- Ruling Chamber 7 -

-COURTESY TRANSLATION –
GERMAN VERSION PREVAILS-

Decision

Ref: BK7-24-01-014

In the administrative proceedings

relating to the determination on a basic compensation and balancing model for hydrogen ("WasABi")

Parties summoned:

RWE Generation SE, RWE Platz 3, 45141 Essen, legally represented by its management board,

party summoned 1)

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

party summoned 2)

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

party summoned 3)

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

party summoned 4)

Uniper Energy Storage GmbH, Franziusstraße 12, 40219 Düsseldorf, legally represented by its management board,

Bundesnetzagentur für
Elektrizität, Gas, Telekommunikation,
Post und Eisenbahnen

Headquarters: Bonn
Tulpenfeld 4
53113 Bonn
☎ +49 (0)228 14-0

Fax Bonn
+49 (0)228 14-8872

Email
poststelle@bnetza.de
Internet
http://www.bundesnetzagentur.de

Please note new bank details
Bundeskasse
Dt. Bundesbank – Filiale Regensburg
BIC: MARKDEF1750
IBAN: DE08 7500 0000 0075 0010 07

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party summoned 5)

Ruling Chamber 7 of the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen, Tulpenfeld 4, 53113 Bonn, legally represented by its President Klaus Müller,

by its Chair	Anne Zeidler
its Vice Chair	Dimitri Wenz
and its Vice Chair	Stephan Faßbender

decided on 27 October 2025:

1. Hydrogen transmission network operators must designate and establish a hydrogen market area manager at the latest two months after publication of this determination. The hydrogen market area manager will, in particular, perform the tasks assigned by this determination and the WaKandA determination (BK7-24-01-15). Hydrogen transmission network operators may commission the hydrogen market area manager to fulfil other tasks relating to the operation of the hydrogen network that are necessary for granting efficient access to the hydrogen network. Hydrogen transmission network operators must involve hydrogen distribution network operators in an appropriate manner in the process of designating the hydrogen market area manager.

   The hydrogen market area may, in the initial phase of the hydrogen ramp-up, comprise several networks or subnetworks not connected to each other and operated by one or more hydrogen network operators, known as “clusters”. Insofar as the effective application of the rules set out in this determination depends on the existence of a national interconnected hydrogen network, the relevant rules will apply accordingly to clusters during the hydrogen ramp-up period.

   Hydrogen transmission network operators must equip the hydrogen market area manager with the necessary resources to enable the hydrogen market area manager to fully perform the tasks assigned and transferred beginning on 1 January 2028. Hydrogen network operators must provide the hydrogen market area manager with any data and information necessary to fulfil the tasks, with the level of detail required in each case.

   The hydrogen market area manager may not incur any gain or loss from the balancing activities. This applies in particular to outgoing and incoming bonus and penalty payments to and from helpers and causers, costs for balancing energy, and other task-related costs incurred or income earned by the hydrogen market area manager in meeting the obligations set out in this determination.

   The hydrogen market area manager must pass on the following to the balance responsible parties:

a) All costs and revenue arising from the financial incentive system as described in operative part 5.

b) All costs and revenue arising from the balancing energy measures carried out for the purposes of operative part 4 a). These costs may generally only be passed on to the balance responsible parties insofar as they have been incurred efficiently. The hydrogen market area manager is responsible for proving efficiency.

c) All other costs and revenue in connection with the balancing activities carried out by the hydrogen market area manager. Costs may generally only be passed on to the balance responsible parties insofar as they have been incurred efficiently. The hydrogen market area manager is responsible for proving efficiency.

d) If the hydrogen market area manager incurs other costs or generates other revenue from the balancing activities that cannot be passed on cost-reflectively, in particular costs and revenue arising in connection with the use of balancing energy for the purposes of operative part 4 b), the costs and revenue will be spread across all German hydrogen supply networks. The hydrogen market area manager must publish each year the projected other costs and revenue for the following year, the actual costs and revenue for the current year and the amount to be passed on in euros per kilowatt hour per hour per annum (€/kWh/h/a). The finer details of the calculation are to be set out in the hydrogen cooperation agreement or a determination. The other costs may generally only be passed on insofar as they have been incurred efficiently. The hydrogen market area manager is responsible for proving efficiency.

e) The hydrogen market area manager must publish the sum of the incoming and outgoing payments referred to in sentence 10 with at least the same frequency as the relevant tariffs are charged to the network users, but at least once a month.

2. Hydrogen network operators and the hydrogen market area manager are required to carry out balancing of hydrogen quantities in accordance with the following principles:

a) All quantities transported and traded by shippers and balance responsible parties must be balanced by the hydrogen market area manager in balancing groups. Tolerances are not allowed. No time-defined balancing period is being set: balancing must take place continuously.

b) Nominated and measured quantities in line with the following criteria are relevant for the purposes of the balancing:

aa) Nominated quantities for the following points must generally be included in the balance; the “allocated as nominated” principle generally applies to these points:

(i) entry and exit points at cross-border interconnection points
(ii) virtual entry and exit points
(iii) entry and exit points from and to hydrogen storage facilities
(iv) entry points from hydrogen terminals.

bb) In the case of exit points connecting final customers and entry points from domestic production facilities, measured data (actual consumption) is relevant to the balancing.

The data must be measured every 15 minutes and must be transmitted without delay to the hydrogen market area manager for allocation to the relevant balancing group. The measured data indicates the quantity for the previous 15 minutes.

c) Balance responsible parties are required to keep their balancing groups balanced as far as possible at all times. Balance responsible parties must take all reasonable measures to avoid predictable imbalances. The general requirement to keep a balancing group balanced applies irrespective of a balance responsible party's function as a helper within the meaning of operative part 5.

d) In order to continuously determine the differences in quantities for each balancing group, the provisional input and offtake quantities, that is the quantities not adjusted for missing or incorrect quantities or the calorific value, must be netted continuously in the balancing group to which they have been allocated. The hydrogen market area manager must net the provisional quantities allocated to a balancing group as determined by the hydrogen entry and exit network operators and must communicate the balance of the quantities allocated to the balancing group for the previous 15 minutes (balancing group status) to the balance responsible party without delay, but at least every 15 minutes. The netting period for the comparison of the differences in quantities in a balancing group with the relevant overall network balance status as defined in operative part 3 and the associated assessment of the balancing group balance in the incentive system as described in operative part 5 is one hour.

e) Hydrogen entry and exit network operators must identify clearly incorrect measured data using an appropriate automated procedure, verify the data using an appropriate methodology and, where necessary, transmit alternative provisional data to the hydrogen market area manager. The correction of verified incorrect provisional measured data within an ongoing one-hour netting period for the balancing groups in which an error has been identified is permitted.

f) If the hydrogen market area manager identifies significant deviations from the average error rate in the transmission of measured data, the hydrogen market area manager is entitled to improve the quality of collection and transmission through an incentive system. The hydrogen market area manager, in cooperation with the market participants, must determine an appropriate methodology, including the limits to be used to assess transmission quality and a financial bonus/penalty system, for the evaluation of the incentive effect to be achieved.

g) The final quantities allocated to a balancing group must include adjustments for missing or incorrect measured data and, where necessary, for the calorific value used for settlement (quantities adjusted for calorific value). Hydrogen entry and exit network operators must determine the final quantities to be allocated and communicate them to the hydrogen market area manager by the tenth working day of the calendar month following the day on which data was measured. The hydrogen market area manager must net the final quantities allocated to a balancing group as determined by the hydrogen entry and exit network operators and must communicate the balance to the balance responsible party without delay on a daily basis.

h) The netting of the balancing groups using provisional measured data to be carried out as set out in point d) must take place continuously. The hydrogen market area manager must ensure, by applying a suitable compensation mechanism, that the differences between the final quantities referred to in point g) and the provisional quantities are taken into account appropriately and cost-reflectively in the balancing, without the netting of the balancing groups based on the provisional measured data as set out in point d) or the overall network balance status as defined in operative part 3 a) having to be changed retrospectively. The compensation mechanism must also take into account the physical differences in quantities resulting from the balancing-related differences in quantities in a hydrogen network. The balancing of the differences by the balance responsible party must take place over a reasonable period of time and at the latest by the end of the calendar month following the day on which data was measured.

i) The settlement of balancing groups, including settlement in line with the financial incentive system as described in operative part 5, must take place at the latest in the month following the month being settled.

3. The hydrogen market area manager must publish the overall network balance status for the hydrogen market area continuously. The following rules apply:

a) The overall network balance status is the sum of the provisional quantities allocated to a balancing group as referred to in operative part 2 d) for the individual balancing groups in the hydrogen market area. The balancing group of the hydrogen market area manager established for the purposes of operative part 4 a) is not included in the calculation of the overall network balance status.

b) The overall network balance status must be updated at least every 15 minutes. A forecast of the overall network status at the beginning of each clock hour for at least the next 12 hours must be published in addition to the current overall network status. The forecast of the overall network status is the sum of the nominations or renominations and quantity notifications in accordance with operative part 5 and operative part 6 of the WaKandA determination (BK7-24-01-015) of the individual balancing groups in the hydrogen market area for the relevant hour.

c) The sum of the balancing group balances of the helpers within the meaning of operative part 5 a) aa) and the sum of the balancing group balances of the causers within the meaning of operative part 5 a) bb) must be published together with the overall network balance status.

d) Hydrogen transmission network operators must define flexibility zones and associated limits in kilowatt hours (kWh) for the hydrogen market area and must transmit them to the hydrogen market area manager in good time. The hydrogen market area manager must publish these at least four hours before the beginning of each calendar day. The flexibility zone limits defined for the next calendar day become binding when they are published. The flexibility zone limits must be designed as follows, in particular taking into account the technical characteristics of the networks and the nominations and quantity notifications received:

   aa) Green zone: flexibility range indicating a stable condition. If the overall network status is within the green zone, no compensatory measures are required in the hydrogen market area.

   bb) Yellow zone: flexibility range indicating a critical condition. If the overall network status is within or reaches the yellow zone, compensatory measures are required in the hydrogen market area.

   cc) Red zone: flexibility range indicating a very critical condition. If the overall network status is within or reaches the red zone, compensatory measures are required without delay in the hydrogen market area.

4. The hydrogen market area manager must use balancing energy to:
   a) bring the overall network balance status towards the green zone;
   b) keep the hydrogen network within its technical limits.

The hydrogen market area manager must always take account of cost efficiency when using balancing energy.

The following applies to the use of balancing energy for the purposes of point a):

If the overall network balance status is above or below the boundary between the green and the yellow zone, the hydrogen market area manager must use balancing energy to bring the overall network balance status back towards the green zone.

The hydrogen market area manager must establish a separate balancing energy balancing group for the use of balancing energy for the purposes of point a). The hydrogen market area manager must balance the balancing energy balancing group through simultaneous balancing energy countertrades as referred to in point aa) within a reasonable period of time. The following rules apply:

aa) The hydrogen market area manager is required to meet the demand for balancing energy by buying or selling quantities of hydrogen. The hydrogen market area manager must primarily use standardised short-term products that can be traded on an exchange in the hydrogen market area manager's own market area.

bb) If the use of products as referred to in point a) aa) is not appropriate or is not sufficient to meet the existing demand, the hydrogen market area manager must meet the demand for balancing energy with products procured via a balancing platform operated by the hydrogen market area manager. Only short-term balancing energy products that cannot be traded as products on the exchange may be procured via the balancing platform. The balancing platform must be integrated into the data exchange platform described in operative part 7.

If the forecast referred to in operative part 3 b) shows that the overall network balance status will exceed the limit for the red zone, the hydrogen market area manager must use balancing energy without delay to prevent the overall network balance status from reaching the red zone. If the overall network balance status reaches the red zone, the hydrogen market area manager must use balancing energy without delay to bring the overall network balance status back into the yellow zone as quickly as possible. The rules set out in points a) aa and bb) apply accordingly.

The following applies to the use of balancing energy for the purposes of point b):

Balancing energy is used for the purposes of point b) irrespective of the overall network balance status to keep the hydrogen network within its technical limits. The hydrogen market area manager must take into account in particular estimates by the hydrogen

market area manager or hydrogen transmission network operators about the demand for hydrogen within the period for which the use of balancing energy is being considered, information about nominations, quantity notifications, allocations and measured flows, and pressure levels in the hydrogen transmission networks.

The hydrogen market area manager is required to meet any demand for balancing energy initially by using internal balancing energy. Contracting and using internal balancing energy is not remunerated separately either among hydrogen network operators or by the hydrogen market area manager. If the use of internal balancing energy is not appropriate or is not sufficient, the hydrogen market area manager must use balancing energy by buying or selling short-term trading products. The following rules apply:

aa) The hydrogen market area manager is required to meet the demand for balancing energy by buying or selling quantities of hydrogen. The hydrogen market area manager must primarily use standardised short-term products that can be traded on an exchange in the hydrogen market area manager's own market area.

bb) If the use of products as referred to in point b) aa) is not appropriate or is not sufficient to meet the existing demand, the hydrogen market area manager must meet the demand for balancing energy with products procured via a balancing platform operated by the hydrogen market area manager. Only balancing energy products that cannot be traded as products on the exchange may be procured via the balancing platform. The balancing platform must be integrated into the data exchange platform described in operative part 7.

The hydrogen market area manager must publish information about the quantity and price of the balancing energy used. The information must be published without delay and must include in particular the following: day of use, hour of use, delivery point, duration of use, lot size, quantity, commodity charge.

5. The hydrogen market area manager must introduce a financial incentive system in line with the following criteria:
   a) The hydrogen market area manager must continuously record the status of the balancing groups as the balance between input and offtake based on the provisional quantities allocated to a balancing group as referred to in operative part 2 d). The balance must be cumulated and continuously updated for each

balancing group. In this context, the balance responsible parties must be classified as either helpers or causers:

aa) Helper: a balance responsible party whose balancing group status is the opposite of the overall network balance status.

bb) Causer: a balance responsible party whose balancing group status is the same as the overall network balance status.

b) In hours in which the overall network balance status is above or below the boundary between the green and the yellow zone and the hydrogen market area manager uses balancing energy for the purposes of operative part 4 a), the hydrogen market area manager must charge a penalty to the causers and pay a bonus to the helpers in line with the following methodology:

The bonus corresponds to the price difference between the balancing energy countertrades (purchase and sale of hydrogen) in the relevant hour multiplied by the balancing group balance of a helper as referred to in operative 2 d) in the same hour.

The penalty comprises any costs for balancing energy and the bonus for the helpers. The hydrogen market area manager calculates the penalty by adding together the costs incurred for balancing energy in the relevant hour and the bonuses to be paid to the helpers, and charges each causer a penalty based on the share of the sum of the balancing group balances of all causers as referred to in operative part 3 c) that is accounted for by the causer's balancing group balance as referred to in operative part 2 d).

c) In hours in which the overall network balance status is above or below the boundary between the green and the yellow zone and the hydrogen market area manager does not use any balancing energy for the purposes of operative part 4 a), the hydrogen market area manager must calculate the penalty and the bonus as follows:

The hydrogen market area manager first multiplies the sum of the balancing group balances of all causers as referred to in operative part 3 c) with the first EEX HYDRIX index for Germany that is published after the relevant hour within the meaning of sentence 1. The product is charged as a penalty to the causers based on the share of the sum of the balancing group balances of all causers as referred to in operative part 3 c) that is accounted for by a causer's balancing group balance as referred to in operative part 2 d).

The amount determined as a penalty is paid as a bonus to the helpers based on the share of the sum of the balancing group balances of all helpers as referred to in operative part 3 c) that is accounted for by a helper's balancing group balance as referred to in operative part 2 d).

d) The hydrogen market area manager must decide in agreement with the ruling chamber whether the penalty as referred to in point c) should be calculated using a percentage of the relevant HYDRIX index or using the actual relevant HYDRIX index. The hydrogen market area manager must take into account in particular the necessary incentive effect of the penalty. The hydrogen market area manager must continuously analyse and assess the figure chosen and may adjust the figure accordingly in agreement with the ruling chamber.

e) If the hydrogen market area manager considers the use of an index other than that referred to in point c) to be appropriate for the financial incentive system, the hydrogen market area manager may apply to the ruling chamber for approval of the use of a different index.

6. The hydrogen market area manager is centrally responsible, for the purposes of hydrogen balancing, for the necessary incoming and outgoing data exchange, the processing and provision of information together with visualisations for all relevant market participants, including collecting the necessary core data. The necessary data must be made available to the hydrogen market area manager with the required level of detail.

7. The provision of information to market participants, in particular the balancing group quantities and network information to be made available and the overall network balance status, the receipt of information by market participants and the associated communication must take place through the hydrogen market area manager with the establishment of an internet-based central data exchange platform (data hub). In addition to the provision of specific information for market participants, market-wide information on the system status in hydrogen networks, such as in particular the sum of the balancing group balances of the helpers and causers, the overall network balance status and the balancing energy used, must also be published by the hydrogen market area manager on the data exchange platform. The same applies to the receipt of nominations, renominations and quantity notifications to the extent necessary for this purpose.

   a) A central registration point (one-stop shop) must be established on the data exchange platform for the registration and conclusion of contracts for access to hydrogen networks within the meaning of operative 2 of the WaKandA determination (BK7-24-01-15), the balancing group contract and access to the

virtual trading point (VTP) to enable market participants to provide or receive the necessary information via a single point.

b) The data exchange platform must be designed to also enable the exchange of data and processing of information for other operative applications relating to hydrogen network access, insofar as this is considered necessary by the hydrogen market area manager in agreement with the ruling chamber or is laid down in a determination.

c) The provision and receipt of information and the exchange of data and messages via the data exchange platform must meet the following requirements:

   i. Continuous availability of the data exchange platform must be ensured with suitable technical measures.
   ii. A standardised IT data interface (application programming interface – API) must be established to enable the automated electronic exchange of data between market participants and the data exchange platform. The hydrogen market area manager is entitled to specify the standard of the IT data interface (API), taking into account any existing API standardisation for market communication in the energy sector that affect the planned exchange of information.
   iii. The data exchange platform and the exchange of information and data using the IT interfaces must be protected against attacks and disruption within the framework of the relevant legislation and standards on IT and data security.
   iv. The provision of information and exchange of data must be based on an access and authorisation concept ensuring that authenticated access to the relevant information is only possible for authorised parties, that is, in particular, balance responsible parties, shippers/suppliers, network operators and final customers.
   v. The relevant data protection provisions must be taken into account in the provision of information and exchange of data. This applies in particular with respect to data integrity and to any necessary anonymisation or pseudonymisation of the data or information itself.
   vi. Market participants must register on the data exchange platform. The hydrogen market area manager must make available the information necessary for registration and for application of the data interfaces.

d) The data exchange platform must be established by 1 July 2027 and must be tested with market participants during an introductory phase up to 1 January 2028.

The specifications for the IT data interface (API) must be communicated to the market participants within a reasonable period of time before the data exchange platform is established.

8. The hydrogen market area manager must set up a VTP. Potential market participants must conclude a balancing group contract with the hydrogen market area manager to gain access to the hydrogen market area and the VTP. The hydrogen market area manager may require registration and the provision of relevant information for the conclusion of a contract. The VTP is a point in the hydrogen market area where hydrogen can be exchanged between balancing groups but is not a physical entry or exit point in the hydrogen market area.

9. The following reporting, evaluation and publication requirements are being imposed:
   a) The hydrogen market area manager is required to provide the ruling chamber with an annual report summarising the development and status of the hydrogen balancing regime in the hydrogen market area in the previous calendar year by 1 April of each year beginning on 1 April 2029. This report should include a history of the overall network balance status and the resulting measures, including the payment flows under the helper/causer incentive system, and an evaluation of the procurement and use of balancing energy.
   b) The reporting and evaluation requirements resulting from point a) should be met together with the reporting requirements from the WaKandA determination (BK7-24-01-15) by providing a combined report to the ruling chamber.
   c) The ruling chamber must publish the report provided in accordance with point a) or b) on the Bundesnetzagentur website.
   d) Hydrogen transmission network operators must publish a coordinated methodology for defining the flexibility zones as set out in operative part 3 within a reasonable period of time before its application. Hydrogen transmission network operators must take due account of the interests of the market roles affected when developing the methodology.
   e) The hydrogen market area manager must publish the compensation mechanism referred to in operative part 2 h), including details of how it functions, within a reasonable period of time before its application. The hydrogen market area manager must take due account of the interests of the market roles affected when developing the compensation mechanism.

10. The hydrogen market area manager and hydrogen network operators are required to apply the rules determined, with the exception of operative part 1 sentence 1 and operative part 7 d), beginning on 1 January 2028.

11. No fees are payable for the decision.

Rationale

I.

1 The purpose of the determination proceedings is to lay down the fundamental aspects of a balancing regime for hydrogen. The determination supplements and builds on the applicable European legal acts, national legislation and the Bundesnetzagentur's existing determinations and aims to ensure a transparent, reliable and legally secure regulatory framework for the ramp-up of hydrogen.

2 In what is referred to as the European Gas and Hydrogen Package, the European legislature created rules for access to hydrogen networks that need to be transposed into national law or that are directly applicable.

3 Pursuant to Article 35(1) and (4) of Directive (EU) 2024/1788 of the 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 (Gas Directive), as from 1 January 2033 at the latest, Member States have to ensure the implementation of a system of regulated third-party access to hydrogen networks that is based on published tariffs and applied objectively and without discrimination between any hydrogen network users. Until 31 December 2032, Member States may provide for a system of negotiated third-party access to hydrogen networks in accordance with objective, transparent and non-discriminatory criteria.

Regulation (EU) 2024/1789 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 (Gas Regulation), contains further provisions on the design of the system of access to hydrogen networks. As from 1 January 2033, at the latest, hydrogen networks have to be organised as entry-exit systems (see Article 3(b) and Article 7(6) of the Gas Regulation).

The German legislature introduced mandatory regulation for hydrogen network operators meeting the criteria set out in section 28j(1) of the Energy Industry Act (EnWG) in anticipation of the implementation of the European rules. In line with these rules, section 28n(1) sentences 3 and 4 require the establishment of an entry-exit system for access to hydrogen networks in Germany. The system is to be based on the requirements in section 20(1b) EnWG for access to the gas supply networks, but is also to take into account the fact that, particularly in the ramp-up phase of the hydrogen market, not all the key characteristics of an entry-exit system (such as the market area-wide firm, free allocability of capacity) can be fully met (see Bundestag printed paper 20/10014, page 57). Section 28n(5) sentence 1 para 1 EnWG gave the regulatory authority far-reaching powers to make determinations in the field of access regulation of hydrogen networks.

4 As part of this process, the ruling chamber opened own-initiative proceedings on 3 July 2024. The initiation of proceedings was published on the Bundesnetzagentur's website. An English version of the introductory document was published on the Bundesnetzagentur's website on 1 August 2024.

5 The ruling chamber launched an initial public consultation upon opening the proceedings, giving all market participants the opportunity to comment. In its introductory document, the ruling chamber outlined the possible subjects of the determination, setting out its considerations on the key elements of a basic model for hydrogen balancing. These key elements included the establishment of a hydrogen market area manager, the continuous recording and transmission to the balance responsible parties of the balancing group status by the hydrogen market area manager, and the processing of data and information through a central data exchange platform. The following associations, stakeholders and individual undertakings responded to the consultation: Bundesverband der Energie- und Wasserwirtschaft e.V. (BDEW), bp Europa SE (bp), European Energy Exchange AG (EEX), EFET Deutschland – Verband Deutscher Energiehändler e.V. (EFET), EnBW Energie Baden-Württemberg AG (EnBW), Energienetze Bayern GmbH & Co. KG (Energienetze Bayern), E.ON SE (E.ON), Evonik Operations GmbH (Evonik), EWE Netz GmbH (EWE Netz), FNB Gas e.V. (FNB Gas), GEODE Deutschland e.V. (GEODE), Gasnetze Hamburg GmbH (GNH), Initiative Energien Speichern e.V. (INES), RWE Supply & Trading GmbH (RWE), party summoned 1), Securing Energy for Europe GmbH (SEFE), Statkraft Markets GmbH (Statkraft), Trading Hub Europe GmbH (THE), Uniper SE (Uniper), Verband der Chemischen Industrie e.V. (VCI), Verband kommunaler Unternehmen e.V. (VKU) and VNG AG (VNG). The introductory document and the 21 responses received are available on the Bundesnetzagentur's website (www.bundesnetzagentur.de). On 23 July 2024 the ruling chamber answered questions for a better understanding of the introductory document in an online session.

6 The ruling chamber admitted party summoned 1) to the proceedings in a decision of 28 November 2024 (BK7-24-01-014#B01). Parties summoned 2) to 5) were admitted to the proceedings in a decision of 3 June 2025 (BK7-24-01-014#B02).

7 The ruling chamber drafted a specific proposal for the operative part together with the main considerations underlying the rules, taking into account the responses received, and put it out for a further consultation on 19 December 2024. An English version of the consultation document was published on the Bundesnetzagentur's website on 11 February 2025. The following associations, stakeholders and individual undertakings responded to the second consultation: Air Products GmbH (Air Products), BDEW, bp, Creos Deutschland Wasserstoff GmbH & Creos Deutschland GmbH (Creos), Deutsche Industrie- und Handelskammer (DIHK), Deutscher Verein des Gas- und Wasserfaches e.V. (DVGW), Deutscher Wasserstoff Verband e.V. (DWV), EEX,

EFET, EnBW, Energienetze Bayern, Energinet, E.ON, Evonik, EWE Gasspeicher GmbH (EWE Gasspeicher), EWE Hydrogen GmbH (EWE Hydrogen), FNB Gas, N.V. Nederlandse Gasunie (Gasunie NL), Geode, Hamburger Energienetze GmbH (HEN), INES, Referenzkraftwerk Lausitz GmbH (RefLau), RWE, party summoned 1), SEFE, Statkraft, Salzgitter AG (Salzgitter), THE, Uniper, party summoned 2), party summoned 3), party summoned 4), party summoned 5), VCI, VKU and Wirtschaftsvereinigung Stahl (WVStahl). The consultation document and the 31 statements received are available on the Bundesnetzagentur's website (www.bundesnetzagentur.de).

8 On 20 February 2025 the ruling chamber held a sector dialogue with the undertakings and associations participating in the consultation. The ruling chamber presented the intended changes to the introductory document and the basic elements of the planned operative part, including a timetable for implementation, and discussed them with the participants. The undertakings and associations were given the opportunity until 7 March 2025 to take account of the matters presented and discussed in their written responses.

9 In view of the large number of subjects covered by the determination, reference is made to the content of the responses to both consultations in the respective part of the rationale. On 23 May 2025 the ruling chamber held a dialogue with the gas transmission system operators as a follow-up to the operators' responses in the second consultation. The dialogue focused on the use of balancing energy and other compensation mechanisms and on the design of the data hub. On 27 May 2025 the ruling chamber held a dialogue with BDEW and EFET as a follow-up to their responses in the second consultation. The dialogue focused on the "park and borrow" concept proposed by the associations to build on the incentive system set out in the draft operative part. The two supplementary responses are available on the Bundesnetzagentur's website.

10 The regulatory authorities of the federal states, the Bundeskartellamt and the Committee of representatives of the federal state regulatory authorities were informed of the opening of proceedings on 3 July 2024. The participation of the Committee of representatives of the federal state regulatory authorities, as well as the participation of the Bundeskartellamt and the regulatory authorities of the federal states, took place through the transmission of the draft decision on 6 October 2025.

11 For further details, reference is made to the contents of the file.

II.

12 The determination is formally and substantively lawful. In particular, the ruling chamber has properly exercised its discretion.

13 Owing to the amount of information to be presented, the reasons for the decision are preceded by a structural overview:

1. Legal basis

14 The ruling chamber based its decision on section 29(1) in conjunction with section 28n(5) sentence 1 para 1 EnWG.

2. Formal lawfulness

15 The formal requirements have been met.

2.1. Competence

16 The competence of the Bundesnetzagentur for the decision derives from section 54(1) EnWG. The competence of the ruling chamber derives from section 59(1) sentence 1 EnWG.

2.2. Hearing and consultation

17 The ruling chamber has given the parties involved and the representatives of the economic sectors affected by the proceedings the opportunity to state their views pursuant to section 67(1) and (2) EnWG.

18 The ruling chamber held a first consultation on 3 July 2024, presenting its basic deliberations. The ruling chamber published a specific proposal for the operative part together with the main considerations underlying the rules, taking into account the responses received, on 19 December 2024 and released it for consultation. As part of the second consultation, the ruling chamber presented the intended changes to the introductory document and the planned operative part, including a timetable for implementation, and discussed them with the parties involved and the representatives of the economic sectors affected by the proceedings in the sector dialogue on 20 February 2025. The undertakings and associations were given the opportunity until 7 March 2025 to take account of the matters presented and discussed in their written responses. On 23 May 2025 the ruling chamber held a dialogue with the gas transmission system operators as a follow-up to the operators' responses in the second consultation. On this occasion, respondents' proposals and arguments relating to the rules for balancing energy, other compensation mechanisms and the design of the data hub were discussed. On 27 May 2025 the ruling chamber held a dialogue with BDEW and EFET to discuss the "park and borrow" concept put forward in their responses in the second consultation.

2.3. Participation of other authorities

19 The participation of other authorities has taken place to the extent required. The regulatory authorities of the federal states were informed of the opening of proceedings on 3 July 2024 in accordance with section 55(1) sentence 2 EnWG; the Bundeskartellamt and the Committee of representatives of the federal state regulatory authorities were also informed. The formal participation of the Bundeskartellamt and the regulatory authorities of the federal states pursuant to section 58(1) sentence 2 EnWG, with the opportunity to comment, took place in the form of the submission of the draft decision on 6 October 2025. No comments were received. The Committee of representatives of the federal state regulatory authorities was sent the draft decision on 6 October 2025 and given the opportunity to comment in accordance with section 60a(2) EnWG. The Committee did not provide a statement on the decision.

3. Substantive lawfulness

20 The determination is also substantively lawful.

21 The determination is directed at operators of hydrogen networks within the meaning of section 3 para 10b EnWG, operators of hydrogen transmission networks within the meaning of section 3 para 10d EnWG, balance responsible parties and the hydrogen market area manager (section 3.1 below). The determination sets out the conditions for access to hydrogen networks and is limited to arrangements which the Bundesnetzagentur is empowered to lay down under section 28n(5) EnWG (section 3.2.). The ruling chamber has correctly exercised its discretion for deciding whether or not to take action and which action to take (sections 3.3 and 3.4).

3.1. Addressees of the determination

22 This determination is addressed to operators of hydrogen networks within the meaning of section 3 para 10b EnWG. Operators of hydrogen networks include both operators of hydrogen transmission networks within the meaning of section 3 para 10d EnWG and hydrogen distribution network operators. In some instances, operators of hydrogen transmission networks within the meaning of section 3 para 10d EnWG are addressed separately, for example in operative part 1, operative part 3 d) and operative part 9 d). Section 28n(5) sentence 1 para 1 EnWG does not directly provide for the determination to be addressed to hydrogen network operators. However, it provides for the determination in these proceedings to expand on the obligations for hydrogen network operators arising from section 28n(1) sentences 1 to 5 EnWG and therefore for the determination to be addressed to those operators.

23 The determination is also addressed to balance responsible parties. The term “balance responsible party” is not defined in the EnWG for the hydrogen sector. For the purposes of this determination, however, the term “balance responsible party” as defined in section 2 para 5 of the Gas Network Access Ordinance (GasNZV) is being used accordingly and therefore means any natural or legal person with responsibility to the hydrogen market area manager for managing a balancing group.

24 The determination is also addressed to the hydrogen market area manager. As there is no legal definition of the term “hydrogen market area manager” either, the definition of “market area manager” in section 3 para 26a EnWG is being used accordingly. The hydrogen market area manager is thus the specific natural or legal person that has been commissioned by the hydrogen transmission network operators to perform network operation tasks and that provides services in the hydrogen market area that are necessary for the efficient management of network access.

25 Section 28n(5) sentence 1 para 1 EnWG does not directly provide for the determination to be addressed to balance responsible parties and the hydrogen market area manager either; however, the determination can be addressed to them because some of the rights and obligations set out

in the determination directly relate to them. For example, operative part 2 c) and h) requires balance responsible parties to keep their balancing groups balanced and to balance any differences in quantities. Operative part 1 specifies which costs the hydrogen market area manager may pass on, operative part 2 specifies how the hydrogen market area manager is to carry out balancing, operative part 3 lays down rules for publication of the overall network balance status by the hydrogen market area manager, and operative part 8 requires the hydrogen market area manager to set up a virtual trading point (VTP).

3.2. Conditions for network access

26 The determination regulates conditions for access to hydrogen networks. It is limited to arrangements which the Bundesnetzagentur is empowered to make by virtue of section 29(1) in conjunction with section 28n(5) sentence 1 para 1 EnWG.

27 Pursuant to section 28n(5) sentence 1 para 1 EnWG the regulatory authority can set requirements on the conditions for access to hydrogen networks, including the rules for balancing the hydrogen network. The ruling chamber understands conditions for access to hydrogen networks to mean all measures, circumstances and obligations associated with the granting of network access or of significance to the management of network access. This determination regulates the basic framework conditions for access to hydrogen networks. This includes defining a compensation and balancing regime, including rules relating to the balancing group contract. This determination also regulates the implementation of a balancing methodology that will enable the allocation of input and offtake quantities of hydrogen to shippers and suppliers, the details of a compensation mechanism to take into account technical restrictions in the network (such as the establishment of flexibility zones in the hydrogen networks), the implementation of an incentive system to assess balancing differences, and rules for the use of balancing energy. In addition, the determination lays down the conditions for managing network access in accordance with section 28n(1) EnWG, in particular the content and scope of the cooperation required among network operators, and publication and reporting requirements. Rules are also included on the establishment and operation of a data exchange platform for the central exchange of messages and information.

3.3. Discretion for deciding whether or not to take action

28 Issuing a determination pursuant to section 29(1) in conjunction with section 28n(5) sentence 1 para 1 EnWG is within the discretion of the regulatory authority. The ruling chamber has properly exercised its due discretion. Pursuant to section 40 of the Administrative Procedure Act (VwVfG), an authority empowered to act according to its discretion has to exercise this discretion in line with the purpose of empowerment and observe the legal limits of discretion.

29 The ruling chamber decided to initiate proceedings in an unobjectionable manner and with consideration of the arguments for and against doing so. A particular argument in favour of issuing

the determination is that Article 35(1) of the Gas Directive requires Member States to implement a system of regulated third-party access to hydrogen networks. Article 35(4) of the Gas Directive and Article 3(b) and Article 7(6) of the Gas Regulation grant Member States a transitional period until 31 December 2032 during which the implementation of regulated access is not compulsory. One particular reason for this is that the hydrogen market is still in the ramp-up phase and it is necessary to take into account the stage of development of the market when applying the principles laid down in the Gas Directive (recital 11 of the Gas Directive). Nevertheless, the German legislature has deliberately pre-empted the European rules by introducing mandatory access regulation for the hydrogen network operators covered by section 28j EnWG before the end of the transitional period (Bundestag printed paper 20/10014, page 56).

30 Another argument in favour of issuing the determination is that the tariff system introduced by the WANDA determination (GBK-24-01-2#1) ties into the booking of entry and exit capacity. This alone makes it necessary to specify the design of the capacity products and the associated conditions for network access, including a compensation and balancing regime that guarantees stable and safe network operation. This does not conflict with the fact that the scope of the WANDA determination (GBK-24-01-2#1), unlike the determination in these proceedings, is restricted to operators of hydrogen networks that are part of the hydrogen core network as provided for by section 28q EnWG. The scope of the determination in these proceedings is based on the scope of Part 3 Division 3b EnWG. This was not contrary to the interests of the parties concerned. The proceedings serve to lay down the fundamental access conditions so that market participants have planning and investment certainty at the very beginning of the hydrogen ramp-up. This should also help to achieve a uniform understanding of the access system among market participants and ensure that legal regulatory provisions are being applied uniformly.

3.4. Discretion for deciding which action to take

31 The ruling chamber has also correctly exercised its discretion for deciding which action to take. It has been guided by the purposes of its empowerment and has observed the limits of discretion, taking into account the principle of proportionality (see section 40 VwVfG). In this determination, the ruling chamber is following the purposes and objectives set out in section 1(1) and (2) sentence 2 EnWG of promoting a supply of hydrogen for the general public that is secure, low-priced, consumer-friendly and efficient and that is increasingly based on renewable energy. The ruling chamber is also taking into account the objectives set out in Article 1 first paragraph points (a) and (b) of the Gas Regulation of promoting the proper functioning of the hydrogen market with a high level of security of supply and contributing to the flexibility of the energy system. In addition, the ruling chamber is taking into account the objective of ensuring competition in the market for hydrogen (recital 84 of the Gas Directive) and the objectives set out in Article 1(1) and (5) of the Gas Directive of establishing a framework for the decarbonisation of the market for

hydrogen in order to contribute to the achievement of the Union's climate and energy targets, the long-term flexibility of the electricity system and the reduction of net greenhouse gas emissions of hard-to-decarbonise sectors. Although the Directive still needs to be transposed into national law, these objectives are being taken into account in line with the principle arising from Article 4(3) of the Treaty on European Union (TEU) in conjunction with Article 288 third paragraph of the Treaty on the Functioning of the European Union (TFEU) in that the attainment of the objectives is not seriously called into question. Consequently, account is also being taken of the purposes of the Climate Change Act (KSG) and the targets set to fulfil those purposes, in particular the achievement of net greenhouse gas neutrality by 2045, as defined in section 13(1) and section 3(2) KSG.

32 The determination in these proceedings takes account of these purposes and objectives. The ruling chamber believes that the establishment of a safe and effective hydrogen network is essential to achieve the national and European targets for decarbonisation, in particular of hard-to-decarbonise sectors. With respect to the individual rules laid down in this determination, the ruling chamber is balancing the interests of the various players in the hydrogen sector in reasonable proportion in order to enable the proper functioning of the market for all stakeholders and not to hinder the further development of the market or the entry of other players in the market. Account has been taken in particular of the needs resulting from both new generation structures dependent on the electricity market and large investments by the network operators.

3.4.1. Basic deliberations

33 The decision to issue the determination is based on the following basic deliberations.

34 The ruling chamber's intention is to introduce rules that guarantee access to hydrogen networks under appropriate and non-discriminatory conditions (see section 28n(1) EnWG). In accordance with the provisions in section 28n(1) sentences 3 to 5 EnWG and Article 3(b) and Article 7(2), (3) and (6) of the Gas Regulation, a capacity-based model for access to hydrogen networks is being introduced whose design is partly based on the current system for access to gas supply networks. However, the model can be designed to include other access rules that may result, for example, from the requirements for an integrated energy system (sector coupling) or the early phase of the hydrogen ramp-up. In accordance with the requirements of Article 13 of the Gas Regulation relating to balancing rules, a compensation and balancing regime is being introduced that is market-based and reflects genuine system needs. This does not conflict with the fact that Article 7(9) of the Gas Regulation does not require compliance with these requirements until 1 January 2033. The early implementation of the entry-exit system in Germany enables the ruling chamber to adjust to the requirements before the end of the transitional period set out in the EU legislation. In order to take account of system needs in the hydrogen sector, large parts of the compensation and balancing regime differ from the current regime in the gas sector. This takes

into account in particular circumstances resulting from the fact that the hydrogen network is still in the ramp-up phase and may therefore initially be made up of clusters and that a market for hydrogen and balancing energy does not yet exist. These network-related technical restrictions in the hydrogen market that are anticipated in the initial phase mean that there will be limited potential flexibility for network operation, and thus also for shippers; this will also have an impact on the balancing regime, that is on the recording of input and offtake quantities for the purposes of balancing. The ruling chamber, using the scope provided by section 28n(1) sentences 3 and 4 EnWG, has included in its considerations the aim of interconnecting the clusters as soon as possible to form a national interconnected network. The ruling chamber has taken into account the stage of development of the hydrogen market by only setting out the fundamental rules required, which can then be built on and supplemented on the basis of the experience gained in the course of the hydrogen ramp-up. Hydrogen network operators will therefore initially have a certain degree of scope that can be used when developing the hydrogen cooperation agreement together with the other market players.

3.4.2. Deliberations on the individual subjects of the determination

35 The individual subjects of the determination are based on the following considerations:

3.4.2.0 Operative part 1

36 Operative part 1 sets out that hydrogen transmission network operators have to designate a hydrogen market area manager for the German hydrogen market area. The hydrogen market area manager has to be designated and established at the latest two months after publication of the determination. According to sentence 2, the hydrogen market area manager will, in particular, perform the tasks envisaged in this determination and in the WaKandA determination (BK7-24-01-015). These tasks include managing balancing and providing the information relevant to balancing through the internet-based central data exchange platform to be established as described in operative part 7. Having one body to perform the tasks ensures efficient access to hydrogen networks and is essential for a market area encompassing all network operators. According to sentence 3, hydrogen transmission network operators will also be able to commission the market area manager to fulfil other tasks.

37 The early designation and establishment of a central hydrogen market area manager by hydrogen transmission network operators was supported by a large number of market participants in the consultations (including BDEW, DIHK, DWV, FNB Gas, INES, Statkraft, THE). In the ruling chamber's view, the designation and establishment of a hydrogen market area manager by hydrogen transmission network operators contributes to a particular extent to accelerating and harmonising processes in the interests of a targeted and ordered ramp-up of the hydrogen market. Defining clear responsibilities creates planning certainty for undertakings, in line with the response

from DIHK, and improves coordination among the stakeholders. The earlier deadline by which the hydrogen market area manager has to be established ensures that the hydrogen market area manager can perform the tasks assigned when the rules in this determination and in the WaKandA determination (BK7-24-01-015) come into force. One respondent (EnBW) suggested using the term “hydrogen market area manager” for the hydrogen sector, above all to make a distinction from the market area manager responsible for the German gas market area (Trading Hub Europe) (see section 3 para 26a EnWG). The ruling chamber recognises the added value in having a clear distinction from the term of market area manager in the gas market area and has therefore changed the term as suggested.

38 One respondent (Creos) stated that designating one single hydrogen market area manager for Germany conflicted with the planned approach in the cross-border mosaHYc project for joint management of the mosaHYc market area by the two network operators involved. The ruling chamber acknowledges that its approach for the establishment of a hydrogen market area manager for the whole German hydrogen market area does not seem to be in line with the proposed approach in the project described by the respondent. However, the ruling chamber does not consider this to be a reason to change its approach. The ruling chamber’s proposal to establish a central hydrogen market area manager for Germany was supported by a broad consensus in the consultation. In the ruling chamber’s view, establishing several market area managers in the various clusters would be inefficient and difficult to reconcile with the other rules in the determination. Irrespective of this, it is not clear why the hydrogen market area manager could not perform the role for the project described by the respondent as well, even though it is not what the project developers originally planned. In addition, operative part 1 sentence 4 states that hydrogen transmission network operators have to involve hydrogen distribution network operators in an appropriate manner in the process of designating the hydrogen market area manager. This makes sense because hydrogen distribution network operators, as part of the hydrogen market area, are particularly affected by the tasks of the hydrogen market area manager, such as the data hub role. It is therefore necessary to take their interests into account. The ruling chamber’s proposal for hydrogen distribution network operators to be involved in an appropriate manner in the process of designating the hydrogen market area manager was supported by respondents (HNE, VKU).

39 Operative part 1 sentence 6 states that the rules in this determination that depend on the existence of a sufficiently interconnected national network are to apply accordingly to clusters, as far as this is necessary for a consistent application of the rules during the hydrogen ramp-up period. This ensures that the rules, which basically relate to a national entry-exit system, are still effective even if clusters are not yet interconnected. The ruling chamber included special rules specifically for clusters in operative part 3 d) of the consultation draft. Respondents (BDEW, FNB Gas) welcomed the possibility of creating clusters but also drew attention to potential inconsistencies beyond this in the application of the rules in the draft decision. Attention was therefore drawn to the need for

exemptions, in particular in operative parts 4 and 5. The ruling chamber decided not to include individual exemptions but to include a catch-all provision in operative part 1 sentence 6 in order to avoid unforeseen inconsistencies in the application of the rules in this determination. This aims to ensure the effective application of the rules without diverging from the principle of the national entry-exit system for hydrogen.

40 Operative part 1 sentence 7 sets out that hydrogen transmission network operators have to equip the hydrogen market area manager with the necessary resources to enable the hydrogen market area manager to fully perform the assigned tasks when this determination and the WaKandA determination (BK7-24-01-015) take effect. The necessary resources mainly include the necessary financial and IT resources and corresponding personnel resources. One respondent (FNB Gas) stated that the necessary financial resources should not be taken to mean the costs arising from the hydrogen market area manager's activities (such as the procurement of balancing energy and pre-financing). The respondent suggested establishing a system for passing on these costs. Another respondent (THE) stated that the hydrogen market area manager should be able to pass on at least the costs from prefinancing and defaulted payments to all balance responsible parties through an additional charge or monthly invoicing. In the ruling chamber's view, the necessary financial resources for the hydrogen market area manager also comprise any necessary costs arising from the hydrogen market area manager's activities, including the procurement of balancing energy and corresponding prefinancing. This is logical because the need to establish a hydrogen market area manager results in particular from the fact that the hydrogen market area will comprise more than one network operator at transmission level. It would be highly inefficient for the individual hydrogen transmission network operators to carry out the responsibilities assigned to the hydrogen market area manager in this determination in their individual clusters, simply because of the multiple structures that would be needed. The establishment of a central hydrogen market area manager was therefore supported by practically all the respondents (BDEW, DIHK, DWV, FNB Gas, INES, Statkraft, THE). Despite this, the hydrogen transmission network operators are still primarily responsible for managing balancing and providing the necessary financial resources, for example, and have a responsibility to do this towards the hydrogen market area manager. Ultimately, however, the hydrogen market area manager and consequently the hydrogen transmission network operators will not incur any costs or generate any revenue from the balancing regime.

41 Operative part 1 sentence 8 states that hydrogen network operators have to provide the hydrogen market area manager with any data and information necessary to fulfil the tasks, with the level of detail required in each case. This rule is necessary because the hydrogen market area manager does not have all the information readily available but needs the information to perform the tasks to the extent necessary and thus to ensure the functioning of the balancing regime set out in the determination. For example, the hydrogen market area manager cannot implement the

helper/causer mechanism described in operative part 5 in compliance with the determination if the binding flexibility zone limits referred to in operative part 3 are not transmitted to the hydrogen market area manager in good time. Likewise, the hydrogen market area manager is dependent on information from the hydrogen transmission network operators in order to use balancing energy for the purposes of operative part 4 b).

42 However, the ruling chamber does not consider it necessary to introduce a comprehensive compensation and balancing regime for the hydrogen market similar to the system of balancing neutrality charges under the GaBi Gas 2.0 determination (BK7-14-020). The balancing model to be implemented in line with this determination gives a greater share of the responsibility to balance responsible parties through the helper/causer mechanism and the resulting financial incentives than is the case in the gas sector. At the same time, this determination does not provide for any balancing energy products for which contracting costs would be incurred that would have to be passed on to the balance responsible parties. The determination does not provide for a liquidity buffer either. Nevertheless, it has to be ensured that the hydrogen market area manager does not incur any gain or loss from the balancing activities. This is explicitly set out in operative part 1 sentence 9. This also makes clear that the hydrogen market area manager will not carry out the activities assigned in this determination and in the WaKandA determination (BK7-24-01-015) with the intention of making a profit. According to operative part 1 sentence 10, this applies in particular to outgoing and incoming bonus and penalty payments to and from helpers and causers, costs for balancing energy, and other costs incurred or income earned in connection with balancing activities, which are considered to be all the activities that the hydrogen market area manager carries out in order to meet the obligations set out in this determination. The financial neutrality of the hydrogen market area manager as regulated in this determination is identical in content to that of the market area manager in the gas sector. However, an explicit regulation is necessary in this case because, unlike in the gas sector with its Network Code on Gas Balancing (Regulation (EU) No 312/2014), there is no corresponding European legislation for the hydrogen sector. Two respondents (FNB Gas, THE) also suggested clarifying this in the determination.

43 In addition to the general determination that no gain or loss may be incurred, operative part 1 sentence 11 a) to c) set out the costs and revenue that the hydrogen market area manager is to pass on to the balance responsible parties. These include the costs and revenue from the use of balancing energy for the purposes of operative part 4 a) and the payments in connection with managing the helper/causer mechanism as described in operative part 5. Sentence 2 in operative part 1 b) and c) sets out that costs can only be passed on to the balance responsible parties if, in the ruling chamber's view, they have been incurred efficiently in line with the applicable provisions. One key criterion for assessing cost efficiency is the extent to which the hydrogen market area manager could have reasonably reduced the costs incurred when using balancing energy. Account has to be taken in particular of the information, time and instruments available to the

hydrogen market area manager at the time the decision was taken to use balancing energy. Sentence 3 in operative part 1 b) and c) sets out that the hydrogen market area manager has to prove that the costs to be passed on to the balance responsible parties were incurred efficiently. The hydrogen market area manager therefore has to provide the ruling chamber, upon request, with any documents it needs to assess efficiency and has to assist appropriately in clarifying the matter, for example by giving additional explanations. These rules serve to implement a monitoring mechanism to ensure that only costs that have been incurred efficiently can be passed on to the balance responsible parties and are covered by the provision that the hydrogen market area manager may not incur any gain or loss.

44 Operative part 1 d) sentence 1 regulates how the hydrogen market area manager can pass on costs and revenue from the balancing activities that, unlike the costs and revenue referred to in operative part 1 a) to c), cannot be passed on cost-reflectively to the balance responsible parties. These include costs and revenue from balancing energy transactions for the purposes of operative part 4 b). The use of balancing energy for the purposes of operative part 4 b) serves to balance out short-term fluctuations in the hydrogen networks and is not directly related to the overall network balance status or the helper/causer mechanism. It is therefore not readily possible to allocate these costs and revenue to individual balancing groups. This may also apply to other types of costs. One respondent (THE) gave potential defaulted payments from individual balance responsible parties or financing costs as examples. Operative part 1 d) sentence 1 sets out that such costs and revenue have to be spread across all German hydrogen networks. This ensures that costs and revenue that cannot be attributed to individual parties are passed on to all network users in the hydrogen market area in a non-discriminatory manner. At the same time, account is also taken of the principle that the hydrogen market area manager may not incur any gain or loss.

45 Operative part 1 d) sentence 2 also sets out that the hydrogen market area manager has to publish each year the projected other costs and revenue for the following year, the actual other costs and revenue for the current year and the amount to be passed on in euros per kilowatt hour per hour per annum (€/kWh/h/a). The hydrogen market area manager has to provide an explanation of the calculations allowing market participants to verify the projected costs and revenue. The amount to be passed on is calculated by dividing the planned costs and revenue to be passed on by the sum of the projected booked exit capacity in the relevant year. Publication of the projected and actual figures and the amount to be passed on is therefore essential for reasons of transparency. The ruling chamber has not included any further details on calculating the amount to be passed on. According to sentence 3, the finer details are to be set out in the hydrogen cooperation agreement in accordance with section 28n(1) EnWG. Alternatively, the details can be set out in a determination. The ruling chamber currently assumes, however, that the hydrogen cooperation agreement is suitable for laying down the details of the amount to be passed on, with the involvement of all relevant market players and the Bundesnetzagentur and by taking into account

network tariff rules such as when price lists have to be published, so that the amount can be charged beginning on 1 January 2028.

46 The rules in sentences 4 and 5, in line with the provisions in points b) and c), serve to implement a monitoring mechanism to ensure that only costs that have been incurred efficiently can be passed on to network users and are covered by the principle that the hydrogen market area manager may not incur any gain or loss.

Finally, operative part 1 e) sets out that the hydrogen market area manager has to publish the sum of the incoming and outgoing payments referred to in operative part 1 sentence 11 a) to d) with at least the same frequency as the relevant tariffs are charged to the balance responsible parties and network users, but at least once a month. This ensures the necessary transparency and gives the market participants a monitoring function to the extent that they can check the plausibility of the published figures.

3.4.2.1 Operative part 2

47 Operative part 2 lays down the principles in accordance with which hydrogen network operators and the hydrogen market area manager are required to carry out balancing.

48 Operative part 2 a) sentence 1 sets out that the hydrogen market area manager has to balance all quantities transported and traded by shippers and balance responsible parties in balancing groups for the proof of the recording of all input and offtake quantities of hydrogen in the hydrogen market area. This is the only way to determine whether the technical quantities in the hydrogen market area are balanced and, if not, whether the hydrogen market area manager needs to take measures. Owing to the limited flexibility potential in the hydrogen networks to accommodate differences in quantities, sentence 2 sets out that no tolerances are allowed. For the same reason, no time-defined balancing period is being set and balancing will instead take place continuously (see also the more detailed explanations about operative part 2 d)). In contrast to the last consultation, the ruling chamber has now decided not to allow tolerances for the assessment of the differences in quantities in a balancing group. This enables a simpler comparison of imbalances in a balancing group with the overall network balance status and therefore a stricter application of the helper/causer mechanism (see operative part 5). At the same time, it can be assumed that the degree of flexibility in a hydrogen network that is needed to allow for a tolerance will now lead to a corresponding extension of the “green zone” (see operative part 3 d)) where no compensatory measures by the balance responsible parties are required. In the ruling chamber’s view, the extension of the green zone adequately compensates the balance responsible parties for the lack of a tolerance range and ultimately has the same effect. The majority of respondents

(BDEW, DIHK, DWV, EFET, EEX, EnBW, SEFE, Statkraft, Uniper, VCI, VKU, Uniper) explicitly welcomed the basic balancing methodology proposed.

49 Operative part 2 b) sets out the criteria for the allocation of quantities of hydrogen in the balancing groups for different types of entry and exit points in the hydrogen networks. Operative part 2 b) aa) and bb) set out the allocation principles applicable to the individual entry and exit points. Specifically:

50 Operative part 2 b) aa) sets out that the “allocated as nominated” principle will apply to entry and exit points at cross-border interconnection points (i), virtual entry and exit points (ii), entry and exit points from and to hydrogen storage facilities (iii) and entry points from hydrogen terminals (iv), in other words the nominated quantities in the balancing groups have to be taken into account. By contrast, operative part 2 b) bb) sentence 1 sets out that the “allocated as measured” principle will apply to exit points connecting final customers and entry points from domestic production facilities, in other words measured data is relevant for the purposes of balancing.

51 The ruling chamber has followed the established approach in the gas sector. It has laid down different allocation rules for different types of entry and exit points, according to which balancing uses either nominated or measured data. In the case of entry and exit points controlled by the hydrogen network operators on the basis of nominations from shippers, the “allocated as nominated” principle applies. In the case of exit points connecting users with interval metering, measured data (actual consumption) has to be included in the balance. The ruling chamber has made a change to the rules as suggested by several respondents (BDEW, Creos, DWV, EnBW, INES, SEFE, Statkraft, RWE, Uniper): entry points from domestic production facilities are now subject to the “allocated as measured” principle instead of the “allocated as nominated” principle. The ruling chamber agrees with the respondents that this will enable the use of flexibility potential of entry points from domestic production facilities, such as electrolysers, in the netting period. As potential changes in load have a direct effect in the balancing groups, this can also lead to positive effects on overall network stability. The ruling chamber also agrees with the respondents that, at least during the ramp-up of the hydrogen market, it is likely that only one shipper/balance responsible party will initially be active at each entry point; this means that further considerations on how to divide up quantities in the case of multiple use of the entry points are not necessary at this stage. In the ruling chamber’s view, however, multiple use is likely to be the rule rather than the exception in the case of the other entry and exit points to which the “allocated as nominated” principle applies; the ruling chamber has therefore not met the request from some respondents (Air Produkt, Creos, EFET) to apply the “allocated as measured” principle to as many entry and exit points as possible. The ruling chamber understands the argument that a sufficiently sized operational balancing account (OBA) necessary for nominations also requires a certain degree of network flexibility; in the ruling chamber’s view, however, the multiple user structures and

continuous entry and exit flows at these entry and exit points, such as at hydrogen storage facilities, are an argument against using actual consumption in the balancing. This view was explicitly supported by various respondents (BDEW, EWE Gasspeicher, INES, RWE, Uniper, VKU).

52 Operative part 2 b) bb) sentence 2 sets out that if measured data is used for the balancing, the data has to be measured every 15 minutes and has to be transmitted without delay to the hydrogen market area manager for allocation to the relevant balancing group. If the "allocated as measured" principle applies, the data has to be measured using interval metering or an equivalent metering method where the measured data indicates the quantity for the previous 15 minutes (operative part 2 b) bb) sentence 3). Measuring at 15-minute intervals will give the balance responsible parties enough time to assess their balancing group status and respond by taking any measures necessary to balance their balancing groups within the one-hour netting period (see operative part 2 d)). Longer intervals would have inappropriately restricted the balance responsible parties in their ability to balance their balancing groups, also given the limited degree of network flexibility. Shorter intervals would ultimately not have given the balance responsible parties any added value compared with 15-minute intervals because the balance responsible parties' linear process of assessment, decision-making and the taking, and taking effect, of any necessary compensatory measures following the transmission of data requires a minimum amount of time that is properly and appropriately accommodated by metering at 15-minute intervals. This view was also explicitly shared by several respondents (bp, Creos, EFET, EnBW, FNB Gas, RWE, Statkraft, VNG). Even shorter metering intervals down to real-time transmission, as called for by two respondents (EEX, HNE), are therefore not necessary.

53 Contrary to the view of some respondents (BDEW, Energienetze Bayern, E.ON, VKU), the ruling chamber does not consider it necessary to provide for alternative allocation methods at exit points connecting final customers, in particular not for the upcoming ramp-up of the hydrogen market. The ruling chamber cannot see how an alternative allocation method, such as standard load profiling as used in the gas sector, could ensure the provision of information at the intervals necessary for the hydrogen sector with an adequate level of quality. In addition, the ruling chamber currently does not anticipate hydrogen being used by household customers during the ramp-up of the hydrogen market and, unlike the above-mentioned respondents, therefore does not believe that the exclusion of alternative allocation principles is a direct obstacle to network operators' estimates of demand for municipal heat plans.

54 In the ruling chamber's view, smart metering systems, for example, would offer measurement methods equivalent to interval metering that could be used at a reasonable cost for household customers with lower consumption as well; nevertheless, the ruling chamber's decision does not generally rule out the need for other allocation methods in the medium and long term. If the

evaluation of the hydrogen balancing regime as required in operative part 9 a) indicates that hydrogen will also be used by household customers, suitable alternative allocation methods can be proposed and discussed and can be taken into account if and when this determination is revised, provided that they meet the necessary requirements.

55 Operative part 2 c) sentences 1 and 2 require balance responsible parties to keep their balancing groups balanced as far as possible at all times and to take all measures available to avoid predictable imbalances. This rule aims to ensure that balance responsible parties generally manage their balancing groups effectively in order to minimise the use of the flexibility framework for balancing any imbalances in balancing groups in the hydrogen networks and the use of compensatory measures by the hydrogen market area manager. The fact that the incentive system as described in operative part 5 of this determination allows for imbalances in individual balancing groups to support network stability, with the balance responsible parties being classified as helpers, does not conflict with the general requirement for balance responsible parties to keep their balancing groups balanced (operative part 2 c) sentence 3). This is because it only follows from the general requirement to avoid imbalances in a balancing group as far as possible at all times that the general objective of managing balancing groups by balancing input and offtake quantities applies, irrespective of whether the incentive system classifies imbalances in a balancing group as “causing” or “helping” network (in)stability and the relevant balance responsible parties have a financial incentive to bring their balancing groups back into balance.

56 Operative part 2 d) sentence 1 sets out that, for the purposes of the continuous balancing, the quantities to be allocated to the balancing groups have to be the provisional input and offtake quantities not adjusted for missing or incorrect quantities or for the calorific value. Operative part 2 d) sentence 2 sets out that the hydrogen market area manager has to net the provisional quantities allocated to a balancing group as determined by the hydrogen entry and exit network operators and has to communicate the differences in quantities in a balancing group for the previous 15 minutes (balancing group status) to the balance responsible party without delay, but at least every 15 minutes. Operative part 2 d) sentence 3 states that the period for the comparison of the differences in quantities in a balancing group with the relevant overall network balance status (see operative part 3) and the associated assessment of the differences in quantities in the incentive system (see operative part 5) is one hour (balancing group balance).

57 The rules take into account the limited network flexibility in the hydrogen sector. Continuous balancing with metering at 15-minute intervals and assessments at hourly intervals enables balance responsible parties to take measures at very short notice to counteract any imbalances in input and offtake quantities. Together with the helper/causer mechanism, the short assessment intervals also enable balance responsible parties, who are responsible for keeping their balancing groups balanced, to take balancing group management measures at short notice for the benefit

of the network or the system. This is only possible if account is taken of provisional input and offtake quantities in the balancing groups. If the final quantities allocated as referred to in operative part 2 g) were used, they would have to be fully adjusted for missing or incorrect data; however, it would not be possible to provide adjusted quantities suitable for settlement within the very short timescale needed for network stability. This applies in particular to any necessary adjustments for the calorific value, which is usually not done by network operators in the gas sector until after the end of the month in which data is measured.

58 The majority of respondents (BDEW, DIHK, DWV, EEX, EnBW, Evonik, RWE, SEFE, THE, Uniper, VCI, VKU, VNG) supported the ruling chamber's approach to generally gearing the regime to balance responsible parties; this regime, combined with the short response intervals, has significant advantages (such as less use of balancing energy) compared with a time-defined balancing period with settlement at the end of the day. The ruling chamber took into account the suggestions from some respondents (BDEW, E.ON, RWE) to explicitly define the different transmission and assessment cycles (balancing group status, balancing group balance). The ruling chamber has also made it clear in this operative part that the balances always have to include all quantities relevant for the purposes of balancing, in other words the nominated quantities and quantity notifications for the relevant period of time as well as the measured data. In the ruling chamber's view, there is no need for further explanations regarding operative implementation, as suggested by individual stakeholders in the sector dialogue. This includes, for example, how the balances are communicated to the balance responsible parties, for instance whether the hydrogen market area manager should provide separate or combined figures for measured data and nominations. Such issues can readily be agreed by the market participants, for example within the framework of the hydrogen cooperation agreement.

59 Operative part 2 e) sentence 1 sets out that hydrogen entry and exit network operators have to identify clearly incorrect measured data using an appropriate automated procedure and transmit suitable alternative measured data to the hydrogen market area manager. The ruling chamber added this rule following the second consultation in response to the request from some respondents (DWV, EFET, EnBW, FNB Gas, Uniper) to allow the short-term correction of data with effect in the balancing groups. The ruling chamber understands the respondents' arguments that missing, incorrect or clearly implausible measured data can lead to a lasting distortion of the balancing group status and balancing group balance. This can be prevented by automated checks and the automated provision of alternative provisional measured data by the hydrogen network operators. Alternative provisional measured data for the relevant period of time gives balance responsible parties a more realistic assessment of the actual balancing situation. It is logical that errors in measured data affect the balances determined for the individual balancing groups due to the short balancing intervals and the use of provisional input and offtake quantities (see operative part 2 d)); however, gross errors in measured data can lead to unrealistic assessments of the

balancing situation and the overall network balance status, which need to be avoided as far as possible in the interests of the market participants. The ruling chamber believes that automated error correction by the hydrogen network operators (who are essentially responsible as the meter operators for recording and generally responsible for transmitting the measured data) is a suitable way of reducing the negative effects of gross data errors to a reasonable extent. The ruling chamber is aware that allowing short-term corrections within a netting period limits the integrity of the measured data received by the balancing groups to a certain extent. Nevertheless, it believes that the benefit of short-term checks on and corrections to measured data significantly outweighs the negative effects for all market participants of decisions on balancing group management and network status assessment that would otherwise be made on the wrong basis.

60 However, the rule in operative part 2 e) sentence 1 is only intended to lay down the basic requirements for short-term corrections. The ruling chamber assumes that the necessary details can be worked out by the market participants themselves, for example within the framework of the hydrogen cooperation agreement, and do not need to be set out in this determination. The market participants are better placed to, for example, develop, assess the feasibility of and agree on uniform rules and processes for verifying potentially significant errors in measured data, including clarifying ambiguous errors. This may include the question of whether communicative measures (such as specific queries with the connection owners or users) or technical measures (such as a clear configuration for measured data marking to identify similar error cases) are more suitable for the purposes of verifying data. Furthermore, the ruling chamber believes that the application of uniform limits for deviations in measured data from one 15-minute interval to the next is suitable for assessing the plausibility of a deviation.

61 Operative part 2 e) sentence 2 only permits the correction of incorrect measured data using other provisional data within an ongoing netting period for the balancing groups in which an error has been identified. This means that it is only possible to identify incorrect data, verify the data, find alternative measured data and correct the data in a balancing group within a one-hour netting period and that any corrected data has to be included in the balancing group balance determined at the end of the one-hour netting period. As the balancing group balance forms the basis for assessing the balancing groups and the overall network balance status and the balance can only be changed when the final measured data is determined (operative part 2 g)), the possibility of correcting the provisional measured data after the end of a netting period is ruled out from the start. This time requirement also means that only an automated data correction method can be considered, which in the ruling chamber's view the hydrogen network operators could establish with reasonable and proportionate effort.

62 The ruling chamber included a new rule in operative part 2 f) sentence 1, alongside the possibility for data correction, that allows the hydrogen market area manager to establish an incentive system

in order to generally guarantee a consistently high level of quality in the collection and exchange of measured data. The objective is to identify and assess significant deviations from the average error rate in the collection and transmission of measured data by hydrogen network operators/meter operators, using suitable limits, and improve the quality of collection and transmission with respect to those with below-average quality through an incentive system. Operative part 2 f) sentence 2 sets out that the hydrogen market area manager has to develop an appropriate methodology for this purpose in cooperation with the market participants, for example within the framework of the hydrogen cooperation agreement. This includes both the limits to be used to assess transmission quality and the design of a financial bonus/penalty system for the evaluation of the incentive effect to be achieved.

63 Experience from the gas sector has shown the ruling chamber that market participants often have no incentive to improve the overall quality of data and transmission if they are able to make corrections to their data. Market participants usually only make an effort to improve quality when encouraged to do so using suitable methods. The ruling chamber therefore considers it appropriate and necessary to establish an incentive system in order to ensure a reasonable quality of data, taking into account the possibility now provided in operative part 2 e) to make corrections to data. With this it is also accommodating the request from two respondents (Statkraft, THE) to implement quality assurance for data transmission, in particular with respect to missing and incorrect data. Experience from the gas sector has also shown that an incentive effect for improving data quality through appropriate organisational, technical or other measures by the competent meter operators can be achieved in particular if there is sufficient financial incentive. The design of the financial bonus/penalty system provided for in this operative part therefore has to ensure this interplay in practice. This is to be highlighted at this point since data transmission in the hydrogen sector will be subject to significantly higher requirements than is currently the case, for example, in the gas sector.

64 Operative part 2 g) sets out the rules for the final quantities to be allocated to the balancing groups. These quantities include both adjustments for missing or incorrect measured data and, where necessary, for the calorific value used for settlement (operative part 2 g) sentence 1). Here, the ruling chamber has taken up the suggestion made by one respondent (DVGW) to group the rules on the final quantities to be determined in one operative part. As final quantities or quantities for settlement may always need to be adjusted for calorific value, grouping the rules in one operative part, as suggested, seems expedient and makes the rules clearer. It is not relevant to this determination whether and to what extent any adjustment has to be made for the calorific value. Neither is it up to the ruling chamber to determine the quality of hydrogen or decide that an adjustment for the calorific value is generally not necessary, as suggested by two respondents (HNE, RefLau). It is therefore essential to retain at least the general possibility for adjustments to be made for the calorific value for the assessment of the final quantities to be balanced.

65 In addition to taking into account the provisional quantities relevant for continuous balancing in accordance with operative part 2 d), it is necessary for the hydrogen market area manager to allocate the final quantities to the balancing groups in order to determine the final input and offtake quantities included in the balance. Operative part 2 g) sentence 2 therefore requires hydrogen entry and exit network operators to determine the final quantities to be allocated and communicate them to the hydrogen market area manager by the tenth working day of the calendar month following the day on which data was measured. In accordance with operative part 2 g) sentence 3, the hydrogen market area manager nets the final quantities allocated to a balancing group as determined by the hydrogen entry and exit network operators and subsequently communicates the balance to the balance responsible party without delay on a daily basis.

66 The ruling chamber has essentially adopted the process and sequence for the individual market roles established in the gas sector for taking into account the quantities for settlement. It has taken up and built on the suggestions from some respondents (E.ON, Evonik, FNB Gas, THE, VCI) relating to the deadline for determining and communicating the final quantities. The ruling chamber has taken up the deadline suggested and seen as practicably reasonable and appropriate by some respondents (E.ON, FNB Gas, THE); the deadline it has now set for determining and communicating the final quantities is the tenth working day of the calendar month following the day on which data was measured.

67 As the continuous netting of the balancing groups uses provisional measured data (see operative part 2 a) and d)), a mechanism is required to compensate for the differences between the provisional and the final quantities once the final quantities have been determined (operative part 2 g)). The ruling chamber has therefore provided for the application of an appropriate compensation mechanism in operative part 2 h). Operative part 2 h) sentence 2 requires the hydrogen market area manager to ensure, by using a suitable methodology, that the differences between these quantities are taken into account appropriately and cost-reflectively in the balancing, without the netting of the balancing groups based on the provisional measured data (operative part 2 d)) or the overall network balance status (operative part 3 a)) having to be changed retrospectively. This means that the compensation mechanism does not affect the continuous hourly assessment of the balancing group balance that is made in accordance with operative part 5 on the basis of the provisional data. The methodology that has been chosen avoids a continuous ex-post evaluation of balances that have already been assessed, which would also have necessitated reassessments and retrospective management of past balancing group statuses. Here, the ruling chamber agrees with the view expressed by market participants during general discussions about the future hydrogen balancing regime that such a reassessment of “old” balancing group statuses would not be appropriate or practicable in a future regime.

68 Nevertheless, the differences in quantities between the provisional and final measured data require appropriate economic balancing and physical balancing. Operative part 2 h) sentence 3 requires physical balancing of the differences in quantities to be taken into account as well, as the balance responsible party has either already actually fed these quantities into the hydrogen network (surplus supply) or not yet fed them into the network (short supply) on the basis of the provisional measured data. The surplus or shortage in the quantities of hydrogen fed into the network by the balance responsible party therefore ultimately needs both economic and physical balancing.

69 A surplus or shortage is physically balanced under the compensation mechanism by adding or subtracting the differences identified in a calendar month to or from the input and offtake quantities of a balance responsible party for the following calendar month. The balance responsible party has to feed in or take off more or less hydrogen in the following calendar month, depending on the quantity of the surplus or shortage identified. This has to be recorded by the hydrogen market area manager through a corresponding nomination in the balancing groups concerned. The hydrogen market area manager's compensation mechanism ultimately ensures that the differences in quantities between provisional and final measured data in a month are both economically and physically balanced in the hydrogen network in the following month.

70 If there are physical imbalances in the network compared with the overall network balance status for other reasons or if deviations in measured data indicate the need for action to physically balance quantities in the hydrogen network in the course of a month (as mentioned by THE), balancing energy has to be used (see also operative part 4.). The rules of the present compensation mechanism are not intended to make up for other shortages in general or balance out differences in measured data in the course of a month whose differences in quantities require physical balancing in the hydrogen network. In order to make this distinction clear, the ruling chamber has taken up the point made by some respondents (BDEW, EnBW, RWE) and has included the aspect of physical balancing under the compensation mechanism in this operative part instead of keeping it in a separate operative part.

71 The ruling chamber has decided since the last consultation to set a specific deadline for balancing under the compensation mechanism. Operative part 2 h) sentence 4 sets out that economic and physical balancing has to take place in the calendar month following the day on which the measurement was taken. It should be noted here that the data measured last thing on a calendar day is always attributed to that calendar day, irrespective of when the data is actually transmitted. The final quantities as referred to in operative part 2 g) first have to be determined before the compensation mechanism can be applied; these final quantities have to be determined and communicated by the tenth working day of the calendar month following the day on which the measurement was taken. Balancing of the differences in quantities every two weeks, as called for

by one respondent (SEFE), would have made it necessary to determine the final quantities also during the course of a month. The ruling chamber does not consider this appropriate because, in its view, the differences between provisional and final measured data are not usually so large as to require physical and economic balancing before the end of a month. In addition, the rule in operative part 2 e) on the correction of gross errors in measured data provides a way to largely minimise unusual deviations. In the ruling chamber's view, there is no need for intra-month balancing under the compensation mechanism because any other imbalances or deviations have to be balanced using balancing energy. In fact, a compensation mechanism with balancing in the following month accommodates the various requirements as it enables a simpler evaluation process on just a monthly basis while ensuring immediate balancing of the differences in quantities once the final quantities needed for the mechanism have been communicated, in line with the interests of the market participants (in particular the balance responsible parties). This also means that the economic impact of a surplus or shortage in the quantity of hydrogen supplied can be reduced to a reasonable level for the market participants.

72 Operative part 2 i) sets out that the settlement of balancing groups, including settlement in line with the financial incentive system (see operative part 5), has to take place at the latest in the month following the month being settled. This rule covers both the payments to be made or received by the hydrogen market area manager to or from balance responsible parties under the helper/causer mechanism and other potential settlement obligations towards balance responsible parties. Although the present determination does not explicitly specify costs and revenue for settlement with the balance responsible parties other than those under the financial incentive system, the ruling chamber does not exclude the future possibility of other costs or revenue being included for settlement as and when the hydrogen balancing regime is developed further (see also operative parts 1 and 4). One possible reference point is the design of the financial bonus/penalty system for the evaluation of data quality as provided for in operative part 2 f). In this respect, this rule mirrors a general catch-all provision for the settlement of costs and revenue, which enables the hydrogen market area manager to settle any other necessary financial obligations requiring payments to or from balance responsible parties. Contrary to the view of some respondents (EnBW, E.ON), settlement should not be restricted to the helper/causer mechanism; in fact, it is appropriate and necessary to include all other costs and revenue to be settled between the hydrogen market area manager and balance responsible parties.

73 The ruling chamber does not share the view of one respondent (E.ON) that the rules on balancing group settlement in the determination also have to cover defaulted payments from individual balance responsible parties. The ruling chamber does not currently see any reason why defaulted payments cannot be regulated by the market participants within the framework of the hydrogen cooperation agreement, as is the case in the gas sector. In the ruling chamber's view, the established instrument of compliance with minimum requirements for the creditworthiness of

potential balance responsible parties in a registration process and the possibility of requiring securities and advance payments in combination with appropriate regulations on (extraordinary) termination of contracts create an interplay of precautionary measures that has proven effective at least for the majority of cases. The ruling chamber does not see an immediate need for the determination to provide for any further measures, at least for the upcoming ramp-up of the hydrogen market, provided that there is consistent application of such regulations in the balancing group contract in combination with the deadline for settlement in the following month (which is shorter than that in the gas sector). At the same time, this does not rule out further considerations by the market participants on how to deal with potential cases of insolvency.

3.4.2.2 Operative part 3

74 The purpose of the rules in operative part 3 is to implement the requirement for the hydrogen market area manager to publish the overall network balance status for the hydrogen market area continuously.

75 Operative part 3 a) sentence 1 defines how the overall network balance status has to be determined. The overall network balance status is the sum of the provisional quantities allocated to a balancing group as referred to in operative part 2 d) for the individual balancing groups in the hydrogen market area. This shows that the overall network balance status does not directly represent the physical state of the individual hydrogen network operators' networks, which is why the word "balance" was added to the term "overall network status" used in the consultation draft. Operative part 3 a) sentence 2 sets out that the balancing group of the hydrogen market area manager established for the purposes of using balancing energy in accordance with operative part 4 a) is not included in the calculation of the overall network balance status. This makes sense to ensure that the financial incentive system under operative part 5 in conjunction with the park/borrow mechanism for procuring balancing energy for the purposes of operative part 4 a) can take full effect and the overall network balance status is not distorted by the hydrogen market area manager's balancing group.

76 Operative part 3 b) sentence 1 sets out that the overall network balance status has to be updated and communicated at least every 15 minutes. This interval is the same as the interval for communicating the balancing group statuses set in operative part 2 and was welcomed by respondents (BDEW, EnWB, EFET, Sefe, Statkraft, THE). Furthermore, operative part 3 b) sentence 2 states that a forecast of the overall network balance status for at least the next 12 hours has to be published in addition to the current status. The ruling chamber has laid down this rule in response to the call from some respondents (EFET, EnBW, SEFE, Statkraft, Uniper) for the published forecast of the overall network balance status to be for a period longer than the one-hour period proposed by the ruling chamber in the second consultation document. As some

respondents (BDEW, FNB Gas) pointed out, the original wording did not actually rule out the publication of a forecast for the next twelve hours. However, having assessed the responses, the ruling chamber decided to extend the binding minimum forecast period to 12 hours. The ruling chamber acknowledges the consensus that a forecast for a longer period than for the next hour has its advantages, although views on the detailed implementation vary. The period of time now set by the ruling chamber takes due account of this. A forecast for the next 12 hours enables balance responsible parties to act promptly if the forecast of the overall network balance status indicates that an individual balancing group status requires countermeasures by the balance responsible party. Balance responsible parties can therefore also contribute to stabilising the overall network balance status, for example by acting as helpers. At the same time, the ruling chamber decided not to extend the forecast period to 24 hours, as suggested by some respondents. The main reason is that the forecast of the overall network balance status, like the actual status, corresponds to the sum of the individual balancing groups in the market area, that is the nominations and quantity notifications in the balancing groups. Based on the consultation responses, the ruling chamber assumes that the balance responsible parties can make a good forecast of their balancing group activities for the next 12 hours and make corresponding nominations and quantity notifications.

77 As in the second consultation draft, the ruling chamber is only requiring the hydrogen market area manager to base the forecast of the overall network balance status on the sum of the balancing groups and not to carry out any other forecasts. On account of the longer minimum forecast period and in line with a proposal from some respondents (FNB Gas, THE, Uniper), the ruling chamber has clarified the methodology for determining the period for the overall network balance status forecast in operative part 3 b) sentence 3.

78 Following the methodology for calculating the forecast of the overall network balance status, the nominations and quantity notifications in accordance with the provisions of the WaKandA determination (BK7-24-01-15) have to be at least for the same period to ensure that the forecast of the overall network balance status provides a valid basis for action for the balance responsible parties. This is guaranteed by the rules in operative part 5 c) and operative part 6 a) of the WaKandA determination (BK7-01-015). Having assessed the responses, the ruling chamber assumes that it is possible for balance responsible parties to make sufficiently accurate forecasts for their balancing groups for at least the next 12 hours and for them or shippers to make corresponding nominations and quantity notifications. With regard to the call from some respondents for a forecast period of 24 hours, the ruling chamber points out that the wording in operative part 3 b) would still allow such a long period because it only sets the minimum forecast period. If the sector stakeholders agree that a longer forecast period is appropriate and make it binding through the hydrogen cooperation agreement, it would have to be introduced in all the

clusters and would also have to be reflected in the rules for the nomination and quantity notification periods.

79 The ruling chamber also makes it clear that the rules in operative part 3 b) on updating the overall network balance status every 15 minutes and publishing a forecast for the next 12 hours mean that the overall network balance status will be published on a rolling basis. In other words, a forecast of the overall network balance status at the beginning of the next clock hour onwards will be published each time the overall network balance status is updated and published at 15-minute intervals. The forecast of the overall network balance status at the beginning of each clock hour for the next 12 hours will be updated hourly. The ruling chamber does not consider it appropriate for the forecast to be published for the next 12 hours and then only to be updated for another 12 hours at the end of that period. Publishing the forecast in such a static manner is likely to result in large differences in the forecasts because changes in nominations and quantity notifications in the meantime would not be taken into account.

80 Operative part 3 c) introduces a publication requirement that was not included in the consultation draft. The requirement sets out that the sum of the balancing group balances of the helpers and the sum of the balancing group balances of the causers have to be published together with the overall network balance status. The ruling chamber has included this requirement following a suggestion from some respondents (EEX, EnBW, Sefe). In the ruling chamber's view, it makes sense to publish the sums of the balancing group balances, in particular in the context of the financial incentive system under operative part 5. The ruling chamber agrees with the argument put forward by respondents that publication can increase the incentive to act in a way that is beneficial to the network as it allows balance responsible parties to calculate their share of a penalty or bonus.

81 Operative part 3 d) sentence 1 requires hydrogen transmission network operators to introduce flexibility zones. The majority of respondents in the consultations (BDEW, bp, DWV, EEX, Energienetze Bayern, EWE Gasspeicher, RWE, SEFE, Statkraft, THE, Uniper, VCI, VKU) supported the introduction of flexibility zones and their basic function in the balancing regime.

82 The ruling chamber made the provision in the consultation document clearer by stating that the requirement to define flexibility zones explicitly applies to hydrogen transmission network operators. The ruling chamber assumes that hydrogen transmission network operators, as the network operators active across the whole market area, will have a prominent role in terms of network flexibility. They therefore have the most appropriate market role to define the limits for the individual flexibility zones. The interests of other market roles, in particular shippers, have to be taken into account in the development of the methodology for defining the flexibility zones in accordance with operative part 9.

83 Hydrogen transmission network operators have to define binding limits in kilowatt hours (kWh) for the individual flexibility zones and, according to sentence 2, have to publish these limits at least four hours before the beginning of each calendar day. The design of the flexibility zones is directly relevant to the use of balancing energy for the purposes of operative part 4 a) and the financial incentive system described in operative part 5. This is why the limits have to be made available to the balance responsible parties in good time and have to be reliable. The ruling chamber has therefore set out in sentence 3 that the limits for the next day become binding when they are published. The ruling chamber now requires the binding limits to be published four hours in advance as opposed to the two hours set out in the second consultation document. This is in line with the suggestion from some respondents (EEX, EFET, Evonik, RWE, Statkraft, VCI) to publish the limits further in advance. The ruling chamber believes that the possibility for the limits for the next day to be adjusted up to four hours in advance represents a balance of interests. It reconciles the balance responsible parties' need for earlier publication in order to have time to adapt to changes in the conditions for managing their balancing groups with the hydrogen transmission network operators' need for short-term adjustments of the flexibility zone limits. According to the ruling chamber, the main factors relevant to defining the limits should be the network's technical parameters, such as pressure levels, in the individual hydrogen networks. However, account should also be taken of the balancing group management information available to hydrogen network operators, in particular nominations and quantity notifications. In any case, the input parameters for defining the limits must not be rigid but have to be able to change over the course of time. The ruling chamber therefore still considers it necessary for hydrogen transmission network operators to be able to adjust the limits a short time in advance, which it believes is still the case with a lead time of four hours.

84 The ruling chamber also makes it clear, however, that 8pm on the previous day is just the latest possible time that the limits can be published. The hydrogen market area manager may publish the binding limits defined for the next day more than four hours in advance, as long as there are no disadvantages for balance responsible parties as regards the flexibility that they have been given. This would be the case in particular if publication of the binding limits further in advance led to a significantly narrower green zone. By contrast, the ruling chamber does not consider it necessary to require publication even further in advance than four hours. In addition, the requirement does not rule out the possibility of a forecast of the limits being published before the final limits are published.

85 Operative part 3 d) sentence 4 aa) to cc) defines the flexibility zones in more detail. The green zone represents a stable flexibility range. If the overall network balance status is within the green zone, no compensatory measures are required. The hydrogen market area manager will therefore not take any measures in accordance with operative part 4 a) within this flexibility range. Any imbalances in the balancing groups will not have any consequences for the balancing groups

under the incentive system described in operative part 5. The yellow zone represents a critical flexibility range that requires compensatory measures. If the overall network balance status is within the yellow zone, the hydrogen market area manager will take measures in accordance with operative part 4 a) to bring the overall network balance status back towards the green zone. The financial incentive system under operative part 5 will come into play. The red zone represents a very critical condition that requires immediate compensatory measures. If the overall network balance status reaches the red zone, the hydrogen market area manager will use balancing energy in accordance with operative part 4 a) without delay. The financial incentive system under operative part 5 will still be applied.

86 The ruling chamber has removed the original reference to measures under section 28n(1a) sentence 2 EnWG from the description of the red zone. This is to avoid the misunderstanding that hydrogen network operators can only take such measures when the overall network balance status is in the red zone. The ruling chamber's view, shared by several respondents (BDEW, FNB Gas, HNE, VKU), is that hydrogen network operators are entitled and obliged to take measures under section 28n(1a) EnWG at any time if the security or reliability of the supply of hydrogen in their networks is at risk or disrupted. These measures can be taken irrespective of the overall network balance status, including when the status is in the green or yellow zone. However, the ruling chamber assumes that there is likely to be a high correlation between the overall network balance status and the physical state of the hydrogen networks, in particular if there are no extraordinary circumstances such as unplanned pipeline outages or larger-scale metering or transmission infrastructure outages. Given this, the ruling chamber sees a higher probability of measures under section 28n(1a) sentence 2 EnWG being taken when the overall network balance status is in the red zone than in the other zones. This was the idea behind the original wording in the draft operative part.

3.4.2.3 Operative part 4

87 The ruling chamber has completely revised operative part 4, taking into account the consultation responses, and changed the basic rules for using balancing energy. The rules now allow the hydrogen market area manager to use balancing energy in the hydrogen networks to balance both the overall network balance status (operative part 4 a)) and short-term physical load fluctuations (operative part 4 b)). The hydrogen market area manager always has to take account of cost efficiency when using balancing energy. If two or more balancing energy products are equally suitable for the balancing, the cheaper product has to be used first. This does not affect the priority for products traded on the exchange over products contracted on a bilateral basis.

88 Operative part 4 a) sets out that the hydrogen market area manager has to use balancing energy if the overall network balance status is above or below the boundary between the green and the

yellow zone. The purpose of using balancing energy is to bring the overall network balance status back towards the green zone and therefore back towards a stable state. The purpose is not to fully balance the overall network balance status.

89 All the respondents welcomed the use of balancing energy by the hydrogen market area manager. Several respondents (BDEW, EFET, EnWB, SEFE) pointed out that if the hydrogen market area manager and the balance responsible parties took measures at the same time, the measures should not unsettle the system and overcompensate for an imbalance and therefore create the need for compensatory measures in the opposite direction. In this connection, some respondents (EnWB, FNB Gas) suggested restricting the use of balancing energy primarily to the red zone, while restricting the use of measures in the yellow zone to balance responsible parties. The ruling chamber shares the view that the use of balancing energy should not lead to the overall network balance status systematically tipping in the other direction. In order to ensure this, the ruling chamber is taking up the market's suggestion in the consultation (EnWB, SEFE), the sector dialogue and the associations' supplementary responses (BDEW, EFET) to manage the use of balancing energy for the purposes of stabilising the overall network balance status with a park/borrow concept. Under this concept, the hydrogen market area manager will make successive, coordinated balancing energy countertrades in order to give balance responsible parties more time to change their balancing group balance and thus the overall network balance status in line with the incentives of the financial incentive system by, for example, acting as a helper or at least reducing their activities as a causer. This means that it is not necessary to restrict the hydrogen market area manager's activities to the red zone.

90 Operative part 4 a) also states that the hydrogen market area manager has to establish a separate balancing group for the use of balancing energy for the purposes of operative part 4 a) and has to balance this balancing group through simultaneous balancing energy countertrades within a reasonable period of time. This means that, in the case of a surplus supply, the hydrogen market area manager will sell hydrogen and at the same time buy the same quantity of hydrogen for delivery at a later time ("park"). In the case of a short supply, the hydrogen market area manager will buy hydrogen and sell the same quantity of hydrogen for delivery at a later time ("borrow"). The balancing energy countertrades can therefore be seen as a kind of "park/borrow" system. However, the ruling chamber explicitly points out that, despite the similar name, this concept is not the same as the product previously used by the gas market area manager THE to procure balancing gas in the gas market, which is considerably different in terms of its implementation.

91 The ruling chamber has deliberately not set a specific period of time within which the hydrogen market area manager has to balance the balancing energy balancing group. The period of time should give the hydrogen market area manager sufficient flexibility in using balancing energy. Furthermore, the ruling chamber has deleted the rule originally laid down in operative part 4 b)

that the quantity of balancing energy to be procured corresponds to the difference between the forecast overall network balance status for the beginning of the next clock hour and the boundary between the green and the yellow zone. This gives the hydrogen market area manager scope in using balancing energy in terms of both time and quantity. The hydrogen market area manager can, for example, take better account of incoming (re)nominations and quantity notifications before taking balancing energy measures, which could also have an effect on the quantities to be procured. Some respondents (bp, EFET, EnBW, Statkraft) also suggested that the hydrogen market area manager should have a certain amount of scope before using balancing energy. The rule still applies, however, that balancing energy may only be used to bring the overall network balance status back towards the green zone.

92 The balancing energy balancing group of the hydrogen market area manager is not included in the calculation of the overall network balance status (see deliberations on operative part 3). Likewise, the parked or borrowed quantities of hydrogen are not allocated to the balance responsible parties' balancing groups based on their share of the overall network balance status. The incentive system therefore remains purely financial (see deliberations on operative part 5). Implementation of the described park/borrow concept ensures that the system is not unsettled since the hydrogen market area manager's use of balancing energy is neutral in terms of quantities and the overall network balance status is balanced by measures taken by the balance responsible parties. At the same time, account is being taken of the argument put forward by various respondents (BDEW, EFET, EnBW, SEFE, Statkraft, THE, Uniper) that an automated allocation of balancing energy quantities to causers' balancing groups by the hydrogen market area manager could lead to subsequent difficulties among the balance responsible parties because of the rules on mass balancing in the Renewable Energy Directive (Directive (EU) 2023/2413). The quality of the balancing energy delivered, in other words its green property, cannot be ensured as required by the balance responsible parties, for instance by retroactively procuring guarantees of origin. Although the ruling chamber believes that this determination does not cover aspects of mass balancing and that questions of hydrogen quality can only play a subordinate role in ensuring network stability, the ruling chamber acknowledges the concerns expressed and has taken them into account by including the park/borrow concept.

93 Operative part 4 a) aa) sentence 2 sets out that the hydrogen market area manager has to primarily use standardised short-term products on the exchange to meet the demand for balancing energy. The use of products that can be traded on the exchange to meet the demand for balancing energy was largely welcomed by respondents (EEX, EFET, EnBW, FNB Gas, Statkraft, THE). Two respondents (FNB Gas, THE) pointed out that hourly products were generally likely to be suitable for the use of balancing energy because the lack of flexibility in the networks meant that action needed to be taken quickly. The ruling chamber understands the arguments presented but does not consider them a reason to restrict the use of balancing energy to hourly products. The

wording chosen by the ruling chamber (“short-term products”) covers products other than hourly products such as “rest-of-the-day” products or day-ahead products, which could also be suitable for the use of balancing energy in future. Likewise, it is not currently possible to say whether other wholesale products specifically designed for the hydrogen market will emerge that could also be suitable. The general restriction to short-term products is therefore still appropriate. The costs of using balancing energy will be charged to the causers under the financial incentive system in accordance with operative part 5. It is therefore logical that the costs of procuring balancing energy should reflect the market price applicable at the time balancing energy is used.

94 Operative part 4 a) bb) allows the hydrogen market area manager to use bilateral short-term products to meet the demand for balancing energy. However, the use of bilateral short-term products is only allowed if the use of the products on the exchange that are primarily to be used is not appropriate or is not sufficient to meet the specific demand. The ruling chamber’s introduction of the use of bilateral short-term products takes up the argument put forward by respondents (BDEW, bp, EnWB, EFET, FNB Gas, RWE, THE) that there may not be a sufficient quantity of products available on the exchange at all times, in particular in the initial phase of the ramp-up. Products on the exchange may not be suitable to meet the demand for balancing energy, in particular if they are not available with the required duration or for the required location. However, if suitable products are available and offered on the exchange, they have to be used first.

95 Bilateral short-term products will be procured through a balancing platform established by the hydrogen market area manager. The hydrogen market area manager has to integrate the balancing platform into the data exchange platform described in operative part 7. It makes sense to integrate the platforms since all the relevant balancing information is exchanged through the data exchange platform, which means that bilateral balancing energy products can thus be procured efficiently.

96 Contrary to the calls from two respondents (bp, Uniper), the ruling chamber will continue not to introduce bilateral, long-term, capacity price-based balancing energy products. No convincing arguments for the necessity of such products were put forward in the responses. It is, for example, not clear why the existing flexibility of various market players cannot be offered through short-term products, which in particular would enable cost-reflective allocation of the costs.

97 According to operative part 4 a) sentences 5 to 7, the methodology for procuring balancing energy set out in operative part 4 a) aa) and a) bb) also applies if the overall network status exceeds the limit for the red zone or is forecast to exceed the limit in the next hour. In this case, however, the scope of the hydrogen market area manager described above is restricted in that the hydrogen market area manager has to use balancing energy without delay to bring the overall network balance status back into the yellow zone as quickly as possible or to prevent the overall network

balance status from reaching the red zone. This restriction is appropriate because, as also stated by one respondent (FNB Gas), the transport capability of the network cannot be guaranteed permanently in the red zone. In the ruling chamber's view, this fact is also an argument in favour of the hydrogen market area manager not waiting until the overall network balance status reaches the red zone before acting. This is why the park/borrow concept will already come into play when the overall network balance status is above or below the boundary between the green and the yellow zone.

98 Operative part 4 b) sets out the rules for the use of balancing energy when necessary to ensure network stability. In accordance with operative part 4 b) sentence 1, the use of balancing energy can become necessary when there is a physical imbalance in the hydrogen market area, irrespective of the overall network balance status. As stated in the deliberations on operative part 3, the overall network balance status does not necessarily reflect the technical situation in the hydrogen networks. If, in particular, there are large errors in measurements and/or data in the course of a month, the balance status and the physical status of the network may differ. In this respect, the ruling chamber agrees with the argument put forward by respondents (FNB Gas, THE, HNE) that it cannot be ruled out that technical compensatory measures in the form of balancing energy may be necessary even if the overall network balance status is in the green zone.

99 The ruling chamber had provided for a compensation mechanism in operative part 2 of its original draft in particular to manage deviations due to errors in measured data. With the rules in operative part 4 b) the ruling chamber has explicitly created the additional possibility for the hydrogen market area manager to use balancing energy to balance out short-term or other physical imbalances. Unlike with the use of balancing energy for the purposes of operative part 4 a), however, the park/borrow concept does not come into play in this case. In the case of operative part 4 b), the aim is in fact to balance a physical surplus or shortage in the quantity of hydrogen in the network by buying or selling hydrogen. Operative part 4 b) sentence 2 therefore lists technical criteria that the hydrogen market area manager should take into account when considering using balancing energy for the purposes of operative part 4 b). These criteria include information about nominations, quantity notifications, allocations and measured flows, and pressure levels in the hydrogen transmission networks.

100 Operative part 4 b) sentence 3 requires the hydrogen market area manager to meet any demand for balancing energy initially by using internal balancing energy before procuring and using external balancing energy. Furthermore, operative part 4 b) sentence 4 sets out that contracting and using internal balancing energy is not remunerated separately either among hydrogen network operators or by the hydrogen market area manager. The rules on the primary use of internal balancing energy correspond to the principles applied to the use of internal balancing gas in the gas sector under the GaBi Gas 2.0 determination (BK7-14-020). These principles have been

proven in practice and should therefore also be applied in the hydrogen sector. Internal balancing energy means balancing energy resulting from the use of the “network buffer” (additional storage capacity in the gas network through compression) and other storage options attributed to the networks. This includes storage capacity within the network of the operator in whose network the technical need for balancing originated as well as internal balancing energy provided by another network operator within or outside the market area in order to optimise the overall system. The use of internal balancing energy will be planned and coordinated jointly by the hydrogen market area manager and all the network operators in the market area. The objectives are to use internal balancing energy as efficiently as possible and to avoid or reduce the need for external balancing energy. In accordance with operative part 4 b) sentence 5, external balancing energy will only be used if the use of internal balancing energy is not appropriate or sufficient to manage a network situation; however, this does not rule out the forward-looking procurement and use of external balancing energy.

101 According to operative part 4 b) aa) and bb), standardised short-term products should also be used for technical balancing. The rules in operative part 4 a) aa) and bb) on the products apply accordingly. Standardised short-term products that can be traded on an exchange should primarily be used. If sufficient products are not available, short-term products procured through the bilateral balancing platform operated by the hydrogen market area manager can be used.

102 The quantities of balancing energy used for the purposes of operative part 4 b) are not directly related to the balancing group balances of the individual balance responsible parties. Large errors in measurements or data transmission, in particular, may mean that all the balance responsible parties behave in compliance with the system on the basis of the data available to them but that balancing energy still needs to be used because the balancing in accordance with operative part 2 is not carried out until later. This in turn means that costs and revenue from the use of balancing energy for the purposes of operative part 4 b) cannot be passed on cost-reflectively to the balance responsible parties. These costs and revenue are instead passed on as set out in operative part 1 d).

103 Operative part 4 also requires the hydrogen market area manager to publish the relevant information about the quantity and price of the balancing energy used. The information has to be published without delay in order to ensure the maximum possible transparency as quickly as possible. The information to be published includes: day of use, hour of use, delivery point, duration of use, lot size, quantity, commodity charge. The hydrogen market area manager is free to publish any other information considered necessary.

104 The ruling chamber did not take up the proposal from one respondent (FNB Gas) to draw up a phased plan of other compensatory measures for when balancing energy is not available in order to maintain the transport capability of the networks at all times. The proposal was for the

determination to require hydrogen transmission network operators to develop a phased plan and have the plan approved by the Bundesnetzagentur. The responsibility of hydrogen transmission network operators for the security and reliability of their hydrogen networks is already set out in section 28n(1a) EnWG. Section 28n(1a) sentences 1 to 4 EnWG also provide for the necessary rules enabling hydrogen network operators to take and enforce measures vis-à-vis third parties in order to ensure the security and reliability of the operation of the hydrogen transmission network (see Bundesrat printed paper 590/23, page 62). The ruling chamber does not believe it is necessary or makes sense to specify the possible measures, including their approval, in detail, especially in a determination on the basic aspects of the balancing regime. The ruling chamber nevertheless supports the development of such a phased plan by the hydrogen transmission network operators, for example within the framework of the hydrogen cooperation agreement. Such a plan can make sense, in particular for reasons of transparency, and can create security in the market as regards the hydrogen transmission network operators' measures in ensuring their responsibility for the system. In addition to the last-resort measures specified in the response from FNB Gas, namely interruptions to firm capacity through disconnections and reductions, the ruling chamber considers other, in particular market-related, measures to be possible. These could include measures similar to the market-based instruments or load flow commitments familiar from the gas sector, disconnection contracts with final customers or interruptions to interruptible transport capacity. In any case, these measures taken by the hydrogen transmission network operators would not be directly related to the balancing regime and, in particular, the costs for these measures would have to be passed on at network tariff level.

3.4.2.4 Operative part 5

105 Operative part 5 requires the hydrogen market area manager to introduce a financial incentive system for the balance responsible parties based on a helper/causer mechanism. The aim is to financially incentivise balance responsible parties to manage their balancing groups in a way that is beneficial to the network and in turn minimise the use of balancing energy.

106 Operative part 5 a) sentence 1 sets out that the statuses of the balancing groups as the balance between input and offtake based on the provisional quantities allocated to a balancing group as referred to in operative part 2 d) are relevant for the purposes of the incentive system. Operative part 5 a) sentence 2 requires the hydrogen market area manager to continuously cumulate and update the balance for each balancing group. This means that there is no settlement of a balancing group after a set period of time. The financial incentive system in accordance with the rules in sentences 1 and 2 therefore fits in with the system of continuous balancing and data transmission intervals as set out in operative part 2.

107 Operative part 5 a) sentence 3 sets out that the balance responsible parties are classified as either helpers or causers under the incentive system. According to operative part 5 a) sentence 3 aa), helpers are balance responsible parties whose balancing group status is the opposite of the overall network balance status as defined in operative part 3. According to operative part 5 a) sentence 3 bb), causers are balance responsible parties whose balancing group status is the same as the overall network balance status. As long as the overall network balance status is within the green zone as defined in operative part 3 d) aa), classification as a helper or a causer does not have any financial consequences for a balance responsible party. If the overall network balance status crosses the boundary from the green to the yellow zone, the hydrogen market area manager has to charge a penalty to the causers and pay a bonus to the helpers. It is appropriate for the financial incentive system to only come into play from the yellow zone onwards. In accordance with the definition, no compensatory measures are required as long as the overall network balance status is within the green zone. Potential imbalances in the balancing groups balance each other out or at least do not require the hydrogen market area manager to act. This means that no financial incentive is necessary to encourage the balance responsible parties to change their balancing group balances in a certain direction. Likewise, no costs are incurred by the hydrogen market area manager that have to be passed on to the balance responsible parties. Many respondents (BDEW, bp, Creos, EEX, EFET, EnBW FNB Gas, THE, RWE, Statkraft, Uniper) welcomed the basic methodology of the helper/causer mechanism as set out in the draft operative part.

108 Different rules apply to the calculation of the penalty and the bonus, depending on whether or not the hydrogen market area manager uses balancing energy for the purposes of operative part 4 a) in the relevant hours. Operative part 5 b) defines the calculation method for when balancing energy is used for the purposes of operative part 4 a). The bonus corresponds to the price difference between the balancing energy countertrades (purchase and sale of hydrogen) in the relevant hour multiplied by the balancing group balance of the helper as referred to in operative part 2 d) in the same hour.

109 The penalty comprises any costs for balancing energy and the bonus for the helpers. The hydrogen market area manager calculates the penalty by adding together the costs incurred for balancing energy (costs from buying hydrogen minus revenue from selling hydrogen) in the relevant hour and the bonuses to be paid to the helpers, and charges each causer a penalty based on the share of the sum of the balancing group balances of all causers as referred to in operative part 3 c) that is accounted for by the causer’s balancing group balance as referred to in operative part 2 d).

110 The following example serves to illustrate the methodology:

Starting point in hour h	Balancing group balance in hour h	Helpers/ causers
Balance responsible party 1	110	Helpers
Balance responsible party 2	500	Helpers
Balance responsible party 3	-100	Causers
Balance responsible party 4	-500	Causers
Balance responsible party 5	-200	Causers
Helpers' sum	610	
Causers' sum	-800	
Overall network balance status	-190	

The overall network balance status in hour h is minus 190 units. This means that the overall network balance status is in the yellow zone and the hydrogen market area manager uses balancing energy in accordance with operative part 4 a). The hydrogen market area manager, using the scope provided, buys 150 units for hour h+1 and sells them for hour h+2 (in other words the hydrogen market area manager "borrows" 150 units for one hour). The following costs are incurred from the use of balancing energy:

Purchase h+1	€150/unit
Sale h+2	€100/unit
Balancing energy quantity	150 units
Balancing energy costs	€7,500

The bonus and penalty in this example are as follows:

Bonus: €150/unit – €100/unit = **€50/unit**

Penalty: (€7,500 + €30,500)/800 = **€47.50/unit**

The hydrogen market area manager either charges a balance responsible party a penalty or pays a balance responsible party a bonus, depending on the balance responsible party's balancing group balance:

Starting point in hour h	Balancing group balance in hour h	Helpers/ causers	Bonus/ penalty
Balance responsible party 1	110	Helpers	€5,500
Balance responsible party 2	500	Helpers	€25,000
Balance responsible party 3	-100	Causers	-€4,750
Balance responsible party 4	-500	Causers	-€23,750
Balance responsible party 5	-200	Causers	-€9,500

111 The calculation of the penalty and the bonus therefore essentially follows the methodology originally proposed by the ruling chamber for the balancing energy costs incurred by the hydrogen

market area manager to be passed on to the causers. Allocating the costs of using balancing energy to the causers is appropriate because the causers, with their balancing group imbalances, are infringing the general requirement set out in operative part 2 c) to keep their balancing groups balanced and are responsible for the imbalance in the overall network balance status, which ultimately triggers the use of balancing energy. However, the methodology originally proposed by the ruling chamber for calculating the penalty and the bonus has been changed in line with the park/borrow concept introduced in operative part 4 a). The advantages of the park/borrow concept (see operative part 4) have therefore also been consistently transferred to the financial incentive system. The financial incentive system differs from that originally proposed in particular in that the physical balancing energy used is not allocated to the causers' balancing groups as economic balancing energy based on each causer's share and that the penalties comprise the bonus for the helpers in addition to the costs for balancing energy. The bonus incentivises the helpers to maintain their balancing group balance, which is the opposite of the overall network balance status and therefore beneficial to the network. The penalty is charged on the basis of the share of the sum of the balancing group balances of all causers that is accounted for by a causer's balancing group balance and therefore on a cost-reflective basis. The balance responsible parties causing the imbalance and therefore the costs in the relevant netting period have to bear the costs. This means that there is a strong financial incentive for balance responsible parties to avoid a penalty.

112 Operative part 5 c) defines the calculation methodology for when the overall network balance status in the relevant netting period crosses the boundary from the green to the yellow zone but no balancing energy is used for the purposes of operative part 4 a). The rules are necessary in order to keep the incentive effect of the financial incentive system in place in hours in which the overall network balance status is in a critical flexibility range but no balancing energy is used. Such a situation may arise because the hydrogen market area manager is given a certain amount of scope in using balancing energy in operative part 4 and therefore does not necessarily have to use balancing energy in every case. In addition, it cannot be ruled out that the balancing energy required is not available in some hours.

113 According to operative part 5 c) sentence 2, the hydrogen market area manager calculates the penalty by multiplying the sum of the balancing group balances of all causers as referred to in operative part 3 c) in the relevant netting period with the first EEX HYDRIX index for Germany that is published after the relevant netting period. This ensures that the penalty is not known in advance and is based as far as possible on the market price for hydrogen. Some respondents (bp, WVS) criticised the ruling chamber's proposal to use the EEX HYDRIX index for calculating the level of the penalty. The respondents stated that the index was not entirely suitable for that purpose, in particular because it did not represent the market price for hydrogen in the relevant hour and because it comprised other price components, such as transport costs and payment default risks, in addition to the hydrogen commodity. One respondent (bp) suggested using something similar

to the uniform single imbalance price (reBAP) applicable in the electricity market. The ruling chamber made it clear in its deliberations on the draft operative part and during the sector dialogue that it does not consider the EEX HYDRIX index in its present form to be the best solution for calculating the penalty under the financial incentive system because, among other things, it does not reflect the short-term hydrogen trades and is only published once a week. However, one particular argument for choosing the EEX HYDRIX index was the argument put forward by numerous respondents in the first consultation (BDEW, bp, EFET, EnBW, RWE, Statkraft, Uniper, VCI, VKU, VNG) that, to allow the financial incentive system to take full effect, the penalty should not be known beforehand, which would be the case if the penalty were based on the network tariff as originally proposed by the ruling chamber. Moreover, despite the weaknesses mentioned, the EEX HYDRIX index reflects a market price for hydrogen. The ruling chamber believes that it is also possible and very likely that the relevance of the index for the quantities of hydrogen traded in Germany will increase in future. It can therefore be expected that, by the time the financial incentive system is applied beginning in 2028, the HYDRIX index will adequately reflect the market price for it to be used as a relevant index for calculating the penalty under the financial incentive system. It can also be assumed that it will be possible to calculate the index on more than a weekly basis once a short-term trading market for hydrogen has developed. The ruling chamber does not generally rule out the use of a price similar to the reBAP. However, a corresponding price is not currently available on the hydrogen market. Likewise, there are currently no statutory or regulatory rules on how to form such a price, unlike for the electricity market.

114 Operative part 5 c) sentence 3 sets out that the product of the calculation in accordance with sentence 2 is charged as a penalty to the causers based on the share of the sum of the balancing group balances of all causers that is accounted for by a causer’s balancing group. In accordance with operative part 5 c) sentence 4, the hydrogen market area manager pays the total amount calculated as set out in sentence 3 as a bonus to the helpers based on the share of the sum of the balancing group balances of all helpers that is accounted for by a helper’s balancing group balance. This methodology ensures that there is also a strong financial incentive for balance responsible parties to contribute through their balancing groups to bringing the overall network balance status back into the green zone in hours in which the overall network balance status requires compensatory measures but no balancing energy is used.

115 The following example serves to illustrate the methodology:

Starting point in hour h	Balancing group balance in hour h	Helpers/ causers
Balance responsible party 1	110	Helpers
Balance responsible party 2	400	Helpers
Balance responsible party 3	-300	Causers
Balance responsible party 4	-250	Causers
Balance responsible party 5	-120	Causers
Helpers' sum	510	
Causers' sum	-670	
Overall network balance status	-160	

The overall network balance status in hour h is minus 160 units. This means that the overall network balance status is in the yellow zone. The hydrogen market area manager, using the scope provided, does not use any balancing energy in hour h. The penalty and bonus are calculated from the HYDRIX index:

Purchase h+1	-
Sale h+2	-
Balancing energy quantity	-
Balancing energy costs	-
HYDRIX	€250/unit

In this example, the penalty corresponds to 30% of the HYDRIX index. The bonus and penalty in this example are therefore as follows:

Penalty: €250/unit x 30% = **€75/unit**

Bonus: (€250/unit x 30%) x 670/510= **€99/unit**

The hydrogen market area manager either charges a balance responsible party a penalty or pays a balance responsible party a bonus, depending on the balance responsible party's balancing group balance:

Starting point in hour h	Balancing group balance in hour h	Helpers/ causers	Bonus/ penalty
Balance responsible party 1	110	Helpers	€10,838
Balance responsible party 2	400	Helpers	€39,412
Balance responsible party 3	-300	Causers	-€22,500
Balance responsible party 4	-250	Causers	-€18,750
Balance responsible party 5	-120	Causers	-€9,000
Helpers' sum	510		
Causers' sum	-670		
Overall network balance status	-160		

116 The ruling chamber has again made it clear by the reference to the hour in operative part 5 b) and c) that the time interval for data transmission (15 minutes) and the netting period (one hour) are not the same (see operative part 2 d)).

117 By setting a data transmission interval of 15 minutes and a netting period of one hour, balance responsible parties are being given a reasonable opportunity to respond to unwanted balancing group imbalances and thus comply with their responsibility in terms of the overall network balance status. At the same time, the netting period is short enough to accommodate the smaller degree of flexibility in the hydrogen network compared with the gas network. The majority of respondents (BDEW, DWV, EEX, EFET, EnBW, GEODE, RWE, THE, Uniper, VKU) welcomed the timescales proposed by the ruling chamber. One respondent (RefLau), however, stated that a netting period of one hour was too short for electrolyser operation. In addition, it was not economically viable to ramp an electrolyser up and down on a 15-minute basis. The ruling chamber does not agree with the arguments set out in the response. In the ruling chamber's view, the data transmission interval and netting period set in the determination do not mean that an electrolyser has to be ramped up or down every 15 minutes. The balancing regime in the determination in fact allows hydrogen to be fed in continuously. However, the helper/causer mechanism creates financial incentives that encourage the individual balance responsible parties to behave in such a way that the overall network balance status remains within the green zone as far as possible. The flexibility in the hydrogen networks is available to all the balance responsible parties across all the defined flexibility zones on a non-discriminatory basis. In addition, balance responsible parties are free to choose which individual flexibility sources they use to manage their balancing groups. An unwanted surplus supply can therefore not be cured just by, for example, ramping down an electrolyser. It can also be counteracted through an increase in the quantity of hydrogen exiting the balancing group, whether by increasing offtake, putting hydrogen into storage or transporting hydrogen to another market area. Likewise, these sources are also potentially available as alternatives to meet an increase in demand.

118 The ruling chamber points out that a penalty is charged and a bonus paid in each hour in which the overall network balance status is outside the green zone. This also applies if the overall network balance status remains outside the green zone for several consecutive hours. The penalty and bonus are calculated for each hour as set out in operative part 5 b) or c), depending on whether or not balancing energy was used in that hour. Settlement vis-à-vis the individual balance responsible parties therefore has to be based on the balancing group balance in the relevant hour. Respondents (EFET, EnBW) pointed out that the wording in the draft operative part was not clear and could create the impression that the penalty should only be charged once for the hour with the highest balancing group balance. The ruling chamber agrees with the argument put forward in the responses that the financial incentive system has to take effect in each hour and that charging a penalty just once a day for the hour with the largest balancing group imbalance could weaken

the incentive effect. The ruling chamber has made the wording in the relevant parts clearer to avoid any such misunderstandings.

119 One respondent (bp) suggested a different method for dividing up the penalty for payment as a bonus to the helpers as an alternative to the method proposed by the ruling chamber in operative parts 5 b) and c): 50% of the revenue from the penalty should be paid as a bonus to helpers and 50% to other balance responsible parties whose balancing group imbalance is within a certain tolerance. This would make it necessary to determine a ranking order for the causers and charge different penalty amounts to them. In the ruling chamber's view, the suggestion would make implementing the helper/causer mechanism more complex without there being any visible added value to offset this complexity. Above all, the response did not show that the proposed breakdown would create a stronger incentive for balance responsible parties to act in a way that is beneficial to the network than the methodology determined by the ruling chamber. The ruling chamber therefore did not take up the suggestion. Likewise, the ruling chamber has not taken up the suggestion from two respondents (Air Products, bp) to cap the costs for balance responsible parties under the helper/causer mechanism in advance. The ruling chamber is not in favour of limiting the costs because it would reduce the incentive created by the helper/causer mechanism for both causers and helpers. In addition, limiting the "economic balancing energy costs" by regulatory means would mean that part of the costs, for example for balancing energy, would not be passed on cost-reflectively to the causers but would have to be spread across all network users. In the ruling chamber's view, this should be avoided. The mechanism for passing on costs set out in operative part 1 d) is deliberately designed only for costs that cannot be passed on cost-reflectively. There would also be the question of how high the cap on costs should be. The ruling chamber cannot currently see any criteria that would provide an appropriate basis for a decision.

120 In order to take into account uncertainties about the EEX HYDRIX index and especially to ensure a balance between the necessary incentive effect and any risks for market participants with respect to the level of the penalty, however, operative part 5 d) and e) give the hydrogen market area scope in applying the index or an alternative index. Operative part 5 d) sentence 1 sets out that the hydrogen market area manager can decide in agreement with the ruling chamber on the level of the EEX HYDRIX index (for example a certain percentage, the full index or a higher figure) to be used to calculate the penalty. According to operative part 5 d) sentence 2, the main criterion for the hydrogen market area manager's decision should be the necessary incentive effect of the penalty. If a certain percentage of the relevant HYDRIX index is used, the percentage chosen should be high enough that the level of the penalty still creates a strong incentive for balance responsible parties to avoid the penalty. At the same time, the figure should create an incentive for balance responsible parties to act as helpers in order to receive the corresponding bonus. On the other hand, the level of the penalty should not create a barrier to market entry. The requirement for the hydrogen market area manager to decide in agreement with the ruling chamber ensures

that the decision on the figure, which can directly affect the effectiveness of the financial incentive system, is not the sole responsibility of the hydrogen market area manager level but that the hydrogen market area manager, having a central function in the balancing regime, takes a leading role in the decision-making.

121 As it is not currently possible to fully predict the development of the EEX HYDRIX index and its importance for the German hydrogen market, operative part 5 d) sentence 3 sets out that the hydrogen market area manager has to continuously analyse and assess the figure chosen and may adjust the figure in agreement with the ruling chamber. This means that due account can be taken of, for example, short-term developments in the HYDRIX index, such as changes in the rules on the composition of the index, by increasing or reducing the percentage used in the financial incentive system. The scope introduced in operative part 5 d) takes into account the position of some respondents (EFET D, EnBW, RWE, SEFE) that the full HYDRIX index as a basis could be too high. A figure of 10% or 20% of the HYDRIX index was suggested as a possible guide, based on the rules under the GaBi Gas 1.0 determination (BK7-08-002). The ruling chamber believes that it is not possible at present to set an appropriate fixed figure. However, the rule ensures that a reasonable figure will be set and will also be continuously assessed. Finally, the ruling chamber points out for the sake of clarity that a percentage of the HYDRIX index also includes a percentage greater than 100%, in other words a markup on the index would also be possible.

122 The rules in operative part 5 e) allow the hydrogen market area manager to find an alternative index if the hydrogen market area manager considers that the EEX HYDRIX index is not suitable for the financial incentive system and the use of another index would be appropriate. In this case, the hydrogen market area manager can apply to the ruling chamber for approval of the use of another index. The fundamental decision about which index should be used for the financial incentive system is highly important for the effectiveness of the incentive system and thus for the functioning of the balancing regime as a whole. The hydrogen market area manager therefore has to apply for approval from the ruling chamber before a change can be made to the index to be used. The hydrogen market area manager has to provide an explanation of why the index is appropriate for use under the financial incentive system together with the application for approval. The explanation has to cover in particular the potential incentive effect of the index. This procedure ensures that the other market participants, in particular the balance responsible parties, can also be involved appropriately in any formal approval proceedings. The ruling chamber points out that a price similar to the reBAP can be used as an alternative index, as suggested by one respondent (bp). What is important is that the price chosen adequately reflects the hydrogen market and creates the necessary incentive effect for the balance responsible parties.

3.4.2.5 Operative part 6

123 Operative part 6 makes the hydrogen market area manager centrally responsible for the incoming and outgoing data exchange necessary for the purposes of hydrogen balancing and the processing and provision of information. This includes visualisations of the data and information for all relevant market participants as well as the collection of the core data from market participants that is necessary for the exchange of data and information. The necessary data has to be made available to the hydrogen market area manager with the required level of detail.

124 The hydrogen market area manager's core tasks as regards balancing group management will be receiving, processing and providing the information relevant to the balancing groups. The hydrogen market area manager can only carry out these tasks if the market participants concerned provide the necessary data with the appropriate level of detail. In contrast to the second consultation draft, the ruling chamber has separated the hydrogen market area manager's obligations regarding the exchange of balancing-related data and information from the rules on the data exchange platform; the wording of the obligations is the same, but the obligations are now in a new, separate operative part for reasons of clarity. This separation aims to highlight the fact that the balancing-related information may only be received and processed by the hydrogen market area manager. Unlike with the hydrogen market area manager's responsibilities relating to the data exchange platform, it is not possible for the hydrogen market area manager to commission third parties to carry out the balancing-related tasks (see operative part 7). It should be expressly noted that the hydrogen market area manager is required to fulfil the obligations relating to the exchange of balancing-related data and information vis-à-vis the market participants through the data exchange platform (see operative part 7).

3.4.2.6 Operative part 7

125 Operative part 7 sentence 1 states that the provision of information to market participants by the hydrogen market area manager has to take place through the establishment of an internet-based central data exchange (data hub). The hydrogen market area manager has to ensure vis-à-vis the regulatory authority that the data exchange platform meets the requirements for the exchange of information and data as set out in the determination. In the ruling chamber's view, the platform does not necessarily have to be operated by the hydrogen market area manager; it is generally possible for a third party to operate the platform and carry out the associated responsibilities. Any choice of a suitable alternative platform operator fulfilling the requirements set out in this determination is the responsibility of the hydrogen market area manager and the hydrogen transmission network operators designating the hydrogen market area manager. In order to give the market participants maximum flexibility in implementing the data hub, the ruling chamber is deliberately not laying down any rules beyond those in the determination relating to a specific

operator model, potential platform operators or the data exchange platform's (IT) system architecture and, unlike two respondents (FNB at the sector dialogue, Energienet), does not consider this necessary. The ruling chamber sees its general approach confirmed as it was supported by nearly all the respondents (BDEW, DWV, DIHK, EFET, ENB, EnBW, EEX, FNB Gas, GNH, RWE, SEFE, THE, VKU, VNG). At the same time, this approach does not rule out the possibility of a European-based platform operator, which one respondent (Energienet) also pointed out. Likewise, it is possible to implement the data hub using a portal solution extendable on a European basis, as suggested by one respondent (FNB Gas in its supplementary response).

126 In the ruling chamber's view and from a regulatory perspective, the hydrogen market area manager's role as the central contact point for the establishment of the data hub follows from the very role as market area manager, which involves horizontal tasks that contribute to achieving efficient network access. This is true in the case of the central data exchange platform, which is a common hub for data and communication for all hydrogen network operators and enables efficient implementation of the exchange of information and therefore network access for market participants. The separation or division of responsibilities for the operation of the platform between the platform operator, the hydrogen market area manager and the hydrogen transmission network operators can be left up to the parties involved without detracting from the objective of the effective exchange of information through the platform. In particular, the role of central contact point does not mean that the responsibility for processes is transferred from hydrogen network operators to the hydrogen market area manager. The hydrogen network operators remain responsible for the content of processes (such as registration with a hydrogen network operator or nomination processes) that are carried out through the data hub or for which information is exchanged through the data hub but that are not within the hydrogen market area manager's scope of responsibility. The ruling chamber has set out the framework conditions and requirements for the data exchange platform clearly and in detail in operative part 7 and has laid down the obligations for the exchange of data and the provision and processing of information that have to be fulfilled for the purposes of balancing group management solely by the hydrogen market area manager through the data hub separately in operative part 6; this means that there are no ambiguities about the substantive or operational obligations arising from this determination or about the functional scope of the data exchange platform should the platform be operated by a third party.

127 In terms of the provision of information, the data exchange platform has to be designed as a central point for the provision of the relevant data to market participants as well as the receipt of market communication. This includes in particular the balancing group, quantity and network information to be provided and the publication in accordance with operative part 7 sentence 2 of market-wide information on the system status in hydrogen networks, such as the sum of the balancing group balances of the helpers and causers, the overall network balance status and the balancing energy used by the hydrogen market area manager. The list of information to be published is deliberately

non-exhaustive since the objective of the data exchange platform is to bundle all the information specific to market participants as well as the information on the system status in hydrogen networks, unless otherwise regulated in this determination or the WaKandA determination (BK7-25-01-015). The market participants have a single point of contact (“one face to the customer”) as a source of information; this means that, unlike the current market role-specific communication in the gas sector, the exchange of data and messages is restricted to one entity and therefore also harmonised. This was specifically highlighted and supported by some respondents (THE, FNB Gas). As already stated, this does not mean that the individual market roles will transfer responsibility for the individual processes to the data exchange platform or hydrogen market area manager (see the response from DWV) but that, in accordance with operative part 7 sentence 3, nominations or quantity notifications, for example, will have to be sent to the central data exchange platform and will then be forwarded to the relevant market participants, in this case the hydrogen transmission network operators, who will use the information to assess flows in the hydrogen network. The data hub can therefore serve as a central point for market communication in these cases as well, without market participants (in this case shippers) having to communicate individually with each hydrogen network operator. Two respondents (EFET, EnBW) supported this approach with respect to nominations and quantity notifications. The ruling chamber decided in the second consultation against further considerations about tasks such as processing measured data and generating substitute data also being carried out centrally through the market area manager on the data exchange platform.

128 The requirement in operative part 7 a) for a central registration point (one-stop shop) to be established on the data exchange platform for the conclusion of contracts also follows the approach of market participants being able to provide or receive the necessary information through a single point. This covers the registration and conclusion of contracts for access to hydrogen networks, including the balancing group contract and access to the VTP. The establishment of a central registration point also enables market participants requesting a contract to manage the organisational work efficiently. Market participants will be able to use the one-stop shop to, for instance, access all standard contracts, submit the contractual information required from those requesting a contract or receive requests and will therefore not have to exchange communications and data with, for example, the individual hydrogen network operators to negotiate a contract. Centralising and harmonising the way contracts are negotiated and concluded will also make access to the hydrogen networks significantly more efficient than is currently the case, for example in the gas sector. In view of the consequent advantages for hydrogen network access, the ruling chamber has taken up suggestions from the sector dialogue and consultation (SEFE) and is requiring the establishment of a central registration point on the data exchange platform instead of a separate platform. The data exchange platform and the central registration point complement

each other with their objective of centralising communication and data exchange in order to minimise the interfaces for market participants and make them efficient.

129 It should be made clear, however, that the central submission or receipt of contract-related data does not necessarily mean that a contract will or has to be concluded. The relevant contracting party, such as the hydrogen network operator or the hydrogen market area manager, will first have to assess the information provided by the market participant requesting a contract to see if the prerequisites are met and a contract can be concluded. The establishment of a central registration platform therefore does not affect or restrict this scope of responsibility. Rather, the central registration point will serve to organise pre-contractual information and communication and ultimately the exchange of any concluded contracts. The central registration point will therefore facilitate contract management for all market participants in an efficient way without fundamentally changing the system of market roles or restricting the basic responsibilities with respect to concluding contracts. The ruling chamber's decision to require the establishment of the one-stop shop on the data hub actually builds on the objective mentioned in the second consultation of establishing a centralised data and communication exchange.

130 Operative part 7 b) requires the data exchange platform's IT system architecture to be designed so that it can be extended to also cover the exchange of data and processing of information for other operative applications relating to hydrogen network access. This extension can be carried out by the hydrogen market area manager or laid down in a determination. In the ruling chamber's view, the initial definition of the data exchange platform's scope only represents the basic core that has to be kept open for possible applications in other market processes. The design of the data exchange platform, including the underlying IT and associated database structure, should therefore generally take into account the possibility of an extension to accommodate other process, information and data exchange requirements. These areas of application can be defined by the ruling chamber in separate determinations or by the hydrogen market area manager in agreement with the ruling chamber, as far as an extension is considered necessary.

131 The aim of the provision is to allow the data exchange platform to be extended to accommodate future process requirements that could be implemented efficiently through the platform. The requirements that the ruling chamber has set out in this determination for the exchange of data and information, in particular relating to balancing and network management, only cover the fundamental aspects of the data exchange platform during the ramp-up of the hydrogen market. In the ruling chamber's view, however, both additional and new requirements may arise during the anticipated ramp-up that would need to be implemented efficiently through the data exchange platform. The ruling chamber is making it clear in this operative part that the data exchange platform's IT system architecture has to be designed so that substantive changes or additional requirements do not generally call into question the platform's structure as implemented on the basis of this determination and do not result in the platform having to be restructured. The

discussions held in connection with this determination have shown that it would generally be possible for other applications, such as processing and managing measured data, to be implemented on the data exchange platform. This was not seen to be appropriate at this stage for the purposes of this determination; however, changes to existing regulations or entirely new requirements, such as supplier switching processes, may arise during the ramp-up of the hydrogen market that could also be implemented more efficiently through the data exchange platform than through separate platforms. This does not generally rule out a future reassessment of the possibility of relocating the task of processing and managing measured data. Whether and to what extent this requirement for the data exchange platform can be ensured by, for example, a modular system architecture or database structure or by other means does not have to be decided in this determination and can be left up to the relevant parties responsible for the system. It should just be highlighted at this point that completely redesigning the data exchange platform established on the basis of this determination in the event of changes to the framework conditions or new requirements must be avoided. This has to be remembered in particular in the event of commissioning to third parties and has to be included in the requirements catalogue for potential providers for the design and operation of a data exchange platform.

132 The accommodation of future process, information and data exchange requirements can be laid down by the ruling chamber in a determination. In contrast to the second consultation draft, the ruling chamber is also now allowing the hydrogen market area manager and the hydrogen transmission network operators in the market area to make such extensions in agreement with the ruling chamber, as far as this is considered necessary. The particular aim of this additional provision is to enable changes to the existing requirements for the data exchange platform to be implemented as efficiently as possible and, unless fundamental changes or extensions are being made, more quickly without the need for lengthy ruling chamber determination proceedings. The required coordination with the ruling chamber ensures that any changes envisaged by the hydrogen market area manager are in line with the regulatory provisions of this determination.

133 Operative part 7 c) sets out the requirements that apply to the receipt and provision of information and the exchange of data and messages and that ensure continuous operational availability of the data exchange platform taking into account IT security and data protection aspects. As the data exchange platform serves as a central communication and information unit for hydrogen network access and is thus of paramount importance for all market participants for the performance of their market roles, both continuous functionality of the platform and the protection of data against unauthorised access of any kind are essential. Operative part 7 c) only sets out the basic IT security and data protection requirements for operation of the data exchange platform; in the ruling chamber’s view, more specific requirements will depend heavily on the detailed system architecture of the data exchange platform, which is not covered by this determination. In addition, relevant legislation, such as the General Data Protection Regulation (GDPR) and the Critical

Infrastructure Ordinance, will have to be taken into account when designing the data exchange platform and information and data flows and developing the security concept for the platform. Some respondents (BDEW, E.ON, GNH) specifically pointed this out, without calling into question the ruling chamber's approach to taking into account IT security and data protection aspects in general.

134 Operative part 7 c) i requires continuous availability of the data exchange platform to be ensured. The determination's requirements on balancing group management, for example, mean that the balance responsible parties will depend on continuous information about their balancing groups and the overall network balance status, etc to meet their obligation to keep their balancing groups balanced at all times. The various market roles therefore need the data exchange platform to be available continuously for the receipt, processing and provision of information in order to manage the hydrogen market area, including guaranteeing the stability of the hydrogen networks. The operator of the data exchange platform has to ensure availability 24 hours a day with suitable technical measures in order to largely rule out the possibility of all or part of the platform failing, for instance with redundant systems or other suitable means, and safeguard the platform with appropriate contingency planning.

135 Operative part 7 c) ii sentence 1 sets out that a standardised IT data interface (application programming interface – API) has to be established to enable the automated electronic exchange of data between market participants and the data exchange platform. This programming interface will ensure that the market participants' individual IT applications and the data exchange platform can communicate directly with each other and exchange data. The API will make the provision of information and processing of data significantly more efficient for market participants compared with the message-based exchange of data currently used in the energy sector and will be more versatile with respect to the market participants' current software applications. A number of respondents (EEX, EFET, EnBW, INES, SEFE) expressly welcomed the envisaged exchange of communications using an API. The ruling chamber also supports the suggestion from one respondent (INES) for the hydrogen market area manager to use the API for the provision of general information and data on the hydrogen market area to interested parties as well as for communication specific to the market roles. However, this does not rule out the possibility of other download options for general access to information. A market-wide standardised API has to be used that enables uniform access to the data exchange platform. According to operative part 7 c) ii sentence 2, the hydrogen market area manager is entitled to specify the standard for the API. However, operative part 7 c) ii sentence 2 also requires the hydrogen market area manager to take into account any existing API standardisation for market communication in the energy sector that may be suitable for the intended exchange of information on the data exchange platform for hydrogen network access. Here, the ruling chamber's aim is to use synergy effects with any

existing API standardisation in the energy market, as far as the standards meet the technical and specific requirements for the data exchange platform set out in this determination.

136 Operative part 7 c) iii, iv and v describe the basic requirements relating to IT security and compliance with the data protection provisions for the data exchange platform and the associated exchange of information and data. With respect to IT and data security (operative part 7 c) iii), the platform and the exchange of information and data have to be protected against attacks and disruption of any kind within the framework of the relevant legislation and standards. This applies equally to the IT interfaces (APIs) for communication between market participants and the data exchange platform in order to guarantee the secure exchange of messages and information. In addition, an authenticated access concept is required to ensure that only authorised parties can access the information intended for them and exchange information (operative part 7 c) iv). The authorisation concept will ensure that the relevant market participants, such as balance responsible parties, shippers/suppliers, network operators and final customers, can only access the information intended for their individual market role and exchange the relevant data and messages. The relevant data protection provisions also have to be taken into account (operative part 7 c) v). Particular attention has to be paid to data integrity, that is the correctness, completeness and consistency of data. This applies not only in terms of the need to protect the individual data elements but also to the need to ensure a consistent basis of data throughout the lifetime of a data element and therefore also with respect to receiving, processing and storing data. In addition, if aggregate data from several parties is provided, each individual data element has to be protected so that it is no longer possible to readily attribute a data element to an individual party. It may therefore be necessary to pseudonymise or anonymise data or information on the data exchange platform itself.

137 In order to ensure that only authorised parties have access to the data exchange platform, market participants must register on the platform (operative part 7 c) vi sentence 1.) In accordance with operative part 7 c) vi sentence 2, the hydrogen market area manager has to make the necessary information available in an appropriate form. The same applies to the relevant information for application of the data interfaces required for the exchange of data and information. The market participants will therefore receive all the information required for registration and the future exchange of data and information, ensuring a smooth registration process.

138 Operative part 7 d) sets out the implementation timescales for the data exchange platform and the interface for communication with the market participants. Operative part 7 d) sentence 1 states that the data exchange platform has to be established by 1 July 2027 and then has to be tested with market participants during an introductory phase up to 1 January 2028, the date set in operative part 10 for implementation of the determination’s rules. In addition, operative part 7 d) sentence 2 states that the specifications for the IT data interface (API) to be applied in accordance

with operative part 7 c) ii and iii have to be communicated to the market participants within a reasonable period of time before the data exchange platform is established.

139 The ruling chamber has brought the deadline for the establishment of the data exchange platform, including an introductory phase, into line with the date of 1 January 2028 set in operative part 10 for implementation of the determination's rules. The ruling chamber has extended the deadline set in the second consultation draft to 1 July 2027 in line with a number of responses (BDEW, DWV, EnBW, E.ON, FNB Gas, SEFE) that were in favour of extending the deadline for establishing the data exchange platform as well if the deadline for implementing the determination's substantive balancing rules was extended. In the ruling chamber's view, it is appropriate and logical to adjust the deadline for completing the data exchange platform in line with the deadline for implementing the determination's rules because the corresponding processes are to be implemented through the platform. It would not be appropriate to keep the deadline of 1 August 2026 originally set in the second consultation draft because the specific processes would still be in development at that time. Some respondents (BDEW, E.ON, FNB Gas, SEFE) also made the general point that the timescale provided for in the second consultation draft was too short anyway, given the complex processes and technical requirements to be accommodated on the data exchange platform. In the ruling chamber's view, the new deadline of 1 July 2027 gives the relevant parties sufficient time to establish the data exchange platform, taking into account the balancing requirements set out in this determination.

140 At the same time the introductory phase to test the data exchange platform also needs to be shifted. Taking into account that the platform will be available for testing with market participants from 1 July 2027, the ruling chamber has extended the test phase to five months (August to December 2027) in response to concerns from some respondents (DWV, EnBW, EFET, EEX, VKU) that the period of two months in the second consultation draft was too short. The ruling chamber shares the view expressed by some of these respondents that the establishment of a data exchange platform involved the first-time, extensive centralisation of the exchange of data and information using new interfaces with market participants and that sufficient time was needed for proper testing. Sufficient time was also needed to ensure the functionality of the platform, as a detailed examination was necessary to ensure that the various processes, including the exchange of messages and data, the provision of information and the individual steps, ran smoothly. The ruling chamber shares this view and has taken into account the concerns in extending the timescale accordingly.

141 The fact also had to be taken into account that a test phase will cover not only the IT and substantive aspects of the data exchange platform but also the market participants' individual IT systems with respect to the relevant technical and communicative requirements. In addition, if potential for improvement is identified in the test phase, time will be needed for any additional adjustments necessary to the data exchange platform and to the market participant's IT systems.

The ruling chamber assumes that the longer test phase of five months, which is only slightly different to the six-month period proposed by some respondents (EFET, EnBW), will adequately accommodate these different aspects. The ruling chamber has also taken into account in operative part 7 d) sentence 2 the call from some respondents (EEX, VKU) to publish the specifications for the IT data interface (API) at an early stage. The rule ensures that the hydrogen market area manager provides, a reasonable time in advance of the establishment of the data exchange platform on 1 July 2027, the information that the market participants need for them to make preparations for the future communication link between their own IT applications and the data exchange platform so that the exchange of communications and messages can begin on the date when the data exchange platform has to be established. The ruling chamber assumes that the market participants will be able to agree, in an appropriate process such as within the framework of the hydrogen cooperation agreement, on a suitable timescale that gives the market participants sufficient time to implement the communication requirements of the API so that the hydrogen market area manager can publish the specifications a reasonable time in advance.

3.4.2.7 Operative part 8

142 Operative part 8 requires the hydrogen market area manager to set up a VTP (sentence 1). Potential market participants have to conclude a balancing group contract with the hydrogen market area manager to gain access to the hydrogen market area and the VTP (sentence 2). The hydrogen market area manager may require registration and the provision of relevant information for the conclusion of a contract (sentence 3). The VTP is defined as a point in the hydrogen market area where hydrogen can be exchanged between balancing groups but is not a physical entry or exit point in the hydrogen market area (sentence 4).

143 The establishment of a hydrogen VTP enables quantities of hydrogen to be transferred between balancing groups for the purposes of balancing, which is the basic prerequisite for the flexible management of quantities in an entry-exit system. This has been proven in practice in the gas sector and is now being transferred to the hydrogen sector. As it is assumed that in the ramp-up phase there will initially only be individual hydrogen clusters that are not interconnected, setting up an overarching hydrogen VTP will also ensure that all clusters will still have access to the VTP. In addition, it ensures that hydrogen can be exchanged with each individual cluster in line with universally applicable uniform rules, as access to a VTP is guaranteed in each cluster. The transfer of quantities can then be restricted to the relevant cluster. The majority of respondents (DWV, EEX, EFET, FNB Gas, INES, SEFE, THE, Uniper, VNG) explicitly welcomed this, in particular in view of the accompanying objective of enabling uniform balancing of quantities and balancing groups across the market. The ruling chamber also shares the view of some respondents (EEX, EFET, EnBW, VKU) that access to the hydrogen VTP should not be linked to booking transport capacity, as this was seen as a barrier to market entry. Making access to the VTP independent of

booking transport capacity would allow market participants to conduct purely commercial transactions at the VTP, which the ruling chamber also sees as particularly expedient for developing a liquid market especially at the start of the ramp-up phase. Unlike one respondent (E.ON), the ruling chamber does not believe that further considerations on the technical design of the VTP are to be made within the scope of this determination. These can be made by the market participants within the framework of the hydrogen cooperation agreement and implemented by the market area manager.

144 Market participants have to conclude a balancing group contract with the hydrogen market area manager to gain access to the hydrogen market area and the VTP. Here, the ruling chamber is transferring the practice established in the gas sector to the hydrogen sector. The conclusion of a balancing group contract and access to the VTP will be possible through the central registration point (one-stop shop) on the data exchange platform (see operative part 7 a)). The possibility for market participants to submit the necessary information and conclude the necessary contracts through one central point, the one-stop shop, in turn enables efficient market access. The ruling chamber has taken up a general suggestion from respondents (and in this case specifically from SEFE) with regard to access to the VTP as well. However, the hydrogen market area manager will still need to collect the data required for the conclusion of contracts and VTP access even given central registration.

3.4.2.8 Operative part 9

145 Operative part 9 sets out the various reporting, evaluation and publication requirements.

146 Operative part 9 a) requires the hydrogen market area manager to provide the ruling chamber with an annual report summarising the development and status of the hydrogen balancing regime in the hydrogen market area in the previous calendar year by 1 April of each year beginning in 2029. The report should include in particular a history of the overall network balance status and the resulting measures, the payment flows under the helper/causer incentive system, and an evaluation of the procurement and use of balancing energy. Operative part 9 b) sets out that the report should be supplemented by the reporting requirements from the WaKandA determination (BK7-24-01-15) and that a combined report should be submitted to the ruling chamber, which the ruling chamber will subsequently publish in accordance with operative part 9 c).

147 The objective of these reporting and evaluation requirements is to ensure the regular monitoring and assessment of the core aspects of the hydrogen balancing regime introduced by this determination. In the ruling chamber’s view, a regular evaluation will be necessary to assess the changes in the framework conditions during market ramp-up and any resulting need for changes to the current rules, especially in light of the expected ramp-up process and the associated increase in the number of market participants, with individual clusters and groups of clusters. The

monitoring and assessment will focus on the fundamental elements of the hydrogen balancing model listed in operative part 9 a), including the use of balancing energy. The evaluation requirement was explicitly welcomed by several respondents (EFET, EnBW, EVONIK, SEFE, Statkraft, VKU). In the ruling chamber's view, the list in operative part 9 a) of hydrogen balancing model elements to be included in the evaluation is by no means exhaustive. Depending on progress in the hydrogen ramp-up, the evaluation could cover additional general issues or very specific questions relating to the current model that would then be assessed in the report as well. The ruling chamber therefore does not see any reason why the report could not, for example, include evaluations of the data exchange platform, as suggested by one respondent (INES), if this was considered necessary.

148 Publication of the report by the ruling chamber also guarantees that all the market participants have access to the same information, which can be used as a basis for discussions on the further development of the hydrogen network access model. In contrast to the second consultation, the ruling chamber has now decided that the reporting requirements from this determination and the WaKandA determination (BK7-24-01-15) are to be integrated into one report and that one combined report is to be submitted to the ruling chamber. The ruling chamber considers it appropriate to have a combined report because of the close interplay between the content of the two determinations. This will make it possible to present the content in a more targeted and easily comprehensible way, for the benefit of authors and readers alike. In addition, it can be assumed that a combined report providing a full overview will also facilitate any subsequent discussions about the further development of the hydrogen network access model or individual elements of the model. If there are objective reasons against a combined report, the submission of separate reports to meet the reporting requirements in this determination and the WaKandA determination (BK7-24-01-15) would be compatible with the provision in operative part 9 b).

149 The date for publication of the first report had to be brought into line with the date of 1 January 2028 set in operative part 10 for implementation of the determination's rules, which means that the first report now has to be submitted in 2029. The ruling chamber has also taken up the point made by several respondents (BDEW, EnBW, E.ON, FNB Gas) and has set the date of 1 April of each year as the deadline for submitting the report so that adequate account can be taken of the data from the previous calendar year.

150 Operative part 9 d) regulates the development and publication by the hydrogen transmission network operators of a methodology for defining the flexibility zones as set out in operative part 3.

151 As the definition of flexibility zones is directly related to the use of balancing energy for the purposes of operative part 4 a) and the financial incentive system as described in operative part 5, operative part 3 requires hydrogen transmission network operators to define and publish binding limits for each of the flexibility zones for their individual hydrogen networks. A uniform methodology therefore has to be developed to ensure that hydrogen transmission network operators apply

uniform principles when calculating and defining the flexibility zones for their individual hydrogen networks. As this directly affects the incentive system, and in turn the various interests of the individual market roles (such as shippers) and their areas of activity, these interests have to be adequately accommodated and taken into due account when developing the methodology. In order to guarantee non-discriminatory application across all hydrogen networks and ensure that hydrogen network operators can adequately prepare for the application of the calculation methodology in their individual networks, the hydrogen transmission network operators have to publish the methodology a reasonable time in advance of its application.

152 Operative part 9 e) requires the hydrogen market area manager to publish the compensation mechanism to be developed in accordance with operative part 2 h). The compensation mechanism, including a description of how it functions, has to be published within a reasonable period of time before its application. The hydrogen market area manager also has to take due account of the market roles affected when developing the compensation mechanism.

153 The compensation mechanism to be developed in accordance with operative part 2 h) comprises a method to ensure that the differences in a balancing group between the provisional and the final quantities as referred to in operative part 2 d) are taken into account appropriately and cost-reflectively. As neither the netting of the balancing groups based on the provisional measured data in accordance with operative part 2 d) nor the overall network balance status as defined in operative part 3 a) can be changed retrospectively, economic and physical balancing of the differences in quantities for the balance responsible party is necessary and has to take place at the latest in the calendar month following the day on which data was measured. The hydrogen market area manager has to develop the methodology required for the compensation mechanism. As the compensation mechanism, and how it functions, is expected to have different effects on the individual market roles (such as balance responsible parties and hydrogen network operators) and their areas of activity, the hydrogen market area manager has to take account of these market participants when developing the compensation mechanism so that the various interests are adequately weighed up and accommodated in the methodology. The hydrogen market area manager has to publish the compensation mechanism, including a detailed description of how it functions, for the information of the market participants a reasonable time in advance of its application. This enables the market participants concerned to assess and take into account the effects of the compensation mechanism on their individual areas of activity.

3.4.2.9 Operative part 10

154 Operative part 10 requires the determination’s rules on balancing in the hydrogen market to be implemented beginning on 1 January 2028. The only exceptions are the requirement to designate a hydrogen market area manager (operative part 1 sentence 1) and the requirement to establish

a data exchange platform by 1 July 2027 and test the platform with market participants during an introductory phase up until 1 January 2028 (operative part 7 d)).

155 The ruling chamber has extended the implementation deadline of 1 October 2026 set in the second consultation draft in response to the view put forward by a number of respondents (BDEW, EnBW, GEODE, SEFE, THE, Uniper) that this date was too ambitious. Respondents said that contractual and operational rules and processes were needed alongside the determination's regulations before market participants could implement the regulatory requirements and establish the necessary IT architecture; these rules and processes first had to be developed by the market participants through the hydrogen cooperation agreement, which would take effect at the earliest on 1 January 2028. This date should therefore be the date for implementing the determination's rules.

156 In the ruling chamber's view, it is appropriate and expedient to synchronise the date for implementing the determination with the effective date for the supplementary rules in the hydrogen cooperation agreement (1 January 2028), as suggested, as this will enable comprehensive and uniform market rules, including further requirements on the operational implementation for hydrogen network access. In the ruling chamber's view, the later effective date for the determination does not have any negative consequences on the market ramp-up or the functionality of a hydrogen market. In fact, the ruling chamber assumes that in any case the market ramp-up will by then still only be characterised by a few individual projects, some of which are already being implemented. These projects will have to be adjusted to the future regulations anyway, irrespective of which effective date is chosen for the rules in this determination. As the WasABi determination (like the WaKandA determination) already describes the basic framework conditions for hydrogen network access, they can also be incorporated into the planning for projects currently to be implemented. This means that the need for changes to projects that have been implemented in the meantime can be minimised as well, as was called for by one respondent (DWV). It was therefore appropriate to base the effective date for this determination not on the implementation of individual projects, as called for by one respondent (HEN), but on the period of time needed to develop comprehensive and uniform market rules and requirements for implementing the provisions of the determination.

3.4.2.10 Operative part 11

157 In accordance with section 91(1) sentence 3 EnWG, no fees are payable for decisions served by public notification in accordance with section 73(1a) EnWG.

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).

Anne Zeidler	Dimitri Wenz	Stephan Faßbender
Chair	Beisitzer	Beisitzer