

Charging Infrastructure Masterplan II



The
Federal Government

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1

Objective and motivation of the Masterplan II

The Federal Government has set itself the objective of reducing greenhouse gas emissions in the transport sector by 48 % by 2030 in comparison with 1990 levels. To achieve this objective, it is necessary in particular to electrify road transport and use renewable energies. The prerequisite for this is that the charging infrastructure be further expanded. Taking the appropriate regulatory and technical decisions will make the ramp-up of electric mobility a key factor in transforming the transport and energy sectors, combating climate change and ending the dependence on energy from fossil sources and thus in Germany achieving energy sovereignty.

Against this backdrop, the Federal Government is committed to the target laid down in the coalition agreement with regard to electric mobility. One million charging

points, which are to be publicly accessible on a non-discriminatory basis by 2030, are to make Germany the leading global market for electric mobility. By making mobility climate-friendly, we will also lay the groundwork for technological and economic progress and, as a result, future jobs and value creation. In 2019, the Federal Government adopted the Charging Infrastructure Masterplan, which pooled the Federal activities to accelerate the roll-out of the charging infrastructure. It has since been continuously evaluated and, in 2021, the coalition agreement stipulated that development of the masterplan was to be continued.

Currently, more than 1.6 million electric passenger cars are registered in Germany. And this figure is rising sharply! Electric mobility has left the market launch phase

and entered a broad and dynamic market ramp-up phase. At the same time, the transformation of heavy commercial vehicles is still in its infancy and requires committed action in order to create the conditions for the planned and needed market developments in good time. As the Federal Government's overall strategy for charging infrastructure rollout, the Charging Infrastructure Masterplan II therefore charts a new course to create the conditions for the successful market ramp-up of electric mobility towards a broad mass market. The Masterplan II does not address other technologies and thus neither includes nor excludes them. A particular focus of this Masterplan II is on an optimum integration of charging infrastructure and electricity system (electricity market and electricity network).

In line with the activities in Germany, the transition to low-emission drivetrains is also being advanced at European level. In future, under the Regulation on the Deployment of Alternative Fuels Infrastructure (AFIR), which is to replace the Directive of the same name, Member States are to directly commit to ambitious minimum targets for the rollout of publicly accessible charging infrastructure in order to enable electric passenger and freight transport across borders in Europe. In addition, provisions on smart and bidi-

rectional charging are to be introduced in the AFIR – as well as in the RED¹ and EPBD² amendments. As soon as this Regulation enters into force, the Federal Government will make the necessary adjustments to the national legal framework, making use of and developing Germany's scope for action as ambitiously as possible.

Building and operating charging infrastructure for electric passenger cars and electric heavy goods vehicles is both an entrepreneurial challenge and an opportunity. With demand rising and new business models for integration into the electricity system being developed, the market-driven provision of charging infrastructure is becoming increasingly attractive. However, gaps in the charging infrastructure in terms of rollout and profitability can have a significant negative impact on the market ramp-up of electric mobility. To prevent the charging infrastructure forming a bottleneck, the rollout must precede the ramp-up and must be supported and backed by state activities. These activities must incentivize private sector investment and the resulting charging infrastructure must be operated as quickly as possible by the private sector in a competitive environment. The legal and technical frameworks must be aligned at an early stage to ensure the greatest possible benefit for users and the electric-

1 Renewable Energy Directive

2 Energy Performance of Buildings Directive

ity system as a whole. In order to identify needs for action and rollout gaps at an early stage and be able to employ efficient and targeted measures as well as instruments, implementation of the measures will be continuously monitored.

The transition to electric mobility can only succeed if users are convinced of its advantages. This requires charging infrastructure which is available all over Germany, meets both current and future demand and is user-friendly. To advance the achievement of these goals in the current market ramp-up phase, 68 measures were included in this new masterplan. Based on a broad database and well-founded forecasts, the further rollout of the charging infrastructure will be systematically and continuously recorded and steered. The data-based evaluation will also show where there is a need for action and will facilitate the development of targeted measures and a high level of efficiency in the use of instruments by the Federal Government.

The rollout of the charging infrastructure in Germany will only be successful if it is understood as a common task and is supported jointly by all stakeholders. Therefore, stakeholders from all relevant sectors have been involved in the development of the Masterplan II.

2

Vision for the charging infrastructure in 2030

All future measures – both for passenger car and heavy goods vehicle charging infrastructure – must be taken with a common vision from the perspective of the users.

This means that user friendliness takes centre stage in the overall strategy of the Federal Government.³ The vision of the Masterplan II is an overall charging infrastructure system that facilitates electric road transport for all groups of users. In future, charging your electric vehicle is to become as natural as refuelling is today. Likewise, for macroeconomic efficiency alone, non-discriminatory access must be ensured at all public charging points and for all users. To promote acceptance, it is of utmost importance to get rid of remaining insecurities with regard to the process at the charging points – from knowing where to find a publicly accessible point that is

not occupied, the configuration that can be expected at the charging site, authentication options, the starting of the charging process and transparent pricing to billing and accessibility. In particular, systems for automatic and user-friendly authentication and payment processes that allow users to choose from a number of charging providers and payment options are required.

A charging infrastructure which is available nationwide and meets both current and future demand must be available everywhere users expect it. Charging must be possible everywhere, without detours and long waiting times – in everyday life as well as on long-distance journeys. The basis of a successful overall system is a sufficient number of charging points in public and non-public areas well in advance of the vehicle ramp-up. Where employee parking spaces are already available at companies

3 Cf. the “User Journey” in: https://nationale-leitstelle.de/wp-content/uploads/2020/12/Thesenpapier_Einfach-laden.pdf (German only)

and public authorities, equipping them with charging infrastructure can play an important role. As a result, the objective should be that, by the end of 2025, one quarter of all employee parking spaces is equipped with charging infrastructure.

The charging infrastructure must be built and operated in a competitive landscape which is fair in nature and provides an attractive environment for as many entrepreneurial stakeholders as possible, thus offering consumers transparency and choice. Making available suitable plots of land for publicly accessible charging infrastructure in a way that promotes competition is particularly important and must be strengthened. When the competitive landscape is in good order, the most attractive services will prevail. During the market ramp-up phase, it will still be necessary for the Federation and possibly also for the federal states to continue to provide financial resources and steering instruments so that issues of financial viability and supply do not jeopardize the security of supply and thus the market ramp-up of vehicles. Obstacles of a regulatory nature, for example in planning and approval processes, must be removed.

Consistent digitalization in the form of uniform, fast and automated exchange of data will provide a crucial impetus for all

action areas which play a part in the charging infrastructure rollout. The provision of relevant data, e.g. on occupancy status or charging prices, will facilitate the development of new and innovative applications and will boost competition. All actors – from grid operators to charging technology manufacturers, charging point operators (CPO) and electric mobility service providers (EMP) to vehicle manufacturers (OEM) – must therefore actively contribute to a joint electric mobility and charging infrastructure data space. Introducing smart metering systems with the smart meter gateway as a secure and interoperable communication platform is a key priority in this regard and in the integration into the electricity system.

The flexibility of electricity generation from renewable energy sources and new consumers is one of the core issues of transformation of Germany's energy system. Moreover, to electrify the transport sector with lasting effect, it is necessary to coordinate the rollout of charging infrastructure with the transformation of the energy system and the upgrading and conversion of the electricity system. Smart charging in particular offers the opportunity to utilize the electricity networks more efficiently and create added value for users. In future, besides established charging infrastructure, other technolo-

gies, for example, swappable batteries, inductive charging or overhead line systems for heavy goods vehicles, could also be an option and, despite not being in widespread use at the moment, should therefore be taken into account.

In addition to individual mobility in the passenger car sector, battery electric drivetrains will also become increasingly important for light and heavy commercial vehicles and are therefore also taken into account in the measures⁴. Deploying the corresponding infrastructure entails particular requirements in terms of land, electricity networks and charging technology. By taking an integrated perspective, which combines charging technology and sites with mobility behaviour and logistical processes, a reliable strategy emerges for electric mobility that meets both current and future demand, is available all over Germany and paves the way for climate-friendly road freight and passenger transport. Rapidly introducing an initial charging network, especially for electric heavy goods vehicles is of great importance for this. All measures to support the deployment of charging infrastructure must take into account the specific requirements of light commercial vehicles.

4 Taking the Federal Ministry for Digital and Transport's Overall Approach to Climate-Friendly Commercial Vehicles into account.

3

Key challenges and measures⁵

3.1 Cooperation and coordination measures

To implement the Masterplan II in an efficient manner, close coordination between the Federal government departments involved and binding commitment from the implementing actors in the private sector are required.

1. Interministerial Steering Group on Charging Infrastructure (ISLa)

In order to coordinate all charging infrastructure rollout measures within the Federal Government, strengthen cooperation and establish an early information system, all Federal government departments are working together in an interministerial steering group. Under the joint leadership of the Federal Ministry for Digital

and Transport and the Federal Ministry for Economic Affairs and Climate Action and with technical and organizational support from the National Centre for Charging Infrastructure, the steering group focuses on the integration of the charging infrastructure and the electricity system. The Federal Ministry for Digital and Transport is responsible for running the Steering Group. In particular, all measures from the Masterplan II are implemented in close consultation with ISLa. The working level of the Federal government departments meets regularly to implement and update the Masterplan II. Relevant stakeholders – especially representatives of the federal states – are regularly consulted on specific topics. ISLa reports to the semi-annual decision-making group consisting of the responsible state secretaries of

⁵ All financially effective measures mentioned under 3. and 4. are subject to the availability of funding, including resources from the Climate and Transformation Fund (Klima- und Transformationsfonds, KTF). Needs for action that arise from test assignments, guidance, working groups, etc. will be translated into measures in the Interministerial Steering Group on Charging Infrastructure and will be implemented by the responsible ministries.

the Federal government departments and the Commissioner for Charging Infrastructure of the Federal Ministry for Digital and Transport. All Federal government departments may request that additional meetings at both levels be held and specific items be put on the agenda.

2. National Centre for Charging Infrastructure (NLL)

On behalf and under the supervision of the Federal Ministry for Digital and Transport, the National Centre for Charging Infrastructure continues to support the Federal Government in planning the rollout and implementing the measures. Specific responsibilities of the National Centre for Charging Infrastructure are defined by the competent technical division in the Federal Ministry for Digital and Transport.

3. Exchange of views with EU Member States

The Federal Ministry for Digital and Transport is committed to establishing an exchange of knowledge and experience on measures and instruments related to the rollout of the charging infrastructure at EU level, especially with Germany's neighbouring countries.

The goal is a coordinated and ambitious roadmap for the rollout of charging infrastructure, including for heavy commercial vehicles.

4. Involvement of the automotive industry

The Federal Government expects the automotive industry to continue to contribute to the success of electric mobility. In addition to the timely delivery of electric vehicles, this also includes further contribution to the forward-looking rollout of the charging infrastructure. The automotive industry should ensure full functional coverage with electricity for electric vehicles on its car parks for employees and guests in line with the dynamic market ramp-up. Moreover, it should increase its contributions in terms of investment in public and non-public charging infrastructure and, in doing so, take into account the rollout of the overall charging infrastructure network.

5. Involvement of the oil industry

In accordance with the decision taken at the Concerted Action on Mobility meeting in November 2020, at least 25 % of all filling stations are

to be equipped with fast charging infrastructure (at least 150 kW charging capacity) by the end of 2022; this figure is to be increased to at least 50 % by the end of 2024 and to at least 75 % by the end of 2026.

6. Monitoring strategy

The Federal Ministry for Digital and Transport and the National Centre for Charging Infrastructure will coordinate with the Federal Ministry for Economic Affairs and Climate Action and, by the end of 2022, will draw up an efficient monitoring mechanism. Based on this, undesirable developments and rollout gaps of public and non-public charging infrastructure – measured against the actually required target corridor – will be identified at an early stage and efficient and targeted measures and instruments will be taken. The parameters used may include, among others, an appropriate regional breakdown of the cumulative installed charging capacity, the number of charging points and – if available – the capacity utilization of the car and HGV charging infrastructure. Relevant factors for the charging infrastructure rollout, e.g. developments in vehicle

numbers and energy supply, will be taken into account. The results will be made available appropriately for the target group. Where competitive solutions are not effective and the structural conditions are in place, the reliable availability of charging points can also be established by means of coverage obligations for companies.

3.2 Data-based monitoring and controlling of demand, rollout and use

For the ambitious market ramp-up of electric mobility, it must be ensured that private investments are mobilized and that a reliable and attractive charging network is established for users in good time, which at the same time offers planning certainty for vehicle manufacturers. To this end, data is required for two target groups and use cases in particular.

First, data is required to determine future demand and upgrade the electricity grid in line with it. With the StandortTOOL, an instrument for integrated planning and control of charging infrastructure development is already available. It allows for a coordinated approach by the Federation, the federal states and the municipalities. This tool is to be enhanced. In addition, the quality of data from existing sources, e.g. the Register of Charging Points of the Federal Network Agency, needs to be improved. Additional data sources must also be tapped to close information gaps. For this purpose, the National Centre for Charging Infrastructure provides the data it collects, in particular on the deployment and use of charging infrastructure, to the

Federal government departments, federal states and municipalities as well as to the Federal Network Agency and the grid operators in compliance with data protection and antitrust laws.

Second, charging infrastructure users need information on the exact location and the usage options of the charging infrastructure. This includes both static data⁶ and dynamic data, such as availability, occupation and charging price. The aim of the following measures is to put the responsible bodies, especially the operators of the charging infrastructure, in a position to make this data available so that navigation systems and other applications can evaluate and display the corresponding information.

7. StandortTOOL 2.0

The National Centre for Charging Infrastructure will develop an enhanced version of the StandortTOOL by mid-2023 at the latest. This is the most important planning tool for passenger and heavy goods vehicles charging infrastructure rollout. Among other things, the enhanced version will map the installed charging capacity, the number of existing and expected vehicles as well as target forecasts of demand. Information on demand, as-is

⁶ In particular site, charging capacity, connections offered, opening hours, payment options, contact details of the operator, Electric Vehicle Supply Equipment ID (EVSE-ID), information on accessibility.

state and rollout activities will be made available to the federal states and municipalities as well as to the general public in a user-friendly manner in order to support charging infrastructure rollout on the ground.

8. **Clean room talks with the industry**

Starting in 2022, the Federal Ministry for Digital and Transport, with the support of the National Centre for Charging Infrastructure, will hold clean room talks with the energy industry, charging point operators and potential investors on the one hand and passenger car and heavy goods vehicle manufacturers on the other. The talks will be organized in a way that is compatible with antitrust laws. Their goal is to gather information on future charging demand, private sector rollout activities and investment with regard to the rollout of charging infrastructure as well as on remaining gaps on the way to a nationwide network which meets the current and future needs of users. Moreover, the talks are to provide learnings for the planning of the electricity grid. They give the industry an opportunity to communicate, anonymously and in a sufficiently aggregated form, their plans for the further rollout of the charging infra-

structure and the ramp-up of electric vehicles, including parameters such as battery size, charging capacity, etc.

9. **Transparency regarding all publicly accessible charging points**

The Federal Network Agency register does not currently show all publicly accessible charging points. The Federal Ministry for Economic Affairs and Climate Action, by the second quarter of 2023, will examine how maximum transparency regarding the publicly accessible charging infrastructure for passenger cars and commercial vehicles can be achieved and whether it will be necessary to amend the Charging Point Regulations. In this context, there will also be an examination of how additional data (e.g. on accessibility) can be supplemented and improved data quality can be ensured.

10. **Reporting of non-public charging points**

Information on the number and geographical distribution of charging points that are not publicly accessible is key to determine future demand with regard to public charging infrastructure. By the first quarter of 2023, the Federal Ministry for Digital and

Transport and the Federal Ministry for Economic Affairs and Climate Action, together with the Federal Network Agency, will establish the legal bases for reporting not publicly accessible charging points of all voltage levels by grid operators to the Federal Network Agency (number, geographical distribution). Reports are to be made with due regard for data protection requirements, appropriately aggregated and at suitable intervals. The financial resources and personnel required for this purpose will be provided to the Federal Network Agency. Under this condition, it will implement the necessary processes, including making this data available for the National Centre for Charging Infrastructure's charging network planning, no later than six months after the legal basis comes into force.

11. Determining demand for HGV charging infrastructure by means of anonymized tolling data

The Federal Ministry for Digital and Transport, within the framework of statutory provisions, will make available pseudo-anonymized tolling data to the National Centre for Charging Infrastructure by the end of 2022 to support the latter in fore-

casting the charging infrastructure network requirements for heavy goods vehicles.

12. Providing static and dynamic data

For the sake of transparency and to make finding appropriate charging facilities easier for passenger car and commercial vehicle users, relevant static and dynamic data will be made available. To this end, the Federal Ministry for Economic Affairs and Climate Action and the Federal Ministry for Digital and Transport, taking into account the results of the negotiations on the AFIR, will adjust the regulatory framework, for example with regard to operating status, availability and charging prices, if possible by the third quarter of 2023, in such a way that the responsible bodies, especially charging post operators, are obliged to make available this data in an open, non-discriminatory and standardized form free of charge. Together with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, there will also be an assessment of which additional data, e.g. data on the availability of a charging point or information from the electric mobility service provider, should be furnished.

13. Pooling of data transmission and provision

The Federal Ministry for Digital and Transport and the Federal Ministry for Economic Affairs and Climate Action, together with the Federal Highway Research Institute (National Access Point/Mobilithek), the Federal Network Agency (Register of Charging Points) and the Federal Cartel Office (Market Transparency Unit for Fuels), will examine to what extent the existing processes, reporting channels and, if necessary, regulatory bases for data collection and transmission of the above-mentioned static and dynamic data should be adapted to increase efficiency and, if necessary, supplemented by a market transparency unit for charging current. A joint decision will be taken by the third quarter of 2023, taking into account the future provisions of the AFIR, on which data to make available or publish for which users and in which form.

3.3 Making financial assistance from the Federal Government more effective

Tendering models and grants are two effective instruments of the Federation to provide financial assistance for the deployment of charging infrastructure. In addition, it must be examined whether and how to set effective and targeted incentives for the deployment of charging infrastructure and thus provide the best possible support for private sector rollout by amending the overall financial framework in accordance with the funds that are available, including the resources in the Climate and Transformation Fund (KTF).

Due to the regulatory framework, application and approval processes in the existing grant-based federal financial assistance programmes for charging infrastructure are sometimes very complex and time-consuming. In addition to long planning, approval and construction times, this often leads to delayed deployment of charging infrastructure and represents an obstacle, especially for regions that have only just embarked on the path to universal coverage.

14. Financial support strategy

Based on a critical assessment of the previous financial assistance programmes, the Federal Ministry for Digital and Transport, by the first quarter of 2023, will draw up a strategy for efficient, targeted and fast financial or other assistance to roll out publicly and not publicly accessible charging infrastructure prior to market ramp-up and to establish the necessary preconditions (e.g. cable infrastructure). To this end, the need for support will be analysed based on use cases, groups of actors (individual or fleet transport incl. logistics) and regional conditions, and then tailored instruments will be developed that serve the goal of establishing competitive structures and limiting the activities of the public sector to the minimum necessary to ensure the advance rollout of a nationwide, user-friendly charging infrastructure, which meets current as well as future demand. The different use cases in terms of charging, funding activities of the federal states and municipalities as well as the availability of regional renewable energies will also be taken into account.

15. Private consumption of renewable energy

By the first quarter of 2023, the Federal Ministry for Digital and Transport and the Federal Ministry for Economic Affairs and Climate Action will assess the most efficient option for the roll-out of private charging infrastructure to allow for the use of self-generated renewable energy to charge individual vehicles or vehicle fleets. In particular, existing or new measures for the further expansion of photovoltaic systems (incl. storage) will be taken into account.

16. Financial assistance for deployment in more densely populated neighbourhoods

Based on the determined demand, the Federal Ministry for Digital and Transport will examine by the second quarter of 2023 how charging options for users without their own parking space, particularly in more densely populated neighbourhoods of all settlement sizes, can be supported financially and through a combination of best practices. The programme will take into account existing funding programmes of the Federation, federal states and municipalities.

17. Tender for additional fast charging points

Having awarded the contracts for the two partial tenders in the 'Deutschlandnetz', the nationwide network of fast charging points, at the end of 2021, the National Centre for Charging Infrastructure, together with the Interministerial Steering Group on Charging Infrastructure, is now assessing potentially remaining gaps. On this basis, the Federal Ministry for Digital and Transport will evaluate the tender of additional, publicly accessible fast charging points from 2023 as laid down in the coalition agreement. The exact number will be identified when the demand is determined.

18. Tender for charging points at rest areas

From 2023, Autobahn GmbH will put to tender the required passenger car charging points at rest areas calculated for 2025. Where concession holders do not build the charging infrastructure that is needed in a reliable manner and at their own initiative, this includes rest areas with services. For the further rollout of charging infrastructure at rest areas with services as of 2025, Autobahn GmbH and the National Centre for Charging Infrastructure will

evaluate the future demand for charging infrastructure and, in doing so, will explore synergies with the deployment of charging infrastructure for heavy goods vehicles. The Federal Ministry for Digital and Transport will assess whether it is possible that several competing operators rollout infrastructure at one rest area.

19. Standardization of approval processes for roadside infrastructure along motorways

The Federal Autobahn GmbH will standardize and accelerate its planning and approval processes for the construction of charging infrastructure and complementary elements (e.g. signage, marking of sites, model layouts) by the second quarter of 2023.

20. Revision of the Federal Motorway Concession Levy Regulations (BAB-KAbgV)

The Federal Ministry for Digital and Transport will revise the Concession Levy for the sale of charging current along federal motorways by the second quarter of 2023 to establish comparability with traditional fuels.

21. Evolving the system for crediting power for electric vehicles in greenhouse gas emission allowance trading

By the first quarter of 2023, the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection will make it possible to consider heavy goods vehicles by publishing additional estimated values within the meaning of section 7 of the 38th Federal Immission Control Act (Bundes-Immissionsschutzgesetz, BImSchG)⁷. In addition, the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection will allow green electricity to be credited for on-site electricity generation even if the system is connected to the grid, where this is technically possible.

22. Issuance of charging cards in the same way as fuel cards

The Federal Ministry of Finance will examine by the second quarter of 2023 the legal or other possibilities for employers to issue more charging cards to users of company cars – like fuel cards – and to ensure that electricity charged at home can be billed.

3.4 Empowering and involving municipalities to a greater degree as key stakeholders

The deployment of public charging infrastructure in the municipalities plays a key role, as they are responsible for much of the required public charging infrastructure. At present, however, many municipalities still do not provide publicly accessible charging infrastructure. The reasons are many and varied: In addition to a lack of knowledge of how to determine future demand or implement specific measures, there is also a lack of human or financial resources. The social and spatial structure of the municipalities sometimes makes it difficult to deploy charging infrastructure, too. Providing and using public charging infrastructure proves particularly difficult in densely populated urban centres. In particular, the large number of users who don't have their own parking space face an obstacle here. An important starting point in this regard is the upgrading of the hitherto predominant alternating current infrastructure with high-power charging points in inner-city locations with high demand. The incipient ramp-up of electric commercial vehicles must also be taken into account.

⁷ Bundes-Immissionsschutzverordnung (Federal Immission Control Ordinance)

The charging infrastructure must be financed as quickly as possible without public funds through a self-supporting system. A central prerequisite is that enough plots of land are available in the municipalities to deploy charging infrastructure. If viable private charging services are not created quickly enough, the public sector must take appropriate measures to ensure provision of a basic public charging infrastructure that is equally available to all users. The aim of the following measures, on the one hand, is to create a nationwide supply standard in terms of charging infrastructure, taking into account the competences stipulated in the Basic Law, and, on the other hand, supporting municipalities in implementing this task.

23. Obligation of federal states to ensure provision of local charging infrastructure mainly by private sector

By the third quarter of 2023, the Federal Ministry for Digital and Transport, in coordination with the Federal Ministry of Justice and the Federal Ministry of the Interior and Community, will examine whether the federal states can be legally required to provide a minimum level of total charging capacity locally if, despite plots of land being available, sufficient viable private sector charging options are not

foreseeable. The question of how and to what extent ancillary financial support by the Federation is required is also being examined. The objective is not for the public sector to build or run the charging infrastructure but to do all that is necessary in order to support corresponding private sector operations.

24. Local masterplans

For a swift and coordinated deployment of charging infrastructure at the local level, it is crucial that activities on the ground be strengthened and pooled. The National Centre for Charging Infrastructure makes available a model local masterplan for the deployment of charging infrastructure. On this basis, the municipalities or municipal associations are to develop local masterplans involving relevant private sector actors, if possible by the end of 2023. The contents of these masterplans should include the local deployment goals as well as the coordinating, regulatory, financial and other measures required to achieve them (competition approach with competing operators of charging points, possible tendering, land acquisition, involvement of local actors,

institutional rooting, designation of priority sites, if necessary, amendment of the land use plan, development planning or parking statutes). Provision of land is to be ensured in a non-discriminatory manner. Integrated approaches for the different modes of transport, e.g. mobility hubs with charging infrastructure, are to be taken into account, too. The Federation can use these masterplans as a requirement and basis for the targeted provision of public sector financial assistance.

25. Regional charging infrastructure managers

By the second quarter of 2023, the National Centre for Charging Infrastructure will start a recruitment process for initially about 30 regional charging infrastructure managers, who will then support the municipalities in selected regions with their challenges, if necessary together with climate change mitigation or electric mobility managers, and, in doing so, will promote the toolbox of advisory, planning and knowledge tools in the regions. The municipalities will be asked to put in place links to on-site administrative structures. Local authority associations will provide the necessary support.

26. LadeLernTOOL

By the end of 2022, the National Centre for Charging Infrastructure will make its digital training instrument LadeLernTOOL available. This instrument will facilitate sharing of basic and applied knowledge about the overall charging infrastructure system with municipalities. The tool is continuously being enhanced.

27. Prozesstool

By the end of 2023, the National Centre for Charging Infrastructure, in close cooperation with representatives from the municipalities, will develop the digital Prozesstool with transparent information about the main municipal processes, options for action and legal bases for the deployment of charging infrastructure, including approval processes and non-discriminatory awarding of contracts. The aim is to simplify processes and harmonize nationwide decision-making criteria. Moreover, municipalities and operators are to be helped to develop expertise quickly in their new employees.

28. **A guide for optimizing and speeding-up approval processes**

By the third quarter of 2023, the National Centre for Charging Infrastructure, with close involvement of municipal representatives, will develop a guide for the optimization and acceleration of municipal planning and approval processes. The aim is to offer low-threshold support in order to tap potentials in existing processes. The subject matter of the guide includes, among other things, municipal approval processes, criteria for granting special use permission for the installation of charging points or accelerated adaptation of development plans for the designation of charging infrastructure.

29. **Models and guidance for municipality tenders**

Following an exchange of information with municipal associations and the Interministerial Steering Group on Charging Infrastructure, the National Centre for Charging Infrastructure will prepare models and guidance for municipal tenders to build and operate charging infrastructure. They are to be made available to municipalities by the second quarter of 2023.

3.5 *Making available more plots of land*

In the public road environment, and in particular in densely populated areas, there are not enough plots of land for the deployment and further scaling of charging infrastructure, and where sites are available, they are sometimes not activated or not known. In particular, plots of land at transport hubs, such as railway stations, airports and park & ride sites, must be made available quickly for the deployment of charging infrastructure. For the charging of electric heavy goods vehicles, the problem of availability and grid connection of plots of land is even more serious and must therefore be taken into account at an early stage in the planning process. Already today, there are not enough parking places for heavy goods vehicles along federal trunk roads in particular. It will always be necessary to weigh possible uses against each other, for example with regard to agricultural land.

30. **Assessment of federally owned land by the Federation**

By the end of the first quarter of 2023, the Institute for Federal Real Estate will examine whether the federal plots of land included in its ELM⁸ Klassik uniform real estate management

system (excluding the Bundeswehr) are fundamentally suitable for the deployment of publicly accessible and not publicly accessible charging infrastructure and will inform the Interministerial Steering Group on Charging Infrastructure accordingly at appropriate times. The Institute for Federal Real Estate will also inform the National Centre for Charging Infrastructure on intended options for use. Similarly, the Federal Ministry of Defence will do the same for its portfolio and that of its executive agencies.

31. **Tender process for charging infrastructure on federal plots of land**

For publicly accessible and not publicly accessible charging infrastructure on federal plots of land included in the ELM Klassik uniform real estate management system (excluding the Bundeswehr), the Institute for Federal Real Estate will publish new tenders for charging infrastructure starting in the second quarter of 2023 and will continue existing ones. The National Centre for Charging Infrastructure will be consulted on preparatory steps where required. Similarly, the Federal Ministry of Defence will build charging infrastructure for official use within its remit and that of its executive agencies.

32. **Charging infrastructure at public authority parking spaces**

By the end of 2023, all federal authorities will examine (incl. budget issues) how 25% of the authorities' parking spaces can be equipped with charging facilities for guests and employees or at least pre-wiring can be provided by the end of 2025. Where the quota cannot be achieved, reasons need to be given. Users from the Institute for Federal Real Estate's ELM Klassik report their results to this institute. On this basis, the Institute for Federal Real Estate will make available this charging infrastructure by 2025. Similarly, the Federal Ministry of Defence will examine and implement its demand independently within the framework of the available capacities.

33. **Deployment of charging facilities and billing of charging current at public authority car parks**

In close coordination with the Federal Ministry of Finance and the Federal Ministry of the Interior and Community, the Federal Ministry for Digital and Transport, by the second quarter of 2023, will draw up uniform guidance for the deployment of charging facilities at places of employment and for the billing

of electricity charged at these places for private use by both federal employees and guests.

34. Charging infrastructure at transport hubs

By the third quarter of 2023, the Federal Ministry for Digital and Transport will examine how to support and speed up the deployment of charging infrastructure at transport hubs such as railway stations, airports, mobility stations, central bus stations or carpool parking areas.

35. Strategy for meeting land requirements along the motorways

By the third quarter of 2023, the Federal Ministry for Digital and Transport, with the support of the National Centre for Charging Infrastructure and in close cooperation with Autobahn GmbH, will draw up a strategy for developing plots of land along or near motorways where charging stations for passenger and heavy goods vehicles can be built. The cost of a grid connection will also be taken into account. Subsequently, specific plots will be assessed and developed.

36. Assessment of own plots of land by the federal states and municipalities

The Federation and the municipal associations will call on the federal states and municipalities to examine their properties by the end of 2023 to determine whether charging infrastructure for passenger cars and commercial vehicles can be built and to report available plots of land to the National Centre for Charging Infrastructure or, if legally possible, to the FlächenTOOL.

3.6 Enhancing charging infrastructure through digitalization

The advantages of electric mobility can only be fully harnessed if the overall charging infrastructure system is digitalized as much as possible. Charging infrastructure, vehicles and the power grid need to be integrated in a way that is both as simple as possible and safe, and user-friendly applications need to be developed.

37. Roadmap for the digitalization of the overall charging infrastructure system

Based on ongoing development and standardization processes, the Federal Ministry for Digital and Transport and the Federal Ministry for Economic Affairs and Climate Action, together with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection and stakeholders, by the first quarter of 2024, will develop a road map which shows the further digitalization steps that must be taken in order to create an overall charging infrastructure system that is convenient and attractive for all users. To this end, the target status for integrating charging infrastructure, vehicles and

use cases will be defined, key applications will be identified and the necessary data space, which can be accessed on a non-discriminatory basis, as well as standardized and open transmission and communication protocols will be described. Among other things, these applications and their impact on competition and user-friendliness will be analysed in more detail:

- Systems for automatic and user-friendly authentication and payment in charging processes
- Accessibility of charging infrastructure
- Roaming
- Booking function for charging infrastructure

Aspects of data security and data protection, data quality as well as measurement and control processes in the energy supply sector are part of the consideration.

38. Cyber security

Due to the increasing importance of cyber security for mobility, the Federal Ministry for Digital and Transport, the Federal Ministry for Economic Affairs and Climate Action and the Federal Ministry of the Interior and Community, by the first quarter of

2024, will assess the need for additional measures to protect against cyber attacks and will identify the elements of the charging infrastructure which, under the European NIS 2 Directive⁹, are to be classified as critical infrastructure.

39. Accessibility of charging infrastructure

Charging infrastructure must be accessible so that people with disabilities can also make use of this infrastructure. Therefore, the Federal Ministry for Digital and Transport, together with relevant actors, will develop technical requirements by the end of 2022.

40. Booking function for charging infrastructure

By the first quarter of 2024, the Federal Ministry for Digital and Transport will examine how to reconcile in a legally secure, user-friendly and non-discriminatory manner the different interests of, for example, people with disabilities, commercial vehicles in logistics chains or spontaneous use in a booking function for public charging points.

3.7 Integrating the charging infrastructure with the electricity system

How fast the charging infrastructure can be rolled out is highly dependent on its integration with the electricity system. Improvements can be achieved by better coordinating activities to upgrade, roll out and regulate the charging and electricity grids and incorporating foreseeable functionalities, e.g. bidirectional charging, from the outset.

The aim of the measures is to adapt communication, flows of information and processes between the relevant actors, including authorities, grid operators and people who want to charge their vehicles, as well as legal and technical regulations, in such a way that the charging infrastructure can be rolled out fast enough for the envisaged vehicle uptake and the charging and electricity systems are integrated in a correspondingly efficient and future-proof manner. Close coordination between all relevant actors and comprehensive pooling of existing knowledge are particularly important with regard to the scalability of charging sites, grid consolidation and better monitoring and regulation of capacity utilization on the grid as well as the special requirements of high-performance sites for heavy commercial vehicles.

9 EU Directive on measures for a high common level of cybersecurity across the Union

Potential for better interaction between the electricity grid and the charging infrastructure, e. g. through controlled and bidirectional charging as well as grid-supporting properties of electric vehicles, should also be harnessed. In addition to low and medium voltage, high voltage grids must also be considered.

With the adoption of the ‘Osterpaket’ (Easter Package) on 6 April 2022, the Federal Cabinet has already introduced comprehensive legal adjustments to facilitate a more forward-looking upgrade of the grid. Accordingly, the plans to upgrade the distribution grid are to be aligned with the long-term goal of climate neutrality. Cross-sectoral developments such as the ramp-up of electric mobility are to be included in the planning in the form of appropriate forecasts.

41. Greater transparency in charging site planning, e. g. with standardized grid maps

The planning of charging sites including the required grid connection becomes all the more efficient the more information is available on power lines and connections capacities. Under section 14d of the Energy Industry Act (Energiewirtschaftsgesetz, EnWG), distribution grid operators are obliged to

draw up grid maps of the high and medium voltage levels as part of the plans to upgrade the grid. By the second quarter of 2023, the Federal Ministry for Economic Affairs and Climate Action will present reliable measures for establishing a uniform digital format (e. g. GIS data format). Efforts will be made to ensure that these maps are made available at a central location, such as the joint internet platform provided for in section 14e of the EnWG. Amongst other things, they can then be used to take decisions on where to locate charging infrastructure, or the National Centre for Charging Infrastructure can use them to improve the instruments with which it determines future demand.

42. Considering electric mobility in grid planning and consolidating communication processes

To support grid operators in taking into account cross-sectoral developments in their grid upgrade plans and regional scenarios, the National Centre for Charging Infrastructure – with a view to the ramp-up of electric mobility – will, among other things, make available requirement forecasts for the charging infrastructure

and, in consultation with the industry, results from the cleanroom talks. The overarching goal is to ensure the exchange between all relevant stakeholders as well as the systematic use of existing extrapolations and forecasts during the fleshing out and implementation of section 14d of the EnWG. The Federal Ministry for Economic Affairs and Climate Action will actively involve the Federal Ministry for Digital and Transport, the National Centre for Charging Infrastructure as well as selected experts from the charging infrastructure sector in the stakeholder process for the distribution grids of the future and potential follow-up processes to this end. Specific issues not addressed in the process will be systematically discussed, e. g. within the framework of the Interministerial Steering Group on Charging Infrastructure's stakeholder participation formats.

43. Enabling forward-looking upgrading of the electricity grid

Electricity grids need to be upgraded in good time and everywhere the future demand for charging infrastructure requires it. Therefore, the Federal Ministry for Economic Affairs and Climate Action and the Federal Ministry for Digital and Transport, in close coordination with the Federal

Network Agency, will examine by the second quarter of 2023 how grid operators can upgrade the electricity grid in a forward-looking manner.

44. Speeding-up application processes for grid connections

The latest amendment to the Low Voltage Connection Ordinance (Niederspannungsanschlussverordnung, NAV) has paved the way for a higher degree of digitalization and standardization for low voltage grid connections. This is intended in particular to accelerate the deployment of private charging infrastructure in the mass market. However, as fast charging points are generally connected at higher voltage levels, simplifications must also be assessed with regard to medium voltage – in particular with regard to digitalization and harmonization. The Federal Network Agency and the Federal Ministry for Economic Affairs and Climate Action will make proposals on speeding up the application process for grid connections also in this segment by the second quarter of 2023.

45. Greater transparency for grid connections

Information from the grid operators on the duration and expected costs of

establishing a connection to the low and medium voltage grid can provide greater transparency and thus allow for a more informed assessment of potential charging sites. Moreover, binding deadlines can contribute to speeding up connection processes. The Federal Network Agency and the Federal Ministry for Economic Affairs and Climate Action will therefore examine by the second quarter of 2023 the extent to which adaptations to the regulatory framework are necessary and possible. This includes examining whether grid operators can provide information at an early stage on how much it will cost to establish the grid connection and how long it will take. In addition, the extent to which the connection process can be accelerated by setting binding deadlines for certain process steps is being examined. At the same time, the Federal Ministry for Digital and Transport and the National Centre for Charging Infrastructure, by the second quarter of 2023, will discuss in an open-ended process with the Federal Ministry for Economic Affairs and Climate Action, the charging infrastructure industry and grid operators the extent to which additional data could provide useful assistance in investment decisions with regard to charging infrastructure and could help speed

up the rollout. Given the respective mandate, the Interministerial Steering Group on Charging Infrastructure will implement the adjustments identified in the reviews and the discussion.

46. Harmonizing technical connection requirements

Charging infrastructure operators who are active in several grid areas often have to take into account different connection conditions, which can lead to inefficiencies and delays. The sectoral dialogue on the speeding-up of grid connections initiated by the Federal Ministry for Economic Affairs and Climate Action will examine, among other things, the extent to which obstacles to connecting consumers or producers to the grid can be overcome by harmonizing the technical grid connections. To this end, the Federal Ministry for Economic Affairs and Climate Action will involve not only grid operators but also charging infrastructure operators as well as the Federal Ministry for Digital and Transport and the National Centre for Charging Infrastructure in the sectoral dialogue. The Federal Network Agency will report for the first time by the third quarter of 2023 and thereafter on an ad hoc basis in which of

the areas relevant to the charging infrastructure the technical connection conditions can be further harmonized. For this purpose, the Federal Network Agency receives information from grid operators and charging infrastructure companies. The Federal Ministry for Economic Affairs and Climate Action will contribute these findings in the course of the further development of the network codes at EU level.

47. Facilitating non-discriminatory bidirectional charging

The flexibility of electric vehicles and the associated energy-economy opportunities can and should be harnessed for the electricity system – especially in the form of bidirectional charging. In accordance with the coalition agreement, by the second quarter of 2023, the Federal Ministry for Economic Affairs and Climate Action will therefore examine, in close consultation with the Federal Ministry for Digital and Transport and the Federal Ministry of Finance, how, among other things, the legal, technical, fiscal and economic framework conditions can be improved in order to remove any obstacles to the non-discriminatory use of the possibilities of bidirectional charging, initially above

all in non-public areas. The Federal Ministry for Economic Affairs and Climate Action will examine the extent to which new legal regulations are required for mobile storage systems to integrate them into the set of regulations on flexibility to the benefit of the grid and the market.

48. Developing case studies for charging point operators

The market and business models for the deployment and the operation of charging infrastructure are many and varied. It is not always immediately apparent who serves as the charging point operator in a specific case. However, there are many rights and obligations attached to this function which, for example, are important with regard to registration with the Federal Network Agency or greenhouse gas emission allowance trading. By the first quarter of 2023, the National Centre for Charging Infrastructure, in cooperation with the industry and with participation of the Federal Ministry for Economic Affairs and Climate Action and the Federal Network Agency, will discuss the role of charging point operator by means of examples and will prepare typical case studies.

3.8 Advancing the road, construction and immission control laws for charging

A number of existing regulations in building and road law stand in the way of the rapid deployment of charging infrastructure. In addition, noise emissions, especially when charging infrastructure is used at night in residential areas, must comply with immission control regulations for the protection of the public. Inconsistencies in road traffic law result in unnecessary complexities for charging infrastructure operators and unnecessary restrictions for users. As there is often a conflict of interests in these areas between the need to roll out charging infrastructure rapidly and other rights and interests worthy of protection, careful consideration is required.

49. Harmonization of signage for electric vehicles

The Electric Mobility Act has not yet led to uniform signage for electric vehicles and charging infrastructure within a municipality, in different municipalities or along the motorways. The Federal Ministry for Digital and Transport will promote the harmonization of signage with the involvement of the federal states and municipalities by the end of

2023. This will be combined with an appeal to the responsible authorities to take consistent action against illegal parking at charging points.

50. Exemptions from standard permit procedures for auxiliary charging infrastructure installations

The Federal Ministry for Housing, Urban Development and Building will ask the federal states to examine whether the Model Building Regulations can be adapted by the second quarter of 2023 in such a way that, where the construction of auxiliary installations has not yet been exempted, construction of relevant installations (such as roofs, buildings or transformers) can be exempted from planning permission as is the case with charging infrastructure. Moreover, the federal states will be asked to subsequently include these regulations in their state building codes.

51. Study on immissions of charging sites

By the first quarter of 2023, the National Centre for Charging Infrastructure, in close consultation with the Federal Ministry for the Environment, Nature Conservation,

Nuclear Safety and Consumer Protection, will commission a study to investigate the environmental impact (especially noise, but also other disturbances) of charging infrastructure sites depending on their size and charging capacity, available vehicle and charging point technology (e.g. fans), structural measures, traffic aspects such as approaching and departing vehicles and, if necessary, other aspects. The aim of the study is firstly to show how charging infrastructure and vehicles must be constructed to comply with the existing immission protection regulations and secondly to propose potential regulatory adaptations and technical developments.

52. **A guide for the use of commercial car parks outside opening hours**

The Federal Ministry for Digital and Transport, together with representatives of the German Retail Federation and the leading local authority associations, will establish a working group to develop a best-practice guide by the third quarter of 2023 for the practicable and legally watertight use of charging infrastructure in commercial car parks outside opening hours by third parties. This will take into account contractual, liability, noise and other regulations.

3.9 *Making charging at buildings easier*

Legal, structural, technical and fiscal obstacles in the area of non-public charging at buildings are currently significantly slowing down the rollout of these charging options. This is especially true for parking spaces at residential buildings (e.g. lack of options for intelligent and bidirectional charging in underground garages of apartment buildings) and the use of self-generated solar power.

53. **Revision of the Electric Mobility Infrastructure in Buildings Act¹⁰**

Following the completion of the revision of the EU Energy Performance of Buildings Directive (EPBD), the Federal Ministry for Economic Affairs and Climate Action, with the involvement of the Federal Ministry for Housing, Urban Development and Building and the Federal Ministry for Digital and Transport, will initiate an evaluation of the Building Electric Mobility Infrastructure Act (GEIG) and will draft an amendment to the GEIG by the end of 2023 with the aim of equipping buildings with sufficient charging infrastructure in a forward-looking and future-proof manner or, alternatively, creating the necessary conditions for this.

¹⁰ Gesetz zum Aufbau einer gebäudeintegrierten Lade- und Leitungsinfrastruktur für die Elektromobilität (Electric Mobility Infrastructure in Buildings Act)

54. **A guide for the installation of charging infrastructure in apartment buildings**

The National Centre for Charging Infrastructure, together with the Federal Ministry of Justice and the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection and the real estate industry, will develop a guide for tenancies in common (Gemeinschaft nach Bruchteilen, sections 741 et seqq., 1008 et seqq. of the German Civil Code) and communities of apartment owners (Wohnungseigentumsgemeinschaften, WEG) by the end of 2023, in which approaches for dealing with various legal and actual constellations when installing charging facilities will be addressed (e.g. a car park owned by a community of owners). Questions of rental and tenancy law are also to be addressed in this context.¹¹

55. **Simplifying and enhancing building connections as well as digital and electrical building infrastructure**

By the third quarter of 2023, the Federal Ministry for Economic Affairs and Climate Action, the Federal Ministry for Digital and Transport and the Federal Ministry for Housing, Urban

Development and Building will jointly examine how building connection upgrades can be simplified and how the electrical and digital infrastructure can be supported, especially in apartment buildings, in order to meet the new requirements resulting from the electrification of transport, the digital transformation of the energy transition and decentralized energy supply and storage. The examination is also to consider whether funding is required and how it can be structured.

56. **Providing charging current to third parties and shared use of charging infrastructure**

In coordination with the Federal Ministry for Digital and Transport and the Federal Ministry of Finance, the Federal Ministry for Economic Affairs and Climate Action will examine by the second quarter of 2023 how private individuals and companies can enable third parties to use their charging points for a fee or free of charge in an unbureaucratic manner without being subject to the same requirements as energy suppliers.

¹¹ In some cases, car parks in apartment buildings are jointly owned by the community of owners. The construction of charging infrastructure on such car parks by a tenant requires the consent of the community of owners, even though section 554 of the German Civil Code generally grants tenants a claim to permission from the landlord. In practice, this is refused for various reasons such as the reasonableness of the construction measure or concerns regarding insurance coverage in the event of a vehicle fire.

57. Revising turnover tax for operation of charging infrastructure

Currently, property managers who bill the residents of an apartment building or housing complex for the electricity they use to charge their vehicles lose their turnover tax privilege. Property managers therefore commission third parties to operate the charging infrastructure and thus increase the costs for the users. The Federal Ministry of Finance will examine the extent to which turnover tax legislation can be adapted within the framework of the binding EU legal requirements so that an exemption from turnover tax can be considered and the transfer of billing by property managers to operators becomes unnecessary, if possible by the second quarter of 2023, after the pending ruling on this issue has been issued.

advocate for a harmonized approach at the EU, which will make Europe-wide roaming easier in terms of taxation, even for small electric mobility providers.

58. Harmonization in the area of turnover tax and electric mobility at EU level

For trouble-free billing, a harmonized regulation on the collection of turnover tax for charging transactions at EU level is essential. The Federal Ministry of Finance will publish a clarifying statement with transitional regulations by the third quarter of 2023 and will

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Charging infrastructure for electric commercial vehicles

In order to significantly reduce CO₂ emissions in road freight transport as well, electric heavy goods vehicles will play a central role in regional transport as well as in long-distance transport. As a result of the European CO₂ emission standards for new heavy commercial vehicles, the industry will soon bring more electric vehicles onto the market. This requires a demand-based charging network to be established ahead of the vehicle ramp-up that also enables long-distance mobility and thus offers sufficient planning certainty for the logistics industry and vehicle manufacturers. In addition, charging infrastructure must also be deployed in non-public areas, e.g. on company premises and at transshipment points. The same applies to the supply of electric buses in passenger transport.

In long-distance transport, electric heavy goods vehicles require a specific charging infrastructure with particularly high

charging capacities. The challenges in terms of available plots of land and grid connection capacities are in many cases much greater than for passenger car charging infrastructure. To plan and implement the deployment of this charging infrastructure in an intelligent manner, joint efforts and close coordination of all parties involved are essential.

The previously adopted measures already partially address the deployment of HGV charging infrastructure. Further measures developed, among other things, in the Backcasting – Charging Infrastructure for Heavy Commercial Vehicles task force as part of the Federal Ministry for Digital and Transport's Overall Approach to Climate-Friendly Commercial Vehicles, are listed below. With regard to the development and implementation of the measures, there will be a timely exchange with the relevant stakeholders (including vehicle manufacturers and the logistics sector).

59. Use cases and user journey for electric HGVs

By the end of 2022, the National Centre for Charging Infrastructure will, in cooperation with other stakeholders, develop an electric heavy goods vehicle user journey based on a use case landscape for heavy commercial vehicles to develop a user-oriented vision for future charging.

60. Determining demand and planning the rollout of charging infrastructure for heavy goods vehicles

By the end of 2022, the Federal Ministry for Digital and Transport and the National Centre for Charging Infrastructure will determine the long-term and site-specific demand (until at least 2035) for the development of charging infrastructure for heavy goods vehicles and the resulting electricity demand, taking charging peaks into account. This information will be made available to investors and, in particular, grid operators for the planning of the electricity grid. The development of charging infrastructure for heavy goods vehicles

should be intelligently coordinated with the rollout of passenger car charging infrastructure, carried out in line with demand and operated by the private sector and in free competition as soon as possible.

61. Strategy for the development of an initial charging network for heavy goods vehicles

The Federal Ministry for Digital and Transport will draw up a strategy for the development of an initial scalable charging infrastructure network for heavy goods vehicles along the federal trunk road network in cooperation with the Federal Autobahn GmbH and the National Centre for Charging Infrastructure by the first quarter of 2023, also taking into account the results of the negotiations on the AFIR. In this context, it will be examined whether grid connections can be applied for immediately after the strategy has been drawn up, and thus before the tenders, to ensure rapid availability of the connections.

62. Tender for an initial charging network for heavy goods vehicles

On the basis of the strategy (see above), the Federal Ministry for Digital and Transport and Autobahn GmbH will publish an initial call for tenders in the third quarter of 2023, if possible, for the construction of the initial charging network, based on which the rest of the network will be built.

63. Financing of charging infrastructure for heavy goods vehicles beyond the initial network

By the first quarter of 2023, the Federal Ministry for Digital and Transport and the Federal Ministry for Economic Affairs and Climate Action will develop suitable funding and support measures for charging infrastructure for heavy goods vehicles at company premises, transshipment points, industrial estates, charging hubs and areas next to federal trunk roads.

64. Charging infrastructure at central bus stations

Following the revision of the TEN-T¹² Regulation, the Federal Ministry for Digital and Transport will draw up a strategy for the development of charging infrastructure for long-distance buses at central bus stations by the end of 2024 in accordance with the new requirements and on the basis of market developments in the vehicle sector.

65. Model layouts for arrangements at charging infrastructure sites for heavy goods vehicle

The Federal Ministry for Digital and Transport and the National Centre for Charging Infrastructure, together with Autobahn GmbH and the stakeholders, will prepare model layouts by the second quarter of 2023 on the arrangement of charging points, parking spaces and transformers at charging infrastructure sites for heavy goods vehicles. These will then be included into the relevant regulations, such as the recommendations for roadside rest areas.

¹² EU Regulation on Union guidelines for the development of the trans-European transport network

66. Standardized heavy goods vehicle charging

Manufacturers are called upon to develop standards for all essential steps in the charging process for heavy goods vehicles together with the relevant standardization bodies by the end of 2023. This includes, for example, charging technology (e.g. overhead gantry charging systems, location of charging sockets on the vehicle) and the MCS¹³ standard. The industry must provide sufficient specialized personnel as well as test and trial capacities for MCS standardization.

67. A guide for charging at private business premises

The Federal Ministry for Digital and Transport will publish a guide for the installation of charging infrastructure at private company premises (incl. model layouts). This guidance will cover in detail charging at own and third-party company premises (including depots in each case).

68. Continuous monitoring and review of the HGV charging infrastructure

The Federal Ministry for Digital and Transport will establish a process by the first quarter of 2023 in which the ongoing technical development, the standardization processes and the development of the charging infrastructure for heavy goods vehicles will be continuously monitored. The aim is the early identification of coordination and regulatory requirements as well as coordination with the ongoing development of the AFIR.

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