



DECISION

In the administrative proceedings pursuant to section 29(1) in conjunction with section 28o(3) and section 28r(1) sentence 2 and (6) of the Energy Industry Act (EnWG)

concerning the determination of provisions on the setting of network tariffs to be charged for access to the hydrogen core network and on the establishment of a payback mechanism effective for a certain period (WANDA)

Parties summoned:

Uniper Global Commodities SE, Holzstraße 6, 40221 Düsseldorf, legally represented by its management board,

- Party summoned re 1) -

Uniper Hydrogen GmbH, Holzstraße 6, 40221 Düsseldorf, legally represented by its management board,

- Party summoned re 2) -

Uniper Kraftwerke GmbH, Holzstraße 6, 40221 Düsseldorf, legally represented by its management board,

- Party summoned re 3) -

Uniper Energy Storage GmbH, Holzstraße 6, 40221 Düsseldorf, legally represented by its management board,

- Party summoned re 4) -

Legal representatives of the parties summoned re 1) to 4): Uniper SE, Holzstraße 6, 40221 Düsseldorf, the latter legally represented by its management board,

the Grand Ruling Chamber for Energy of the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen, Tulpenfeld 4, 53113 Bonn,

represented by

its Chair	President of the Bundesnetzagentur Klaus Müller,
its Vice Chair	Vice President of the Bundesnetzagentur Barbie Kornelia Haller,
its Vice Chair	Dr Christian Schütte,
its Vice Chair	Anne Christine Zeidler,
its Vice Chair	Achim Zerres,
and its Vice Chair	Dr Annegret Groebel

decided on 06. 06. 2024:

From 1 January 2025 onwards the following provisions apply to all operators of hydrogen core networks that are part of the hydrogen core network pursuant to section 28q of the Energy Industry Act (EnWG). Notwithstanding the above, point 7 of these provisions applies as soon as this decision enters into force.

1. The hydrogen core network operators charge tariffs for the provision of entry and exit capacity for the hydrogen core network. The tariff is calculated in €/kWh/h/a. It always applies for a non-interruptible annual capacity. No tariff is charged for transporting hydrogen

from the network of one hydrogen core network operator to the network of another hydrogen core network operator.

2. Subject to the specific provisions for the payback period pursuant to point 3, all hydrogen core network operators jointly set a non-distance-related tariff for all entry and exit points of the hydrogen core network for each calendar year. This entails dividing the costs approved in accordance with section 14(2) of the Hydrogen Network Tariffs Ordinance (WasserstoffNEV) including the additions and deductions in accordance with point 7(g) of the provisions by the contracted capacities of the entry and exit points forecasted for the calendar year. If a tariff is formed in accordance with sentence 1, the hydrogen core network operators must publish it no later than 1 November of the previous calendar year. The publication must be corrected without delay if the tariff subsequently changes. Any change to the tariff after the start of the calendar year to which the tariff applies is ruled out.
3. During the payback period, in derogation of point 2, the hydrogen core network operators charge a ramp-up tariff for all entry and exit points of the hydrogen core network. The payback period begins on 1 January 2025 and ends at the end of the calendar year in which the intertemporal cost allocation account pursuant to point 4 is balanced. The ramp-up tariff is set by the Bundesnetzagentur by means of a determination. It should be set at a level such that if it continues to apply unchanged while taking account of inflation in accordance with sentence 5, it enables the intertemporal cost allocation account to be balanced by 31 December 2055. Every calendar year the hydrogen core network operators adjust it in line with general inflation by multiplying it by the overall consumer price index published by the Federal Statistical Office from the last year but one before the year to which the ramp-up tariff applies relative to the overall consumer price index from the year for which the ramp-up tariff was first set or was adjusted in accordance with the following provisions. The Bundesnetzagentur will conduct a review of the ramp-up tariff for the first time on 1 January 2028 and thereafter every three years. If the review establishes that the expected development of the parameters influencing the intertemporal cost allocation account differs from the assumptions on which the previous determination of the ramp-up tariff was based, and balancing of the intertemporal cost allocation account is not expected to be possible by 31 December 2055 with the ramp-up tariff remaining unchanged after taking account of inflation in accordance with sentence 5, the Bundesnetzagentur will adjust the ramp-up tariff by means of a determination such that balancing is made possible again. If balancing the intertemporal cost allocation account is not achievable by 31 December 2055 in the opinion of the Bundesnetzagentur, it will set the ramp-up tariff sufficiently low as to facilitate the

highest possible overall revenue. Point 2 sentences 3 and 4 applies mutatis mutandis to the ramp-up tariff.

4. If a hydrogen core network operator's revenues from the ramp-up tariff plus or minus the balancing payments pursuant to point 5 in one calculation period deviate from the network costs approved for that calculation period pursuant to section 14(3) sentence 3 WasserstoffNEV, the difference is recorded in an intertemporal cost allocation account. The forecasts for establishing the balancing payments pursuant to point 5 are key to establishing the revenues. In this process the difference is to be reduced by amounts which a hydrogen core network operator expressly renounces. In particular, those amounts that are covered by a declaration of renunciation pursuant to section 28r(4) EnWG are deducted from the cumulative differences as soon as balancing of the amortisation account pursuant to section 28s(1) EnWG is achieved. The intertemporal cost allocation account is considered balanced when it reaches an amount of zero again after the start of the ramp-up period or the amortisation account pursuant to section 28s(1) EnWG is balanced by the Federal Government.
5. In order to be able to properly apply a joint tariff pursuant to point 2 or 3, the expected revenues from tariffs between the hydrogen core network operators are balanced by means of monthly balancing payments in accordance with the following provisions. The percentage share of the approved network costs for the calendar year is determined for each hydrogen core network operator in accordance with section 14(2) WasserstoffNEV including the additions and deductions in accordance with point 7(g) of these provisions with respect to the total approved network costs of all hydrogen core network operators for the calendar year in question in accordance with section 14(2) WasserstoffNEV including the additions and deductions in accordance with point 7(g). This is multiplied by the total of all revenues from network tariffs from all hydrogen core network operators arising from the application of the joint tariff to the capacity marketing forecasted for the calendar year in question. The annual balancing payment is obtained for each hydrogen core network operator from the difference between the value calculated as above and the revenues of the respective hydrogen core network operator in the calendar year in question on application of the joint tariff to its forecasted capacity marketing. The monthly balancing payment corresponds to a twelfth of the annual balancing payment. If the monthly balancing payment of a hydrogen core network operator is negative, it must be disbursed pro rata to all hydrogen core network operators with a positive monthly balancing payment no later than the 15th of the respective month.

6. Hydrogen core network operators can participate in a state funding mechanism through which the gaps in financing that arise for them during the payback period pursuant to point 3 are filled and, in the eventuality of failure of the ramp-up, compensation for the costs incurred is assured.
7. In derogation of EnWG and WasserstoffNEV, the following provisions apply to hydrogen core network operators:
 - a) Section 2 WasserstoffNEV does not apply.
 - b) For general assets, the useful life pursuant to section 8(4) WasserstoffNEV corresponds to the ordinary useful life pursuant to annex 1(I.) Gas Network Charges Ordinance (GasNEV). The useful life for all other fixed assets corresponds to their respective ordinary useful life pursuant to annex 1(II. to VI.) GasNEV, provided that its lower end is no more than 35 years; otherwise the hydrogen core network operators can each select a useful life between 35 years and the longest possible ordinary useful life pursuant to annex 1(II. to VI.) GasNEV. Sentences 1 and 2 each relate to the version of GasNEV that is valid on the date this decision enters into force. Divergent determinations by the Bundesnetzagentur for gas network operators are disregarded. For repurposed fixed assets from natural gas networks, a change of useful life can be carried out in accordance with the provisions of this subsection as of the date of the repurposing. The residual values and depreciation allowances prior to repurposing remain unaffected.
 - c) In derogation of section 28r(6) sentence 2 EnWG, section 10(3) WasserstoffNEV applies. In derogation of section 28r(1) sentence 7 EnWG, the rate of return on equity before tax for existing assets is calculated from the rate of return on equity for new assets after tax less the rate of price change multiplied by the tax factor. The rate of return on equity for new assets after tax is calculated from the rate of return on equity for new assets before tax divided by the tax factor. The rate of price change is obtained from the average of the consumer price index from 2023 published by the Federal Statistical Office with respect to the last ten calendar years. The tax factor is 1.226.
 - d) Revenues resulting from the use of state funding from a mechanism pursuant to point 6 are not taken into account as cost-reducing revenues in accordance with section 12 WasserstoffNEV. Expenditures from the return of such funding or for the creation of accruals intended for this purpose are not taken into account as current outlay costs pursuant to section 7 WasserstoffNEV. Receivables, payables and

accruals from such circumstances are disregarded in the calculation of the imputed return on equity pursuant to section 10 WasserstoffNEV.

- e) Expenditures that arose before the first calendar year for which costs were approved will be taken into account retrospectively. Interest is incurred on the expenditures from the year in which they arose onwards, for which the interest rate is based on the average current yield to maturity of domestic bearer bonds over the previous ten full calendar years (overall) as published by the Deutsche Bundesbank.
 - f) Within the framework of the target/actual cost comparison pursuant to section 14(1) sentence 1 para 1 WasserstoffNEV, the revenues from and expenditures for balancing payments pursuant to point 5 must be taken into account as revenues generated from network tariffs. Amounts that are recorded in the intertemporal cost allocation account in accordance with point 4 sentence 1 are deducted from the approved network costs within the framework of the target/actual cost comparison.
 - g) The difference of the last completed calendar year calculated and bearing interest in accordance with section 14(1) sentences 1 to 5 WasserstoffNEV is taken into account by adding to or deducting from the network costs in the year following the approval of the actual costs pursuant to section 14(3) WasserstoffNEV. Establishing the additions or deductions forms part of the approval of the planned costs pursuant to section 14(2) WasserstoffNEV.
 - h) The stated costs pursuant to section 14(2) sentence 1 and (3) sentence 1 WasserstoffNEV and the basis on which they are calculated must be sent to the Bundesnetzagentur by 30 June of each year. This date also replaces 30 September for the calculation of the time limits pursuant to section 14(2) sentences 3 and 4 and (3) sentences 3 and 4 WasserstoffNEV.
 - i) Insofar as fixed assets are no longer required for operation of the core network prior to expiry of their imputed useful life and cannot be sold or only sold for a revenue below their imputed residual value, that part of the imputed residual value that is not offset by revenues is taken into account as costs.
8. No tariffs other than those envisaged in this decision are permissible.
9. The right to order payment of costs is reserved.

Rationale

A.

- 1 Section 28o(3) sentence 1 EnWG authorises the Bundesnetzagentur to establish regulations pertaining to all areas named in section 28o(2) EnWG by means of a determination. This encompasses the conditions and methods for determining costs and tariffs pursuant to section 28o(1) EnWG (para 1), the collection and storage of network-related data and of data otherwise required for calculating costs (para 2), regulations on the fact that tariffs needed to meet all necessary annual costs of network operation will not be collected in full from the network operators during market ramp-up and the proportion that is not collected will not be taken into consideration in tariffication until a later date (para 3), the obligation of operators of hydrogen networks to establish uniform network tariffs (para 4) and economic balancing mechanisms between the operators of hydrogen networks (para 5). In this context, pursuant to section 28o(3) sentence 2 EnWG it may also deviate from statutory instruments pursuant to section 28o(2) EnWG, which specifically relates to the WasserstoffNEV issued on the basis of this provision.
- 2 Furthermore, pursuant to section 28r(1) sentence 2 EnWG with due consideration for an expert report produced on behalf of the Federal Government to validate the viability of the financing model set out in section 28r EnWG, the Bundesnetzagentur must establish an intertemporal cost allocation mechanism for the hydrogen core network that enables the hydrogen core network to be financed through to 31 December 2055. In this context, however, it is not strictly tied to the statutory requirements but can also make divergent arrangements pursuant to section 28r(6) sentence 1 EnWG.
- 3 Furthermore, the Regulation of the European Parliament and of the Council on the internal markets for renewable gas, natural gas and hydrogen, amending Regulations (EU) No. 1227/2011, (EU) 2017/1938, (EU) 2019/942 and (EU) 2022/869 and Decision (EU) 2017/684 and repealing Regulation (EC) No. 715/2009 (recast), hereinafter Gas Regulation, was adopted on 21 May 2024¹. Pursuant to Article 7(8) first subparagraph Gas Regulation, Article 17(1), (2), (4) and (5) Gas Regulation shall apply to hydrogen networks in a Member State if that Member State decides to grant regulated third-party access in accordance with Article 35 of the Directive of the

¹ <https://data.consilium.europa.eu/doc/document/PE-105-2023-INIT/en/pdf>; the date of publication and official number of the regulation were not yet known at the time of this decision.

European Parliament and of the Council on common rules for the internal markets in renewable gas, natural gas and hydrogen, amending Directive (EU) 2023/1791 and repealing Directive 2009/73/EC (recast)², hereinafter Gas Directive. The legislators of the Federal Republic of Germany took such a decision for the hydrogen core network pursuant to section 28q EnWG through section 28n(1) sentence 1 in conjunction with section 28j(1) EnWG. Pursuant to Article 17(1) first subparagraph sentence 1 Gas Regulation, the tariffs or the methodologies used to calculate the tariffs applied by the network operators must be approved by the national regulatory authorities pursuant to Article 78(7) of the Gas Directive.

- 4 The expert report on validation of the viability of the financing model envisaged by the legislators was submitted by the Fraunhofer Research Institution for Energy Infrastructures and Geothermal Energy IEG, commissioned to act as the expert by the German Energy Agency (dena), on 14 February 2024 and was comprehensively evaluated by the Ruling Chamber. On 9 April 2024 the Ruling Chamber opened proceedings on regulating the establishment of tariffs for access to the hydrogen core network and published a draft decision for consultation on its website. Emails were sent to the regulatory authorities of the federal states and the Bundeskartellamt on 9 April 2024 to give them the opportunity to comment in accordance with section 58(1) sentence 2 EnWG. The Committee of representatives of the federal state regulatory authorities was given the opportunity to comment in accordance with section 60a(2) EnWG on 25 April 2024.
- 5 In the course of the consultation a total of 21 comments were submitted by the following stakeholders:

BDEW Bundesverband der Energie- und Wasserwirtschaft e.V. (German Association of Energy and Water Industries)

Behörde für Umwelt, Klima, Energie und Agrarwirtschaft der Hansestadt Hamburg (Authority for the Environment, Climate, Energy and Agriculture of the Hanseatic City of Hamburg)

BP Europa SE

German Chamber of Commerce and Industry

EFET Deutschland - Verband Deutscher Energiehändler e.V.

EnBW Energie Baden-Württemberg AG

FNB Gas e.V.

² <https://data.consilium.europa.eu/doc/document/PE-104-2023-INIT/en/pdf>; the date of publication and official number of the directive were not yet known at the time of this decision.

Gasnetz Hamburg GmbH

INES Initiative Energien Speichern e.V.

N.V. Nederlandse Gasunie

OMV Gas Marketing & Trading GmbH

SHS - Stahl-Holding-Saar GmbH & Co. KGaA

Stadtwerke Flensburg GmbH

Statkraft Germany GmbH

thyssenkrupp Steel Europe AG

Uniper SE

Verband der Chemischen Industrie e.V. (German Chemical Industry Association)

Verband kommunaler Unternehmen e.V. (German Association of Local Utilities)

VIK Verband der Industriellen Energie- und Kraftwirtschaft e.V. (German Association of Energy and Water Industries)

VNG Handel & Vertrieb GmbH

Wirtschaftsvereinigung Stahl (German Steel Association)

- 6 The key principles of the determination, such as in particular the uniform postage stamp tariff and the intertemporal ramp-up mechanism, were expressly welcomed in many comments. The linking of the tariff system to the booking of entry and exit capacity, familiar from gas network regulation, also met with considerable approval. One comment, on the other hand, found this provision to be too specific while the capacity model has not even been fixed yet. One comment was in favour of pricing exit points only, as this would lead to more transparent tariffs, because it would prevent part of the network costs from being incorporated in the raw material price in an unidentifiable form from the viewpoint of the end user. The same comment further suggested charging exit tariffs solely for industrial customers and power plants (but under no circumstances at storage facilities), because the expansion of the core network is based on maximum load scenarios in which offtakes mainly take place among these two customer groups, which are therefore the actual drivers of the network costs. Several comments made proposals that were effectively along similar lines, suggesting a discount of 100% at storage facilities so that the initial network customers are not burdened with the high upfront costs of newly built or converted hydrogen storage facilities. Another comment rejected entry tariffs at cross-border interconnection points in order to avoid the pancaking effect at those points. In addition, the absence of pricing of transport capacities between

different entry-exit systems in the form in which they are expected to still exist during the ramp-up phase of the core network was welcomed by some comments but rejected by others with a view to the very limited capacities available for this purpose in the initial stages. In this connection, suggestions were also made to refer to transports rather than surplus supply because the latter term has a different meaning in the gas sector. With regard to the non-interruptible yearly capacity product, in very many comments it was requested that this should be defined more precisely than booked, firm, freely allocable capacity (FZK). Similarly, a large number of comments called for the introduction of non-yearly capacity products with only pro rata tariffs (and if applicable multipliers). As a variant of this, one consultee proposed that there should be only a pro rata tariff, at least in the year of network connection. One opposing comment rejected any deductions for non-yearly bookings. One consultee asserted that there should be no need for a capacity booking (liable to a tariff) for the first-time test operation of a new network connection. Some comments expressed the desire for clarification that the tariffs contain all necessary services and no additional tariffs would be charged, such as meter operation tariffs.

- 7 Very many market participants criticised the lateness of the tariff publication date on 1 November and in some cases advocated an earlier date (those mentioned were 30 May, 1 September and 1 October), and in other cases a lead time depending on the date of capacity allocation (at least six or ten weeks prior to the marketing procedure). In addition, they stated that the published tariff must be binding and at best should be allowed to be adjusted retrospectively in the same way as under NC TAR in the event of network operation being jeopardised. One comment additionally proposed a lead time of at least two months in this connection.
- 8 With regard to the ramp-up tariff, the comments insisted that this should not be set too high. The figure of €15–20 per kWh/h/a quoted in the expert report was already said to be prohibitive. This was a threefold increase compared to the transmission tariff for natural gas, and the tariffs for the downstream network levels were not even included in it. The yardstick was said to be the gas price in the USA of 1 cent per kWh. Very many consultees also requested transparent and comprehensible methodological regulations regarding adjustments to the tariff within the revision mechanism. In this context they stated that it was essential to avoid placing excessive strain on network customers and creating stranded assets on the consumer side and that the ramp-up risk must under no circumstances be transferred from the network operators to the network customers. In a few comments there were also proposals to set an absolute upper limit for adjustments or for a link to gas network tariffs. The market participants should be consulted at least four weeks before the ramp-up tariff is adjusted, they added. Any adjustment should be made with as much advance notice as possible and be linked to an indicative statement on the future trend in order to give the market participants planning certainty. If it became apparent that the intertemporal cost allocation

account was likely to be balanced before 2055, the ramp-up tariff should be reduced with the aim of achieving a balance in 2055. The provisions on the revenue-maximising tariff should be worded in a more comprehensible manner. In the opinion of one respondent, provision should be made that a core network operator must offset the difference between the ramp-up tariff and the actual tariff for its customers if the network operator does not yet apply the ramp-up tariff when the network enters service, for example in the eventuality of complaint proceedings against this decision.

- 9 Several comments pointed out that it would not be appropriate to pay interest on the intertemporal cost allocation account because this account must always contain the same amount as the amortisation account. One opposing comment, on the other hand, considered the interest rate to be too low and suggested that it should be based on the interest-setting methodology used in the context of the capex mark-up. Furthermore it should be clarified that waiving differential amounts that are deductible within the framework of the state funding mechanism must not be allowed to reduce the holding in the cost allocation account directly but instead that these amounts do not lapse until the cost allocation account is balanced by the Federal Government. One comment expressed difficulties in understanding the waiver and interest arrangements and the difference between the intertemporal cost allocation account and the amortisation account and requested explanations to clarify these matters.
- 10 With regard to the provisions on the balancing mechanism between core network operators, one reference was made to positive and negative balancing payments being swapped in the wording of the operative part of the decision. In addition, attention was drawn to complex interactions between network costs, interest expenses and differential amounts to be balanced by the account-keeping body within the framework of the state funding mechanism, for which no clear arithmetical solution was to be found. One comment requested that the balancing payments should be executed by the account-keeping body, since its position vis-à-vis the network operators was neutral.
- 11 Several comments suggested using the term "intertemporal cost allocation mechanism" rather than "state funding mechanism". They went on to point out that it should be clarified that the costs incurred are only partially balanced because of the deductible amount. Furthermore, equal treatment of the network operators should be ensured in the funding mechanism. Later investments must not be put in jeopardy as a result of network operators who do not join until later being burdened with a greater risk because their fixed assets will still have higher residual values in 2055.

- 12 The imputed useful lives should be based on the standard values assumed in the expert report by the Fraunhofer Research Institution for Energy Infrastructures and Geothermal Energy IEG or should be limited to 35 years for all fixed assets apart from administration buildings. There were said to be no insights to date into the useful life of the infrastructure of hydrogen networks that could be expected in reality. It would have to be possible to recover the costs of investment during the payback period.
- 13 The rate of return on equity for existing assets should be set to 5.75% before tax. This is derived from a reduction in the rate of return of 7.73% envisaged in WasserstoffNEV by the same proportion as the reduction in the rate of return for new assets from 9% to 6.69% provided for in EnWG. The rate of return on equity where the equity ratio exceeds 40% (EK II) should be determined in a similar way to the capex mark-up and investment measures as the arithmetic mean of the current yield to maturity of domestic bearer bonds as published by the Deutsche Bundesbank – bonds issued by companies and loans to non-financial corporations of over 1 million euros with an initial period of interest rate fixation with a term of more than one year and up to five years, which would reflect the current capital market situation more appropriately than the present arrangements. One comment additionally suggested compensating for the lower rate of return for existing assets with a higher rate of return for new assets, which should be based on the capex mark-up. In contrast, another comment advocated continuing with the rate of return currently set out in EnWG beyond 2028.
- 14 One comment wanted clarification of what is meant by "return of funding" in operative provision 7(d). Another comment suggested "payments to the amortisation account" as alternative wording.
- 15 Up-front costs should be taken into account not just for 2024 but for all years preceding 2025 because the first preparatory work was said to have taken place as early as 2021, especially for IPCEI (important project of common European interest) projects.
- 16 In light of the cost reviews that are due to take place soon, provisions on the transmission of data for the planned costs that need to be notified should be established in the near future. Furthermore, it should be possible for every network operator to apply for planned costs because in the initial stages it was not yet certain which companies would be core network operators in the future.
- 17 If network operation is terminated in the event of premature cancellation of the amortisation account by the Federal Government, it should be possible to allow a special depreciation in the amount of the residual value chargeable to the amortisation account, since cessation of business would be likely in the event of ramp-up failing and in that case the entire economic risk must not be left with the network operators.

- 18 The regulatory content of operative provision 8 was considered unclear by some comments. Additional types of tariffs would be needed whatever the case, for instance for non-yearly capacity or for hydrogen storage facilities.
- 19 One comment requested clarifying regulations for the tariffs in network components outside the core network and for payments between the network levels. Furthermore, provisions on imputed useful lives were also needed for those network elements and the review periods under WasserstoffNEV should be adjusted in the same way as for the core network. Tariff structures for subsequent expansions of the core network following approval of the network would also be required. Several comments called for the swift submission of a funding concept for the so-called second stage, too, in other words the hydrogen network infrastructure outside the core network. Analogous regulations were required for this. The uniform postage stamp tariff should also be extended to hydrogen clusters that are connected to the core network. In addition there were calls for tried-and-tested provisions from natural gas regulation to be adopted in large part; in particular the capacity model and the related allocation mechanism should be transferred to hydrogen networks. The principle of capacity booking should also be applied to networks outside the core network. One comment also emphasised that the market-based instruments introduced for the purpose of safeguarding capacity should likewise be applied in the hydrogen network.
- 20 With the decisions of **## ##** 2024, the parties summoned to 1) to 4) were summoned to the proceedings in response to their applications of 6 May 2024.
- 21 For further details, reference is made to the content of the file.

B.

22 The decisions taken fall under the responsibility of the Bundesnetzagentur as provided for by section 28o(3) and section 28r(1) sentence 2 EnWG. The responsibility of the Grand Ruling Chamber for Energy derives from section 59(3) sentence 3 EnWG.

23 The substantive legal basis for the decisions is provided by section 29(1) in conjunction with section 28o(3) and section 28r(1) sentence 2 and (6) EnWG.

0. Subject matter and scope

24 This decision lays down fundamental provisions for the tariff methodology in the hydrogen core network pursuant to section 28q EnWG. The decision does not, however, address the subject matter of hydrogen networks that are not a constituent part of the core network – even if they are operated by a network operator that is at one and the same time a core network operator (and in this case must implement accounting separation between the two hydrogen networks in accordance with section 28r(8) EnWG). It follows from this that later additions to the core network that were not envisaged in the original approval of the core network are not covered by the provisions of this decision because according to the legal concept they can no longer be a constituent part of that network. To date no final decisions have been taken on regulating the networks that are outside the core network and at least in part connected to it, referred to in the political debate as the second stage, which is why the Ruling Chamber is initially focusing on the rapid establishment of the regulations for the core network that are needed particularly urgently at the current time. Nor is there an acute need for regulation yet either, because in any case according to the law as it exists pursuant to section 28j EnWG only voluntary regulation is envisaged for other hydrogen networks, and for those network operators that make use of this possibility a full regulatory framework for tariffication is in principle available in the form of WasserstoffNEV.

25 The Ruling Chamber noted from the consultation that there is considerable need for clarity in the market with regard to the other networks too. It will address this topic in due course, probably following implementation of the European gas decarbonisation package by the legislature. Many voices expressed the wish that the system established through this decision should essentially be transferred to all hydrogen networks. All that can be said in this regard to date is that parts of the present determination may possibly be suitable to be used for other networks by analogy. That said, it is already becoming apparent that including other networks in the scope of the uniform postage stamp or the ramp-up tariff, at least, is not likely to be possible. The intertemporal cost allocation account under this determination is closely linked with the Federal Government's

funding mechanism pursuant to sections 28r et seq EnWG and its "paying" amortisation account. According to the legislature's intention, however, this is clearly limited to the establishment of the core network. The Ruling Chamber is not authorised to extend this comprehensive state safeguarding to other circumstances. The intertemporal cost allocation account, in turn, is closely linked to the uniform ramp-up tariff and the balancing mechanism between the core network operators; likewise, these therefore cannot be extended to other network operators without repercussions for the funding system.

- 26 With regard to it being called upon in the consultation to go so far as to submit a "funding concept" for the other hydrogen networks, the Ruling Chamber must point out that it is not able to determine funding concepts, only tariff methodologies. An intertemporal shifting of costs and/or tariffs may form part of such a tariff methodology – as is the case in this decision – if this is conducive to a successful ramp-up. However, the Ruling Chamber is not able to adjudge whether a funding concept will be linked to balancing of the resulting gaps in financing using public funds; only the legislature can do so.

I. Fundamental provisions (operative part 1)

- 27 Pursuant to section 28o(3) sentence 1 in conjunction with (2) para 2 EnWG, the Bundesnetzagentur can establish regulations on the conditions and methodologies for calculating the tariffs for access to hydrogen networks. The Ruling Chamber makes use of this power and within the scope of the discretion granted to it mandates the fundamental methodological arrangements for the network tariffs of the hydrogen core network set out in operative part 1.

1. Priced services

- 28 In the hydrogen core network the reference point of a network tariff is always the provision of entry and exit capacity in an entry-exit system. This corresponds to Article 3(c) of the Gas Regulation, which likewise ties into tariffs charged at entry and exit points of a hydrogen network. It is therefore not the actual use of the network for carrying out physical transport operations (nomination) that is priced but the booking of the possibility of carrying out transport, irrespective of whether it is actually used. This replicates the tried-and-tested system of tariffing access to natural gas networks, giving rise to sensible results for hydrogen networks, which work in a very similar manner in structural terms. The costs of the network are in large part caused by merely keeping the necessary infrastructure available and still arise regardless of whether it is actually used by the network customers. The development and expansion of the network can only be based on the transport requests indicated in advance by the market. Pricing must therefore also be linked to the booking of the mere possibility of transport.

- 29 Entry and exit points within the meaning of this decision are also connection points to other network operators outside the core network and between networks operated by the same network operator if the latter operates both a constituent part of the core network and a hydrogen network that does not belong to the core network. This applies regardless of whether such connection points are bookable points in the sense of a separate entry-exit system or internal interconnection points in an entry-exit system for hydrogen covering the whole of Germany.
- 30 In response to individual calls in the consultation process for pricing to be restricted to certain types of points that are supposedly key to the design of the network, it can be stated that all network users benefit from the provision of the network and consequently have to make a contribution to its financing in accordance with the extent of their use of the network. The Ruling Chamber also takes a critical view of conferring privileged status on cross-border interconnection points, since this would distort the appropriate allocation of domestic and foreign network costs. Balancing mechanisms for cross-border networks are possible and are permissible under EU law, but in the opinion of the Ruling Chamber at least with regard to the core network they cannot be combined with the joint intertemporal cost allocation account envisaged for the core network or with the associated state funding mechanism, which is strictly confined to the core network.
- 31 Separate tariffs for non-transmission services associated with transport such as in particular metering, meter operation and accounting are not envisaged. The relevant costs will be met by the network tariff.

2. Tariff unit

- 32 The network tariff is calculated in €/kWh/h/a.

3. Possibility of differentiated tariff variants

- 33 The network tariff always applies to a non-interruptible annual capacity, which is considered to be a standard product from which other product variants can be derived if appropriate. At the time of these determination proceedings it had not yet been established whether the hydrogen core network operators will also offer other transport products alongside this standard product, nor what types of product these might be; this is likely to depend in part on the regulations that are established within the scope of separate determination proceedings on access to the hydrogen core network. Nonetheless, in order to give the network operators clarity about the financing conditions in a binding manner at as early a stage as possible, the Chamber has decided initially to issue a simplified determination that is based on the assumption that only a single product type exists. In the course of 2024 it is to be followed by a supplementary determination, the content of which will be coordinated with the determination on access conditions, and which is expected to

add additional regulations for further differentiation of the tariff system in good time before the marketing launch expected to take place in 2025. The content of this supplementary determination may include, for example, multipliers for non-yearly products, special regulations for interruptible products, the handling of allocation restrictions, discounts for booking points at hydrogen storage facilities or regasification facilities for liquefied hydrogen, as well as if applicable entirely novel cases that are not yet known from the gas network regulation that serves as a model. In this context it would also still be possible if necessary to change the fundamental reference point of the tariff regulations, should it emerge that network access will be designed to use a different system rather than capacity bookings. The Ruling Chamber hopes that this approach will enable it to gain time for the necessary discussions about these aspects of core network regulation which have not been conclusively discussed to date at the conceptual level. In conjunction with operative part 8 of this decision, limitation to firm annual products initially means that it is not permitted to set tariffs for other types of product. However, this situation will be modified accordingly by the above-mentioned supplementary determination.

- 34 In order to avoid misunderstandings such as those that emerged in some cases during the consultation process according to the impression gained by the Ruling Chamber, it should be expressly emphasised that at this stage there is no provision for a transitional phase until differentiated tariffs are introduced. Although the supplementary determination is scheduled to follow this decision chronologically, it should enter into force sufficiently in advance of the commissioning of the first constituent parts of the core network that it will be applied to the first capacities to be marketed. In regulatory terms the non-interruptible annual capacity referred to in this decision therefore merely serves as a placeholder so that a full and self-contained set of regulations to safeguard the financial framework conditions can be established at the present time without preempting the design of subsequent transport products (nor the creation of a product type corresponding to FZK). Consequently, for the time being the Ruling Chamber will not address the proposals put forward by numerous consultees to specify these matters more precisely.

4. Use of multiple networks

- 35 If a network customer books the entry capacity and corresponding exit capacity with different network operators, the customer pays only an entry tariff to one network operator and an exit tariff to the other. Exiting the network of the entry network operator and entering the network of the exit network operator are not subject to a tariff, nor is the use of any intermediate networks or any networks involved in handling transport in some other way. This, too, corresponds to the idea expressed in Article 3(c) Gas Regulation, which refers (only) to tariffs at entry and exit points. In

contrast, calculating network tariffs on the basis of contract paths is expressly ruled out by Article 17(1) fourth subparagraph sentence 3 Gas Regulation. According to the will of the European Union legislature, therefore, the transit of hydrogen taking place between the individual participating network operators within the core network should very much not be reflected in the network tariffs applied to the network customers. It also corresponds to the idea of Article 17(5) Gas Regulation, according to which a uniform tariff may be set in order to establish a level playing field in terms of competition between the network users (more on this below under II.). A level playing field will only be achieved if not only the tariffs of the individual network operators of the core network are identical but also no additional tariffs are charged for using the networks of more than one network operator. If this were not the case, in the event of transport bookings through multiple networks the effect would be that the tariffs of all participating network operators would be added together (so-called pancaking), as a result of which network customers supplying final consumers who on account of their geographical location can only be reached from a production or import source by passing through multiple networks would be placed at an economic disadvantage compared with others. This would mean that the terms of competition among the network customers and indirectly among the consumers that they supply would certainly not be equal. Furthermore, separate pricing of the use of exchange points within the integrated entry-exit system with comprehensive cooperation between the operators would lead to practical problems. Experience from the regulation of gas transmission systems has shown that if a market area has a certain degree of complexity it is in actual fact no longer possible to allocate the processing of individual capacity bookings to specific physical transport routes (see also only the corresponding statements in Decision BK9-19/610 of 11 September 2020 – REGENT 2021). In certain situations it may therefore also no longer be possible to clearly determine which network operators were involved in carrying out the transport at all. Against such a background it is technically no longer feasible to link a tariff system to the use of exchange points between network operators (see also the history of Decision BK9-13/607 of 22 June 2016 – HoKoWä – which has since been revoked). It is to be expected that the hydrogen core network will also reach a degree of complexity in which precise observation of individual hydrogen flows within the integrated entry-exit system will no longer work (more details on this below under II.). The imbalances in the revenues of the individual network operators resulting from the lack of pricing for transport by multiple operators within the core network will be corrected via the balancing mechanism pursuant to operative part 5 (more details under VI.).

- 36 In the initial phase of the core network, for a transitional period there will be a series of smaller clusters which will only gradually be connected to each other to form an overall network. In this process it is expected that in some situations it will be possible for transports to take place between

these clusters to a certain extent even before the systems are merged to form larger clusters. During the consultation process it was proposed that a network tariff should be applied to at least these transports, since for technical reasons the corresponding capacities can only be made available to a limited extent. The Ruling Chamber considered this option, but in the final analysis rejected it. Even if the transports described above take place between clusters, they are an expression of a larger entry-exit system that is in the process of being created. The tariff system introduced with this decision is characterised in all its elements by anticipation of the future structure of the core network and knowingly accepts temporary imprecisions during the first phase of the formation of the network. It has to do this if it is not to be subjected to constant revision in the first years of its application and would therefore certainly not be able to offer the market participants and investors the economic certainty that according to all the comments expressed to the Chamber is so important to the success of market ramp-up. For example, the balancing mechanism between the network operators in accordance with operative part 5 and the joint intertemporal cost allocation account are geared to the model of a contiguous network, for reasons of practicability.

- 37 The Ruling Chamber recognises that the technical means of representing transport capacity, which at times are still limited, must be reflected in the regulations. That said, in its estimation this is primarily a problem of network access and less one of the tariff methodology. The key to avoiding excessive strain being placed on the technical capabilities of the network is first and foremost limiting the capacity offer itself or at least designing the capacities with corresponding allocation restrictions or possibilities for interruption. A lack of pricing is not fundamentally inconsistent with the establishment of separated entry-exit systems and does not prevent a – possible – requirement for separate booking of transport capacity between such systems. Insofar as price signals are considered necessary for the efficient allocation of limited capacities, this can also be achieved through auction surcharges, for example – without wanting to preempt the design of the capacity allocation mechanism by pointing this out. Nevertheless, the Chamber will monitor the interaction between the various aspects of access and tariff regulation as clusters are successively connected. It is already envisaged that a supplementary determination to this decision will be issued, which will present an opportunity for adjustments to be made if these appear expedient.

II. Uniform postage stamp tariff (operative parts 2 and 3)

- 38 The setting of a uniform tariff for all hydrogen core network operators is also based on section 28o(3) sentence 1 in conjunction with (2) para 1 EnWG and constitutes an even more precise methodological approach for tariffication. Furthermore, according to section 28o(3)

sentence 1 in conjunction with (2) para 4 EnWG the Bundesnetzagentur is expressly authorised to establish regulations that oblige the operators of hydrogen networks to form uniform network tariffs. In fact section 28r(1) sentence 4 EnWG expressly stipulates for the hydrogen core network that as of 1 January 2025 the level of the tariffs for access to the hydrogen core network should be determined uniformly throughout Germany on the basis of the aggregated network costs of all hydrogen core network operators. Through this target provision, the legislature has already specified intended discretion in the direction of uniform tariffs. Nonetheless, pursuant to section 28r(6) sentence 1 the Ruling Chamber has extensive options to deviate from these principles and is thus – apart from anything else on account of its role as an independent regulatory authority pursuant to Article 78(7) of the Gas Directive – not relieved of the obligation to take an independent discretionary decision on (among other things) the uniformity of the network tariffs.

39 In substantive terms, after the Gas Regulation enters into force, which is due to take place soon, the key determinant for the selection of an appropriate tariff methodology is primarily its Article 17(1) in conjunction with Article 7(8) first subparagraph sentence 1. The fact that these provisions are not yet formally binding for the Ruling Chamber at the time of this decision is a matter of secondary importance because firstly they essentially contain only generally recognised principles of regulation by which the Chamber would be guided anyway, and secondly this decision is intended to remain valid even after they enter into force and consequently will have to be compatible with them in future.

40 Accordingly, the approved network tariffs and the methodologies used to calculate them must be transparent, must take into account the need for system integrity and its improvement, and must reflect the actual costs incurred, insofar as such costs correspond to those of an efficient and structurally comparable network operator and are transparent, whilst including an appropriate return on investment. The network tariffs, or the methodologies used to calculate them, must be applied in a non-discriminatory manner. They must facilitate efficient hydrogen trade and competition, while at the same time avoiding cross-subsidies between network users and providing incentives for investment and maintaining or creating interoperability for hydrogen networks. The network tariffs for network users must be non-discriminatory and be set separately for each entry point into the hydrogen network or each exit point out of the hydrogen network. Cost distribution mechanisms and rate setting methodologies regarding entry and exit points must be approved by the national regulatory authorities. Article 17(2) Gas Regulation stipulates that tariffs for network access must neither restrict market liquidity nor distort trade across borders of different hydrogen networks. Furthermore, Article 17(5) Gas Regulation determines that a Member State with more than one network operator within an entry-exit system may stipulate a uniform network tariff in order to establish a level playing field in terms of competition between the network users if

an approved network plan is in place and a balancing mechanism between the network operators is created.

1. Envisaged forms of the postage stamp

- 41 On the basis of these provisions – in the final analysis corresponding to the legislative requirements as intended in section 28r(1) sentence 4 EnWG – the Ruling Chamber has prescribed a uniform tariff (a so-called postage stamp) for the entire hydrogen core network. In so doing it is implementing two variants of this uniform tariff. In operative part 2 a largely "classic" postage stamp is specified as the base case, comparable to the one that is already used in the natural gas transmission network. However, according to operative part 4 a ramp-up tariff is initially envisaged as a special variant of the postage stamp for the first few decades after this decision enters into force.
- 42 In the base case pursuant to operative part 2, all hydrogen core network operators jointly set a non-distance-related tariff for all entry and exit points of the hydrogen core network for each calendar year. The parameters for determining this postage stamp tariff are on the one hand the costs necessary for network operation and on the other the expected capacity marketing. The costs are based on the value of the planned costs approved according to section 14(2) WasserstoffNEV, which at the time of tariff calculation represents the most reliable available source of information about the network costs for the following year that are eligible from a regulatory standpoint. According to operative part 7(g), the approval also includes the differences from the target/actual cost comparison pursuant to section 14(1) WasserstoffNEV, which are used to compensate for previous incorrect forecasts regarding costs or volumes. With regard to capacity marketing, the network operators must give the best possible estimate of the bookings that will be made in the following year in each case on the basis of the information tools available to them. The postage stamp tariff is then obtained by dividing the cumulative approved network costs of all network operators by the cumulative expected capacity marketing by all network operators.
- 43 During the payback period, the tariff pursuant to operative part 2 will be replaced by a special ramp-up tariff pursuant to operative part 3 (more below under III.). The ramp-up tariff is also a postage stamp tariff, where merely the level of the tariff is determined by other means. The following considerations regarding the justification for a uniform postage stamp tariff therefore relate equally to operative parts 2 and 3.

2. Transparency

- 44 The uniform postage stamp is a transparent method of tariffication. It is a very simple pricing system that network customers can understand without difficulty. In the base case according to operative

part 2, the calculation is carried out by dividing the approved network costs by the forecasted contracted capacities, in order to ensure maximum transparency for all market participants. In addition, if adjustments are made to the estimate of the two input parameters, the effects on the reference prices are directly evident. During the payback period the degree of transparency is actually increased yet further as a result of the determination of the ramp-up tariff in accordance with operative part 3 by the Bundesnetzagentur. The ramp-up tariff is intended to remain unchanged over a period of many years (apart from being adjusted in line with the overall consumer price index) and thus offers the greatest possible level of predictability. Both the initial determination and any adjustments will be carried out as part of transparent administrative proceedings. Within this process the criteria for setting the tariff, which serve the purpose of balancing the intertemporal cost allocation account by 31 December 2055, are clearly apparent.

3. Cost-reflectivity

- 45 Furthermore the postage stamp tariff reflects the actual costs of network operation insofar as they correspond to the costs of an efficient and structurally comparable network operator, are transparent and at the same time include an appropriate return on investment. This is achieved by the calculation of the tariff being linked to the approved costs. Cost approval on the basis of WasserstoffNEV ensures that only operationally necessary and efficient costs are permitted to be included in the calculation. The fact that all necessary costs are taken into account means that the need for system integrity and the improvement of system integrity is comprehensively met. Moreover, the rate of return on equity included in the cost approval ensures that adequate incentives are granted for investment and for maintaining or establishing interoperability between the hydrogen networks. In the postage stamp variant of the ramp-up tariff pursuant to operative part 3, too, linking the tariff methodology to costs is appropriate because this is how the amounts are determined that are posted to the intertemporal cost allocation account and enable the costs to be collected in future. The costs accumulated in the course of time thus determine how long the ramp-up tariff remains in effect and to what extent it may need to be adjusted during the payback period.
- 46 However, a tariff methodology based on actual costs fundamentally requires that not only the actual costs of network operation but also the actual costs of the individual transport booking are appropriately reflected in the tariff. Cost-reflectivity between the various network customers is therefore also crucial. As a general rule a network customer should only have to bear those costs that they have (partly) caused by their booking.
- 47 That said, the precise allocation of costs in a complex, integrated entry-exit system presents fundamental difficulties. Precise allocation would require that in the case of a transport process it

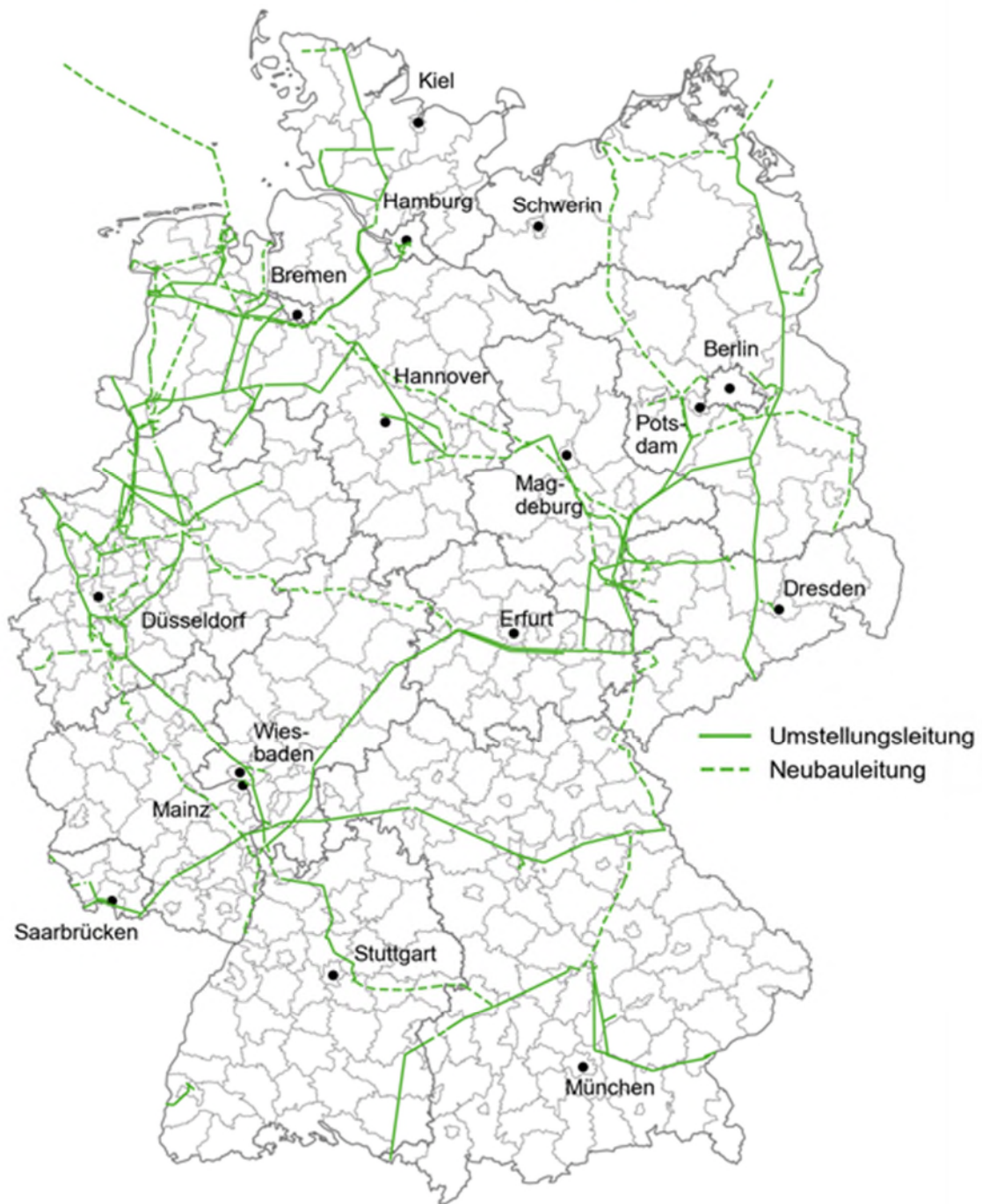
must be possible to make at least approximate assumptions about which constituent parts of the core network have been used for it and what costs (in addition to the capital costs of the pipelines used also operational costs of quite specific network operators) corresponding to those parts have arisen precisely because of this. However, the Bundesnetzagentur knows from experience at least in the natural gas transmission network that allocation in this way regularly is not possible (more details on this in Decision BK9-19/610 of 11 September 2020 – REGENT 2021). The contractual performance of the network operators does not lie in actually physically transporting the input energy sources from the entry point to the exit point. Instead they merely have to incorporate the input volume into their network (by whatever means) and at the same time make a corresponding volume of the same type and quality available at the exit point (no matter where it takes it from). The "transport" is therefore initially entirely virtual. It goes without saying, however, that hydrogen also has to be physically moved in the network in some way for this virtual transport to take place. A complex entry-exit system is characterised by the fact that a large number of transport requests at many different locations and in many different directions have to be processed simultaneously, requests that may interact with each other in diverse ways or in some cases also balance each other out. Within the framework of dispatching (for all network operators), in order to satisfy these transport requests the volumes in the network are controlled in such a way that ultimately each of the nominated input and offtake volumes are realised at all booking points. Logically it is no longer possible to allocate movements of actual molecules to specific virtual transports, so consequently nor is it possible to allocate specific infrastructure or specific network costs to individual capacity bookings.

48 In a system of this type, a uniform postage stamp tariff – despite its blanket applicability and even though it expressly does not attempt to allocate costs more precisely – is already the most cost-reflective form of cost allocation that is possible in practice. On the one hand, the postage stamp is able to establish a certain degree of cost fairness by using the recognised cost driver of the capacities that are expected to be booked which, in the main, mirrors the network contingency costs. On the other hand, the methodology acknowledges the abstraction of contract paths by disregarding distances, and thus ultimately it prices entering and/or exiting the entry-exit system. For the shipper, the service is the main concern and not the actual physical transport of gas, such that in principle there is no direct connection between a booking and the use of specific infrastructure.

49 It can be assumed that even when it is fully developed the hydrogen core network, which is designed as a kind of backbone network for a more differentiated hydrogen infrastructure connected to it, will not reach the same level of complexity as is the case with Germany's natural gas transmission network. Nevertheless, the planned structure for the core network shows a

considerable degree of complexity. For example, the informal draft by FNB Gas e.V. for the joint application from the transmission system operators for the hydrogen core network exhibits a fine-grained network topography characterised by numerous cross-connections and mesh points. Main pipelines that would be essential for supplying certain areas are not obviously identifiable, or at best to a very limited extent at local level. On the contrary, it is apparent that many paths and alternative routes will be available for dispatching in order to transfer volumes of hydrogen from one location in the core network to another. The many connections and possible combinations of points also suggest that there will be considerable interactions between different transport requests and that – much like the natural gas transmission network – the physical hydrogen movements will bear only little relation to the virtual transports. In light of its experience, therefore, the Ruling Chamber assumes that any attempt to allocate transport costs on a clearly separated basis will not be feasible in the hydrogen core network either, and for this reason a flat-rate, uniform postage stamp tariff in this case, too, offers the greatest degree of cost-reflectivity that can be achieved in a system of this nature with the information tools available.

Entwurf für das Wasserstoff-Kernnetz



Legend: Draft plan of hydrogen core network

Repurposed pipeline

Newly constructed pipeline

Source: FNB Gas e.V., <https://fnb-gas.de/wasserstoffnetz-wasserstoff-kernnetz/>



Source: FNB Gas e.V., draft of the joint application for the hydrogen core network dated 15 November 2023, annex 4,

https://www.bundesnetzagentur.de/DE/Fachthemen/ElektrizitaetundGas/Wasserstoff/Kernnetz/Downloads/Antragsentwurf_FNB_Anlage4.pdf?__blob=publicationFile&v=2

50 The Ruling Chamber is aware that the core network will not exhibit this degree of complexity from the outset but will only be built and enter operation step by step in the course of a number of years. In the early phase of network operation, during which the first capacity marketing will take place, the transports are still likely to be carried out in unconnected although rapidly expanding isolated networks, which will then gradually be connected to each other. The Ruling Chamber bases its deliberations on the intended target state of the network, however, and is already orienting the defined tariff methodology towards this now. In the highly dynamic phase of network ramp-up, in which the structure of the infrastructure will continually change and expand, constant readjustment of the pricing system for the sake of a regulation that is supposedly perfectly attuned to the actual state of the network that exists at any one time but is always only transitional would lead to perpetual fluctuations in the network tariffs that would be barely predictable for the network customers and would appear arbitrary. Moreover, it appears to make little sense operationally to design a supposedly optimum tariff system for an interim state that from the ex ante perspective can at best be anticipated in outline form and to subject it to constant review until the core network has reached its provisional end state. The Chamber has therefore decided, in the interest of a system that is reliable and furthermore predictable for the customers, to specify a methodology now that takes account of the requirements of the network situation that are expected in a number of years' time and will then persist on a lasting basis.

4. Further prerequisites pursuant to Article 17 Gas Regulation

51 As the postage stamp tariff is applied to all network customers equally, it is non-discriminatory. Equal treatment can only be discriminatory if unequal treatment would be appropriate for objective reasons. However, such reasons could at best be found in different levels of cost causation by the individual network customers. As already explained, however, no reliable statements can be made on individual cost causation in a complex entry-exit system.

52 For the same reason there is no instance of undue cross-subsidisation here. This would be the case if individual users or user groups were required to bear costs that are caused by other users or user groups, as a result of which the latter would be unreasonably advantaged. It is impossible, however, for unreasonable preferential treatment of this nature to arise if cost allocation is cost-reflective according to the criteria applicable to the network structure under consideration.

53 The postage stamp tariff promotes efficient hydrogen trading and facilitates competition, because it ensures that all network customers are able to transport hydrogen on the same terms and/or at the same cost. As a consequence, every market participant can participate in the market in the same way regardless of their location.

54 There is no restriction of market liquidity, precisely because market access is simplified as described above. Trade across the borders of different hydrogen networks is not distorted either. A distortion of trade can only arise if prices are applied that deviate from a price that is actually appropriate and have a negative influence on trade as a result. As shown above, however, the postage stamp tariff is, in substance, appropriate and can therefore have no distorting effect on trade.

5. Possibility of a postage stamp tariff pursuant to Article 17(5) Gas Regulation

55 Furthermore, according to Article 17(5) Gas Regulation a Member State with more than one network operator within an entry-exit system may stipulate a uniform network tariff in order to establish a level playing field in terms of competition between the network users if an approved network plan is in place and a balancing mechanism between the network operators is created. The German hydrogen core network will include the networks of a number of network operators. Provision for the requisite balancing mechanism is set out in operative part 5 of this decision. Approval of the network plan will be granted with approval of the core network by the Bundesnetzagentur in accordance with section 28q(8) EnWG or by determination in accordance with section 28q(3) EnWG, which had not yet taken place by the time this decision was adopted. Even if the formal prerequisites for the application of Article 17(5) Gas Regulation are therefore not yet in place at present, the provision does reflect a general idea of the European legislature according to which the establishment of a level playing field in terms of competition constitutes a commendable regulatory objective which may also be pursued irrespective of considerations of cost-reflectivity or other regulatory principles. The German legislature has indicated a decision for a uniform network tariff with section 28r(1) sentence 4 EnWG, even though according to section 28r(6) sentence 1 EnWG this is not binding for the Ruling Chamber. The Ruling Chamber also considers the establishment of a level playing field for the users of the hydrogen core network to be an important objective in order to promote a rapid market ramp-up, especially as the payback mechanism envisaged in operative parts 3 and 4 will only prove successful if a certain number of customers enter the market swiftly and participate in financing the network. This applies all the more in light of the fact that according to the above deliberations a uniform network tariff is in any case to be viewed as an appropriate and cost-reflective tariff methodology for the core network.

6. Publication

56 The hydrogen core network operators publish the tariff no later than 1 November of the preceding calendar year. This is intended to ensure that information about future prices is made available to the network customers at an early stage. The chosen date, which is relatively late compared to

the publication of the tariffs for the natural gas transmission network, results from the particular nature of the cost review for the hydrogen core network. If completed on schedule, the approvals for the network operators' costs pursuant to operative part 7(h) will be available by 30 September each year. The network operators then must form the joint tariff on the basis of the approved costs, a process for which, in light of experience in the natural gas sector, several iterations are necessary, which is why it takes a certain amount of time. The Ruling Chamber considers a period of one month between the availability of the cost approvals and the publication of the tariffs to be an appropriate compromise between the time required by the network operators and the information needs of the market. During the consultation process, however, it became clear that large parts of the market consider it necessary for publication to take place significantly earlier so that they can plan with confidence and take account of the price level in contracts on which they are based. Given the procedural steps described above, the Chamber can do nothing to redress this situation for the time being. That said, it should be pointed out that the factual preconditions for transferring the existing system to different models of cost or tariff approval are likely to be in place anyway with the ending of the amortisation period, due no later than 2055, and the transition to a tariff that covers costs directly (but possibly also at an earlier date, if building of the core network is completed and the aimed-for level of network usage is reached), as a result of which the need for annual cost review procedures could be removed and hence scope would arise for the due dates to be adapted to the circumstances familiar at the present time from the natural gas transmission network. Until these developments take place, at a time still well in the future, the Ruling Chamber does not see the uncertainties regarding the tariff level. For the time being there will be a ramp-up tariff determined *ex ante* that will ensue from decisions by the Bundesnetzagentur with sufficient advance notice (even in the event of adjustment within the scope of the revision mechanism). The only factor of uncertainty remains the regular inflation adjustment, which the market is likely to anticipate very easily.

- 57 If any changes are made to the level of the tariff retrospectively, the publication must be corrected without delay. This relates in particular to cases in which assumptions regarding the level of network usage have to be updated because of near-term information or cost approvals are available later than envisaged. There is no commitment to the publication being binding in a similar way to Article 12(3) in conjunction with Article 29 of Regulation (EU) 2017/460. That said, within-year adjustment in the course of a tariff period that has already started is not permissible. Any imbalances arising from this must be dealt with exclusively through the comparison between forecasted and actual values pursuant to section 14(1) WasserstoffNEV.

III. Intertemporal cost allocation mechanism (operative parts 3 and 4)

58 According to section 28o(1) sentence 3 EnWG, as a general rule a hydrogen network operator's costs are calculated annually on the basis of the expected costs for the following calendar year and the difference between the revenues generated and the actual costs from previous years and are redeemed through tariffs; details in this regard are derived from WasserstoffNEV. However, in derogation of the above, section 28o(3) sentence 1 in conjunction with (2) para 3 EnWG allows the Bundesnetzagentur to establish regulations that tariffs that are needed to meet all the necessary annual costs of network operation will not be collected by the network operators in full during market ramp-up and that the proportion that is not collected will not be taken into consideration in tariffication until a later date. Section 28r EnWG sets out these provisions for the core network in more concrete terms. Pursuant to section 28r(1) sentence 2 EnWG, the Bundesnetzagentur has the obligation under section 29(1) EnWG to establish an intertemporal cost allocation mechanism that enables the hydrogen core network to be financed by 31 December 2055. In order to facilitate the swift ramp-up of the hydrogen market in the Federal Republic of Germany and reach the objective of section 28q(1) sentence 2 EnWG, pursuant to section 28r(2) sentence 1 EnWG the Bundesnetzagentur is required to set a ramp-up tariff within the framework of the design of the intertemporal cost allocation mechanism. According to section 28r(2) sentence 2 EnWG, determination of the ramp-up tariff is intended to ensure that the amortisation account pursuant to section 28r(3) sentence 2 EnWG is balanced by 31 December 2055 and to take account of the effects of the ramp-up tariff on demand for transport capacity in the hydrogen core network. If the revenues generated through the calendar-year ramp-up tariff deviate from the hydrogen core network operators' aggregated approved costs, according to section 28r(3) sentence 1 EnWG the Bundesnetzagentur must calculate the difference between the approved costs and revenues generated from tariffs for each hydrogen core network operator every year, taking account of financial offsetting in accordance with section 28r(1) sentence 8 EnWG. According to section 28r(3) sentence 2 EnWG, this difference is to be debited from or credited to an amortisation account that is managed by an account-keeping body on behalf of the Federal Government, whereby in the case of a difference that is chargeable to the amortisation account corresponding payments are made by the account-keeping body commissioned by the Federal Government to the respective hydrogen core network operator and in the case of a difference in favour of the amortisation account corresponding payments are made by the respective hydrogen core network operator to the account-keeping body commissioned by the Federal Government. The Bundesnetzagentur also has the right to deviate from most of these provisions in accordance with section 28r(6) sentence 1 EnWG. However, the Ruling Chamber has made use of its authority to issue determinations from section 28o(3) sentence 1 in

conjunction with (2) para 3 EnWG by establishing an intertemporal cost allocation mechanism corresponding to section 28r(1) and (2) EnWG.

1. Need for an intertemporal cost allocation mechanism

59 The background to these provisions is that, in comparison with the established regulated network sectors of electricity and gas, in the hydrogen core network in the coming years a particular situation will apply in which a stable state of ongoing network operation does not yet exist but rather that the network will be built up step by step and the purchase market for the transport capacity on offer still has to be created as more and more industrial consumers gradually switch to hydrogen in the course of decarbonisation and additional downstream hydrogen infrastructure is created as and when appropriate. A network tariff that is formed according to general rules and is aimed at covering costs in the near term, as envisaged in operative part 2, causes specific problems in a situation of this nature. In the first calculation periods it is foreseeable that only an extremely small number of customers entering the market at a very early stage will use the core network. At the same time, however, very high costs for investment and for ongoing operation will arise for the network from the outset. Were these high costs to be passed on in full to the small number of network customers, this would lead to enormously high specific tariffs. It can be assumed that such a high tariff burden would have a prohibitive effect and make it uneconomic for potential customers to use the network. Consequently there would be no expectation that further network customers who could participate in financing the network would enter the market in the subsequent years. Since no additional customers would be expected, the network would remain permanently unattractive and it would never attain a state in which it could sustain itself economically.

2. Key content of the provisions

60 In order to remedy this situation, in its role as an independent regulatory authority the Ruling Chamber has decided, in the due exercise of its discretion but in its practical outcome essentially in line with the legislative target provisions of section 28r EnWG, to establish a special regulation as a transitional arrangement for the market ramp-up phase. Instead of a tariff that covers costs (directly at the time), at first a special ramp-up tariff specified by the regulatory authority will be applied. The purpose of this ramp-up tariff is to provisionally cap the prices for capacity at a level that can still be considered marketable and does not have a deterrent effect on potential customers of the core network. As a result, however, by the very nature of this arrangement a discrepancy arises between the costs caused by the network and the revenues that can be generated from application of the ramp-up tariff vis-à-vis the customers. The concept therefore envisages that

those costs that are not initially covered by tariffs will be collected from future customers at a later date when the level of usage of the network is higher,

To this end, the difference between the approved costs and the revenues generated from the ramp-up tariff is recorded in an intertemporal cost allocation account. This account is not identical to the amortisation account stipulated in section 28r(3) sentence 2 EnWG, which is a Federal Government funding instrument positioned outside the scope of the regulation but which serves a similar purpose in the regulatory context and as a rule should have the same account balance in terms of the amount held. Participation in the funding mechanism is not a precondition for participation in the intertemporal cost allocation account.

3. Envisaged development of the intertemporal cost allocation account

61 It is to be expected that the account balance will initially grow rapidly in the first few years, given that the revenues will still be relatively low. If more customers join the network and participate in financing in the course of time, this will lead to the account balance growing at a lower rate. If market ramp-up is successful, at some stage a point will be reached as of which the revenues generated from application of the ramp-up tariff will be sufficient to cover the network costs of the year in question, and the network will thus be in a position to sustain itself economically. This point marks the beginning of the phase when the account balance is reduced. The ramp-up tariff will continue to be retained for the time being, even though by then it will actually be above the level needed to cover the current costs in each case. The surpluses in revenue generated in this way will subsequently be used to reduce the balance further. In this way the gaps in financing during the start-up phase will be closed retrospectively using the tariffs from future network customers. The ramp-up tariff will remain in force until the intertemporal cost allocation account reaches a balance of zero again. The payback period will thus be completed, and will be followed by a change in system to a standard cost-covering tariff pursuant to operative part 2.

62 Ideally, a development pathway should be created in which there is just one turning point, when the cost allocation account permanently switches from the build-up phase to the wind-down phase. In practice, however, in certain economic situations it is also possible that there will be a multi-year transitional phase during which the account fluctuates between these two states. The emergence of any such situations should not, though, have a detrimental impact on the proper functioning of the system described above.

4. Intertemporal cost-reflectivity

63 Article 5(3) sentence 1 Gas Regulation expressly allows the initial costs of the hydrogen network to be collected over an extended period of time in order to involve future network users. Yet even regardless of this provision, in the opinion of the Ruling Chamber this method of tarification is cost-oriented and cost-reflective within the meaning of Article 17(1) sentence 1 Gas Regulation. This is because the expected network customers in the future are also the drivers of the initial network costs to a substantial extent. The core network will be built by the network operators against the background that the emergence of significant demand for hydrogen as a fuel and raw material and, resulting from that, a steady rise in demand for the transport of hydrogen is to be expected as the ending of the use of fossil fuels continues to advance as a consequence of legislative provisions on climate change mitigation and through the use of various state support measures for the sustainable transformation of the economy. The technical design of the core network is geared towards these expectations. If the transport demand expected to arise in the immediate future were to be taken as the sole basis, the core network in its planned form would be massively overdimensioned. It cannot be sustained economically by the initial network customers in this form and far exceeds their needs in terms of its capacity potential. The beneficiaries of this discrepancy are solely those customers starting to use hydrogen years later, who upon their entry into the market will find a network that is sufficiently developed to meet their needs and if that were not to be the case would probably in many instances not enter the market at all. Consequently it appears appropriate that they should make a financial contribution not only to the current network costs at the time when they use the network themselves but also to the preceding costs of the infrastructure, which was set up to suit their interests from the outset. This is therefore a system designed to guarantee intertemporal cost-reflectivity. Although the Ruling Chamber does not assume that a mandatory principle of intertemporal cost-reflectivity can be read into Article 17 Gas Regulation, it does in any case see the principle as being covered by the provisions contained in that article. This is particularly true in light of the circumstance that financing the core network from network tariffs and without making use of sovereign support does not appear possible in any other way, because a cost-oriented tariff methodology without an intertemporal component, as outlined above, would lead to prohibitively high tariffs and hence it is likely that the network would not be used at all.

5. Expert report on the viability of the financing model

64 Pursuant to section 28r(1) sentence 2 EnWG, in establishing the intertemporal cost allocation mechanism the Ruling Chamber must take account of an expert report produced on behalf of the Federal Government to validate the viability of the financing model set out in the following, whereby the regulatory component of the financing model mentioned largely corresponds to the model

established here. To this end, the Ruling Chamber consulted and took account of the "Expert report on the validation of a concept for private-sector financing of the development of a hydrogen core network with subsidiary state safeguarding" by the Fraunhofer Research Institution for Energy Infrastructures and Geothermal Energy IEG of 14 February 2024³. In their analyses, the consultants showed that, given realistic development of both network costs and the demand for transport capacity, successful financing of the core network and balancing of the amortisation account (which essentially corresponds to the intertemporal cost allocation account for the matters of interest here) appears to be possible by 2055 with the instruments envisaged in this decision and can be expected to be achieved. Moreover, they point out that further improvements to the financing situation can be achieved by making readjustments to integrated network development planning at a later date.

65 Part of the expert report involved validating whether the financing model envisaged by the Federal Government and in particular the intertemporal cost allocation mechanism are suitable for financing the costs of hydrogen ramp-up from network tariffs in full and thus ensuring ramp-up by the private sector. This entailed the consultants initially examining the calculation tool used as a basis by the natural gas transmission system operators, and subsequently modifying and extending it to include scenarios that also take account of more adverse ramp-up assumptions. The consultants first of all come to the conclusion that the costs for the hydrogen core network envisaged at that time were adequately described by the natural gas transmission system operators and that the calculations were correct. The Ruling Chamber arrives at the same outcome in its review.

66 The starting point for the subsequent analyses by the consultants is what is referred to as the basic ramp-up scenario. This firstly has the purpose of mapping a functioning ramp-up of the hydrogen sector and corresponds to the T45_Strom (T45_electricity) scenario from the BMWK long-term scenarios, which has been delayed by three years. The assumption for the basic ramp-up scenario is that as of 2038 the hydrogen core network will reach its maximum assumed offtake capacity of 86.5 GW and an input capacity of 93.7 GW. Only yearly capacity bookings are used as the basis for analysis in the expert report. Any within-year or conditional products or discounts were abstracted. Furthermore, the expert report was explicitly not required to calculate the level of ramp-up tariff that would lead to a balanced amortisation account in 2055. Instead it serves the purpose of pointing out sensitivities in the event of changes to individual parameters (costs,

³ https://www.bmwk.de/Redaktion/DE/Downloads/G/gutachterliche-validierung-des-finanzierungsmodells-zum-aufbau-eines-wasserstoff-kernetzes-bei-subsidiarer-staatlicher-absicherung.pdf?__blob=publicationFile&v=6

demand/capacity trends) with respect to the basic ramp-up scenario. In this process the consultants varied the ramp-up tariff in 5-euro steps and examined when the amortisation account would be balanced in each case. In the basic ramp-up scenario, if a tariff of €15 per kWh/h/a is set, balance would be achieved in 2048 – consequently seven years before the targeted date of 2055. In detail, the following changes and their impacts were examined, all other things being equal:

Scenario	Ramp-up tariff in €/kWh/h/a	Year of balance
Delay ramp-up by a further three years	20	2048
75% network tariff discount for hydrogen storage facilities for input and offtake	20	2054
Fixed increases in construction costs within investment costs of 30%	20	2044
Annual increases in construction costs of 2%	15	2051
Fixed increases in construction costs of 30%	15	2050
Annual increases in operating costs of 2%	15	2049
Residual book values of converted gas pipelines amount to 30% of costs of new build instead of 25%	15	2050
Loss of IPCEI funding amounting to 55%	15	2050
Cumulative effect of all the above scenarios (highly adverse scenario)	35	2050

67 In conclusion it is apparent that balancing of the amortisation account can be achieved between 2044 and 2054 with a ramp-up tariff of between €15 and €20 per kWh/h/a. The consultants consider this level of tariff to be fundamentally marketable. The scenario with the greatest impact on the amortisation account is the introduction of a network tariff discount at storage points amounting to 75%. However, whether there will be a discount and what level of discount may be applied will be subject to regulatory decisions by the Bundesnetzagentur. The Bundesnetzagentur will not take a decision that makes balancing the amortisation account unlikely. At the time of the expert report it was still unclear whether all projects will receive the envisaged IPCEI funding. Since then, however, financing of the projects has been secured, such that the "Loss of IPCEI funding" scenario can no longer occur – even if it would have had only minor impacts anyway. In the highly adverse scenario, on the other hand, in which all deviations are accumulated, balancing of the amortisation account before 2055 can only be achieved with a ramp-up tariff amounting to €35 per kWh/h/a. The consultants classify this tariff as being beyond the level that is marketable, which would result in failure of the financing model.

- 68 The Ruling Chamber considers it to be not unlikely that negative deviations from the assumptions of the basic ramp-up scenario will occur. This is foreseeable with regard to the construction costs, in particular, as a result of the inclusion of a relatively large project in the core network – something that did not become known until after the expert report was produced – of a magnitude that is still covered by the scenarios. It is also perfectly conceivable that some of the individual deviation scenarios that were examined will occur simultaneously. The Ruling Chamber does consider it unlikely, however, that all the scenarios will occur with the described intensity at the same time or that an individual scenario will occur with much greater intensity. Furthermore, it sees a considerable buffer between the forecasted balance between 2044 and 2051 (without considering the "Discount at storage facilities" scenario) and the target date of 2055.
- 69 The Chamber therefore considers it sufficiently probable that the financing model, with its intertemporal cost allocation mechanism, will lead to balancing of the amortisation account in 2055. In addition, it did not identify any methodological deficiencies in the expert report and therefore takes ownership of its contents with regard to the points that are relevant for this decision.

IV. Ramp-up tariff (operative part 3)

- 70 Determination of the ramp-up tariff in accordance with operative part 3 is part of the intertemporal cost allocation mechanism pursuant to section 28r(1) sentence 2 EnWG described in the previous section.

1. Payback period

- 71 The payback period constitutes a time-limited transitional arrangement. It begins on 1 January 2025, in other words when the provisions of this decision enter into force. It ends with the balancing of the intertemporal cost allocation account, in other words at the moment when the network costs that initially could not be collected through the ramp-up tariff have been financed in full through future network customers. Although the tariff system is geared to achieving this balance by 2055, the payback period may also end at an earlier or later date, depending on how the economy develops (even if ending at a later date, at least, is in actual fact likely to be prevented according to the current legal situation as a result of balancing in accordance with section 28s(1) EnWG).

2. Duration of the ramp-up tariff

72 The ramp-up tariff is set at a rate such that, taking all information available at the time of determination into account, balancing of the intertemporal cost allocation account and hence the ending of the payback period by 31 December 2055 appears probable. In this context the Ruling Chamber is aware that it is not possible to specify an ideal target date for the refinancing of the ramp-up costs objectively, based on technical criteria. As was established above, the principle of cost-reflectivity allows future customers to be burdened with costs from the past if those customers can be considered to be drivers of such costs. It does not follow from this, however, that it is necessary for the ramp-up costs to be precisely allocated to all those customers who can at least be identified as the partial drivers of the costs. This would not be possible in practice. The hydrogen core network will be built to be used for an indefinite period of time. Accordingly, based on the assumption that expansion of the network on the required scale would not take place at all without the intertemporal shift established here (see above), all future customers who emerge as network users up until the unforeseeable end of network operation would, without exception, have to bear a proportional share of the ramp-up costs (and in this case network operation means operation of the continuously renewed network as an entire system, not, for example, the sum of the individual fixed assets with entirely foreseeable depreciation periods). Shifting costs to "forever" in this way is neither practicable nor appropriate. The principle of intertemporal cost-reflectivity can therefore merely be used as justification for extending the time frame for refinancing on its merits, but does not provide much indication of its specific shaping. Since the "correct" period for allocating the costs cannot be deduced unequivocally in this way, the target date can only be set in rather general terms. In the opinion of the Ruling Chamber, on the one hand the period should be kept as short as possible, because the Ruling Chamber views the special provision on the payback period as an exceptional system for a tariff methodology that is fundamentally based on present worth costs and allows prompt return flows of funds, whereas perfect cost-reflectivity is not attainable anyway, even over the course of time. On the other hand the period must be long enough to enable the ramp-up tariff to be reduced sufficiently by extending the time frame of the return flows of funds such that it reaches a marketable level and that following a successful market ramp-up there is enough time remaining to be able to collect the ramp-up costs from the network customers in full. It can be predicted that several decades will be required for this.

73 In order to reach a compromise between these viewpoints, in section 28r(1) and (2) EnWG the legislature envisaged financing of the core network (what is meant here is financing of the costs from the payback period) until 31 December 2055, in other words within 31 years from the date regulation starts. The Ruling Chamber considers this target date to be a reasonable and appropriate solution – even though pursuant to section 28r(6) sentence 1 EnWG it could deviate from this date. It emerges from the expert report by the Fraunhofer Research Institution for Energy

Infrastructures and Geothermal Energy IEG of 14 February 2024 that, according to currently available information, full refinancing of the costs arising within this period is possible and probable. At the same time, bearing in mind risks and imponderables inherent in the system, it does not appear to be excessively long and merely offers an appropriate safety margin in order to ensure that refinancing will still take place in the event of certain unfavourable developments to the market or costs that were not predicted in such a form, provided that they do not assume dimensions that deviate quite substantially from current forecasts. Furthermore, according to the expert report it permits ramp-up tariffs of an order of magnitude which, in the opinion of the Chamber, is still within a range that does not have to be considered prohibitive. In addition, it does not appear unreasonable to assume a sufficiently close proximity to the ramp-up costs in the case of the customers using the core network within the first three years and then to set a boundary for the transition to a system that links only to present worth costs in each case. The Ruling Chamber therefore accepts the time frame set out by the legislature and thus establishes the congruence between regulatory intertemporal cost allocation and the state funding mechanism set out in sections 28r et seq EnWG. In this way at the same time it satisfies the target provision contained in section 28r(2) sentence 2 EnWG, since the function of the amortisation account mentioned there, which is part of the funding system outside the scope of the regulation, corresponds to the regulated intertemporal cost allocation account and should always show the same account balance in terms of the amount held, at least if the funding mechanism is implemented as envisaged in sections 28r et seq EnWG and the network operators actually participate in it.

- 74 Since the principle of intertemporal cost-reflectivity does not allow a clear deduction of which customers should still contribute to the ramp-up costs and which should no longer do so, as explained above, the Ruling Chamber assumes that as far as the legality of the methodology is concerned it is not important exactly how the intended target date is in fact achieved in practical implementation. In order to increase the probability of the target being reached, instead the Ruling Chamber expressly reserves the right to choose a ramp-up tariff which, with the inclusion of contingency mark-ups, according to current forecasts makes balancing the account a few years before 2055 appear more likely than failing to achieve a balance until after 2055.

3. Determining the level of the ramp-up tariff

- 75 The level of the ramp-up tariff will be set by a separate determination on the basis of section 28r(2) sentence 1 EnWG, and will initially apply unchanged for the entire duration of the payback period (notwithstanding the annual inflation adjustment in line with the overall consumer price index). When setting the ramp-up tariff, the Bundesnetzagentur will firstly have to take account of the expected development of the network costs. The more costs that the network creates and the

earlier that these costs arise, the greater the rate of rise in the balance held in the intertemporal cost allocation account during the start-up phase, in which only few revenues can be generated from a manageable number of customers, and consequently further costs arise in turn as a result of interest and compounding effects. Secondly, the Bundesnetzagentur will have to estimate the level of usage of the network over the course of time. The more transport capacity is marketed, the more revenues there will be to offset the costs and the more the rise in the account balance will be slowed, so that ultimately, if successful, it will fall again thanks to revenue surpluses and in the end the account will be balanced. The higher the ramp-up tariff is set, the sooner the costs will be balanced by revenues and the faster a balanced account will be reached, with a greater degree of certainty. At the same time, however, it is essential to anticipate the repercussions of the tariff level on the demand for capacity. The higher the ramp-up tariff, the more unattractive it becomes for potential customers to use the core network. If it is too high, it can have a negative impact on the level of network usage. In this case the effect will not be an increase in revenues but a reduction, making balancing the account and hence refinancing the network less likely. The very purpose of the intertemporal cost allocation mechanism, however, is to reduce the tariffs to a non-prohibitive level in order to facilitate financing. This is also underlined by section 28r(2) sentence 2 EnWG, according to which determination of the ramp-up tariff is supposed to take account of the effects of the ramp-up tariff on demand for transport capacity in the hydrogen core network. Between these conflicting priorities the Bundesnetzagentur will have to take as objective and appropriate a decision as possible on the basis of the information available at the time and a methodologically sound forecast. It will decide on the selection of scientific information tools to be used for this within the framework of the relevant determination proceedings.

4. Annual adjustment to the general price trend

76 Pursuant to section 28r(2) sentence 3 EnWG, the ramp-up tariff can be indexed annually using the overall consumer price index published by the Federal Statistical Office, especially in the event of cost increases in the construction of the hydrogen core network. The Ruling Chamber takes up this opportunity by determining that the tariff will be adjusted to match the current trend in price level each year using the aforementioned index. This will ensure that the tariff tracks general inflation and that there will be no creeping reduction in real purchasing power over the years, which, although it would be in the interests of the network customers and would counteract possible prohibitive effects of the tariff, could also jeopardise the prospects of reliably covering the expected increase in network costs caused by inflation. Furthermore, it is to be expected that the network customers' willingness to pay will gradually rise over time as general inflation advances, and hence there is no threat of the core network losing attractiveness as a result of its access

tariffs being adjusted in line with the general price level. The Ruling Chamber views the Federal Statistical Office's overall consumer price index as a suitable yardstick for mapping the expected price increases as it maps the trend in the value of money in Germany as a whole, and for the foreseeable future there is no sign of there being a better point of reference for the specific inflation effects, especially with regard to the operating costs of hydrogen networks.

5. Revision mechanism

- 77 Pursuant to section 28r(5) sentence 1 EnWG, the Bundesnetzagentur will conduct a review of the ramp-up tariff for the first time on 1 January 2028 and thereafter every three years. If, during this review, it establishes that the actual development of the hydrogen ramp-up or of the payback account is deviating significantly from the assumptions that formed the basis of the previous determination of the ramp-up tariff, it is required to adjust the ramp-up tariff in accordance with section 28r(5) sentence 2 EnWG by means of the determination pursuant to section 29(1) EnWG in such a way as to facilitate balancing of the amortisation account in accordance with section 28r(3) sentence 2 EnWG by 31 December 2055 through tariffs. Even though, as is the case for all elements of the intertemporal cost allocation mechanism, these provisions are also subject to the right to deviate as set out in section 28r(6) sentence 1 EnWG, within the scope of its discretion the Ruling Chamber has adopted the mechanism as intended by the legislature in this decision. However, it has chosen the development of the intertemporal cost allocation account as the point of reference for the ongoing review and not the development of the amortisation account because this is the only one that it can meaningfully review, as a constituent part of the regulatory framework. No practical difference arises from this, since the two accounts are economically equivalent.
- 78 Alongside the continuous adjustment of the ramp-up tariff in line with inflation, therefore, from 2028 onwards a revision mechanism will be regularly implemented in order to monitor whether the development of the intertemporal cost allocation account is roughly in line with the forecasts as originally predicted or whether the intended balancing of the account by 2055 appears to be in jeopardy. To this end, the analysis that formed the basis for the original determination of the ramp-up tariff will be conducted again, using the up-to-date information available at the time. A negative deviation from the original forecasts may arise for a variety of reasons. It is conceivable that the account balance will rise more than expected as a result of unforeseen increases in network costs because they are not offset to a corresponding extent by the revenues from the ramp-up tariff, which is static after adjustment for inflation. It is also conceivable that the transformation of the fossil fuel industry to a hydrogen economy will proceed more slowly than envisaged, for example because the price of hydrogen as a commodity does not fall to a sufficient extent, growth in

hydrogen production is sluggish or there is insufficient willingness to participate in the transformation among potential consumers, perhaps because state funding is no longer provided as a result of a shift in political priorities. Another scenario could involve the development of a more efficient renewable substitute for hydrogen as a consequence of surprising technological breakthroughs, causing a collapse in demand. In both cases the need for transport capacity would grow more slowly or would fall again, with the effect that fewer revenues than planned could be generated from network tariffs. Balancing the intertemporal cost allocation account could thus be delayed or even rendered entirely impossible.

- 79 If the new analysis reveals that, according to the latest information, balancing of the cost allocation account can no longer be considered probable if the current ramp-up tariff is retained, the tariff must be adjusted. To do this, a new determination must be issued which adheres to the same criteria as the original determination and which as a general principle, in turn, enshrines the tariff at a new level either permanently or until the ramp-up mechanism comes to an end. It can be adjusted again in the course of future revision processes if the relevant need to do so is established. The adjustment applies *ex nunc*. In normal circumstances any adjustment to the ramp-up tariff is likely to be an increase in order to enable higher revenues to be generated, thus offsetting one of the negative effects described above and stabilising the development of the account. However, it is also conceivable that situations will arise in which a reduction in the tariff may be indicated in order to increase the marketability of the network and improve the level of usage, with the aim, in turn, of increasing revenues. On the other hand, if it appears that retaining the current ramp-up tariff is likely to lead to the account being balanced at an earlier date than by 2055, it does not necessarily follow that there will be a requirement to reduce the tariff in order to extend the reduction of the account balance to 31 December 2055 as originally planned. As described above, it is not the aim of the intertemporal cost allocation mechanism to ensure that any specific customer group bears the burden, in pursuit of supposedly precise cost-reflectivity.
- 80 The revision process will be carried out in a regular three-year cycle. This will guarantee that the intertemporal cost allocation account is subject to continuous monitoring and will ensure that any undesirable developments are noticed in good time and trigger an appropriate response. The Ruling Chamber assumes that a shorter interval is not necessary because under normal circumstances it is not likely that such a significant and unforeseen misalignment will arise during this time frame as to require a correction any sooner in order to avert major problems. Furthermore, the Chamber is seeking to provide the market with the greatest possible degree of dependability with regard to the tariff level during the particularly sensitive payback period, which is why it would like to avoid constant discussions and uncertainty about possible readjustments, unless they prove necessary for the reasons outlined above. With the same considerations in

mind, it has provided for an automatic mechanism for adjusting the fundamentally unchangeable (after adjustment for inflation) tariff only in the event of a critical forecast regarding the likelihood that the objectives will be achieved, and has not provided for regular redetermination that would bring about constant readjustments to correct even the most minor forecast deviations. Should a need for swift intervention in the system arise as a result of unpredictable disruptive events, for example, and the revision cycle envisaged here does not suffice, the Chamber would in fact not be prevented from enabling a correction at shorter notice if necessary by means of a change to this determination. However, if actual economic developments correspond at least roughly to the initial forecasts, ideally no adjustment would be made throughout the entire payback period and the ramp-up tariff would remain the same continuously from 2025 to 2055 (in terms of real purchasing power).

81 During the consultation process there were some calls for an absolute limit to be set for tariff adjustments, but this does not appear very practicable to the Ruling Chamber. With a mechanism that is designed to last for several decades, it is likely to be barely feasible to calculate a value that can no longer be considered marketable across the entire period because in the long term it is impossible to predict either inflation or the willingness of customers to pay, which among other things is influenced by raw material prices, the cost of alternative energy sources and the chances of profit. The network customers are overburdened anyway as a result of the principle of the revenue-maximising tariff (more on this below). Besides, linking the ramp-up tariff to gas network tariffs, as was proposed in some of the comments, is one option among several, which like all others must also be judged by whether it makes balancing the cost allocation account by 2055 likely or unlikely according to the forecasts available at the time the decision is taken. Involving the market participants, as was demanded by many consultees, is obligatory if for no other reason than because a consultation process must be carried out for the purpose of setting or adjusting the tariff as is the case with all general rulings by the Bundesnetzagentur. The indicative statement on the further development of the tariff, which was likewise called for by some consultees, is superfluous inasmuch as every ramp-up tariff (with the exception of the revenue-maximising tariff) is designed to bring about a balancing of the account by 2055 and hence according to the expectations applicable at the time of issue will never have to be adjusted.

6. Revenue-maximising tariff

82 If balancing the amortisation account is not achievable by 31 December 2055 in the opinion of the Bundesnetzagentur, pursuant to section 28r(5) sentence 3 it should set the ramp-up tariff sufficiently low as to facilitate the highest possible overall revenue. Within the scope of its discretion, the Ruling Chamber also considered this target provision by the legislature to be

reasonable and accepted it. Given highly unfavourable developments for one or more of the reasons described above, it is possible that a situation may arise in which it is likely that balancing of the intertemporal cost allocation account by 31 December 2055 will no longer be achievable at all. This would be the case if considerable cost increases and/or persistently lower or repeatedly collapsing capacity demand were to indicate such a noticeable increase in the ramp-up tariff in order to stabilise the account that the tariff level would thus have a prohibitive effect and subsequently revenues would actually shrink yet further because of the loss of bookings caused by the increased tariff. A particularly salient, although from today's standpoint unforeseeable example of that would be for instance the emergence of a more attractive alternative technology whose availability would lastingly nullify demand for hydrogen for a large part of the market and render the core network largely superfluous. In such a case the Bundesnetzagentur could not take a decision that satisfied the criteria set out in operative part 3 sentence 7 because there would be no ramp-up tariff that would be likely to lead to the intended result. In this case it will instead set a tariff that according to the available forecasts is likely to maximise revenues. The tariff will therefore be set at a level that, as far as can be assessed, will generate the highest revenues depending on the price/quantity combination. The request not to impose an excessive burden on network customers in the event of a crisis, expressed in many comments during the consultation process, is therefore already taken into account. This is because the withdrawal of market participants that are no longer able or willing to afford the high network tariffs would lead to the very decline in capacity demand and resulting revenues that the revenue-maximising tariff is actually designed to prevent. It will therefore always be limited to the precise level at which network customers will not, as far as can be foreseen, be forced out of the market, or at least not to a relevant extent.

83 In an only moderately unfavourable scenario, balancing of the cost allocation account could still remain achievable by a later date than 2055; in practice, however, this would no longer occur because of the balancing provision pursuant to section 28s(1) sentence 1 EnWG. In a highly unfavourable scenario, as of a certain point in time the accumulating compound interest could reach such a scale that there is no longer any chance at all that it could be offset by realistically achievable revenues. In the latter case, refinancing of the core network would have finally failed and the infrastructure would be permanently economically unviable without state support. The Bundesnetzagentur does not have any suitable instruments to avert a (hypothetical!) development of this nature, should it actually come to pass. Regulation can only ensure that network costs are appropriately shared within an existing market; it is not, however, able to remedy structural and permanent underfinancing of infrastructure that is not sufficiently in demand on the customer side. Application of the revenue-maximising tariff facilitates the greatest possible degree of private-sector self-financing of the core network that is still achievable in such a situation. In this

eventuality, policymakers may take the signal inherent in such a decision as an opportunity to draw corresponding conclusions and if applicable make additional funding available for the network operators or, if the relevant conditions apply, initiate the discontinuation of the state funding mechanism pursuant to section 28r(7) EnWG.

7. Publication

84 During the payback period, the network operators do not publish the (in this case merely hypothetical) tariff pursuant to operative part 2, but the ramp-up tariff pursuant to operative part 3 instead. The Ruling Chamber considers the publication obligation to make sense, for one reason because the tariff is not identical to the value that it set as a consequence of it being constantly adjusted in line with the overall consumer price index. Furthermore, the network customers should be able to view future prices directly from the network operators and not have to refer to decisions by the Bundesnetzagentur.

V. Intertemporal cost allocation account (operative part 4)

85 If the revenues generated through the calendar-year ramp-up tariff deviate from the hydrogen core network operators' aggregated approved costs, according to section 28r(3) sentence 1 EnWG the Bundesnetzagentur must calculate the difference between the approved costs and the revenues generated from tariffs for each hydrogen core network operator every year, taking account of financial offsetting in accordance with section 28r(1) sentence 8 EnWG (ie in this case in accordance with operative part 5). The differences are recorded in a payback account within the framework of the state funding mechanism in accordance with section 28r(1) sentence 2 EnWG. However, there is also a need for a comparable account as part of the regulatory system (in other words the intertemporal cost allocation mechanism pursuant to section 28r(1) sentence 2 EnWG in the narrower sense). The Ruling Chamber therefore introduces an intertemporal cost allocation account with this decision.

86 The intertemporal cost allocation account serves to document the amounts which are initially not collected in the interests of having a marketable ramp-up tariff and which are therefore permitted to be made up for later vis-à-vis future network customers. Its function is roughly comparable to that of the regulatory account pursuant to section 5 ARegV, but it is designed for a significantly longer-term shift in revenues. Moreover, there is only one account for all network operators, although in economic terms the amount held in the account can be assigned pro rata to the individual operators of the core network.

1. Amounts to be recorded

87 The amount to be recorded on the account is always based on the revenues that the individual network operators are likely to generate according to the forecasts that they carry out among themselves in order to set the annual balancing payments, and taking account of precisely those balancing payments in the calendar year in question. The Ruling Chamber has decided against choosing the actual revenues and the resultant differences with respect to the approved network costs as the reference point, even if at first glance this appears to be more appropriate. It is always the case that the actual revenues for a calendar year can only be established after the year has come to an end. This would have the effect that the system change from the payback period to the cost-covering tariff pursuant to operative part 2 when the account is balanced would have to take place after a delay, because the balancing of the account could only be established retrospectively. It therefore appears to make more sense to anticipate the expected balance in good time and to gear the terms of the account to this arrangement from the outset. It should not be possible for imbalances to arise systematically in this way because of imprecise forecasts, because forecast errors also influence the target/actual cost comparison pursuant to section 14(1) WasserstoffNEV and give rise to corresponding corrections in the subsequent years. Precise balancing of all forecast uncertainties by the end of the payback period is not necessary either, because minor residual differences in one direction or the other can still be processed by way of the target/actual cost comparison even when the future tariff methodology applies in the stable state. One non-regulatory side effect that is not relevant to the Chamber's deliberations is that account balances calculated in advance can be used as the basis for payments within the framework of the state funding mechanism pursuant to section 28r(3) EnWG.

2. Voluntary renunciation

88 As a general rule, all amounts that are recorded in the intertemporal cost allocation account can also be converted into network tariffs later and be collected from the network customers. This follows from the principle of cost orientation, which not only forbids the imposition of an unjustified burden on network customers, it also rules out a tariff methodology that prevents the collection in full of approved, operationally necessary costs. In particular, the regulation therefore does not in itself make provision for any form of deductibles on the part of the network operators, as envisaged within the framework of the state funding mechanism in section 28s(3) EnWG. That said, consideration for acquired account balances in the tariffs can be definitively dropped provided that the network operator renounces this voluntarily. In section 28r(4) EnWG the legislature decided to make participation in the state funding mechanism dependent on a network operator irrevocably renouncing the right to collect the deductible through tariffs if the account is balanced by the state. The aim of this regulation is plainly to have the effect that the network operator should back up the

comprehensive state safeguarding of its risks to avoid misplaced incentives with a certain residual risk of its own, which should result in an actual economic disadvantage if it comes to pass and should not be counteracted by regulatory opportunities for collection from the network customers at a later stage. It is not up to the Ruling Chamber to evaluate this legislative decision because it relates exclusively to the funding regime, which is beyond the scope of the regulation. It does, however, implement its actual effects for regulatory purposes by removing amounts covered by corresponding declarations of renunciation from the intertemporal cost allocation account. The Ruling Chamber assesses amounts that a network operator has renounced in accordance with section 28r(4) EnWG as having lapsed, provided that the amortisation account is balanced by the Federal Government in accordance with section 28s(1) EnWG. No separate declaration of renunciation vis-à-vis the Bundesnetzagentur is required for this. The corresponding amounts are initially also recorded in the intertemporal cost allocation account, like all others, and are only deleted by the Federal Government again when the amortisation account is balanced, because prior to this it is not possible to establish whether the condition for renunciation will be met at all. Beyond the deductible provided for by law, no reasons for a declaration of renunciation are evident to the Ruling Chamber, but they are theoretically conceivable and thus not ruled out.

3. Interest

89 Contrary to the consultation version of this decision, there is no provision for interest to be paid on the intertemporal cost allocation account. Interest would be necessary if the network operators were to suffer an economic disadvantage from the delay in recovering the costs that have arisen for them. However, this is not the case because in practice the required liquidity accrues to them without delay through other routes. Section 28r(3) EnWG, for example, provides that the network operators receive a reimbursement of the differences between approved costs and generated revenues directly from public funds, provided that they participate in the state funding mechanism. These reimbursements are charged to an amortisation account, the costs of which (including interest) for the envisaged account-keeping body are billed to the core network operators. An interest payment is thus already included in the network operators' costs that have to be approved. Additional interest on the intertemporal cost allocation account would lead to an unjustified double interest payment.

4. Balancing the account

90 The intertemporal cost allocation account is considered balanced when it reaches an amount of zero again after the start of the ramp-up period. As of this point in time, the ramp-up costs have been fully met by delayed revenues from network tariffs, and the establishment of the core

network, financed by the private sector, was successful. The special regulations for the payback period have thus fulfilled their purpose and cease to have effect. A switch to a standard cost-covering tariff is carried out pursuant to operative part 2.

91 If the amortisation account is balanced by the Federal Government in accordance with section 28s(1) EnWG, the network operators are released from obligations to make payments to the funding body. In this case it would not be possible to justify the situation if the network operators, even though their gaps in financing from application of the initially non-cost-covering ramp-up tariff have already been covered by the Federal Government, were able to collect the corresponding amounts again from the network customers. In such a case, therefore, too, the intertemporal cost allocation account is considered to be balanced.

VI. Balancing mechanism (operative part 5)

92 Pursuant to section 28o(3) sentence 1 in conjunction with (2) para 5 EnWG, the Bundesnetzagentur can establish regulations on economic balancing mechanisms between the operators of hydrogen networks. For the hydrogen core network, section 28r(1) sentence 8 EnWG explicitly stipulates that excess revenues or shortfalls in revenue arising for the individual hydrogen core network operators through the uniform tariff throughout Germany must be balanced by means of financial offsetting between the hydrogen core network operators. Pursuant to section 28r(6) sentence 1 EnWG, this regulation is also at the disposal of the Ruling Chamber. However, the Ruling Chamber has exercised its discretion in such a way as to introduce the balancing payments between the network operators described in operative part 5, which constitute an economic balancing mechanism or financial offsetting within the meaning of the stated provisions.

1. Function

93 The balancing mechanism pursuant to operative part 5 is required because the revenues generated from the postage stamp tariff (whether according to operative part 2 or 3) do not reflect the approved costs of the individual network operators. A network operator whose hypothetical individual tariff lies below the postage stamp tariff will collect more through the postage stamp tariff than it needs to cover its approved costs. A network operator whose specific tariff lies above the postage stamp tariff will not be able to cover its approved costs through the postage stamp tariff. Accordingly, the aim and purpose of the balancing mechanism is to balance the core network-wide revenues from capacity bookings in such a way that as a general principle each network operator is able to cover its approved costs through balancing payments between the network operators when marketing the volumes of sales used as the basis for tariffication.

94 This applies at least for the period after the ramp-up in which the generated revenues in total actually correspond to the current total network costs applicable at the time. During the payback period these two variables are not identical, which is why the balancing mechanism is not capable of establishing precise coverage of costs (immediately at a specific time) at the level of the individual network operator. Instead, the balancing mechanism is meant to ensure that each network operator receives the exact share of the revenues generated by the entire core network that corresponds to its proportional share of the total costs of the core network. In effect, therefore, each network operator must bear a temporary shortfall in the coverage of its network costs in equal proportion and contributes to the build-up of the amounts recorded in the intertemporal cost allocation account to an extent that corresponds to its cost-related significance. During the phase when the account balance is reduced, the network operators participate in equal proportion in collecting the delayed revenues.

2. Calculating the annual balancing payment

95 The balancing payments are determined according to the following formula:

$$Ausgleich_i^t = \frac{K_i^t}{\sum_{i=1}^n K_i^t} \cdot \sum_{i=1}^n E_i^t - E_i^t$$

where: K_i^t = approved costs of network operator i in year t ,

E_i^t = collected tariffs of network operator i in year t

[Ausgleich = Balance]

For each network operator, therefore, the percentage share of their approved network costs for the calendar year in question (t) is determined on the basis of the total approved costs of all network operators (number n) for the calendar year. This is multiplied by the total of all revenues from network tariffs from all network operators arising from the application of the joint tariff to the capacity marketing forecasted for the calendar year in question. The annual balancing payment is then obtained for each network operator from the difference between the value calculated as above and the revenues of the respective network operator in the calendar year in question on application of the joint tariff to its forecasted capacity marketing.

96 For example, assuming $n=2$, if network operator A in an early stage of the payback period has approved costs amounting to €100 and expected revenues from tariffs amounting to €25, and network operator B has approved costs amounting to €50 and expected revenues from tariffs

likewise amounting to €50, network operator A has a balancing claim amounting to €25 while network operator B has a balancing obligation amounting to €25. In this way total revenues are divided up such that network operator A in the final analysis receives two thirds of the total revenues – corresponding to its share of the costs.

- 97 The economic logic behind the balancing mechanism corresponds to that from the AMELIE determinations developed for the natural gas transmission network. If the method of calculation proposed there were applied to a tariff pursuant to operative part 2, arithmetically the same balancing amounts would be obtained. The more abstract means of representation in this decision was necessary in order to be able to map the divergence of costs and revenues (current costs and revenues in each case) during the payback period. If, instead, the balancing payments were reduced according to the AMELIE formula by the proportion to which the costs of the network as a whole during the payback period are not met (or increased to the extent to which they are later more than met), the result would be the same, but a fictitious cost-covering tariff would have to be calculated as an intermediate step.
- 98 The Ruling Chamber is not pursuing a change to the balancing mechanism proposed in the consultation process to incorporate a breakdown on the basis of cumulative differential amounts. Firstly, no better distribution formula could be spelled out in sufficient detail. Secondly, as already noted by the consultee submitting the proposal, a different mechanism would necessarily raise the level of complexity, while it is not apparent whether it would lead to a fairer distribution of the collected tariffs. The Ruling Chamber shares this assessment.

3. Calculating the monthly balancing payment

- 99 Network operators whose expected revenues from tariffs are higher than the approved costs must make monthly payments by no later than the 15th of each month in the calendar year in question in twelve equal instalments pro rata to all network operators in the core network with a positive difference, ie to those network operators whose expected revenues are below the approved costs. Taking the example outlined above as a basis, this means that network operator B has to pay a monthly amount of €2.085 (€25/12 months) to network operator A. The principle is exactly the same if the core network consists of more than two network operators. For example, if the core network consists of four network operators, if network operator A has a balancing obligation amounting to €40, network operator B a balancing obligation amounting to €20, network operator C a balancing claim amounting to €35 and network operator D a balancing claim amounting to €25, network operator A must pay its balancing obligation amounting to €40 pro rata to network operators C and D on a monthly basis. This means that network operator A must pay €1.94

(€23.33⁴/12 months) every month to network operator C and €1.39 (€16.67⁵/12 months) every month to network operator D. The same applies to network operator B. This network operator also has to meet its balancing obligation amounting to a payment of €20 pro rata to network operators C and D. This means that network operator B must pay €0.97 (€11.67⁶/12 months) every month to network operator C and €0.69 (€8.33⁷/12 months) every month to network operator D.

- 100 The Ruling Chamber is not able to order that the balancing payments should be processed by the account-keeping body pursuant to section 28r(3) sentence 2 EnWG, as was proposed in the consultation process, for one reason because that body is not an addressee of its regulatory decisions. Besides this, the payments processed by the network operators themselves in the natural gas transmission network have already proved successful, and as far as the Chamber is aware no difficulties have ever arisen with them.

4. Forecast values

- 101 When it comes to the formation of a joint tariff in accordance with operative part 2 following completion of the payback period, the forecasted capacity bookings refer to the same capacities that were included in the calculation of the joint tariff. This means that the values to be used for the forecasted capacity bookings are not permitted to deviate from the values that were used as the basis for calculating the joint tariff. Without this provision, each network operator would have the possibility of creating its own balancing obligation or balancing claim. The consequence of this would be that, viewed across the core network as a whole, the balancing claims and balancing obligations would normally no longer match each other one to one and it would therefore not be guaranteed that every network operator would be able to cover its approved costs.
- 102 A comparison on the basis of actual revenues is not carried out. Deviations between the approved costs and the achievable revenues (excess revenues or shortfalls in revenue) are balanced on an individual company basis with the inclusion of the balancing payments that are received and paid, by way of the target/actual cost comparison pursuant to section 14(1) WasserstoffNEV. This means that excess revenues or shortfalls in revenue generated via the core network are not shared evenly among the network operators in the core network, which would have necessitated

⁴ €40/€60 · €35 = €23.33.

⁵ €40/€60 · €25 = €16.67.

⁶ €20/€60 · €35 = €11.67.

⁷ €20/€60 · €25 = €8.33.

an additional balancing mechanism on the basis of the revenues actually generated. The individual network operators therefore continue to bear the risk of their volume forecasts.

VII. State funding mechanism (operative part 6)

- 103 According to Article 5(3) sentence 2 Gas Regulation, an intertemporal cost allocation mechanism requires approval from the national regulatory authority. Even in the run-up to these determination proceedings, voices were to be heard suggesting that transitional state balancing of liquidity gaps inherent in the system and safeguarding of the amortisation account used for that purpose through a guarantee by the Federal Government belong to the cost allocation mechanism within the meaning of that article and hence require approval by the Bundesnetzagentur. Without expressly adopting this legal opinion as its own, the Ruling Chamber therefore clarifies as a precautionary step that, in its view, participation by the core network operators in a state funding mechanism through which they will have the liquidity gaps arising during the payback period offset by payments and are assured that the costs incurred will be balanced in the event that ramp-up fails is compatible both with Article 5(3) Gas Regulation and with the principles of this decision. Specifically, it considers the regulations in sections 28r et seq EnWG and participation by the core network operators to be a permissible supplement to the provisions made here. In particular it sees the state balancing guarantee set out in section 28s(1) EnWG as being consistent with Article 5(3) sentence 3 Gas Regulation.
- 104 The clarifications for the description of the funding mechanism proposed in the consultation process are not adopted by the Ruling Chamber because this is an abstract provision that should not place any restriction on the legislature in the design of this mechanism. It is all the more out of the question for the Ruling Chamber to take up even further-reaching demands for modifications to the content of the funding regime, which are beyond the scope of its authority.
- 105 Payments from the funding system are not subsidies with a tariff-replacing effect pursuant to section 3(2) WasserstoffNEV.

VIII. Modifications to EnWG and WasserstoffNEV (operative part 7)

- 106 The adjustments to the provision of EnWG and WasserstoffNEV are regulations on the conditions and methodologies for calculating costs pursuant to section 28o(3) sentence 1 in conjunction with (2) para 1 EnWG. According to section 28r(6) sentence 2 EnWG, WasserstoffNEV applies in principle to hydrogen core network operators with the exception of section 10(3) and (4). The Bundesnetzagentur can however deviate from this by determination, as is also apparent from section 28o(3) sentence 2 EnWG. It is already foreseeable that the conceptual changes that will

arise in the coming years in the course of the restructuring of the regulatory frameworks for the established electricity and gas network sectors will also have an impact on WasserstoffNEV. That said, in light of the extremely short time frame, the Ruling Chamber considers these determination proceedings to be unsuitable for preempting the associated discussion processes, which is why it is restricting the adjustments to the regulation to what is absolutely necessary in this context. Like all the elements of this decision, the following provisions apply only to operators of the hydrogen core network. If a core network operator additionally operates a regulated hydrogen network outside the core network, it must submit separate cost notifications for the two network divisions, bearing in mind that the modifications set out here apply only to the costs of the core network.

1. Principles for determining the network tariffs (a)

107 Pursuant to section 2(1) WasserstoffNEV, within the framework of the calculation of network tariffs the network operators must ensure that the tariff system covers costs and must document in a transparent way the validation carried out for this in accordance with section 2(2) WasserstoffNEV. This decision also envisages cost-covering tarification, but modifies it both through joint tarification by all core network operators and through the intertemporal cost allocation mechanism. The fundamental provisions from section 2(1) and (2) WasserstoffNEV are therefore replaced by operative parts 2 to 5 of this decision. Furthermore, section 2(3) WasserstoffNEV allows the designation of technically independent subnetworks with separate pricing. However, no such subnetworks are envisaged in the hydrogen core network. It contradicts the approach of a uniform postage stamp tariff, whether during the ramp-up regime or in the later stable state. The probable future structure of the core network does not allow the cost-based separation of individual parts of the network because they are not intended to be operated independently of each other but instead span a complex overall system. See also the explanations given under II.

2. Imputed useful lives (b)

108 Section 8(4) WasserstoffNEV does not include any provisions at all on the choice of the imputed useful lives for activated fixed assets in hydrogen networks. However, in the context of a joint tariff system for a majority of network operators whose costs are to be fed into the uniform tariff (or transitionally into the joint intertemporal cost allocation account) under uniform conditions, such comprehensive freedom of choice appears to be barely appropriate. The Ruling Chamber has therefore decided to specify standardisation, in much the same way as in the established regulated electricity and gas network sectors. In so doing, in the absence of better insights, as a first step it also makes use of the tried-and-tested provisions of GasNEV for the hydrogen network, which are also appropriate for the hydrogen network with regard to the choice of the relevant asset

categories. However, in this case it takes account of the fact that the depreciation periods set out in GasNEV, which should roughly reflect economic service life, cannot be simply transferred to the assets that come into contact with hydrogen as a matter of course. It is true that the network operators themselves also have little experience of the long-term durability of hydrogen infrastructure at the present time. It does appear to be fundamentally plausible, however, that the assets that come into direct contact with hydrogen will have a shorter technical useful life than is the case for comparable asset classes in the gas networks. Whereas the problem of hydrogen embrittlement can be largely counteracted through the use of suitable materials, it can be assumed that especially in the case of valves, compressor units and similar facilities with moving parts there will be a tendency towards diminishing tightness compared to empirical values from natural gas operations on account of the smaller size of the hydrogen molecule. The Ruling Chamber therefore allows the useful lives to be shortened to 35 years for all asset categories with the exception of general assets, unless the useful lives are already shorter anyway. This figure is in line with the previous calculations by the network operators and was used as the basis for the analyses in the expert report by the Fraunhofer Research Institution for Energy Infrastructures and Geothermal Energy IEG on which the payback system envisaged in this decision is based.

109 The reference relates solely to Annex 1 GasNEV; any divergent determinations for the gas sector are disregarded. In particular Decision BK9-22/614 of 8 November 2022 (KANU) shall not apply because the hydrogen core network is very much not designed for premature decommissioning so there is no need for a refinancing period that is shorter than the theoretical useful life of the assets.

110 Insofar as assets from the natural gas network are repurposed, the useful lives pursuant to this decision apply only from the date of repurposing onwards. They must be implemented by way of a retrospective change of useful life. In the case of an asset with an original useful life of 55 years (upper limit) that is repurposed after 30 years, therefore, the depreciation of the remaining residual value can be spread over a period of between 5 and 25 years.

3. Rate of return on equity for existing assets (c)

111 This change is not a deviation from WasserstoffNEV pursuant to section 28o(3) sentence 2 EnWG but a deviation from section 28r(1) sentence 7 EnWG. In this respect, too, the Ruling Chamber has authorisation pursuant to section 28r(6) sentence 1 EnWG. Furthermore this change requires the application of section 10(3) WasserstoffNEV, even though this is not envisaged pursuant to section 28r(6) sentence 2 EnWG. Section 28r(6) sentence 1 EnWG expressly provides only for the possibility of deviations from section 28r(1), (2) and (5) EnWG, not for deviation from

section 28r(6) sentence 2 EnWG. However, a change to section 28r(1) sentence 7 EnWG, which provides for a special rate of return for existing assets, must logically be able to include the corresponding basic regulations for this. Moreover, section 28o(3) sentence 2 EnWG explicitly envisages that the Bundesnetzagentur can specify provisions that deviate from WasserstoffNEV. In that case, however, it is all the more important that it must be able to reinstate elements of WasserstoffNEV that have been suspended, especially as it could just as easily issue a new identically worded provision of its own. The alternative to this would be to adjust the calculation of the residual values of existing assets with the same economic outcome.

- 112 The rate of return on equity before tax is uniformly standardised in section 28r(1) sentence 7 EnWG in derogation of section 10(3) and 4 WasserstoffNEV. However, this figure does not take account of the fact that the principle of net value maintenance is applied to existing assets of the gas supply network that have been converted exclusively for hydrogen transport in accordance with section 9 WasserstoffNEV. When determining the operating capital pursuant to section 10(1) in conjunction with (3) WasserstoffNEV, the historical costs of acquisition and production of the operationally necessary fixed assets are converted to replacement costs. Accordingly, based on the provision set out in section 10(4) sentence 2 WasserstoffNEV the rate of return on equity before tax for existing assets must be reduced by the average rate of price change over the last ten calendar years according to the overall consumer price index published by the Federal Statistical Office in line with the calculation logic familiar from gas network regulation pursuant to section 7(4) sentence 2 GasNEV.
- 113 With this adjustment, the Ruling Chamber initially merely reflects the special features of the calculation of the acquisition and production costs resulting from the logic of the principle of net value maintenance in the interest level chosen by the legislature in section 28r(1) sentence 7 EnWG and thus ensures that the equity return methodology is consistent and coherent in itself. This is not yet associated with a conclusive assessment of the interest rate level. According to section 28r(1) sentence 7 EnWG, the interest rate stated there applies until 31 December 2027. Although this date could also be at the disposal of the Ruling Chamber because of section 28r(6) sentence 1 EnWG, the development of a carefully elaborated and scientifically sound method for the appropriate determination of a rate of return on equity requires considerably more time than is available for these determination proceedings and, taking into account the corresponding conceptual considerations for the electricity and gas network sectors, will be carried out for the period after the tariff regulations there cease to have effect. The principle of net value maintenance, too, (like other elements of the equity return methodology) is not itself subjected to closer evaluation with this decision, partly because of the tight time frame for the proceedings as

already mentioned above, which does not rule out the principle being changed in later fundamental decisions on hydrogen regulation and on other regulated network sectors.

- 114 As the legally standardised rate of return on equity in section 28r(1) sentence 7 EnWG is a rate of return before tax, the proportion of tax must be taken into account when calculating the rate of return after tax in order to determine the rate of return for existing assets. The term taxes within the meaning of section 10(4) WasserstoffNEV refers to income taxes. Income taxes include trade taxes and corporate taxes. Since trade tax is already taken into account in section 11 WasserstoffNEV, the tax factor is determined solely on the basis of corporate tax.
- 115 In the opinion of the Chamber, determination of the tax factor should not be based on the company's individual tax situation depending on the company structure. Instead, an imputed perspective is key – as in the case of trade tax. It is therefore generally assumed that the full tax rate is to be applied. If not, determination of the rate of return on equity depending on the tax situation would lead to individual rates of return before tax for each company.
- 116 In addition to corporate tax, the Ruling Chamber also takes account of the solidarity surcharge in the rate of return because it constitutes a surcharge on corporate tax. At the time of the decision the solidarity surcharge will continue to apply insofar as it is also due to be paid by corporations in the future. Given a corporate tax rate of 15%, the tax factor amounts to 0.15825, with 0.15×1.055 . As the basis for assessing corporate tax is profit before all taxes and hence also before trade tax, trade tax must also be taken into account in the tax factor accordingly. The trade tax rate is obtained by multiplying a Germany-wide average assessment rate of 403⁸ by the specified index of 0.035. This results in an average trade tax rate of 14.105%.
- 117 Accordingly, the tax factor relevant for calculation of the rate of return after tax is calculated as follows:

$$s = \frac{1 - GewSt}{1 - GewSt - KSt}$$
$$s = \frac{1 - 0.14105}{1 - 0.14105 - 0.15825}$$
$$s = 1.226$$

[GewSt = trade tax, KSt = corporate tax, s = tax factor]

⁸ [https://www.destatis.de/DE/Presse/Pressemitteilungen/2023/08/PD23_332_713.html#:~:text=WIESBADEN%20%E2%80%93%20Die%20Gemeinden%20in%20Deutschland,Statistische%20Bundesamt%20\(Destatis\)%20mit.](https://www.destatis.de/DE/Presse/Pressemitteilungen/2023/08/PD23_332_713.html#:~:text=WIESBADEN%20%E2%80%93%20Die%20Gemeinden%20in%20Deutschland,Statistische%20Bundesamt%20(Destatis)%20mit.)

118 From this, the rate of return after tax for new assets can be calculated according to the following formula, which makes the adjustment for corporate tax.

$$\text{Rate of return on equity}_{\text{new assets after tax}} = \text{rate of return on equity}_{\text{new assets before tax}} / \text{tax factor}$$

119 The rate of return on equity before tax is calculated according to the formula below, which adjusts the rate of return on equity for new assets after tax by the average of the consumer price index based on the last ten completed calendar years and then makes the necessary adjustment for corporate tax using the previously determined tax factor. In this context the average of the consumer price index is fixed at the average of the last completed calendar year at the time of the decision, 2023, because the base rate of return from section 28r(1) sentence 7 EnWG (at least initially) is not subject to ongoing adjustment and the calculation logic is therefore only coherent if the initial values remain static.

$$\text{Rate of return on equity}_{\text{existing assets before tax}} = (\text{rate of return on equity}_{\text{new assets after tax}} - \text{rate of price change}) \times \text{tax factor}$$

120 The Ruling Chamber was not able to pursue the deviating approach of reducing the existing asset rate of return by the same ratio of the rate of return for existing assets (7.73%) to the rate of return for new assets (9.00%) in accordance with section 9(4) WasserstoffNEV as suggested in the consultation process. The value established in the legislative process – also as an element of the funding concept – that was included in section 28r(1) sentence 7 EnWG was derived from interest rate series at the current margin. In this respect it is appropriate to reduce the nominal rate of return by a rate of price increase that was likewise calculated at the current margin. Consideration should be given to whether a ten-year average or the rate of price change from the last completed year, 2023, should be deducted. Since (at least with respect to the existing assets) the aim is to calculate the interest for an existing network and not the interest for a single new investment at the current margin, it is appropriate to take account of a long-standing average of the rate of price change. This is not directly associated with a lower interest rate for the asset base. After all, the interest rate for existing assets in the net value maintenance system provides for calculation of the interest base using replacement costs. In this respect, too, considerable price increases have been registered in recent years. Unilaterally taking account of only the higher interest base but not, conversely, a higher general rate of price change when calculating the real interest rate would favour the network operators one-sidedly.

121 In addition, the request put forward during the consultation to adjust the rate of return on equity (EK II) to the conditions of the capex mark-up does not appear appropriate either. The interest rate there is only granted until the end of the respective regulatory period and subsequently drops back to the normal level specified for the period in question. However, in the context of the hydrogen network it is a matter of the interest rate on an existing network and not, as in the case of the capex mark-up, the interest rate on individual new investments.

4. Imputed treatment of state funding (d)

122 Especially during the initial phase of the ramp-up, payments from the Federal Government's funding mechanism pursuant to section 28r(3) sentence 4 EnWG result in considerable revenues, which would drastically distort the proper determination of the costs necessary for network operation in a downward direction when taken into account on a cost-reducing imputed basis. Conversely, in the later balance-reducing phase, taking account of the return of funding, ie the balancing payments in the case of differences remitted to the amortisation account pursuant to section 28r(3) sentence 4 half-sentence 1 variant 2 EnWG, would distort the network costs in an upward direction. However, as the regulated tariff system is intended to reflect the real network costs without distortion by the interim financing by the Federal Government, which is only temporary and is based on the approved costs, the effects must be neutralised when determining the network costs.

123 The same applies to balance sheet items that are linked to the funding mechanism. It is currently not foreseeable with absolute certainty whether and, if so, from when, to what extent and under what circumstances the specific design of the funding modalities will make it necessary under commercial law for accruals to be created or payables to be registered for payments to the Federal Government. However, regardless of the commercial balance sheet perspective it would be inappropriate in regulatory terms to assess corresponding balance sheet items as non-interest-bearing liabilities and hence to reduce imputed equity. Firstly, this would not adequately reflect the network operators' actual economic position, because the payment obligations do not constitute a genuine economic burden for the companies given the very far-reaching state-guaranteed protection, and the obligations only need to be fulfilled if the funds required for this can indeed be generated by the network customers through revenues. Secondly, as a result the imputed return on equity is potentially likely to be drastically reduced or even pushed far into negative territory, thus eliminating any economic incentive for network operation. Not only the state funding mechanism but also the intertemporal cost allocation mechanism proposed in this decision would be reduced to absurdity.

5. Up-front costs (e)

- 124 Logically, the work on building the hydrogen core network has to start before the network is capable of transporting hydrogen for the first time and generating revenues from the marketing of capacity. Nevertheless, it must also be possible to refinance these costs through tariffs. In order to be able to reflect the earlier up-front costs in the tariffs as well, they can also be claimed – if operationally necessary – for all previous calendar years within the framework of the first cost approval in each case. This relates in particular to all costs from calendar years prior to 2025, which it would otherwise not have been possible to apply for at all before this decision comes into force. In order to reflect the delay in being taken into account in the regulations, interest is added to the costs in the same way as for the regulatory account pursuant to section 5 ARegV. If the costs have arisen at a time for which no audited activity report pursuant to section 28k(2) sentence 3 EnWG is available yet, there may be increased requirements for proof of costs. If claims are made for capital costs for assets under construction that have arisen in previous years, it goes without saying that corresponding non-interest-bearing liabilities must likewise be taken into account with these.
- 125 When costs are submitted for the first time it is not absolutely necessary for a company to be characterised as a core network operator, in other words a separate hydrogen core network division does not need to be spun off nor is there need for certification provided that acquisition of this characteristic can seriously be expected to take place for the year for which costs are claimed.

6. Calculation of the target/actual cost comparison (f)

- 126 According to section 14(1) sentence 1 WasserstoffNEV, the difference between the revenues generated from network tariffs and the approved actual costs is determined for each year in order to then offset these against the current planned costs in each case. In the context of the tariff methodology established with this decision, this comparison requires modification in order to be able to determine appropriate differential amounts. Firstly, the balancing payments pursuant to operative part 5 must be taken into account in the revenues because the network operator's actual economic result for the calendar year in question can only be determined after balancing. Secondly, all the amounts that have been recorded in the intertemporal cost allocation account must be eliminated from the calculation. If not, the shortfalls in revenue from the start of the payback period would be counted double and on the one hand over the long term would be to the detriment of future network customers but on the other hand would also in the short term be included in the immediately upcoming calendar years by increasing the planned costs. The same effect would occur inversely at the end of the payback period in the case of the surpluses in

revenue. Differences resulting from the discrepancy between the ramp-up tariff and the approved network costs will therefore be removed from the regular target/actual cost comparison and processed exclusively via the intertemporal cost allocation account.

7. Correction of planned costs by target/actual cost comparison (g)

- 127 The differential values between approved costs and actual revenues calculated according to the above principles are deducted directly from the planned costs to be approved for the year after the year after the next calendar year as an adjustment amount, or added directly to them as appropriate. This ensures that deviations from the plan are taken into account as necessary in the future cost approvals. In the original system for WasserstoffNEV this step would take place in the validation calculation pursuant to section 2(1) WasserstoffNEV for determining the tariffs, which within the scope of this decision however is replaced by the provisions from operative part 2 and 3.

8. Transmission of cost data (h)

- 128 Pursuant to section 14(2) sentence 1 WasserstoffNEV, the planned costs for the following calendar year including the associated basis on which they are calculated must be sent to the Bundesnetzagentur by 30 September in each case. Pursuant to section 14(2) sentence 2 WasserstoffNEV, the Bundesnetzagentur then has three months to check them, in other words as a rule until 31 December, notwithstanding any events that extend this deadline. The actual costs from the preceding year are likewise sent by 30 September, pursuant to section 14(3) sentence 1 WasserstoffNEV, in which case the time for checking is 15 months, ie as a rule until 31 December of the following year.
- 129 In the context of the tariff methodology defined here, these time windows are too close to the end of the year. Approval of the planned costs must be granted at least a few months before the end of the year so that the network operators can use them as a basis in good time to calculate the balancing payments pursuant to operative part 3 and (following the end of the payback period) the joint tariff pursuant to operative part 2. Approval of the actual costs must also be granted at an earlier point in time so that the results of the target/actual cost comparison can be taken into account in the planned costs. The Ruling Chamber has therefore decided to move the entire time schedule set out in this provision forward by three months. As a result, all participants should gain sufficient time to carry out the envisaged procedural steps in good time. At the same time the Chamber assumes that the network operators will be in a position to prepare the relevant documents by 30 June in each case. It points out that with regard to planned costs these deadlines

already have to be observed in 2024 in order to ensure smooth implementation of the system in 2025.

- 130 Insofar as deadlines are extended because of inadequate documentation, situations may arise in which the necessary cost approvals for individual network operators will not be available, despite everything, before the start of the respective calendar year or before the calculations that have to be carried out in advance. In this case a best possible estimate of the costs must be provided. Incorrect forecasts in this connection can be compensated for via the target/actual cost comparison, as can volume deviations.

9. Special depreciation allowances (i)

- 131 Operative part 7(i) is merely a clarifying provision. In the course of the determination proceedings it emerged that section 28s(5) sentence 2 EnWG gave rise to certain questions among some stakeholders. According to this, the hydrogen core network operators can carry out a special depreciation to be debited from the amortisation account up to the amount of the regulated imputed residual values if operation of the hydrogen core network is continued in the event of the amortisation account being cancelled by the Federal Government. It may then be tempting to reach the inverse conclusion that a special depreciation of this type should definitely not be permissible if network operation ceases in the event of cancellation.
- 132 In the opinion of the Ruling Chamber, the legal arrangement from section 28s(5) sentence 2 EnWG is exclusively limited to a continuation of network operation because there was no need for a separate regulation for the eventuality of a cessation of operation. If assets that have not yet been written down are no longer required economically – as is the case especially when operation ceases – and cannot be utilised in any other way either, it is in line with the general principles of finance and accounting (unlike when use of the assets continues) to eliminate the now worthless assets from the balance sheet by way of a special depreciation allowance. It seems clearly apparent to the Chamber that this depreciation must be taken into account in the network costs. Insofar as the Bundesnetzagentur often makes cuts in the case of such depreciation allowances in the electricity and gas network sectors, this follows from the budget principle of incentive regulation, which continues to allow depreciation and interest for a certain period of time for assets that are already written down. There are no comparable compensatory effects in WasserstoffNEV. With an annual cost review, too, there is no suspicion that the worthlessness of the assets could have arisen at an earlier time than in the base year.
- 133 These remarks relate exclusively to cases in which parts of the network (or also the network as a whole) drop out of network operation altogether. Sale to another network operator (potentially also

to a regulated or non-regulated network operator outside the core network) for a purchase price below the imputed residual value does not constitute an entitlement to special depreciation that would be eligible from a regulatory standpoint. Besides, any attempt to sell assets that have been taken out of operation must of course only be made if it at least appears plausible that this will result in a profit. The Ruling Chamber therefore does not expect pipelines to be dug up if there is no restoration obligation and the costs of utilisation would clearly exceed any possible gain on disposal.

IX. Exclusivity of the tariff determinations (operative part 8)

134 No tariffs other than those envisaged in this decision are permissible. This ensures that the provisions set out here will not be circumvented by alternative arrangements. Insofar as the emergence of new product types on the market implies additional tariff variants, this can be taken into account with an adjustment to this decision. In light of a number of misunderstandings in the consultation process, it must be expressly stated that the provision does not rule out or constrain later supplementary determinations but is solely intended to prevent arbitrary tariff responses with no regulatory basis. The regulation is based on the corresponding provision in section 15(8) GasNEV.

X. Costs (operative part 9)

135 Regarding costs, a separate notice will be issued as provided for by section 91 EnWG.

XI. Other information

136 Since the determination is issued in relation to all hydrogen core network operators active in Germany, pursuant to section 73(1a) sentence 1 EnWG the Ruling Chamber replaces notification according to section 73(1) sentence 1 EnWG with public notice of the determination. According to section 73(1a) sentence 2 EnWG this public notification is effected by publication in the Bundesnetzagentur's Official Gazette of the operative part of the determination, the information on legal remedies and a brief statement that the decision in full has been published on the regulatory authority's website. In accordance with section 73(1a) sentence 3 EnWG the determination is considered to have been served on the day on which two weeks have elapsed since the date of public notification in the regulatory authority's Official Gazette.

Information on legal remedies

Appeals against this decision may be brought within one month of its service. The appeal must be submitted to the Higher Regional Court of Düsseldorf (address: Cecilienallee 3, 40474 Düsseldorf).

The appeal must be accompanied by a written statement setting out the grounds for appeal. The written statement must be provided within one month. The one-month period begins with the filing of the appeal; this deadline may be extended by the court of appeal's presiding judge upon request. The appeal and the grounds for appeal must be signed by a lawyer.

The appeal does not have suspensory effect (section 76(1) EnWG).

Bonn, [date]

Chair

Vice Chair

Vice Chair

Klaus Müller

Barbie Kornelia Haller

Dr Christian Schütte

Vice Chair

Vice Chair

Vice Chair

Anne Zeidler

Achim Zerres

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