
Making renewable hydrogen cost-competitive

Legal evaluation of potential policy support instruments

ANALYSIS

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Making renewable hydrogen cost-competitive

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Legal evaluation of potential policy support instruments

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Preface

Dear reader,

In our recent publication *Making renewable hydrogen cost-competitive: Policy instruments for supporting green H₂* (Agora Energiewende and Guidehouse 2021), we have presented several policy instruments for supporting renewable hydrogen.

Whenever new instruments are suggested, questions arise as to their compatibility with national, European and international law. We therefore tasked specialist law firm Becker Büttner Held (BBH) with a brief legal evaluation of the policy instruments addressed in the main publication.

This accompanying report includes BBH's evaluation of the following instruments:

- Carbon Contracts for Difference
- H₂ supply contracts
- Support for H₂-fuelled combined heat and power plants
- PtL quota for aviation

- General H₂ quota
- Labelling system for climate-friendly basic materials

Each legal evaluation is structured as follows:

- A. Instrument description
- B. Abstract
- C. European Law
- D. National law
- E. Suggestions for design

The evaluation identifies the most salient barriers to implementation as well as needs for further analysis.

I hope you enjoy the read.

Best regards,

Patrick Graichen
Executive Direktor, Agora Energiewende

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1 Carbon Contracts for Difference

A. Brief description of the instrument

The “Carbon contract for difference” is a private law contract concluded between the favoured undertaking and a public counter-party. This contract forms the basis of the contractual obligation of the public counter-party to pay the difference between the amount of the contractually set basic price (strike price) and the reference price (here: CO₂ price of the emission certificate), where the basic price is higher than the reference price. The approach thus ties in with the concept of so-called Contracts for Difference (CfD). The undertaking is in return to assume the obligation to invest in measures for the conversion of its production to hydrogen-based technologies. The contractually set basic price should align itself to the actual CO₂ abatement costs, so as to generate the necessary investment incentive for hydrogen-based technologies.

B. Abstract

Whether the Carbon Contract for Difference (“CCfD”) is compatible with European and national law depends on the specific design of the instrument and can thus not be assessed in a final manner herein. However, there are, in principle, no fundamental legal objections to the implementation of a CCfD. Depending on the specific financing mechanism, the CCfD is, in principle, to be classified as State aid within the meaning of Article 107 Treaty on the Functioning of the European Union (“TFEU”). Since neither a legal element for State aid under the General Block Exemption Regulation (“GBER”) nor a legal element under the Guidelines on State aid for environmental protection and energy 2014-2020 (“EEAG”) are relevant to the CCfD, an independent State aid notification procedure with the European Commission would probably have to be undertaken. In this respect, there are good arguments that a notification would be possible also

in the matter at hand. This is because the Commission has already classified a CfD used by Great Britain to promote a nuclear power plant as State aid compatible with the internal market.¹

Furthermore, the CCfD is, in principle, also compatible with EU secondary law. It is, in particular, permissible as a supplementary national measure in relation to the European emissions trading scheme. Finally, there are no fundamental objections under national law either. To the extent that support is limited to hydrogen-based technologies and/or to individual companies and, respectively, branches and this constitutes unequal treatment within the meaning of Article 3 German Basic Law (*Grundgesetz* – GG), there are good arguments that such treatment can be justified.

As regards the method of the financial support, it is particularly a market premium that falls for consideration. If the support system was managed by calls for tenders, the reference point for the premium would derive from the tender result that determines the basic price. If the amount of support was determined administratively, a degression mechanism should be introduced to take account of the technological progress as well as learning effects. In this context, it must, however, be borne in mind that – due to the permissible aid intensity – support amounting to 100 % of the eligible costs could only be granted by way of tenders (see above). A fundamental option for consideration would be financing from the federal budget by federal taxes. Alternatively one could secure the refinancing of the “supporting payment sums” out of the CCfD using a fund. Corresponding considerations are already under discussion in connection with a possible change in the EEG compensation mechanism.

¹ Commission Decision (EU) 2015/658, no. 7.3, (296); ECJ, judgment of 22/11/2020, C-594/18 P.

C. European Law

I. Primary law

1. State aid law

The implementation of a Carbon Contract for Difference (hereinafter “CCfD”) needs firstly to be compatible with European state aid law. **State aid** under Art. 107 (1) TFEU is an advantage given to a certain undertaking or to production of certain goods which involves intervention by the state or a measure financed from state resources that distorts or threatens to distort competition and is likely to affect trade between member states.² Through the CCfD the income of the favoured undertaking is stabilised, in that contractually it is guaranteed to receive payment of the difference between a basic price set in the contract (strike price, here: calculated CO₂ price) and the reference price (here: CO₂ market price for emission certificates), where the reference price falls below the basic price. In this way the favoured undertaking is given a selective **advantage**.³

Additionally there is also a risk of **distortion of competition** since by reason of the stabilisation of its income the favoured undertaking gains a competitive advantage over other undertakings that are not supported by means of a similar instrument. The measure is likely to affect trade because it strengthens the position of the favoured undertaking over others. But it is debatable whether it is a **state intervention** or an intervention through state resources. This depends on the financing selected by the CCfD. If the payments from the CCfD are financed directly from budgetary resources, this is a grant from public resources. A different outcome might be achieved where the payments are refinanced through an allocation organised under private law – similar to the EEG apportionment. According to ECJ case law the EEG 2012 does not amount to state aid since the state

in the context of these provisions has no power to dispose of the funds obtained from the EEG apportionment and the transmission system operators managing the payment and administration of the funds are not under state control.⁴ Similarly to this, the likelihood of a CCfD being state aid would also be reduced where the payments were refinanced using a similar mechanism.

If conversely there is state aid, this must fall within one of the **exceptions** listed at Art. 107 (2) to (3) TFEU. These include Art. 107 (3) (b) TFEU (“aid to promote the execution of an important project of common European interest”) and Art. 107 (3) (c) TFEU (“aid to facilitate the development of certain economic activities or of certain economic areas”). Under Art. 107 (3) (b) TFEU the state aid must serve to promote the execution of an important project of common European interest. The term “of common interest” is not defined in the TFEU. But there is a strong argument that a project must not only be in the interests of the European Union, but also in the specific interest of the member states.⁵ The purpose of the CCfD is to incentivise investment in technologies based on renewable energy for the defossilising of various sectors (i.a. industry) and in this way to achieve climate protection goals and thus environmental protection. This is a project that is both in the interest of the European Union and in the interest of the respective member states.⁶ Even if one were to look at this differently there is a strong argument that the CCfD can in any case satisfy the conditions for exception under Art. 107 (3) (c) TFEU. According to this the CCfD would have facilitate the development of certain economic activities. According to expert assessments this is also the case since the favoured

2 Von Wallenberg/Schütte, in Grabitz/Hilf/Nettesheim, “Das Recht der Europäischen Union”(“European Union Law”), ed. August 2020, margin no. 24.

3 Commission, Decision (EU) 2015/658, No. 7.3, (296).

4 ECJ, judgment of 28.03.2019, C-405/16 P, margin no. 48 et seqq.

5 Calliess, in Calliess/ Ruffert, TEU/TFEU, 5th edition 2016, Art. 171, margin no. 10.

6 Commission, Energy and Environmental State aid guidelines 2014 – 2020, p. 12, para. 3.2.1.1.

undertaking is able to convert its production to climate-neutral technologies.

In contrast to the exceptions under Article 107 (2) TFEU there is the question whether a state aid is compatible with the internal market, in the context of the exceptions under Article 107 (3) TFEU in the judgment of the Commission.⁷ The Commission has developed guidelines that give substance to the exercise of its judgment in this respect by the Commission. This includes in particular the **General Block Exemption Regulation** and the **Energy and Environmental State aid guidelines 2014-2020**. However these are likely not to apply to the CCfD under examination here:

Firstly the GBER does not apply where it is not possible to calculate the precise gross grant equivalent of the aid, i.e. the volume of support, *ex ante* with reasonable certainty (Art. 5 1. GBER). This should also be the case here since the reference price (here: CO₂ market price for the emission certificates from the European emissions trading scheme) is volatile and thus cannot be determined with certainty *ex ante*. Further, the GBER no longer applies to “investment aid for environmental protection”, expected to apply to CCfD, from EUR 15 million per undertaking and investment project (Art. 4 1. (s) GBER).

Also the Energy and Environmental State aid guidelines 2014-2020 cannot be invoked since currently they contain no express provision under which such CCfD was permitted. Also problematic here is that the concrete economic significance of a CCfD cannot be determined by reason of the volatility of the price for the CO₂ certificate.

Current legislation indicates that for the implementation of a CCfD mechanism an **independent**

notification procedure with the Commission would have to be undertaken. Certainly the Commission has classified a CfD used by Great Britain to promote a nuclear power plant as state aid compatible with the internal market.⁸ The CCfD under examination here is also comparable with this, which leads to the conclusion that approval of the CCfD by the Commission is possible in principle. Problematic for this firstly is that the scope of the state aid and also the amount of the gross grant equivalent of the aid cannot be quantified since the reference price (here: CO₂ market price for emission certificates) is volatile. But according to case law this does not prevent compatibility of a state aid under Art. 107 (3) TFEU since the wording of this provision does not expressly require that the Commission has to quantify the grant equivalent of the aid measure.⁹ Furthermore the question arises in relation to state aid law compatibility whether it is a matter of investment aid or of – classified as fundamentally more problematic legally – operating aid. Operating aid is basically incompatible with the internal market and can therefore be permitted only subject to strict requirements of legal justification.¹⁰ According to case law aid is in this category when it preserves the status quo or is intended to release an undertaking from costs that it would under normal circumstances have had to bear in the course of its day-to-day management or its usual activities.¹¹ The support of the undertaking by means of the CCfD does not occur however, in our assessment, to preserve the status quo, but rather is intended to enable investment in the conversion of production to climate-neutral technologies. This runs counter to the view that payments made on the basis of the CCfD are operating aid in this sense. Further, the ECJ has decided that an aid measure, independently of its classification as

7 See Art. 107 (3) TFEU and Von Wallenberg/Schütte, in Grabitz/Hilf/Nettesheim, “Das Recht der Europäischen Union”, (“European Union Law”) ed. August 2020, margin no. 147.

8 Commission Decision (EU) 2015/658, No. 7.3, (296); ECJ, judgment of 22.11.2020, C-594/18 P.

9 Court of First Instance, judgment of 12.07.2018, T-356/15, margin no. 249.

10 ECJ, judgment of 22.11.2020, C-594/18 P, margin no. 111.

11 Court of First Instance, judgment of 12.07.2018,

investment or operating aid, can satisfy the conditions for the exceptions applicable in the case in dispute under Art. 107 (3) (c) TFEU.¹² Possibly this would also have to be accepted in this way by the European Commission.

Finally it is questionable what effects there are from a state aid law perspective where the payments to the favoured undertaking are expected to be significant. In this respect at first one would exclude impermissible overcompensation. The ultimate sum of a grant on its own does not mean that it is overcompensation. Rather it must be demonstrated that the payments exceed what is necessary to attract investment in the new technologies.¹³ But in our assessment this is not so in the case of the planned CCfD. Also one can counteract a possible overcompensation by evaluating the contractual basic price regularly and adjusting it to the actual CO₂ abatement costs.

In the Energy and Environmental State aid guidelines the Commission defined general criteria for environmental aid.¹⁴ These should also be taken into account for this planned CCfD. According to these criteria, aid is permitted where it is necessary, suitable and reasonable, has an incentive effect and excessive and negative effects on competition and trade are avoided. Arguably these conditions are met in this case:

Firstly aid is necessary where it corrects a market failure.¹⁵ In our assessment there is a market failure here since the conversion to hydrogen-based technologies by undertakings would not occur because of the continuing very high costs of these technologies in comparison to conventional technologies. Aid is

suitable where the same contribution cannot be achieved using other instruments that distort competition to a lesser extent. Firstly there already exists in the European emissions trading scheme an instrument that similarly to the CCfD is intended to be an incentive for investments in climate-neutral technologies. But the “market price” for the emission of CO₂ targeted until now in the European emissions trading scheme has up until now not been high enough to attract necessary investment in climate-neutral technologies. To achieve this a steady increase in the CO₂ price is needed. As yet therefore the European emissions trading scheme alone cannot ensure the investment incentive needed, with the consequence that up until now there is not a more moderate but equally effective means. There is an incentive effect where the aid induces the recipient to adjust its behaviour so that environmental protection or the functioning of an energy market is improved with more secure, affordable and sustainable energy and this change in behaviour would not occur without aid.¹⁶ This is, on the basis of the considerations already stated, also the case since only the CCfD enables the conversion to climate-neutral technologies. Lastly the aid would also have to be reasonable, i.e. the amount of aid required must be limited to the necessary minimum to achieve the sought-after environmental and energy targets. For this purpose there are defined in the Energy and Environmental aid guidelines maximum aid intensities, i.e. a defined percentage of eligible costs. Aid is viewed as reasonable where the amount of aid does not exceed the maximum aid intensity.¹⁷ It is however debatable whether the aid intensities permitted under Annex I section. 1 EEAG (max. 55 % for medium-sized enterprises and max. 45 % for large enterprises; 100 % only in the case of bidding processes which should however constitute a clearly conceivable obvious option) are high enough to cover the actual special

12 ECJ, judgment of 22.11.2020, C-594/18 P, margin no. 113.

13 Court of First Instance, judgment of 12.07.2018, T-356/15, margin no. 606.

14 Commission, Energy and Environmental State aid guidelines 2014 – 2020, p. 13, cl. 3.2 et seqq.

15 Commission, Energy and Environmental State aid guidelines 2014 – 2020, p. 13, cl. 3.2.2.1.

16 Commission, Energy and Environmental State aid guidelines 2014 – 2020, p. 16, cl. 3.2.4.1.

17 Commission, Energy and Environmental State aid guidelines 2014 – 2020, p. 16, cl. 3.2.5.1.

needs of the favoured undertakings. To conclude, the aid intensity may not exceed 100 % of the eligible costs.¹⁸ Finally it is necessary that the negative effects of the aid (especially distortions of competition caused by the aid and adverse effect on trade between member states) are limited and outweighed by the positive effects.¹⁹ This can also be the case here since the CCfD enables conversion to climate-neutral technologies and thus is conducive to environmental protection. The related interference with competition in contrast is not as yet disproportionate to the positive effects, since without the CCfD the necessary investments in climate-neutral hydrogen-based technologies would not be made owing to the high cost of these technologies.

Finally it is questionable whether there is impermissible discrimination where the CCfD is not open to undertakings outside Germany. The ECJ certainly regards it as permissible in the promotion of electricity from renewable energies where member states restrict their support to internally produced green electricity.²⁰ This is an argument also in favour of the CCfD – where this is not intended to be extended also to foreign undertakings – in as much as justification on grounds of environmental protection falls for consideration.

2. Free movement of goods

The relationship between free movement of goods and state aid law is controversial. The ECJ has so far considered that – where aid is granted – the free movement of goods does not have to be examined.²¹ As to whether this should be viewed differently, there is an argument that the CCfD can interfere as a

measure with similar effect on the free movement of goods. As justification for this interference environmental protection falls for consideration as an unwritten justification. Also applicable in this regard is that the territorial limitation of a promotional arrangement has been regarded in case law up until now as permissible (see above).

In addition the CCfD must also be proportionate. The CCfD promotes the use of hydrogen-based technologies and thus with environmental protection serves a *legitimate aim*. The CCfD is also *suitable* to achieve this aim since this instrument is also suitable potentially for increasing the proportion of green hydrogen. The CCfD is arguably also *necessary*, since a more moderate and equally effective means is not available. The European emissions trading scheme is not in itself sufficient to provide the necessary investment incentive. Also for the foreseeable future hydrogen-based technologies represent in certain sectors – in particular industry, heavy load, air and shipping traffic – the only option for defossilisation. The CCfD can also be *appropriate in the strict sense*. The instrument is an incentive for investment in climate-neutral hydrogen-based technologies, in that the undertaking is given financial support. This serves to achieve climate protection goals and thus environmental protection.

The free movement of goods under Article 34 TFEU is in conclusion also subsidiary to the particular prohibition against taxation discrimination under Article 110 TFEU.²² However there are a number of arguments that the CCfD does not involve taxation in this sense. This is because the CCfD is a private law contract with which the respectively favoured undertaking is given aid.²³ On its own the ability to pass on the

18 Commission, Energy and Environmental State aid guidelines 2014 – 2020, p. 16, cl. 3.2.5.1.

19 Commission, Energy and Environmental State aid guidelines 2014 – 2020, p. 16, cl. 3.2.6.1.

20 ECJ, judgment of 01.07.2014, Rs. C-573/12.

21 Mestmäcker/Schweitzer, in Immenga/Mestmäcker, Wettbewerbsrecht (Competition Law), 5th edition 2016, Art. 107 TFEU, margin no. 10ff).

22 Kamann, in Streinz, TEU/TFEU, 3rd edition 2018, Art. 110 TFEU, margin no. 33.

23 See on CfD for the Hinkley Point C nuclear power plant, Commission, decision (EU) 2015/658.

costs of the financing of the CCfD to the consumer is not sufficient to assume that this is taxation.²⁴

II. Secondary law

In our assessment the provisions for the award of public contracts are not applicable to the CCfD, esp. Directive 2014/25/EU coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors and Directive 2014/24/EU on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, since the payments made on the basis of a CCfD are not connected with the award of public supply contracts, public works contracts or public service contracts.²⁵

Furthermore there needs to be examined whether supplementary national measures – here through the introduction of the CCfD – are permissible in relation to the European emissions trading scheme. Some propose that the emissions trading directive 2003/87/EC is an exhaustive provision.²⁶ An argument against this approach however is Recital 23 of the emissions trading directive. According to this in addition to the emissions trading scheme member states are expressly permitted to consider “*regulatory, fiscal or other policies*”.²⁷ An argument not least in support of the permissibility of the CCfD is that it is not a regulatory instrument, but an incentive instrument that also works for undertakings subject to the emissions trading scheme and it imposes no further

24 ECJ, judgment of 28.03.2019, C-405/16 P, margin no. 36.

25 Court of First Instance, judgment of 12.07.2018, T-356/15, margin no. 632 ff.

26 Stiftung Umweltenergierecht, “Europa- und verfassungsrechtliche Spielräume einer CO₂-Bepreisung in Deutschland” (European and constitutional law scope of CO₂ pricing in Germany) 2017, p. 6 et seqq.; Spieth, NVwZ 2015, 1173.

27 Stiftung Umweltenergierecht, “Europa- und verfassungsrechtliche Spielräume einer CO₂-Bepreisung in Deutschland”, (European and constitutional law scope of CO₂ pricing in Germany) October 2017, p. 6.

liability on the undertakings. Also the CCfD only supplements the emissions trading scheme.

D. National law

I. Financial law

The CCfD should also be compatible with national law. The provisions of financial law – esp. Art. 106 et seqq. Grundgesetz für die Bundesrepublik Deutschland (Basic Law for the Federal Republic of Germany or “GG”) – must be observed, in so far as this would not involve a tax or non-tax-based levy. That is arguably not the case here since it is not possible to see the extent of any indirect obligations to make payments that would be imposed on the state.

II. Fundamental rights

At the national level a CCfD must in particular measure up to Art. 3 para. 1 GG. The limitation of support to certain undertakings or energy carriers could give rise to unequal treatment. Therefore the promotion of hydrogen-based defossilising technologies over conventional technologies or even alternative, non-hydrogen-based technologies arguably amounts to unequal treatment requiring justification. But this – to be classified objectively as – unequal treatment can probably be justified on the grounds of environmental protection. This is because the deployment of hydrogen-based technologies leads to a reduction in greenhouse gas emissions over conventional technologies. Also for the foreseeable future hydrogen-based technologies represent in industry the arguably most significant way of defossilising industrial processes.

III. Further national law

Further it is questionable whether additional basic legal provisions need to be taken into account. In addressing this firstly it must be recorded that a CCfD is a private law contract.²⁸ The provisions of national

28 See the CfD for Hinkley Point C nuclear power plant, Commission decision (EU) 2015/658.

administrative law on the permissibility of public law contracts (esp. § 54 Verwaltungsverfahrens-gesetz (German Administrative Procedure Act or "VwVfG") therefore need not be observed.

Further, the planned CCfD under consideration gives rise only to an obligation to make payments, not to a purchase obligation on the part of the other contractual party. There are arguments that the limitations under law relating to terms and conditions concerning contractual duration in the case of supply contracts under § 309 no. 9 Bürgerliches Gesetzbuch (German Civil Code or "BGB") are not to be taken into account for the conclusion of the CCfD.

E. Suggestions for design

The CCfD is a private law contract concluded between the favoured undertaking and a public counter-party. This contract forms the basis of the contractual obligation of the public counter-party to pay the difference between the amount of the contractually set basic price (strike price) and the reference price (here: CO₂ price of the emission certificate), where the basic price is higher than the reference price. The undertaking is in return to assume the obligation to invest in measures for the conversion of its production to hydrogen-based technologies. The contractually set basic price should align itself to the actual CO₂ abatement costs, so as to generate the necessary investment incentive for hydrogen-based technologies. In order to match the contractually set basic price with the development of the CO₂ abatement costs, different variants fall to be considered. Under discussion currently is an ex-post payment settlement under which the contractually set basic price is adjusted annually to the actual CO₂ abatement costs.²⁹ Because of the monitoring required for this and the related expense, this design variant certainly appears possible particularly in the case of a project specific placing of the CCfD.

As regards the method of the financial support a market premium falls for particular consideration. This would balance the difference between the basic price (on the basis of the actual abatement costs) and the reference price (here: CO₂ market price of the emission certificate). If the support system was managed by calls for tenders, the reference point for the premium would derive from the tender result that determines the basic price. If the amount of support was determined administratively, regard would have to be had to a reduction in the technological progress and learning effects. Aside from this the proceeds from other sectors or parallel support if continuing would need to be fully taken into account. Tenders presuppose competition. If there are insufficient numbers of potential bidders for such a CCfD tender, the preferred alternative for consideration is phased support rather than actual ex post balancing, as outlined above.

Thus as long as hydrogen-based technologies are not sufficiently well-established, consideration can be given to choosing a phase with administrative, possibly individualised specifications and a project specific allocation. In any event it must be continuously ensured that no excessive funding in terms of price is awarded. Finally it must be borne in mind that according to the existing provisions of the EEAG an aid intensity of 100 % of the eligible costs is permissible only in the case of tenders which in turn is a strong argument for a tendering system from the outset. For it must be assumed that this high aid intensity of 100 % will only be obtained where the basic price is the major criterion relevant to eligibility for bonuses. In any event in addition to costs efficiency further criteria could be favoured such as activity in or serving the electricity market or the extent of the CO₂ saving achieved through a correspondingly higher level of support.

A fundamental option for consideration would be financing from the federal budget by federal taxes. This could be justified on the basis that the financing of the costs of conversion of production processes to

²⁹ Bundestag Printed Paper 19/23624, p. 3.

hydrogen-based technologies is connected with benefits to the public and would be better financed from tax receipts than by a surcharge on energy prices similar to an EEG levy or similar (see below). But then a state aid notification procedure would probably be necessary in any event. Alternatively one could secure the refinancing of the “supporting payment sums” out of the CCfD using a fund. Corresponding considerations are under discussion in connection with a possible change in the EEG compensation mechanism.³⁰ It would be conceivable, in establishing a fund or in the event of financing from the federal budget, that the receipts from the CO₂ tax or the emissions trading scheme could be used for the financing. An alternative option would be the introduction of a levy similar to the existing EEG levy, but relating to the taxation of combustibles and fuels or corresponding to the CO₂ impact of an end product on end users. Permissibility of this option was however not examined here for the time being. It is likely that ultimately financing via tax following a notification will be rated the most legally reliable method and thus preferred politically.

The period of validity of a CCfD itself should in general be limited from the outset because of state aid rules.

30 Diekmann/Breitschopf/Lehr, Politische Optionen zur Verminderung von Verteilungswirkungen der EEG-Umlage (Political options for the reduction of distributional effects of the EEG apportionment), GWS Discussion Paper, 2015, <https://www.impres-projekt.de/impres-wAssets/docs/gws-paper15-18.pdf>, as consulted online on 12.03.2020.

2 H₂ supply contracts

A. Brief description of the instrument

The "H₂ supply contract" instrument is based on an auction model for the purchase and resale of green hydrogen. It provides for an intermediary to buy-in hydrogen from a producer. For this purpose, a contract is concluded between the intermediary and the producer with the lowest-cost bid in an auction for the supply of a certain quantity of green hydrogen per period of time (e.g. monthly delivery quantity) over a fixed period (x years). The intermediary then also sells the green hydrogen on at auction, for example to an industrial end user, at the highest possible price. The producers of the green hydrogen receive a compensation payment from the intermediary in addition to the price for the sale to the intermediary of green hydrogen. This compensation covers the difference between the bid of the hydrogen producer (buying-in price) and the bid of the end consumer (sales price). The approach thus ties in with the concept of so-called Contracts for Difference (CfD).

B. Abstract

I. Legal assessment

There are no fundamental legal objections to the introduction of the "H₂ supply contract" instrument.

Firstly, there is much to support the argument that the "H₂ supply contract" is **aid** pursuant to Article 107(1) TFEU if the funds for subsidising the buying-in prices come from tax revenues and are not refinanced via a mechanism similar to the levy under the German Renewable Energy Sources Act (*Erneuerbare-Energien-Gesetz*, (hereinafter: "**EEG**")). But since the "H₂ supply contract" is neither subject to the General Block Exemption Regulation (hereinafter: **GBER**) nor to the Guidelines on State aid for environmental protection and energy 2014-2020 (EEAG), a separate **notification procedure** would then have to

be carried out vis-à-vis the European Commission for the notification of this aid. There is much to support the argument that the "H₂ supply contract" would probably be **approvable**. Given the high production costs of green hydrogen production and its importance for decarbonisation of various sectors, such aid would seem to be necessary, suitable and appropriate. It also has an incentive effect and excessive and negative effects on competition and trade are avoided.

The "H₂ supply contract" would also, in our view, be compatible with **constitutional law**. Any unequal treatment compared to other non-subsidised energy sources under Article 3 of the Basic Law for the Federal Republic of Germany (*Grundgesetz* (hereinafter: **the Basic Law**)) could probably be justified on the grounds of environmental protection and the increased importance of green hydrogen (industrial and air/heavy goods transport).

Depending on the specific individual case, an award procedure in accordance with sections 97 et seqq. German Competition Act (*Gesetz gegen Wettbewerbsbeschränkungen* (hereinafter: **GWB**)) may have to be conducted for the conclusion of the "H₂ supply contract". This will depend in particular on whether the intermediary is to be considered a contracting authority within the meaning of sec.99 GWB. Since the contract partners are to be determined here by means of a competitive selection procedure, the procurement procedure or the competitive dialogue is particularly suitable. Against the background of prohibition of discrimination that also applies to public procurement law, directly excluding foreign companies would probably not be possible. In addition, against the background of the law on general terms and conditions, the contracts should not have longer commitment periods than 5 years and even less would be better.

II. Form of the instrument

In the drafting, on the one hand, the subject of the tender, **green hydrogen** and, if applicable, derivatives, should be specified more precisely. This should include the precise definition of eligible **green electricity** as well as the criteria of a certain **additionality** and a certain **proximity** between electricity generation and hydrogen production. Aspects of the **grid efficiency** of hydrogen production can also be considered as characteristics of eligible hydrogen.

The **tender designs** of the buying-in and sales auctions will have to be shaped differently. In this context, a transfer of experiences gained with direct marketing under the EEG is proposed for the **buying-in auctions**, but with an intermediary in the central position having access to state subsidies. The **sales auctions** could be closely modelled on the funding tenders in the EEG subsidy scheme conducted for essential energy carriers by the German Federal Network Agency (*Bundesnetzagentur* (hereinafter: **BNetzA**)). The requirements for bidders can be adapted to energy industry standards.

C. European law

I. Primary law

1. State aid law

The question also arises whether the "H₂ supply contract" is state aid. Aid within the meaning of Article 107(1) TFEU exists if an advantage is granted to a particular undertaking or a particular sector of production and if it is a state measure or a measure financed through state resources which distorts or threatens to distort competition and is liable to affect trade between Member States.¹ The "H₂ supply contract" stabilises the income of the favoured hydrogen producer by contractually guaranteeing it the payment of the difference between the buy-in

and sales price. This confers a selective advantage on the hydrogen producer.² Furthermore, there is also a risk of distortion of competition, as the favoured undertakings, by stabilising their revenues, gain a competitive advantage over other undertakings that are not supported with a comparable instrument. The measure is also likely to affect trade because this strengthens the position of hydrogen producers vis-à-vis other undertakings. It is questionable, however, whether the subsidy granted on top of the sales price constitutes the granting of state funds. This depends on the choice of funding mechanism for the "H₂ supply contract". Firstly, the case law assumes that not only advantages granted directly by the state, but also those granted by public or private bodies established or mandated by it to implement the aid scheme may constitute a grant of state resources.³ A grant of state resources is thus also made if the intermediary is not the state itself but a legal entity commissioned or set up by it. The concept of aid also includes all funds, i.e. in addition to funds from the state budget, also other funds provided they are permanently under state control.⁴ According to this concept, the presence of state resources would only be ruled out under the current state of affairs where financing oriented to the EEG levy is introduced for the subsidies, since case law has assumed in the case of this financing mechanism that the funds generated with it are not subject to state control.⁵

Also in view of the current development in the area of the EEG (increasing tax financing), the more

1 Von Wallenberg/Schütte, in Grabitz/Hilf/Nettesheim, "Das Recht der Europäischen Union" ("European Union Law"), ed. August 2020, marg. no. 24.

2 Cf. Commission, Decision (EU) 2015/658, no. 7.3, (296) on the similarly situated CfD.

3 ECJ, judgment of 19/03/2019, T-98/16 i.a., *Europäische Zeitschrift für Wirtschaftsrecht: (European Journal of Business Law) 2019, 546 (556)*.

4 ECJ, judgment of 19/03/2019, T-98/16 i.a., *Europäische Zeitschrift für Wirtschaftsrecht: (European Journal of Business Law) 2019, 546 (556)*.

5 According to the case law of the ECJ, the financing mechanism of the EEG 2012 is not aid, cf. ECJ, judgment of 28/03/2019, C-405/16 P, marg. no. 48 et seqq.

appropriate design option is assumed to be one according to which the funds for subsidising the buy-in prices, since these amounts could not be achieved through the sales prices, come from tax revenues. In this case, the aid is unproblematic. If one assumes the existence of aid, this must fall under one of the **exceptional circumstances** listed in Article 107(2) to (3) TFEU. In the present case, both Article 107(3) (b) TFEU ("aid to promote the execution of an important project of common European interest") as well as Art. 107(3) (c) TFEU ("aid to facilitate the development of certain economic activities or of certain economic areas") come into consideration. The term "of common interest" is not defined in the TFEU. In the literature, this is assumed to be the case when a project is not only in the interest of the European Union, but also in the concrete interests of the Member States.⁶ The "H₂ supply contract" serves to build a market for green hydrogen. Green hydrogen is a key element in the defossilisation of various sectors (in particular industry and aviation) and thus in achieving climate protection targets.⁷ This is not only in the interest of the European Union, but also of the respective Member State.⁸ Furthermore, there is much to support the argument that the "H₂ supply contract" can in any case satisfy the elements of exceptional circumstances under Article 107(3) (c) TFEU. This is because it serves to expand a hydrogen market and thus the development of an economic sector, as long as the production of green hydrogen is seen as an industry in its own right. Furthermore, the expansion of a hydrogen market also serves industry and the transport sector, who can thus switch to climate-neutral technologies.

According to Article 107(3) TFEU the question whether aid is compatible with the internal market is at the discretion of the Commission.⁹ The Commission has developed guidelines for this that constitute a concretisation of the exercise of discretion. This includes in particular the **General Block Exemption Regulation** and the **Guidelines on State aid for environmental protection and energy 2014-2020**. However, these are probably not relevant for the "H₂ supply contract" under review here:

Firstly the GBER is not applicable if the concrete gross grant equivalent, i.e. the extent of the support, cannot be calculated in advance with sufficient certainty (Art. 5 no. 1 GBER). This should also be the case for the "H₂ supply contract" in the present case, since the buy-in price and the selling price for the green hydrogen and thus also the subsidy difference to be paid cannot be determined concretely ex ante.

Also the Energy and Environmental State aid guidelines 2014-2020 do not contain any elements according to which such an "H₂ supply contract" could constitute a permissible support measure. It is also problematic here that the concrete, economic significance of an "H₂ supply contract" cannot be determined ex ante because of the volatility of the purchase and sale prices.

The current legal position indicates that an **independent notification procedure** should be conducted by the Commission for the implementation of the "H₂ supply contract". That the Commission has classified a CfD used by Great Britain for the promotion of a nuclear power plant as aid compatible with the internal market – the "H₂ supply contract" planned here is also comparable to this in parts – suggests firstly that state aid approval by the Commission may

6 Calliess, in Calliess/ Ruffert, TEU/ TFEU, 5th edition 2016, Art. 171, marg. no. 10.

7 Commission, "Communication and roadmap on the European Green Deal", available at <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal>, downloaded on 22/04/2021.

8 Commission, Guidelines on State aid for environmental protection and energy 2014 – 2020, p. 12, no. 3.2.1.1.

9 Cf. Art. 107(3) TFEU and Von Wallenberg/Schütte, in Grabitz/Hilf/Nettesheim, „Das Recht der Europäischen Union“ ("European Union Law"), ed. August 2020, marg. no. 147.

be possible in principle.¹⁰ According to the case law, the compatibility of aid with Art. 107 TFEU is not dependent on the fact that the scope of the aid and also the amount of the gross grant equivalent cannot be quantified, since a quantification of the grant equivalent of the aid measure is not explicitly required by Art. 107 TFEU.¹¹ Further, the question arises whether the planned grant is an investment aid or a measure to be characterised as operating aid. Operating aid can only be allowed under stringent justification requirements.¹² According to the case law, such aid exists where it is to maintain the status quo or exempt an undertaking from costs which it would normally have had to bear in the course of its day-to-day management or its usual activities.¹³ But this would probably not be the case here, since the “H₂ supply contract” does not serve to maintain the status quo, but rather to establish a market for green hydrogen and enable investment in conversion to climate neutral technologies. Operating aid in this sense is therefore probably not present. In addition the ECJ decided that an aid measure, irrespective of its classification as investment or operating aid, could also satisfy the requirements for the relevant elements of the exemptions under Art. 107(3) c) TFEU in the case at issue.¹⁴

The Commission has set general criteria for environmental aid in the Guidelines on State aid for environmental protection and energy.¹⁵ These would probably also have to be observed for the “H₂ supply contract” planned here. According to these, aid is permissible if it is necessary, appropriate and proportionate, has an

incentive effect and avoids excessive and negative effects on competition and trade. These conditions are probably satisfied here:

Firstly, aid is necessary when it corrects a market failure.¹⁶ In our assessment there is such a market failure here since, without the subsidy granted, green hydrogen would not prevail over conventionally produced hydrogen due to its significantly higher production costs, but the use of green hydrogen is indispensable for the conversion of industry and other sectors for the protection of the environment.¹⁷ At the same time, there is not yet sufficient demand for green hydrogen for which consumers would be willing to pay a cost-covering and appropriately equity-returning price. For green hydrogen therefore, due to the circumstances described above, there is currently a barrier to market entry. Aid is appropriate if the same contribution cannot be achieved by other instruments that distort competition to a lesser extent. For example, one could think of the European emissions trading system. However, this alone is not suitable for providing a stable investment incentive for the switch to climate neutral technologies and thus in our assessment does not constitute an equally suitable means.¹⁸ An incentive effect exists when the aid induces the beneficiary to change its behaviour so that environmental protection or the functioning of an energy market with safe, affordable and sustainable energy is improved and this change in behaviour would not have occurred without aid.¹⁹ This is also the case here due to the considerations already explained, since only the “H₂ supply contract” can build a market for green hydrogen, so that this can

10 Commission, Decision (EU) 2015/658, No. 7.3, (296); ECJ, judgment of 22/11/2020, C-594/18 P.

11 ECJ, judgment of 12/07/2018, T-356/15, marg. no. 249.

12 ECJ, judgment of 22/11/2020, C-594/18 P, marg. no. 111.

13 ECJ, judgment of 12/07/2018, T-356/15, marg. no. 579 with further evidence.

14 ECJ, judgment of 22/11/2020, C-594/18 P, marg. no. 113.

15 Commission, Guidelines on State aid for environmental protection and energy 2014 – 2020, p. 13, no. 3.2 et seqq.

16 Commission, Guidelines on State aid for environmental protection and energy 2014 – 2020, p. 13, no. 3.2.2.1.

17 Commission, “Communication and roadmap on the European Green Deal”, available at <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal>, downloaded on 22/04/2021.

18 See also the comments on the CCfD.

19 Commission, Guidelines on State aid for environmental protection and energy 2014 – 2020, p. 16, no. 3.2.4.1.

enable the switch to climate-neutral technologies in industry and other sectors in the future.

Finally, the aid would also have to be appropriate, i.e. the amount of aid required must be limited to the minimum necessary to achieve the environmental and energy goals sought. For this purpose, maximum aid intensities i.e. a certain percentage of eligible costs, are defined in the Guidelines on State aid for environmental protection and energy (hereinafter: **UEBLL**). Aid is considered to be proportionate if the aid amount does not exceed the maximum aid intensity.²⁰ According to Annex I (1) UEBLL the basic allowance is a maximum of 55 % in the case of medium-sized enterprises and a maximum of 45 % in the case of large enterprises. Only in the case of tenders is 100 % permissible. Since the conduct of tenders is planned here from the outset, the maximum allowable aid intensities will not be exceeded. However, when granting the buy-in price, subsidies for the green hydrogen (in particular 69b EEG 2021 and 64a EEG 2021) that would otherwise accrue to the producer would have to be taken into account as deductions, in order to exclude the possibility of overfunding in contravention of state aid law. Further, it is necessary that the negative effects of the aid (in particular distortions of competition due to aid and effect on trade between Member States) are limited and that the positive effects predominate.²¹ This should also be the case here since the "H₂ supply contract" establishes a market for green hydrogen and thus enables conversion to climate-neutral technologies. The associated interference in competition, on the other hand, is not as yet out of proportion to the positive effects, because without the "H₂ supply contract" a market for green hydrogen would probably not emerge and this would therefore not be available to a sufficient extent in the future for use to defossilise industry and other sectors.

20 Commission, Guidelines on State aid for environmental protection and energy 2014 – 2020, p. 16, no. 3.2.5.1.

21 Commission, Guidelines on State aid for environmental protection and energy 2014 – 2020, p. 16, no.3.2.6.1.

2. Free movement of goods

The relationship between the free movement of goods and state aid law is controversial. The ECJ has thus far started from the premise that – if there is aid – free movement of goods is not relevant.²² If one should look at this differently, there is much to support the argument that the "H₂ supply contract" can interfere with the free movement of goods, being a measure having equivalent effect. This is because, similar to a customs provision, the regulation would relatively worsen the competitive opportunities in Germany for green hydrogen that is not promoted in this way. However, environmental protection can be considered as an unwritten justification for this interference.

In addition, the "H₂ supply contract" would also have to be proportionate. The "H₂ supply contract" promotes the production of green hydrogen and the expansion of its market in Germany. Green hydrogen is seen as playing a key role in the defossilisation of the economy²³ and thus with environmental protection it serves a *legitimate goal*. The "H₂ supply contract" is also *suitable* to achieve this goal, because this instrument is also potentially suitable for increasing the share of green hydrogen. The "H₂ supply contract" is probably also *necessary*, since a milder and equally effective remedy is probably not available. European emissions trading is not sufficient in itself to provide the necessary investment incentive. Also for the foreseeable future hydrogen-based technologies represent the only or at least the only material possibility for defossilisation in certain areas – expected to be particularly prevalent in parts of the chemical industry, steel and cement production, as well as heavy goods, air and shipping

22 Mestmäcker/Schweitzer, in Immenga/Mestmäcker, Wettbewerbsrecht, (Competition law), 5th edition 2016, Art. 107 TFEU, marg. no. 10 et seqq.).

23 Commission, "Communication and roadmap on the European Green Deal", available at <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal>, downloaded on 22/04/2021.

traffic, among others. Also in the area of heat – and, to a certain extent, even in electricity generation, hydrogen is likely to play an important role in the transformation process. The “H₂ supply contract” should also in principle be *appropriate in the narrower sense of the term*. The instrument serves to activate the market for green hydrogen so that this can be used for defossilisation in the future. This serves to achieve the climate protection goals and thus environmental protection.

II. Secondary law

In the area of secondary law, the European requirements on public procurement law are of particular importance. Directive 2014/24/EU²⁴ lays down rules on the procedures to be followed by contracting authorities when awarding public contracts. Further specifications for the award of contracts are still being set at European level by Directive 2014/25/EU²⁵, which, in its scope – public contracts in the water, energy and transport sectors concerning an activity referred to in Articles 8 to 14 of this Directive – takes precedence over Directive 2014/24/EU. These are implemented in the German Act on Restraints of Competition (*Gesetz über Wettbewerbsbeschränkungen* (GWB)), the German Public Procurement Ordinance (*Vergabeverordnung* (hereinafter: **VGV**)) and the German Sector Ordinance (*Sektorenverordnung* (SektVO)), so that in this respect reference is made to the explanations under point D., III., 1.

24 Directive 2014/24/EU of the European Parliament and of the council of 26.02.2014 on procurement and repealing Directive 2004/18/EG.

25 Directive 2014/25/EU of the European Parliament and of the council of 26.02.2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC

D. National law

I. Financial regime

The “H₂ supply contract” would also have to be compatible with national law. The requirements of the constitutional rules governing public finances – in particular Art. 106 et seqq. Basic Law – would have to be considered if this were a tax or non-tax levy. Whether a problem could arise in this respect, depends on the design of the mechanism. In the present context, this concerns the way of refinancing the financial resources used to raise the difference between the buy-in price and the sale price. This question is related to the issue of the existence of aid, which has been examined above. To the extent that the funds would be raised from general tax revenues, which is strongly indicated, doubts under constitutional law governing public finances would not be relevant. It would then not be apparent to what extent this instrument would impose a direct monetary obligation on the state.

II. Fundamental rights

At the national level, the “H₂ supply contract” must measure up in particular to Art. 3(1) Basic Law, thus it must satisfy the general principle of equality. Restricting support to producers of green hydrogen would lead to unequal treatment vis-à-vis other companies (e.g. producers of fossil hydrogens) and other energy sources (fossil and renewable, e.g. biomethane). However, these unequal treatments could probably be justified by the objectively important environmental protection associated with the regulation. This is because the use of hydrogen-based technologies leads to a reduction in greenhouse gas emissions compared to conventional technologies. In addition, hydrogen-based technologies in parts of industry, for example, or in parts of air transport with heavier aircraft, represent a possibility for the defossilisation of these processes for which there is probably no alternative in the foreseeable future.

III. Other national law

In addition, the question arises whether further ordinary law requirements would have to be observed.

1. Necessity of procurement procedure

The question arises whether a procurement procedure would have to be carried out for the procurement of green hydrogen under the "H₂ supply contract". Under sections 98 et seqq. GWB this would require that a contracting authority within the meaning of sec.98 GWB awards a public contract.

The contracting authorities in this sense include first of all the so-called public contracting authorities according to sec.99 GWB. These include the regional authorities, their special funds and the associations comprising them. Therefore, if the federal government, the Länder or municipalities or their administrative units (authorities) are used as intermediaries, the intermediary would be a contracting authority. But according to sec.99 no. 2 GWB the concept of contracting authority also includes all other legal persons under public or private law, if they are established for the specific purpose of meeting non-commercial needs in the general interest and where they are for the most part financed by the state or are subject to state supervision as regards their management or where more than half of the members of one of their management or supervisory bodies are appointed by the state. Legal persons in this sense may, for example, be foundations as a legal person under public law or a limited liability company as a legal person under private law. Whether a foundation or limited liability company established as an intermediary fulfils the requirements of sec.99 no. 2 GWB and thus constitutes a contracting authority, is a question in each individual case and cannot be answered conclusively here. In principle, however, there is much to support the position that the intermediary would be established for the specific purpose of meeting a need in the general interest. This is because the H₂ Supply Contract serves to create a market for green hydrogen. Green hydrogen in turn is

a key element for the defossilisation of various sectors and thus for environmental protection, with the consequence that a need in the general interest would be met. There is also much to suggest that this task would not be of a commercial nature, as the intermediary would not act primarily for its own profit motive when procuring the hydrogen. Finally, the differential payments that the intermediary is to pay out as a subsidy to the hydrogen producers would be expected to come from the budget, so that there would also be state funding. Should these prerequisites not be met according to the circumstances of the individual case, it would be necessary to check whether the intermediary can be a sector contracting authority pursuant to sec.100 or a concession grantor pursuant to sec.101 GWB. Sector contracting authorities are characterised in particular by the fact that they – as contracting authorities or legal persons under private law – perform a sector activity pursuant to sec.102 GWB. In the present case, however, the performance of such an activity would be lacking, since the production of hydrogen does not constitute sector activity pursuant to sec.102 GWB. Finally the intermediary would also not be a concession grantor pursuant to sec.101 GWB, since in this case no concession is granted. It thus remains to be stated that the intermediary can fulfil the concept of a contracting authority depending on the individual case, but not that of sector contracting authority or concession grantor.

The application of public procurement law would require furthermore that a public contract exists. According to sec.103 GWB these are contracts for pecuniary interest, between contracting authorities within the meaning of sec.98 GWB and undertakings, concerning the procurement of services whose subject matter is i.a. the delivery of goods. In this case a contract for the supply of hydrogen should be concluded. Thus there will be a contract for the delivery of goods. Therefore, if the intermediary constitutes a contracting authority in an individual case (see above), a procurement procedure according to sections 97 et seqq. GWB would have to be

conducted if the contract value reaches the threshold to be determined according to sec.106 GWB (so-called upper threshold). This is determined by the European Commission and for supply contracts is currently Euro 214,000.²⁶ If the order value should fall below this value in an individual case (so-called sub-threshold) the GWB would not be relevant. Here, the necessity of a procurement procedure may result from the federal or state budget regulations and the state procurement laws. These were not examined separately here, as it is to be expected that the hydrogen supply contracts will exceed the contract value of euro 214,000.

According to sec.119 GWB, in addition to the (single-stage) open procedure for the conduct of a procurement procedure in the upper threshold range, there is also available for consideration generally the (two-stage) negotiated procedure or a competitive dialogue. Since the contract partners here are to be determined by means of a competitive selection procedure, the negotiated procedure or the competitive dialogue is particularly suitable. These procedures are subdivided into, among other things, an early participation competition (Stage 1) and an offer and negotiation phase or dialogue phase (Stage 2). Who prevails in Stage 1 is decided according to company-related "suitability criteria" (e.g. financial performance). At Stage 2 product- and process-related "award criteria" are decisive. According to sec.97 subs. 3 GWB "environmental aspects" can be taken into account both at the level of the company-related selection criteria and at the level of the product-related award criteria. The bidders can therefore be obliged, if the specifications are appropriately designed, to fulfil certain environmental requirements with regard to the required product or its production (see on this also immediately below at E. "Design").²⁷

26 Cf. Bundeswirtschaftsministerium (German Federal Ministry of Economics and Technology), „Public procurement“, available at: <https://www.bmwi.de/Redaktion/EN/Dossier/public-procurement.html>.

27 Opitz, in Burgi/Dreher, Beck`scher

The procurement procedure must also be consistent with the general principles of public procurement law, which include in particular the prohibition of discrimination under sec.97 subs. 2 GWB. If the group of eligible companies were to be limited exclusively to domestic producers of green hydrogen, for instance, this would in principle constitute discrimination against foreign producers. The prohibition of discrimination, however, requires that foreign suppliers be given equal access to the German procurement market and equal participation in the procurement procedure.²⁸ It would thus probably not be possible in principle to restrict the procurement procedure to participation of domestic hydrogen producers. The case law of the ECJ does recognise that in support for the generation of renewable electricity, a restriction of support to domestic electricity producers is permissible.²⁹ However, this case law only directly relates to the promotion of (green) power generation.

The prohibition of discrimination must also be observed at the level of the domestic hydrogen producers.³⁰ Therefore, based on an initial assessment, a restriction to certain regional hydrogen producers would probably also not be compatible with the prohibition of discrimination. This is also supported by sec.31 subs. 6 p. 1 VgV, which gives standard expression to the prohibition on discrimination: *“In the description of services reference may not be made to a specific production or origin or a special process that characterises the products or services of a*

Vergaberechtskommentar (procurement law commentary), Vol. 1, 3rd edition 2017, sec. 97 GWB, marg. no. 20.

28 Dörr, in Burgi/Dreher, Beck`scher Vergaberechtskommentar (procurement law commentary), Vol. 1, 3rd edition 2017, sec. 97 subs.2 GWB, marg. no. 4.

29 ECJ, judgment of 01/07/2014, C-573/12 (Alands Vindkraft).

30 Dörr, in Burgi/Dreher, Beck`scher Vergaberechtskommentar, (procurement law commentary), Vol. 1, 3rd edition 2017, sec. 97 subs.2 GWB, marg. no. 4.

specific company, or to industrial property rights, types or a specific origin if this would result in specific companies or specific products being favoured or excluded, unless this reference is justified by the subject matter of the order.” The prerequisites would probably be fulfilled here: reference would be made to a specific origin and this would favour or exclude certain companies or products. This is only permissible if the reference is justified by the subject matter of the contract, which is not apparently the case here.

2. Maximum contract term

Furthermore, the question arises as to which maximum contract term can apply to the contract for the delivery of the hydrogen. According to sec.309 no. 9 German Civil Code (*Bürgerliches Gesetzbuch* (hereinafter: **BGB**)), in a contractual relationship with private individuals, which - as in this case - has as its object the regular delivery of goods, a term of the contract binding the other party for more than two years as well as a tacit extension of the contractual relationship by more than one year in each case that is binding on the other party are prohibited. This provision does not apply to commercial transactions. Here, the permissibility of the duration of contract terms is to be examined exclusively on the basis of sec.307 BGB. According to sec.307 BGB, provisions in standard business terms are ineffective if they unreasonably disadvantage the other party to the contract with the user. Case law considers a contractual commitment of 10 years or more to be critical.³¹ This can only be justified by special circumstances on the part of the user.³² These include, for example, high installation, assembly, development or contingency costs, which are only amortised over a longer contract period.³³

31 German Federal Supreme Court (Bundesgerichtshof) *Neue Juristische Wochenschrift* case law report NJW-RR 1997, 942.

32 Becker, in BeckOK BGB, Bamberger/Roth/Hau/Poseck, 53rd Edition as at 01/02/2020, sec. 309 no. 9 BGB marg. no. 36.

33 Frankfurt Higher Regional Court (Oberlandesgericht)

Taking this as a basis, according to the experts a commitment of the hydrogen producers of 10 years or more - if at all - can only be permissible in special exceptional cases. This is because this would probably require that the investment in the electrolyser can ultimately only be refinanced over the long contract period of about 10 years. Arguably, such a situation would only be assumed if neither other accessible buyers (of hydrogen in this case) for the supplier nor other accessible suppliers for the buyer are available or foreseeable. So the goal is to “ramp up” a market for green hydrogen. If one exists the hydrogen supplier is not dependent on this one or two customers. There is thus a strong case for providing for significantly shorter delivery commitments (five years or less), insofar as general terms and conditions are used, which is to be expected here and would probably be difficult to avoid.

E. Suggestions for design

I. More precise specification of the characteristics of the object of the buy-in auctions: green hydrogen

With regard to the design of the buy-in auction (hydrogen producers to intermediary) the main question is which characteristics the procurement item green hydrogen should have in order to create a basis to determine the suitability and award criteria in the invitation to tender. For the production of green hydrogen or derivatives produced therefrom - insofar as the subject matter of the invitations to tender should also cover these - the requirements in particular of Directive (EU) 2018/2001 (Renewable Energy Directive II, RED II) must be observed. In our opinion, compliance with these conditions would not be a mandatory prerequisite for the regulation under examination, but compliance would be obvious so that the hydrogen could be used widely and other subsidies that also meet these conditions (e.g. sec. 37

Neue Juristische Wochenschrift case law report NJW-RR 2005, 1170.

German Federal Immission Control Act - *Bundes-Immissionsschutzgesetz*) could possibly take effect. If further subsidies apply, these amounts would have to be stated and taken into account as a reduction when calculating the differential payment in order to exclude over-subsidisation in violation of state aid law.

1. Exclusively electricity from renewable energy

Should the funded hydrogen comply with the requirements of the Delegated Act within the meaning of Article 27(3) RED II, initially only electricity from renewable energy would have to be used for the production of the hydrogen in the electrolyser. Where the electricity for the electrolyser can also be obtained from the general supply grid, the concurrency level (¼ h, if necessary per hour or per day or an even more generous scale) required between electricity generation and hydrogen electrolysis should also be determined. Balancing per ¼ h is the usual standard for electricity supply contracts in the energy industry and is also provided for in sec. 62b subs. 5 sentence 1 EEG³⁴ and could therefore also be provided here as a standard.

2. Additionality of the generation of green electricity

In order to ensure an expansion of renewable energy capacities and thus prevent a "simple" relocation of already existing electricity from renewable energy sources, it would also be required, within the meaning of the European provisions in the RED II, that the power generation plants (especially wind farm and/or solar farm) come into operation after or at the same time as the electrolyser. This would then correspond

34 The provision reads: "In the context of Sections 61 to 61l as well as in the context of Section 64 (5a), when calculating the self-generated and self-consumed amounts of electricity, regardless of whether the full, a partial or no EEG surcharge according to the provisions of this part is to be paid, electricity can be taken into account up to the amount of the aggregated self-consumption, based on every 15-minute interval (concurrency)."

to the provisions of Art. 27(3) RED II. For a transitional period, electricity quantities from existing renewable energy plants could also be permitted for hydrogen production on a pro rata basis, with an increasing percentage. This would allow the necessary power generation capacities to be built up in time, so that the hydrogen could eventually be largely or even completely generated from additional green electricity, but at the same time the production of hydrogen could start earlier. This would accelerate the process of market expansion, without having to compromise on the green nature of the hydrogen.

3. Proximity criterion: Electricity generation – electrolyser

According to the provisions in the RED II an additional condition could be required that the RES-E and the electrolyser would either not be connected to the general supply grid or would be connected to the general supply grid but the green electricity in question would be provided demonstrably, without drawing electricity from the general supply grid ("**strict proximity criterion**").

Alternatively, however, it could be considered sufficient that the RES-E generation plants and the electrolyser would already be connected to the general supply grid, the electricity can be proven to have the characteristics of e.g. wind or solar power and, in addition, only the future requirements of the delegated act within the meaning of Article 27(3) RED II are met, thus a certain spatial link, as will be established there, is sufficient ("**relaxed proximity criterion**").

4. Sustainability of a potential carbon source

In so far as carbon (CO₂,...) is needed to produce green gas, it stands to reason that sustainability requirements should also be applied to the carbon source. On the one hand, biogenic CO₂ sources could in principle be considered permissible if the sustainability criteria of RED II are met.³⁵ Furthermore, the

35 Cf. on this also under b).

extraction of carbon dioxide directly from the ambient air could be permissible (so-called direct air capture (hereinafter: **DAC**)). Furthermore, admissibility could also extend to unavoidable emissions of (fossil) carbon dioxide.

5. Other product or production requirements

In addition, it should be ensured that land use for the project itself – i.e. the land taken up for electricity and hydrogen production – is also sustainable. In particular, the requirements of Art. 29 RED II can be used as a benchmark.

Further, links could also be made with grid efficiency or whether the generation relieves the electricity system or takes advantage of temporary surpluses in the electricity supply and so contributes to supporting, but not burdening, the power supply system. It would be conceivable, for example, to only promote plants that do not reach more than 4,000 Vbh/a (annual working hours), thus only producing slightly less than half of the theoretically producible amount of hydrogen. If production of hydrogen is powered by electricity from wind turbines and/ or solar installations, full utilisation hours in the aforementioned range are likely to occur regularly.

Finally, consideration should also be given to any requirements with regard to the GHG balance in the production and the transportation of the hydrogen.

II. Possible design of the buy-in auction

The design of the buy-in auction can be done in different ways and should develop over time. In principle, it is advisable to design the provisions similarly to those for tenders under the EEG at the BNetzA e.g. for onshore wind turbines (sliding market premium). It would be used to tender for generation services for electrolysers, which, if operated in accordance with the tender conditions and product descriptions, could expect the intermediary to buy the hydrogen they produce. In a later, more mature market stage, the marketing of the hydrogen could be transferred to private direct marketing companies

and then existing trading venues such as a hydrogen exchange could be used. A green hydrogen market price parameter that probably does not yet exist in the market due to the lack of exchange trading will be replaced initially by the sales proceeds from the sales auction as a deduction from the buy-in price agreed and thus will regulate the graduated level of state subsidy depending on the developing but also fluctuating market price for such green hydrogen.

The award of the tender could then grant the successful bidder the right to conclude a buy-in contract for green hydrogen at the agreed buy-in price for a period of 10 years or more, according to a standard contract familiar to it which also governs in a binding manner the conditions of the award and, i.a., the above-mentioned characteristics criteria for the hydrogen. The contract would have to impose penalties (clause on contractual penalties), i.a., if the deliveries start later than about two years after the award or if breaches of duty occur. These could include, for example, underruns of delivery quantities below a certain quantity band. This is necessary from the point of view of the intermediary, because it will in turn conclude sale contracts with buyers and – even when pooling quantities from different generation plants – it will probably not ultimately assume the volume risk. If applicable, penalties that the intermediary has to pay to a client, because delivery quantities were not reached, would have to be secured via corresponding penalty provisions in the buy-in contract, i.e. via price deductions that would derive from the agreed value to be applied and the specific sales proceeds in €/quantity units.

III. Possible design of the sales auction

With regard to the sale auction (intermediary to industrial H₂ buyers/traders/consumers in the transport sector) it must first be clarified whether a resale of the green hydrogen or the sale as a grey energy carrier plus the sale of certificates for greening ("Book and Claim") is to be envisaged.

In addition, the question of how to shape the timing of green hydrogen sales is of major importance here. Currently there is no market for green hydrogen or, as the case may be, subsidised derivatives in Germany, and similarly no general marketing forums yet such as a hydrogen exchange. As soon as such a suitable sales platform is found, the auctioning of the quantities bought in by the intermediary could take place via one of these market forums.

Moreover, there are issues of the right time to sell and the period of the sales contracts (contract duration). At an early stage, the total quantities produced could pass from Supplier A to Purchaser B within the framework of a 1:1 delivery ratio via two contracts and an interposed intermediary (who buys at price x and sells at price $x-y$). In the course of development, for hydrogen supplies in Germany tenders could take place for the green hydrogen of the intermediary from its subscription ratios based on monthly quantities and thereby pooled quantities from more and more plants from the various buy-in contracts could be sold. If the quantities already exist in real terms at auction, this reduces the risks to the intermediary. In this context, there would have to be more precise regulation of who falls to be considered as an intermediary at all (state or quasi-state agency? private party authorised to perform official function? private undertaking?) and of which economic risks could also be assumed by the latter at all.

For legal reasons – in particular the permissibility of long-term supply contracts even subject to purchase terms according to the law relating to terms and conditions of business (see above) – short-term supply contracts (no longer than 5 years, perhaps even less, see above) are to be recommended. With shorter contracts it will also be possible, when market prices for green hydrogen pick up, to increase the intermediary's sales revenue, for example, due to rising demand and CO₂ prices and thus reduce the funding expense for the funding provider, the state budget.

IV. Requirements for bidders for green hydrogen (wholesale buyers)

What requirements should be placed on the suitability of the bidders who can become purchasers of the hydrogen or derivatives initially via 1:1 contracts from the intermediary and in the medium term via one or more established general trading venues or a hydrogen exchange? A distinction must be made between factual and financial suitability criteria (pre-qualification requirements).

1. Technical and personnel suitability of bidders

The conceptual considerations examined here are based on the assumption that, initially, industrial companies in particular fall for consideration as customers for green hydrogen, possibly also transport companies or dealers from this sector who procure hydrogen for airline, forwarding and shipping companies. However, it should be simple to provide evidence, by reference to existing structures of technical and personnel suitability to take delivery of the products preferably at the place of production and to transport them to the place of use. Trading companies (gas traders, fuel traders) are likely to be and are already familiar with the trading of hydrogen or of (fossil) sister products like methane (to green e-methane).

2. Financial suitability of bidders

The financial suitability of possible bidders for the quantities of green hydrogen that the intermediary brings to market can accord with the usual pre-qualification requirements for energy trading contracts. These include obligations to make advance payments of the contractual compensation, where appropriate timed for delivery in several parts, in the case of delivery from the grid e.g. for a monthly amount of synthetic green e-methane, assignment and sale of the potential receivables from the sale of PtX products already in the run-up to delivery, collateral (guarantees,...) and credit reports together with consideration of resilience ratings.

Also important in the design of the contract are "precise" notice periods in the case of breaches of contract in supply contracts having a continuing obligation nature (annual contract with delivery in several parts,...) such as an acceptance failure, but especially in the event of non-payment which gives rise to the possibility of terminating the supply contract at short notice).

V. Design of the auctions

Depending on the expected delivery quantities and delivery dates, several auctions should be held with corresponding auction quantities. This will ensure that unsuccessful bids can be successfully submitted in time for the next auction date.

At the start the auction procedures themselves could, in turn, be closely aligned with the EEG tendering procedures of the BNetzA: Firstly there is an announcement by the intermediary of the auction date, the auction volume and a minimum bid value for the respective auction date. This is to ensure that the products offered are not sold "below value". It makes sense to at least compare the price of the comparable "grey product" here plus a surcharge. This surcharge takes into account the intrinsic value of the green property of the product. Should too few bids be submitted on an auction date, consideration could be given to reducing this minimum bid value or auctioning the quantity tendered in a later auction. Format requirements should be given for the bid submission. This facilitates the execution of the auction due to standardisation and facilitates communication with the bidders. For this purpose, appropriate forms could be made available on the internet, which must be used, to set out, among other things, the pre-qualification conditions that have been established and to document them accordingly.

In addition, the model supply contract concluded between the intermediary and the bidder in the event of the award of the contract shall be published. In particular, the aforementioned provisions on

contractual penalties, the delivery date(s) and the place(s) of delivery are agreed here.

The bids submitted in due time are then examined with consideration given to the provisions described above and bids that do not meet the requirements are excluded. The acceptance of the bids eligible for acceptance then takes place. If the auction volume is not exhausted, all bidders are awarded a contract in accordance with the size of their bid. If, on the other hand, the tender volume is exceeded by the bids, the intermediary must accept certain bids and reject others. The bids are sorted, in case of different bid values, according to the bid value in ascending order, starting with the lowest bid value. The result is a "merit order curve". If the bids have the same bid value, the bid quantity decides: the bid with the lowest bid quantity will be placed in the order before the bid with the next highest bid quantity.

After the award of the contract, the bids accepted and their amount are announced. Finally, the supply contracts described above are concluded with the bidders of the accepted bids – adding the delivery quantity and the corresponding price. After that, delivery can begin.

3 Support for H₂-fuelled combined heat and power plants

A. Brief description of the instrument

To support H₂-fuelled combined heat and power plants and to achieve the goal of 2.5 GW installed capacity (H₂-based) by 2030, a number of suggestions have been made for the instrument's design, which revolve in particular around its implementation in the CHP Act and the CHP Tendering Ordinance as well as combinations with other CHP support mechanisms. Those suggestions concern for example innovative CHP systems or a setting for an adequate maximum value for bids, which will be a crucial element in the support for H₂-fuelled installations. Another element influencing the economic conditions is the duration of support.

B. Abstract

The instrument to support H₂-fuelled combined heat and power (CHP) plants must comply with the legal requirements of EU and national law.

With respect to EU primary law, a fixed feed-in premium could interfere with the **free movement of goods** in accordance with Articles 28, 34 Treaty on the Functioning of the European Union (TFEU). However, the instrument is justified on the grounds of the protection of health and life of humans, animals or plants, or on the grounds of overriding requirements for the general protection of the environment. Based on the description of the instrument, the scheme complies with the principle of proportionality, is suitable for ensuring attainment of the objective pursued and does not go beyond what is necessary in order to attain the objective of environmental protection.

The instrument constitutes **State aid** and must therefore be compatible with EU State aid law. This is the case here as the scheme meets the requirements of the General Block Exemption Regulation (GBER), the Guidelines on State aid for environmental protection and energy (EEAG) as well as Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (RED II). According thereto, aid is to be granted as a premium in addition to the market price whereby the generators sell their electricity directly to the market. The aid is to be granted in a competitive bidding process open to all generators on a non-discriminatory basis. The scheme may be limited to specific technologies as an open bidding process for all generators would lead to a suboptimal result in view of, inter alia, the need to achieve diversification and/or grid stability. The support is limited to undertakings generating electricity and heat for the public supply or for industrial use. Lastly, the scheme also meets the standards under the EU Energy Efficiency Directive (EED) as it ensures that only high-efficiency cogeneration plants are eligible and waste heat is used effectively.

The instrument is compatible with the financial constitution. The scheme adversely affects competition and therefore infringes the freedom of occupation and the principle of equal treatment. This infringement is, however, justified on the grounds of the protection of the environment in accordance with Article 20a German Basic Law (*Grundgesetz* – GG).

With regard to subconstitutional law, the proposed fixed feed-in premium for H₂-fuelled CHP plants most closely approximates the CHP premium for new CHP plants determined by tenders under sec. 8a German Combined Heat and Power Act (*Kraft-Wärme-Kopplungsgesetz* – KWKG, hereinafter:

CHP Act). Due to the different economic parameters of gas and hydrogen, tenders for H₂-fuelled CHP should be regulated and carried out separately from tenders under sec. 8a CHP Act. Accordingly, it is necessary to further develop parameters for H₂-fuelled CHP plants and to integrate the scheme into the **CHP Act and the CHP Tendering Ordinance (KWK-Ausschreibungsverordnung)**. Considering the development of other support schemes relating to the production and use of hydrogen, it should be ensured that H₂-fuelled CHP plants are not overfunded when aid is cumulated.

The instrument is to support new CHP plants which are physically fuelled by pure hydrogen generated from renewable energy sources (green H₂). The financial support consists of a fixed feed-in premium per unit of electricity generated during the plant's depreciation period and is to cover incremental investment costs as well as the difference in operation costs of CHP plants fuelled by green H₂ and those fuelled by natural gas. The support is to be awarded through capacity-based tendering. The following assessment aims at providing an overview of the compatibility of this instrument with existing EU law as well as national law, pointing out the pieces of legislation that might require adjustments. On this basis, suggestions for the instrument's design can be developed.

C. European law

I. Primary law

Support for H₂-fuelled CHP plants must be compatible with EU primary law, including in particular the fundamental freedoms of the European single market as well as State aid law.

1. Free movement of goods

The four fundamental freedoms enshrined in the TFEU guarantee the free movement of goods (Article 28 et seq. TFEU), labour (Article 45 et seq. TFEU), services (Article 56 et seq. TFEU) and capital (Article 63 et seq. TFEU) without restrictions within the

EU. With regard to the proposed measure, a fixed feed-in premium could adversely affect the free movement of goods. Article 34 TFEU prohibits quantitative restrictions on the import of goods while Article 30 and 110 TFEU prohibit customs duties and taxation of such a nature as to afford indirect protection to other products.

a) Restrictions on the import of goods

Article 34 TFEU prohibits quantitative restrictions on the import of goods and all measures having equivalent effect. For the material scope of the free movement of goods to apply, the fixed feed-in premium must, therefore, affect the circulation of goods in the first place. According to the initial definition of the Court of Justice of the European Union (hereinafter: CJEU), goods are physical objects that have a monetary value and can be the subject of commercial transactions. The CJEU interprets the characteristic of physicality broadly to include physically definable objects such as gases, liquids or electricity. Accordingly, electricity generated in an H₂-fuelled CHP plant falls within the material scope of Articles 28, 34 TFEU.

If a particular area of law has been fully harmonised at the European level, the measure in national law must be assessed primarily in the light of the provisions of the harmonised law and the free movement of goods. RED II contains mandatory targets for the EU Member States to increase the minimum share of renewable energy in their final energy consumption. However, it does not specify which instruments the Member States must use to achieve their minimum share of renewable energy in their final energy consumption. Therefore, the area of law has not been fully harmonised and it must be assessed whether the fixed feed-in premium is in accordance with primary EU law.

The free movement of goods could be infringed by a governmental measure in the form of a quantitative restriction on imports or exports or a measure having equivalent effect. A fixed feed-in premium is not a

quantitative restriction on imports. However, it might be considered a measure having equivalent effect. According to the CJEU's *Dassonville* formula, a measure of equivalent effect includes measures of the Member States which are capable of hindering, at least indirectly and potentially, intra-Community trade.¹ In previous cases, the CJEU has established that a purchase obligation imposed on electricity supply undertakings, such as a feed-in premium for electricity produced from specific energy sources, is capable, at least potentially, of hindering intra-Community trade.² A feed-in premium can therefore constitute a measure of equivalent effect, as it results in poorer marketing conditions for imported electricity that cannot benefit from the premium. This would be considered a case of unequal treatment and can potentially impede electricity imports from other Member States.³

However, national legislation that constitutes a measure having equivalent effect to a quantitative restriction may be justified on one of the public interest grounds set out in Article 36 TFEU or by overriding requirements. Legislation seeking to promote the use of renewable energy sources for the production of electricity contributes to reducing greenhouse gas emissions. The measure in question aims at mitigating one of the main causes of climate change and is thus designed to protect the health and life of humans, animals and plants.⁴ Hence, the feed-in premium can be justified on public interest

grounds for the protection of health and life of humans, animals or plants (Article 36 TFEU). The CJEU has also recognised justification on grounds of overriding requirements for the general protection of the environment.⁵ The CJEU also finds that the promotion of renewable energy is one of the objectives guiding the EU energy policy according to Article 194(1)(c) TFEU, which supports the justification of a restriction on the free movement of goods. It should be noted that this justification only applies to the extent that the hydrogen used as fuel is generated from renewable sources. The proposed design of the instrument meets this requirement since it only allows the use of green H₂ and requires the subsidised CHP plants to physically consume pure hydrogen.

Lastly, the national provisions must be in accordance with the principle of proportionality, suitable for ensuring attainment of the objective pursued and must not go beyond what is necessary in order to attain that objective.⁶ The purpose of the feed-in premium is to support the market uptake of hydrogen as a fuel produced from renewable energy sources to generate electricity and heat. The particular value of supporting this form of renewable energy generation lies in its flexibility.⁷ Currently, the costs of using green hydrogen as fuel in CHP plants are not competitive in comparison to the use of fossil fuels, in particular natural gas. A premium that is granted for each unit of electricity generated and covers the cost difference between green hydrogen and natural gas as well as incremental investment costs is an

1 CJEU, judgment of 11/07/1974 – C-8/74, ECLI:EU:C:1974:82 (paragraph 5) – *Dassonville*

2 CJEU, judgment of 13/03/2001 – C-379/98, ECLI:EU:C:2001:160 (paragraph 71) – *PreussenElektra*.

3 CJEU, judgment of 01/07/2014 – C-573/12, ECLI:EU:C:2014:2037 (paragraph 67 et seqq.) – *Ålands Vindkraft*

4 CJEU, judgment of 13/03/2001 – C-379/98, ECLI:EU:C:2001:160 (paragraph 73 et seqq.) – *PreussenElektra*; CJEU, judgment of 01/07/2014 – C-573/12, ECLI:EU:C:2014:2037 (paragraph 78 et seqq.) – *Ålands Vindkraft*

5 CJEU, judgment of 13/03/2001 – C-379/98, ECLI:EU:C:2001:160 (para. 76 et seqq.) – *PreussenElektra*; CJEU, judgment of 01/07/2014 – C-573/12, ECLI:EU:C:2014:2037 (paragraph 78 et seqq.) – *Ålands Vindkraft*

6 CJEU, judgment of 01/07/2014 – C-573/12, ECLI:EU:C:2014:2037 (paragraph 76) – *Ålands Vindkraft*.

7 Recital 24 RED II recognises that support for sources of flexibility, in particular flexible generation, can be necessary to allow for the cost-effective integration of additional renewable electricity capacity.

appropriate measure to promote the use of green hydrogen as a fuel.

To attain the objective of supporting the market uptake of hydrogen-based energy generation, the support scheme needs to be designed as a national tendering procedure. Given that EU law has not harmonised national support schemes for green electricity, the CJEU has confirmed that it is, in principle, possible for Member States to limit access to such support schemes to green electricity being produced in their territory.⁸ Drawing upon the recitals of EU Directive 2009/28/EC (RED), the CJEU has also recognised that it is important for Member States to be able to control the effect and costs of their national support schemes according to their different potentials while maintaining investor confidence in order to ensure the proper functioning of the national support schemes.⁹ Recital 16 RED II¹⁰ states that support continues to be a key element of increasing market integration of renewable electricity¹¹ and that Member States should ensure that support schemes are provided in a form that is as non-distortive as possible for the functioning of electricity markets, for instance, by granting support in addition to market revenues and introducing market-based systems such as tendering procedures.¹² While tendering procedures should, in principle, be open to all producers of electricity from renewable sources on a non-discriminatory basis, Member States may limit

support schemes to specific technologies where this is needed to avoid suboptimal results.¹³

The design of the proposed instrument meets these requirements. The premium is awarded through tendering procedures and thus through a market-based system intended to limit distortions of the electricity market. It is, furthermore, necessary to limit the support scheme to hydrogen-fuelled CHP plants. These plants are to serve as a flexible source of energy and not to be used for baseload operation. Limiting the support to around 3,000 hours per year can incentivise the use of H₂-fuelled CHP plants as a flexible source of energy. This function of H₂-fuelled CHP plants within the energy system differs from other volatile renewable energy sources and the levelised costs of energy (LCOE) are not yet competitive with the costs of other renewable fuels. Opening the tendering procedure to all technologies for renewable electricity would fail to achieve the desired objective, i.e. to enable the market uptake of flexible, hydrogen-based means of energy generation. As a result, support for H₂-fuelled CHP plants constitutes a measure having equivalent effect to quantitative restrictions on the free movement of goods. The restriction on the free movement of goods is, however, justifiable.

b) Charges of equivalent effect and internal taxation

EU law prohibits Member States from imposing customs duties of a fiscal nature on imports and exports and charges having equivalent effect (Article 30 TFEU). The same applies to any internal taxation of any kind in excess of that imposed on similar domestic products or of such a nature as to afford indirect protection to other products (Article 110 TFEU). The CJEU has ruled that a surcharge on imported electricity with the purpose of financing a support scheme for renewable energy is incompatible with Articles 30 and 110 TFEU, without specifying which of

8 CJEU, judgment of 01/07/2014 – C-573/12, ECLI:EU:C:2014:2037 (paragraph 94) – Ålands Vindkraft.

9 CJEU, judgment of 01/07/2014 – C-573/12, ECLI:EU:C:2014:2037 (paragraph 99) – Ålands Vindkraft.

10 Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, OJ L 328, 21/12/2018, p. 82–209, hereinafter: RED II.

11 Recital 22 RED II continues to refer to the Member States' need to control the effect and costs of their national support schemes according to their different potentials.

12 Recitals 16 and 19 RED II.

13 Recital 19 RED II.

the two provisions is adversely affected.¹⁴ In contrast to Article 34 TFEU, infringements of Articles 30 and 110 TFEU are not justifiable.¹⁵ However, the Commission considers levies or surcharges to be in compliance with EU primary law if Member States open up their support schemes to electricity from renewable sources produced in other Members States.¹⁶

According to its description, the instrument will not be financed through a surcharge on electricity but rather through carbon tax revenues. It is, therefore, compatible with Articles 30 and 110 TFEU. It should be noted, however, that it might be necessary to expand the scope of the support scheme to bidders outside of Germany in the event that the design of the instrument was changed and based on a levy or surcharge.

2. State aid law

A feed-in premium must be compatible with competition law, in particular with State aid law. It is first necessary to determine whether a fixed feed-in premium for electricity generated in H₂-fuelled CHP plants constitutes State aid under Article 107 TFEU and second, if this is the case, whether the design of the support scheme is compatible with the internal market.

a) Applicability of Article 107 TFEU

According to Article 107(1) TFEU, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods is, in so far as it affects trade between Member States, deemed to be incompatible with the internal market. In order for a measure to constitute State aid, it must meet all five of

the constituent elements embedded in the definition. Based on the description of the instrument, the support for H₂-fuelled CHP plants meets these five elements and thus constitutes State aid.

Firstly, the support is granted through State resources. The premium is imputable to the State since the support scheme would be based on an adaptation of the CHP Act, i.e. federal legislation. Secondly, the financial advantage would be funded through State resources. The second condition might be debatable if the scheme under the CHP Act is upheld. According to this scheme, the support is funded by a special levy which is charged and administered by transmission and distribution system operators. The support scheme under the CHP Act is designed on the basis of the support scheme under the German Renewable Energy Sources Act (*Erneuerbare-Energien-Gesetz* – EEG). In 2019, the CJEU ruled that the Renewable Energy Sources Act 2012 does not constitute State aid based on the finding that the special levy funding the support scheme for renewable energy did not constitute State resources.¹⁷ Even though there is no judgement of the CJEU on the question as to whether support under the CHP Act constitutes State aid, the similarities between the two support schemes leave room to argue that the reasoning of the CJEU in its 2019 judgment also applies to the CHP Act.¹⁸ This reasoning no longer applies if State resources are used to fund the feed-in premium. According to the description of the instrument, the support would be refinanced through carbon tax revenues, i.e. State resources.

b) Compatibility with the internal market

The Commission may consider a State aid measure to be compatible with the internal market in accordance with Article 107(3)(c) TFEU to the extent that it serves

14 CJEU, judgment of 17/07/2008 – C-206/06, ECLI:EU:C:2008:413 (paragraph 56, 57) – Essent Netwerk Noord BV.

15 Calliess/Ruffert/Waldhoff, 5th edition 2016, TFEU Article 30 marg. no. 1, Article 110 marg. no. 5 et seqq.

16 Kahles/Pause, EuZW 2015, 776.

17 CJEU, judgment of 28/03/2019 – C-405/16, ECLI:EU:C:2019:268 – EEG 2012.

18 See for a detailed legal analysis following the CJEU's judgment on the EEG 2012 e.g. Schmidt-Preuß, Kraft-Wärme-Kopplung und Beihilfe, 1st edition 2020.

to facilitate the development of certain economic activities within the European Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.

A support scheme must be notified to the Commission prior to its implementation in accordance with Article 108 TFEU. The Commission has a margin of discretion when evaluating the compatibility of a measure with the internal market. The provisions on State aid set out in Article 107 TFEU are supplemented by regulations and guidelines limiting the Commission's discretionary power. In the context of energy generation, the Guidelines on State aid for environmental protection and energy (EEAG)¹⁹ and the General Block Exemption Regulation (GBER)²⁰ are most relevant. The Commission examines a notified measure based on the criteria laid down in the EEAG. If a measure meets the legal requirements for aid under the GBER, the Member State is exempt from the obligation to notify the measure to the Commission for approval. It should be noted, though, that both the GBER as well as the EEAG are currently being revised by the Commission. Any legislative proposal in the context of the fixed feed-in premium for H₂-based CHP capacities should be reassessed based on the revised framework for State aid.

aa) GBER

The GBER does not include provisions regarding hydrogen or operating aid for CHP plants. Since the instrument in question is based on pure green H₂, it could fall within the scope of operating aid for the promotion of electricity from renewable energy sources. Aid is compatible with the internal market if the conditions laid down in Article 42 and Chapter I

GBER are fulfilled. According to these provisions, aid is to be granted in a competitive bidding process on the basis of clear, transparent and non-discriminatory criteria which is open to all generators producing electricity from renewable energy sources (Article 42(2) GBER). According to Article 42(3) GBER, the bidding process can be limited to specific technologies where a process open to all generators would lead to a suboptimal result which cannot be addressed in the process design. This is the case, in particular, if the requirements set out in Article 42(3)(i) to (v) are met. The premium for H₂-based CHP capacities is to be tendered, so the instrument in question is to be based on a competitive bidding process. However, the scheme is designed exclusively for CHP plants fuelled with green hydrogen and must therefore meet the additional requirements set out in Article 42(3) GBER.

In accordance with Article 42(3) GBER, aid may further be limited to specific technologies in view of different aspects including the need to achieve diversification (Article 42(3)(ii) GBER). Diversification refers to the need to improve the security of energy supply by diversifying energy sources and suppliers. In accordance with the description, green H₂ is to be produced by electrolyzers close to the plant or delivered through a hydrogen network. This would not rule out the possibility of importing hydrogen from other Member States or outside the EU. At the same time, it would contribute to a reduction in natural gas imports and change the existing fuel mix. Besides this option, support may be limited to specific technologies in view of network constraints and grid stability (Article 42(3)(iii) GBER). Feeding high quantities of volatile electricity from renewable energy sources into the grids poses a challenge for the stability of electricity grids, which must be ensured by means of flexibility measures. The fixed feed-in premium is designed to promote CHP plants operating on the basis of green H₂ that can serve as a flexible source of energy, thereby contributing to network stability and the integration of other renewable energy sources. As a result, Article 42(3)(ii) and (iii)

19 Communication from the Commission – Guidelines on State aid for environmental protection and energy 2014–2020, [OJ C 200, 28.6.2014, p. 1–55](#), hereinafter: EEAG.

20 Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, [OJ L 187, 26.6.2014, p. 1–78](#), hereinafter: GBER.

GBER provide grounds by which the fixed feed-in premium may be limited to H₂-fuelled CHP plants.

Pursuant to further requirements regarding aid under the GBER, Member States are to carry out a detailed assessment of the applicability of the conditions for a limitation of the operating aid to specific technologies and report it to the Commission (Article 42(3) GBER). Member States are to grant the aid as a premium in addition to the market price whereby the generators sell their electricity directly to the market (Article 42(5) GBER). Beneficiaries are subject to standard balancing responsibilities and aid is not to be granted when prices are negative (Article 42(6), (7) GBER). Finally, aid may only be granted until the plant has been fully depreciated according to generally accepted accounting principles (Article 42(11) GBER). Based on its description, the instrument appears to meet these additional requirements. The duration of the aid is based on a plant's depreciation period, and the instrument's design is based on a system-friendly dispatch incentivised through electricity spot market prices.

It should be noted that operating aid for the production of electricity from renewable energy sources is limited to EUR 150 million per year if it is granted on the basis of a competitive bidding process (Article 4(1) (v) GBER). Furthermore, the support scheme must meet general requirements, in particular regarding transparency (Article 5 GBER) and the incentive effect (Article 6 GBER).

bb) EEAG

If the design of the support scheme does not meet the requirements for aid under the GBER, the Commission will, upon notification, assess the compatibility of the measure based on the criteria laid down in the EEAG. The EEAG are guidelines for the Commission in the exercise of its discretionary power and do not constitute an exhaustive set of rules on the compatibility of State aid.

The requirements for operating aid granted to energy from renewable sources under paragraph 124 et seqq. EEAG correspond to the requirements under the GBER: Aid is to be granted as a premium in addition to the market price whereby the generators sell their electricity directly to the market; beneficiaries are subject to standard balancing responsibilities and measures are to be put into place to ensure that there is no incentive to generate electricity under negative prices. Support is to be granted in a competitive bidding process which is to be open to all generators on a non-discriminatory basis. The scheme may be limited to specific technologies if a process that is open to all generators would lead to a suboptimal result in view of, inter alia, the need to achieve diversification or grid stability, paragraph 126 EEAG.

Although heat and electricity generated in a CHP plant are considered to be renewable insofar as the fuel is considered to be a renewable energy source, paragraph 151 EEAG includes additional requirements for operating aid for highly energy efficient CHP plants. Aid may only be granted:

"(a) to undertakings generating electric power and heat to the public where the costs of producing such electric power or heat exceed its market price;

(b) for the industrial use of the combined production of electric power and heat where it can be shown that the production cost of one unit of energy using that technique exceeds the market price of one unit of conventional energy".

Based on the description of the instrument, the fixed feed-in premium for H₂-fuelled CHP plants appears to meet these criteria.

II. Secondary law

A feed-in premium must be compatible with EU secondary law. Secondary law pertaining to CHP and renewable energy sources includes, in particular, the recast Renewable Energy Directive 2018/2001/EU on the promotion of the use of energy from renewable

sources (RED II) and Directive 2012/27/EU on energy efficiency (the Energy Efficiency Directive – EED).

1. RED II

RED II is a central instrument of EU law for achieving the targets the EU has set itself in regard to the share of energy from renewable sources. The directive does not specify which instruments Member States must use to achieve the minimum share of renewable energy in their final energy consumption. Although RED II mentions hydrogen as a source of renewable energy, provisions on hydrogen are fragmentary. The definition of renewable energy under Article 2(1) RED II does not make reference to hydrogen. While green hydrogen could indeed be included in “liquid or gaseous renewable fuels for transport of non-bio-genic origin” under Article 2(36) RED II, both the term itself and the definition refer exclusively to fuels used in the transport sector, excluding green hydrogen used for heating or cooling. Nonetheless, hydrogen from renewable sources is listed as a renewable fuel in Annex III.

Article 7(1) RED II states that hydrogen from renewable sources shall be considered for the purposes of calculating the share of gross final consumption of energy from renewable sources, including with regard to the gross final consumption of electricity from renewable sources as well as energy from renewable sources in the heating and cooling sector. Member States must ensure that the energy attributed to green hydrogen is only accounted for once. While Articles 25 and 27 RED II include provisions on the use of hydrogen in the transport sector, there are no such regulations for the heating, cooling and electricity sectors.

Against the background of the assessment of the fixed feed-in premium under State aid law above, the instrument apparently meets the requirements under Article 4 RED II. According to Article 4 RED II, support schemes for electricity from renewable sources must provide incentives for the integration of renewable electricity in the electricity market in a

market-based and market-responsive way aiming at maximising the integration of renewable sources in the electricity market and ensuring that energy producers respond to market price signals. Direct price support schemes are to be granted in the form of a fixed market premium. Member States may limit tendering procedures to specific technologies. The conditions for limiting the tendering procedures to specific technologies correspond to the conditions as laid down in the GBER and the EEAG.

2. EED

As CHP is a technology aiming at energy efficiency, the main provisions of EU law pertaining to CHP are embedded in the EED²¹. The directive contains a number of definitions of legal terms related to CHP, including a definition of cogeneration (Article 2(30) EED).²² The annexes to the EED provide, inter alia, a technical framework for calculating electricity from cogeneration and a list of cogeneration technologies covered by the directive (Annex I) as well as a methodology for determining the efficiency of the cogeneration process (Annex II). A conversion table in Annex IV lists the energy content for selected fuels for end use; however, hydrogen is not mentioned therein.²³

Under Article 14 EED and Annex VIII thereto, Member States are required to carry out a comprehensive assessment of the potential for applying

21 Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, OJ L 315, 14/11/2012, p. 1–56, last amended by Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity, OJ L 158, 14/06/2019, p. 125–199, hereinafter: [EED](#).

22 Further definitions refer to useful heat (Article 2(32) EED), electricity from cogeneration (Article 2(33) EED), highly efficient cogeneration (Article 2(34) EED) and cogeneration unit (Article 2(37) EED).

23 Values for the energy content of fuels are also listed in Annex III RED II, this table includes hydrogen from renewable sources.

high-efficiency cogeneration and efficient district heating and cooling. The analysis carried out for this purpose must distinguish between energy derived from fossil and renewable sources and is to include an assessment of costs and benefits (Article 14(3), (5) EED). While the potential for H₂-fuelled CHP plants might be included in such an assessment, this does lead to legal objections to the introduction of the fixed feed-in premium for H₂-based CHP capacities.

Member States are to encourage the use of high-efficiency cogeneration. Support is to be available only for high-efficiency cogeneration and waste heat must be effectively used to achieve primary energy savings, Article 14(11) EED. The feed-in premium would constitute a measure to encourage high-efficiency cogeneration. Accordingly, the proposed support scheme should ensure that only high-efficiency cogeneration plants are eligible for support and that the waste heat is effectively used.

Information about the support scheme would have to be included in the event that guarantees of origin are issued for the electricity produced in H₂-fuelled CHP plants in accordance with Article 14(10) EED and Annex X thereto. Since the instrument requires CHP plants to physically consume pure hydrogen, guarantees of origin for energy from renewable sources under Article 19 RED II could be issued as well; such guarantees also require the disclosure of information on whether and to what extent financial support is granted to produce electricity.

D. National law

The support scheme must be compatible with national constitutional law. Furthermore, it is necessary to evaluate the extent to which the instrument is compatible with other national pieces of legislation.

I. Financial law

The compatibility of the support scheme with the requirements of the financial constitution, in

particular Article 106 et seq. German Basic Law, would be critical if the scheme requires the introduction of a new source of revenue to finance the feed-in premium. This is, however, not the case. The description of the instrument suggests refinancing the instrument through existing sources of revenue, specifically the EU ETS and the national emissions trading system.²⁴ Since the instrument would be integrated into the CHP Act, the CHP levy might provide a further source of financing. There are no signs for the instrument being incompatible with the financial constitution.

II. Fundamental rights

The instrument must be compatible with the fundamental rights enshrined in Articles 1 to 19 German Basic Law. A support scheme might affect the fundamental rights of persons active in the energy sector, in particular the freedom of occupation in Article 12 German Basic Law as well as the principle of equal treatment in Article 3 German Basic Law.

1. Freedom of occupation (Article 12 German Basic Law)

The freedom of occupation in Article 12 German Basic Law ensures the freedom to choose an occupation or profession and to work in this area, whereas "occupation" means any activity designed to create and maintain a livelihood on a permanent basis.²⁵ A fixed feed-in premium for H₂-fuelled CHP plants is a type of subsidy intended to provide economic support to operators of CHP plants to the extent that certain preconditions are met. The instrument is available to any operator of a CHP plant in Germany. It does not prevent CHP plant operators from continuing to use

²⁴ It should be noted that a thorough assessment of the constitutionality of these existing sources of revenue is outside the scope of this examination. The compatibility of the national emissions trading system with the financial constitution is currently being challenged before court. The case is pending as of the date of publication.

²⁵ Scholz, in: Maunz/Dürig, Grundgesetz-Kommentar Article 12 marg. no. 29 (92nd supplement August 2020).

other fuels, nor does the scheme impose any obligation to use green hydrogen. Nevertheless, the subsidy, i.e. the fixed feed-in premium for H₂-based CHP capacities, affects the economic parameters of CHP plants that are not fuelled by hydrogen for the purpose of generating electricity and do not receive subsidies. Thus, the support scheme could constitute an interference with the power plant operators' freedom of occupation.

Although in the view of the Federal Constitutional Court (*Bundesverfassungsgericht*), protection against competition is not afforded by the freedom of occupation, free competition among entrepreneurs is a component of the freedom to exercise one's profession covered by Article 12 German Basic Law.²⁶ Any parties competing with the recipients of a subsidy could therefore be affected in their freedom of competition. Due to the expected effects on free competition, the feed-in premium could possibly interfere with the freedom of occupation of operators of electricity generation plants which are not subsidised; the premium could therefore constitute a restriction of Article 12 German Basic Law.

Restrictions of the freedom of occupation under Article 12 German Basic Law may be justified. To assess the justification, the Federal Constitutional Court has developed the so-called three-level theory (*Dreistufentheorie*) according to which a distinction must be made between practice regulations, subjective as well as objective regulations governing a person's occupational choice.²⁷ The fixed feed-in premium merely indirectly affects the professional practice of the non-subsidised operators of electricity generation plants. Such a provision at the level of practice regulations means a low intensity of interference with the freedom of occupation and is justified if it appears to be necessary on the basis of

reasonable considerations of the common good. The purpose of the fixed feed-in premium for H₂-based CHP capacities is the protection of the environment, for which there are grounds for justification in line with Article 20a German Basic Law. Green hydrogen can replace fossil energy sources, which reduces greenhouse gas emissions and protects the climate. Since the availability of sustainably produced biomass is limited and its use in the industrial sector is necessary at least in the medium to long term, the use of green hydrogen can also contribute to the preservation of natural resources.

2. Principle of equal treatment (Article 3 German Basic Law)

A fixed feed-in premium has to be compatible with the principle of equal treatment. Article 3(1) German Basic Law prohibits unequal treatment of groups of persons or situations that are essentially the same.²⁸ There may, however, be reasons justifying unequal treatment. In principle, an arbitrariness test is sufficient to determine whether there is an objective reason for unequal treatment. If this test shows that there is unequal treatment of groups of people that are essentially the same, or if a state measure interferes with a fundamental right, a proportionality test must be carried out additionally.²⁹

With regard to the feed-in premium, all fuels used for generating electricity must be compared and assessed as being part of the same group. The instrument gives rise to unequal treatment as only the use of green hydrogen is eligible for the subsidy, whereas the same subsidy is not granted for the use of biogenic renewable energy sources and fossil fuels. The subsidy interferes with the freedom of occupation under Article 12 German Basic Law, see above. The proportionality test might, however, demonstrate that the unequal treatment caused by the instrument is

26 Scholz, in: Maunz/Dürig, Grundgesetz-Kommentar Article 12 marg. no. 87.

27 Scholz, in: Maunz/Dürig, Grundgesetz-Kommentar Article 12 marg. no. 335.

28 Kischel, in: BeckOK Grundgesetz Article 3 Introduction (46th edition 15/02/2021).

29 Kirchhof, in: Maunz/Dürig, Grundgesetz-Kommentar Article 3(1) marg. no. 241

justified. The fixed feed-in premium can be justified if it serves a legitimate purpose in environmental protection in accordance with Article 20a German Basic Law. Green hydrogen can replace fossil energy sources, which leads to a reduction of greenhouse gas emissions and protects the environment. Since the availability of sustainably produced biomass is limited and its use in the industrial sector is necessary at least in the medium to long term, the use of green hydrogen may also contribute to the preservation of natural resources.

III. Further national law

The instrument must be incorporated into the existing legal framework governing the generation and supply of energy. This includes first and foremost the CHP Act (*Kraft-Wärme-Kopplungsgesetz – KWKG*) which, according to the factsheet, should be adapted to integrate the support for new H₂-fuelled CHP plants. The development of the instrument should also take into account the Energy Industry Act (*Energiewirtschaftsgesetz – EnWG*), Renewable Energy Sources Act (*Erneuerbare-Energien-Gesetz – EEG*), emissions trading systems as well as energy and electricity taxation, particularly the Energy Tax Act (*Energiesteuergesetz – EnergieStG*).

1. CHP Act (KWKG)

The CHP Act is the central framework for subsidising the generation of electricity in CHP plants as well as for the infrastructure of district heating systems. The description of the fixed feed-in premium for H₂-based CHP capacities suggests the integration of the instrument into the CHP Act. The CHP Act currently covers several support schemes, all of which require, inter alia, generation on the basis of high-efficiency CHP plants fuelled by natural gas, liquid fuels, waste or biomass (sec. 6 CHP Act). Economic conditions for operating gas-fuelled and (purely) hydrogen-fuelled CHP plants differ significantly; the CHP instrument would thus have to be adjusted to reflect these differences. In this respect, the framework for existing support schemes can

serve as a model. Existing support can be roughly categorised as follows:

- **Fixed CHP premium (sec. 7 CHP Act)** for electricity generated in new and refurbished CHP plants (≤ 500 kW, > 50 MW) as well as retrofitted CHP plants; the premium is granted in addition to the market revenue; its level and duration are determined by the capacity of the plant and, in the case of a refurbishment, depend on whether the measures for refurbishing the plant reach a certain cost threshold.
- **CHP premium determined by tenders (sec. 8a CHP Act)** (> 500 kW, ≤ 50 MW) for electricity generated in new and refurbished CHP plants; all of the generated electricity must be fed into the general supply grid; the costs of refurbishment must reach a threshold of 50 % of the costs for constructing a new CHP plant; the level of support is determined by tendering and granted at a fixed rate for a duration of 30,000 full load hours with a maximum of 3,500 full load hours per year over 30 years.
- **CHP support for innovative CHP systems determined by tenders (sec. 8b CHP Act)** (> 1 MW, ≤ 10 MW); an innovative CHP system consists of three components which are controlled collectively: a CHP plant, an installation to generate innovative renewable heat and a power-to-heat installation; all of the generated electricity must be fed into the general supply grid; the level of support is determined through tendering and granted for a total of 45,000 full load hours with a maximum of 3,500 full load hours per year over 30 years; innovative CHP systems are tendered separately from new and modernised CHP plants due to the differing economic conditions.
- **Renewable heat bonus (sec. 7a CHP Act)** granted in addition to the CHP premium for an installation generating renewable heat; the level of the bonus is fixed and depends on the share of renewable heat in the heating network.

→ **Power-to-heat bonus (sec. 7b CHP Act)** is granted if the operator sets up an electric heat generator; the bonus is granted in a lump sum payment of EUR 70 per thermal kW.

→ **Coal-replacement bonus (sec. 7c CHP Act)** is granted in addition to the CHP premium if the new CHP plant or innovative CHP system replaces a coal-fired CHP plant; the bonus is fixed and depends on the age of the existing coal-fired plant as well as its decommissioning date.

The proposed fixed feed-in premium for H₂-fuelled CHP plants most closely approximates the CHP premium for new CHP plants determined by tenders under sec. 8a CHP Act. Both measures subsidise new CHP plants; capacities are tendered; support is limited to a certain number of full load hours per year to ensure flexibility and a market-oriented operation of the plants. The maximum duration of 30,000 full load hours of support in the current version of the CHP Act corresponds to a depreciation period of 10 to 15 years, which is similar to the proposed instrument. Considering the similarities, it seems reasonable to base the instrument on existing rules under sections 5, 8a CHP Act which are supplemented by the provisions in the CHP Tendering Ordinance.

Due to different economic parameters of gas and hydrogen, tenders for H₂-fuelled CHP plants should be regulated and carried out separately from tenders under sec. 8a CHP Act. Separate tenders allow for adaptations to meet the challenges of H₂-fuelled energy generation and could help promote the market uptake of hydrogen. Accordingly, it would be necessary to further develop the parameters for H₂-fuelled CHP plants and to integrate them into the CHP Act and the CHP Tendering Ordinance. The scheme for innovative CHP systems shows that separate tenders are already an option provided for by the CHP Act. Section 8b CHP Act and the CHP Tendering Ordinance contain provisions tailored to specific economic parameters of innovative systems. For instance, the maximum value for bids is 7.0 cents/

kWh for CHP plants and 12.0 cents/kWh for innovative CHP systems (sec. 5 CHP Tendering Ordinance).

2. Energy Industry Act (EnWG)

The Energy Industry Act is the main legislative framework for the regulation of gas and electricity supply. According to the definitions in sec. 3 no. 10c Energy Industry Act, hydrogen and synthetic methane fall within the scope of "biogas". There appear to be no specific provisions on electricity generation that would lead to legal objections to the introduction of such a fixed feed-in premium for H₂-based CHP capacities.

3. Renewable Energy Sources Act (EEG)

The Renewable Energy Sources Act is the central legislative framework for subsidising the generation of electricity from renewable sources. Operators of renewable energy installations can receive a market premium under sections 19, 20 Renewable Energy Sources Act or a feed-in tariff under sections 19, 21 Renewable Energy Sources Act if the respective conditions for the subsidy are met. The term "installation" refers to every facility for generating electricity from renewable energy sources (sec. 3 no. 1 Renewable Energy Sources Act). Biogas is explicitly listed among the renewable energy sources under sec. 3 no. 21 e) Renewable Energy Sources Act. In light of the definition of biogas under sec. 3 no. 10a) Energy Industry Act, it needs to be assessed whether a feed-in premium for electricity generated in H₂-fuelled CHP plants is already covered by the market premium and the feed-in tariff under sec. 19 et seq. Renewable Energy Sources Act. However, the definition of biogas in the Renewable Energy Sources Act differs from the definition in the Energy Industry Act in that the former only includes gas produced by the anaerobic fermentation of biomass (see sec. 3 no. 11 Renewable Energy Sources Act). Hence H₂-fuelled CHP plants are currently not covered by the Renewable Energy Sources Act. The above-stated differences of the legal definitions of biogas should be kept in mind when developing the framework for

instruments supporting the market uptake of hydrogen.

At the same time, sec. 19 subs. 3 sentence 4 Renewable Energy Sources Act provides for the applicability of the support scheme under the Renewable Energy Sources Act in regard to electricity generated from so-called storage gases (*Speichergase*). Storage gas is defined in sec. 3 no. 42 Renewable Energy Sources Act as every gas which is not a renewable energy source but which is generated exclusively using electricity from renewable energy sources for the purpose of temporary storage of electricity from renewable energy sources. Hydrogen falls within this scope if it is produced exclusively out of "green" electricity; the same applies to synthetic methane produced out of "green" hydrogen. Unfortunately, the amount of support for this electricity produced out of storage gas is limited to the amount that could be claimed for the type of electricity put in temporary storage, e.g. solar power. Furthermore, the losses of electricity due to temporary storage are not compensated, which makes this type of electricity production based on hydrogen unprofitable – even under this support scheme which is hardly ever used in the first place.

4. Emissions trading schemes

Greenhouse gas emissions caused by CHP plants in the generation of energy are covered by either the European emissions trading scheme (EU-ETS) (transposed into the German Greenhouse Gas Emissions Trading Act (*Treibhausgas-Emissionshandels-gesetz* – TEHG)) or a national emissions trading scheme (such as the German Fuel Emissions Trading Act (*Brennstoffemissionshandelsgesetz* – BEHG)). As for CHP plants, it is their size that determines whether a plant is subject to the Greenhouse Gas Emissions Trading Act or the Fuel Emissions Trading Act. Installations which are exclusively fuelled with landfill gas, sewage treatment plant gas and biogases within the meaning of Article 2 no. 2 Renewable Energy Directive³⁰ are exempt from the EU-ETS

30 Directive 2009/28/EC of the European Parliament and of

(sec. 2 subs. 5 Greenhouse Gas Emissions Trading Act) as well as from the national emissions trading scheme (sec. 7, annex 2 Fuel Emissions Trading Act). A corresponding exemption does not currently exist for hydrogen. Though energy generation in CHP plants fuelled by green hydrogen is not expected to cause greenhouse gas emissions, it should be ensured that existing exemptions for H₂-fuelled CHP plants remain in place to support a profitable operation of such plants.

5. Energy Tax Act (EnergieStG)

Section 53a Energy Tax Act defines the conditions for an energy tax relief during the depreciation period or a partial relief after the depreciation period in regard to fuels used in CHP installations up to an electric capacity of 2 MW. The operator must apply for a tax relief for each individual installation. This tax relief contributes to improving the economic conditions for the operation of CHP plants. Hydrogen is currently not subject to taxation under the Energy Tax Act (see sections 1 and 2 Energy Tax Act). However, if any kind of taxation for hydrogen was to be introduced, this type of tax relief should also be considered for CHP plants.

E. Suggestions for design

To achieve the goal of 2.5 GW installed capacity (H₂-based) by 2030, a number of suggestions have been made for the instrument's design, which revolve in particular around its implementation in the CHP Act and the CHP Tendering Ordinance as well as combinations with other CHP support mechanisms. It has been criticised that the current design of support for innovative CHP systems under sec. 8b CHP Act has failed to achieve the desired results in regard to

the Council of 23 April 2009 on the promotion of the use of energy from renewable sources, OJ L 140, 5.6.2009, p. 16–62, last modified by Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015, OJ L 239, 15/09/2015, p. 1–29.

the market uptake for innovative CHP systems. The challenge lies in particular in setting an adequate maximum value for bids, which will be a crucial element in the support for H₂-fuelled installations. Another element influencing the economic conditions is the duration of support. For better comparison and to simplify the integration of the instrument into the CHP Act, it might be helpful to extend the duration from the suggested 3,000 hours per year to 3,500 hours per year, as is the case for existing support schemes. If, however, the instrument is to have a stronger focus on capacity expansion, it might be useful to reduce the support, for instance to 2,500 hours per year.³¹ The total duration of support in maximum duration of load hours is not specified in the description of the instrument which rather refers to the depreciation period. The design could provide for a maximum duration of 45,000 full load hours in accordance with aid for innovative CHP systems, as a longer support period could help expand capacity.

It should be assessed to what extent subsidised H₂-fuelled CHP plants should be eligible for bonuses under sec. 7a to 7c CHP Act. To ensure flexible operation, the design must also consider whether the operator may generate and use the electricity locally as opposed to feeding 100 % of the electricity into the grid. Heat storage allows CHP plants to operate even more flexibly, which is why it is necessary to ensure attractive funding mechanisms for storage.

The scheme in question should specify a minimum capacity for CHP plants, such as 500 kW or 1 MW. Extending the scheme to CHP refurbishment may also help reach the goals regarding the installed capacity. In this context, support should also be granted for projects aiming at refurbishing CHP units by replacing steam generators as part of a common steam mains installation

(*Dampfsammelschienen-KWK-Anlage*). Under the provisions of the current CHP Act, installations that received aid in the past are temporarily excluded from the option to obtain CHP support for a waiting period of two, five or ten years (depending on the facts in the individual case). In view of the ambitious goal for 2030, it might be necessary to reassess this waiting period if refurbished plants are to be included in the scheme.

31 A draft version of the CHP Act in 2020 suggested limiting support to 2,500 hours per year for installations in southern Germany for the sake of expanding capacity. The proposal was ultimately not adopted in legislation.

4 PtL quota for aviation

A. Brief description of the instrument

The subject matter of the instrument would be a European quota increasing over time for the admixture of power-to-liquid (PtL) fuel in the form of synthetic e-kerosene up to a current maximum share of 50 % (energy content). The quota-obligated parties are in principle the providers (expected to be the distributors, cf. below) of fossil kerosene. The additional costs for this green fuel would have to be borne by the producers and distributors via the airlines and ultimately by the airline customers. A state subsidy to cover the additional costs is not envisaged.

B. Abstract

I. Legal assessment

Since the quota is intended to relate to flights that take-off or land in the EEA and thus would not only affect flight routes within the EU, the question arises as to whether this is compatible with the principle of territoriality under international law and the principle of the sovereignty of third countries. For emissions trading the ECJ has decided that extending it to flights that take-off or land in the EEA is consistent with these principles. This is because the aircraft would in that case be physically in the territory of an EU Member State and would thus be subject to the unlimited sovereignty of the EU.¹ Such an application of EU law also cannot be said to call into question the principle of free flight over the high seas since an aircraft flying over the high seas would not in this respect be subject to the allowance trading scheme.²

The quota planned here is also intended to tie in with take-off or landing in the EEA so that there is much to be said for the argument that the ECJ's reasoning can be applied to this case. In our view, this is also the case insofar as the quota, to address the risk of tankering, is intended to relate to the combustion of the fuel in the aircraft and thus not to the quantities of refuelling in the EU. This arrangement also raises the fundamental question of whether this is compatible with the principle of territoriality under international law and the principle of the sovereignty of third countries. But for the ETS, which in principle also refers to flights that depart from or land in the EEA and also includes the entire flight, as already explained, the ECJ has found that these principles are not violated. Finally, according to our assessment, the quota also does not represent a levy within the meaning of the Open Skies Treaty, as it is not intended to generate revenue for a state.

In our opinion the quota does not contradict European secondary law. It would, in particular, be compatible with the Energy Tax Directive or the Emissions Trading Directive. In particular, Article 27 Directive (EU) 2018/2001 (RED II) would have to be taken into account in the implementation. That directive places requirements i.a. on the electricity, which have to be fulfilled for the production of the e-kerosene or the intermediate product of green hydrogen (i.a. additionality, proximity relationship, grid serviceability, carbon source requirements and other sustainability requirements).

With regard to the compatibility of such a European e-kerosene quota with the **free movement of goods** under European law we start from the premise that this would not constitute a sales modality, but a so-called measure of equivalent effect with an import restriction. There is much to be said for the argument that the potential restriction of trade in fossil kerosene can be justified on the grounds of environmental

1 ECJ, judgment of 21/12/2011, C-366/10, marg. no. 122 – 123.

2 ECJ, judgment of 21/12/2011, C-366/10, marg. no. 125 – 129.

protection. Likewise, special justification would be needed if the quota were to cover only synthetic e-kerosene, but not e-kerosene from biogenic energy sources. Because also with its use fundamentally greenhouse gas emissions in air traffic could be saved. Whether a regulation that excludes regenerative kerosene sourced from (sustainably produced) biomass (biokerosene) for such a quota, would be compatible with the free movement of goods, is debatable against this background. On the other hand, there is a design in which a general quota for defossilised kerosene (as a generic term for biokerosene and e-kerosene) is set together with a sub-quota for e-kerosene, as is currently commonly the case for fuels in RED II. If necessary, there would be no compatibility in the absence of such a sub-quota arrangement if an exclusion – e.g. due to priority uses of biomass quantities that may be available in limited quantities – could not be reliably substantiated.

Finally the quota in the structure proposed here is also in principle proportionate. However, if the quota were set too high, it might not be possible for the obligated parties to meet it and it would thus violate the principle of proportionality. When setting the level of the quota, it is therefore particularly difficult to strike a balance between the rather low availability of e-kerosene on the one hand, which is probably still to be expected in the mid-2020s, and the particular urgency of reducing GHG emissions in order to achieve climate protection targets. Against this background, the previously envisaged level of 2 % in 2030 – in this case related to synthetic e-kerosene – appears to be appropriate. Against the background of the particular urgency of reducing greenhouse gas emissions, a higher quota obligation also does not seem out of the question.

If – as currently envisaged – the quota were not to be designed as a support instrument, the scheme would not constitute aid within the meaning of the TFEU. If, on the other hand, the quota were combined with a direct subsidy, the scheme would probably have to be

classified as aid and notified to the European Commission.

II. Notes on the design

The quota could in principle be implemented at European level by means of both a regulation and a directive. If implemented as a regulation³ no transposition act by the Member States would be necessary, as it would have direct effect in the Member States (Article 288(2) TFEU). Directives, on the other hand, are not directly applicable and must therefore still be transposed by the Member States (Article 288(3) TFEU). Therefore, if a directive were chosen, the quota – comparable to the quota for advanced biofuels – could in accordance with Article 25(1), 4th subparagraph RED II – provide for a minimum proportion of e-kerosene to be achieved by the Member States within certain timeframes. In order to generate a clear signal for investment in the production of e-kerosene, the minimum share should also show a fixed path of increase over the years.

Insofar as the quota is to be linked to the placing on the market of the fuel – i.e. the withdrawal from the tax warehouse – attention must be paid to the particularity that in practice the fuelling of aircraft is often carried out by companies that merely act as service providers for the fuel suppliers and are commissioned commercially by them.⁴ From an energy tax perspective, however, the airfield tankers of such service providers can constitute tax warehouses within the meaning of energy tax law.⁵ The refuelling and thus the withdrawal of the fuel from the airfield tanker would thus be considered as placing on the market and would make the service provider an obligated party, which in turn is not intended. For this reason, it should therefore be regulated by law that the fuel provider who has

3 So too the Commission's proposal from the initiative "ReFuel EU Aviation".

4 Bundestag Printed Paper (Bundestag – Drucksache or "BT-Drs.") 19/27435, p. 22.

5 BT-Drs. 19/27435, p. 22.

commercially commissioned this service provider with the fuelling of the aircraft is the obligated party under the quota.⁶

To apply the quota to all kerosene **burnt** in the airspace between take-off and landing points and not only to the quantity placed on the market in the EU would have the consequence that the quantity burnt in the airspace would have to be recorded metrologically. It would therefore have to be checked before implementation whether and to what extent this is technically possible. A calibrated measuring device may be required for this. For the ETS, which in principle also refers to flights departing **or** landing in the EEA and thereby also includes the entire flight, the ECJ has already explained that these principles are not violated. There is thus much to be said for the argument that also against this background the connection to the quantity burnt in the aircraft during the entire flight instead of the quantities of fuel placed on the market in the EU should be permissible. The question then arises, however, whether in such a case the fuel distributors - i.e. fuel suppliers (as a rule the mineral oil companies) - can continue to be considered as obligated parties under the quota. This is because the reference point for the fulfilment of the quota obligation would then no longer be the quantity of fuel they put into circulation, but the fuel used in the aircraft. However, this cannot be assessed by the fuel provider, but only by the airline operating the flight. The consequence could then be, i.a., difficulties for the fuel importer in providing proof of quota compliance because it does not know the actual amount of fuel burnt in the aircraft. If necessary, a structure would then be preferable in which not the fuel suppliers but the respective airline operating the flight is obligated directly to refuel a corresponding amount of e-kerosene in order to address the risk of tankering). If the placing on the market were no longer to be linked, this would have the consequence that it would no longer be possible to fall back on the

requirements of energy tax law. This could result in a higher implementation burden for Member States.

C. International law

Since the quota is to apply to flights taking off **or** landing in the EEA, the question arises whether this is compatible with the principle of territoriality under international law and the principle of the sovereignty of third countries. The quota thus corresponds to the scope of application of the European emissions trading system with regard to aviation. Even according to that, fundamentally flights departing from or arriving in the EEA are covered.⁷ For emissions trading, the ECJ has ruled that this is neither contrary to the principle of territoriality, nor to the principle of the sovereignty of third countries, since in this case the aircraft would be physically on the territory of an EU Member State and thus subject to the full sovereignty of the EU. Such an application of EU law cannot call into question the principle of free flight over the high seas either, since an aircraft flying over the high seas is not subject to the allowance trading scheme in that respect.⁸ This also applies insofar as the quota is to be related to the combustion of the fuel in the aircraft in order to counter the risk of tankering. This structure also raises the fundamental question of whether this is compatible with the principle of territoriality under international law and the principle of the sovereignty of third countries. For the ETS, which in principle also covers flights that depart from **or** land in the EEA and also includes the entire flight - as already explained - the ECJ has found that these principles are not violated.

The quota also does not constitute a levy within the meaning of the Open Skies Treaty. This obliges the contracting states to exempt fuel from customs duties, fees and charges. A levy would require that it

6 BT-Drs. 19/27435, p. 22.

7 Appendix 1, Directive 2003/87/EC

8 ECJ, judgment of 21/12/2011, C-366/10, marg. no. 122 - 123, 125 - 129.

is intended to generate revenue for the state and that there is a direct, inseparable link between fuel consumption and the pollutants targeted by the levy.⁹ But it is not apparent that the quota would generate funds that would accrue to the state. In our view, even a sanction that may be implemented in the event of failure to comply with the quota regulation does not constitute a levy if it is a purely financial penalty with merely a sanctioning character whose objective is not from the outset a financing purpose.¹⁰ In contrast, it could be a levy if the “sanctioning” pursues task-related financing.¹¹ However, this is – as far as can be seen – not provided for so far. Furthermore, there is also no direct, inseparable link between fuel consumption and the pollutants they would target.

D. European law

I. Primary law

1. Free movement of goods

Firstly the introduction of a European quota for the use of e-kerosene in air traffic would have to be compatible with the free movement of goods in accordance with Article 34 TFEU¹².

a) Scope of application

Since a quota is to be implemented at European level, the first question is whether measures taken by the Union legislator are to be measured against the yardstick of fundamental freedoms at all. This issue is controversial.¹³ The ECJ – and with it the predominant opinion in the literature – affirms “formally”, but grants the Union legislator a wide scope of assessment in this respect. In the literature, a binding of the Union legislator to the fundamental freedoms is also rejected in part, since threats to the fundamental freedoms would typically emanate from measures of the Member States.¹⁴ However, this is probably to be rejected, since violations of the fundamental freedoms can also emanate from the European legislative acts.¹⁵

The material scope of the free movement of goods is relevant where there is a product. Products are basically *physical* objects that have a monetary value and can be the subject of commercial transactions.¹⁶ E-kerosene is not a fixed tangible object. However, the ECJ interprets the criterion of physicality broadly, so that gases, liquids and even electricity can also fall within the scope of the free movement of goods.¹⁷ This

9 ECJ, judgment of 21/12/2011, C-366/10, marg. no. 144.

10 Federal Constitutional Court (Bundesverfassungsgericht or “BVerfG”) of 16/06/1954 – 1 PBvV 2/52. See also Seiler, in: Maunz-Dürig, Grundgesetz-Kommentar (Commentary on the Basic Law for the Federal Republic of Germany or “GG”, 74. EL [74th supplement (Ergänzungslieferung)], May 2015, marg. no. 5 on Article 105 GG, marg. no. 86.

11 Kube, in BeckOK Grundgesetz (Basic Law for the Federal Republic of Germany), Epping/Hillgruber, 40th edition, February 2019, Article 105, marg. no. 18.

12 The more specific prohibition of discrimination under tax law according to Article 118 TFEU is not applicable due to the quota lacking the character of a levy (see below).

13 Kahl, Ökostromförderung und freier Warenverkehr (Green electricity promotion and free movement of goods), GPR 2015, 183 (184).

14 Kahl, Ökostromförderung und freier Warenverkehr (Green electricity promotion and free movement of goods), GPR 2015, 183 (184).

15 Kahl, Ökostromförderung und freier Warenverkehr (Green electricity promotion and free movement of goods), GPR 2015, 183 (184).

16 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Article 34 TFEU, marg. no. 28.

17 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Article 34 TFEU, marg. no. 28; ECJ, judgment of 27/04/1994, C-393/92, “Almelo”; ECJ, judgment of 13/02/2011, C-379/98, “Preussen Elektra”; ECJ, judgment of 01/07/2014, C-573/12, “Ålands Vindkraft”.

therefore supports the argument that e-kerosene also constitutes goods.

Finally, there is also a cross-border link, as companies would be affected by the quota regardless of their origin.

b) Intervention

The question arises whether the planned quota interferes with the free movement of goods. Such an interference can take the form of any state measure in the form of a quantitative restriction on imports or exports or a measure having equivalent effect.

aa) Quantitative import restriction

A quantitative import restriction exists if the import of goods is completely prohibited or limited in terms of quantity, value or time period.¹⁸

The quota does not constitute an import restriction in this sense, as it neither prohibits the import of fossil kerosene nor restricts it in terms of quantity, value or time period.

bb) Measure of equivalent effect

However it could be a measure of equivalent effect. This includes "any trading arrangement which is capable of hindering, directly, indirectly, actually or potentially, intra-Community trade" (so-called Dassonville Formula).¹⁹

Sales modalities, on the other hand, do not constitute measures of equivalent effect.²⁰ These concern regulations that affect the sale of products.²¹

18 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Article 34 TFEU, marg. no. 55.

19 ECJ, judgment of 11/07/1974, RS8/74, marg. no. 5 – "Dassonville".

20 ECJ, related cases C-267 and C-268/91 (Keck & Mithouard), coll. 1994, I-6097, marg. no. 16.

21 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Article 34 TFEU, marg.

There is much to support the argument that the quota is not a sales modality, as it not only regulates the way kerosene is distributed, but also places concrete requirements on the product or its properties. In our assessment, it is thus a product-related measure that can constitute a measure of equivalent effect according to the Dassonville formula.²² Even the potential necessity to adapt a product to product-related regulations means that it is not only a sales modality, but a product-related regulation.²³ This also applies to the quota, as the production of e-kerosene requires a change in the production process. Since the quota is intended to gradually increase the share of e-kerosene in aviation fuel, there is much to support the argument that it is also suitable for at least potentially hindering trade in fossil kerosene or – if this is to be excluded – biokerosene.

c) Justification

The question therefore arises whether and to what extent justification of these interventions is possible.

Firstly, we believe there is a strong case for justifying the potential restriction on fossil kerosene trade on environmental grounds. The transport sector – including aviation – is responsible for a quarter of GHG emissions in the EU. Its emissions have decreased only very slightly compared to 1990, with emissions from aviation actually increasing.²⁴ In order to achieve the targeted reduction of GHG

no. 81.

22 So also: Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Article 34 TFEU, marg. no. 92.

23 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Article 34 TFEU, marg. no. 94.

24 German Environment Agency (Umweltbundesamt), Report under the United Nations Framework Convention on Climate Change and the Kyoto Protocol 2020, Nationaler Inventarbericht zum Deutschen Treibhausgasinventar (National Inventory Report on the German Greenhouse Gas Inventory) 1990 – 2018, 2020, p. 162.

emissions by at least 55 % by 2030 and EU climate neutrality in 2050, emissions from aviation, which has hardly contributed to a reduction so far, must therefore also be massively reduced. This requires the use of policy instruments such as this planned quota.

In contrast, it is more difficult to justify the lack of eligibility of kerosene from biogenic sources – due to a limitation to synthetic fuels of non-biogenic origin – because, in principle, its use can also reduce greenhouse gas emissions in aviation. On the other hand there are arguments – also against the background of environmental protection – that could at least speak for an exclusion of certain biogenic fuels, especially first-generation biofuels. This is because sustainably produced biomass is only available in limited quantities due to land restrictions. Moreover, their benefit for environmental protection is controversial due to land-use competition in the cultivation of biomass. At the same time, biomass will also be needed in the medium to long term in the industrial sector for power generation. However, the limited availability of synthetic e-kerosene argues in favour of allowing the use of kerosene from advanced biofuels – if necessary only for a transitional period.²⁵ The quota could then also be set higher.

d) Proportionality

Finally, the quota would also have to be proportionate.²⁶ For this, the quota would first have to serve a *legitimate goal*. The quota is intended to increase the share of e-kerosene in air traffic. This serves to defossilise air traffic and thus to protect the environment as a recognised legitimate goal. The quota is also *suitable* for achieving this goal, as it leads to a gradual increase in the share of renewable energies in the transport sector. The quota is probably also *necessary*, as there is no milder and equally effective remedy.

²⁵ The European initiative for sustainable aviation fuels “ReFuelEU Aviation – Sustainable Aviation Fuels” also permits advanced biofuels as a basis for kerosene.

²⁶ Kingreen, in Calliess/Ruffert, TEU/ TFEU, 5th edition 2016, Article 36 TFEU, marg. no. 36.

Certainly other technologies (e.g. electricity) can be used to increase the share of renewable energies in addition to the use of e-kerosene. However, it is not yet foreseeable that electricity will be able to represent an alternative to the defossilisation of air traffic, at least in all aircraft weight classes. Finally, the fact that air traffic – currently still limited to intra-European air traffic – is included in the European Emissions Trading Scheme does not argue against the necessity of the quota. This is because the resulting investment incentive for the production of e-kerosene is too low, not only because of the restriction of the geographical scope of application, but also because of the need for a steadily rising CO₂ price. This is also the case since the build-up of generation capacity must now be stimulated at very short notice. Furthermore, the quota is also *appropriate in the narrower sense*, in so far as its level always takes into account the – as yet – limited availability of e-kerosene. This is because a quota that cannot be fulfilled due to the lack of availability of e-kerosene would not be appropriate and would violate the proportionality principle.

2. State aid law

The question also arises whether the quota is subject to state aid law.²⁷ This would require that it is aid within the meaning of Article 107 TFEU. Aid is defined under Article 107(1) TFEU as aid granted by the state or through state resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods, in so far as it affects trade between Member States.²⁸

²⁷ The relationship between the free movement of goods and state aid law is controversial. According to the case law of the ECJ, in the case of state aid, the latter takes precedence over the free movement of goods as a *lex specialis* (Mestmäcker/Schweitzer, in Immenga/Mestmäcker, Wettbewerbsrecht (Competition law), 5th edition 2016, Article 107 TFEU, marg. no. 10 et seq.).

²⁸ ECJ, judgment of 19/12/2018, C-374/17, marg. no. 19.

The quota is intended to increase the share of e-kerosene and thus indirectly favours the companies that produce e-kerosene. However, the fact that this advantage is not granted directly or indirectly from state resources speaks against the existence of aid.²⁹

If one wanted to see it differently, there is much to support the argument that the quota could be permissible as aid to promote important projects of common interest pursuant to Article 107(3) (b) TFEU or as aid to promote the development of certain economic sectors. The Guidelines on State aid for environmental protection and energy recognise the basic permissibility of quota systems for the promotion of renewable energies.³⁰ However, the Commission then requires that this is indispensable to ensure the viability of renewable sources, that there is no overcompensation, that renewable energy producers are not discouraged from strengthening their competitiveness and that no prices for any environmental certificates are set in advance.³¹ Last but not least, the repercussions on existing support mechanisms for renewable energies (especially Articles 4 and 25 RED II) would have to be examined in order to rule out over-support.

3. Compatibility with the fundamental rights of the Union

In addition to the fundamental freedoms, individual fundamental rights of the Charter of the European Union (hereinafter: **EU Charter of Fundamental Rights**) may also be affected by the quota. These are also part of European primary law and stand independently alongside the fundamental freedoms.³²

a) The freedom to conduct a business according to Article 16 EU Charter of Fundamental Rights

In accordance with Article 16 of the EU Charter of Fundamental Rights, the freedom to conduct a business is recognised in accordance with Union law and national laws and practices. The quota obliges the distributors of kerosene to admix a certain proportion of e-kerosene. It thus constitutes a regulation that sets binding requirements for the "how" of the professional activity of gas producers. The obligation addressed to the fuel distributors or possibly also the individual airline to distribute or use the more expensive e-kerosene also represents an intervention.

Entrepreneurial freedom is subject to the reservation under Article 52(1). Interventions and thus restrictions of the fundamental right therefore must be provided for by law in accordance with Article 52(1) sentence 1.³³ This requirement would also be fulfilled here. Interferences in Article 16 are, according to Article 52(1) sentence 1, only permissible if they respect the essence of the fundamental right. This condition is cumulative to that of proportionality.³⁴ However, the essence would still be respected by the planned instrument, because it only restricts the "how" of production, not the entrepreneurial activity as a whole.

Moreover, the planned regulation would probably also be proportionate: as a legitimate purpose, the quota serves the protection of the environment in accordance with Article 37 EU Charter of Fundamental Rights. It is also a suitable means of promoting the use of e-kerosene in air traffic - at least if sufficient e-kerosene is available in each case (see below). There is much to support the argument that the quota is also

29 ECJ, judgment of 28/03/2019, C-405/16 P, marg. no. 48.

30 Commission, 2014/C 200/01 (135).

31 Commission, 2014/C 200/01 (135, 136).

32 Jarass, in Jarass, Charta der Grundrechte der EU, (Charter of Fundamental Rights of the EU), 4th edition 2021, marg. no.11.

33 Jarass, in Jarass/Pieroth, Charta der Grundrechte der EU, (Charter of Fundamental Rights of the EU), 4th edition 2021, Article 16, marg. no. 22.

34 Jarass, in Jarass/Pieroth, Charta der Grundrechte der EU, (Charter of Fundamental Rights of the EU), 4th edition 2021, Article 16, marg. no. 22.

necessary, i.e. that a milder, equally effective remedy does not exist. Although other measures can be considered to reduce emissions (e.g. biokerosene), for the reasons mentioned above they are not equally effective. Ultimately, the quota would probably also be appropriate. As already explained, the quota serves to protect the environment. The transport sector is a significant contributor to the EU's greenhouse gas emissions, and greenhouse gas emissions from aviation have actually increased (see above). Considering that these are to be reduced by up to 55 % in all sectors relevant to energy consumption as early as 2030 and that climate neutrality is to be achieved by 2050 at the latest, there is much to support the argument that the planned quota also constitutes an appropriate regulation. However, it is important that the still limited availability of e-kerosene is taken into account when determining the amount of the quota. It would be disproportionate to introduce a quota that could not be met by obligated parties due to lack of fuel availability.

b) General principle of equal treatment according to Article 20

According to Article 20 of the EU Charter of Fundamental Rights, all persons are equal before the law. The provision thus contains a general principle of equal treatment, which also binds the legislative bodies of the EU. Both natural and legal persons can be fundamental rights holders.³⁵

The lack of eligibility of bio-kerosene and fossil kerosene is another unequal treatment that requires justification. The replacement of fossil kerosene by e-kerosene leads to a reduction in greenhouse gas emissions and can thus be justified by environmental protection under Article 37. Whether this also applies to an exclusion of kerosene from (sustainably produced) biomass (biokerosene) is debatable for the reasons already mentioned (see above). If, contrary to

the assumptions made here, it turns out that biokerosene or other renewable fuels can make a comparable contribution to climate and environmental protection and to independence from fossil energy sources, the extension of the quota to such alternatives could perhaps also be considered.

II. Secondary law

1. Directive on the promotion of renewable energies

Firstly the quota would have to be compatible with the Renewable Energy Directive³⁶ (hereinafter: **RED II**). This directive establishes the Community legal framework for the promotion of renewable energies and is thus intended to contribute to reducing greenhouse gas emissions in the EU through the increased use of renewable energies.³⁷ The core element of this directive are the targets set for the various sectors to increase the RE share.³⁸ The quota planned here also serves to increase the share of renewable energy in the transport sector and is thus in line with the regulatory objective of RED II. This is also supported by the fact that RED II already provides for a comparable instrument in the form of a separate sub quota for advanced biofuels in accordance with Article 25(1) 4th subparagraph RED II.

According to Article 27(2) c) Directive (EU) 2018/2001 Member States (so far) have the option to count renewable fuels provided for aviation with 1.2 times their energy content towards the target in the transport sector, provided that the fuels have not been produced from food or animal feed. This could also be maintained in the case of a European quota.

With regard to the production of e-kerosene, the requirements of Article 27(3) Directive (EU) 2018/2001 must also be observed. According to this a

³⁵ Jarass, in Jarass/Pieroth, Charta der Grundrechte der EU (Charter of Fundamental Rights of the EU), 4th edition 2021, Article 16, marg. no. 7.

³⁶ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11/12/2018 on the promotion of the use of energy from renewable sources

³⁷ Recital 2 RED II.

³⁸ Cf. Articles 3, 25 RED II.

full crediting of electricity-based fuels against the obligation under Article 25 Directive (EU) 2018/2001 is in principle only possible in the case of direct connection of the electricity supply facility to the production facility for the electricity-based fuels. Furthermore, the electricity generation plant must start operation at the same time as or after the fuel production plant ("additionality"). In addition, the electricity generation plant must not be connected to the grid or it must in any case be demonstrably ensured that the electricity is not drawn from the grid (cf. Article 27). Exceptionally, under the provisions of Article 27, electricity may also be drawn from the grid if the electricity drawn from the grid is produced *"exclusively from renewable sources and the renewable properties and other appropriate criteria have been demonstrated, ensuring that the renewable properties of that electricity are claimed only once and only in one end-use sector."* There will still be a delegated act to concretise Article 27.

2. Energy Tax Directive

The question arises whether, in addition, the requirements of the Energy Tax Directive³⁹ must be observed. However, according to Article 1, this is only applicable if a tax is levied on energy products or electricity within the meaning of the directive.⁴⁰ A tax exists if a monetary payment is imposed, with a financing function, on the individual without entitlement to consideration.⁴¹ This is not the case here, as the quota does not represent a monetary obligation unilaterally imposed by the state and the funds generated also do not flow into the state budget. Even a penalty payment implemented in the event of non-fulfilment of the quota is probably not a tax or levy, because in that case its character as a sanction is prominent.

39 Directive 2003/96/EC of the Council of 27/10/2003 restructuring the Community framework for the taxation of energy products and electricity.

40 ECJ, judgment of 20/09/2017, C-215/16 i.a., marg. no. 54.

41 Seiler, in Grabitz/Hilf/Nettesheim, "Das Recht der EU" (European Union Law), Article 113 TFEU, marg. no. 18 et seq.

3. Emissions Trading Directive

Furthermore, the question arises whether the planned e-kerosene quota is compatible with the Emissions Trading Directive⁴². According to Article 3a in conjunction with Appendix I of the Emissions Trading Directive aviation is already included in the European Emissions Trading Scheme. The basic scope of application of emissions trading for aviation corresponds to that of the quota planned here: fundamentally, all flights that take off or land in the EEA are covered. In principle, all flights including the entire route are subject to the ETS (cf. Article 2 in conjunction with Appendix I no. 6 Directive 2003/87/EC). However, for the years 2012 and 2013 to 2016, the reporting and submission obligation was limited to flights that take off **and** land on the territory of the EEA. This so-called reduced geographical scope was initially extended up to and including 2023.⁴³

This raises the question of whether it would be permissible to burden these companies "additionally" with the planned quota. Fundamentally the quota, like emissions trading, is an instrument for reducing greenhouse gas emissions in the EU. As the existence of the aforementioned RED II, for example, shows, there is already a "coexistence" of different instruments at the European level, all of which ultimately serve to reduce greenhouse gas emissions in the EU. This thus supports the argument that with the quota planned here, another "complementary" European instrument could be introduced. The quota would also not replace emissions trading or attempt to undermine its system, but only complement it in order to increase the use of e-kerosene in aviation. It also does not appear that the aforementioned restriction

42 Directive 2003/87/EG of the European Parliament and of the Council of 13/10/2003 establishing a scheme for greenhouse gas emission allowance trading within the Community last amended by Directive (EU) 2018/410.

43 German Emissions Trading Authority (Deutsche Emissionshandelsstelle) / Federal Environment Agency (Umweltbundesamt), Factsheet "Emissions trading in aviation", p. 2.

in the scope of application of the European Emissions Trading Scheme would prevent the application of the quota to flights departing from or landing in the EEA. This is because this restriction only applies to European emissions trading and is explicitly limited until 2023. In our view, this does not justify any particular confidence that the European legislator will thus also forego further instruments outside emissions trading, neither for the period before nor certainly for the period after 2023. This is confirmed not only by the time limit of the limited scope of emissions trading, but also by the clearly defined policy of the EU to further strongly reduce greenhouse gas emissions. The fundamental application of emissions trading to flights departing from or landing in the EU also argues against special protection of legitimate expectations.

E. National law: constitutional law

According to the case-law of the Federal Constitutional Court (Bundesverfassungsgericht (hereinafter: "BVerfG")), specialised Union law is in principle not subject to review based on the fundamental rights of the Basic Law for the Federal Republic of Germany (Grundgesetz) (hereinafter: the Basic Law), as long as the fundamental rights of the Union offer effective protection of fundamental rights in general that is to be considered essentially equal to the protection of fundamental rights offered as indispensable by the Basic Law in each case.⁴⁴ According to the BVerfG's Solange II case law, an (indirect) review of a Union act - i.e. a national transposition act - against the standard of the fundamental rights of the Basic Law is also ruled out due to the protection of fundamental rights, which is essentially comparable to the Basic Law and which is guaranteed at Union level. However, the German legislature then remains bound by the fundamental rights of the Basic Law insofar as

Union law in turn leaves latitude for implementation by the German legislature.⁴⁵

In the case of the quota, latitude for implementation would only be conceivable from the outset if it were introduced via a European directive (see also F. below). Whether and to what extent there is then latitude for implementation depends in turn on the concrete structure of the regulation. It would be conceivable, for example, for the EU to specify only minimum shares for the RE share to be achieved, as was done for the sub-quota for advanced biofuels in accordance with Article 25(1) 4th subparagraph RED II. In this case, the Member States would also have the latitude to set higher RE shares, which in turn would have to be measured against fundamental rights (especially Articles 12 and 3 of the Basic Law). It should be noted in particular that the still limited availability of e-kerosene should be taken into account when setting the amount of the quota. It would be disproportionate to introduce a quota that could not be met by obligated parties due to lack of fuel availability (see above).

F. Suggestions for design

The quota could in principle be implemented at European level both via a regulation and via a directive. If the quota were to be implemented as a regulation, no transposition act by the Member States would be necessary, as regulations have direct effect in the Member States (Article 288(2) TFEU). Directives, on the other hand, are not directly applicable and must therefore still be transposed by the Member States (Article 288(3) TFEU). The lack of need for an implementing act could argue in favour of implementing the quota via a regulation. On the other hand, a directive would offer the advantage that member states retain the freedom to "over-fulfil" the quota by setting more ambitious targets. In addition, the route

44 BVerfGE 73, 339 ("Solange II"); Huber, in Streinz, EUV/AEU (TEU/TFEU), 3rd edition 2018, marg. no. 66.

45 Huber, in Streinz, EUV/AEU (TEU/TFEU), 3rd edition 2018, marg. no. 70.

via a directive could be politically easier to implement in the legislative process.

If the route via a directive were chosen, the quota - comparable to the quota for advanced biofuels according to Article 25(1) 4th subparagraph RED II and also as a sub-quota to a comprehensive quota for defossilised kerosene (residual amount of bio-kerosene) - could provide for a minimum share of e-kerosene to be achieved by the Member States within certain timeframes. In order to generate a clear signal for investment in the production of e-kerosene, the minimum share should also show a fixed path of increase over the years.

The quota could be related to all kerosene **burnt** in the airspace between the take-off and landing points. Or the quota could relate only to the amount of kerosene put on the market in the EU and then consumed there. The former would mean that the quantity burnt in the airspace would have to be measured metrologically using a calibrated measuring device. This could probably not be achieved with on-board software alone, but this remains to be checked. Before implementation, it would therefore have to be examined whether and to what extent this is otherwise technically possible or how the on-board systems can achieve this in compliance with, for example, the German Measurement and Calibration Act (*Mess- und Eichgesetz*) or comparable regulations of other Member States. If necessary, exemptions could also apply in this respect.

The reference to the quantity burnt in airspace also raises the fundamental question of compatibility with the principle of territoriality under international law and the principle of the sovereignty of third countries. For the ETS, which in principle also covers flights departing **or** landing in the EEA and thereby also includes the entire flight, the ECJ has already explained that these principles are not violated (see above). There is thus much to support the argument that also against this background the connection to the quantity burnt in the aircraft during the entire

flight instead of the quantities of fuel placed on the market in the EU (and then consumed there) should be permissible. The question then arises, however, whether in such a case the fuel distributors - i.e. fuel suppliers (as a rule the fuel producers or traders) - can continue to be considered as obligated parties under the quota. For the reference point for the fulfilment of the quota obligation would then no longer be the quantity of fuel they put into circulation, but the fuel used in the aircraft. However this cannot be assessed by the fuel provider, but only by the airline operating the flight. The consequence could then be, i.a., difficulties for the fuel importer in providing proof of quota compliance because it does not know the actual amount of fuel burnt in the aircraft. It might be preferable to have a system in which the airline operating the flight is directly obliged to refuel with a corresponding quantity of e-kerosene, rather than the fuel suppliers and fuel distributors. In this way, the risk of tankering (i.e. refuelling the aircraft beyond the requirements of the current next flight, even for the onward or return flight outside the scope of the quota) could also be addressed. From a legal point of view, we do not believe that it is necessary to link this to the placing on the market. However, if the placing on the market were no longer to be linked, this would have the consequence that it would then no longer be possible to fall back on the requirements of energy tax law. This could result in a higher transposition burden for the Member States as well as a more complicated legal situation for the norm addressees due to similar but not identical parallel regulations.

In practice, there is also the peculiarity that the fuelling of aircraft is often carried out by companies that act as service providers for the fuel suppliers and are commissioned commercially by them.⁴⁶ From an energy tax perspective, however, the airfield tankers of such service providers can constitute tax warehouses within the meaning of energy tax law.⁴⁷ The refuelling and thus the withdrawal of the fuel from

⁴⁶ BT-Drs. 19/27435, p. 22.

⁴⁷ BT-Drs. 19/27435, p. 22.

the airfield tanker would thus be considered as placing on the market and would make the service provider an obligated party, which may not be intended. For this reason, it could therefore be regulated by law that the fuel provider who has commercially commissioned this service provider with the fuelling of the aircraft should be the obligated party under the quota.⁴⁸

With sec.37a of the amendment to the German Federal Immission Control Act (Entwurf des Bundes-Immissionsschutzgesetzes (hereinafter: E-BImSchG)), a comparable mechanism will exist in Germany (presumably soon), which - if designed as a directive - could be linked to when implementing the quota at national level for e-kerosene.⁴⁹ It would then not be necessary to create a completely new law for the implementation of the quota for e-kerosene. Rather, the obligation already provided for in sec. 37a E-BImSchG could be taken up and supplemented accordingly.

When determining the respective annual amount of the quota, it is imperative that the still limited availability of e-kerosene in the long term and the speed of the increase in available quantities are adequately taken into account. This is because unfulfillable and thus unreasonable quota requirements would severely jeopardise the existence of the scheme (scheme not suitable). If necessary, the path already provided for in sec. 37a E-BImSchG could be continued. In this case, the obligated parties would be the distributors of the fuel (in the case of withdrawal from the tax warehouse, cf. as model regulations those of the German Energy Tax Act (Energiesteuergesetz)).

In addition, a verification system for the green credentials of e-kerosene would have to be

introduced. In particular mass balancing systems or guarantees of origin are possible. Mass balancing is used, for example, for biofuels and ensures in that case, even when sustainable biomass is mixed with other quantities, the usability of the quantity equivalent, which is then considered sustainable biomass, even if sustainable and non-sustainable biomass can actually no longer be separated after mixing.⁵⁰

Furthermore, the quota should have a sanction mechanism that intervenes in the event of non-compliance by the obligated parties. As already explained, this is neither an aid nor a levy, provided that the sanctioning character is paramount and the funds are not used for task-related financing. In addition, the quota should have a revision mechanism that allows the mechanism to be adapted to changes in factual, technical and market developments.

48 BT-Drs. 19/27435, p. 22.

49 Draft German Federal Government bill of 18/01/2021."Draft of a law for the further development of the greenhouse gas reduction quota"

50 Thomas, Nachhaltigkeitsanforderungen für Bioenergie im Welthandelsrecht (Sustainability requirements for bioenergy in world trade law), 1st edition 2016, page 112.

5 General H₂ Quota

A. Brief description of the instrument

The subject matter of the instrument would be a general quota for a virtual (using block & claim mechanisms) or actual admixture of green hydrogen to natural gas in the gas grid. This could be in the range of 3 to 5 %.¹ Whether the admixture obligation would apply to gas withdrawals for all sectors in transport, heat, industry and possibly even electricity generation would still need to be discussed.

B. Abstract

With regard to the compatibility of such a general hydrogen quota with the free movement of goods under European law, we start from the premise that this would not constitute a sales modality, but a so-called measure having equivalent effect with an import restriction. This intervention would probably be justifiable, if it is ensured that - which should be obvious - foreign hydrogen producers are also allowed to supply the obligated parties when placing natural gas in Germany. If this is not wanted, it would probably only be permissible within the framework of a support scheme for domestically produced e-kerosene.

If - as currently envisaged - no such support were to be provided, the scheme should not constitute aid within the meaning of the TFEU and would therefore not have to be notified. If, on the other hand, the quota were linked to direct funding, the scheme would probably have to be notified to the European Commission.

In particular Art. 27 of the Renewable Energy Directive II, RED II (RED II, Directive (EU) 2018/2001) would have to be taken into account in the implementation if the quota is also to apply to the transport sector. This places requirements on, i.a., the electricity used to produce the e-kerosene or the intermediate product of green hydrogen (i.a. additionality, proximity relationship, grid serviceability, coal source requirements, and other sustainability requirements). Notably it has not been conclusively clarified in this context whether and to what extent biomass hydrogen (hydrogen from the electrolysis of electricity from biomass/biogas or perhaps even hydrogen from the steam reforming of biogas) may also be chargeable. Hydrogen here falls within the term set out in Art. 25 (1) (a) Directive (EU) 2018/2001 "gaseous fuels of non-biological origin". The wording of the standard thus fundamentally speaks against the eligibility of biomass hydrogen for the RE target of RED II in the transport sector. But again the systematic connection to Art. 2 Directive (EU) 2003/30/EG could also support an argument in favour of eligibility of biomass hydrogen in the transport sector as well. The quota does not conflict with the Energy Taxation Directive or the Emissions Trading Directive.

Furthermore, the quota would probably also be compatible with the requirements of fundamental rights and of the constitutional rules governing public finances. The encroachments on the right to freedom of occupation under Art. 12 of the Basic Law for the Federal Republic of Germany (Grundgesetz (hereinafter: **the Basic Law**)) and the principle of equal treatment under Art. 3 of the Basic Law are probably justifiable as a state objective of environmental protection raised to constitutional level by Art. 20s of the Basic Law, due to the importance of green hydrogen for the defossilisation of different sectors and thus climate protection. In addition green hydrogen is deemed as biogas under sec. 3 no. 10c German Energy Industry

¹ According to the guidelines of the German Association for Gas and Water (Deutschen Vereins des Gas- und Wasserfaches (DVGW) hydrogen may be fed - currently at a volume of five % - into the natural gas grid to a limited extent and marketed via it.

Act (Gesetz über die Elektrizitäts- und Gasversorgung (hereinafter: **EnWG**)), so that the privileges of the German Gas Network Ordinance (Gasnetzzugangsverordnung GasNZV) with regard to access and transport via the natural gas network and the balancing for the latter also apply to it.

If it is fed into the natural gas grid and later used in a combustion process, hydrogen is a fuel fundamentally within the meaning of the German Fuel Emissions Trading Act (Gesetz über einen nationalen Zertifikatehandel für Brennstoffemissionen (hereinafter: **BEHG**)). However, if the electricity used for electrolysis comes exclusively from renewable energy sources, the energy content can be assessed with an emission factor of zero, as is the case with biomethane. A link with the BEHG could thus only occur at all through the quota planned here, if an emission factor of zero were no longer to be applied to green hydrogen in the future. However, this is currently not foreseeable for green hydrogen. Even if such an emission factor above zero were to be set for green hydrogen in the future, the BEHG would probably not exclude the quota planned here. This is because, in our opinion, there is no provision in the BEHG as a simple-law national regulation (in contrast to the European Emissions Trading Directive) suggesting that it is intended to be a final regulation. The national legislator is also free, within the framework of its freedom of design, to introduce various instruments to achieve a regulatory purpose – in this case the reduction of greenhouse gas emissions. A contradiction is also remote because the BEHG, unlike the quota as such, is not designed to increase the proportion of green hydrogen in the natural gas grid.

C. European law

I. Primary law

1. Free movement of goods

The first fundamental freedom to be considered is the freedom of movement of goods pursuant to Art. 34 et

seqq. TFEU². This prohibits quantitative restrictions on the import of goods and all measures having equivalent effect.

a) Scope of application

The material scope of the free movement of goods applies where there is a product. According to the definition of the European Court of Justice (hereinafter: **ECJ**) goods in this sense are physical objects which have a monetary value and may be the subject of commercial transactions.³ Gas lacks the physicality required in this respect. However, the ECJ interprets the characteristic of corporeality broadly. Gases, liquids or electricity may therefore also fall within the scope of the free movement of goods.⁴ Hydrogen can thus constitute a product within the meaning of the free movement of goods.

Ultimately, the application of the free movement of goods is excluded, provided that the action takes place in an area that is finally harmonised at European level.⁵ However, such harmonisation is not present here. Directive (EU) 2018/2001⁶ does oblige Member States to increase the share of renewable energy. However, it does not specify to the Member

2 The prohibition of discrimination under tax law, which is more specific than the freedom of movement of goods, according to Art. 110 TFEU is not applicable due to the quota not being a levy (see below).

3 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, *Das Recht der EU* (European Union Law), Art. 34 TFEU, marg. no. 28.

4 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, *Das Recht der EU* (European Union Law), Art. 34 TFEU, marg. no. 28; ECJ, judgment of 27/04/1994, [C-393/92](#), "Almelo"; ECJ, judgment of 13/02/2011, [C-379/98](#), "Preussen Elektra"; ECJ, judgment of 01/07/2014, [C-573/12](#), "Ålands Vindkraft".

5 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, *Das Recht der EU* (European Union Law), Art. 34 TFEU, marg. no. 42.

6 Directive (EU) 2018/2001 of the European Parliament and of the Council of 11/12/2018 on the promotion of the use of energy from renewable sources.

States which instruments are to be used to achieve the minimum share of renewable energies.⁷

Finally, the quota also has a cross-border dimension, as it can also affect foreign companies that are active on the German market.

b) Intervention

An encroachment on the free movement of goods can occur through any state measure in the form of a quantitative restriction on imports or exports as well as a measure with equivalent effect.

aa) Quantitative import restriction

A quantitative import restriction exists if the import of goods is completely prohibited or limited in terms of quantity, value or time period.⁸

The quota does not constitute an import restriction in this sense because it does not prohibit the import of, for example, fossil hydrogen or limit it in terms of quantity, value or time period.

bb) Measure of equivalent effect

However, the question arises whether the quota is a *measure of equivalent effect*. This includes "any trade regulation of the Member States which is capable of hindering intra-Community trade directly, indirectly, actually or potentially" (so-called Dassonville formula).⁹ On the other hand, selling arrangements which apply to all economic operators carrying on their activities on national territory and which affect the marketing of domestic products and of products from abroad in the same manner in law and in fact, do

not constitute measures having equivalent effect.¹⁰ This includes regulations governing the manner of distribution of a product.¹¹

Firstly the quota does not represent a sales modality, since it does not only regulate the way of distributing hydrogen but also makes concrete demands on its quality and production. It is therefore a product-related measure which, according to the Dassonville formula, can constitute a measure of equivalent effect.¹² It is sufficient that there is a potential need to adapt a product to product-related regulations in order to exclude the existence of a sales modality.¹³ This also applies to the quota since a different production process is required for the production of green hydrogen than, for example, for the production of fossil hydrogen by means of steam reforming. Since the quota is intended to gradually increase the share of green hydrogen, there is much to support the argument that it is also capable of at least potentially hindering trade in fossil hydrogen. The quota would also constitute a measure of equivalent effect if it were to apply only to domestically produced green hydrogen but not to imported green hydrogen.¹⁴ Furthermore, a measure of equivalent effect may exist where certain input materials (e.g. biomass electricity) or processes (e.g. biological manufacturing processes) are excluded from the crediting to the quota because the quota would at least be capable of hindering the market access of hydrogen that is produced on the basis of the excluded input materials or processes. Finally, it would be a measure of

7 Hoffmann, "Green electricity in the fuel market - what does the RED II bring?" ("Grüner Strom im Kraftstoffmarkt - Was bringt die RED II?", ZNER (Magazine for New Energy Law - Zeitschrift für Neues Energierecht) 300 (300).

8 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Art. 34 TFEU, marg. no. 55.

9 ECJ, judgment of 11/07/1974, RS8/74, marg. no. 5 - "Dassonville".

10 ECJ, joined cases RS C-267 and C-268/91 (Keck and Mithouard), Rep. 1994, I-6097, marg. no. 16.

11 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Art. 34 TFEU, marg. no. 81.

12 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Art. 34 TFEU, marg. no. 92.

13 Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, Das Recht der EU (European Union Law), Art. 34 TFEU, marg. no. 94.

14 Cf. ECJ, judgment of 22/06/2017, C-549/15, marg. no. 79 - 80, cited by Juris, for the cross-border import of biomethane.

equivalent effect if the green hydrogen were to receive a subsidy in addition to the creditability to the quota (e.g. issue of tradable certificates) and foreign gas producers were to be excluded from this subsidy.¹⁵

cc) Justification

It is therefore questionable whether these interferences with the free movement of goods can be justified.

(1) Written justifications

Firstly, it is questionable whether the explicit justification of “protection of health and life of humans and animals” under Art. 36 TFEU may be invoked. This would require that the quota is for the specific protection of animal and plant health.¹⁶ Promoting the production of green hydrogen can certainly replace fossil energy sources and thus combat the dangers of climate change. However, it seems difficult to justify an assertion that the concrete and direct aims of the quota are confined to this. For this reason, according to the experts, it could be difficult to base the justification on Art. 36 TFEU.

(2) Unwritten grounds for justification

However, the ECJ also recognises unwritten grounds for justification, which include environmental protection.¹⁷ Firstly, there is much to support the argument that the exclusion of the creditability of fossil hydrogen can be justified by environmental protection because it can save greenhouse gas emissions. For the possibility of justifying the exclusion of hydrogen produced from electricity or

other biological processes, systemic considerations such as the need for biomass in the industry and the limited availability of sustainable biomass can be relied on, especially since the quota prohibits the sale neither of fossil hydrogen nor of hydrogen produced from biological manufacturing processes.

In contrast, justifying the exclusion of green hydrogen produced abroad (demonstrably) is likely to be more problematic. This is because the ECJ has already ruled that biogas produced sustainably abroad that has been fed into the natural gas grid of another Member State and has been mass-balanced may not be excluded from mass-balancing in another Member State.¹⁸ There is thus much to support the argument that an exclusion of hydrogen demonstrably sustainably produced abroad would probably not be compatible with the free movement of goods.

For the promotion of electricity from renewable energies the ECJ has considered a quota system with tradable electricity certificates, in which only domestic electricity producers were supported, to be justified on the grounds of environmental protection.¹⁹ Against this background, there is much to support the argument that – if the quota is to be designed with a corresponding subsidy – a restriction to domestic green hydrogen production would probably be compatible with the free movement of goods.

dd) Proportionality

Finally, the quota would also have to be proportionate.²⁰ For this, the quota would first have to serve a *legitimate goal*. With the quota the share of green hydrogen is intended to be increased. It thus serves to reduce greenhouse gas emissions from the use of fossil fuels and thus serves environmental protection

¹⁵ ECJ, judgment of 01/07/2014, C-573/12.

¹⁶ Leible/T. Streinz, in Grabitz/Hilf/Nettesheim, *Das Recht der EU (European Union Law)*, August 2020, Art. 36 TFEU, marg. no. 24.

¹⁷ Kingreen, in Calliess/Ruffert, *TEU/ TFEU*, 5th edition 2016, Art. 36 TFEU, marg. no. 80; Leible/ T. Streinz, in Grabitz/Hilf/Nettesheim, *Das Recht der Europäischen Union (European Union Law)*, August 2020, Art. 34 TFEU, Marg. no. 117.

¹⁸ ECJ, judgment of 22/07/2017, C-549/15, marg. no. 72ff.

¹⁹ ECJ, judgment of 01/07/2014, [C-573/12](#), marg. no. 92 ff.

²⁰ Kingreen, in Calliess/Ruffert, *TEU/ TFEU*, 5th edition 2016, Art. 36 TFEU, marg. no. 36.

as a legitimate goal. The quota is also *suitable* to achieve this goal, because this instrument is also potentially suitable for increasing the share of green hydrogen. The quota is probably also *necessary*, since a milder and equally effective remedy is probably not available. Certainly other technologies besides green hydrogen can be used to increase the share of renewable energies, (e.g. the direct use of electricity or fuels and combustibles produced from biomass). However, in certain areas – especially industry, heavy goods transport, air traffic and shipping – green hydrogen (and downstream products based on it) is probably the most promising and comprehensive way of defossilising these sectors for the foreseeable future. Unlike blue hydrogen for example, no fossil fuels are used in the production of green hydrogen, so that, for example, CO₂ capture is not necessary, which in turn is also an argument in favour of the use of green hydrogen in the long term and overall lower residual emissions can be expected from green hydrogen, than is likely to be the case from blue or turquoise hydrogen due to the GHG emissions that continue to be generated during the exploration of natural gas as the base product for blue hydrogen. The share of fuels that can be produced from sustainable biomass is also limited. In addition, biomass will be needed in industry in the long term. The quota is also likely to be *appropriate in the narrower sense of the term*. Initially, only a moderate increase in the green share is planned (3 to 5 %). Given the importance of the target – environmental protection – there is much to support the argument that this is also appropriate in conjunction with a further gradual increase in the green share, especially since the sale of fossil fuels or hydrogen produced by other methods will not be banned.

2. State aid law

A further question arises as to whether the quota is compatible with state aid law.²¹ Firstly it would need

21 The relationship between the free movement of goods and state aid law is controversial. According to the case law of the ECJ, if there is aid, this takes precedence

to be aid coming within the meaning of Art. 107 TFEU. Aid is present when an advantage is granted to a particular undertaking or product sector, when it is a state measure or a measure involving state resources which is imputable to the state, when it distorts or threatens to distort competition and when it is liable to affect trade between Member States.²²

The quota is intended to increase the share of green hydrogen and thus indeed indirectly favours the companies that produce green hydrogen. However, the fact that this advantage is not granted directly or indirectly from state resources speaks against the existence of aid.²³ The sanction provided in the event of failure to comply with the quota does not constitute aid either, since the sanctioning character of this measure is prominent and not the favouring of individual companies.

If one wanted to see it differently, there is much to support the argument that the quota could be permissible as aid to promote important projects of common European interest under Article 107 (3) (e) TFEU. The fundamental admissibility of quota systems for the promotion of renewable energies is recognised in the Guidelines on State aid for environmental protection and energy.²⁴ But the Commission then requires, in order to ensure the viability of renewable sources, that it is absolutely essential that there is no over-compensation, that renewable energy producers are not discouraged from strengthening their competitiveness and that no prices for any environmental certificates are set in advance.²⁵ Last but not least, the feedback effects on existing support mechanisms for

dence as a *lex specialis* over the free movement of goods (Mestmäcker/Schweitzer, in Immenga/Mestmäcker, Wettbewerbsrecht, (Competition law), 5th edition 2016, Art. 107 TFEU, marg. no. 10 et seqq.).

22 ECJ, judgment of 19/12/2018, C-374/17, marg. no. 19.

23 ECJ, judgment of 28/03/2019, C-405/16 P, marg. no. 48.

24 Commission, 2014/C 200/01 (135).

25 Commission, 2014/C 200/01 (135, 136).

renewable energies would have to be examined in order to rule out over-support (in particular sections 64a and 69b EEG 2021 and the GHG reduction quota under sec. 37a BImSchG in conjunction with the German 37th Ordinance on the Implementation of the Federal Immission Control Act (Verordnung zur Durchführung des Bundes-Immissionsschutzgesetz).

II. Secondary law

1. Renewable Energy Directive II

Firstly, in this context, compatibility with Directive (EU) 2018/2001 must be examined. As already explained, the directive does not prescribe to the Member States which instruments they must use to achieve the increase in the share of renewable energies. The Member States, and thus also Germany, are therefore free also to introduce a quota for the injection of green hydrogen, in order to thereby increase the share of renewable energies.

In our assessment the quota would be compatible with the requirements set out in this directive for injection of gas from renewable sources – including green hydrogen when it is injected into the gas grid. Article 20 (1) of Directive (EU) 2018/2001 stipulates that Member States shall, “where necessary”, consider the need to extend the existing gas grid infrastructure in order to facilitate the injection of gas from renewable sources. According to Art. 20 (2) and (3) of Directive (EU) 2018/2001, Member States shall also require network operators to publish technical rules in accordance with Art. 8 of Directive 2009/73/EC. The provisions of Art. 20 of Directive (EU) 2018/2001 thus also do not stand in the way of the introduction of a quota for the injection of green hydrogen into the natural gas grid.

Insofar as the scope of the quota is to extend to the transport sector, the requirements of Art. 25 et seq. of Directive (EU) 2018/2001 must be observed with regard to the production of green hydrogen. Hydrogen falls under the term “gaseous fuel of non-biogenic origin” listed in Art. 25 (1) (a) Directive (EU) 2018/2001. In any case, this includes hydrogen that

has been generated from wind or PV electricity by means of electrolysis.²⁶ Whether this excludes biomass hydrogen has not yet been conclusively clarified at present and – if an extension of the quota to the transport sector is envisaged – it would have to be examined in more detail. The wording of Art. 25(1) (a) Directive (EU) 2018/2001 in terms of fuel of “non-biogenic origin” could initially support a narrow interpretation, according to which biomass hydrogen, which has been produced by means of biomass flow in electrolysis, may be excluded.²⁷ The systematic connection to Art. 2 Directive (EU) 2003/30/EG could in turn also support an argument for eligibility of biomass hydrogen in the transport sector.

Art. 27 also provides special requirements for the production of hydrogen. According to this, full crediting of the hydrogen is generally only possible in the case of a direct connection of the power supply plant to the hydrogen generation plant. In addition, the power generation plant must come into operation after, or at the same time as, the fuel production plant (“additionality”), and must not be connected to the grid or, is connected to the grid, but evidence can be provided that the electricity concerned has been supplied without taking electricity from the grid (cf. Art. 27). Exceptionally, under the requirements of Art. 27, electricity may also be drawn from the latter if the electricity drawn from the grid is “*produced exclusively from renewable sources and the renewable properties and other appropriate criteria have been demonstrated, ensuring that the renewable properties of that electricity are claimed only once and only in one end-use sector.*” The criteria are still to be

26 Hoffmann, “Grüner Strom im Kraftstoffmarkt – Was bringt die RED II? (“Green electricity in the fuel market – what does the RED II bring?”), ZNER (Magazine for New Energy Law – Zeitschrift für Neues Energierecht) 300 (302).

27 So also Hoffmann, “Grüner Strom im Kraftstoffmarkt – Was bringt die RED II? (“Green electricity in the fuel market – what does the RED II bring?”), ZNER (Magazine for New Energy Law – Zeitschrift für Neues Energierecht) ZNER 300 (302).

specified in detail by the European Commission by means of a delegated act.

2. Electricity and Energy Taxation Directive / Excise Duty Directive

The question arises whether, in addition, the requirements of the Electricity and Energy Taxation Directive must also be observed. This prescribes certain minimum tax rates for energy products used as fuel or heating fuel. However according to Art. 1 this directive only applies where a tax is levied on energy products or electricity within the meaning of the directive.²⁸ Irrespective of the question whether hydrogen is an energy product at all within the meaning of this directive, there is a lot to be said for the quota not being a tax. A tax is characterised by the fact that a payment is imposed, without entitlement to consideration, with a financing function.²⁹ However, these conditions are not fulfilled by the quota, as the quota does not involve imposition by the state of a unilateral payment obligation and the funds do not flow back into the state budget. Even a penalty payment implemented in case of non-fulfilment of the quota is probably not a tax or levy, because its sanctioning character is prominent here. Also a different outcome does not follow from the fact that the obligated parties can pass on the additional burden from the quota to consumers. The ECJ has ruled that the mere fact that a burden can be passed on to the end consumer is not in itself sufficient to classify a measure as a levy.³⁰ This applies in particular if – as also the case here – there is no obligation to pass on the additional amount to the consumer. Rather, it is a levy only when there is a burden unilaterally imposed by law to be paid by consumers.³¹

Since the quota is neither a tax nor a levy, the requirements of the Excise Duty Directive also need not be observed in this respect. This directive also only applies if a levy is imposed on the consumption of energy products or electricity.³²

D. National law

I. Financial regime

Further, the quota would have to be compatible with national law. The provisions of the constitutional rules governing public finances – in particular Art. 106 et seqq. Basic Law – would have to be observed if the quota were a tax or non-tax levy. According to this, monetary payments are regarded as tax where they are not consideration for a specific service and are imposed by a public-law community in order to generate revenue.³³ Taxes finance general government tasks and flow into the general budget.³⁴ The classification of the quota as a tax can be ruled out straightaway because it does not impose a direct monetary obligation on the state. Nor does the quota serve to finance general state tasks, nor does revenue enter the state budget (see above).

Finally, the question arises whether the quota could constitute a non-tax levy. Non-tax levies are only permitted in narrow exception cases and require special justification in each case in order to prevent the legislator from undermining the financial constitution of the Basic Law by using its competences under Art. 70 et seqq. Basic Law to impose non-tax levies on the citizen beyond the rules of distribution in the constitutional rules governing public finances and beyond the budgetary law of the parliament.³⁵

28 ECJ, judgment of 20/09/2017, C-215/16 i.a., marg. no. 54.

29 Seiler, in Grabitz/Hilf/Nettesheim, "Das Recht der EU" (European Union Law), Art. 113 TFEU, marg. no. 18 et seqq.

30 ECJ, judgment of 28/03/2019, C-405/16 P, marg. no. 71.

31 ECJ, judgment of 28/03/2019, C-405/16 P, marg. no. 69-70.

32 ECJ, judgment of 20/09/2017.

33 Jarass, in Jarass, GG, Basic Law, Art. 105, 10th edition, marg. no. 3.

34 Jarass, in Jarass, GG, Basic Law, Art. 105, 10th edition, marg. no. 3.

35 Jarass, in Jarass, GG, Basic Law, Art. 105, 10th edition, marg. no. 8; Bundesgerichtshof (German Federal Supreme

The basic prerequisite for classification as a levy is that there is a revenue effect for the benefit of the public sector.³⁶ However, it does not appear that the quota generates funds that accrue to the state. In our view, even a sanction that may be implemented in the event of non-compliance with the quota regulations does not constitute a levy if it is a pure fine with a mere sanctioning character, which does not pursue a financing purpose from the outset.³⁷ In contrast, it could be a levy if the “sanctioning” pursues task-related financing (e.g. promotion and expansion of hydrogen portability).³⁸ However, as far as can be seen, this has not been planned so far.

II. Fundamental rights

1. The right to freedom of occupation,

Art. 12 Basic Law

The quota would also have to be compatible with fundamental rights. The first step would be to ensure compatibility with **Art. 12 Basic Law**. The quota obliges the distributors of gas to add green hydrogen in a certain proportion. It thus constitutes a regulation with a tendency to regulate the profession, which sets binding requirements for the “how” of the professional activity of the gas producers. The obligation of the distributors to place the more expensive green hydrogen on the market also constitutes an indirect encroachment on fundamental rights. However, this interference would presumably be a permissible regulation of professional practice, insofar as it is proportionate: as *legitimate aim* the

Court), judgment of 25/06/2014, VIII ZR 169/13, marg. no. 21.

36 Bundesgerichtshof (German Federal Supreme Court), judgment of 25/06/2014, VIII ZR 169/13, marg. no. 14.

37 Bundesverfassungsgericht (German Federal Constitutional Court) report of 16/6/1954 – 1 PBvV 2/52. See also Seiler, in: Maunz-Dürig, Grundgesetz-Kommentar (Commentary on Basic Law), 74. EL [74th supplement (Ergänzungslieferung)], May 2015, marg. no. 5 to Art. 105 Basic Law, marg. no. 86.

38 Kube, in BeckOK Grundgesetz (Basic Law), Epping/Hillgruber, 40th edition, February 2019, Art. 105, marg. no. 18.

quota serves to protect the environment. Furthermore, in our view, this is also a *suitable means* of promoting the use of low-emission technologies. There is much to support the argument in addition that the quota is also *necessary*, i.e. a milder, equally effective remedy does not exist. It is the case that other measures can also be considered to reduce emissions (e.g. promotion of electric mobility or the use of biogenic fuels in combustion vehicles). However, these are not equally effective for the reasons mentioned above. Ultimately the quota would probably also be appropriate. As already explained, the quota serves to protect the environment in accordance with Art. 20 (a) Basic Law. This is an outstanding benefit having constitutional status, which – in principle – can also justify greater encroachments on fundamental rights.³⁹ The level of the quota planned up until now (3-5 %) also suggests the intensity of the intervention can be classified merely as medium. The legislator also has a wide scope for decision-making when reorganising or restructuring an area of law.⁴⁰ As a rule, the principle of the protection of legitimate expectations would only be relevant if the legislator had created a special element of protection of legitimate expectations in this respect, for which there are no indications in the present case.

2. The principle of equal treatment,

Art. 3 Basic Law

The quota would also have to be compatible with the principle of equal treatment under Art. 3 Basic Law. This prohibits unjustifiable unequal treatment of what is essentially the same. The justification requirements differ according to whether there is an objective and personal difference in treatment. In the first case, an objective reason is sufficient (“arbitrary

39 Jarass, in Jarass/Pieroth, in GG-Kommentar (Commentary on the Basic Law), 10th edition, Art. 20a Basic Law, marg. no. 15.

40 Jarass, in Jarass/Pieroth, in GG-Kommentar (Commentary on the Basic Law), 10th edition, Art. 14 Basic Law, marg. no. 45.

formula") and in the latter case, the justification requirements are stricter ("proportionality test").⁴¹

The promotion of green hydrogen over biogenic renewable energy sources and fossil energy products does constitute unequal treatment that needs to be justified. However, these differences in treatment - each of which is to be classified as factual - can presumably be justified on the grounds of environmental protection. This is because the substitution of fossil energy sources serves to avoid greenhouse gas emissions and thus to protect the environment. Furthermore, the availability of sustainably produced biomass is limited and its use in the industrial sector is necessary at least in the medium to long term. If, contrary to the assumptions made here, it turns out that other propulsion technologies can make a comparable contribution to climate protection, environmental protection and independence from fossil energy yields, the extension of the quota to such alternatives could also be considered under certain circumstances. The unequal treatment as a result of the promotion of green as opposed to fossil hydrogen production can also be justified as environmental protection according to Art. 20 (a).

III. Simple national legal requirements

1. Access, transportation and balancing

In German law, the Gas Network Access Ordinance (Gasnetzzugangsverordnung (hereinafter: **GasNZV**)) specifies requirements for the feed-in and transportation of hydrogen via the natural gas grid as well as for balancing. There are certain privileges for the feed-in of biogas in this context. These include under sec. 33 GasNZV the grid connection obligation and priority grid access for the transport of biogas as well as facilitations in balancing under sec. 35 GasNZV. Under sec. 3 no. 10c EnWG hydrogen is deemed as biogas if the electricity used for electrolysis was generated predominantly - i.e. at least 80 % - from

⁴¹ Jarass, in Jarass, GG-Kommentar (Commentary on the Basic Law), 10th edition, Art. 3, marg. no. 17 et seqq.

renewable energies. This would be the case with regard to green hydrogen, so that the privileges under the GasNZV apply to it.

2. Relationship to the German Fuel Emissions Trading Act (Brennstoff-Emissionshandelsgesetz)

The question arises whether repercussions in relation to the BEHG would also have to be considered. The BEHG obliges the "responsible parties" under this Act - these are the tax payers within the meaning of the Energy Tax Act - to provide by 30 September of each year emission certificates that correspond to the total quantity of fuel emissions in the previous calendar year.

The BEHG is applicable to fuels within the meaning of Annex 1, so that the question arises first of all as to whether hydrogen is to be regarded as fuel in this sense. In energy tax law, biogas is initially considered to be natural gas or treated as such if it is processed and fed into a network that also transports natural gas for the purpose of transport. This is because biogas is physically mixed with natural gas and natural gas is physically extracted.⁴² Mixing with natural gas also occurs when hydrogen is fed into the natural gas grid. Hydrogen is therefore to be classified - like natural gas - under CN Code 2711 21 ("Natural gas, gaseous") and under sentence 1 no. 2 of Annex 1 to the BEHG as a fuel within the meaning of the BEHG.⁴³ Hydrogen that is fed into the natural gas grid is therefore fundamentally subject to the obligations of the BEHG which include not only the obligation to provide emission certificates but also the reporting obligation pursuant to sec 7 subs. 1 BEHG. However,

⁴² Cf. Bundesministerium der Finanzen (German Federal Ministry of Finances) Letter of 2/7/2008, file no. III A 1 - V 8245/07/0006, marg. no. 1.

⁴³ Deutsche Emissionshandelsstelle (German Emissions Trading Authority), Leitfaden zum Anwendungsbereich sowie zur Überwachung und Berichterstattung von CO₂-Emissionen - Nationaler Emissionshandel (Guidance on the scope, monitoring and reporting of CO₂ emissions - National Emissions Trading Scheme), p. 15, point 2.3.3.

provided that the electricity used for electrolysis comes exclusively from renewable energy sources, the energy content can be assessed with an emission factor of zero, as with biomethane.⁴⁴ The prerequisite for the deductibility is, according to sec. 6 subs. 3 German Emissions Reporting Ordinance 2022 (Emissionsberichterstattungsverordnung (hereinafter: **EBeV 2022**), presentation to the competent authority of a supply contract for the respective calendar year for the corresponding quantity of fuel and proof that the quantity of gas extracted corresponds in energy equivalent to the quantity of biomethane that has been fed into the natural gas grid elsewhere and that a mass balance system was used for the entire transportation and distribution until withdrawal from the natural gas grid.

Connection with the BEHG could thus only arise through the quota planned here if an emission factor of zero were no longer to be applied for green hydrogen in the future. But this is not foreseeable for green hydrogen at present. Even if such an emission factor were to be set in the future, the BEHG would not exclude the quota planned here. This is because there is no provision in the BEHG suggesting that it is intended to be a final regulation. The national legislator is also free, within the framework of its freedom of design, to introduce various instruments to achieve a regulatory purpose – in this case, the reduction of greenhouse gas emissions. Unlike in European law, the conditions of a “protection-enhancing measure” do not have to be fulfilled in this context either. Finally, the quota planned here would also not violate the unity of the legal order. This would presuppose a genuine contradiction between the two laws. However, like the BEHG the quota also serves to reduce fuel emissions. A contradiction is also remote for this reason since the BEHG, unlike the quota as such, is

44 Deutsche Emissionshandelsstelle (German Emissions Trading Authority), Leitfaden zum Anwendungsbereich sowie zur Überwachung und Berichterstattung von CO₂-Emissionen – Nationaler Emissionshandel (Guidance on the scope, monitoring and reporting of CO₂ emissions – National Emissions Trading Scheme), p. 15, point 2.3.3.

not designed at all for the purpose of increasing the proportion of green hydrogen in the natural gas grid.

E. Suggestions for design

Various ways to design the quota are conceivable. Firstly it is possible to apply the quota to all sectors or, conversely, to limit it to individual sectors. Where the transport sector is also included in the quota, the requirements of Directive EU 2018/2001 must be observed and interactions with the greenhouse gas reduction quota under sec. 37a Basic Law and sections 64a and 69b EEG 2021 must be checked, in order to exclude overfunding.

Various implementations are also conceivable at the addressee level. A producer, supplier or consumer obligation may be considered. It is envisaged that the quota should impose obligations on the distributors of gases (so-called supplier obligation). However, an obligation to accept green hydrogen is not created by the quota. This is a general disadvantage of quota instruments compared to price instruments such as the German Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz), according to which operators of renewable energy plants have off-take and remuneration entitlements as against the grid operator.

In addition, a verification system would have to be introduced to prove the green nature of the hydrogen. On the one hand, mass balancing systems or guarantees of origin are conceivable. Mass balancing is used, for example, in biofuels, where it ensures the usability of the quantity equivalent when sustainable biomass is mixed with other quantities, which then counts as sustainable biomass, even if sustainable and non-sustainable biomass can no longer actually be separated after mixing.⁴⁵ A guarantee of origin is

45 Thomas, Nachhaltigkeitsanforderungen für Bioenergie im Welthandelsrecht (Sustainability requirements for bioenergy in world trade law), 1st edition 2016, page 112.

an electronic document that serves to prove to an end customer in the context of electricity labelling that a certain proportion of the electricity was generated from renewable energies.⁴⁶ In contrast to the mass balancing system, with guarantees of origin the green property is decoupled or separated from the physical raw material electricity and can be traded separately. Art. 19 (1) RED II now obliges Member States to guarantee the origin of energy produced from green sources. This also covers green gases including hydrogen. The European CertifHy project is already working on the establishment of a green hydrogen register of origin at European level.⁴⁷

The quota should also have a sanction mechanism that intervenes in the event of non-compliance by obligated parties. With such a mechanism a quota then also encourages the addition of generation capacities for green hydrogen. The penalty amount would then also have to be assessed accordingly, and would have to be above the market price for green hydrogen. As already explained, such a scheme is neither an aid nor a levy, provided that the sanctioning character is prominent and the funds are not used for task-related financing. In addition, the quota should have a revision mechanism that allows it to be discontinued when market viability is reached.

Comparable to the greenhouse gas reduction quota in sec. 37a ff. BImSchG thought could be given to the introduction of so-called "quota-trading" (cf. sections 37a subsections 6 and 7 BImSchG). In this framework the obligated parties could transfer the fulfilment of their quota obligation to a third party. But this would enable trading only between quota obligated parties in order to avoid these certificates becoming objects of speculation which would drive the price level up unnecessarily and ultimately to the

disadvantage of the end consumer, and the additional revenues would not benefit transformation.

Finally it would be possible to link the quota with a funding mechanism (e.g. tradeable certificates). For the relevant legal requirements in this respect reference is made to the designs described above.

46 Henning/Ekardt, in Frenz/Müggenborg/Cosack/Hennig/Schomerus, Erneuerbare-Energien-Gesetz Kommentar (German Renewable Energy Sources Act Commentary), 5th edition 2017, sec. 3, marg. no.171, page 245.

47 <http://www.certifhy.eu/>

6 Labelling system for climate-friendly basic materials

A. Brief description of the instrument

The subject matter of the instrument is the labelling of products as products with a certain reduced level of embedded CO₂ or GHG in total because the respective production process involved green hydrogen. The labelling can take various forms (using a rating system (scale), a figure (e.g. the CO₂ emissions “within” the product) or a binary “Yes” or “No” (compliance with product standard XY for green products)). In the matter at hand, it is intended to make the labelling mandatory by law.

B. Abstract

A legal assessment of the instrument depends largely on its specific design. There is currently no uniform legal framework based on which the various design options could be assessed. Against this background, a legal assessment can only provide initial legal guidance.

For the matter at hand, ‘labelling of climate-friendly products’ means markings in the form of transparency and quality labels regarding the CO₂ content of basic materials. However, depending on their design, also the CO₂ emissions associated with the packaging, transport and retail of the basic materials can be included in such labels, which might give rise to other or further legal issues.

The mandatory labelling of basic materials is likely to interfere with the free movement of goods (Article 34 Treaty on the Functioning of the European Union – TFEU) as well as with the fundamental rights of the companies concerned, especially in regard to the right to occupational freedom (Article 12 German Basic Law (*Grundgesetz* – GG)). Therefore, a statutory basis

is required to justify the interference with the right to occupational freedom (Article 12 Basic Law) of the companies concerned associated with the introduction of a labelling scheme. For reasons of proportionality and, respectively appropriateness, it is most probably also necessary to introduce the labelling of climate-neutral basic materials step by step. There are, however, no specific legal requirements in that regard.

Particular attention is to be given to Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products (**Ecodesign Directive**). Depending on the design of the instrument, it is to be examined more closely whether it would be permissible at all to include basic materials used in energy-related products in a labelling scheme for climate-friendly basic materials outside the Ecodesign Directive. The Ecodesign Directive might prove to be the relevant piece of legislation for the introduction of a labelling scheme for climate-friendly basic materials at European level, but might have to be adapted in this respect.

C. WTO law

I. Agreement on Technical Barriers to Trade

The mandatory labelling of climate-friendly basic materials could fall within the scope of the Agreement on Technical Barriers to Trade (**TBT Agreement**). The TBT Agreement covers all “products, including industrial and agricultural products” (Article 1.3 TBT Agreement) and includes rules that are to be observed when introducing technical regulations, standards and conformity assessment procedures. “Technical regulation” within the meaning of the TBT Agreement means a document which lays down binding

conditions; “labelling requirements” are explicitly mentioned in the TBT Agreement, cf. Article 1.2 in conjunction with Annex 1.1 TBT Agreement. Therefore, the **mandatory labelling** of climate-friendly basic materials is likely to be classified as “technical regulation”.

Whether the scope of application of the TBT Agreement is limited to **product-related process and production methods** (PPMs) or also includes **non-product-related PPMs** is controversial.¹ Non-product related PPMs are meant to be those that do not affect the characteristics of a product. Examples in this respect include, among other things, voluntary labels such as “outdoor rearing”, “organic” or “fair trade”. However, in that regard it is to be considered that “affecting the characteristics of a product” is not a very distinct criterion. Furthermore, marking the CO₂ content of a basic material might well have an effect on the sales potential of an end product that contains basic materials subject to labelling requirements – at least indirectly due to the intended influence on consumer behaviour. In view of this, it is assumed in the matter at hand that the labelling of climate-friendly basic materials is to be classified as product-related PPMs and is thus subject to the TBT Agreement.

Where mandatory labels constitute “technical regulations”, they must meet the **requirements under Article 2 TBT Agreement**. According to this provision, countries shall not be prevented by the Agreement from taking necessary measures to protect the life and health of humans, animal or plants or the environment. However, “technical regulations” based on these legitimate objectives must not be more trade-restrictive than necessary to fulfil a legitimate objective. The measures must also be transparent and non-discriminatory. Whether mandatory labels remain within these limits of what is necessary and

do not have a discriminatory effect, depends on their specific design. There is a strong argument that the mandatory labelling of climate-friendly basic materials is in line with the requirements under Article 2 TBT Agreement as it is aimed only at quantifying the CO₂ content of basic materials but not at excluding, in principle, the trade in CO₂-intensive basic materials.

With regard to the **standards** for the determination of CO₂ emissions (CO₂ tracking) that **form the basis** for the labelling of climate-friendly basic materials, compliance with the **requirements relating to conformity assessment procedures** is necessary. According to Article 6.1 TBT Agreement, the parties to the TBT Agreement are to recognise, among other things, the conformity assessment procedures of other members, even when they differ from their own. Such recognition may, however, be made subject to the condition that those procedures offer an assurance of conformity with technical regulations or standards equivalent to their own procedures. This should also be taken into account when fleshing out the instrument.

The **notification procedure** must also be complied with: According to the TBT Agreement, any planned regulation regarding the introduction of mandatory labels for climate-friendly basic materials must be notified to and adopted by the WTO.

II. General Agreement on Tariffs and Trade 1994 (GATT 1994)

The mandatory labelling of climate-friendly basic materials is also likely to be subject to the General Agreement on Tariffs and Trade 1994 (GATT 1994). In particular, the most-favoured-nation clause in Article I:1 GATT 1994 and the non-discrimination clause in Article III:4 GATT 1994 are to be observed. In the event of a breach of the GATT 1994 rules by the labelling of climate-friendly basic materials, a justification pursuant to Article XX lit. b) or g) GATT 1994 may come into consideration.

¹ Cf. Tietje, in: Grabitz/Hilf, Das Recht der Europäischen Union (European Union Law), 40th edition 2009, E29, marg. no. 126 et seqq.

D. EU law

I. Primary Law: Free movement of goods, Article 34 TFEU

When it comes to the labelling of climate-friendly basic materials, the **free movement of goods** pursuant to Article 34 TFEU is to be observed. It protects cross-border trade in goods in the common internal market against quantitative restrictions on imports and measures having an equivalent effect. According to the **Dassonville judgment** of the European Court of Justice (ECJ), measures which are capable of hindering, directly or indirectly, actually or potentially, intra-Community trade are to be considered as measures having an effect equivalent to quantitative restrictions on imports.² In its **Keck judgment**, the ECJ limited the broad interpretation of measures having an equivalent effect under the Dassonville formula and excluded certain selling arrangements from the scope of Article 34 TFEU.³ However, product labelling requirements are classified by the ECJ as product-related regulations and not as selling arrangements.⁴ Thus, an interference with the free movement of goods is to be assumed in the matter at hand.

It is, therefore, likely that requirements of legal justification for interferences with the free movement of goods must be met in respect of the mandatory labelling of climate-friendly basic materials. Accordingly, the **justification** required for the labelling of climate-friendly basic materials could – irrespective of the specific design in the individual case – be based either on the exhaustive list of grounds for justification in **Article 36 TFEU** or – according to the **Cassis-de-Dijon** judgement⁵ – on **overriding reasons in the public interest**. The ECJ has recognised measures to protect the climate as a

contribution to the protection of the health and life of humans, animals and plants within the meaning of Article 36 TFEU.⁶ Besides, the ECJ has held that the protection of the environment is an “overriding reason” within the meaning of the Cassis-de-Dijon formula.⁷ Insofar as the labelling is to favour climate-friendly basic materials over those causing harm to the climate, it seems possible that the grounds for justification of Article 36 TFEU and, respectively, the “overriding reasons in the public interest” could be invoked when fleshing out the design of such an instrument.

Furthermore, the labelling of climate-friendly basic materials would also have to be **proportionate**. As such labels create transparency with regard to the CO₂ emissions of basic materials, they are, in any case, likely to promote the purchase of products with a smaller CO₂ footprint or that were produced in a carbon-neutral way and are thus a **suitable means** to protect the environment and, respectively, the climate. A design that meets the requirements of suitability seems to be achievable in that regard.

The instrument of labelling climate-friendly basic materials would also have to be **necessary**, i.e. a means that is less restrictive and equally suitable must not be discernible. As a rule, the ECJ focuses on the assessment of necessity when conducting a proportionality assessment.⁸ In contrast to mandatory labels, optional labels for climate-friendly basic materials are, in principle, likely to constitute a means of a less restrictive nature.⁹ However, this is likely to

2 ECJ, judgment of 11/07/1974, C-8/74, EU:C:1974:82.

3 ECJ, judgment of 24/11/1993, joined cases C-267/91 and C-268/91, EU:C:1993:905.

4 ECJ, judgement of 06/07/1995, C-470/93, EU:C:1995:224.

5 ECJ, judgment of 20/02/1979, C-120/78, EU:C:1979:42.

6 ECJ, judgement of 13/03/2001, C-379/98, EU:C:2001:160, marg. nos. 75, 81.

7 ECJ, judgment of 14/07/1998, C-284-95, EU:C:1998:352, marg. no. 8.

8 Leible, in: Grabitz/Hilf/Nettesheim, AEUV (TFEU), Article 34, marg. no. 125.

9 In this respect, reference is to be made, by way of example, to the Ecodesign Directive (Directive 2009/125/EC). For reasons of necessity, recital 18 gives priority to alternative courses of action, such as self-regulation by the

hold true only where companies that participate voluntarily in such a labelling scheme are concerned. It appears questionable whether the same can be said for companies which do not participate (voluntarily) in the labelling of climate-friendly basic materials, but which are nonetheless incidentally burdened by the labelling (falling behind competitors due to non-labelling).

This means that, depending on the design and justification, also mandatory labels could prove to be necessary if a voluntary labelling scheme is not equally suitable, for example, due to a lack of acceptance in the industry or due to a lack of international scope. In the end, member states should be allowed a certain **margin of discretion** in this respect so that also a direct introduction of mandatory labels could be considered necessary – provided that the respective design is justified appropriately.

Furthermore, the labelling of climate-friendly basic materials would also have to be **appropriate**, i.e. the restrictions on the free movement of goods associated therewith must not be disproportionate to the purpose pursued. In this respect, it is to be considered that Article 191 TFEU attaches great importance to the objectives and principles of Community policy on the environment specified therein. National environmental measures are, therefore, likely to justify relatively far-reaching restrictions. However, the assessment of appropriateness plays only a minor role in the case law of the ECJ. As a rule, the assessment of appropriateness does not entail a weighing of interests that goes beyond the assessment of necessity.¹⁰

industry, over the adoption of corresponding legislative measures unless market forces fail to evolve in the right direction or at an acceptable speed.

10 Leible, in: Grabitz/Hilf/Nettesheim, AEUV (TFEU), Article 34, marg. no. 127 with further references.

II. Secondary law

First, the **EU Energy Labelling Regulation**¹¹ might be of relevance here. The subject matter of this regulation is the provision of standard product information regarding energy efficiency, the consumption of energy and of other resources by certain groups of products (e.g. washing machines, TVs, heating systems) *during their use*, Article 1 EU Energy Labelling Regulation. Hence, the EU Energy Labelling Regulation does not cover the labelling of climate-friendly basic materials for creating transparency regarding energy consumption and, respectively, the CO₂ content of *the basic materials* in a product. It is to be noted, however, that the regulation opens up the possibility of providing supplementary information, for example, on the environmental performance of products in line with the objective to promote a circular economy.¹² It is unclear whether the CO₂ content of the basic materials is to be classified as supplementary information within the meaning of the regulation. The labelling of climate-friendly basic materials within the meaning of the instrument at hand is, however, not likely to run counter to the regulation.

However, the **Ecodesign Directive**¹³ is likely to be relevant. This directive aims at reducing the environmental impacts of energy-related products (excluding

11 Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU.

12 Recital 36 of the EU Energy Labelling Regulation.

13 Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products. The Ecodesign Directive was transposed into German law under the German Energy-related Products Act (Gesetz über die umweltgerechte Gestaltung energieverbrauchsrelevanter Produkte – EVPG). In this regard, see also, among others: Dietrich, Das Energieverbrauchsrelevante-Produkte-Gesetz – Deutscher Rechtsrahmen für Europäische Ökodesign-Vorschriften (The Energy-related Products Act – German framework for European Ecodesign Requirements), NVwZ 2012, 598 et seqq.

means of transport), throughout their entire life cycle. Environmental impacts means any and all changes to the environment wholly or partially resulting from a product during its life cycle, Article 2 no. 12 Ecodesign Directive. CO₂ and other GHG emissions also constitute environmental impacts (cf. Article 11 TFEU). According to Annex I, Part 1 of the Ecodesign Directive, the life cycle of an energy-related product also includes the early stages of “raw material selection and use” which become relevant in regard to a labelling of climate-friendly basic materials.

The Ecodesign Directive is a framework directive, i.e. the specific requirements for the different product groups are laid down by comitology in implementing acts of the Commission pursuant to Article 15 in conjunction with Article 19(3) Ecodesign Directive.

This means: With regard to basic materials that are used in non-energy-related products, it is likely that there are no restrictions or requirements in terms of the mandatory labelling of basic materials arising from the Ecodesign Directive. The same is likely to apply also to basic materials that are used in the automotive sector since means of transport are excluded from the scope of the Ecodesign Directive. To the extent that basic materials are to be used in energy-related products, it is to be taken into account that the directive aims at a full harmonisation.¹⁴ Therefore, particularly the regulation in Article 6(1) Ecodesign Directive on the free movement of products which are in conformity with the directive is to be observed. In this respect, an examination on a case-by-case basis is likely to be necessary to determine whether the ecodesign parameters “raw material selection and use” in the applicable

implementing measure are relevant for an energy-related product and to verify that the product meets all relevant requirements of the applicable implementing measure in that regard. If this is the case, the inclusion of such basic materials in a scheme for the labelling of climate-friendly materials which goes beyond the implementing acts is likely to be inadmissible.

However, where there are no implementing acts with regard to the “early” ecodesign parameters which are of interest here, it would nonetheless be questionable whether labelling schemes for climate-friendly basic materials could be introduced at national level outside the framework of the Ecodesign Directive. It is true that ecodesign requirements have specific legal effects only on the basis of implementing measures. However, a national level of protection that goes beyond the Ecodesign Directive is nevertheless only likely to be admissible subject to the requirements of Article 114(4) TFEU and the approval of the Commission pursuant to Article 114(6) TFEU. To the extent that basic materials in energy-related products are to be covered by the instrument at hand, a more thorough examination in respect of the Ecodesign Directive should thus be carried out and the input of the Commission should be sought.

Finally, the following is to be noted: Basic materials do not constitute “products” within the meaning of the Ecodesign Directive. According to Article 2(1) Ecodesign Directive, not only energy-using and energy-relevant products but also parts intended to be incorporated into an energy-related product covered by this directive are “products” within the meaning of the directive. But only if they are placed on the market as individual parts for end-users. These prerequisites are not likely to be met with regard to basic materials.

Basic materials, however, are likely to be “components” within the meaning of the directive, cf. Article 2 no. 2 Ecodesign Directive. According to Article 11 Ecodesign Directive, implementing

14 Heselhaus, Rechtsvergleich bestehender rechtlicher Maßnahmen in der Europäischen Union und ausgewählten Staaten sowie der Schweiz zur Förderung der Kreislaufwirtschaft im Konsumbereich (Comparative analysis of existing legal measures in the European Union and selected states as well as Switzerland regarding the promotion of the circular economy in the consumer sector), 2019, p. 105, available at <https://bit.ly/3srcstM>.

measures may require, among other parties, a manufacturer of such components to provide the manufacturer of a product covered by implementing measures with relevant information on the material composition and the consumption of energy, materials and/or resources of the components or sub-assemblies.

In our opinion, this provision in Article 11 Ecodesign Directive could be referred to as the basis for introducing a labelling obligation for climate-friendly basic materials at European level. However, as a prerequisite in this regard it is probably necessary to extend the scope of application of the directive so as to cover not only energy-related products (for more information see section F. "Suggestions for design").

E. National constitutional law

I. Environmental protection as a state objective (Article 20a German Basic Law (GG)) and the state duty to protect fundamental rights

Mindful also of the responsibility towards future generations, Article 20a Basic Law defines the protection of the natural foundations of life as a **state objective** (*Staatsziel*). Furthermore, the objective legal dimension of the right to life and physical integrity (Article 2 subs. 2 sentence 1 Basic Law) also includes a **state duty to protect** the foundations of human life as a **fundamental right**. However, both environmental protection as a state objective and the state duties to protect fundamental rights merely constitute objective constitutional law. This means that they entail primarily constitutional tasks that the legislator is entrusted with in regard to the question as to "whether" the natural foundations are protected by the state. Furthermore, as regards the "how" of state protection, the democratically legitimised legislator has ample **room for manoeuvre**. Therefore, there are no specific constitutional provisions resulting from the state objective of environmental protection or the fundamental duty to protect the foundations of

human life. This means that, in our understanding, a specific obligation of the state to introduce a labelling scheme for climate-friendly basic materials cannot be deduced from Article 20a Basic Law. Moreover, it is not possible to discern from Article 20a Basic Law that the tasks of public environmental protection would always have to be carried out by the state itself mindful of **its responsibility to perform these tasks** (*eigene Erfüllungsverantwortung*). Instead, the state may also rely on **society's self-regulation** in this respect.¹⁵ It is also unlikely that the recent order of the Federal Constitutional Court (*Bundesverfassungsgericht* – BVerfG) of 24/03/2011 – court ref. 1 BvR 2656/18 – regarding the Climate Protection Act has fundamentally changed that.

II. Fundamental rights as limits to the labelling of climate-friendly basic materials

Besides, the labelling of climate-friendly basic materials is likely to give rise to fundamental rights issues with regard to the core function of fundamental rights as rights of defence against the state. In any case, the labelling of climate-friendly basic materials affects the **occupational freedom** of companies and is, therefore, covered by the uniform scope of protection under Article 12 subs. 1 sentence 1 Basic Law.¹⁶ It is true that in its **Glycol judgment**, the Federal Constitutional Court held that the publication of official information by the state is not covered by the scope of protection guaranteed by Article 12 subs. 1 Basic Law ("*Gewährleistungsgesamt*"), which might also include the labelling of climate-friendly basic materials. However, this approach of narrowing the scope of protection of Article 12 subs. 1 Basic Law has

15 Schulze-Fielitz, in Dreier, GG (Basic Law), Article 20a, marg. no. 58; for detailed information see: Hoppe, VVDStRL 38 (1980), p. 81.

16 On the uniform scope of protection with regard to occupational freedom: Scholz, in: Maunz/Dürig, Article 12, marg. no. 1. To be noted in that regard: the protection guaranteed by Article 12 Basic Law does not apply to foreigners. Occupational freedom is protected in that regard on the basis of the right to general freedom to act, Article 2 subs. 1 Basic Law.

predominantly been met with disapproval in the legal literature.¹⁷ Even the Federal Constitutional Court appears to have departed from this approach in the meantime.¹⁸

In addition to occupational freedom, the **freedom of property** (*Eigentumsfreiheit*) of companies (Article 14 subs. 1 sentence 1 Basic Law) is often affected as well, particularly in the event of economic control measures insofar as not only the opportunities of companies to acquire property are affected but also the already acquired property protected by Article 14 subs. 1 Basic Law.¹⁹ In that regard, it is, however, to be borne in mind that the labelling of climate-friendly basic materials is indirectly aimed at reducing the CO₂ emissions during the production of the basic materials (and, as the case may be, also the end products), which could have an adverse effect on investments in production facilities already made by the companies. However, it appears to be questionable whether this can be attributed to the labelling instrument since labelling cannot be equated with a ban on CO₂-intensive products. Freedom of property will, therefore, not be addressed in detail in the following.

However, the question as to whether and, if yes, to what extent the labelling of climate-friendly basic materials constitutes **an interference in a fundamental right** at all (in this case: the occupational freedom of the companies affected) needs to be examined more closely. According to the "modern concept of interference" (*moderner Eingriffsbegriff*), any state action which makes behaviour protected by a fundamental right more difficult constitutes an interference in a fundamental right. Another

prerequisite for an interference is a certain degree of significance (so-called minimum threshold (*Bagatell-vorbehalt*)) and – with a view to occupational freedom – its inherent regulatory effects on occupations (*berufsregelnde Tendenz*). It may be readily assumed that the **mandatory labelling** of climate-friendly basic materials constitutes an interference having a certain degree of significance and inherent regulatory effects on occupations.

The labelling of climate-friendly basic materials is, therefore, likely to be subject to the **requirements of legal justification pursuant to Article 12 subs. 1 Basic Law**. Accordingly, a **legal basis** ("by a law") or, at any rate, a **legal authorisation to issue ordinances** (*Verordnungsermächtigung*) ("pursuant to a law") is initially required for such a labelling scheme for climate-friendly basic materials. The aim to be achieved by the labelling of climate-friendly basic materials, i.e. the purchase of CO₂-neutral products by the consumer, should easily constitute a **reasonable consideration of the common good** within the meaning of the three-stage theory (*Drei-Stufen-Theorie*) of the Federal Constitutional Court.

Finally, also the **principle of proportionality** must be observed. As regards the **suitability and necessity** of the labelling of climate-friendly basic materials, reference can be made first of all to what has been stated above with regard to the free movement of goods pursuant to Article 34 TFEU. This is, as a rule, not likely to result in essential restrictions for the legislator because of the fact that he enjoys a **broad prerogative of assessment** with regard to the suitability and necessity of a measure.

The **appropriateness** of the labelling of climate-friendly basic materials must, however, be examined more closely. As a rule, the assessment of the appropriateness of a measure constitutes the core of the proportionality assessment in the national context. A final assessment in this respect can only be made once the concrete design of the instrument has been determined. In this context, the following

17 Ruffert, in: Epping/Hillgruber, BeckOK Grundgesetz (Basic Law), Article 12, marg. no. 50.

18 Judgment of the Federal Constitutional Court BVerfGE 148, 40 (51) – Consumer information.

19 Cf. on the relation of Article 12 subs. 1 and Article 14 GG: Ruffert, in Epping/Hillgruber, BeckOK GG, 46th edition 2021, Article 12, marg. no. 161.

aspects could be relevant with regard to appropriateness:

If, in a first step, one only considers a possible **burden due to the labelling**, such burden in itself is, at best, likely to be only a minor and therefore absolutely appropriate interference in a fundamental right. Questions of appropriateness ultimately arise particularly with regard to the need for investment in new facilities which results from a labelling obligation and, respectively the requirement to provide evidence of the CO₂ emissions caused, i.e. CO₂ tracking. **Two things can be noted** in that regard:

Firstly, a possible need for investment in new, less CO₂-intensive or CO₂-neutral production technologies and facilities can only indirectly, if at all, be attributed to a labelling scheme for climate-friendly basic materials. While the labelling of climate-friendly basic materials in the form of **transparency** and **quality labels** aims at influencing the purchase decisions of consumers in favour of (end) products that are CO₂-neutral or involve a comparatively lower degree of CO₂ emissions, it does **not** include **a ban on the sale of CO₂-intensive products**.

Secondly, **CO₂-tracking** is **not** likely to be carried out **exclusively for the purpose of the labelling** of basic materials. Instead, such tracking will likely become necessary in the future for a number of other reasons. Therefore, it is likely to be assumed that only a proportion of the onerous effect resulting therefrom is to be attributed to the labelling instrument regarding climate-friendly basic materials. For the assessment of the appropriateness of the labelling of climate-friendly basic materials, it would, therefore, be principally appropriate if the CO₂ tracking was also necessary to implement other, in particular, product-related instruments, e.g. aimed at the CO₂-pricing of (end) products.

For reasons of appropriateness, it is, principally, likely to be necessary to **gradually introduce** a mandatory labelling of climate-friendly basic materials and the

transparency and quality standards associated therewith. However, concrete requirements in that regard cannot be inferred from the principle of proportionality and, respectively, appropriateness.

F. Suggestions for design

The mandatory labelling of climate-friendly basic materials requires a legal basis, particularly due to the interference in the fundamental rights of the affected companies arising from CO₂-tracking (in this case: occupational freedom).

In order to ensure the appropriateness of the labelling of climate-friendly basic materials, a gradual implementation of such a labelling scheme appears to be necessary. For example, individual basic materials could be gradually included in the labelling instrument. For the establishment of quality standards, it is appropriate in that regard to first use as point of reference the amount of the standardised estimated average CO₂ content of the energy source used to produce the basic material and at a later stage apply more precise methods to determine the concrete CO₂ content of the in fact used basic materials. In any case, it cannot be ruled out that in this way the onerous effect of the necessary CO₂ tracking on the manufacturers of basic materials can be mitigated considerably. A CO₂ content per tonne of basic material determined in this way could then be measured up and evaluated against a benchmark specific to the basic material.

The Ecodesign Directive is likely to be of crucial importance when it comes to the design of a labelling scheme for climate-friendly basic materials. Not only could the Ecodesign Directive run counter to a labelling scheme for climate-friendly basic materials to be introduced outside this legal framework – at least, where the basic materials are used in energy-relevant products. But, above all, the Ecodesign Directive provides an already existing and suitable legal framework for a European-wide gradual

introduction of labels identifying climate-friendly basic materials. In addition to Article 11 already mentioned above, it is in particular also Article 14 lit. b) Ecodesign Directive that should be noted. This provision lays down that, in accordance with the applicable implementing measures, manufacturers of products shall ensure (in the form they deem appropriate) that consumers are provided with the ecological profile²⁰ of the product.

In order to introduce a European-wide labelling of climate-friendly basic materials within the framework of the Ecodesign Directive, it is likely to be necessary to develop this Directive further. In its current version, the Directive focuses particularly on increasing energy efficiency to reduce the environmental impacts of products. This focus would have to be extended by specifically focusing also on the emissions of the basic materials used to produce the product. Furthermore, the scope of the Directive would have to be extended beyond energy-using and energy-relevant products so as to cover all products. It could also be considered to no longer exempt means of transport from the scope of its application.

20 See Article 2 no. 20 Ecodesign Directive: "Ecological profile" means a description, in accordance with the implementing measure applicable to the product, of the inputs and outputs (such as materials, emissions and waste) associated with a product throughout its life cycle which are significant from the point of view of its environmental impact and are expressed in physical quantities that can be measured.

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Agora Energiewende develops scientifically sound, politically feasible ways to ensure the success of the energy transition – in Germany, Europe and the rest of the world. The organization works independently of economic and partisan interests. Its only commitment is to climate action.



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