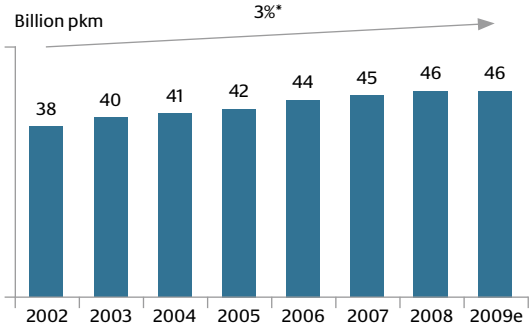
Freight transport



Long-distance passenger transport



Short-distance passenger transport



tkm = ton kilometres
pkm = passenger kilometres
* Average growth per year
** Updated figure
Source: Federal Network Agency, Federal Statistical Office

TRAFFIC TRENDS

The previous years' trend of steadily increasing transport performance both in passenger and in freight transport could not be sustained in 2009, as revealed in the provisional information provided by the Federal Statistical Office. The economic environment caused massive declines in the volume of freight carried in the rail freight transport sector. The transport performance recorded in 2008 was not achieved in the long-distance rail passenger transport sector either.

For the rail freight transport sector, the Federal Statistical Office expects a transport performance of around 96 billion ton kilometres in 2009. This is equivalent to a decline of approximately 17 percent compared with the previous year's figure. Although freight volumes rose again from the middle of the year onwards, the level reached was only around the 2005 figure.

The predicted transport performance in the long-distance rail passenger transport sector of 35 billion passenger kilometres is also lower than the previous year's figure. For the short-distance rail passenger transport sector, however, the Federal Statistical Office expects the previous year's figure of around 46 billion passenger kilometres to be reached once again.

COMPETITIVE TRENDS

The fact that in a difficult economic environment still more railway undertakings met the necessary entry requirements confirms that, from the companies' perspective, the market continues to offer potential. At the end of 2009, 386 public railway undertakings were regis-

tered with the Federal Railway Authority, nine more than in the previous year.

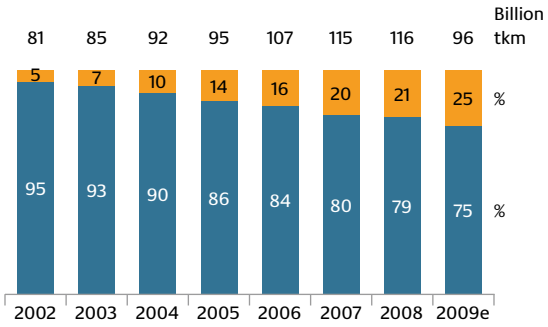
DB Schenker Rail AG, which is well-positioned in the freight business and has been particularly affected by the economic crisis, was again forced to surrender market share to competitors in 2009. It still accounted for 75 percent of the total transport performance in the German rail freight transport market. Its competitors accounted for 25 percent. The broad range of providers, the large number of different business models and companies' flexibility helped to prevent the slump in the rail freight transport sector from being even greater.

Competitors' share of the long-distance rail passenger transport segment continued to stagnate at under one percent in 2009. However, there are initial signs of more movement in this market segment. Two of the DB Group's competitors have announced independently of one another that they intend to offer selected individual connections in the area of long-distance transport in Germany from 2010 and 2011, respectively. The Federal Network Agency views this as an important signal to the market and hopes that it will result in a revival of the stagnating competitive trend.

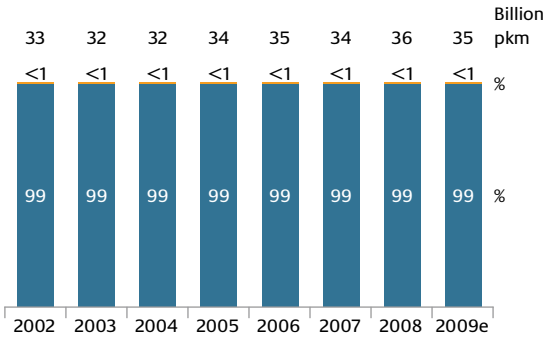
In the short-distance rail passenger transport sector, according to the Federal Network Agency's initial estimates, competitors meanwhile accounted for twelve percent of the total transport performance in 2009 and hence almost one in every eight passenger kilometres. This percentage can be expected to increase further in the future as around two-thirds of the transport performance in Germany is to be reallocated in the coming five years. It remains to be seen, however, whether in terms of the large number and scope of services to be provided under the expected tenders a sufficient number of offers are actually received in each case. Financing, vehicle availability and capacity of railway undertakings could represent potential bottlenecks in this regard.

Competition in the railway market 2002–2009

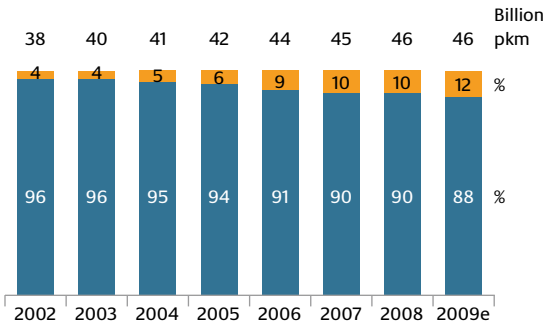
Freight transport



Long-distance passenger transport



Short-distance passenger transport



Competitors' share
DB AG's share

tkm = ton kilometres
pkm = passenger kilometres
Source: Federal Network Agency, DB AG, Federal Statistical Office

RAILWAY INFRASTRUCTURE

In an annual market survey, the Federal Network Agency also gives railway undertakings the opportunity to assess market-relevant criteria. The questions cover key aspects of access to infrastructure, operations and charging structures and levels. In addition, companies can assess existing and potential market development and competitive barriers.

The fairness and the structure of infrastructure usage charges have frequently been the focus of criticism by the companies surveyed. These charges represent a major cost factor for the provision of transport services. On average, infrastructure usage charges account for around 30 percent of the total costs of a railway undertaking; in the short-distance rail passenger transport sector (including station charges/prices), they account for over 50 percent in some cases. In all transport segments, increases in charges therefore have a direct impact on railway undertakings' total costs as well as on their pricing, profitability and competitiveness relative to other transport operators.

In the current survey, the companies also critically assessed the quality of the railway network and the situation regarding network expansion. Numerous companies surveyed found fault with the steady removal of sidings. Railway undertakings referred to the fact that they did not have sufficient influence on railway infrastructure companies' expansion and removal plans. They said that infrastructure capacity planning was mainly geared to the operating concepts of DB AG's transport subsidiaries.

The Federal Network Agency continues to note an increasing possibility of conflict regarding DB AG's sales and pricing systems in the area of passenger transport. The Group in effect has a monopoly position in this sector which is not adequately taken into account in the current regulatory framework.

For potential competitors in the long-distance rail passenger transport sector, this is compounded by the fact that there is a lack of planning certainty with regard to infrastructure capacity. However, long-term commitments in respect of cycles, time slots and integration with short-distance rail passenger transport play an important role in terms of the prospects of success for a planned long-distance rail passenger transport service. However, DB Netz AG does not currently feel it is in a position to make long-term commitments to market entrants regarding lead times.

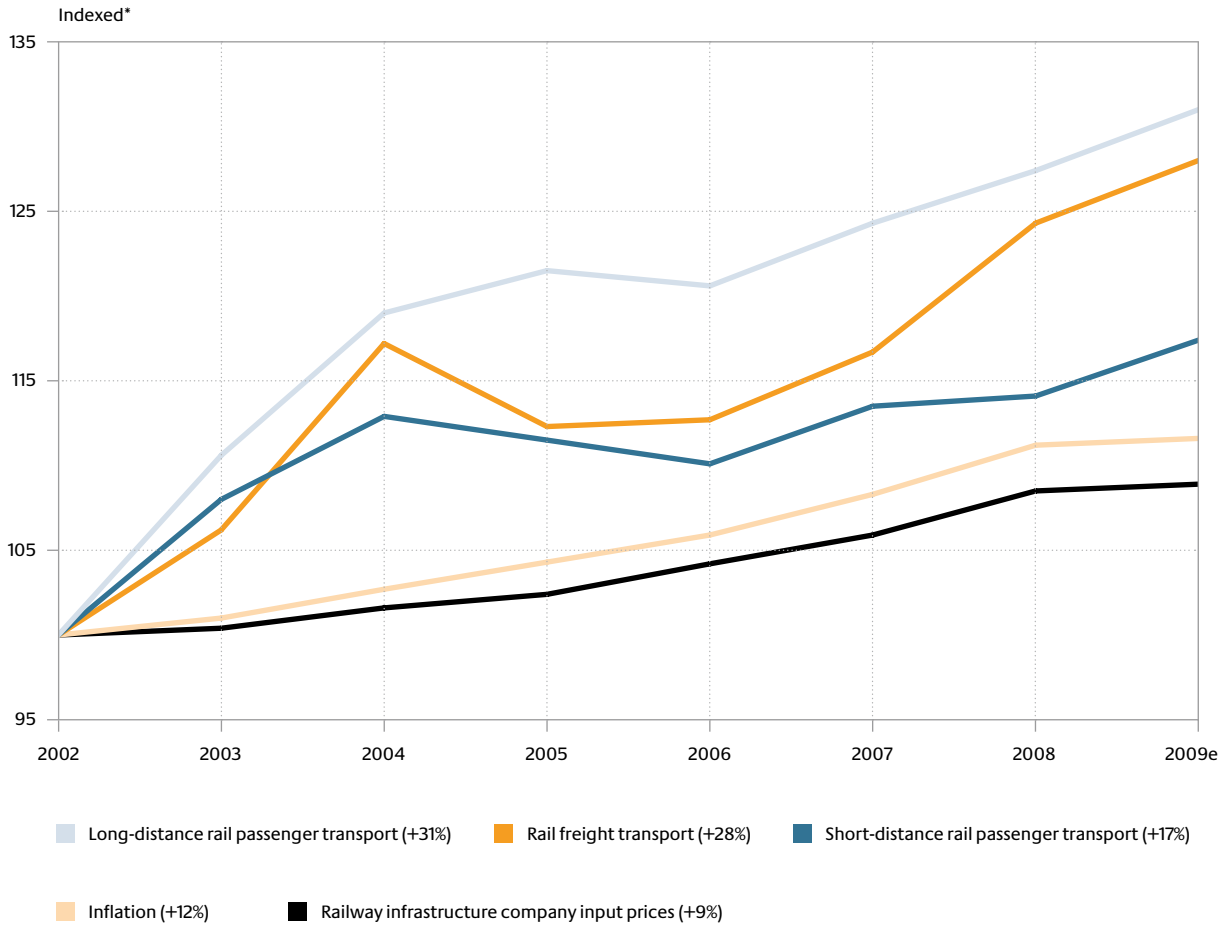
USAGE CHARGES

The prices for using the railway infrastructure increased further in 2009. Since 2002, the average train path price paid per train kilometre in the long-distance rail passenger transport sector has increased by 31 percent, in the rail freight transport sector by 28 percent and in the short-distance rail passenger transport sector by 17 percent. By contrast, the general rate of inflation during this period was 12 percent.

A comparison of train path price trends with trends in relation to the specific costs of railway infrastructure companies ("input prices") also highlights the high rate of increases in train path prices. Wissenschaftliches Institut für Infrastruktur- und Kommunikationsdienst (WIK) (Scientific Institute for Communication Services) has developed an index which covers the typical cost structure of railway

infrastructure companies and incorporates weighted sub-indices for the relevant cost blocks. Based on these considerations, the input prices for railway infrastructure companies increased by around 9 percent between 2002 and 2009, meaning they still remained below the general rate of inflation.

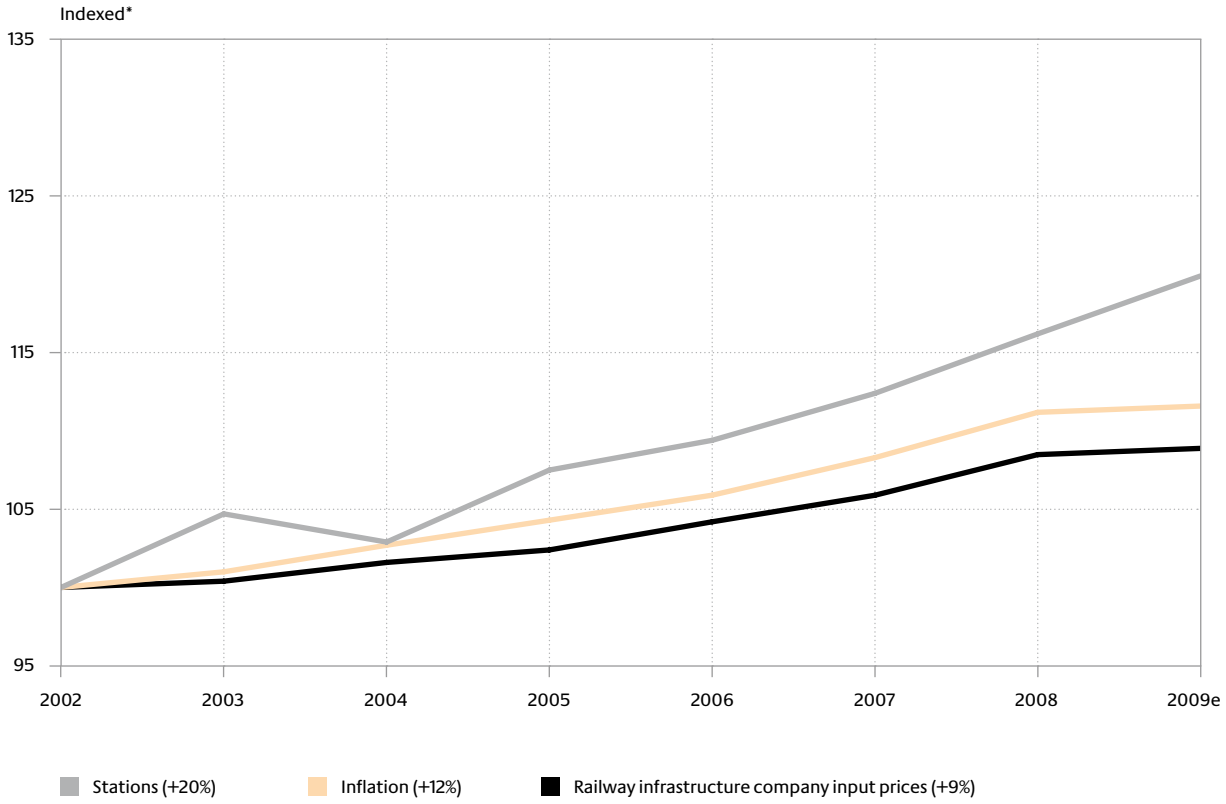
Average train path price per train kilometre (DB Netz AG) 2002–2009



* Calculated as a quotient of the train path prices and operating performance of DB subsidiaries as per services billed
2002 = 100
Source: Federal Network Agency, DB AG, Federal Statistical Office, WIK

The average revenue per train stop (DB Station & Service AG) also rose significantly. Whereas it amounted to €4.14 in 2002, in 2008 it was already €4.82. For 2009, the Federal Network Agency expects average revenue of just under €5. Hence, overall, the average revenue rose by approximately 20 percent between 2002 and 2009.

Average revenue per station stop (DB Station & Service AG) 2002–2009



* Calculated as a quotient of the station prices and station stops
2002 = 100
Source: Federal Network Agency, DB AG, Federal Statistical Office, WIK

IMPLEMENTATION OF RAILWAY REGULATIONS

Railway infrastructure companies that have access to the railway infrastructure are subject to a number of specific regulations. Railway infrastructure operators are required to draw up and publish a so-called Network Statement (SNB) and operators of service facilities a so-called Service Facilities Statement (NBS). In 2008, around 63 percent of railway infrastructure operators and 42 percent of operators of service facilities drew up relevant terms of use. Some of the railway infrastructure companies, usually small operators, have not yet drawn up relevant codes of rules. The Federal Network Agency therefore once again drew these railway infrastructure companies' attention to their statutory obligations. The Federal Network Agency also advised companies on drawing up terms of use and assisted the Association of German Transport Companies (Verband Deutscher Verkehrsunternehmen (VDV)) in developing "model Network Statements", which railway infrastructure companies can use as a template for drawing up their own terms of use.

Besides drawing up terms of use, railway infrastructure companies are also required to produce price lists for the services they offer. Over 95 percent of the railway infrastructure operators that have drawn up terms of use have also produced relevant price lists. The figure for operators of service facilities is 80 percent.

Activities and proceedings

The Federal Network Agency took a large number of decisions regarding access to the infrastructure once again in 2009. In the area of pricing, the comprehensive review of the station price system operated by DB Station & Service AG was completed last year. The Federal Network Agency declared the station prices void and demanded that the company develop non-discriminatory prices.

ACCESS TO THE RAILWAY INFRASTRUCTURE

Association of German Transport Companies' model Network Statements

Together with the Association of German Transport Companies and different railway infrastructure companies, the Federal Network Agency has developed an up-to-date model for Network Statements in order to facilitate uniform and complete codes of rules nationwide. It constitutes a recommendation to railway infrastructure operators, who are legally required to draw up a Network Statement.

The model avoids wording that gives railway infrastructure operators discretionary scope. This ensures that parties with the right of access receive equal treatment and that there is no discrimination with regard to the granting of access to the infrastructure. Advice on how to formulate the company-specific special section of the Network Statement is also provided by way of assistance to railway infrastructure operators. A large number of railway infrastructure companies have revised or amended their own Network Statements with the aid of this template.

Network Statements of DB Netz AG

Railway infrastructure operators have to submit envisaged amendments to or revisions of their terms of use and price lists to the Federal Network Agency. The Federal Network Agency may object to the envisaged amendments within four weeks unless the provisions are compatible with the railway regulations, in particular non-discriminatory network access.

On 20 October 2009, DB Netz AG submitted its envisaged amendments to its Network Statement to the Federal Network Agency for review. In the new version planned for 2011, numerous corporate guidelines had been removed from the Network Statement even though these guidelines contain important technical, operational and legal

specifications. This would, consequently, make it possible to introduce drastic changes at short notice. This would deprive railway undertakings of planning certainty and make it more difficult for the Federal Network Agency to carry out an effective review.

Changes to technical specifications may, for example, result in the need to convert vehicles, burdening railway undertakings with significant costs and a lead-up time for these conversions. There would be no need to investigate whether changes to technical specifications could also have a discriminatory effect if the guidelines were removed from the Network Statement.

If operational specifications are included in amendments made to codes of rules, the Federal Network Agency is of the view that the financial impact on railway undertakings, for instance for training personnel, also needs to be taken into account. If legal regulations are amended, the distribution of risk must not be shifted one-sidedly to the detriment of railway undertakings. This could worsen railway undertakings' competitive position vis-à-vis other transport operators.

Consequently, in a decision handed down on 17 November 2009, the Federal Network Agency opposed the removal of guidelines from the Network Statement where they have an impact on railway undertakings. DB Netz AG filed an objection against this decision and filed a summary application for the granting of suspensive effect to the objection.

Train path application system TPN

In its Network Statement for 2010, DB Netz AG had already announced that, from the 2011 network schedule onwards, it would only accept applications for train paths via the "Trassenportal DB Netz" (TPN) (DB Netz train path portal) application system. However, the company withdrew this change on account of the objections raised by the Federal Network Agency and by parties with the right of access. The TPN is intended to ensure comprehensive communication with regard to train path applications. This includes submissions of offers or rejections by railway infrastructure operators as well as acceptance or rejection by railway undertakings.

Since 2008, the Federal Network Agency has conducted several hearings with DB Netz AG regarding the TPN. During the hearings, it emerged that there are different access paths for railway undertakings: for external railway undertakings, access is via the Internet whereas for internal railway undertakings, it is via the intranet. Hence, it is not possible to rule out discrimination via the access paths. The Federal Network Agency therefore requested identical access paths to the TPN as well as a self-explanatory guide that complies with the terms used in the Rail Infrastructure Usage Regulations (Eisenbahninfrastruktur-Benutzungsverordnung (EIBV)). It further requested, inter alia, the sending of an electronic proof of receipt of a train path application by DB Netz AG as well as the incorporation of the guide into the Network Statement.

Although no agreement was reached, DB Netz AG published its envisaged changes to the TPN online as part of the current comments by railway undertakings regarding the Network Statement. In doing so, it confirmed its intention to only permit applications for train paths

in relation to the 2011 network schedule being filed via the TPN. A number of railway undertakings then once again expressed their misgivings. The Federal Network Agency also repeated its demands. DB Netz AG responded by removing the envisaged mandatory introduction of the TPN from the amendments to the 2011 Network Statement submitted to the Federal Network Agency pursuant to Section 14d of the General Railway Act (Allgemeines Eisenbahngesetz) (AEG).

Infrastructure connection contracts

In 2009, DB Netz AG concluded an infrastructure connection contract with PKP, the largest Polish infrastructure manager. This contract regulates the transition from the German to the Polish railway network and includes precise provisions relating to individual border crossing points.

As the infrastructure connection contract or supplementary agreements based thereupon regulate the terms of use for the railway infrastructure, the prohibition of discrimination under railway law, including the duty of transparency, must be complied with. The Federal Network Agency has, for this reason, required DB Netz AG to submit the agreements concluded with the Polish infrastructure manager. Only then can they be reviewed in order to ascertain whether parties with the right of access are being discriminated against.

The Federal Network Agency is reviewing the provisions that have been submitted to it. Besides this, the Federal Network Agency also intends to have DB Netz AG submit to it for review the infrastructure connection contracts it has concluded with other infrastructure managers in neighbouring countries.

ACCESS TO SERVICE FACILITIES

Terms of use

In 2009 the Federal Network Agency once again examined a large number of Service Facilities Statements and advised individual infrastructure managers who were drawing up Service Facilities Statements, pointing out potential legal infringements. For the most part, this prevented complaints from being lodged against envisaged amendments. In this context, important issues included sets of operational/technical rules, service facilities, goods terminals and Autozug (car train) terminals.

When examining and objecting to envisaged amendments to the Service Facilities Statements of DB Netz AG, similar to the Network Statements, the main focus was on abolishing sets of technical rules. Service Facilities Statements must also contain the operational and technical provisions for service facilities that are relevant for access.

Companies operating mainly as railway undertakings are also obliged to issue terms of use and price lists for service facilities. After the obligation had been imposed on DB Regio AG in 2008 to issue Service Facilities Statements for its repair shops, additional railway undertakings with service facilities complied with the requirement imposed by the Federal Network Agency to issue terms of use.

Another focal point of the reviews carried out by the Federal Network Agency in 2009 was the area of goods terminals owned by terminal operators who do not operate the tracks on which they offer the transshipment of goods and containers. Both the track operators and the operators of transshipment hubs are obliged to draw up terms of use for their part of the infrastructure.

Owing to their mutual dependence, they need to ensure there is close coordination regarding the allocation of tracks and the provision of service.

The Federal Network Agency also focused on Autozug terminals. After receiving a request by the Federal Network Agency, DB Station & Service AG expanded its Service Facilities Statements to include the vehicle loading terminals it operates, for which it had not previously had any terms of use. This meant that parties with the right of access had no possibility of obtaining information about the terms that applied to Autozug terminals.

Access-related issues

The Federal Network Agency investigated the complaints lodged by parties with the right of access who claimed that it was virtually impossible for competitors to use the shunting yards and other train formation facilities of DB Netz AG. This prompted the Federal Network Agency to institute proceedings. Specific obstacles are, in particular, the almost complete allocation of track capacities to just one user and the management at the main traffic junctions. The Federal Network Agency will be pursuing the proceedings in 2010.

With regard to DB Station & Service AG's passenger railway stations, the focus was on disputes over quality parameters and facilities, in particular the obligation to provide passengers with information about the current operating conditions. In addition to considering whether and by whom audiovisual media should be provided in order to furnish passengers with up-to-the-minute information, the Federal Network Agency is currently also looking into complaints about an alleged lack of, or incorrect, announcements.

Other activities

A large number of access-related problems can be attributed to the fact that operators of service facilities are not obliged by law to factor in detour capacities when they plan construction measures or to observe the interests of parties with the right of access. The port of Dresden, for instance, was cut off from the railway network for several weeks during 2009 owing to the full closure of a single feeder track. At the port of Hamburg, several bridges used by rail traffic had to be fully or partially closed over extended periods owing to construction deficiencies or damage. This caused major disruption to the logistics system at the port. The Federal Network Agency is acting as a mediator between the stakeholders within narrow statutory boundaries and is endeavouring to find a solution that is acceptable to all parties.

PRICE REGULATION

DB Station & Service AG

Station price system

For each stop made at any of the around 5,400 passenger railway stations operated by DB Station & Service AG, railway undertakings with the right of access have had to pay a category-based charge that varies between the Länder. In particular, the large number of complaints filed by railway undertakings using the railway stations operated by DB Station & Service AG, which are frequently required to pay greatly varying charges, prompted the Federal Network Agency to review the pricing system. The review was provisionally completed in 2009. On 10 December 2009, the Federal Network Agency declared in a notice to the company that the station prices it was charging would be invalid as and from 1 May 2010.

The current price system infringes upon the prohibition of discrimination under railway law as the station charges are not determined on the basis of costs incurred as specified in the DB Station & Service AG Terms of Use. The varying level of rates charged is not justified by the costs incurred according to the facts established by the Federal Network Agency. This is leading to clear differences in the level of payments which parties with the right of access have to pay to use passenger railway stations of the same category in the individual Länder. These differences ultimately lead to unequal treatment of parties with the right of access by nationwide comparison. The company is now obliged to develop non-discriminatory charges and to submit them to the Federal Network Agency for review.

Incentive system for railway stations

In early 2009, the Federal Network Agency received a surge of complaints by parties with the right of access about poor performance by DB Station & Service AG (including delayed snow clearance, deficient buildings). The current incentive system allows parties with the right of access who have been affected by disruptions at passenger railway stations to receive a retroactive discount. The Federal Network Agency instituted proceedings and ordered DB Station & Service AG to explain how disruptions were taken into account regarding railway station charges. It is currently examining whether this incentive system is suitable for safeguarding and enhancing the efficiency of passenger railway stations. This goal is a requirement of the Rail Infrastructure Usage Regulations (EIBV).

DB Netz AG

Siding charges

For the protection of competitors in rail freight transport, the Federal Network Agency last year prohibited DB Netz AG from implementing the envisaged discounts for sidings. The company had intended to introduce a special offer for parking empty goods wagons on sidings limited until 30 June 2009. The special offer was to grant a discount of 50 percent on the normal price for some sidings that had not been specified. However, as the regulation on actual allocation practice was not transparent, it would have had a negative impact on competition.

Reviews carried out by the Federal Network Agency also revealed that DB Schenker Rail Germany AG was the only railway undertaking availing itself of the special offer. Private railway undertakings did make enquiries about the discounted sidings. However, there were either no sidings available in the desired regions or only a few sidings available at a discount or else the capacities reserved were unsuitable for meaningful operational use. Under these circumstances, the companies in question were no longer interested in availing themselves of relevant siding capacities. The objection filed by the Federal Network Agency ensured that competition in the rail freight transport sector was not distorted by one company having a competitive edge, particularly in times of economic crisis.

Incentive system for train paths

In a notification issued on 30 December 2008, the Federal Network Agency obliged DB Netz AG to use a statutory incentive system (cf. Section 21 subsection 1 of the Rail Infrastructure Usage Regulations) for its railway infrastructure when it changed its timetable on 13 December 2009. The aim of any such system is to create

incentives to reduce disruption and to enhance the efficiency of the rail infrastructure.

Over the course of 2009, DB Netz AG organised four customer workshops on the envisaged incentive system, which the Federal Network Agency took part in. The Federal Network Agency subsequently issued a detailed report. It will now be possible for the incentive system that DB Netz AG will henceforth have to use to prove its practical worth. The Federal Network Agency will continue to ensure that the provisions set forth in the General Railway Act regarding the incentive system are observed.

Empty train paths

In the envisaged revision of its Network Statement for the timetable period 2010/2011, DB Netz AG was planning to abolish the low-cost empty train paths in passenger transport. These train paths are used by railway undertakings to transport locomotives and traction units. If the envisaged revision had been made, railway undertakings would only have been able to book the economy train path that is around 50 percent more expensive.

Within the framework of the Network Statement review, DB Netz AG was unable to explain, inter alia, that it had adhered to the revenue ceiling permitted by law (costs plus a reasonable rate of return) and that it had been able to guarantee non-discriminatory rates. Against this backdrop, the Federal Network Agency objected to the envisaged abolition of empty train paths in passenger transport in its notice of 2 December 2009. By taking this decision, the Federal Network Agency managed to prevent the railway undertakings involved in passenger transport from introducing major price increases.

Other activities

Noise-dependent modular route price system

The Federal Ministry of Transport, Building and Urban Development has provided for a number of noise reduction measures in the area of rail transport within the framework of the "Freight Transport and Logistics 2009" master plan, including a programme aimed at promoting the use of state-of-the-art noise reducing train technologies. The aim of the "Silent Rhine" pilot project is to create incentives with government funding to retrofit around 5,000 freight wagons, the majority of which travel along the River Rhine, with low-noise brake blocks. Project sponsors and working groups specified, inter alia, the funding conditions that comply with EU law.

A working group under the auspices of the Federal Network Agency looked into a range of wagon-tracking models on routes along the River Rhine. Tracking helps to monitor observance of the funding conditions and is being used as a pilot model for large-scale wagon-tracking in the German and European rail network. The working group developed a concept for a non-discriminatory, noise-dependent, modular route price system for the period following the conclusion of the pilot project in which price incentives can be created for retrofitting, taking European requirements into account.

Scope of disclosure requirements

In January 2010, the Federal Network Agency specified binding standards vis-à-vis DB Netz AG for disclosure of envisaged amendments to or revision of Terms of Use for the Railway Network and Terms of Use for Service Facilities. They include requirements in relation to the form and content of notifications, including price lists. The aim is to safeguard effective *ex ante* control by the Federal Network Agency.

Only if the operators of railroads meet their statutory disclosure and reporting obligations in full can the Federal Network Agency subject the envisaged revisions or amendments to comprehensive legal review within the one-month deadline. The decision taken vis-à-vis DB Netz AG can act as a role model. It also creates legal certainty for all other infrastructure managers as they, too, are obliged to meet these standards.

Cost of capital in the regulation of surcharges

In the past two years, determination of the cost of capital in the railway sector has steadily gained in importance. The reason for this was, in particular, the continual increases in returns shown by the two largest railway infrastructure companies in Germany, namely DB Netz AG and DB Station & Service AG. DB Netz AG was declaring losses right up to the end of 2007.

Against this backdrop, the Federal Network Agency commissioned an expert's report to determine what returns were permissible under the special conditions of the German railway sector. It intends to present the results of the expert's report to the market players in the first quarter of 2010 and to invite their comments.

Court proceedings

The court decisions taken in 2009 address numerous basic railway regulation issues. All in all, the Federal Network Agency has made a positive assessment.

DB NETZ AG—NETWORK STATEMENTS 2008

Cologne Administrative Court confirmed that the Federal Network Agency has been right in objecting to the vast majority of clauses in DB Netz AG's Network Statement for the timetable period 2008/2009. In its decision of 21 August 2009 (ref. 18 K 2722/07), Cologne Administrative Court presumed that the Network Statement was incompatible with the provisions set forth in railway law. In its comments, it also provided some basic answers to issues that had been a matter of controversy between DB Netz AG and the Federal Network Agency.

The Network Statement provides the basis for access to the rail infrastructure and provides a comprehensive description of how the railway infrastructure can be used. In 2006, DB Netz AG submitted the envisaged new version of its Network Statement for 2008/2009 for review for the first time. The Federal Network Agency issued a notice objecting to numerous clauses. DB Netz AG lodged an appeal against this notice and filed a suit against the negative objection notice. Cologne Administrative Court confirmed, in particular, the definition of the term "discrimination". A universal provision in the Network Statement can end up having different de facto impacts ("concealed discrimination"), and non-transparent, ambiguous wording can unreasonably hamper access to the infrastructure. For the transparency requirement ensuing from the prohibition of discrimination to be breached in this way, the respective railway undertaking's access to the infrastructure must, however, be tangibly and significantly hampered.

In addition, Cologne Administrative Court confirmed the distinction between the Network Statement and the General Terms and Conditions. For provisions that are part of the compulsory content of the Network Statement, it is not sufficient to provide information in the General Terms and Conditions. The court shared the Federal Network Agency's view that the envisaged construction measures should not affect the contractually agreed condition of the infrastructure. Rather, the construction measures must be an integral part of the agreement on the use of train paths. If this is not the case, the option of using a specifically defined train path in serviceable condition will have to be available over the

entire contractual period. An appeal was lodged against the decision.

DB NETZ AG—REDUCTION

In a notice issued on 6 April 2009, the Federal Network Agency had established that the provisions relating to the reduction of train path prices in DB Netz AG's Network Statement did not meet statutory requirements. Railway law makes provision for a reduction in train path prices if the condition of the railway infrastructure, the associated management and safety systems and the facilities providing route-based traction supply do not comply with the agreement. Complaints the Federal Network Agency received from parties with the right of access to the infrastructure prompted it to review DB Netz AG's Network Statement. The company was obliged to expand the reductions. DB Netz AG lodged an appeal against this notice. The Higher Administrative Court of North Rhine-Westphalia, as the court of last instance, denied an application to give suspensive effect to its objection (ref. 13 B 922/09). Until a final decision is taken in the main proceedings, DB Netz AG will be obliged to implement the notice.

In its core statements, the order imposed by the Federal Network Agency stated that, in principle, provision was to be made for reductions in train path prices for any, even minor, poor performance. If the condition of the railway infrastructure, the associated management and safety systems and the facilities providing route-based traction supply do not comply with the agreement, DB Netz AG is obliged to reduce the train path prices as the infrastructure manager—provided it is familiar with the circumstances leading to the reduction. DB Netz AG is also obliged to grant reductions if the party with the right of access does not explicitly request a reduction. Reductions must normally be calculated such that the reduced interest of the party with the right of access in the reduced performance is taken adequately into account. DB Netz AG was obliged to amend the relevant provisions in its Network Statement and to implement them vis-à-vis all parties with the right of access. The relevant revisions entered into force on 13 December 2009.

DB NETZ AG—DISCLOSURE OF FRAMEWORK AGREEMENTS

In its decision handed down on 13 October 2009, the Higher Administrative Court of North Rhine-Westphalia confirmed the decision taken by the Federal Network Agency on 16 July 2009 on DB Netz AG's obligation to disclose the main features of framework agreements (ref. 13 B 1334/09). The Higher Administrative Court of North Rhine-Westphalia rejected an application lodged by DB Netz AG to grant suspensive effect to its objection by way of a preliminary injunction.

Framework agreements concluded between railway undertakings and railway infrastructure companies on the use of railway capacity have a term of more than one timetable period, namely of several years. In order to be able to plan framework agreements and to register them with DB Netz AG, railway undertakings must know what framework conditions have already been concluded with DB Netz AG and not just be familiar with DB Netz AG's standardised framework agreement. However, the company had refused to make any such disclosure. A number of parties with the right of access considered this behaviour to be a breach of the company's statutory

obligation to provide information. The Federal Network Agency ordered DB Netz AG to provide parties with the right of access, upon request, with anonymised versions of the framework agreements already concluded that contain information about the agreed railway routes, the agreed bandwidths (timeframes) and their timing, the term and date of expiry of the respective framework agreement.

DB Netz AG lodged an appeal against the decision and filed an application to grant suspensive effect to the decision. Cologne Administrative Court (ref. 18 L 1247/09) dismissed the summary proceedings instituted by DB Netz AG in its decision of 8 September 2009.

Until a final decision is taken in the main proceedings, DB Netz AG will be obliged to implement the notice by virtue of the decision handed down by the Higher Administrative Court of North Rhine-Westphalia.

DB NETZ AG—FRAMEWORK AGREEMENTS INVOLVING DEFERRED LAUNCH OF OPERATIONS

In a notification issued on 18 March 2009, the Federal Network Agency ordered DB Netz AG to accept and process framework agreements according to which operations are not due to start directly at the beginning of the next framework timetable period in December 2010, but at a later date. The delayed start of operations gives new market entrants, in particular, planning security, enabling them to undertake their initial railway vehicle procurement in the period between conclusion of the framework agreement and the launch of operations. The conclusion of a framework agreement with the option of using train paths over many years facilitates borrowing to finance rolling stock until operations are launched. DB Netz AG lodged an appeal in April 2009 and applied to Cologne Administrative Court to grant suspensive effect. In its decision of 26 May 2009 (ref. 18 L 542/09), Cologne Administrative Court dismissed the summary proceedings instituted by DB Netz AG against the notification issued by the Federal Network Agency.

In its decision of 22 July 2009 (ref. 13 B 830/09), the Higher Administrative Court of North Rhine-Westphalia granted the appeal filed by DB Netz AG against the decision handed down by Cologne Administrative Court and granted suspensive effect to the appeal against the notification issued by the Federal Network Agency on 18 March 2009, which means that, at present, DB Netz AG is not processing registrations of framework agreements with deferred launch of operations. Cologne Administrative Court will take a decision on the notification issued by the Federal Network Agency in main proceedings.

DB NETZ AG—SERVICE FACILITIES STATEMENT 2008

On 4 December 2009, Cologne Administrative Court (ref. 18 K 4918/07) handed down a decision in the main proceedings involving the amendments DB Netz AG was planning to make to its Service Facilities Statement submitted in late 2006. In addition to confirming the legal standards and assessments made in the previous decision handed down on 21 August 2009 in relation to the Network Statement 2008, Cologne Administrative Court commented further on the reach of regulatory obligations. In particular, the court explained that Section 14 subsection 1 of the General Railway Act not only contained a prohibition of discrimination but

also an independent right of access ("right of participation"). This means that regulations with a financial deterrent effect are unlawful because they make parties with the right of access reluctant to use service facilities, thereby undermining the right of access.

Furthermore, Cologne Administrative Court said it was in favour of the Service Facilities Statement having an indispensible minimum content. This means that railway infrastructure companies are obliged to incorporate into the Service Facilities Statement any criteria that might sway parties with the right of access in their choice of service facility. However, Cologne Administrative Court did not follow the demands of the Federal Network Agency regarding the level of detail and the minimum amount of information or the demand for an optimum incentive system.

Agency's function, structure and core tasks

FUNCTIONS AND STRUCTURE

The Federal Network Agency, originally called the Regulatory Authority for Telecommunications and Post (Reg TP), was set up on 1 January 1998 as a higher federal authority within the scope of business of the Federal Ministry of Economics and Technology (BMWi). It took over the responsibilities of the former Federal Ministry of Post and Telecommunications (BMPT) and the Federal Office for Post and Telecommunications (BAPT). When it was assigned functions from the new Energy Industry Act and the amended General Railway Act it was renamed Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway (Federal Network Agency) in 2005.

First and foremost, the Agency's remit is, through regulation, to promote competition in the telecoms, postal, energy and rail sectors, to guarantee non-discriminatory network access, to ensure the provision of appropriate and adequate services across the country in the telecoms and postal sectors, and to provide frequency regulation and numbering arrangements. These responsibilities are detailed in the Telecommunications Act (TKG), the Postal Act (PostG), the Energy Industry Act (EnWG) and the General Railway Act (AEG), and are regulated additionally in ordinances and other implementing provisions.

Further tasks of the Federal Network Agency flow from various other specialist laws such as the Radio Equipment and Telecommunications Terminal Equipment Act (FTEG), the Amateur Radio Act (AFuG) and the Electromagnetic Compatibility of Equipment Act (EMVG) in the telecoms sector and the Renewable Energy Sources Act (EEG) in the energy sector. The Agency is the competent authority under the Electronic Signatures Act (SigG) and as such is tasked with setting up and monitoring a secure and reliable electronic signatures infrastructure.

The Agency's tasks and activities are complex and wide in scope. They range from cases addressed in quasi-judicial proceedings in regulation areas right down to the detection and processing of radio interference throughout the country.

A higher federal authority of the Agency's size needs constant development of its organisation. An analysis of staff requirements was therefore

carried out to ensure the efficient performance of the Agency's responsibilities on the basis of a task-oriented organisational structure. The current organisational structure is as follows:

The Agency comprises Ruling Chambers and departments. The President's Chamber takes decisions on, in particular, award proceedings for scarce radio spectrum resources and the imposition of universal services. In the telecoms sector, the President's Chamber determines which markets require regulation and which companies have significant market power in these markets. On the basis of these determinations, the Ruling Chambers then decide on the regulatory measures to be imposed on SMP undertakings. They decide on details of obligations in the field of network access conditions, for example, and, as part of their responsibility for the *ex ante* or *ex post* examination, they decide on rates. In the postal sector the Ruling Chamber's responsibility also focuses on *ex ante* and *ex post* rates regulation and the control of anti-competitive practices, including the regulation of access to the postal network. In the energy sector the Ruling Chambers are responsible for all decisions which the Agency is required to take in the gas and electricity sectors under the Energy Industry Act and implementing ordinances, including regulating the use of system charges.

The departments perform specialised and central administrative functions. These include economic and legal policy issues of telecoms, postal, energy and rail regulation and technical aspects of frequencies, standardisation and numbering. The Agency is active in international bodies, cooperating on drafting standards for the development of new generation networks and radio systems. A major departmental function is to give Ruling Chambers specialist assistance in their decision-making. In respect of rail regulation, all relevant tasks are performed by the rail department as there is no Ruling Chamber for this sector.

Combating abuse of premium rate services continues to be a great challenge. Another field of tasks is connected with the database of fixed transmitter sites operating above a specified power level. Of particular importance for the public is the dispute resolution procedure under section 47a of the Telecommunications Act and section 10 of the Postal Services Ordinance (PDLV), and consumer protection.

On the basis of the Energy Industry Act, the Agency creates the environment for sustainable competition in the upstream and downstream gas and electricity markets, mainly by way of unbundling and regulating access to the energy networks and by regulating rates. The aim is to monitor network access, which is to be offered on a non-discriminatory basis, and to regulate the use of the system charges levied by the companies. In addition, the Agency monitors developments in the upstream generation and import markets and in the retail markets. In 2009 the Agency's work focused on the implementation of incentive regulation, applicable since 1 January

2009, and on the further reduction of structural barriers restricting access to the gas market.

On 1 January 2006 the Agency also assumed responsibility for monitoring compliance with the legislation on access to rail infrastructure. A principal task is to secure the non-discriminatory use of rail infrastructure for the railway undertakings and other access beneficiaries. Rail infrastructure covers the infrastructure and services connected with both tracks and service facilities (eg stations, freight terminals). Rates regulation includes the examination of the amount and structure of infrastructure charges and of other charges levied by the infrastructure managers.

To emphasise the uniform structure of the Agency, there is a special department for the regional offices, the contact point with consumers and the industry across the country.

The regional offices are responsible mainly for technical matters. They provide advice, for instance, on compliance with the Telecommunications Act, on electromagnetic compatibility provisions and the electromagnetic compatibility of apparatus. They are also responsible for frequency assignment, eg for mobile radio and PMR systems. Another important area is the processing and resolution of radio interference using state-of-the-art measuring equipment, monitoring compliance with regulations and carrying out radio monitoring and inspection orders under the TKG and EMVG.

Under the government programme *Future-Oriented Administration through Innovation,* the Agency is also taking part in *the Establishment and Extension of Shared Services Centres* project. It provides services to other authorities and allowance beneficiaries, mainly from the scope of business of the Federal Ministry of Economics and Technology, concerning family allowances, remuneration and pay, travel expenses, separation allowances, relocation allowances and medical allowances. These services are performed by the regional offices.

As a result of certain tasks being transferred to the regional offices, the headquarters can focus on its core tasks and local staff of the regional offices are meaningfully employed.

To adjust its current path to future requirements and ensure a homogeneous distribution of functions, the Agency is undertaking organisational reviews in its regional offices. The outcome of these reviews will be considered in drawing up a standard concept for regional offices.

HUMAN RESOURCES

A modern staff management system is a top priority at the Agency. Amid ever greater constraints on staffing levels, it is essential to deploy existing staff optimally as well as to recruit qualified new staff. This is only possible when human resources planning takes account of work requirements and staff skills and preferences equally. Only with a combination of pro active staff deployment planning and motivated staff can the Agency perform its tasks efficiently and cost-effectively at times of tight budgets.

In recruiting new staff the Agency not only requires excellent specialist knowledge but also conceptual ability and team skills, backed up by the feel for the practical requirements of the markets and their mechanisms.

The Agency employs a total of 2,600 specialists from a wide range of backgrounds for its highly interdisciplinary fields of activity. These include law, economics, engineering, physics, mathematics, information technology and administration.

The Agency has provided training since 1999. In 2009, a total of 10 young people began as office communication trainees at the headquarters in Bonn and Mainz. Under the traineeships in electronic equipment and systems offered since 2003, 22 places for trainees have been made available at Augsburg, Bremen, Göttingen, Magdeburg and Münster. The places in Augsburg and Münster were newly created in autumn 2009. Thus in 2009, a total of 124 young men and women received training within the Agency.

BUDGET

The Agency's income and expenditure is budgeted for in the federal budget in the section of the Federal Ministry of Economics and Technology.

The table below shows the income for the years 2009 (target and performance) and 2010 (second government draft):

Type of income	2009 target in € '000	2009 performance in € '000	2010 target in € '000
Telecoms fees, contributions and other charges	169,149	72,159	221,867
Postal fees and other charges	50	52	65
Fees and other charges in the rail sector	328	192	328
Fees and other charges in the energy sector (electricity and gas)	1,100	3,073	433
Other administrative income, eg fines, rents and disposals	1,419	3,819	1,532
Administrative income	**172,046**	**79,295**	**224,225**

The shortfall in revenue in the year 2009 (target and performance) is mainly attributable to the fact that the auction of broadband mobile frequencies, originally scheduled for 2009, is now taking place in 2010.

The table below shows the expenditure for the years 2009 (target and performance) and 2010 (second government draft):

Type of expenditure	2009 target in € '000	2009 performance in € '000	2010 target in € '000
Staff costs	109,181	110,093	106,637
General administrative expenditure, appropriations	35,994	36,876	35,491
Investment	11,832	7,824	18,391
Total expenditure	**157,007**	**154,793**	**160,519**

Strategic plan 2010

The Federal Network Agency 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 Agency in the current year. In addition, the Agency is reporting here on all its main projects in all its fields of activity in which issues of fundamental importance are expected in 2010.

TELECOMMUNICATIONS

Body of European Regulators for Electronic Communications (BEREC)

After the approval of the new Telecommunications Package by the European Parliament and the Council of Ministers at the end of November 2009, it is now planned to establish BEREC in 2010. BEREC is a new model. Its Office is separated from the "Board of Regulators"—which replaces the current European Regulators Group (ERG)—and it is an independent legal entity under Community law. However, BEREC as a whole is not an agency, but the common roof for the Board of Regulators as a consulting body (without independent legal status) and the Office, which is controlled by the "Management Committee" consisting of the representatives of 27 national regulatory authorities (NRAs) of the EU member states and one representative of the EU Commission. Its substructure still consists of the working groups responsible for the work on contents, in which experts of the NRAs prepare the relevant documents and decisions of the Board of Regulators. This last fact emphasises that all specialist work is still performed by the NRAs and the Federal Network Agency will contribute by an active cooperation in the working groups. Furthermore, the Agency is intensively involved in preparations for the establishment of BEREC and the Office to ensure that it is done in accordance with the Regulation's objectives. Therefore, it cooperates both in the preparation of the budget plan, the personnel concept and the rules of procedure as well as other steps. This will cover the entire year 2010.

Foundation of an NGA Forum

Against the backdrop of the federal government's broadband strategy, the Agency has prepared key elements for progressing modern telecommunications networks and creating powerful broadband infrastructures.

One result of these key elements is the establishment of an NGA Forum initiated by the Agency to promote a dialogue between the authority, network operators, manufacturers, federal states and municipalities.

A consultation on these key elements revealed that some subjects play a special role for the establishment of NGA networks and are thus specifically suited for a discussion in the NGA Forum.

For instance, the term Open Access is of special importance in the establishment of NGA networks; simultaneously, many questions remain unanswered. At first, the NGA Forum should prepare a common definition of the term Open Access. Based on this definition, investigations as to which prerequisites and conditions are necessary for Open Access to positively stimulate broadband roll-out should be performed. Technical and operational aspects of the access to optical fibre networks and other NGA networks should be dealt with here as well. The consultation on the key elements revealed that the market considers an early determination of standards as a precondition for a comprehensive NGA roll-out. Another focus for the NGA roll-out is the subject of co-investment including its different co-investment models. The NGA Forum should examine the different models and assess their suitability to achieve the two objectives mentioned above.

The NGA Forum managed by the Agency should start working on these subjects as soon as possible to push the expansion of broadband in Germany, requiring massive investments, and to solve the problems of its practical implementation.

Net neutrality

Issues of net neutrality have been discussed controversially, mainly in the USA, for some years now. Discussions focus, in particular, on a non-discriminatory Internet access for service providers as well as on a neutral transmission of data by network operators. No detailed regulations for this purpose are laid down in the Telecommunications Act (TKG) which is based on the regulatory framework of the EU; however, provisions on the end-to-end-connectivity and on interoperability of services offer some starting points. And the new package of draft directives containing additional regulations on transparency and minimum quality provides further instruments to ensure net neutrality.

As long as there is sufficient competition on the network level and end customers are not hindered to change their provider, consumers may punish blockages and declining quality levels by quickly changing their provider. In addition, the European legislative framework and the TKG allow for the sanctioning of the abuse of market dominance and for the imposition of access obligations in markets requiring regulation. In the case of operators not having significant market power, the Agency may impose access obligations in justified cases under section 18 of the TKG.

This subject is of increasing importance in Germany, in particular due to the increasing

use of mobile Internet access which, generally, does not correspond to the Internet use based on fixed lines. The Agency will closely monitor any further development in the market and come back to the issue, as needed.

Market definition and analysis procedures as well as regulatory orders

In 2009, a comprehensive analysis was made and a consultation document published on the wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location (market No. 4 of the 2007 Commission Recommendation on relevant product and service markets). An evaluation and publication of the consultation results as well as the final notification to the Commission and the European member states are planned for 2010. Subsequently, the market will be defined by the President's Chamber.

A similar situation exists for the market of wholesale terminating segments of leased lines, irrespective of the technology used to provide leased or dedicated capacity (market No. 6 of the 2007 Commission Recommendation on relevant product and service markets). A comprehensive analysis was made and a consultation document published in 2009. Results of the consultation will be evaluated and published in 2010. The market definition and analysis will be notified to the Commission and to the member states before the market is finally defined by the President's Chamber.

Additional plans for 2010 include the analysis of the markets of broadcasting transmission services to deliver broadcast content to end users (market No. 18 of the 2003 Commission Recommendation on relevant product and service markets), and of voice call termination on individual mobile networks (market No. 7 of the 2007 Commission Recommendation). A comprehensive information request was initiated for the market of broadcasting transmission services in 2009; the information submitted will be used to complete the entire procedure in 2010. A decision will be taken here as to whether regulation can be discontinued—as recommended by the Commission—or if there is still a need for regulation.

A draft of the regulatory order for bit stream access published in October 2009 obliges Deutsche Telekom AG (DTAG) to provide bit stream access on non-discriminatory terms in the future as well. However, a relaxation of control is proposed in respect of rates regulation. It should suffice when DTAG informs the Agency of the bit stream rates prior to them taking effect and a verification of the rates will be performed later, if appropriate. The obligation to obtain prior approval might, thus, be eliminated in future. In 2010, the Agency will pass a relating regulatory order taking into account the comments received during the consultation.

A revision of the regulatory order for local loops is planned for 2010 as well.

Rates approval

In a decision of 4 December 2009, the Federal Network Agency determined rules for the access of competitors to multi-functional cases, ducts and dark fibres of DTAG; now, in a second step, relevant rates need to be defined, probably in the first quarter of 2010.

Furthermore, a number of important wholesale prices are up for renewed approval in 2010. Provisioning charges for access and shared access to the local loop are to be newly approved

until the middle of the year. In addition, charges for a great number of auxiliary services must be redefined in the course of the year, such as for carrier express fault repair, coexistence testing and access to distribution frames.

Mobile termination charges of all four mobile operators are up for renewed approval in autumn 2010. Prior to these procedures, a decision will have to be made under section 29 of the TKG on whether the costs of mobile operators must be evidenced using an electronic cost tool developed by the Agency. Use of this cost tool should enable a standardisation of the cost data and a resulting efficiency evaluation across all operators to enable a determination of the call termination charges.

Risk-adjusted return on equity

Key element 11 of the draft key elements for progressing modern telecommunications networks and creating powerful broadband infrastructures, published by the Agency for public consultation, states:

"The Federal Network Agency will soon look into the matter of whether, and if so to what extent, it needs to adapt the method it currently applies to determine a rate of return on equity that properly reflects the risks involved in broadband deployment. To this end it has commissioned an expert opinion".

Numbering concept

Section 2 of the Telecommunications Numbering Ordinance requires the Agency, following a public consultation, to publish an annual numbering concept reflecting trends in the telecommunications market and their implications for the numbering plan. The concept should show how the numbering plan is expected to progress, in order to provide maximum transparency and a sound basis for planning. It will place individual measures in their overall context and provide an instrument with which regulatory aims can be achieved by amending existing arrangements with the involvement of all the stakeholders. The numbering concept, as stated in the Ordinance, will contain an overview of the degree of occupancy and the development of demand in all numbering spaces, numbering ranges and subranges used, identifying those spaces, ranges and subranges where resources are expected to become scarce in the next five years.

In November 2009, the Agency published its first numbering concept. The plan for 2010 comprises the establishment of a numbering concept which, based on the concept of 2009, describes all changes in the field of numbering which are planned to promote the telecommunications market and the consumer interests, by taking into account the current developments.

Spectrum management

The following activities should be emphasised in the context of spectrum management:

- Performance of auctions to award frequencies in the ranges of 800 MHz, 1,800 MHz, 2,000 MHz and 2,600 MHz for wireless access for the provision of telecommunications services
- Flexibilisation of frequency usage rights for wireless access for the provision of telecommunications services in the ranges of 450 MHz, 900 MHz, 1,800 MHz, 2,000 MHz and 3,500 MHz
- Evaluation of cooperation options for network operators, including the possibility of infrastructure sharing
- Update of the Agency's Frequency Usage Plan to implement the results and resolutions of

the World Radiocommunication Conference 2007 (WRC-07) or of the Frequency Band Allocation Ordinance as amended; update of partial frequency usage plans due to urgent national planning needs.

Consumer protection

The following aspects should be emphasised in the area of consumer protection:

- Control of transparency in the telecommunications retail market (in particular regarding the contents of standard contracts and publication duties)
- Analysis of problems during provider change processes by evaluating digitally published information
- Review of the expanded measures to fight the abuse of call numbers in view of the massive rise of complaints by consumers in 2009

Implementation of the regulatory order for market 1

In view of the recent publication of regulatory orders for national retail fixed line markets, an important plan for 2010 is to adapt the methods for rates regulation to new conditions. In doing so, it must be taken into account that regulation of the national retail fixed-line telephone market was considerably reduced in 2009. For instance, regulation has been discontinued for national fixed-line connections and for calls from the national fixed-line network to national mobile networks. Furthermore, DTAG will, in future, offer its competitors fixed-line connections, under its General Terms and Conditions, for resale to third parties on a voluntary basis. In addition to the reduction of regulation in the retail market, this sector has experienced the increasing marketing of package products and individual contracts offering different services—eg connection, telephone services and use of the Internet—at a flat rate. In determining whether rates for bundled products are abusive under section 28 of the TKG, the Agency will therefore focus on the development of an adequate regulatory approach taking into account the reduction of regulation on the one hand, but also the increasing provision of bundled products (including both regulated (fixed-line connections) and non-regulated services) on the other.

Regulatory order for market 6

At present, an important plan for 2010 is the issue of a regulatory order based on the results of the second market definition and market analysis procedure for market 6 of the EU Commission Recommendation (wholesale terminating segments of leased lines) initiated in 2009. In addition to overseeing the market definition and market analysis procedures and preparing and realising the required consultation and consolidation process, the Agency will in particular determine appropriate access obligations.

Provision of subscriber data

After the Federal Administrative Court repealed an Agency decision on charges for the provision of subscriber data under section 47 TKG in 2008, it becomes increasingly apparent that the Agency needs to deal with the provision of subscriber data again.

Automated information procedure

The Agency's automated information procedure as per section 112 of the Telecommunications Act represents an important contribution to public safety. On 1 January 2008 the Telecommunications Interception and Other Undercover Investigation Measures Reform and Transposition of Directive

2006/24/EC Act took effect. This entails additional requirements for the automated information procedure, most notably concerning the retrieval of e-mail addresses and mobile equipment IDs.

The Agency is currently involved in drawing up the new ordinance required by section 112(3) of the Telecommunications Act. This will be followed by a new technical directive, essential for the design of the automated procedure, drawn up in conjunction with the industry associations, telecommunications companies and authorised bodies.

Based on section 112(2) para. 5 of the Telecommunications Act in conjunction with section 7(6) of the Emergency Call Ordinance, the Agency offers emergency service centres access to the automated information procedure to enable a localisation of location-based connections in case of emergency calls where callers are unable to state their location. Some emergency service centres in the German federal states of North Rhine-Westphalia and Hesse have already been connected to the automated information system. Approx. 100 further emergency service centres have announced their participation for 2010 and will be connected to the system by the Agency.

Technical implementation of intercept measures

The Agency's activities for the technical implementation of intercepts are a valuable contribution to public safety. In particular, the technical directive Telecommunications Interception Ordinance as per section 110(3) of the Telecommunications Act provides the basis for the implementation by the telecommunications companies, the manufacturers and the security authorities. The directive must be adapted as necessary to accommodate new communications technologies.

An analysis of the VoIP market segment ordered from the company Berlecon Research and the Fraunhofer Institute for Systems of Communication Technology was completed in 2009 and its results were distributed to the companies involved. However, before any knowledge retrieved is used in practice and any current technical implementation in this field can be supplemented, the VoIP standardisation measures which have been started by ETSI will be accompanied actively and their completion in form of a technical standard will be pushed.

The "Telecommunications Interception and Other Undercover Investigation Measures Reform and Transposition of Directive 2006/24/EC Act", effective as of 1 January 2008, includes provisions on the obligation regarding information requests on traffic data. The Agency took part in the relevant international standardisation activities. In 2009, the Agency prepared a technical directive Telecommunications Interception Ordinance (TR TKÜV) taking account of this standardisation. The technical directive also includes the "electronic transmission of judicial intercept orders". A precondition for the mandatory use of the interface described in the new TR TKÜV is an adaptation of the Telecommunications Interception Ordinance. The Agency will participate in the preparation of this Ordinance to integrate any experience made in practice to date.

Technical compatibility studies

Compatibility studies for radio applications are performed in the international bodies of CEPT and ITU involving the parties concerned. Results are minimum sets of compatibility parameters which form a technical frame for radio applications. A great number of compatibility studies need to be performed in 2010, as well, in order to fulfil a precondition for the implementation of new radio applications and technologies. Within the framework of the Wireless Access Policy for Electronic Communications Services (WAPECS) initiated by the European Union, the Federal Network Agency will co-design the necessary technical minimum requirements for the 2 GHz band in 2010. While the 2 GHz band has been occupied by UMTS for several years, it will be usable on a more technology-neutral basis after technical minimum requirements have been specified.

Other significant plans for 2010 are:

- Compatibility studies for the extension of GSM-R (radiocommunications for the railways in the 900 MHz band);
- Compatibility analyses for ultra-wide band automotive short range radar (SRR) equipment in the 26 GHz band and competing small-band radars in the 24 GHz band;
- Several analyses for short range devices (eg radio-based medical implants, professional radio microphones, radio monitoring devices, WLAN in airplanes, etc.);
- Analysis of compatibility between the radiodetermination-satellite service (RDDS GALILEO) and the mobile-satellite service (MSS) at 2.5 GHz;
- Studies for complementary ground components for the mobile-satellite service;
- Analysis of the technical options for the use of non-used broadcasting channels (white spaces) in the UHF band from 470 to 790 MHz by other radio applications;
- Compatibility studies for small gap fillers (low-power repeaters for femto cells in households) for DVB-H in the UHF band;
- Continuation of different compatibility studies as a contribution to the World Radiocommunication Conference in 2012

Measures for the protection of public telecommunications networks and safety-relevant radio systems

The Public Safety Radiocommunications Protection Ordinance took effect in 2009. Headed by the Agency, two coordination groups were formed with representatives of cable operators, associations and authorities. These groups are coordinating the concrete measures to identify and eliminate inadmissible spurious emissions from wire-based telecommunications infrastructures (predominantly cable networks), and to protect safety-relevant transmitters and receivers. Comprehensive monitoring activities are planned for 2010 in German conurbation centres. One of the objectives is to re-enable the future use of aeronautical frequencies formerly taken out of service due to interference.

EMC standardisation

One objective of standards for electromagnetic compatibility (EMC) is to ensure that users of electrical and electronic devices and systems of all types are spared EMC interference as far as possible. But they also provide the industry with planning security for the specification of their products. The Federal Network Agency is the competent authority for the application of the Electromagnetic Compatibility of Equipment

Act (EMVG) and cooperates in the national and international EMC standardisation, in particular in the interest of users.

One focus of the Agency's standardisation work in 2010 is to participate in the coordination of the EMC standardisation of inverters to feed renewable energies from photovoltaic and fuel cell generators to the low-voltage network. The decentralised provision of electrical energy by small generators is of increasing importance. Concrete EMC requirements need to be defined to avoid interference, in particular in the low, medium and high-frequency bands.

Another focus of the Agency's involvement in standardisation will be to concretise standardisation plans for the immunity of equipment and line-based telecommunications infrastructures designed for the use of 800 MHz frequencies. An increasing use of co-frequency radio (wireless access for the provision of telecommunications services) and cable (eg in cable television nets) is to be expected in future.

It becomes apparent that international EMC bodies might allow alternative testing and measuring techniques to be included in the standards. The Agency sees the necessity to work toward an increased quality assurance regarding standardisation. Alternative processes must be equivalent regarding their compliance with fundamental EMC requirements both in the interest of fair competition between the manufacturers and in the interest of the consumer.

EMF monitoring at LTE base stations

The commercial implementation of LTE is planned for 2010. LTE means Long Term Evolution, a mobile service standard which allows for a transition to significantly higher data rates even in today's mobile networks. Scarcely populated areas with currently insufficient Internet access might benefit from this technology as LTE enables broadband Internet access.

LTE may, fundamentally, be implemented on the existing structure of the UMTS and GSM networks. The Agency will monitor the compliance of this technology with limits for the protection of persons in electromagnetic fields. Systems may only be commissioned when site certification prove their compliance with the limits relating to the safety of persons.

As an additional measure for the implementation of LTE in 2010, the Agency intends to set up automated measuring stations at suitable sites documenting the field strength level prior to and after the installation of the LTE technology around the clock. This measure should provide representative data about the field strength level generated by the LTE technology which can be retrieved by anyone from the Agency's EMF database.

Standardisation & climate change

The Federal Network Agency will participate in the ITU's standardisation work in the field of ICT & climate change in order to promote a transparent and comprehensible balance of emissions in the telecommunications sector. The Agency is working towards uniform evaluation chains and processes (regarding CO_2 emissions) in coordination with network operators and device manufacturers based in Germany.

Market surveillance by the Federal Network Agency

The Agency's market surveillance activities under Directive 2004/108/EC on the electromagnetic compatibility of equipment and Directive 1999/5/EC on radio equipment and telecommunications terminal equipment aim to verify the compliance of relevant products with requirements on a spot-check basis and thus to prevent or restrict the placing on the market of non-conforming products and to protect the consumer. Regulation 765/2008, contained in the EU's Goods Package, must be applied by the market surveillance authorities from 1 October 2010. It provides for a uniform protection level in all EU states and thus, finally, for a harmonisation of the approaches used. The intention of the internal market package is basically to strengthen market surveillance all over Europe. For this purpose, the European Commission intends to perform a review of the ten year old R&TTE Directive.

The procedures used in Germany are to be considered in the review of the R&TTE Directive and in the cooperation of the European market surveillance authorities; in particular, the Agency intends to participate actively in the implementation of the Europe-wide database system for market surveillance described in Regulation 765/2008.

Treatment of Intellectual Property Rights in Standardisation Organisations

Compliance with patent claims and the framing of licensing agreements are left to the contractual partners concerned. As patents and copyrights might influence the market position, it must be ensured that all IPR obligations concluded during the standardisation will also be transferred to the new owner, in the interest of fair competition. The Federal Network Agency will do its utmost for that to be more than before safeguarded in the IPR guidelines of the standardisation organisations. Reason for this is a sentence by the Regional Court of Mannheim of 27 February 2009, according to which the right to receive licences on the so-called FRAND conditions (fair, reasonable and non-discriminatory) with the sale of a standard-relevant patent will not be transferred automatically with the patent.

Increased involvement of science and industry in the work of the ITU-T standardisation and optimisation of interest representation

In the framework of the new organisation of ITU-T after the WTSA-08 (World Telecommunication Standardisation Assembly) and despite the economic situation caused, inter alia, by the financial crisis, the Agency plans to expand the basis for Germany's standardisation activities in the ITU-T in cooperation with the Federal Ministry of Economics and Technology. Special focus is on the involvement and representation of scientific institutes and small and medium-sized companies (SMC) to enable them to integrate their innovations and ideas in this standardisation process to be able to benefit from it.

It is planned to support the Federal Ministry of Economics and Technology in the harmonisation of a joint position of the federal government for current subjects such as identity management and cyber security.

In 2010, a meeting of the ITU's highest body, the Plenipotentiary Conference, will be held. The Agency will actively support the Federal Ministry in its task to prepare and coordinate

the German delegation at national level. The Conference is to give special attention to streamlining the ITU's rules of procedure and to enhancing their transparency and efficiency. As a result, cooperation in the ITU might be more attractive for the industry.

Long-term development of intelligent technical concepts for flexible spectrum use—Software Defined Radio (SDR) and Cognitive Radio (CR)

At the Agency's instigation and in cooperation with other regulatory authorities, the subject of SDR and CR is given a separate item on the agenda (AI 1.19) of the World Radiocommunication Conference 2012. The relating work within ITU-R is actively supported. A separate national preparation session was established to prepare a harmonised German position on this subject in cooperation with the interested public.

At the beginning of 2010, ETSI will commence with the detailed standardisation work, as technical concepts and requirements relevant for SDR/CR were defined in 2009.

The Federal Network Agency will, jointly with industry partners, develop technical concepts for flexible spectrum use in the new EU research project and contribute the relevant research results to the standardisation work (eg ETSI, ITU).

Intelligent Transport Systems (ITS)

At the end of 2009, the ETSI finished the European Profile Standard for ITS comprising the framework of specifications for car-to-car and car-to-infrastructure applications. Simultaneously, the radio system (digital air interface with relating channel plan, channel access and radio system management) will be standardised by ETSI in the period from 2009 to 2010. It is a new radio system without base stations offering high mobility which predominantly transmits information relevant for road safety and supporting traffic management. The Agency chairs the relating ETSI working group.

The objective is to achieve full conformity with the protocol, even in the sense of interoperability, which is derived from the provision of frequencies on a harmonised European level. The German automotive industry which is increasingly taking part in ETSI standardisation is also highly interested in this subject. Now, a special standardisation mandate for ITS, M/453, exists to ensure the preparation of the relevant standards in due time.

Global Standard for International Mobile Telecommunications—IMT Advanced

ITU is currently performing the evaluation process for standards of the fourth generation of mobile radio. Two new technical proposals for IMT Advanced are up for evaluation and possible approval by ITU in 2010. Simultaneously, the development of the technical specifications for 3GPP and IEEE is under way and will continue into the year 2012.

It is of special importance for the Agency to ensure that the regulatory objectives (which also include ensuring compatibility with other radio services) are considered in the standardisation in these phases of completion of the technical specifications and performance of the entire evaluation process. As regards radio, this concerns mainly the use of multiple transmitting and receiving antennas (MIMO), the aggregation of physically separated bands (spectrum aggregation), relaying technology and the coordinated multipoint reception and

transmission. Furthermore, subjects such as "global circulation of IMT advanced mobile stations" and "femto cells" will play an important role in the next years.

Smart Metering and industrial short-range communication

ETSI started several standardisation projects for short-range radio protocols at the end of 2009 under the EU standardisation mandate M/441 for Smart Metering. Industrial users and metering service providers, in particular in Germany, are highly interested in using these protocols and establishing harmonised standards under the R&TTE Directive. The Agency supports these activities. Special attention must be given to ensure that wireless short-range communication is harmonised with the general smart metering communication architecture which is under development in the newly founded ETSI committee M2M (machine-to-machine).

Technical Directive for Emergency Calls

The Emergency Calls Ordinance of March 2009 provides details on the fundamental requirements defined in section 108 of the Telecommunications Act. On this basis a technical directive will be drawn up to specify technical details for emergency calls. Properties of emergency call connections, for instance, were formerly defined in a technical directive of DTAG. To enable other service operators to service the market of emergency call lines it is planned to integrate the technical requirements in the Technical Directive for Emergency Calls. Rules for routing emergency calls need to be specified in the course of this process as well. A case-by-case forwarding of an emergency call to another emergency service centre and the forwarding of all emergency calls made to a temporarily faulty emergency service centre to a replacement emergency service centre must also be taken into account.

Accounting accuracy of volume-based rates

While traditional, line switched call services are mostly billed based on time and international calls also based on distance, volume based billing is suitable for packet-switched telecommunication networks. Here, the actually transmitted data volume—even in the case of voice and video transmission services—is recorded and billed to the end customer. The volume transmitted is also recorded in case of so-called "unreal" flat-rate offers where special discounts apply if a certain threshold is reached. While the Agency requested an evidence of the proper functioning of those time and distance-based accounting systems on an annual basis, in the interest of both end customers and providers, it now plans to define the requirements for the systems and processes used to determine the charge for volume-based transmission services under section 45g(3) of the Telecommunications Act, in consultation with the Federal Office for Information Security and after hearing the parties concerned.

ELECTRONIC SIGNATURE

Several large-scale projects in the field of qualified electronic signatures will be introduced or expanded in the next year. It must be assumed that these projects will fundamentally change the public's awareness for qualified electronic signatures. For that reason, the Agency will expand its consultancy services for companies, administrations and the public in the upcoming year.

The following large-scale projects of the federal government use qualified electronic signatures to a major extent:

- 1. In the medical sector, the Health Professional Card (HBA) and the Electronic Health Card (eGK) will be introduced. All HBAs will contain a qualified electronic signature, and qualified electronic signatures are an option for all eGKs. This means that a massive expansion of services from companies in this field is to be expected in view of approx. 140,000 medical professionals and approx. 70 million members of public health insurances in Germany's biggest economic sector having a volume of more than EUR 260 billion and 4.2 million employees.
- 2. Introduction in 2012 of ELENA (electronic record of income, previously called JobCard), providing, by means of qualified electronic signatures, a record of income for some 40 million employees. ELENA will not be provided as a smart card in its own right, but only as a qualified electronic signature on a card, replacing, for instance, the applicant's written signature on applications for social benefits. Further preparations for ELENA, for instance setting up a central storage facility, will be continued in 2010.
- 3. The electronic ID card planned for November 2010 will also optionally offer an electronic authentication feature (eID) stored on a chip, in addition to its current features (photo, proof of identity, travel document). Both the electronic health card and the electronic ID card are configured in such a way that they can also be used for qualified electronic signatures at the user's request. Reloading functionalities for qualified certificates are currently also being tested by companies participating in the field test. And there should be several application scenarios for the use of the qualified electronic signature (eg insurances) using the eID feature.
- 4. Electronic tax returns (ELSTER) are designed to support both electronic authentication and qualified electronic signatures. This will greatly ease the administrative burden associated with tax returns currently filed on paper.

As regards progressing the legal aspects of qualified electronic signatures, the Agency will assist in transposing Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market. This refers, in particular, to the preparation of a Trust Service Status List (TSL) for certification service providers in the Federal Republic of Germany. Each member state was obliged to provide such a TSL, listing all certification service providers as defined in the European Signatures Directive subject to state supervision, until the end of 2009. In a second step, a relating verification tool will be prepared which will enable direct checks for the contents of the TSL. This will allow for a Europe-wide use of the qualified electronic signature, in particular to pave the way for transnational one stop shopping services. Furthermore, the Agency is cooperating significantly in the revision of the Electronic Signatures Act and Signatures Ordinance and prepares the basis of a revised schedule of fees (Annex II of the Signatures Ordinance) in cooperation with the competent Federal Ministry of Economics and Technology.

European standardisation in the field of qualified electronic signatures is of special importance, also in view of the implementation of the Services Directive. The Agency is, thus, working committedly in national, European and international bodies. Focus of the work here is the cooperation in the Forum of European

Supervisory Authorities for Electronic Signatures (FESA), the European Telecommunications Standards Institute (ETSI) as well as the Electronic Signatures and Infrastructures (ESI). The Agency will host the FESA meeting in October 2010.

Furthermore, it provides consulting services for foreign governments regarding the establishment of signature infrastructures according to the German model, in particular for nations striving for an increased cooperation with the EU, as well as for African countries.

POST

Impact of new technologies on the letter Market

The introduction of new technologies and the change of the communication customs have an increasing effect on the postal market. New technologies not only leave their mark on internal processes of postal service providers but in particular on the products and services offered by them.

The future development in letter services is heading toward digital and thus pure electronic handling ("digital letter"). The EU Services Directive provides for the option of handling processes and formalities for the commencement and performance of a service electronically. The introduction of a citizen portal enabling a secure exchange of written messages and documents ("De-Mail") is planned to transpose this Directive.

Deutsche Post AG (DPAG) is developing its own system for sending online letters via the Internet. Other postal service providers are increasing their activities in this field as well.

Existing models such as hybrid mail (electronic handling and paper-based delivery) are also subject to further development and refinement.

The extent of substitution of physical letters and the acceptance of electronic offers by consumers are not foreseeable at the moment. The Agency will observe and accompany the development of such digitalisation in the market as well as its effects on competition and demand behaviour.

Quality measurement in the Universal Service

The Postal Universal Service Ordinance (PUDLV) defines quality standards for letter and parcel mail. These standards specify, inter alia, the transit time of mail items.

The quality standards specified apply to letter and parcel services of all providers. Since the discontinuation of the exclusive licence in 2008, no company is obliged to provide the universal service. The Postal Act based on section 87f of the Basic Law for the Federal Republic of Germany rather specifies that universal services will be rendered by the companies operating in the postal market. Therefore, the effective performance of the universal service depends significantly on the existing competitive situation.

The Federal Network Agency must supervise the compliance with quality standards by taking into account all services in the market. However, it does not have a dedicated measuring system to control such compliance with the transit time standard.

The transit time measuring system for letters originally developed by the Agency and operated with some employees had to be

discontinued at the end of 2004. Since that time, the Agency receives information on the transit times of letters from DPAG. Therefore, these data refer to the services of this company only, however not to those of other letter service providers. Additionally, DPAG's measuring system does not record the entire transit time of a letter from sender to receiver, but only the part which DPAG needs for transport and service.

Transit times of parcels are not measured at the moment. A new measuring system able to measure the transit times of all relevant letter and parcel services offered on the market is required to control the compliance with the quality standards of the Postal Universal Service Ordinance. Therefore, the Agency is verifying whether a dedicated quality measuring system able to map the entire market and to record quality criteria other than transit times in a multi-operator market and in different postal markets should be introduced.

Prior to tendering such a project, the Agency will—always depending on possible amendments of the Postal Universal Service Ordinance—verify and decide whether transit times should be measured and, if so, for which letter and/or parcel streams. Furthermore, it must be decided whether the data recorded by DPAG for its own purposes might be considered therein.

Attention to national regulatory interests on a European and international level

In the postal area, the Agency is actively participating in regulatory issues in different European and international organisations. The reason for its cooperation in these bodies is that any decision taken there will have an increasing effect on the national regulatory framework; such cooperation also enables the Agency to actively co-design the future sphere of influence.

Important in this respect is that developments and discussions about current subjects in Germany, such as an electronic postal service, standardisation and the strengthening of consumer rights, will be reflected on a European and international level and might be influenced significantly from there. Against this backdrop, it is planned to perform an assessment of the Agency's current cooperation in the different bodies. In view of an increasing scarcity of human resources, a statement of income and expenditure should help to prioritise these activities both for further steps to open the market on a European and non-European level and for the general strengthening of consumer rights.

Furthermore, new important postal issues affecting the national regulatory framework should be identified and possible ways to implement the national regulatory interests be developed.

ENERGY

Among the numerous activities in the field of energy regulation, the following plans should be emphasised for the year 2010.

Grid upgrade model

The Agency develops a grid upgrade model for operators of transport networks, predominantly for electricity transport network operators, in the framework of the evaluation of applications for approval of an investment budget according to section 23 of the Incentive Regulation Ordinance. This grid upgrade model should be

used to verify the necessity of any planned measure. The objective is to determine the future upgrade requirements of the transport networks based on a uniform scenario framework in which assumptions are made on the significant future developments in the energy industry. This is realised by comparing the assumed future development with the networks mapped in models. The necessary uniform scenario framework will be developed with the participation of all significant players.

Preparation of quality regulation

The Agency has the task to develop and implement a concept setting out the details of the quality element. In the electricity sector, quality regulation must start in the second regulatory period at the latest, may, however, also be implemented at the beginning of or during the first regulatory period. Quality regulation in the gas sector will probably be implemented subsequently, at the latest to the end of the second regulatory period.

The Agency is aiming to implement a quality element in the segment of electricity before the end of the first regulatory period. It should serve both to maintain the existing level of grid reliability and promote network efficiency. Any knowledge from consultation projects currently under way should be used to this end. Furthermore, preliminary work comprises, for instance, the validation of existing data to ensure their reliability, the performance of technical analyses using existing data and a possible acquisition of additional data from grid operators.

Cooperation in the implementation of the 3rd energy package

After the entry into force of the 3rd internal energy market package of the European Union on 14 August 2009, Directives 2009/72 and 2009/73 have to be transposed by 3 March 2011. In view of the numerous new and changed tasks for national regulatory authorities, the Agency will actively cooperate in the discussion process to be expected at national and European level. Key subjects for the Agency are a consistent set of rules for the unbundling of electricity and gas transport network operators, measures to coordinate and accelerate the construction of necessary energy lines, the preparation of network codes in the field of gas balancing, capacity management and pricing of gas storage facilities, and effective energy consumer protection.

Further development of congestion management Procedures at German borders

The further development of congestion management plays an important role to further strengthen competition and to promote the internal electricity market. The Agency will continue to accompany initiatives on a regional and European level to improve congestion management. Load-flow based allocation and market coupling are planned for some regions in Europe in 2010. In addition, the further development of cross-border intraday capacity allocation will continue in the regions. Further key subjects are the commitment of capacities and the specification of transmission rights.

Liberalisation of metering/smart metering

At the beginning of 2010, the Agency will prepare a report on the state of competition and on necessary further developments in the field of metering and time- and load-variable tariffs and submit it to the Federal Ministry of Economics

and Technology. Furthermore, it will continue its dialogue with market players (commissioners for data protection of the federal government and of the federal states, calibration authorities, meter system manufacturers and all other players) and participate in work group meetings in 2010.

Metering determination and implementation

The process to specify uniform standard contracts and business processes for energy metering introduced in 2009 resulted in several rounds of consultation during which market participants presented their positions. The procedure conducted simultaneously by Ruling Chambers 6 and 7 to use possible synergy effects should be completed in 2010 with a determination intended to effectively implement the opening of the market for metering point operation and metering. The determination will specify binding and uniform business processes for energy metering and standard contracts for the operation of metering points and the rendering of metering services.

Optimisation of network safety management within the meaning of section 13 EnWG/section 11 EEG

Under section 11(1) of the 2009 Renewable Energy Sources Act (EEG), operators facing a grid overload are given the opportunity to control, under certain conditions, installations with a capacity of more than 100 kW for the generation of electricity from renewable energy sources, combined heat and power generation or pit gas. At the same time, according to section 12(1) and (2) of the Energy Industry Act (EnWG), operators of transmission systems are entitled and obliged to take measures to eliminate dangers or impairments threatening the security or reliability of the electricity supply network. In this respect, the obligations defined in section 8(1) of the EEG and section 4(1) of the Combined Heat and Power Act (KWKG) need to be observed, i.e. the priority to take electricity from renewable energy sources, combined heat and power generation or pit gas. The Agency will ensure a coherent and practical application of the measures stated above.

Strengthening and upgrade of system balancing energy markets

In the field of electricity, the Federal Network Agency issued concrete standards for tendering the three system balancing energy qualities, primary regulation, secondary regulation and minute reserve, for the first time in 2006 and 2007. The standards were intended to increase the attractiveness of the system balancing energy markets and thus to intensify competition.

In future, it should be analysed whether the applicable rules need to be amended to contribute to a further intensification of competition by the entry of new providers and new technologies.

Overseeing the EEG Redistribution Mechanism Modified According to Equalisation Mechanism Ordinance

The Agency's tasks in the field of the Renewable Energy Sources Act (EEG) were extended after the elimination of the physical redistribution of electricity from renewable energy sources by the transmission network operators under the Equalisation Mechanism Ordinance. Now, the Agency also oversees the sale of renewable electricity at the stock exchange. Furthermore, it supervises the use of the renewables surcharge and the redistribution of the costs actually incurred for renewable electricity.

Approval of individual network charges

Under section 19(2) of the Electricity Network Charges Ordinance, the Federal Network Agency approves individual network charges for end consumers having an atypical usage behaviour. With the entry into force of the Energy Line Upgrade Act, section 19(2) of the Electricity Network Charges Ordinance was amended. These amendments must now be observed in the approval of individual network charges under section 19 of this ordinance.

Biogas injection

One key project in the field of access to gas supply networks is to answer existing and future questions regarding the interpretation of important provisions of part 11a of the Gas Network Access Ordinance. This project is of increasing importance as the injection of biogas rises significantly. This calls for a transparent and reliable mediation between network operators and injecters.

The questions to be clarified in this context include questions concerning the economic feasibility of capacity-increasing measures that may be necessary, the provision of minimum gas qualities by the injecters and further network access details.

Evaluation of interdependencies between the increasing upgrade of district heating networks and the regulation of gas distribution networks

Government subsidies for an increased use of combined heat and power generation to reduce CO_2 emissions result in a gradual replacement of the existing gas distribution infrastructure by district heating networks, first and foremost among household customers and commercial entities in highly populated city centres. Gas distribution networks are increasingly substituted by non-regulated district heating networks.

There are no resilient forecasts on the expected effects on gas sales and network charges for remaining network customers at the moment. The increasing number of complaints by consumers regarding the gas network deconstruction are an indication of the increasing importance of this subject. To approach this development in a suitable manner, the Federal Network Agency is required to further observe the substitution process with regard to increase and stability.

Strengthening of the market integrity at energy-trading places

The Agency considers an improvement of the legal conditions for energy trade indispensable. It will strive for a full implementation of the proposals of the European Energy and Securities Regulators (ERGEG/CESR) in order to improve transparency and to fight market abuse. From the Agency's point of view, it would be sensible to create a central institution to supervise all important aspects of electricity and gas trade which is also authorised to sanction companies infringing the legal standards.

Further improvements of transparency in the field of fundamental data

An improvement of transparency is decisive to strengthen the energy trade and competition. Therefore, the Agency will still be committed to further improve transparency in the field of fundamental data, in particular regarding electricity generation data and gas flow data, in 2010. It will support existing national initiatives as regards electricity and actively accompany the European discussions.

Development of the gas wholesale market

Beginning with 2010, market observation should cover all relevant European trading places, in order to improve the evaluation of trading data. International analysis is currently focusing on the trading places in Zeebrugge, Belgium, the National Balancing Point (NBP) in Britain, as well as the Title Transfer Facility (TTF) in the Netherlands. On a national level, developments at virtual trading points such as NetConnect Germany (NCG) as well as Gaspool need to be observed closely as new impulses are to be expected due to the concentration of the market areas on 1 October 2009—also for the trade at the European Energy Exchange (EEX) in Leipzig.

Capacity allocation/congestion management

Results on capacity and congestion management prepared on a national level are also to be implemented on an international level by the preparation of guidelines. In addition, short-term availability of firm capacity rights should be improved in cross-border gas trade.

Supply security

In 2010, the subject of supply security will still be dealt with on a European level to prepare a draft regulation for supply security. In addition, it is planned to continuously request load flow protocols in the course of the next year to receive knowledge on the network utilisation on a regular basis. A project group for the implementation of that plan has been formed already in 2009; this group will deal with the consultation of affected transmission system operators and the concrete programming of required tools and transmission routes.

Market area reduction

The creation of a Germany-wide gas market is making progress thanks to a continued concentration of gas market areas. It is currently important to strengthen cooperation between the still existing network operators by means of gas flow commitments within the new gas market regions. Bayernets GmbH in the market region of NetConnect Germany was the first market player to commit itself to comply with defined principles for the determination and procurement of gas flow commitments. Subsequently, other companies, too, committed themselves to obtain flow commitments. In 2010, the Agency will continue to oversee the tenders for the procurement of flow commitments and check their effectiveness. In addition to the existing cooperation, further opportunities for a concentration of market regions must be examined and discussed with market players.

Capacity management

Another priority is capacity and congestion management. The availability of free capacities is of high importance for competition in the gas sector. Currently demand far outstrips supply, particularly at the points of interconnection and in cross-market-area gas flows. At the same time it can be presumed that more efficient use could be made physically of some, at least, of the points of interconnection. Thus measures are to be taken in conjunction with the industry associations of operators and users that aim at more efficient capacity allocation and congestion management methods to encourage competition. The fundamental work which commenced in 2009 will be continued in the framework of the determination and reference offer procedure initiated at the beginning of 2010.

RAILWAYS

In their coalition agreement concluded on 26 October 2009, the German parties CDU/CSU and FDP favour an increased regulation of access to service facilities, access to traction current and distribution services in railway passenger transport. In addition, the government is committed to incentive regulation to which particularly train path and station prices are to be subjected to. The Agency will make its expertise available to the legislator for this plan.

The following activities should be emphasised out of the numerous activities planned for 2010.

Rates regulation

The pricing of rail infrastructure usage is central to a non-discriminatory access to this infrastructure. Charges that are discriminatory, too high or that have a prohibitive effect may considerably obstruct or undermine the exercise of statutory access rights and thereby impair competition.

Rates regulation procedures

After a review of DB Station & Service AG's stations pricing system in 2009, the focus in 2010 will be on an intensive analysis of DB Netz AG's path pricing system. Until now, the Agency focused on a selective analysis of individual rate components (eg regional factor, cancellation fees) and conditions (eg specifications for making reductions). Now, the modular structure of the path pricing system should be analysed for its compliance with the pricing regulations defined in railway laws. Special attention will thus be given both to cost determination and cost distribution. One key issue in 2010 will be DB Netz AG's obligation to present data of its internal cost accounting to support its argumentation.

The following must be analysed in the context of these rates regulation procedures:

- Compliance with the full cost benchmark for the rail network (establishing the costs that have actually arisen, taking account of cost coverage through public subsidies),
- Compliance with the pricing criteria for service facilities,
- Structuring based on the costs arising in direct connection with train operations and mark-ups,
- Allocation of common costs,
- Taking account of head office charges and internal prices in group companies,
- Non-discriminatory application of the principle of market viability,
- Individual components and mark-ups,
- Necessary equipment of service facilities

Reduction rules of infrastructure managers

In 2009, the Agency subjected DB Netz AG to the obligation to review the rules for the reduction of infrastructure charges in case of bad performance taking into account public authority requirements. These amended rules will initially be applied in 2010. The Agency will accompany the implementation of the rules by integrating all access beneficiaries and it will observe the effects on the competitive situation. The objective is to detect any deficits in the new rules as soon as possible.

Concept for incentive regulation

In the rail sector, there are far fewer provisions concerning issues of rates regulation than in other regulated sectors. Given the information asymmetry between infrastructure managers

and regulatory body and the lack of incentives to lower costs and access charges, the Agency considers it wise to take price regulation forward. Based on the final report published in January 2009, the Agency will pursue the preparations for the introduction of incentive regulation. For this purpose, the Agency is preparing proposals on which aspects should be taken into account in an incentive regulation ordinance. Accordingly, initial considerations on the use of price indices as well as on the data necessary for efficiency benchmarking purposes were made in 2009. Furthermore, benchmarks for admissible returns in the railway infrastructure market were developed. In addition, the individual steps to be taken both at the beginning of and during a regulatory period need to be specified. Necessary preparatory work will not only comprise the specification of the approach used in partial steps—for example in determining individual efficiency positions of companies—but also the determination of relevant initial charge levels. It must initially be clarified how the heterogeneity of the railway infrastructure market can be mapped sensibly for the purposes of incentive regulation on a symmetric basis.

Additionally, models to benchmark regional and supraregional operators of rail paths and service facilities are being developed. A benchmark of regional railway infrastructure operators compares small federal and private operators using key figures on costs and performance. A benchmarking of supraregional operators shows major infrastructure companies of DB AG in an international comparison.

Concept for a noise-based path pricing system

The legal provisions stated in section 21(2) of the Rail Infrastructure Usage Regulations allow for train path prices to contain a rate component taking account of the costs of environmental effects of the railway operation and thus enable a differentiation of path prices depending on noise and emission.

The Agency accompanies considerations on how to achieve noise-based train path pricing systems. A working group initiated by the Federal Ministry of Transport, Building and Urban Development (BMVBS) and headed by the Federal Network Agency is working on a concept for a realisable, sustainable and non-discriminatory noise-based path pricing system in cooperation with a project promoter, railway undertakings and infrastructure managers as well as railcar owners and other market participants. Railcars mainly used on train paths along the river Rhine should be retrofitted in the scope of a pilot project. The objective is to gain experience for a subsequent introduction of a noise-based component in the path pricing system which also satisfies European requirements.

Incentive systems to reduce disruptions

According to section 21(1) first sentence of the Rail Infrastructure Usage Regulations, rail network operators must charge for their mandatory services in such a way that they offer railway undertakings and rail network operators incentives, through performance-related components, to lessen disruptions and enhance rail network efficiency.

DB Netz AG had introduced an incentive system for the timetable period 2006/2007, but suspended it in November 2007 after proceedings

in a civil court. The legal requirements of railway law remained thus unfulfilled. In December 2008, the Agency obliged DB Netz AG to apply an incentive system beginning with the timetable period 2009/2010. This decision enabled DB Netz AG to develop a new incentive system with participation of the market to replace the old one.

The Agency will verify whether the new incentive system (ARS09) complies with the requirements of the railway law. DB Netz AG's system will be characterised by high flexibility and will thus make it difficult for the market participants and the Agency to assess its compliance with the legal objectives—non-discrimination, reduction of disruptions and increase in efficiency—prior to its application. Therefore, the planned incentive system will be validated by the Agency at the time of its application, i.e. beginning with the timetable period.

Operators of service facilities are also subject to the legal obligation to establish an incentive system according to section 24(1) of the Rail Infrastructure Usage Regulations. DB Station & Service AG has already been using an incentive system since 2007. The Agency will check whether its application is in conformity with the legal provisions.

Opening of DB Netz AG's Operations Control Centres

DB Netz AG's Operations Control Centres (OCCs) are responsible for coordinating train movements in daily operation. They take measures, in particular, to eliminate delays. OCCs have a significant influence on the actual performance of rail traffic due to the many operational irregularities in rail transport caused by different events and due to frequent deviations from the timetable.

Intragroup railway undertakings (DB Regio AG, DB Fernverkehr AG, Schenker Rail Deutschland AG) are represented with dispatching workplaces in DB Netz AG's OCCs. External railway undertakings (RUs) have no workplaces in these OCCs.

The presence of intragroup RUs in the OCCs enables them to exert better and faster influence on decisions on the coordination of trains than external RUs which contributes to punctuality and costs of their traffic to the disadvantage of external RU.

DB Netz AG refused any type of access in the past. An opening concept issued in 2009 is not sufficient according to the Agency's opinion. The Agency will soon take a decision on this matter whose implementation and effects on competition might need to be followed during the year 2010.

Construction and coordination procedures

Allocation of infrastructure for the working timetable as per section 8 of the Rail Infrastructure Usage Regulations and for occasional services as per section 14 of the Regulations is currently not subject to controls by the Agency, in particular in those cases in which approx. 12,000 construction and usage conflicts were amicably solved with the railway undertakings in the scope of a coordination process according to section 9(3) of the Regulations, as results from a publication of DB Netz AG for the working timetable of 2010. Internal regulations according to which the coordination process needs to be performed are currently

not contained in the operational/technical rulebook of the infrastructure managers or are not published. The provisions of the Network Statements only refer to fundamental procedural rules.

In coordination with the Federal Ministry of Transport, Building and Urban Development, the Agency will increasingly verify which internal rules are applied in making decisions in favour of individual access beneficiaries in train path construction and coordination procedures for the working timetable and in path construction procedures for ad-hoc requests.

Access to Marshalling Yards

The access to marshalling yards and other train formation facilities has not lost its importance for the development in rail freight traffic even in view of the economic crisis. Transport units from different origins travelling to the same destination can (and must) be newly combined in these service facilities, in particular for transports over large distances.

In 2009, the Agency analysed and evaluated the competitive conditions for access to marshalling yards and other train formation facilities. It recognised a need for regulatory action at different points, in particular regarding the process of capacity allocation and operational management.

The Agency will verify further steps in 2010. It will take into account, in particular, that the system of individual railcar traffic is under enormous pressure and reacts sensibly to any type of change due to its position in the intermodal competition. It will, therefore, place great value on the participation of the market and aims to achieve a solution which provides both existing and new business models of different RUs with the option to be mapped on the existing infrastructure in a future-oriented way.

Market observation

The manifold tasks of the Federal Network Agency indispensably require access to current and valid information. In the absence of alternative data sources, the Agency has collected data using questionnaires since 2006.

In 2010, the Agency will perform the fifth market survey asking companies about data on company objective, revenue, traffic services, infrastructure and service facilities. The results and information arising from the current and previous market surveys are subsequently published and directly discussed in a series of meetings with associations and interested RUs. Furthermore, the Agency is trying to refine the market survey both technically and with regard to the data requested to accelerate the process and reduce the effort for participating companies.

International activities

Regulation concerning a European rail network for competitive freight

In mid-2009, the European Commission issued a proposal concerning a European rail network for competitive freight. The Regulation is to determine cross-border rail freight corridors in the member states, partly in addition to the corridors existing to date. The Regulation is planned to be transposed by the member states within three years of its taking effect.

The corridors to be established should be subject to special legal and organisational conditions. According to the Regulation, governance of the freight corridors should be performed by

an "executive board" composed of representatives of the authorities of the member states concerned; the board should be responsible for defining the general objectives and for supervising and taking the necessary infrastructure measures. The infrastructure managers concerned should establish a "management board", whose responsibilities would include taking measures, investment planning, allocation of train paths—taking into account the need for capacity of passenger transport—keeping reserve capacity available to be able to respond to ad hoc requests, and traffic management in cases of disruption.

The implementation of the Regulation is of special importance for Germany, a central railway transit country with more than 50 border crossing points, in view of the activities of the rail regulatory bodies defined in the proposed Regulation. Article 18 of the Regulation significantly extends the powers and duties of the rail regulatory bodies referred to in Article 31 of Directive 2001/14/EC. The obligation to provide information required for handling complaints or conducting investigations should enable the regulatory bodies to perform legally conform administrative procedures also with foreign regulatory bodies.

Initially, the International Group for Improving the Quality of Rail Transport in the North-South Corridor (IQ-C), a working group of the regulatory bodies of the Netherlands, Germany, Switzerland and Italy, is to clarify the procedural issues raised by the proposed Regulation. Any results found by this group will subsequently be transferable to other corridors.

Infrastructure link-up contracts including additional agreements

State-owned railways had entered into contracts facilitating cross-border traffic in the past. When the new European legal system took effect, separate contracts of the infrastructure managers and railway undertakings were required.

In 2008, the European Commission asked member states to verify existing agreements on cross-border railway traffic for their compatibility with existing Community law. The Commission assumed restrictions of access to the railway traffic market from the application of still existing agreements on cross-border operations. Contracts to link the railway infrastructures are entered into based on treaties and should ensure a high quality of cross-border railway operations.

Contracts on the link-up of infrastructures and associated additional agreements may pose legal obstacles for competition. Some of the old agreements evidently included exclusive rights for only some of the railway undertakings in cross-border traffic. The partially revised or new contracts must also comply with the requirement of non-discrimination of RUs. The Federal Network Agency will therefore request the German infrastructure managers to submit their contracts on the link-up of infrastructures for review.

Abbreviations

3

3 GPP
3rd Generation Partnership Project

A

ACER
Agency for the Cooperation of Energy Regulators

AEG
General Railway Act

AFuG
Amateur Radio Act

AGAB
Association of recognised evaluation and certification bodies

AGB
General terms and conditions

AGCOM
Italian communications regulatory authority

AIS
Automatic Identification Systems

A-SMGCS
Advanced Surface Movement Guidance and Control System

ARAF
Railway Activities Regulatory Authority

ARegV
Incentive Regulation Ordinance

ATM
Asynchronous Transfer Mode

ATRT
Technical Telecommunications Regulation Commitee

AusglMechV
Equalisation Ordinance

B

BAPT
Federal Post and Telecommunications Office

BDEW
Federal Association of German Energy and Water Industries

BEMFV
Ordinance concerning the Controls for the Limitation of Electromagnetic Fields

BEREC
Body of European Regulators in Electronic Communications

BGH
Federal Court of Justice

BMPT
Federal Ministry of Post and Telecommunications

BMVBS
Federal Ministry of Transport, Building and Urban Affairs

BMWi
Federal Ministry of Economics and Technology

BOS
Emergency organisations

BVerfG
Federal Constitutional Court

BVerwG
Federal Administrative Court

BWA
Broadband Wireless Access

BZA
Outbound mail sorting centre

BZE
Inbound mail sorting centre

C

CA
Council of Administration of the Universal Postal Union

CEER
Council of European Energy Regulators

CE
Communauté Européenne—European Community

CEN
European Committee for Standardization

CEPT
European Conference of Postal and Telecommunications Administrations

CERP
European Committee for Postal Regulation

CESR
Committee of European Securities Regulators

CII
Critical information infrastructures

CNSA
Contact Network of Spam Authorities

Com-ITU
Committee for ITU Policy

CP
Common Position

CR
Cognitive Radio

ct/kWh
Cent per kilowatt hour

D

DB AG
Deutsche Bahn AG

DHL
Deutsche Post DHL

DLS
Data Link Services

DOCSIS
Data Over Cable Service Interface Specification

DPAG
Deutsche Post AG

DPD
Dynamic Parcel Distribution

DRM
Digital Right Management

DSL
Digital Subscriber Line

DSLAM
Digital Subscriber Line Access Multiplexer

DTAG
Deutsche Telekom AG

DVB-C
Digital Video Broadcasting-Cable

DVB-H
Digital Video Broadcasting-Handhelds

DVB-T
Digital Video Broadcasting-Terrestrial

E

e
expected

EBA
Fderal Railway Authority

ECC
Electronic Communications Committee

EDGE
Enhanced Data Rates for GSM-Evolution

EECMA
European Electronic Communications Market Authority

EEG
Renewable Energy Sources Act

EEX
European Energy Exchange AG

EFIS
ERO Frequency Information Sytem

EFMS
European Forum for member states

EFZN
Lower Saxony Energy Research Centre

EIBV
Rail infrastructure Usage Regulations

EIU
Rail infrastructure manager

EMF
Electromagnetic fields

EMRA
Electricity Market Regulatory Authority

EMV
Electromagnetic compatibility

EMVG
Electromagnetic Compatibility Act

EMVU
EMC and the environment

ENISA
European Network and Information Security Agency

EnLAG
Power Grid Expansion Act

ENTSO
European Network of Transmission System Operators

EnWG
Energy Act

EP
European Parliament

EP3R
European Public-Private Partnership for Resilience

EQS TF
Electricity Quality of Supply Task Force

ERG
European Regulators Group

ERGEG
European Regulators Group for Electricity and Gas

ESI
Electronic Signatures and Infrastructures

ETSI
European Telecommunications Standards Institute

EU
European Union

EuGH
European Court of Justice

EVU
Railway undertaking

F

FESA
Forum of European Supervisory Authorities

FRAND
Fair, Reasonable and Non Discriminatory

FreqBZP
National Table of Frequency Allocations

FreqBZPV
Frequency Band Allocation Ordinance

FreqNP
Frequency Usage Plan

FTEG
Radio Equipment and Telecommunications Terminal Equipment Act

FTTH
Fiber to the home

FTTx
Fiber to the x

G

GABi Gas
Basic model for balancing services and balancing rules in the gas sector

GasNEV
Gas Network Charges Ordinance

GasNZV
Gas Access Charges Ordinance

GB
gigabyte

GeLi Gas
Business processes for switching gas supplier

GEREK
Body of European Regulators for Electronic Communications (BEREC)

GG
Basic Law (German constitution)

GHz
gigahertz

GLS
General Logistics System/German Parcel

GPKE
Business processes for supplying customers with electricity

GPRS
General Packet Radio Service

GSM
Global System for Mobile Communications

GSM-R
Global System for Mobile Communications-Rail

GW
gigawatt

GWh
gigawatt hour

H

H-Gas
High Calorific Value Gas

HSDPA
High Speed Downlink Packet Access

HVt
Main distribution frame

I

IARN
International Audiotex Regulators Network

ICT
Information and Communication Technology

IEC
International Electrotechnical Commission

IEEE
Institute of Electrical and Electronic Engineers

IMSI
International Mobile Subscriber Identity

IMT
International Mobile Telecommunications

IP
Internet Protocol

IPR
Intellectual Property Rights

IPTV
Internet Protocol Television

IQ-C
International Group for Improving the Quality of Rail Transport in the North-South Corridor

IRG
Independent Regulators Group

ISDN
Integrated Services Digital Network

ISDN-PMX
Primary rate ISDN lines

ISO
Independent System Operator

ISPC
International Signalling Point Codes

ITC
Inter-TSO-Compensation

ITO
Independent Transmission Operator

ITS
Intelligent Transport Systems

ITSI
Individual TETRA Subscriber Identity

ITU
International Telecommunication Union

ITU-R
ITU Radiocommunication Sector

ITU-T
ITU Telecommunication Sector

K

kbit
kilobit

KEP
Courier, express, parcel

KVz
Cable distributor

kW
kilowatt

kWh
kilowatt hour

L

LAN
Local Area Network

L-Gas
Low Calorific Value Gas

LNG
Liquefied Natural Gas

LRIT
Long Range Identification and Tracking

LTE
Long Term Evolution

M

M2M
Machine-to-Machine

MB
megabyte

Mbit
megabit

MessZV
Metering Access Ordinance

MHz
megahertz

MMS
Multimedia Messaging Service

MRU
Manner-Romberg Unternehmensberatung GmbH

MSS
Mobile-satellite service

MTR
Mobile Termination Rates

MW
megawatt

N

NBP
National Balancing Point

NCG
NetConnect Germany

NBS
Service Facilities Statement

NGA
Next Generation Access

NGN
Next Generation Network

NotrufV
Emergency Services Access Ordinance

NRA
National Regulatory Authority

NSPC
National Signalling Point Codes

O

OLG
Higher regional court

OPAL
Baltic Sea Connection Pipeline

OVG
Higher administrative court

OVG NRW
North Rhine-Westphalia higher administrative court

OWP
Offshore windfarm project

P

PDLV
Postal Services Ordinance

PDSV
Postal Services Data Protection Ordinance

Pkm
Passenger-kilometres

PKP
Polskie Koleje Panstwowe

PLC
Powerline Communication

PMD
Radio monitoring and inspection service

POC
Postal Operations Council

PostG
Postal Act

PSTN
Public Switched Telephone Network

PUDLV
Postal Unsiversal Service Ordinance

PZA
Service of documents

R

Reg TP
Regulatory Authority for Telecommunications and Post

RFID
Radio Frequency Identification

RNE
Rail Net Europe

RSC
Radio Spectrum Committee

RSPG
Radio Spectrum Policy Group

R&TTE
Radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity

S

SAIDI
System Average Interruption Duration Index

SchuTSEV
Ordinance concerning the Protection of Public Telecommunications Networks and Transmitters and Receivers operated for Safety Purposes

SDR
Software Defined Radio

SGV
Rail freight

SigG
Electronic Signatures Act

SigV
Electronic Signatures Ordinance

SIM
Subscriber Identity Module

SMS
Short Messaging Service

SNB
Network Statement

SNCF
Société Nationale des Chemins de Fer Francais

SPFV
Long-distance passenger rail services

SPNV
Regional passenger rail services

SRD
Short Range Device

SRR
Short Range Radar

SSC
Shared Service Center

StromNEV
Electricity Network Charges Ordinance

T

TAF TSI
Telematics Application for Freight—Technical Specification for Interoperability

TAIEX
Technical Assistance Information Exchange

TAL
Local loop

TCAM
Telecommunications Conformity Assessment and Market Surveillance Committee

TETRA
Terrestrial Trunked Radio

TF
Task Force

TKEE
Telecommunications terminal equipment

TKG
Telecommunications Act

tkm
tonne kilometers

TKÜV
Telecommunications Interception Ordinance

TNV
Telecommunications Numbering Ordinance

TPS
Train path pricing

TR
Technical directive

TSL
Trusted Status List

TSO
Transmission System Operator

TTF
Title Transfer Facility

TW
terawatt

TWh
terawatt hour

U

UBA
Federal Environment Agency

UHF
Ultra High Frequency

UMTS
Universal Mobile Telecommunications System

UPS
United Parcel Service

URB TF
Unbundling, Reporting and Benchmarking Task Force

UWG
Unfair Competition Act

V

VDSL
Very High Speed Digital Subscriber Line

VDV
Association of German Transport Undertakings

VG
Administrative court

VO-Funk
Radio Regulations

VoIP
Voice over Internet Protocol

VwGO
Code of Administrative Court Procedure

W

WAPECS
Wireless Access Policy for Electronic Communications Services

WG CPG
Conference Preparatory Group

WG FM
Working Group Frequency Management

WG
Working Group Spectrum Engineering

WIK
Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste (consultancy)

WLAN
Wireless Local Area Network

WPV
Universal Postal Union

WRC
World Radio Conference

WRC-2012
World Radio Conference 2012

WS EFB
Workstream Incentive-based Regulation and Efficiency Benchmarking

WTSA
World Telecommunication Standardization Assembly

Z

ZDA
Certification service provider

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