CA 1

Article 2

Definitions

For the purposes of this Directive, the relevant definitions in Directive 2009/72/EC of the European Parliament and of the Council ([5]) apply.

([1]) OJ L 123, 12.5.2016, p. 1.

([2]) Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

([3]) OJ C 369, 17.12.2011, p. 14.

- Council Directive 2013/18/EU of 13 May 2013 adapting Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, by reason of the accession of the Republic of Croatia (OJ L 158, 10.6.2013, p. 230).
- Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market

in electricity and repealing Directive 2003/54/EC (OJ L 211, 14.8.2009, p. 55).

The following definitions also apply:

- 'energy from renewable sources' or 'renewable energy' means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ***osmotic energy, (Renew 375)*** ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas;

(1a) 'quality roundwood' means roundwood felled or otherwise harvested and removed, whose characteristics, such as species, dimensions, rectitude, and node density, make it suitable for industrial use, as defined and duly justified by Member States according to the relevant forest conditions. This does not include pre-commercial thinning operations or trees extracted from forests affected by fires, pests, diseases or damage due to abiotic factors ;

(1aa) 'innovative renewable energy technology' means a renewable energy generation technology that improves in at least one way comparable state-of-the-art renewable energy technologies or makes exploitable a largely untapped renewable energy resource and involves a clear degree of risk, in technological, market or financial terms, which is higher than the risk generally associated with comparable non-innovative technologies or activities;

- 'ambient energy' means naturally occurring thermal energy and energy accumulated in the environment with constrained boundaries, which can be stored in the ambient air, excluding in exhaust air, or in surface or sewage

CA 2

Article 3

Binding overall Union target for 2030

- ~~Member States shall collectively ensure that the share of energy from renewable sources in the Union's gross final consumption of energy in 2030 is at least 32 %. The Commission shall assess that target with a view to submitting a legislative proposal by 2023 to increase it where there are further substantial costs reductions in the production of renewable energy, where needed to meet the Union's international commitments for decarbonisation, or where a significant decrease in energy consumption in the Union justifies such an increase.~~ **Member States shall collectively ensure that the share of energy from renewable sources in the Union's gross final consumption of energy in 2030 is at least 45%.**

In order to promote the production and use of renewable energy from innovative renewable energy technologies and **to safeguard the Union's industrial competitiveness, each Member State shall set an indicative target of at least 5 % of new installed renewable energy capacity between [entry into force of the directive] and 2030 as innovative renewable energy technology.**

In order to facilitate further penetration of renewable electricity and to increase the flexibility and balancing services, Member States shall set an indicative target for storage technologies.

To support the cost-effective achievement of this target and the achievement of system efficiency, ***Member States shall set a minimum indicative national target for demand-side flexibility corresponding to a reduction of 5% of peak electricity demand by 2030***. This target should be achieved through the activation of demand-side flexibility in all end-use sectors, including through buildings renovation and energy efficiency respectively in accordance with [revised directive (EU) 2018/844] and [revised directive (EU) 2018/2002].

The national demand-side flexibility target, including intermediate milestones, shall be specified in the national objectives set out by Member States in their integrated energy and climate plans to increase system flexibility, in accordance with article 4(d)(3) of the regulation (EU) 2018/1999. When needed, the European Commission could take complementary measures to support the Members States to fulfil their target.

Each Member State shall identify in its integrated energy and climate plan, in accordance with Article 4, point (d), point (3), of Regulation (EU) 2018/1999. (RE393) the measures needed to meet the target referred to in paragraph 1 subparagraph 2 and 3.

- Member States shall set national contributions to meet, collectively, the binding overall Union target set in paragraph 1 of this Article as part of their integrated national energy and climate plans in accordance with Articles 3 to 5 and 9 to 14 of Regulation (EU) 2018/1999. In preparing their draft integrated national energy and climate plans, Member States may consider the formula referred to in Annex II to

that Regulation.

If, on the basis of the assessment of the draft integrated national energy and climate plans submitted pursuant to Article 9 of Regulation (EU) 2018/1999, the Commission concludes that the national contributions of the Member States are insufficient for the collective achievement of the binding overall Union target, it shall follow the procedure laid down in Articles 9 and 31 of that Regulation.

- ~~Member States shall ensure that their national policies, including the obligations deriving from Articles 25 to 28 of this Directive, and their support schemes, are designed with due regard to the waste hierarchy as set out in Article 4 of Directive 2008/98/EC to aim to avoid undue distortive effects on the raw material markets. Member States shall grant no support for renewable energy produced from the incineration of waste if the separate collection obligations laid down in that Directive have not been complied with.~~ **Member States shall take measures to ensure that energy from biomass is produced in a way that minimises undue distortive effects on the biomass raw material market and harmful impacts on biodiversity, the environment and the climate. To that end , they shall take into account the waste hierarchy as set out in Article 4 of Directive 2008/98/EC and the cascading principle referred to in the third subparagraph As part of the measures referred to in the first subparagraph:**
- **Member States shall grant no support for:**
- **the use of saw logs, veneer logs, stumps and roots to produce energy;**
- **the production of renewable energy produced from the incineration of waste if the separate collection and waste hierarchy obligations laid down in Directive 2008/98/EC have not been complied with;**
- **practices which are not in line with the implementing act in the third subparagraph.**
- **Without prejudice to the provisions set out in Article 6, from 31 December 2026, and without prejudice to the obligations in the first sub- paragraph, Member States shall grant no support to the production of electricity from forest biomass in electricity-only-installations, unless such electricity meets at least one of the following conditions:**
    - **it is produced in a region identified in a territorial just transition plan approved by the European Commission, in accordance with Regulation (EU) 2021/… of the European Parliament and the Council establishing the Just Transition Fund due to its reliance on solid fossil fuels, and meets the relevant requirements set in Article 29(11);**
    - **it is produced applying Biomass CO2 Capture and Storage and meets the requirements set in Article 29(11), second subparagraph;**

(ii a) ***it is produced by plants that are already in operation at the date of entry into force of this Directive, for which modifications in the direction of cogeneration are not possible due to the absence of the infrastructure and demand conditions and meet the requirements set***

out in Article 29 (11). Member States shall notify the Commission of the usage of such exemption and justify it by means of verified and up-to-date scientific and technical information. The exemption shall be approved by the Commission.

No later than one year after [the entry into force of this amending Directive], the Commission shall adopt an implementing act on how to apply the cascading principle for forest biomass, in particular on how to minimise the use of quality roundwood for energy production, with a focus on support schemes and with due regard to the highest economic and environmental added-value and national specificities including wildfire prevention and salvage logging. By 2026 the Commission shall present a report on the impact of the Member States' support schemes for biomass, including on biodiversity, climate, environment and possible market distortions, and will assess the support schemes to forest biomass.

- From 1 January 2021, the share of energy from renewable sources in each Member State's gross final consumption of energy shall not be lower than the baseline share shown in the third column of the table in Part A of Annex I to this Directive. Member States shall take the necessary measures to ensure compliance with that baseline share. If a Member State does not maintain its baseline share as measured over any one-year period, the first and second sub paragraphs of Article 32(4) of Regulation (EU) 2018/1999 shall apply.

4a. Member States shall establish a framework, which may include support schemes and facilitating the uptake of renewable and co-located energy storage projects as well as energy and renewable heating and cooling purchase agreements, enabling the deployment of renewable energy to a level that is consistent with the Member State's national contribution referred to in paragraph 2 and at a pace that is consistent with the indicative trajectories referred to in Article 4(a)(2) of Regulation (EU) 2018/1999. In particular, that framework shall tackle remaining barriers, including those related to permitting procedures, the establishment of energy community initiatives and the development of the necessary energy transport networks to support a high level of renewable energy supply. When designing that framework, Member States shall take into account the additional renewable energy and storage infrastructures required to meet demand in the transport, industry, building and heating and cooling sectors and for the production of renewable fuels of non- biological origin.

In conformity with the energy efficiency first principle, Member States should ensure the flexible consumption, trade and storage of renewable electricity in these end-use sectors to help its penetration in a cost-effective way.

Member States may include a summary of the policies and measures under the enabling framework and an assessment of their implementation respectively in their integrated national energy and climate plans and progress reports, pursuant to Regulation (EU) 2018/1999.

Member States may ensure that the expected increase in demand for electricity beyond the current baseline is taken into account in the national renewable energy targets and included in the National Energy and Climate Plans.

- The Commission shall support the high ambition of Member States through an enabling framework comprising the enhanced use of Union funds, including additional funds to facilitate a just transition of carbon intensive regions towards increased shares of renewable energy, in particular financial instruments, especially for the following purposes:

- reducing the cost of capital for renewable energy projects;

- developing projects and programmes for integrating renewable sources into the energy system, for increasing flexibility of the energy system, for maintaining grid stability and for managing grid congestions;

- developing transmission and distribution grid infrastructure, intelligent networks, storage facilities and interconnections, with the objective of arriving at a 15 % electricity interconnection target by 2030, in order to increase the technically feasible and economically affordable level of renewable energy in the electricity system;

- enhancing regional cooperation between Member States and between Member States and third countries, through joint projects, joint support schemes and the opening of support schemes for renewable electricity to producers located in other Member States.

- The Commission shall establish a facilitative platform in order to support Member States that use cooperation mechanisms to contribute to the binding overall Union target set in paragraph 1.

Related recitals:

(3) Directive (EU) 2018/2001 of the European Parliament and of the Council sets a binding Union target to reach a share of at least 32 % of energy from renewable sources in the Union's gross final consumption of energy by 2030. Under the Climate Target Plan, the share of renewable energy in gross final energy consumption would need to increase to ***45***% by 2030 in order to achieve the Union's greenhouse gas emissions reduction target. Therefore, the target set out in Article 3 of that Directive needs to be increased.

(3a) In line with the Commission recommendation of 28 September 2021 entitled "On Energy Efficiency First: from principles to practice. Guidelines and examples for its implementation in decision-making in the energy sector and beyond", this Directive should take an integrated approach by promoting the most energy efficient renewable source for any given sector and application, as well as by promoting system efficiency, so that the least energy is required for different economic activities.

(3b) In line with the REPowerEU Communication, boosting the production of sustainable biomethane to at least 35 bcm by 2030 is a cost-efficient path to

increase the share of renewable energy and diversify of EU gas supply, thereby supporting security of supply and EU climate ambitions. The Commission should develop an EU strategy to address the regulatory barriers to scale biomethane production and integration to the EU internal gas market.

(3c) *To support the cost-effective achievement of the renewable energy target and the electrification of end-use sectors, while empowering and rewarding households and industries to play an active part in securing and decarbonising the EU energy system, Member States shall ensure that the national regulatory framework enables the reduction of the peak electricity demand through the activation of demand-side flexibility in all end-use sectors. To that end, Member States could introduce in their integrated energy and climate plans, minimum targets for the reduction of the peak electricity demand of at least 5% by 2025, to be increased to at least 10% by 2030, to increase system flexibility, in accordance with article 4(d)(3) of the regulation (EU) 2018/1999.*

(4) There is a growing recognition of the need for alignment of bioenergy policies with the cascading principle of biomass use, with a view to ensuring fair access to the biomass raw material market for the development of innovative, high value-added bio-based solutions and a sustainable circular bioeconomy. When developing support schemes for bioenergy, Member States should therefore take into consideration the available sustainable supply of biomass for energy and non-energy uses and the maintenance of the national forest carbon sinks and ecosystems, ***the protection of biodiversity (S&D 114)*** as well as the principles of the circular economy and the biomass cascading use, and the waste hierarchy established in Directive 2008/98/EC of the European Parliament and of the Council. For this, they should grant no support to the production of energy from saw logs, veener logs, stumps and roots**. However they should be able to grant support for the production of energy from stumps or roots in the case of waste or residues derived from the implementation of works carried out with the primary objective of nature conservation and landscape management, such as from roadsides**. ***In any event, Member States should*** avoid promoting the use of quality roundwood for energy except in well-defined circumstances, ***for example wildfire prevention and salvage logging (S&D 114)***. In line with the cascading principle, woody biomass should be used according to its highest economic and environmental added value in the following order of priorities: 1) wood-based products, 2) extending their service life, 3) re-use, 4) recycling, 5) bio-energy and 6) disposal. Where no other use for woody biomass is economically viable or environmentally appropriate, energy recovery helps to reduce energy generation from non-renewable sources. Member States' support schemes for bioenergy should therefore be directed to such feedstocks for which little market competition exists with the material sectors, and whose sourcing is considered positive for both climate and biodiversity, in order to avoid negative incentives for unsustainable bioenergy pathways, as identified in the JRC report 'The use of woody biomass for energy production in the EU'. On the other hand, in defining the further implications of the cascading principle, it is necessary to recognise the national specificities, which guide Member States in the design of their support schemes. Waste prevention, reuse and recycling of waste should be the priority option. Member States should avoid creating support schemes which would be counter to targets on treatment of waste and which would lead to the inefficient use of recyclable waste. Moreover, in order to ensure a more efficient use of bioenergy, from 2026 on Member States should not give support anymore to electricity-only plants, unless the installations are in regions with a specific use status as regards their transition away from fossil fuels or if the installations use carbon capture and storage ***or if the installations cannot be modified in a direction to cogeneration in exceptional justified cases upon approval by the Commission.***

(5) The rapid growth and increasing cost-competitiveness of renewable electricity production can be used to satisfy a growing share of energy demand, for instance using heat pumps for space heating or low-temperature industrial processes, electric vehicles for transport, or electric furnaces in certain industries. Renewable electricity can also be used to produce synthetic fuels for consumption in hard-to-decarbonise transport sectors such as aviation and maritime transport. ***Innovative technologies in connections with a dedicated target should be developed, as they could contribute towards the 2030 climate goals as well as the 2050 climate targets.*** A framework for electrification needs to enable robust and efficient coordination and expand market mechanisms to match both supply and demand in space and time, stimulate investmnts in flexibility, ***energy storage, demand response and other flexibility mechanisms*** and help integrate large shares of variable renewable generation. Member States should therefore***, while taking account of the energy efficiency first principle*** ensure that the deployment of renewable electricity continues to increase at an adequate pace to meet growing demand***, including by coordinating import strategies at Union level, while also ensuring that demand flexibly adapts to renewable energy generation.*** For this, Member States should establish a framework that includes market-compatible mechanisms to tackle remaining barriers to have secure and adequate electricity systems fit for a high level of ***flexible*** renewable energy, as well as storage facilities, fully integrated into the electricity system. In particular, this framework shall tackle remaining barriers, including non-financial ones such as insufficient digital and human resources of authorities to process a growing number of permitting applications.

(5a) Innovative technologies, such as hybrid heat pumps, need to be developed and used within the criteria of Directive (EU) 2018/2001, as they can be used as a transition technology towards the 2030 climate goals as well as contributing to the achievement of the 2050 climate targets.

CA 3

Article 7

Calculation of the share of energy from renewable sources

1. The gross final consumption of energy from renewable sources in each Member State shall be calculated as the sum of:

- gross final consumption of electricity from renewable sources;
- gross final consumption of energy from renewable sources in the heating and cooling sector; and
- final consumption of energy from renewable sources and fuels in the transport sector.

~~With regard to point (a), (b), or (c) of the first subparagraph, gas, electricity and hydrogen from renewable sources shall be considered only once for the purposes of calculating the share of gross final consumption of energy from renewable sources.~~ With regard to the first subparagraph, point (a), (b), or (c), gas and electricity from renewable sources shall be considered only once for the purposes of calculating the share of gross final consumption of energy from renewable sources. Energy produced from renewable fuels of non-biological origin shall be accounted in the sector - electricity, heating and cooling or transport - where it is consumed. Where renewable fuels of non-biological origin are consumed in a Member State different from the one where they have been produced, unless agreed otherwise between Member States concerned, energy generated by the use of RFNBOs shall be accounted for 80% of their volume in the country and sector where it is consumed and for 20% of their volume in the country where it produced, In order to monitor and avoid any double counting, the Commission shall be notified of any such agreement including the exact volumes of the supply and demand, the times of the transfer and the date by which the arrangement will become operational. The Commission shall make available information on the concluded agreements, including their timing, volume, price and any additional conditions. For the purposes of the targets referred to in Articles 15a, 22a, 23(1), 24(4) and 25(1), the renewable fuels of non-biological origin shall be accounted for 100% of their volume in the country where they are consumed.

Subject to the second subparagraph of Article 29(1), biofuels, bioliquids and biomass fuels that do not fulfil the sustain ability and greenhouse gas emissions saving criteria laid down in Article 29(2) to (7) and (10) shall not be taken into account.

2. ~~For the purposes of point (a) of the first subparagraph of paragraph 1, gross final consumption of electricity from renewable sources shall be calculated as the quantity of electricity produced in a Member State from renewable sources, including the production of electricity from renewables self-consumers and renewable energy communities and excluding the production of electricity in pumped storage units from water that has previously been pumped uphill.~~ For the purposes of paragraph 1, first subparagraph, point (a), gross final consumption of electricity from renewable sources shall be calculated as the quantity of electricity produced in a Member State from

renewable sources, including the production of electricity from renewables self-consumers and renewable energy communities and electricity from renewable fuels of non- biological origin and excluding the production of electricity in pumped storage units from water that has previously been pumped uphill as well as the electricity used to produce renewable fuels of non-biological origin.

In multi-fuel plants using renewable and non-renewable sources, only the part of electricity produced from renewable sources shall be taken into account. For the purposes of that calculation, the contribution of each energy source shall be calculated on the basis of its energy content.

The electricity generated by hydropower and wind power shall be accounted for in accordance with the normalisation rules set out in Annex II.

3. For the purposes of point (b) of the first subparagraph of paragraph 1, gross final consumption of energy from renewable sources in the heating and cooling sector shall be calculated as the quantity of district heating and cooling produced in a Member State from renewable sources, plus the consumption of other energy from renewable sources in industry, households, services, agriculture, forestry and fisheries, for heating, cooling and processing purposes.

In multi-fuel plants using renewable and non-renewable sources, only the part of heating and cooling produced from renewable sources shall be taken into account. For the purposes of that calculation, the contribution of each energy source shall be calculated on the basis of its energy content.

Ambient and geothermal energy used for heating and cooling by means of heat pumps and district cooling systems shall be taken into account for the purposes of point (b) of the first subparagraph of paragraph 1, provided that the final energy output significantly exceeds the primary energy input required to drive the heat pumps. The quantity of heat or cold to be considered to be energy from renewable sources for the purposes of this Directive shall be calculated in accordance with the methodology set out in Annex VII and shall take into account energy use in all end-use sectors.

Thermal energy generated by passive energy systems, under which lower energy consumption is achieved passively through building design or from heat generated by energy from non-renewable sources, shall not be taken into account for the purposes of point (b) of the first subparagraph of paragraph 1.

By 31 December 2021, the Commission shall adopt delegated acts in accordance with Article 35 to supplement this Directive by establishing a methodology for calculating the quantity of renewable energy used for cooling and district cooling and to amend Annex VII.

That methodology shall include minimum seasonal performance factors for heat pumps operating in reverse mode.

4. For the purposes of point (c) of the first subparagraph of paragraph 1, the following requirements shall apply:

- ~~Final consumption of energy from renewable sources in the transport sector shall be calculated as the sum of all biofuels, biomass fuels and renewable liquid and gaseous transport fuels of non-biological origin consumed in the transport sector. However, renewable liquid and gaseous transport fuels of non-biological origin that are produced from renewable electricity shall be considered to be part of the calculation pursuant to point (a) of the first subparagraph of paragraph 1 only when calculating the quantity of electricity produced in a Member State from renewable sources~~. Final consumption of energy from renewable sources in the transport sector shall be calculated as the sum of all biofuels, biogas, and renewable fuels of non-biological origin consumed in the transport sector.

- For the calculation of final consumption of energy in the transport sector, the values regarding the energy content of transport fuels, as set out in Annex III, shall be used. For the determination of the energy content of transport fuels not included in Annex III, Member States shall use the relevant European Standards Organisation (ESO) standards in order to determine the calorific values of fuels. Where no ESO standard has been adopted for that purpose, Member States shall use the relevant International Organization for Standardisation (ISO) standards.

5. The share of energy from renewable sources shall be calculated as the gross final consumption of energy from renewable sources divided by the gross final consumption of energy from all energy sources, expressed as a percentage.

For the purposes of the first subparagraph of this paragraph, the sum referred to in the first subparagraph of paragraph 1 of this Article shall be adjusted in accordance with Articles 8, 10, 12 and 13.

In calculating a Member State's gross final consumption of energy for the purposes of measuring its compliance with the targets and indicative trajectory laid down in this Directive, the amount of energy consumed in aviation shall, as a proportion of that Member State's gross final consumption of energy, be considered to be no more than 6,18 %. For Cyprus and Malta the amount of energy consumed in aviation shall, as a proportion of those Member States' gross final consumption of energy, be considered to be no more than 4,12 %.

6. The methodology and definitions used in the calculation of the share of energy from renewable sources shall be those provided for in Regulation (EC) No 1099/2008.

Member States shall ensure coherence of the statistical information used in calculating those sectoral and overall shares and of the statistical information reported to the Commission pursuant to that Regulation.

Related recital:

(6) When calculating the share of renewables in a Member State, renewable fuels of non-biological origin should be counted in the sector where they are consumed (electricity, heating and cooling, or transport). ***Where renewable fuels of non-biological origin are consumed in a Member State different from the one where they have been produced, unless agreed otherwise between the Member States concerned, energy generated by the use of renewable fuels of non-biological origin should be accounted for 80% of their volume in the country and sector where it is consumed and for 20% of their volume in the country where it produced. Agreements between Member States can be in the form of a specific cooperation agreement made via the Union Renewable Development Platform (URDP). The Commission should be notified of any such agreements and make available information on them, including the exact volumes of supply and demand, the times of the transfer and the date by which the arrangement will become operational. For the subtargets, the renewable fuels of non-biological origin shall be accounted for 100% of their volume in the country where they are consumed.*** To avoid double-counting, the renewable electricity used to produce these fuels should not be counted. This would result in a harmonisation of the accounting rules for these fuels throughout the Directive, regardless of whether they are counted for the overall renewable energy target or for any sub-target. It would also allow to count the real energy consumed, taking account of energy losses in the process to produce those fuels. Moreover, it would allow for the accounting of renewable fuels of non-biological origin imported into and consumed in the Union.

water;

- ‘geothermal energy’ means energy stored in the form of heat beneath the surface of solid earth;

- ‘gross final consumption of energy’ means the energy commodities delivered for energy purposes to industry, transport, households, services including public services, agriculture, forestry and fisheries, the consumption of electricity and heat by the energy branch for electricity, heat and transport fuel production, and losses of electricity and heat in distribution and transmission;

- ‘support scheme’ means any instrument, scheme or mechanism applied by a Member State, or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased, including but not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and sliding or fixed premium payments;

- ‘renewable energy obligation’ means a support scheme requiring energy producers to include a given share of energy from renewable sources in their production, requiring energy suppliers to include a given share of energy from renewable sources in their supply, or requiring energy consumers to include a given share of energy from renewable sources in their consumption, including schemes under which such requirements may be fulfilled by using green certificates;

- ‘financial instrument’ means a financial instrument as defined in point (29) of Article 2 of Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council ([1]);

- ‘SME’ means a micro, small or medium-sized enterprise as defined in Article 2 of the Annex to Commission Recommendation 2003/361/EC ([2]);

- ‘waste heat and cold’ means unavoidable heat or cold generated as by-product in industrial or power generation installations, or in the tertiary sector, which would be dissipated unused in air or water without access to a district heating or cooling system, where a cogeneration process has been used or will be used or where cogeneration is not feasible;

- ‘repowering’ means renewing power plants that produce renewable energy, including the full or partial replacement of installations or operation systems and equipment for the purposes of replacing capacity or increasing the efficiency or capacity of the installation;

- ‘distribution system operator’ means an operator as defined in point (6) of

Article 2 of Directive 2009/72/EC and in point (6) of Article 2 of Directive 2009/73/EC of the European Parliament and of the Council ([3]);

- 'guarantee of origin' means an electronic document which has the sole function of providing evidence to a final customer that a given share or quantity of energy was produced from renewable sources;

- Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 (OJ L 193, 30.7.2018, p. 1).
- Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises
(OJ L 124, 20.5.2003, p. 36).
- Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC (OJ L 211, 14.8.2009, p. 94).

- 'residual energy mix' means the total annual energy mix for a Member State, excluding the share covered by cancelled guarantees of origin;

- 'renewables self-consumer' means a final customer operating within its premises located within confined boundaries or, where permitted by a Member State, within other premises, who generates renewable electricity for its own consumption, and who may store or sell self-generated renewable electricity, provided that, for a non-household renewables self-consumer, those activities do not constitute its primary commercial or professional activity;

(14a) 'bidding zone' means a bidding zone as defined in Article 2, point (65) of Regulation (EU) 2019/943 of the European Parliament and of the Council;

(14b) 'smart metering system' means smart metering system as defined in Article 2, point (23) of Directive (EU) 2019/944 of the European Parliament and of the Council;

(14c) 'recharging point' means recharging point as defined in point 33 of Article 2, point (33) of Directive (EU) No 2019/944;

(14d) 'market participant' means market participant as defined in point (25) of Article 2, point (25) of Regulation (EU) 2019/943;

(14e) 'electricity market' means electricity market as defined in Article 2, point (9) of Directive 2019/944;

(14f) 'domestic battery' means a stand-alone rechargeable battery of rated capacity greater than 2 kwh, which is suitable for installation and use in a

domestic environment;

(14g) 'electric vehicle battery' means an electric vehicle battery as defined in Article 2, point (12) of [the proposed Regulation concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020];

(14h) 'industrial battery' means industrial battery as defined in Article 2. point (11) of [the proposed Regulation concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020];

(14i) 'state of health' means state of health as defined in point (25) of Article 2, point (25) of [the proposal for a Regulation concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020];

(14j) 'state of charge' means state of charge as defined in Article 2, point (24) of [the proposal for a Regulation concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) 2019/1020];

(14k) 'power set point' means the information held in a battery's management system prescribing the electric power settings at which the battery operates during a recharging or a discharging operation, so that its state of health and operational use are optimised;

(14l) 'smart charging' means a recharging operation in which the intensity of electricity delivered to the battery is adjusted in real-time, based on information received through electronic communication; smart recharging can be realised at normal charging speeds as well as during fast charging through response to dynamic price signals or optimization of power flow; (GR303)

(14m) 'regulatory authority' means regulatory authority defined in Article 2, point (2) of Regulation (EU) 2019/943;

(14n) 'bidirectional charging' means smart charging operation where the direction of the flow may be may be reversed, allowing that electric flow from the battery to the recharging point it is connected to; (GR 306)

(14o) 'normal power recharging point' means 'normal power recharging point' as defined in Article 2 point 31 of [the proposal for a Regulation concerning the deployment of alternative fuel infrastructure, repealing Directive 2014/94/EU];

(14o a) ***'community battery' means a stand-alone rechargeable battery with a rated capacity greater than 50 kWh, which is suitable for installation and use in a residential, commercial or industrial environment and is owned by jointly acting renewable self-consumers or a renewable energy community;***

- 'jointly acting renewables self-consumers' means a group of at least two jointly acting renewables self-consumers in accordance with point (14) who are located in the same building or multi-apartment block;

- ‘renewable energy community’ means a legal entity:

    - which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;

    - the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;

    - the primary purpose of which is to provide environmental, economic or social community benefits***, in conformity with the energy efficiency first principle, (Renew 276)*** for its shareholders or members or for the local areas where it operates, rather than financial profits;

- ‘renewables power purchase agreement’ means a contract under which a natural or legal person agrees to purchase renewable electricity directly from an electricity producer;

(17a) ‘renewables energy purchase agreement’ means a contract under which a natural or legal person agrees to purchase renewable energy directly from a producer, which encompasses, but it is not limited to, renewables power purchase agreements, renewables hydrogen purchase agreements and renewables heating and cooling purchase agreements;

(17b) ‘renewables heating and cooling purchase agreement’ means a contract under which a natural or legal person agrees to purchase renewable heating and cooling directly from a producer; (Greens 296)

(17c) ‘renewables hydrogen purchase agreement’ means a contract under which a natural or legal person agrees to purchase renewable fuels of non-biological origin directly from a producer;

- ‘peer-to-peer trading’ of renewable energy means the sale of renewable energy between market participants by means of a contract with pre-determined conditions governing the automated execution and settlement of the transaction, either directly between market participants or indirectly through a certified third-party market participant, such as an aggregator. The right to conduct peer-to-peer trading shall be without prejudice to the rights and obligations of the parties involved as final customers, producers, suppliers or aggregators;

(18a) ‘industry’ means companies and products that fall sections B, C, F and J, division (63) of the statistical classification of economic activities (NACE REV.2);

(18b) ‘non-energy purpose’ means the use of fuels as raw materials in an industrial process, instead of being used to produce energy;

- ‘district heating’ or ‘district cooling’ means the distribution of thermal energy in the form of steam, hot water or chilled liquids, from central or decentralised sources of production through a network to multiple buildings or sites, for the use of space or

process heating or cooling;

- ‘efficient district heating and cooling’ means efficient district heating and cooling as defined in point (41) of Article 2 of Directive 2012/27/EU;

- ‘high-efficiency cogeneration’ means high-efficiency cogeneration as defined in point (34) of Article 2 of Directive 2012/27/EU;

- ‘energy performance certificate’ means energy performance certificate as defined in point (12) of Article 2 of Directive 2010/31/EU;

(22a) ‘renewable fuels’ means biofuels, bioliquids, biomass fuels and renewable fuels of non-biological origin;

(22aa) ‘energy efficiency first’ has the meaning given to it by Article 2(18) of Regulation (EU) 2018/1999;

(22ab) ***‘offshore renewable hybrid asset’ means a transmission asset serving the dual purpose of connecting offshore renewable energy generation and connecting two or more bidding zones; (Renew 345, Greens 324)***

(22ac) ‘renewable district heating and cooling’ refers to highly energy efficient district heating and cooling systems operating exclusively by renewable energy sources;

- ‘waste’ means waste as defined in point (1) of Article 3 of Directive 2008/98/EC, excluding substances that have been intentionally modified or contaminated in order to meet this definition;

- ‘biomass’ means the biodegradable fraction of products, waste and residues from biological origin from agriculture, including vegetal and animal substances, from forestry and related industries, including fisheries and aquaculture, as well as the biodegradable fraction of waste, including industrial and municipal waste of biological origin;

- ‘agricultural biomass’ means biomass produced from agriculture;

- ‘forest biomass’ means biomass produced from forestry;

- ‘biomass fuels’ means gaseous and solid fuels produced from biomass;

- ‘biogas’ means gaseous fuels produced from biomass;

- ‘biowaste’ means biowaste as defined in point (4) of Article 3 of Directive 2008/98/EC;

- ‘sourcing area’ means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the

sustainability and legality characteristics of the forest biomass;

- 'forest regeneration' means the re-establishment of a forest stand by natural or artificial means following the removal of the previous stand by felling or as a result of natural causes, including fire or storm;

- 'bioliquids' means liquid fuel for energy purposes other than for transport, including electricity and heating and cooling, produced from biomass;

- 'biofuels' means liquid fuel for transport produced from biomass;

- 'advanced biofuels' means biofuels that are produced from the feedstock listed in Part A of Annex IX;

- 'recycled carbon fuels' means liquid and gaseous fuels that are produced from liquid or solid waste streams of non- renewable origin which are not suitable for material recovery in accordance with Article 4 of Directive 2008/98/EC, or from waste processing gas and exhaust gas of non-renewable origin which are produced as an unavoidable and unintentional consequence of the production process in industrial installations;

- ~~'renewable liquid and gaseous transport fuels of non-biological origin' means liquid or gaseous fuels which are used in the transport sector other than biofuels or biogas, the energy content of which is derived from renewable sources other than biomass;~~ **'renewable fuels of non-biological origin' means liquid and gaseous fuels the energy content of which is derived from renewable sources other than biomass**;

(36a) 'renewable hydrogen' means hydrogen produced through the electrolysis of water (in an electrolyser, powered by electricity stemming from renewable sources, or through the reforming of biogas or biochemical conversion of biomass, if in compliance with sustainability criteria set out in Article 29 of Directive (EU) 2018/2001 of the European Parliament and of the Council.

- 'low indirect land-use change-risk biofuels, bioliquids and biomass fuels' means biofuels, bioliquids and biomass fuels, the feedstock of which was produced within schemes which avoid displacement effects of food and feed-crop based biofuels, bioliquids and biomass fuels through improved agricultural practices as well as through the cultivation of crops on areas which were previously not used for cultivation of crops, and which were produced in accordance with the sustainability criteria for biofuels, bioliquids and biomass fuels laid down in Article 29;

- 'fuel supplier' means an entity supplying fuel to the market that is responsible for passing fuel through an excise duty point or, in the case of electricity or where no excise is due or where duly justified, any other relevant entity designated by a Member State;

- 'starch-rich crops' means crops comprising mainly cereals, regardless of whether the grains alone or the whole plant, such as in the case of green maize, are used; tubers and

root crops, such as potatoes, Jerusalem artichokes, sweet potatoes, cassava and yams; and corm crops, such as taro and cocoyam;

- ‘food and feed crops’ means starch-rich crops, sugar crops or oil crops produced on agricultural land as a main crop excluding residues, waste or ligno-cellulosic material and intermediate crops, such as catch crops and cover crops, provided that the use of such intermediate crops does not trigger demand for additional land;

- ‘ligno-cellulosic material’ means material composed of lignin, cellulose and hemicellulose, such as biomass sourced from forests, woody energy crops and forest-based industries' residues and wastes;

- ‘non-food cellulosic material’ means feedstock mainly composed of cellulose and hemicellulose, and having a lower lignin content than ligno-cellulosic material, including food and feed crop residues, such as straw, stover, husks and shells; grassy energy crops with a low starch content, such as ryegrass, switchgrass, miscanthus, giant cane; cover crops before and after main crops; ley crops; industrial residues, including from food and feed crops after vegetal oils, sugars, starches and protein have been extracted; and material from biowaste, where ley and cover crops are understood to be temporary, short-term sown pastures comprising grass-legume mixture with a low starch content to obtain fodder for livestock and improve soil fertility for obtaining higher yields of arable main crops;

- ‘residue’ means a substance that is not the end product(s) that a production process directly seeks to produce; it is not a primary aim of the production process and the process has not been deliberately modified to produce it;

- ‘agricultural, aquaculture, fisheries and forestry residues’ means residues that are directly generated by agriculture, aquaculture, fisheries and forestry and that do not include residues from related industries or processing;

(44a) ‘plantation forest’ means a planted forest that is intensively managed and meets, at planting and stand maturity, all the following criteria: one or two species, even age class, and regular spacing. It includes short rotation plantations for wood, fibre and energy, and excludes forests planted for protection or ecosystem restoration, as well as forests established through planting or seeding which at stand maturity resemble or will resemble naturally regenerating forests;

(44b) ‘planted forest’ means forest predominantly composed of trees established through planting and/or deliberate seeding provided that the planted or seeded trees are expected to constitute more than fifty percent of the growing stock at maturity; it includes coppice from trees that were originally planted or seeded;

(44ba) ‘osmotic energy’ means ***energy naturally created from the difference in salt concentration between two fluids, commonly fresh and salt water;***

(44bb) ***'system efficiency' means an energy system which integrates variable renewables cost-effectively and maximises the value of demand-side flexibility to optimise the transition to climate neutrality, measured in reductions of system investment and operational costs, greenhouse gas emissions and fossil fuel uses in each national energy mix;***

- ‘actual value’ means the greenhouse gas emissions savings for some or all of the steps of a specific biofuel, bioliquid or biomass fuel production process, calculated in accordance with the methodology laid down in Part C of Annex V or Part B of Annex VI;

- ‘typical value’ means an estimate of the greenhouse gas emissions and greenhouse gas emissions savings for a particular biofuel, bioliquid or biomass fuel production pathway, which is representative of the Union consumption;

- ~~‘default value’ means a value derived from a typical value by the application of pre-determined factors and that may, in circumstances specified in this Directive, be used in place of an actual value~~. **‘default value’ means a value derived from a typical value by the application of pre-determined factors and that may, in circumstances specified in this Directive, be used in place of an actual value;**

(47a) ‘renewable hybrid power plant’ means ***a combination of two or more renewable generation technologies which share the same grid connection, and can also integrate storage capacity;***

(47b) ‘co-located energy storage project’ means a project encompassing an energy storage facility and a facility producing renewable energy connected behind the same grid access point;

CA 4

Article 9

Joint projects between Member States

- Two or more Member States may cooperate on all types of joint projects with regard to the production of electricity, heating or cooling from renewable sources. Such cooperation may involve private operators.

1a. Each Member State shall enter into cooperation agreements to establish joint projects with one or more other Member States for the production of renewable energy, including offshore renewable hybrid assets, as follows:

(a) By 31 December 2025, Member States with an annual electricity consumption of 100 TWh or less shall establish at least two joint projects;

(b) By 2030, Member States with an annual electricity consumption of more than 100 TWh shall establish a third joint project.

Such joint projects shall not correspond to the projects of common interest already adopted under Regulation (EU) .../... of the European Parliament and the Council [on guidelines for trans-European energy infrastructure as proposed by COM(2020)0824]. The identification of joint projects shall be based on the needs identified in the high-level strategic integrated offshore network development plans for each sea-basin and the Ten Years Network Development Plan but may go beyond those needs and may involve local and regional authorities and private operators.

Projects financed by national contributions under the Union renewable energy financing mechanism established by Commission Implementing Regulation (EU) 2020/1294 shall be taken into account for the purposes of fulfilling the requirements of the first subparagraph for the Member States involved in those projects.

Member States shall work towards a fair distribution of costs and benefits of joint projects. To that end, all the relevant costs and benefits of the joint project shall be taken into account in the relevant cooperation agreement.

Member States shall notify the Commission of the cooperation agreements referred to in the first subparagraph, including the date on which the project is expected to become operational.

- Member States shall notify the Commission of the proportion or amount of electricity, heating or cooling from renewable sources produced by any joint project in their territory that became operational after 25 June 2009, or by the increased capacity of an installation that was refurbished after that date, which is to be regarded as counting towards the renewable energy share of another Member State for the purposes of this Directive.

- The notification referred to in paragraph 2 shall:

- describe the proposed installation or identify the refurbished installation;

- specify the proportion or amount of electricity or heating or cooling produced from the installation which is to be regarded as counting towards the renewable energy share of the other Member State;

- identify the Member State in whose favour the notification is being made; and

- specify the period, in whole calendar years, during which the electricity or heating or cooling produced by the installation from renewable sources is to be regarded as counting towards the renewable energy share of the other Member State.

- The duration of a joint project as referred to in this Article may extend beyond 2030.

- A notification made under this Article shall not be varied or withdrawn without the joint agreement of the Member State making the notification and the Member State identified in accordance with point (c) of paragraph 3.

- The Commission shall, upon the request of the Member States concerned, facilitate the establishment of joint projects between Member States, in particular via dedicated technical assistance and project development assistance.

7a. Member States bordering a sea basin shall cooperate in order to establish jointly, after consulting stakeholders, the amount of offshore renewable energy they plan to produce in that sea basin by 2050, with intermediate steps *and trajectories per sea basin* in 2030 and 2040 in accordance with Regulation (EU) .../... [revised regulation (EU) No. 347/2013]. Each Member State shall indicate the volumes it plans to achieve through governmental tenders, with a focus on technical and economic feasibility for the grid infrastructure.

In their cooperation agreements, the Member States shall collectively ensure that those plans are in line with the fulfilment of the objectives laid down in Commission communication of 19 November 2020 entitled 'An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future', while respecting EU environmental legislation and the protection of biodiversity, the specificities and development in each region, especially the activities that already take place in the affected areas, the possible harm to the environment, the offshore renewable potential of the sea basin and the importance of ensuring associated integrated grid planning. Member States shall notify that amount and the planned grid in their updated integrated national energy and climate plans submitted pursuant to Article 14 of Regulation (EU) 2018/1999. The Commission may take complementary measures to support Member States in their efforts to align with the trajectories per sea basin.

Following the communication of the updated integrated national energy and climate plans, the Commission shall assess any possible gap between the potential amount of offshore renewable energy resources of the Member States and the amount of offshore renewable energy planned for 2030, 2040 and 2050. Where appropriate, the Commission shall take additional measures to reduce the gap.

Member States bordering a sea basin shall jointly define the adequate space for offshore renewable energy projects and allocate that space in their maritime spatial plans while ensuring a strong public participation approach so that the views of all stakeholders and

affected coastal communities, as well as the impacts on the activities already taking place in the affected areas, are taken into account.

In order to facilitate permit granting for joint offshore renewable energy projects, Member States shall reduce the complexity and increase the efficiency and transparency of the permit granting process and enhance cooperation among themselves, including, where appropriate, by establishing a unique point of contact ('one stop shop') per priority offshore grid corridor.

In order to enhance broad public acceptance, Member States shall ensure the possibility of including renewable energy communities in joint cooperation projects on offshore renewable energy.

LINKED RECITALS:

(7) Member States' cooperation to promote renewable energy can take the form of statistical transfers, support schemes or joint projects. It allows for a cost-efficient deployment of renewable energy across Europe and contributes to market integration. Despite its potential, cooperation has been very limited, thus leading to suboptimal results in terms of efficiency in increasing renewable energy. Member States should therefore be obliged to test cooperation through implementing pilot ***projects by December 2025 and by 2030 a third project, for Member States with an annual electricity consumption of more than 100 TWh***. Projects financed by national contributions under the Union renewable energy financing mechanism established by Commission Implementing Regulation (EU) 2020/1294 would meet this obligation for the Member States involved.

(8) The Offshore Renewable Energy Strategy introduces an ambitious objective of 300 GW of offshore wind and 40 GW of ocean energy across all the Union's sea basins by 2050. To ensure this step change, Member States will need to work together across borders at sea-basin level. Member States should therefore jointly define***, and allocate adequate space in their maritime spatial plan for,*** the amount of offshore renewable generation to be deployed within each sea basin by 2050, with intermediate steps in 2030 and 2040. ***Should there be a possible gap between the potential amount of offshore renewable energy resources of the Member States and the planned amount of offshore renewable energy, the Commission should take additional measures to reduce that gap***. These objectives should be reflected in the updated national energy and climate plans that will be submitted in 2023 and 2024 pursuant to Regulation (EU) 2018/1999. In defining the amount, Member States should take into account the offshore renewable energy potential of each sea basin, ***the technical and economic feasibility of the transmission grid infrastructure,*** environmental protection, ***biodiversity,*** climate adaptation and other uses of the sea, ***especially the activities that already take place in the affected areas and the possible harm to the environment,*** as well as the Union's decarbonisation targets. In addition, Member States should increasingly consider the possibility of combining offshore renewable energy generation with transmission lines interconnecting several Member States, in the form of hybrid projects or, at a later stage, a more meshed grid. This would allow electricity to flow in different directions, thus maximising socio-economic welfare, optimising infrastructure expenditure and enabling a more sustainable usage of the sea. ***Member States bordering a sea basin should use the maritime spatial planning process to ensure a strong public participation approach so that the views of all stakeholders and coastal communities are taken into account.***

CA 5

Article 15

Administrative procedures, regulations and codes

- Member States shall ensure that any national rules concerning the authorisation, certification and licensing procedures that are applied to plants, including renewable hybrid power plants and associated transmission and distribution networks for the production of electricity, heating or cooling from renewable sources, to the process of transformation of biomass into biofuels, bioliquids, biomass fuels or other energy products, and to renewable fuels of non-biological origin are proportionate and necessary and contribute to the implementation of the energy efficiency first principle.

Member States shall, in particular, take the appropriate steps to ensure that:

- all administrative procedures are streamlined, including regional and municipal processes, and expedited at the appropriate administrative level and predictable timeframes are established for the procedures referred to in the first subparagraph;

- rules concerning authorisation, certification and licensing are objective, transparent and proportionate, do not discriminate between applicants and take fully into account the particularities of individual renewable energy technologies;

- administrative charges paid by consumers, planners, architects, builders and equipment and system installers and suppliers are transparent and cost-related; and

d) simplified and less burdensome authorisation procedures, including a simple-notification procedure and single contact points are established for decentralised devices, and for producing and storing energy from renewable sources.

- ~~Member States shall clearly define any technical specifications which are to be met by renewable energy equipment and systems in order to benefit from support schemes. Where European standards exist, including eco-labels, energy labels and other technical reference systems established by the European standardisation bodies, such technical specifi cations shall be expressed in terms of those standards. Such technical specifications shall not prescribe where the equipment and systems are to be certified and shall not impede the proper functioning of the internal market~~. **Member States shall clearly define any technical specifications which are to be met by renewable energy equipment and systems in order to benefit from support schemes** and shall **be eligible under public procurement.Where regulatory or harmonised standards or European standards exist, including technical reference systems established by the European standardisation organisations, such technical specifications shall be expressed in terms of those standards. Precedence shall be given to regulatory and harmonised standards, the references of which have been published in the Official Journal of the European Union in support of European legislation, including for instance Regulation (EU) 2017/1369 or Regulations (EU) 2009/125, in their absence, other harmonised standards and European standards shall be used, in that order. Such technical specifications shall not prescribe where the equipment and systems are to be certified and shall not impede the proper functioning of the internal market.**

CA 6

Article 15a

Mainstreaming renewable energy in buildings

- **In order to promote the production and use of renewable energy and waste heat and cold in the building sector, Member States shall set an indicative target for the share of renewables produced on site or nearby including from the grid in final energy consumption in their buildings sector in 2030 that is consistent with an indicative target of at least a 49 % share of energy from renewable sources and unavoidable waste heat and cold in the buildings sector in the Union's final consumption of energy in 2030.** ***Member States that do not explicitly price carbon in the building sector through a tax or emissions trading scheme or Member States that temporarily opt out of the new European emissions trading scheme for buildings and transport shall set a higher indicative share of renewable energy sources.*** **The national *indicative* target shall be expressed in terms of share of national final energy consumption and calculated in accordance with the methodology set out in Article 7*, which may include in the calculation of the share of final consumption the electricity from renewable sources comprising self-consumption, energy communities, the share of renewable energy in the electricity mix and the unavoidable waste heat and cold*. Member States shall include their target in the updated integrated national energy and climate plans submitted pursuant to Article 14 of Regulation (EU) 2018/1999 as well as information on how they plan to achieve it.**

  Member States may count waste heat and cold towards the target referred to in the first subparagraph, up to a limit of **20**%. If they decide to do so, the target shall increase by half of the waste heat and cold percentage used **to an upper limit of 54%.**

2. Member States shall introduce measures in their building regulations and codes and, where applicable, in their support schemes, to increase the share of electricity and heating and cooling from renewable sources both produced on site or nearby including from the grid in the building stock, including national measures relating to substantial increases in renewables self-consumption, renewable energy communities, local renewable energy sharing and local energy storage, smart and bidirectional charging, other flexibility services such as demand response, and in combination with energy efficiency improvements relating to high-efficiency **cogeneration and passive, nearly zero-energy and zero- energy buildings taking into account innovative technologies..**

To achieve the indicative share of renewable energy sources set out in paragraph 1, Member States shall, in their building regulations and codes and, where applicable, in their support schemes or by other means with equivalent effect, require the use of minimum levels of energy from renewable sources on-site or nearby in new buildings and in those subject to major renovation, in line with the provisions of Directive 2010/31/EU. and where that is economically, technically and functionally feasible. Member States shall allow those minimum levels to be fulfilled, among others, through efficient district heating and cooling.

For existing buildings, the first subparagraph shall apply to the armed forces only to the extent that its application does not cause any conflict with the nature and primary aim of the activities of the armed forces and with the exception of material used exclusively for military

CA 7

Article 18

Information and training

1. Member States shall ensure that information on support measures is made available to all relevant actors, such as consumers including low-income, vulnerable consumers, renewables self-consumers, renewable energy communities, builders, installers, architects, suppliers of heating, cooling and electricity equipment and systems, and suppliers of vehicles compatible with the use of renewable energy and of intelligent transport systems.

2. Member States shall ensure that information on the net benefits, cost and energy efficiency of equipment and systems for the use of heating, cooling and electricity from renewable sources is made available either by the supplier of the equipment or system or by the competent authorities.

3. ~~Member States shall ensure that certification schemes or equivalent qualification schemes are available for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps. Those schemes may take into account existing schemes and structures as appropriate, and shall be based on the criteria laid down in Annex IV. Each Member State shall recognise the certification awarded by other Member States in accordance with those criteria~~. **Member States shall ensure that certification schemes or equivalent qualification schemes are available for installers and designers of all forms of renewable heating and cooling systems in buildings, industry and agriculture, and for installers of other renewable energy technologies, storage and demand-response technologies, including charging stations. Those schemes may take into account existing schemes and structures as appropriate and shall be based on the criteria laid down in Annex IV. Each Member State shall verify the recognition of the certification awarded by other Member States in accordance with those criteria.**

By 31 December 2023 and every three years thereafter, Member States shall assess the gap between available and needed trained and qualified installations professionals, and, where appropriate, provide recommendations to remove any gaps. Those assessments and any recommendations shall be made publicly available.

Member States shall establish conditions, including through upskilling and reskilling strategies, to ensure that a sufficient number of trained and qualified installers referred to in paragraph 3 is available to service the growth of renewable heating and cooling required to contribute to the annual increase in the share of renewable energy in the heating and cooling sector as set out in Article 23 and to the targets for renewable energy in buildings set out in Article 15a, in the industry sector set out in Article 22a and in the transport sector set out in Article 25, and to contribute to reaching the overall target set out in Article 3.

To achieve a sufficient number of installers and designers, Member States shall, provided that they are compatible with national qualification and certification schemes, ensure that sufficient training programmes leading to qualification or certification covering renewable heating and cooling technologies, and their latest innovative solutions, are made available. Member States shall put in place measures to promote participation in such programmes, in particular by small and medium-sized enterprises and the self-employed, as well as ensuring

CA 8

Article 19

Guarantees of origin for energy

1. For the purposes of demonstrating to final customers origin of energy from renewable sources in an energy supplier's energy mix and in the energy supplied to consumers under contracts marketed with reference to the consumption of energy from renewable sources, Member States shall ensure that the origin of energy from renewable sources can be guaranteed as such within the meaning of this Directive, in accordance with objective, transparent and non-discriminatory criteria.

2. To that end, Member States shall ensure that a guarantee of origin is issued in response to a request from a producer of energy from renewable sources. Member States *shall provide for a uniform system of guarantees of origin to be issued for renewable hydrogen*.

Member States may decide, for the purposes of accounting for the market value of the guarantee of origin, not to issue such a guarantee of origin to a producer that receives financial support from a support scheme.

The Commission shall introduce supplemental information for guarantees of origin, while avoiding double counting.

Issuance of guarantees of origin may be made subject to a minimum capacity limit. A guarantee of origin shall be 1 MWh with the possibility to issue fractions of it. They shall be duly standardized through the European standard CEN-EN16325, are issued upon a request from a producer of energy, provided that this does not lead to double counting. Simplified registration processes and reduced registration fees shall be introduced for small installations of less than 50 kW and for energy communities. Guarantees of origin may be issued for several small installations pooled together.

No more than one guarantee of origin shall be issued in respect of each unit of energy produced and the same unit of energy is taken into account only once.

Member States shall ensure that when a producer receives financial support from a support scheme, the market value of the guarantee of origin for the same production is taken into account appropriately in the relevant support scheme.

It shall be presumed that the market value of the guarantee of origin has been taken into account appropriately in any of the following cases:

- where the financial support is granted by way of a tendering procedure or a tradable green certificate system;
- where the market value of the guarantees of origin is administratively taken into account in the level of financial support; or
- where the guarantees of origin are not issued directly to the producer but to a supplier or consumer who buys the energy either in a competitive setting or in a long-term renewables power purchase agreement.

~~In order to take into account the market value of the guarantee of origin, Member States may, *inter alia*, decide to issue a guarantee of origin to the producer and immediately cancel it..~~

The guarantee of origin shall have no function in terms of a Member State's compliance with Article 3. Transfers of guarantees of origin, separately or together with the physical transfer of energy, shall have no effect on the decision of Member States to use statistical transfers, joint projects or joint support schemes for compliance with Article 3 or on the calculation of the gross final consumption of energy from renewable sources in accordance with Article 7.

3. For the purposes of paragraph 1, guarantees of origin shall be valid for transactions for 12 months after the production of the relevant energy unit. Member States shall ensure that all guarantees of origin that have not been cancelled expire at the latest 18 months after the production of the energy unit. Member States shall include expired guarantees of origin in the calculation of their residual energy mix.

4. For the purposes of disclosure referred to in paragraphs 8 and 13, Member States shall ensure that energy companies cancel guarantees of origin at the latest six months after the end of the validity of the guarantee of origin. Furthermore, by one year after the entry into force of this amending Directive, Member States shall ensure that the data on their residual mix is published on an annual basis.

5. Member States or designated competent bodies shall supervise the issuance, transfer and cancellation of guarantees of origin. The designated competent bodies shall not have overlapping geographical responsibilities, and shall be independent of production, trade and supply activities.

6. Member States or the designated competent bodies shall put in place appropriate mechanisms to ensure that guarantees of origin are issued, transferred and cancelled electronically and are accurate, reliable and fraud-resistant. Member States and designated competent bodies shall ensure that the requirements they impose comply with the standard CEN - EN 16325.

7. A guarantee of origin shall specify at least:

- the energy source from which the energy was produced and the start and end dates as close to real time as possible, with the objective to arrive at intervals of no more than one hour of production;
- whether it relates to:
    - electricity;
    - gas, including hydrogen; or
    - heating or cooling;
- the identity, location, bidding zone for electricity, (RE 693, GR 712)type and capacity of the installation where the energy was produced;
- whether the installation has benefited from investment support and whether the unit of energy

has benefited in any other way from a national support scheme, and the type of support scheme;

- the date on which the installation became operational; and

- the date and country of issue and a unique identification number.
- greenhouse gas emissions over the life cycle of the guaranteed energy in accordance with the standard ISO 14067:2018
- refined time granularity
- locational matching

Simplified information may be specified on guarantees of origin from installations of less than 50 kW.

~~8. Where an electricity supplier is required to demonstrate the share or quantity of energy from renewable sources in its energy mix for the purposes of point (a) of Article 3(9) of Directive 2009/72/EC, it shall do so by using guarantees of origin except:~~

- ~~as regards the share of its energy mix corresponding to non-tracked commercial offers, if any, for which the supplier may use the residual mix; or~~

- ~~where a Member State decides not to issue guarantees of origin to a producer that receives financial support from a support scheme.~~ Where an electricity supplier is required to demonstrate the origin of energy from renewable sources in its energy mix for the purposes of Article 3(9), point (a) of Directive 2009/72/EC, it shall do so by using guarantees of origin except as regards the share of its energy mix corresponding to non- tracked commercial offers, if any, for which the supplier may use the residual mix.

Where a gas supplier is required to demonstrate the origin of energy from renewable sources in its energy mix for the purposes of the directive “on common rules for the internal markets in renewable and natural gases and in hydrogen” Annex I section 5 of COM (2021) 803 , it shall do so by using guarantees of origin except as regards the share of its energy mix corresponding to non- tracked commercial offers, if any, for which the supplier may use the residual mix.

Where Member States have arranged to have guarantees of origin for other types of energy, suppliers shall use for disclosure the same type of guarantees of origin as the energy supplied. Furthermore, when the customers consumes gas from a hydrogen or natural gas network, Member States may ensure that the GOs cancelled correspond to the relevant network characteristics. Likewise, guarantees of origin created pursuant to Article 14(10) of Directive 2012/27/EU may be used to substantiate any requirement to demonstrate the quantity of electricity produced from high-efficiency cogeneration. For the purposes of paragraph 2 of this Article, where electricity is generated from high-efficiency cogeneration using renewable sources, only one guarantee of origin specifying both characteristics may be issued.

9. Member States shall recognise guarantees of origin issued by other Member States in accordance with this Directive exclusively as evidence of the elements referred to in paragraph 1 and points (a) to (g) of the first subparagraph of paragraph 7. A Member State may refuse to recognise a guarantee of origin only where it has well-founded doubts about its accuracy, reliability or veracity. The Member State shall notify the Commission of such a refusal and its justifi cation.

10. If the Commission finds that a refusal to recognise a guarantee of origin is unfounded, the Commission may adopt a decision requiring the Member State in question to recognise it.

11. Member States shall not recognise guarantees of origins issued by a third country except where the Union has concluded an agreement with that third country on mutual recognition of guarantees of origin issued in the Union and compatible guarantees of origin systems established in that third country, and only where there is direct import or export of energy . The Commissions shall issue Guidelines clarifying the EU requirements for recognizing guarantees of origin issued by a third country, including the underlying governance arrangements associated, to the purpose of streamlining and accelerating the achievement of such agreements with third countries.

By ... [one year after the entry into force of this amending Directive], the Commission shall issue guidance on relevant safeguards for cross-border transfers.

12. A Member State may, in accordance with Union law, introduce objective, transparent and non-discriminatory criteria for the use of guarantees of origin in accordance with the obligations laid down in Article 3(9) of Directive 2009/72/EC.

13. The Commission shall adopt a report by 30th of June 2025 assessing options to establish a Union-wide green label with a view to promoting the use of renewable energy coming from new installations. Suppliers shall use the information contained in guarantees of origin to demonstrate compliance with the requirements of such a label.

13a The Commission shall monitor the functioning of the guarantees of origin system and assess by 30th of June 2025 the balance of supply-demand of guarantees of origins in the market and in case of imbalances identify relevant factors affecting supply and demand and propose measures rectifying any potential structural imbalances with a view to support markets in focusing on new renewable installations .

RECITAL:

(13) Guarantees of origin are a key tool for consumer information as well as for the further uptake of renewable power purchase agreements. In order to establish a coherent Union base for the use of guarantees of origin and to provide access to appropriate supporting evidence for persons concluding renewable power purchase agreements, all renewable energy producers should be able to receive a guarantee of origin without prejudice to Member States' obligation to take into account the market value of the guarantees of origin if the energy producers receive financial support. ***The system of guarantees of origin provided for by Member States should be a harmonised system applicable throughout the Union. A more flexible energy system and growing consumer demands call for a more innovative, digital, technologically advanced and reliable tool to support and document the increasing production of renewable energy. In particular, innovative technologies can ensure a higher spatial and temporal granularity of guarantees of origin. To facilitate digital innovation in this field, Member States should introduce additional size granularity in their schemes for guarantees of origin.***

gender balance and targeting in particular underrepresented minorities. Compatible with already existing training and qualification schemes, Member States may put in place voluntary agreements with the relevant technology providers and vendors to train sufficient numbers of installers, which may be based on estimates of sales, in the latest innovative solutions and technologies available on the market.

Member States shall describe their policies and measures promoting effective, high quality and inclusive training, re-skilling and upskilling of workers in the field of renewable energies in their integrated national energy and climate plans referred to in Articles 3 and 14 of Regulation (EU) 2018/1999 and progress reports submitted pursuant to Article 17 of that Regulation.

4. ~~Member States shall make information on certification schemes or equivalent qualification schemes as referred to in paragraph 3 available to the public. Member States may also make the list of installers who are qualified or certified in accordance with paragraph 3 available to the public~~. **Member States shall make information on the certification schemes or equivalent national qualification schemes referred to in paragraph 3 available to the public. Member States shall also make available to the public, in a transparent and easily accessible manner, a regularly updated list of installers who are qualified or certified in accordance with paragraph 3.**

5. Member States shall ensure that guidance is made available to all relevant actors, in particular to planners and architects so that they are able properly to consider the optimal combination of energy from renewable sources, of high- efficiency technologies, and of district heating and cooling when planning, designing, building and renovating industrial, commercial or residential areas.

6. Member States, where appropriate with the participation of local and regional authorities, shall develop suitable information, awareness-raising, guidance or training programmes in order to inform citizens of how to exercise their rights as active customers, and of the benefits and practicalities, including technical and financial aspects, of developing and using energy from renewable sources, including by renewables self-consumption or in the framework of renewable energy communities.

6a. Any measures taken under this Article shall be without prejudice to measures taken under the [Energy Efficiency Directive] and the [EPBD].

LINKED RECITAL:

(12) Insufficient numbers of skilled workers, in particular installers and designers of renewable heating and cooling systems, slow down the replacement of fossil fuel heating systems by renewable energy based systems and is a major barrier to integrating renewables in buildings, industry and agriculture. Member States should cooperate with social partners and renewable energy communities to anticipate the skills that will be needed. A sufficient number of high-quality ***and effective upskilling and reskilling strategies and (Greens 158)*** training programmes and certification possibilities ensuring proper installation and reliable operation of a wide range of renewable heating and cooling systems ***and storage technologies, as well as electric vehicles charging points, (Greens 158)*** should be made available and designed in a way to attract participation in such training programmes and certification systems. Member States should consider what actions should be taken

to attract groups currently under-represented in the occupational areas in question. The list of trained and certified installers should be made public to ensure consumer trust and easy access to tailored designer and installer skills guaranteeing proper installation and operation of renewable heating and cooling.

LINKED TEXT IN THE ANNEXES:

ANNEX IV

~~CERTIFICATION OF INSTALLERS~~ TRAINING AND CERTIFICATION OF INSTALLERS AND DESIGNERS OF RENEWABLE INSTALLATIONS'

~~The certification schemes or equivalent qualification schemes referred to in Article 18(3) shall be based on the following criteria:~~ **The certification schemes and training programmes referred to in Article 18(3) shall be based on the following criteria:**

- ~~The certification or qualification process shall be transparent and clearly defined by the Member States or by the administrative body that they appoint.~~ **The certification process shall be transparent and clearly defined by the Member States or by the administrative body that they appoint.**

1a. The certificates issued by certification bodies shall be clearly defined and easy to identify for workers and professionals seeking certification.

1b. The certification process shall enable installers to put in place high quality installations that operate reliably.

- ~~Installers of biomass, heat pump, shallow geothermal and solar photovoltaic and solar thermal energy shall be certified by an accredited training programme or training provider.~~ **Installers of biomass, heat pump, shallow geothermal, solar thermal energy and storage and demand-response technologies, including charging stations, shall be certified by an accredited training programme or training provider or formal qualification schemes according to national law.**

- ~~The accreditation of the training programme or provider shall be effected by Member States or by the administrative body that they appoint. The accrediting body shall ensure that the training programme offered by the training provider has continuity and regional or national coverage. The training provider shall have adequate technical facilities to provide practical training, including some laboratory equipment or corresponding facilities to provide practical training. The training provider shall also offer in addition to the basic training, shorter refresher courses on topical issues, including on new technologies, to enable life-long learning in installations. The training provider may be the manufacturer of the equipment or system, institutes or associations.~~ **The accreditation of the training programme or provider shall be effected by Member States or by the administrative body that they appoint. The accrediting body shall ensure that the training*, upskilling and reskilling*** **programmes offered by the training provider *are inclusive and have***

continuity and regional or national coverage.

The training provider shall have adequate technical facilities to provide practical training, including sufficient laboratory equipment or corresponding facilities to provide practical training.

The training provider shall offer, in addition to the basic training, shorter refresher and upskilling courses organised in training modules allowing installers and designers to add new competences, widen and diversify their skills across several technologies and their combinations. The training provider shall ensure adaptation of training to new renewable technologies in the context of buildings, industry and agriculture. Training providers shall recognise acquired relevant skills.

The training programmes and modules shall be designed to enable life-long learning in renewable installations and be compatible with vocational training for first time job seekers and adults seeking reskilling or new employment.

The training programmes shall be designed in order to facilitate acquiring qualification in different technologies and solutions and avoid limited specialisation in a specific brand or technology. The training provider may be the manufacturer of the equipment or system, institutes or associations.

- The training leading to certification or qualification of an installer shall include theoretical and practical parts. At the end of the training, the installer must have the skills required to install the relevant equipment and systems to meet the performance and reliability needs of the customer, incorporate quality craftsmanship, and comply with all applicable codes and standards, including energy and eco-labelling.

- The training course shall end with an examination leading to a certificate or qualification. The examination shall include a practical assessment of successfully installing biomass boilers or stoves, heat pumps, shallow geothermal installations, solar thermal installations or **storage and demand-response technologies, including charging stations**.

- The certification schemes or equivalent qualification schemes referred to in Article 18(3) shall take due account of the following guidelines:

    - Accredited training programmes should be offered to installers with work experience, who have undergone, or are undergoing, the following types of training:

        - in the case of biomass boiler and stove installers: training as a plumber, pipe fitter, heating engineer or technician of sanitary and heating or cooling equipment as a prerequisite;

        - in the case of heat pump installers: training as a plumber or refrigeration engineer and have basic electrical and plumbing skills (cutting pipe, soldering pipe joints, gluing pipe joints, lagging, sealing fittings, testing for leaks and installation of heating or cooling systems) as a prerequisite;

        - in the case of a solar photovoltaic or solar thermal installer: training as a

plumber or electrician and have plumbing, electrical and roofing skills, including knowledge of soldering pipe joints, gluing pipe joints, sealing fittings, testing for plumbing leaks, ability to connect wiring, familiar with basic roof materials, flashing and sealing methods as a prerequisite; or

- a vocational training scheme to provide an installer with adequate skills corresponding to a three years education in the skills referred to in point (a), (b) or (c), including both classroom and workplace learning.

- The theoretical part of the biomass stove and boiler installer training should give an overview of the market situation of biomass and cover ecological aspects, biomass fuels, logistics, fire protection, related subsidies, combustion techniques, firing systems, optimal hydraulic solutions, cost and profitability comparison as well as the design, installation and maintenance of biomass boilers and stoves. The training should also provide good knowledge of any European standards for technology and biomass fuels, such as pellets, and biomass related national and Union law.

- The theoretical part of the heat pump installer training should give an overview of the market situation for heat pumps and cover geothermal resources and ground source temperatures of different regions, soil and rock identi fication for thermal conductivity, regulations on using geothermal resources, feasibility of using heat pumps in buildings and determining the most suitable heat pump system, and knowledge about their technical requirements, safety, air filtering, connection with the heat source and system layout. The training should also provide good knowledge of any European standards for heat pumps, and of relevant national and Union law. The installer should demonstrate the following key competences:

  - a basic understanding of the physical and operation principles of a heat pump, including characteristics of the heat pump circle: context between low temperatures of the heat sink, high temperatures of the heat source, and the efficiency of the system, determination of the coefficient of performance and seasonal performance factor (SPF);

  - an understanding of the components and their function within a heat pump circle, including the compressor, expansion valve, evaporator, condenser, fixtures and fittings, lubricating oil, refrigerant, superheating and sub-cooling and cooling possibilities with heat pumps; and

  - the ability to choose and size the components in typical installation situations, including determining the typical values of the heat load of different buildings and for hot water production based on energy consumption, determining the capacity of the heat pump on the heat load for hot water production, on the storage mass of the building and on interruptible current supply; determine the buffer tank component and its volume and integration of a second heating system.

  - **an understanding of feasibility and design studies;**

  - **an understanding of drilling, in the case of geothermal heat pumps**

- The theoretical part of the solar photovoltaic and solar thermal installer training

should give an overview of the market situation of solar products and cost and profitability comparisons, and cover ecological aspects, components, characteristics and dimensioning of solar systems, selection of accurate systems and dimensioning of components, determination of the heat demand, fire protection, related subsidies, as well as the design, installation and maintenance of solar photovoltaic and solar thermal installations. The training should also provide good knowledge of any European standards for technology, and certification such as Solar Keymark, and related national and Union law. The installer should demonstrate the following key competences:

- the ability to work safely using the required tools and equipment and implementing safety codes and standards and to identify plumbing, electrical and other hazards associated with solar installations;
- the ability to identify systems and their components specific to active and passive systems, including the mechanical design, and to determine the components' location and system layout and configuration;
- the ability to determine the required installation area, orientation and tilt for the solar photovoltaic and solar water heater, taking account of shading, solar access, structural integrity, the appropriateness of the installation for the building or the climate and to identify different installation methods suitable for roof types and the balance of system equipment required for the installation; and
- for solar photovoltaic systems in particular, the ability to adapt the electrical design, including determining design currents, selecting appropriate conductor types and ratings for each electrical circuit, determining appropriate size, ratings and locations for all associated equipment and subsystems and selecting an appropriate interconnection point.

- The installer certification should be time restricted, so that a refresher seminar or event would be necessary for continued certification.

purposes.

3. Member States shall ensure that public buildings at national, regional and local level, fulfil an exemplary role as regards the share of renewable energy used, in accordance with the provisions of Article 9 of Directive 2010/31/EU and Article 5 of Directive 2012/27/EU. Member States may, among others, allow that obligation to be fulfilled by providing for the roofs or other compatible surfaces and sub-surfaces of public or mixed private-public buildings to be used by third parties for installations that produce energy from renewable sources.

Member States shall promote cooperation between local authorities and renewable energy communities in the building sector, particularly through the use of public procurement. Such support shall be indicated in Member States' National Building Renovation Plans under Article 3 of Directive [EPBD].

4. In order to achieve the indicative share of renewable energy set out in paragraph 1, Member States shall promote the use of renewable heating and cooling systems and equipment including innovative technologies ***for the given local context, such as smart and renewable-based electrified heating and cooling systems and equipment, complemented, where applicable, with smart management of all decentralised energy resources in buildings, through Building Energy Management Systems capable of interacting with the energy grid*****. To that end, Member States shall use all appropriate measures, tools and incentives, including, among others, energy labels developed under Regulation (EU) 2017/1369 of the European Parliament and of the Council, energy performance certificates pursuant to Directive 2010/31/EU, or other appropriate certificates or standards developed at national or Union level, and shall ensure the provision of adequate information and advice including through one stop shops on renewable, highly energy efficient alternatives as well as on financial instruments and incentives available to promote an increased replacement rate of old heating and cooling systems and an increased switch to solutions based on renewable energy.**

RECITAL:

(11) Buildings have a large untapped potential to contribute effectively to the reduction in greenhouse gas emissions in the Union. The decarbonisation of heating and cooling in this sector through an increased share in production and use of renewable energy***, particularly in the local context,*** will be needed to meet the ambition set in the ***European*** Climate ***Law*** to achieve the Union objective of climate neutrality. However, progress on the use of renewables for heating and cooling has been stagnant in the last decade, largely relying on increased use of biomass. Without the establishment of indicative targets to increase the production and use of renewable energy in buildings, there will be no ability to track progress and identify bottlenecks in the uptake of renewables. Waste heat and cold may be counted towards the target referred to in the first subparagraph, up to a limit of **20**%. with **an upper limit of 54%.** Furthermore, the creation of targets will provide a long-term signal to investors, including for the period immediately after 2030. This will complement obligations related to energy efficiency and the energy performance of buildings ***and comply with the energy efficiency first principle***. Therefore, indicative targets for the use of renewable energy in buildings should be set to guide and incentivise Member States' efforts to exploit the potential of using and producing renewable energy ***on-site or nearby*** in buildings ***and*** encourage the development of technologies which produce renewable energy ***and help their***

efficient integration in the energy system, while providing certainty for investors and local level engagement***, as well as contributing to system efficiency***. ***Emission trading schemes are designed to increase fossil energy costs and lead to market-driven energy saving investments or switching to renewable energy. Double burdens for consumers through emissions trading schemes and other targets required under Union law should be avoided.***

- Member States shall ensure that their competent authorities at national, regional and local level include provisions for the integration and deployment of renewable energy, including for renewables self-consumption and renewable energy communities, and the use of unavoidable waste heat and cold when planning, including early spatial planning, designing, building and renovating urban infrastructure, industrial, commercial or residential areas and energy and transport infrastructure, including electricity, district heating and cooling, natural gas and alternative fuel networks. Member States shall, in particular, encourage local and regional administrative bodies to include heating and cooling from renewable sources in the planning of city infrastructure where appropriate, and to consult the network operators to reflect the impact of energy efficiency and demand response programs as well as specific provisions on renewables self- consumption and renewable energy communities, on the infrastructure development plans of the operators.

- ~~Member States shall introduce appropriate measures in their building regulations and codes in order to increase the share of all kinds of energy from renewable sources in the building sector.~~

~~In establishing such measures or in their support schemes, Member States may take into account, where applicable, national measures relating to substantial increases in renewables self-consumption, in local energy storage and in energy efficiency, relating to cogeneration and relating to passive, low-energy or zero-energy buildings.~~

~~Member States shall, in their building regulations and codes or by other means with equivalent effect, require the use of minimum levels of energy from renewable sources in new buildings and in existing buildings that are subject to major renovation in so far as technically, functionally and economically feasible, and reflecting the results of the cost optimal calculation carried out pursuant to Article 5(2) of Directive 2010/31/EU, and in so far as this does not negatively affect indoor air quality. Member States shall permit those minimum levels to be fulfilled, *inter alia*, through efficient district heating and cooling using a significant share of renewable energy and waste heat and cold.~~

~~The requirements laid down in the first subparagraph shall apply to the armed forces only to the extent that its application does not cause any conflict with the nature and primary aim of the activities of the armed forces and with the exception of material used exclusively for military purposes.~~

- ~~Member States shall ensure that new public buildings, and existing public buildings that are subject to major renovation, at national, regional and local level, fulfil an exemplary role in the context of this Directive from 1 January 2012. Member States may, *inter alia*, allow that obligation to be fulfilled by complying with nearly zero-energy building provisions as required in Directive 2010/31/EU, or by providing for the roofs of public or mixed private-public buildings to be used by third parties for installations that produce energy from renewable sources.~~

- ~~With respect to their building regulations and codes, Member States shall promote the use of renewable heating and cooling systems and equipment that achieve a significant reduction of energy consumption. To that end, Member States shall use energy or eco-labels or other appropriate certificates or standards developed at national or Union level, where these exist,~~

~~and ensure the provision of adequate information and advice on renewable, highly energy efficient alternatives as well as eventual financial instruments and incentives available in the case of replacement, with a view to promoting an increased replacement rate of old heating systems and an increased switch to solutions based on renewable energy in accordance with Directive 2010/31/EU.~~

- ~~Member States shall carry out an assessment of their potential of energy from renewable sources and of the use of waste heat and cold in the heating and cooling sector. That assessment shall, where appropriate, include spatial analysis of areas suitable for low-ecological-risk deployment and the potential for small-scale household projects and shall be included in the second comprehensive assessment required pursuant to Article 14(1) of Directive 2012/27/EU for the first time by 31 December 2020 and in the subsequent updates of the comprehensive assessments.~~

- ~~Member States shall assess the regulatory and administrative barriers to long-term renewables power purchase agreements, and shall remove unjustified barriers to, and facilitate the uptake of, such agreements. Member States shall ensure that those agreements are not subject to disproportionate or discriminatory procedures or charges.~~

~~Member States shall describe policies and measures facilitating the uptake of renewables power purchase agreements in their integrated national energy and climate plans and progress reports pursuant to Regulation (EU) 2018/1999.~~

Member States shall assess the regulatory and administrative barriers to long-term energy (EPP568) purchase agreements, including renewable power, renewable heating and cooling and RFNBOs purchase agreements, co- located energy storage projects as well as cross border ones.

They shall remove barriers at national and cross border level to *their development, such as barriers to permitting*, for example for energy intensive industries and SMEs, as well as other smaller actors and municipalities and promote the uptake of, such agreements, including by exploring how to reduce the financial risks associated with them, in particular by using credit guarantees. Member States shall ensure that those agreements are not subject to disproportionate or discriminatory procedures or any charges or fees, and that any associated guarantees of origin can be transferred to the buyer of energy under an energy purchase agreement.

Member States shall describe their policies and measures promoting the uptake of energy purchase agreements in their integrated national energy and climate plans referred to in Articles 3 and 14 of Regulation (EU) 2018/1999 and progress reports submitted pursuant to Article 17 of that Regulation. They shall also provide, in those reports, an indication of the volume of renewable power generation supported by the different types of energy purchase agreements.

Member States shall ensure that applicants are allowed to submit all relevant documents in digital form. If an applicant makes use of the digital application option, the entire permitting process including the administrative internal processes needs to be carried out digitally.

Member States shall further ensure the digitalization of the public hearings and the participation procedures.

9. By one year after the entry into force of this amending Directive, the Commission shall ***revise guidelines to Member States on permitting practices to accelerate and simplify the process for new and repowered projects. These guidelines shall include recommendations on how to implement and*** **apply the rules on administrative procedures set out in Articles 15, and 17 together with their application** ***to renewable heating, cooling and power and renewable cogeneration*** **and a set of key performance indicators (KPIs) to enable a transparent assessment and monitoring of both progress and effectiveness.**

To this end, the Commission shall carry out appropriate consultations, including with relevant stakeholders. Such guidance shall also include information on digital and human resources of permitting authorities, effective single contact points, spatial planning, military and civil aviation constraints, court proceedings and civil resolution and mediation cases as well as adjustment and retrofitting of laws on mining, geological works as well as ensuring adequate technical capacity to perform these tasks.

Member States shall present an assessment of their permitting process and the measures for improvement to be taken in line with the guidelines in the updated integrated national energy and climate plan referred to in Article 14(2) of Regulation (EU) 2018/199 in accordance with the procedure and timeline laid down in that Article.

The Commission shall assess the corrective measures in the plans and scoring of each Member state in the key performance indicators. The assessment shall be made publically available.

In case of lack of progress, the Commission may take additional measures to support Member States in their implementation assisting them in reforming and streamlining their permitting procedures.

RECITALS:

(9) The market for renewable power purchase agreements is rapidly growing and provides a complementary route to the market of renewable power generation in addition to support schemes by Member States or to selling directly on the wholesale electricity market. At the same time, ***these agreements provide the producer with the security of a certain income, whilst the user can benefit from a stable electricity price.*** The market for renewable power purchase agreements is still limited to a small number of Member States and large companies, with significant administrative, technical and financial barriers remaining in large parts of the Union's market. ***Besides renewable power purchase agreements, the Commission shall assess barriers to the roll-out of renewable heating and cooling purchase agreements, which will play an increasing role in reaching the EU's climate and renewables targets.*** The existing measures in Article 15 to encourage the uptake of renewable power purchase agreements should therefore be strengthened further, by exploring the use of credit guarantees to reduce these agreements' financial risks, taking into account that these guarantees, where public, should not crowd out private financing.

(10) Overly complex and excessively long administrative procedures constitute a major barrier for

the deployment of renewable energy. ***Further streamlining of administrative and permitting procedures is needed to ease the administrative burden for both renewable energy projects and the related grid infrastructure projects. Within one year after the entry into force of this Directive, the Commission should revise guidelines on permit granting to shorten and simplify processes for new, repowering and the upgrade of renewable projects. Key performance indicators should be developed in the context of these guidelines.***

CA 9

Article 20

Access to and operation of the grids

- Where relevant, Member States shall assess the need to extend existing gas network infrastructure to facilitate the integration of gas from renewable sources.

- Where relevant, Member States shall require transmission system operators and distribution system operators in their territory to publish technical rules in accordance with Article 8 of Directive 2009/73/EC, in particular regarding network connection rules that include gas quality, gas odoration and gas pressure requirements. Member States shall also require transmission and distribution system operators to publish the connection tariffs to connect gas from renewable sources based on objective, transparent and non-discriminatory criteria.

- ~~Subject to their assessment included in the integrated national energy and climate plans in accordance with Annex I to Regulation (EU) 2018/1999 on the necessity to build new infrastructure for district heating and cooling from renewable sources in order to achieve the Union target set in Article 3(1) of this Directive, Member States shall, where relevant, take the necessary steps with a view to developing a district heating and cooling infrastructure to accommodate the development of heating and cooling from large biomass, solar energy, ambient energy and geothermal energy facilities and from waste heat and cold.~~ **Subject to their assessment included in the integrated national energy and climate plans in accordance with Annex I to Regulation (EU) 2018/1999 on the necessity to build new or modernize existing infrastructure for district heating and cooling from renewable sources in order to achieve the Union target set in Article 3(1) of this Directive, Member States shall, following the energy efficiency first principle where relevant, take the necessary steps with a view to developing efficient district heating and cooling infrastructure to promote heating and cooling from renewable energy sources, in combination with thermal energy storage, demand response systems and power to heat installations.**

- **In line with relevant electricity market legislation, Member States shall, where relevant, take the necessary actions to integrate intermittent renewable electricity in the grid while ensuring grid stability and security of supply.**

LINKED RECITALS

(13a) In line with the Joint European Action for more affordable, secure and sustainable energy set out in the Commission communication of 8 March 2022, where relevant, Member States should assess the need to extend existing gas network infrastructure to facilitate the integration of gas from renewable sources and to reduce reliance on fossil fuels, in particular if that infrastructure contributes significantly to the interconnection between at least two Member States or between a Member State and a third country.

(14) Infrastructure development for district heating and cooling networks should be stepped up and steered towards harnessing a wider range of renewable heat and cold sources in an efficient and flexible way in order to increase the deployment of renewable energy and

deepen energy system integration. It is therefore appropriate to update the list of renewable energy sources that district heating and cooling networks should increasingly accommodate and require the integration of thermal energy storage as a source of flexibility, greater energy efficiency and more cost-effective operation.

(14a) Member States' actions to integrate intermittent renewable electricity in the grid, while ensuring grid stability and security of supply, can relate to the development of solutions such as storage facilities, demand-side management and grid-balancing power plants and high-efficient cogeneration plants that participate in grid-balancing in support of intermittent renewable electricity.

CA 10

Article 20a

Facilitating system integration of renewable electricity

1. Member States shall require transmission system operators, and if technically available the distribution system operators, in their territory to make available information on the share of renewable electricity and the greenhouse gas emissions content of the electricity supplied in each bidding zone, as accurately as possible and as close to real time as possible but in time intervals of no more than one hour, with forecasting where available. Member States shall ensure that distribution system operators have access to the needed data. In case they do not have access, according to national legislation, to all information needed, they shall apply existing data reporting system under ENTSO-E, in accordance with the provisions of Directive 2019/944 [Electricity Directive]. However, Transmission system operators and distribution system operators shall not be liable for forecasting, estimation or calculation errors due to external circumstances. Member States shall incentivise upgrades of smart grids to better monitor grid balance and make available real time information.

If technically available, DSO should also make available anonymized and aggregated data on the demand response potential and the renewable electricity generated by self-consumers and renewable energy communities and injected to the grid.

1 a. The information and data referred to in paragraph 1 shall be made available digitally in a manner that ensures interoperability based on harmonized data formats and standardized data sets so that it can be used in a non-discriminatory manner by electricity market participants, aggregators, consumers and end-users, and that it can be read by electronic communication devices.

2. In addition to the requirements in [the proposal for a Regulation concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020], Member States shall adopt measures requiring that manufacturers of domestic and industrial batteries enable real-time access to basic battery management system information, including battery capacity, state of health, state of charge and power set point, to battery owners and users as well as to third parties acting on their behalf through explicit consent and in compliance with the relevant provisions set out in Regulation (EU) 2016/679, such as building energy management companies and electricity market participants, under non-discriminatory terms and free of charge.

By 6 months from the entry into force of the Directive, Member States shall adopt measures requiring vehicle manufacturers to make available, in real-time, in-vehicle data related to the battery state of health, battery state of charge, battery power setpoint as well as battery capacity, to electric vehicle owners and users, as well as to third parties acting on the owners' and users' behalf with explicit consent, such as electricity market participants and electromobility service providers, under non-discriminatory terms and free of charge to the owners or users of the batteries and the entities acting on their behalf,, in addition to further requirements in the type

approval and market surveillance regulation and in full compliance with the relevant provisions in regulation (EU) 2016/679. In accordance with the Battery Regulation [xyz], data shall be shared as 'read-only', thus preventing third parties to modify the parameters of the data.

Member States shall ensure that manufacturers of smart heating and cooling systems, thermal energy storage units and other smart devices facilitating consumers to provide demand response to the energy system to enable real-time access to data relevant for demand response under non-discriminatory terms and free of charge to users, as well as to third parties acting on the owners' and users' behalf through explicit consent and in compliance with the relevant provisions set out in Regulation (EU) 2016/679.

3. In addition to the requirements in [the proposal for a Regulation concerning the deployment of alternative fuel infrastructure, repealing Directive 2014/94/EU], Member States shall ensure that non–publicly accessible normal power recharging points installed in their territory from [the transposition deadline of this amending Directive] can support smart charging functionalities and interface with smart metering systems, when deployed by Member States and, where appropriate based on assessment by the regulatory authority, bidirectional charging functionalities as laid out in the Art. 14(4) of the Alternative Fuel Infrastructure Regulation and assessed by regulatory authorities regarding its potential contribution.

4. Member States shall ensure that all means of electricity generation, including renewable electricity production units, are involved in providing system and balancing services. Member States shall also ensure that the national regulatory framework does not discriminate against participation in the electricity markets, including congestion management and the provision of flexibility and balancing services for the electricity networks and the district heating and cooling networks, energy storage and flexibility providers as well as balancing services,, of small or mobile systems such as domestic and community batteries and electric vehicles, as well as decentralised energy resources with a capacity under 1MW participating to the system, thermal energy storage units, power-to-gas, heat pumps and other technologies able to provide flexibility, both directly and through aggregation. Member States shall provide a level playing field for smaller market actors, in particular renewable energy communities, so that they are able to participate in the market without facing disproportionate administrative or regulatory burden.

4 a. Member States shall ensure that the national regulatory framework allows final customers to enter into contractual agreements with electricity market participants and electromobility service providers to receive information on the terms of the agreement, including their personal data protection, and its implications for the consumers, including the remuneration for the flexibility.

LINKED RECITALS:

(15) With more than 30 million electric vehicles expected in the Union by 2030 it is necessary to ensure that they can fully contribute to the system integration of renewable

electricity, and thus allow reaching higher shares of renewable electricity in a cost-optimal manner. The potential of electric vehicles to absorb renewable electricity at times when it is abundant and feed it back into a grid when there is scarcity has to be fully utilised***, contributing to the system integration of variable renewable electricity while ensuring a secure and reliable supply of electricity***. It is therefore ***necessary*** to introduce specific measures on electric vehicles and information about renewable energy and how and when to access it which complement those in Directive (EU) 2014/94 of the European Parliament and of the Council and the [proposed Regulation concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020].

(15a) The potential of grid-balancing power plants and cogeneration plants that participate in grid-balancing in support of intermittent renewable electricity, thus allowing the expansion of such renewable electricity, should be fully utilised.

(16) In order for flexibility and balancing services from the aggregation of distributed storage assets to be developed in a competitive manner, real-time access to basic battery information such as state of health, state of charge, capacity and power set point should be provided under non-discriminatory terms***, in full compliance with the relevant provisions of Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation),*** and free of charge to the owners or users of the batteries and the entities acting on their behalf ***through explicit consent***, such as building energy system managers, mobility service providers and other electricity market participants***, such as electric vehicle users***. It is therefore appropriate to introduce measures addressing the need of access to such data for facilitating the integration-related operations of domestic batteries and electric vehicles, ***smart heating and cooling systems, and other smart devices,*** complementing the provisions on access to battery data related to facilitating the repurposing of batteries in [the proposed Commission regulation concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020]. The provisions on access to battery data of electric vehicles should apply in addition to any laid down in Union law on type approval of vehicles.

(17) The increasing number of electric vehicles in road, rail, maritime and other transport modes will require that recharging operations are optimised and managed in a way that does not cause congestion and takes full advantage of the availability of renewable electricity and low electricity prices in the system. In situations where ***smart and*** bidirectional charging would assist further penetration of renewable electricity by electric vehicle fleets in transport and the electricity system in general, such functionality should also be made available. In view of the long life span of recharging points, requirements for charging infrastructure should be kept updated in a way that would cater for future needs and would not result in negative lock-in effects to the development of technology and services.

(18) Electric vehicle users entering into contractual agreements with electromobility service providers and electricity market participants should have the right to receive information and explanations on how the terms of the agreement will affect the use of their vehicle and the state of health of its battery. Electromobility service providers and electricity market participants should explain clearly to electric vehicle users how they will be remunerated for the flexibility, balancing and storage services provided to the electricity system and market by the use of their electric vehicle. Electric vehicle users also need to have their consumer rights secured when entering into such agreements, in particular regarding the protection of their personal data such as location and driving habits, in connection to the use of their vehicle. Electric vehicle users' preference regarding the type of electricity purchased for use in their electric vehicle, as well as other preferences, can also be part of such agreements. For the above reasons, it is important ***to ensure that the charging***

infrastructure that is to be deployed is used most effectively. In order to improve consumer confidence in e-mobility, it is essential that electric vehicle users can use their subscription at multiple recharging points. This will also allow the electric vehicle user's service provider of choice to optimally integrate the electric vehicle in the electricity system, through predictable planning and incentives based on the electric vehicle user preferences This is also in line with the principles of a consumer-centric and prosumer-based energy system, and the right of supplier choice of electric vehicle users as final customers as per the provisions of Directive (EU) 2019/944.

(18a) Beyond domestic and electric vehicle batteries, a variety of other appliances such as smart heating and cooling devices, hot water tanks, thermal energy storage units and other smart devices have a significant demand response potential which should urgently be tapped to allow consumers to provide their flexibility to the energy system. It is therefore necessary to introduce measures enabling real-time access to data relevant for demand response to users, as well as to third parties acting on the owners' and users' behalf, such as electricity market participants, under non-discriminatory terms and free of charge, in full compliance with the relevant provisions of Regulation (EU) 2016/679.

(19) ***Accordingly, distributed and decentralised generation, demand response and*** storage assets, such as domestic batteries and batteries of electric vehicles***, smart heating and cooling systems and other smart devices and thermal energy storage*** have the potential to offer considerable flexibility and balancing services to the grid through aggregation. In order to facilitate the development of such ***devices and related*** services, the regulatory provisions concerning connection and operation of the ***decentralised generation and*** storage assets, such as tariffs, commitment times and connection specifications, should be designed in a way that does not hamper the potential of all storage assets, including small and mobile ones, to offer flexibility and balancing services to the system and to contribute to the further penetration renewable electricity, in comparison with larger, stationary storage assets. ***Member States should also provide a level playing-field for smaller market actors, in particular renewable energy communities, so that they are able to participate in the market without facing a disproportionate administrative or regulatory burden.***

(20) Recharging points where electric vehicles typically park for extended periods of time, such as where people park for reasons of residence or employment, are highly relevant to energy system integration, therefore smart ***and bidirectional*** charging functionalities need to be ensured. ***Specific initiatives should be taken to increase the number of recharging points in rural and sparsely populated areas and to ensure adequate distribution in the most remote and mountainous areas.*** In this regard, the operation of non-publicly accessible normal charging infrastructure***, for example through smart metering systems,*** is particularly important for the integration of electric vehicles in the electricity system as it is located where electric vehicles are parked repeatedly for long periods of time, such as in buildings with restricted access, employee parking or parking facilities rented out to natural or legal persons.

CA 11

Article 22a

Mainstreaming renewable energy in industry

1. Member States shall endeavour to increase the share of renewable source in the amount of energy sources used for final energy and non-energy purposes in the industry sector by an indicative average minimum annual increase of 1.9 percentage points by 2030. That increase shall be calculated as an average for the three-year periods, i.e. 2024 to 2027 and 2027 to 2030.

Member States shall include the policies and measures planned and taken to achieve such indicative increase in their integrated national energy and climate plans and progress reports submitted pursuant to Articles 3, 14 and 17 of Regulation (EU) 2018/1999. Such measures shall include the renewable-based electrification of industrial processes when considered as a cost-effective option. When adopting measures to increase the share of renewable energy in industry, Member States shall comply with the energy efficiency first principle.

Member States shall establish a regulatory framework which may include support measures for industry in accordance with in Art 3 (4a) and promote the uptake of renewable sources and renewable hydrogen consumed by industry, taking effectiveness and international competitiveness fully into account, as necessary pre-conditions for the uptake of renewable energy consumption in industry. In particular, that framework should tackle regulatory, administrative and economic barriers in line with art.3(4a) and art. 15(8).

Member States shall ensure that the contribution of renewable fuels of non-biological origin used for final energy and non-energy purposes is 50 % of the hydrogen used for final energy and non-energy purposes in industry by 2030. Member States shall ensure that by 2035, the contribution of renewable fuels of non-biological origin used for final energy and non-energy purposes is at least 70 % of the hydrogen used for final energy and non-energy purposes in industry. The Commission shall analyse the availability of fuels of non-biological origin in 2026 and every year thereafter. For the calculation of the percentage, the following rules shall apply:

(a) For the calculation of the denominator, the energy content of hydrogen, , for final energy and non-energy purposes shall be taken into account, excluding hydrogen used as intermediate products for the production of conventional transport fuels and hydrogen produced as a by-product or derived from by-products in industrial installations.

(b) For the calculation of the numerator, the energy content of the renewable fuels of non-biological origin consumed in the industry sector for final energy and non- energy purposes shall be taken into account, excluding renewable fuels of non- biological origin used as intermediate products for the production of transport fuels.

(c) For the calculation of the numerator and the denominator, the values regarding

the energy content of fuels set out in Annex III shall be used.

By 31 January 2026, following the establishment of the rules referred to in paragraph 1, the Commission shall assess whether, in view of regulatory, technical and scientific development, it is appropriate and justified to adapt the RFNBOs sub-target of 2030, and, where appropriate, shall amend this article for that purpose, accompanied by an impact assessment.

To promote the use of renewable energy solutions for low and medium-temperature industrial heat, Member States shall endeavour to increase the availability of economically viable and technically feasible renewable alternatives to fossil-fuel based energy use for industrial heat applications with the aim of ending the use of fossil-fuel based for applications requiring maximum heating temperatures up to 200 degrees Celsius by 2027 at the latest.

1a. By ... [one year after the entry into force of this amending Directive], the Commission shall develop a global hydrogen import strategy to promote a European hydrogen market. This strategy shall complement initiatives to promote domestic hydrogen production within the EU, supporting the implementation of this Directive and the achievement of the targets set out therein, while having due regard to security of supply and the EU's strategic autonomy in energy. The measures included in the strategy shall aim to promote a level playing-field, based on equivalent rules or standards in third countries in terms of environmental protection, sustainability and mitigating climate change. The strategy shall include indicative milestones and measures for imports. Member States shall take appropriate measures to implement the strategy in their integrated national energy and climate plans and progress reports submitted pursuant to Articles 3, 14 and 17 of Regulation (EU) 2018/1999. Furthermore, the strategy shall also take into account the need to develop access to energy for local people.

LINKED RECITALS:

(21) Industry accounts for 25% of the Union's energy consumption, and is a major consumer of heating and cooling, which is currently supplied 91% by fossil fuels. However, 50% of heating and cooling demand is low-temperature (<200 °C) for which there are cost-effective renewable energy options, including through direct renewable electrification, industrial heat-pumps and geothermal solutions. In addition, industry uses non-renewable sources as raw materials to produce products such as steel or chemicals. Industrial investment decisions today will determine the future industrial processes and energy options that can be considered by industry, so it is important that those investments decisions are future-proof ***and avoid the creation of stranded assets (S&D 187, Greens 186)***. Therefore, benchmarks should be put in place to incentivise industry to switch to a renewables-based production processes that not only are fuelled by renewable energy, but also use renewable-based raw materials such as renewable hydrogen. ~~Moreover, a common methodology for products that are labelled as having been produced partially or fully using renewable energy or using renewable fuels of non-biological origin as feedstock is required, taking into account existing Union product labelling methodologies and sustainable product initiatives. This would avoid deceptive practices and increase consumers trust. Furthermore, given consumer preference for products that contribute to environmental and climate change objectives, it would stimulate a market demand for those products.~~

(22) ***In application of the energy efficiency first principle, (S&D 192, Greens 190, ENVI***

21) renewable fuels of non-biological origin can be used for energy purposes, but also for non-energy purposes as feedstock or raw material in industries such as steel or chemicals. The use of renewable fuels of non-biological origin for both purposes exploits their full potential to replace fossil fuels used as feedstock and to reduce greenhouse gas emissions in ***industrial processes which are difficult to electrify (S&D 192, ENVI 21)*** and should therefore be included in a target for the use of renewable fuels of non-biological origin. National measures to support the uptake of renewable fuels of non-biological origin in ***those industrial sectors (Greens 190, ENVI 21)*** should not result in net pollution increases due to an increased demand for electricity generation that is satisfied by the most polluting fossil fuels, such as coal, diesel, lignite, oil peat and oil shale.

(22a) As referred to in the EU Hydrogen Strategy, low-carbon fuels and low carbon hydrogen can play a role in the energy transition to reduce emissions of existing fuels. As low-carbon fuels and low-carbon hydrogen are not renewable fuels, the revision of [Directive gas and hydrogen] should define the complementary provisions on the role of low-carbon fuels and low-carbon hydrogen to achieve carbon neutrality by 2050.

CA 12

Article 23

Mainstreaming renewable energy in heating and cooling

- ~~In order to promote the use of renewable energy in the heating and cooling sector, each Member State shall endeavour to increase the share of renewable energy in that sector by an indicative 1,3 percentage points as an annual average calculated for the periods 2021 to 2025 and 2026 to 2030, starting from the share of renewable energy in the heating and cooling sector in 2020, expressed in terms of national share of final energy consumption and calculated in accordance with the methodology set out in Article 7, without prejudice to paragraph 2 of this Article. That increase shall be limited to an indicative 1,1 percentage points for Member States where waste heat and cold is not used. Member States shall, where appropriate, prioritise the best available technologies.~~ **In order to promote the use of renewable energy in the heating and cooling sector, each Member State shall increase the share of renewable energy in that sector by an indicative 2.3 percentage points as an annual average calculated for the periods 2021 to 2025 and 2026 to 2030, starting from the share of renewable energy in the heating and cooling sector in 2020, expressed in terms of national share of gross final energy consumption and calculated in accordance with the methodology set out in Article 7.**

That increase shall be of 2.8 percentage points for Member States where waste heat and cold is used. In that caseMember States may count waste heat and cold up to 40 % of the average annual increase.

1a. In order to give to the Commission a full account of the considerable differences in the level of industrial heat demand across the Union, Member States shall carry out an assessment of their potential of energy from renewable sources and of the use of waste heat and cold in the heating and cooling sector including a cost- benefit analysis covering all the positive externalities, where appropriate, an analysis of areas suitable for their deployment at low ecological risk and of the potential for small-scale household projects SMEs, industrial symbioses and of commercial buildings and outline any infrastructure requirements with the participation of local and regional authorities. The assessment shall consider the available and economically feasible technologies for industrial and domestic uses in order to set out milestones and measures to increase the use of renewable energy sources in heating and cooling and, where appropriate, the use of waste heat and cold through district heating and cooling and small-scale households and SMEs with a view of establishing a long-term national strategy to reduce GHG emissions and air pollution originating from heating and cooling. Such strategy should take into account the different level of heat quality (high, medium, low temperature) specific to various processes and uses. The assessment shall be in accordance with the energy efficiency first principle and part of the integrated national energy and climate plans referred to in Articles 3 and 14 of Regulation (EU) 2018/1999, and shall accompany the comprehensive heating and cooling assessment required by Article 14(1) of Directive 2012/27/EU.

- For the purposes of paragraph 1, when calculating its share of renewable energy in the heating and cooling sector and its average annual increase in accordance with that paragraph, each Member State:

- ~~may count waste heat and cold, subject to a limit of 40 % of the average annual increase;~~

- where its share of renewable energy in the heating and cooling sector is above 60 %, may count any such share as fulfilling the average annual increase; and

- where its share of renewable energy in the heating and cooling sector is above 50 % and up to 60 %, may count any such share as fulfilling half of the average annual increase.

When deciding which measures to adopt for the purposes of deploying energy from renewable sources in the heating and cooling sector, Member States may take into account cost-effectiveness reflecting structural barriers arising from the high share of natural gas or cooling, or from a dispersed settlement structure with low population density.

Where those measures would result in a lower average annual increase than that referred to in paragraph 1 of this Article, Member States shall make it public, for instance by the means of their integrated national energy and climate progress reports pursuant to Article 20 of Regulation (EU) 2018/1999, and provide the Commission with reasons, including of choice of measures as referred to the second subparagraph of this paragraph.

Member States shall in particular provide information to the owners or tenants of buildings and SMEs on cost-effective measures, and financial instruments, to improve the use of renewable energy in the heating and cooling systems. Member States shall provide the information through accessible and transparent advisory tools based in one-stop shops

- On the basis of objective and non-discriminatory criteria, Member States may establish and make public a list of measures and may designate and make public the implementing entities, such as fuel suppliers, public or professional bodies, which are to contribute to the average annual increase referred to in paragraph 1.

- ~~Member States may implement the average annual increase referred to in paragraph 1 by means, *inter alia*, of one or more of the following options:~~

- ~~physical incorporation of renewable energy or waste heat and cold in the energy and energy fuel supplied for heating and cooling;~~

- ~~direct mitigation measures such as the installation of highly efficient renewable heating and cooling systems in buildings, or the use of renewable energy or waste heat and cold in industrial heating and cooling processes;~~

- ~~indirect mitigation measures covered by tradable certificates proving compliance with the obligation laid down in paragraph 1 through support to indirect mitigation measures, carried out by another economic operator such as an independent renewable technology installer or energy service company providing renewable installation services;~~

- ~~other policy measures, with an equivalent effect, to reach the average annual increase referred to in paragraph 1, including fiscal measures or other financial incentives.~~

~~When adopting and implementing the measures referred to in the first subparagraph, Member States shall aim to ensure the accessibility of measures to all consumers, in particular those in low-income or vulnerable households, who would not otherwise possess sufficient up-front capital to benefit.~~

To achieve the average annual increase referred to in paragraph 1, first subparagraph, Member States shall implement at least three of the following measures:

(a) physical incorporation of renewable energy or waste heat and cold in the energy sources and fuels supplied for heating and cooling;

(b) installation of highly efficient renewable heating and cooling systems in buildings, connection of buildings to high efficiency district heating and cooling system or use of renewable energy or waste heat and cold in industrial heating and cooling processes;

(c) measures covered by tradable certificates proving compliance with the obligation laid down in paragraph 1, first subparagraph, through support to installation measures under point (b) of this paragraph, carried out by another economic operator such as an independent renewable technology installer or an energy service company providing renewable installation services;

(d) capacity building for national, regional and local authorities to mal local renewable heating and cooling potential, to plan and implement and advise on renewable projects and infrastructures;

(e) creation of risk mitigation frameworks to reduce the cost of capital for renewable heat and cooling and waste heat and cold projects, inter alia allowing for the bundling of smaller projects as well as linking it more holistically with other energy efficiency and building renovation measures;

(f) promotion of renewable heat purchase agreements for corporate and collective small consumers;

(g) planned replacement schemes of fossil heating sources, heating systems not compatible with renewable sources or fossil phase-out schemes with milestones;

(h) renewable heat planning, encompassing cooling, requirements at local and regional level;

(i) other policy measures, with an equivalent effect, including fiscal measures, support schemes or other financial incentives contributing to the installation of renewable heating and cooling equipment and the development of energy networks supplying renewable energy for heating and cooling in buildings and industry.

j) promotion of the production of biogas and its injection into the gas grid, instead of

its use for electricity production

k) measures promoting the integration of thermal energy storage technologies in heating and cooling systems

l) promotion of consumer-owned renewable based district heating and cooling networks, in particular by renewable energy communities, including through regulatory measures, financing arrangements and support;

When adopting and implementing those measures, Member States shall ensure their accessibility to all consumers including those who are tenants, in particular those in low-income or vulnerable households and shall require a significant share of measures to be implemented as a priority in households living in a condition of energy poverty as defined in the [Energy efficiency Directive recast] and in social housing, who would not otherwise possess sufficient up-front capital to benefit.

- Member States may use the structures established under the national energy savings obligations set out in Article 7 of Directive 2012/27/EU to implement and monitor the measures referred to in paragraph 3 of this Article.

- Where entities are designated under paragraph 3, Member States shall ensure that the contribution by those designated entities is measurable and verifiable and that the designated entities report annually on:

- the total amount of energy supplied for heating and cooling;

- the total amount of renewable energy supplied for heating and cooling;

- the amount of waste heat and cold supplied for heating and cooling;

- the share of renewable energy and waste heat and cold in the total amount of energy supplied for heating and cooling; and

- the type of renewable energy source.

LINKED RECITAL:

(23) Increasing ambition in the heating and cooling sector is key to delivering the overall renewable energy target given that heating and cooling constitutes around half of the Union's energy consumption, covering a wide range of end uses and technologies in buildings, industry and district heating and cooling. To accelerate the increase of renewables in heating and cooling, an annual 1.1 percentage point increase at Member State level should be made binding as a minimum for all Member States. For those Member States, which already have renewable shares above 50% in the heating and cooling sector, it should remain possible to only apply half of the binding annual increase rate and Member States with 60% or above may count any such share as fulfilling the average annual increase rate in accordance with points b) and c) of paragraph 2 of Article 23. ***Member States should carry out, with the involvement of local and regional authorities and in full compliance with the energy efficiency first principle, an assessment of their potential of energy from renewable sources***

in the heating and cooling sector and of the use of waste heat and cold. In addition, Member State-specific top-ups should be set, redistributing the additional efforts to the desired level of renewables in 2030 among Member States based on GDP and cost-effectiveness. A longer list of different measures should also be included in Directive (EU) 2018/2001 to facilitate increasing the share of renewables in heating and cooling. Member States ***should*** implement one or more measures from the list of measures. ***When adopting and implementing those measures, Member States should ensure their accessibility to all consumers, in particular those in low-income or vulnerable households, and should require a significant share of measures to be implemented as a priority in low-income households at risk of energy poverty and in social housing.***

CA 13

Article 24

District heating and cooling

- **Member States shall support the renovation of existing and the development of highly efficient 4th and 5th generation renewable district heating and cooling networks fuelled exclusively by renewable energy sources and unavoidable waste heat or cold, following a positive economic and environmental cost-benefit analysis undertaken in partnership with local authorities involved.** Member ~~States shall ensure that information on the energy performance and the share of renewable energy in their district heating and cooling systems is provided to final consumers in an easily accessible manner, such as on the suppliers' websites, on annual bills or upon request.~~ **Member States shall ensure that information on the energy performance, the greenhouse gas emissions and the share of renewable energy in their district heating and cooling systems is provided to final consumers in an easily accessible manner, such as on bills or on the suppliers' websites and on request. The information on the renewable energy share shall be expressed at least as a percentage of gross final consumption of heating and cooling assigned to the customers of a given district heating and cooling system, including information on how much energy was used to deliver one unit of heating to the customer or end-user.**

- Member States shall lay down the necessary measures and conditions to allow customers of district heating or cooling systems which are not efficient district heating and cooling systems, or which are not such a system by 31 December 2025 on the basis of a plan approved by the competent authority, to disconnect by terminating or modifying their contract in order to produce heating or cooling from renewable sources themselves.

Where the termination of a contract is linked to physical disconnection, such a termination may be made conditional on compensation for the costs directly incurred as a result of the physical disconnection and for the undepreciated portion of assets needed to provide heat and cold to that customer.

- Member States may restrict the right to disconnect by terminating or modifying a contract in accordance with paragraph 2 to customers who can demonstrate that the planned alternative supply solution for heating or cooling results in a significantly better energy performance. The energy-performance assessment of the alternative supply solution may be based on the energy performance certificate.

- ~~Member States shall lay down the necessary measures to ensure that district heating and cooling systems contribute to the increase referred to in Article 23(1) of this Directive by implementing at least one of the two following options:~~

- ~~Endeavour to increase the share of energy from renewable sources and from waste heat and cold in district heating and cooling by at least one percentage point as an annual average calculated for the period 2021 to 2025 and for the period 2026 to~~

~~2030, starting from the share of energy from renewable sources and from waste heat and cold in district heating and cooling in 2020, expressed in terms of share of final energy consumption in district heating and cooling, by implementing measures that can be expected to trigger that average annual increase in years with normal climatic conditions.~~

~~Member States with a share of energy from renewable sources and from waste heat and cold in district heating and cooling above 60 % may count any such share as fulfilling the average annual increase referred to in the first sub-paragraph of this point.~~

~~Member States shall lay down the necessary measures to implement the average annual increase referred to in the first subparagraph of this point in their integrated national energy and climate plans pursuant to Annex I to Regulation (EU) 2018/1999.~~

- ~~Ensure that operators of district heating or cooling systems are obliged to connect suppliers of energy from renewable sources and from waste heat and cold or are obliged to offer to connect and purchase heat or cold from renewable sources and from waste heat and cold from third-party suppliers based on non-discriminatory criteria set by the competent authority of the Member State concerned, where they need to do one or more of the following:~~

  - ~~meet demand from new customers;~~
  - ~~replace existing heat or cold generation capacity;~~
  - ~~expand existing heat or cold generation capacity.~~

4. Member States shall endeavour to increase the share of energy from renewable sources, including heat generated from electricity from renewable energy sources, and from waste heat and cold in district heating and cooling by at least 2.3 percentage points as an annual average calculated for the period 2021 to 2025 and for the period 2026 to 2030, starting from the share of energy from renewable sources, including heat generated from electricity from renewable energy sources, and from waste heat and cold in district heating and cooling in 2020, and shall lay down the measures necessary to that end. The share of renewable energy shall be expressed in terms of share of gross final energy consumption in district heating and cooling adjusted to normal average climatic conditions.

Member States with a share of energy from renewable sources and from waste heat and cold in district heating and cooling above 60 % may count any such share as fulfilling the average annual increase referred to in the first subparagraph.

Member States shall lay down the necessary measures to implement the average annual increase referred to in the first subparagraph in their integrated national energy and climate plans pursuant to Annex I to Regulation (EU) 2018/1999.

4a. Member States shall ensure that operators of district heating or cooling systems above 25 MWth capacity are encouraged to connect third party suppliers of energy from renewable sources and from waste heat and cold or are encouraged to offer to

connect and purchase heat or cold from renewable sources and from waste heat and cold from third-party suppliers based on non-discriminatory criteria to be set by concerned Member State if such a connection is technically and economically feasible and, where such operators need to do one or more of the following:

(a) meet demand from new customers;

(b) replace existing heat or cold generation capacity;

(c) expand existing heat or cold generation capacity.';

Member States may decide to count renewable electricity used for district heating and cooling in the annual average increase set out in paragraph 4 of this Article. Renewable electricity counted towards Article 7 paragraph point (b) shall not be taken into account for the purposes of achieving the goals set out in point (a) of paragraph 1 of Article 7.

Where Member States decide to count renewable electricity used in district heating and cooling they shall notify it to the Commission before the introduction of such mechanism. Member States shall include the amount of renewable electricity used in district heating and cooling in their integrated national energy and climate progress reports pursuant to Article 17 of Regulation (EU) 2018/1999.

- ~~Where a Member State exercises the option referred to in point (b) of paragraph 4, an operator of a district heating or cooling system may refuse to connect and to purchase heat or cold from a third-party supplier where:~~

- ~~the system lacks the necessary capacity due to other supplies of waste heat and cold, of heat or cold from renewable sources or of heat or cold produced by high-efficiency cogeneration;~~

- ~~the heat or cold from the third-party supplier does not meet the technical parameters necessary to connect and ensure the reliable and safe operation of the district heating and cooling system; or~~

- ~~the operator can demonstrate that providing access would lead to an excessive heat or cold cost increase for final customers compared to the cost of using the main local heat or cold supply with which the renewable source or waste heat and cold would compete.~~

~~Member States shall ensure that, when an operator of a district heating or cooling system refuses to connect a supplier of heating or cooling pursuant to the first subparagraph, information on the reasons for the refusal, as well as the conditions to be met and measures to be taken in the system in order to enable the connection, is provided by that operator to the competent authority in accordance with paragraph 9.~~

For the purposes of calculating the renewable fuels and electricity produced from renewable sources and used for the production of heat and cold in district heating and cooling towards the implementation of the minimum share referred to in paragraph 4, the rules set out in Article 23(6a) apply.

5. Member States may allow an operator of a district heating or cooling system to refuse to connect and to purchase heat or cold from a third-party supplier in any of the following situations:

(a) the system lacks the necessary capacity due to other supplies of heat or cold from renewable sources or of waste heat and cold;

(b) the heat or cold from the third-party supplier does not meet the technical parameters necessary to connect and ensure the reliable and safe operation of the district heating and cooling system;

(c) the operator can demonstrate that providing access would lead to an excessive heat or cold cost increase for final customers compared to the cost of using the main local heat or cold supply with which the renewable source or waste heat and cold would compete;

(d) the operator's system meets the definition of efficient district heating and cooling set out in [Article x of the proposed recast of the Energy Efficiency Directive].

Member States shall ensure that, when an operator of a district heating or cooling system refuses to connect a supplier of heating or cooling pursuant to the first subparagraph, information on the reasons for the refusal, as well as the conditions to be met and measures to be taken in the system in order to enable the connection, is provided by that operator to the competent authority. Member States shall ensure that an appropriate process is in place to remedy unjustified refusals.

- ~~Where a Member State exercises the option referred to in point (b) of paragraph 4, it may exempt operators of the following district heating and cooling systems from the application of that point:~~
- ~~efficient district heating and cooling;~~
- ~~efficient district heating and cooling that exploits high-efficiency cogeneration;~~
- ~~district heating and cooling that, on the basis of a plan approved by the competent authority, is efficient district heating and cooling by 31 December 2025;~~
- ~~district heating and cooling with a total rated thermal input below 20 MW.~~
- **Member States shall put in place, where needed, a coordination framework between district heating and cooling system operators and the potential sources of waste heat and cold in the industrial and tertiary sectors to facilitate the use of waste heat and cold. That coordination framework shall ensure the application of the energy efficiency first principle and facilitate dialogue as regards the use of waste heat and cold involving at least:**
- **district heating and cooling system operators;**
- **industrial and tertiary sector enterprises generating waste heat and cold that**

can be economically recovered via district heating and cooling systems, such as data centres, industrial plants, large commercial buildings, energy storage facilities, and public transport; and

- **local authorities responsible for planning and approving energy infrastructures;**
- **scientific experts working on the latest state of the art highly energy efficient fully renewables based district heating and cooling systems**
- **renewable energy communities involved in heating and cooling**

- The right to disconnect by terminating or modifying a contract in accordance with paragraph 2 may be exercised by individual customers, by joint undertakings formed by customers or by parties acting on behalf of customers. For multi-apartment blocks, such disconnection may be exercised only at a whole building level in accordance with the applicable housing law.

- ~~Member States shall require electricity distribution system operators to assess at least every four years, in cooperation with the operators of district heating or cooling systems in their respective area, the potential for district heating or cooling systems to provide balancing and other system services, including demand response and storing of excess electricity from renewable sources, and whether the use of the identified potential would be more resource- and cost-efficient than alternative solutions.~~ **Member States shall establish a framework under which electricity distribution system operators will assess, at least every four years, in cooperation with the operators of district heating and cooling systems in their respective areas, the potential for district heating and cooling systems to provide balancing and other system services, including demand response and thermal storage of excess electricity from centralized and decentralized renewable sources, and whether the use of the identified potential would be more resource- and cost-efficient than alternative solutions, in compliance with the energy efficiency first principle.**

Member States shall ensure that electricity transmission and distribution system operators take due account of the results of the assessment required under the first subparagraph in grid planning, grid investment and infrastructure development in their respective territories.

Member States shall facilitate coordination between operators of district heating and cooling systems and electricity transmission and distribution system operators to ensure that balancing, storage and other flexibility services, such as demand response, provided by district heating and district cooling system operators, can participate in their electricity markets on a non-discriminatory basis.

Member States may extend the assessment and coordination requirements under the first and third subparagraphs to gas transmission and distribution system operators, including hydrogen networks and other energy networks.

- ~~Member States shall ensure that the rights of consumers and the rules for operating district heating and cooling systems in accordance with this Article are clearly defined and enforced by the competent authority.~~ **Member States shall ensure that the rights of consumers and the rules for operating district heating and cooling systems in accordance with this Article are clearly defined, publicly available and enforced by the competent authority.**

- ~~A Member State shall not be required to apply paragraphs 2 to 9 of this Article where:~~

- ~~its share of district heating and cooling is less than or equal to 2 % of the overall consumption of energy in heating and cooling on 24 December 2018;~~

- ~~its share of district heating and cooling is increased above 2 % by developing new efficient district heating and cooling based on its integrated national energy and climate plan pursuant to Annex I to Regulation (EU) 2018/1999 or the assessment referred to in Article 15(7) of this Directive; or~~

- ~~its share of systems referred to in paragraph 6 of this Article constitutes over 90 % of total sales of its district heating and cooling.~~

- **A Member State shall not be required to apply paragraph 2 where at least one of the following conditions is met:**
- **its share of district heating and cooling was less than or equal to 2 % of the gross final energy consumption in heating and cooling on 24 December 2018;**

- **its share of district heating and cooling is increased above 2 % of the gross final energy consumption in heating and cooling on 24 December 2018 by developing new efficient district heating and cooling based on its integrated national energy and climate plan pursuant to Annex I to Regulation (EU) 2018/1999 and the assessment referred to in Article 23(1a) of this Directive;**

- **90 % of the gross final energy consumption in district heating and cooling systems takes place in district heating and cooling systems meeting the definition laid down in [Article x of the proposed recast of the Energy Efficiency Directive].**

LINKED RECITALS:

(24) To ensure that a greater role of district heating and cooling is accompanied by better information for consumers, it is appropriate to clarify and strengthen the disclosure of the renewables share and ***the associated greenhouse gas emissions, as well as the*** energy efficiency of these systems.

(25) Modern renewable-based efficient district heating and cooling systems have demonstrated their potential to provide cost-effective solutions for integrating renewable energy, increased energy efficiency and energy system integration, facilitating the overall decarbonisation of the heating and cooling sector. To ensure this potential is harnessed, the

annual increase of renewable energy and/or waste heat in district heating and cooling should be raised from 1 percentage point to 2.1 without changing the indicative nature of this increase, reflecting the uneven development of this type of network across the Union.

(26) To reflect the increased importance of district heating and cooling and the need to steer the development of these networks towards the integration of more renewable energy, it is appropriate to set requirements to ensure the connection of third party suppliers of renewable energy and waste heat and cold with district heating or cooling networks systems above 25MW.

(27) Waste heat and cold are underused despite their wide availability, leading to a waste of resources, lower energy efficiency in national energy systems and higher than necessary energy consumption in the Union. Requirements for closer coordination between district heating and cooling operators, industrial and tertiary sectors, and local authorities could facilitate the dialogue and cooperation necessary to harness cost-effective waste heat and cold potentials via district heating and cooling systems.

(28) To ensure district heating and cooling participate fully in energy sector integration, it is necessary to extend the cooperation with electricity distribution system operators to electricity transmission system operators and widen the scope of cooperation to grid investment planning and markets to better utilise the potential of district heating and cooling for providing flexibility services in electricity markets. Further cooperation with gas network operators, including hydrogen and other energy networks, should also be made possible to ensure a wider integration across energy carriers and their most cost-effective use.

CA 19

Article 31a

Union database

1. Three months after entry into force of this Directive, the Commission shall ensure that a Union database is set up to enable the tracing of biomass fuels, liquid and gaseous renewable fuels and recycled carbon fuels (the "Union Database").

2. Member States shall require the relevant economic operators to enter in a timely manner accurate information into that database on the transactions made, on the sustainability criteria of the fuels subject to those transactions, including their life-cycle greenhouse gas emissions, starting from their point of production to the moment it is consumed in the Union. The interconnected gas system shall be considered a single mass balance system. Information about injection and withdrawal shall be provided in the Union Database for gaseous fuels. Information on whether support has been provided for the production of a specific consignment of fuel, and if so, on the type of support scheme, shall also be included in the database.

Where appropriate to improve traceability of data along the entire supply chain, the Commission is empowered to adopt delegated acts in accordance with Article 35 to further extend the scope of the information to be included in the Union database to cover relevant data from the point of production or collection of the raw material used for the fuel production. Member States shall require fuel suppliers to enter the information necessary to verify compliance with the requirements laid down in Article 25(1), first subparagraph, into the Union database.

Notwithstanding paragraph 2, for gaseous renewable fuels and for gaseous fuels injected into the European gas system, economic operators should enter information on the transactions made and the sustainability criteria and other relevant information such as GHG emissions of the fuels up to the injection point to the interconnected gas system, where the mass balancing traceability system is complemented by guarantees of origin.

3. Member States shall have access to the Union database for the purposes of monitoring and data verification.

4. When guarantees of origin have been issued for the production of a consignment of renewable gases, Member States shall ensure that those guarantees of origin are cancelled after the consignment of renewable gases is withdrawn from the European interconnected system for gas.

5. Member States shall ensure that the accuracy and completeness of the information included by economic operators in the database is verified, for instance by using voluntary or national schemes, which may be complemented by a system of guarantees of origin.

5 a. The database shall be made publicly available in an open, transparent and user-friendly manner and kept up-to-date.

The Commission shall publish annual reports for the general public about the information reported in the Union database including the quantities, the geographic origin and feedstock type of renewable and low carbon fuels.

For data verification, voluntary or national schemes recognised by the Commission pursuant to Article 30(4), (5) and (6) may use third party information systems as intermediaries to collect the data, provided that such use has been notified to the Commission.

Related recital to Art. 31a:
(38) The Union database to be set up by the Commission aims at enabling the tracing of liquid and gaseous renewable fuels and recycled carbon fuels. Its scope should be extended from transport to all other end-use sectors in which such fuels are consumed. This should make a vital contribution to the comprehensive monitoring of the production and consumption of those fuels, mitigating risks of double-counting or irregularities along the supply chains covered by the Union database. In addition, to avoid any risk of double claims on the same renewable gas, a guarantee of origin issued for any consignment of renewable gas registered in the database should be cancelled. ***This database should be made publicly available in an open, transparent and user friendly manner. The Commission should publish annual reports for the general public about the information reported in the Union database, including the quantities, the geographic origin and feedstock type of biofuels, bioliquids and biomass fuels***

CA 20

Article 33

Monitoring by the Commission

- The Commission shall monitor the origin of biofuels, bioliquids and biomass fuels consumed in the Union and the impact of their production, including the impact as a result of displacement, on land use in the Union and in the main third countries of supply. Such monitoring shall be based on Member States' integrated national energy and climate plans and corresponding progress reports pursuant to Articles 3, 17 and 20 of Regulation (EU) 2018/1999, and those of relevant third countries, intergovernmental organizations, scientific studies and any other relevant pieces of information. The Commission shall also monitor the commodity price changes associated with the use of biomass for energy and any associated positive and negative effects on food security.

- The Commission shall maintain a dialogue and exchange information with third countries and biofuel, bioliquid and biomass fuel producers, consumer organisations and civil society concerning the general implementation of the measures in this Directive relating to biofuels, bioliquids and biomass fuels. It shall, within that framework, pay particular attention to the impact that biofuel, bioliquid and biomass fuel production may have on food prices.

- In 2025, the Commission shall submit, if appropriate, a legislative proposal on the regulatory framework for the promotion of energy from renewable sources for the period after 2030.

That proposal shall take into account the experience of the implementation of this Directive, including its sustainability and greenhouse gas emissions saving criteria, and technological developments in energy from renewable sources.

When preparing the legislative proposal referred to in the first subparagraph the Commission shall take into account:

(a) the advice of the European Scientific Advisory Board on Climate Change established under Article 10a of Regulation (EC) No 401/2009 and ;
(b) the projected indicative Union greenhouse gas budget referred to set out in Article 4(4) of Regulation (EU) 2021/1119;, and
(c) the integrated national energy and climate plans submitted by Member States by 30 June 2024 pursuant to Article 14 (2) of Regulation (EU) 2018/1999;
(d) the assessment made under paragraph 2a, of this Article;
(e) the experience gained by the implementation of this Directive, including its sustainability and greenhouse gas emissions saving criteria;, and;
(f) technological developments in energy from renewable sources,

- In 2032, the Commission shall publish a report reviewing the application of this Directive.

4a. By two years after entry into force of the Directive, the Commission shall review the implementation of this Directive and publish a report setting out the conclusions of its review. The review shall, in particular, examine the following:

(a) the external effects of the deployment of renewable energy and its impact on the environment ;
(b) the socio-economic benefits of the implementation of this Directive;,
(c) the status of the implementation of related renewables energy initiatives under the RepowerEU;,
(d) whether the increase in demand for electricity in the transport, industry, building and heating and cooling sectors and RFNBOs is met with equivalent amounts of renewable generation capacities;.
(e) the administrative burden resulting from the implementation of this Directive, taking into account the "one in, one out" principle, and possible amendments to this Directive and other Union legislative acts with the aim of overall regulatory simplification.

The Commission and the competent authorities in the Member States shall continuously adapt to best administrative practices administrative procedures and take all other measures to simplify the implementation of this Directive, and reduce compliance costs for involved actors and affected sectors to a minimum.

RECITAL:

(38a) In order to offset of the regulatory burdens for citizens, administrations and businesses introduced by this Directive, the Commission should, in the framework of its annual burden survey conducted pursuant to paragraph 48 of the Interinstitutional Agreement of 13 April 2016 on Better Law-Making, review the regulatory framework in the concerned sectors in line with the "one in, one out" principle, as set out in the Commission communication of 29 April 2021 entitled "Better Regulation: Joining forces to make better laws", and, where appropriate, present legislative proposals for the amendment or deletion of provisions in other Union legislative acts that generate compliance costs in those sectors.

CA 22

(1) The European Green Deal establishes the objective of the Union becoming climate neutral in 2050 in a manner that contributes to the European economy, growth and job creation. That objective, and the objective of a reduction ***of at least 55%*** in greenhouse gas emissions by 2030 as set out in ***Regulation (EU) 2021/119 (the European Climate Law)*** requires an energy transition and significantly higher shares of renewable energy sources in an integrated energy system.

(1a) This transition affects Member States, regions, economic sectors and citizens differently and depending on their particular situation. It is therefore essential to ensure that the Green Deal is implemented in a way that promotes economic, social and territorial cohesion in the EU and that the transition is just and inclusive. In particular, it must be ensured that disruptions are avoided in critical sectors that meet basic needs of the economy and society, such as mobility.

(1b) Energy is an essential production factor that is in constant demand and vitally important in economic, social and environmental terms. All human activities, including transport, depend on sufficient and affordable energy being available when needed.

(2) Renewable energy plays a fundamental role in delivering the European Green Deal and for achieving climate neutrality by 2050, given that the energy sector contributes over 75% of total greenhouse gas emissions in the Union. By reducing those greenhouse gas emissions, renewable energy also contributes to tackling environmental-related challenges such as biodiversity loss***, land, water and air pollution, as long as the use of the renewable energy sources themselves does not exacerbate those challenges. The low operating costs of renewable energy and the reduced exposure to price shocks compared to fossil fuels gives renewable energy a key role in tackling energy poverty.***

CA 21
Article 5(1), first subparagraph (COM(2021)557)

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December ***2023*** at the latest. They shall forthwith communicate to the Commission the text of those provisions.

CA 14

Article 25

Greenhouse gas intensity reduction in the transport sector from the use of renewable energy

1. Each Member State shall set an obligation on fuel suppliers to ensure that:

(a) the amount of renewable fuels and renewable electricity supplied to the transport sector leads to a greenhouse gas intensity reduction of at least 16 % by 2030, compared to the baseline set out in Article 27(1), point (b), in accordance with a trajectory set by the Member State;

(b) the share of advanced biofuels and biogas produced from the feedstock listed in Part A of Annex IX in the energy supplied to the transport sector is at least, 0,5 % in 2025 and at least 2,2 % in 2030, and the share of renewable fuels of non- biological origin is at least 2,6 % in *2028, and at least 5,7 % in* in 2030.

If the list of feedstock set out in Part A of Annex IX is amended in accordance with Article 28(6), the minimum share of advanced biofuels and biogas produced from the feedstock in the energy supplied to the transport sector referred to in point (b) shall be increased accordingly and shall be based on an impact assessment by the Commission.

(ba) From 2030 fuel suppliers shall deliver at least 1,2 % renewable fuels of non-biological origin, to the hard to abate maritime mode. A Member State which has no maritime ports in its territory may choose not to apply this provision. Any Member State that intends to avail itself of that derogation shall notify the Commission no later than one year after ... [the entry into force of this amending Directive]. Any subsequent change shall also be communicated to the Commission.

The Commission shall assess that obligation laid down in paragraph 1 with a view to submitting a legislative proposal by 2025 to increase it where there are further substantial costs reductions in the production of renewable energy, where needed to meet the Union's international commitments for decarbonisation, or where a significant decrease in energy consumption in the Union justifies such an increase.

For the calculation of the reduction referred to in point (a) and the share referred to in point (b), Member States shall take into account renewable fuels of non-biological origin also when they are used as intermediate products for the production of conventional transport fuels. For the calculation of the reduction referred to in point (a), Member States may take into account recycled carbon fuels.

When setting the obligation on fuel suppliers, Member States may exempt fuel suppliers supplying electricity or renewable liquid and gaseous transport fuels of non-biological origin from the requirement to comply with the minimum share of advanced biofuels and biogas produced from the feedstock listed in Part A of Annex IX with respect to those fuels.

2. Member States shall establish a mechanism allowing fuel suppliers in their territory to exchange credits for supplying renewable energy to the transport sector. Economic operators that supply renewable electricity to light and heavy duty electric vehicles through public

recharging stations *or renewable energy* shall receive credits, irrespectively of whether the economic operators are subject to the obligation set by the Member State on fuel suppliers, and may sell those credits to fuel suppliers, which shall be allowed to use the credits to fulfil the obligation set out in paragraph 1, first subparagraph. ***Member State may decide to include private recharging stations in the mechanism referred to in the first subparagraph provided it can be demonstrated that renewable electricity supplied to those private recharging stations is provided solely to electric vehicles.***

Related recitals:

(29) The use of renewable fuels and renewable electricity in transport can contribute to the decarbonisation of the Union transport sector in a cost-effective manner, and improve, amongst other, energy diversification in that sector while promoting innovation, growth and jobs in the Union economy and reducing reliance on energy imports. With a view to achieving the increased target for greenhouse gas emission savings defined by the Union, the level of renewable energy supplied to all transport modes in the Union should be increased. Expressing the transport target as a greenhouse gas intensity reduction target would stimulate an increasing use of the most cost-effective and performing fuels, in terms of greenhouse gas savings, in transport. In addition, a greenhouse gas intensity reduction target would stimulate innovation and set out a clear benchmark to compare across fuel types and renewable electricity depending on their greenhouse gas intensity. Complementary to this, increasing the level of the energy-based target on advanced biofuels and biogas and introducing a target for renewable fuels of non-biological origin would ensure an increased use of the renewable fuels with smallest environmental impact in transport modes that are difficult to electrify. The achievement of those targets should be ensured by obligations on fuel suppliers as well as by other measures included in [Regulation (EU) 2021/XXX on the use of renewable and low-carbon fuels in maritime transport - FuelEU Maritime and Regulation (EU) 2021/XXX on ensuring a level playing field for sustainable air transport]. Dedicated obligations on aviation fuel suppliers should be set only pursuant to [Regulation (EU) 2021/XXX on ensuring a level playing field for sustainable air transport].

(30) Electromobility will play an essential role in decarbonising the transport sector. To foster the further development of electromobility, Member States should establish a credit mechanism enabling operators of charging points accessible to the public to contribute, by supplying renewable electricity ***or renewable energy,*** towards the fulfilment of the obligation set up by Member States on fuel suppliers. ***Private recharging stations can be included in this mechanism by the Member States, if it can be demonstrated that the renewable electricity supplied to those recharging stations is provided solely to electric vehicles.*** While supporting electricity in transport through such a mechanism, it is important that Member States continue setting a high level of ambition for the decarbonisation of their liquid fuel mix***, particularly*** in ***hard-to-decarbonise*** transport ***sectors, such as maritime and aviation, where direct electrification is much more difficult***.

CA 15

Article 26

Specific rules for biofuels, bioliquids and biomass fuels produced from food and feed crops

1. ~~For the calculation of a Member State's gross final consumption of energy from renewable sources referred to in Article 7 and the minimum share referred to in the first subparagraph of Article 25(1), the share of biofuels and bioliquids, as well as of biomass fuels consumed in transport, where produced from food and feed crops, shall be no more than one percentage point higher than the share of such fuels in the final consumption of energy in the road and rail transport sectors in 2020 in that Member State, with a maximum of 7 % of final consumption of energy in the road and rail transport sectors in that Member State.~~ **For the calculation of a Member State's gross final consumption of energy from renewable sources referred to in Article 7 and of the greenhouse gas intensity reduction target referred to in Article 25(1), first subparagraph, point (a), the share of biofuels and bioliquids, as well as of biomass fuels consumed in transport, where produced from food and feed crops, shall be no more than one percentage point higher than the share of such fuels in the final consumption of energy in the transport sector in 2020 in that Member State, with a maximum of 7 % of final consumption of energy in the transport sector in that Member State.**

At the request of a Member State, the Commission may allow a derogation from the first subparagraph allowing Member States to exclude bioliquids used for electricity production in outermost regions within the meaning of Article 349 TFEU from the calculation of the ceiling of 7% of final consumption of energy in the road and rail transport sector referred to in the first subparagraph, provided that such derogation is justified by local specificities. Member States shall make the request for the derogation to the Commission by ... [date of transposition of this amending Directive] and provide up-to-date scientific and technical justifications for such derogation. The Commission shall decide on the request of the Member State within three months of its receipt.

Where that share of biofuels and bioliquids referred to in the first subparagraph is below 1 % in a Member State, it may be increased to a maximum of 2 % of the final consumption of energy in the road and rail transport sectors

Member States may set a lower limit and may distinguish, for the purposes of Article 29(1), between different biofuels, bioliquids and biomass fuels produced from food and feed crops, taking into account best available evidence on indirect land-use change impact. Member States may, for example, set a lower limit for the share of biofuels, bioliquids and biomass fuels produced from oil crops.

~~Where the share of biofuels and bioliquids, as well as of biomass fuels consumed in transport, produced from food and feed crops in a Member State is limited to a share lower than 7 % or a Member State decides to limit the share further, that Member State may reduce the minimum share referred to in the first subparagraph of Article 25(1) accordingly, by a maximum of 7 percentage points.~~ **Where the share of biofuels and bioliquids, as well as of biomass fuels consumed in transport, produced from food and feed crops in a Member State is limited to a share lower**

than 7 % or a Member State decides to limit the share further, that Member State may reduce the greenhouse gas intensity reduction target referred to in Article 25(1), first subparagraph, point (a), accordingly, in view of the contribution these fuels would have made in terms of greenhouse gas emissions saving. For that purpose, Member States shall consider those fuels save 50 % greenhouse gas emissions.

2. For the calculation of a Member State's gross final consumption of energy from renewable sources referred to in Article 7 and ~~the minimum share referred to in the first subparagraph of Article 25(1)~~ **the greenhouse gas emission reduction target referred to in Article 25(1), first subparagraph, point (a)**, the share of high indirect land- use change-risk biofuels, bioliquids or biomass fuels produced from food and feed crops for which a significant expansion of the production area into land with high-carbon stock is observed shall not exceed the level of consumption of such fuels in that Member State in 2019, unless they are certified to be low indirect land-use change- risk biofuels, bioliquids or biomass fuels pursuant to this paragraph.

By (entry into force of this directive) that limit shall decrease to 0 %.

By 1 February 2019, the Commission shall submit to the European Parliament and to the Council a report on the status of worldwide production expansion of the relevant food and feed crops.

By 1 February 2019, the Commission shall adopt a delegated act in accordance with Article 35 to supplement this Directive by setting out the criteria for certification of low indirect land-use change-risk biofuels, bioliquids and biomass fuels and for determining the high indirect land-use change-risk feedstock for which a significant expansion of the production area into land with high-carbon stock is observed. The report and the accompanying delegated act shall be based on the best available scientific data.

***By 30 June 2023, the Commission shall submit to the European Parliament and to the Council an update of the report on the status of worldwide production expansion of the relevant food and feed crops. This update must include the most recent data from the last two years with regards to deforestation and high indirect land use change risk feedstocks and must address other high risk commodities in the category of high indirect land use change risk feedstocks. F*or the purposes of the delegated act referred to in the fifth paragraph, the maximum share of the average annual expansion of the global production area in high carbon stocks shall be higher than 7,9%.**

By 1 September 2023, the Commission shall review the criteria laid down in the delegated act referred to in the fourth subparagraph based on the best available scientific data and shall adopt delegated acts in accordance with Article 35 to amend such criteria, where appropriate, and to include a trajectory to gradually decrease the contribution to the Union target set in Article 3(1) and to ~~the minimum share referred to in the first subparagraph of Article 25(1)~~ **the greenhouse gas emission reduction target referred to in Article 25(1), first subparagraph, point (a)**, of high indirect land-use change-risk biofuels, bioliquids and biomass fuels produced from feedstock for which a significant expansion of the production into land with high-carbon stock is observed.

Related recital:

(31) The Union's renewable energy policy aims to contribute to achieving the climate change

mitigation objectives of the European Union in terms of the reduction of greenhouse gas emissions. In the pursuit of this goal, it is essential to also contribute to wider environmental objectives, and in particular the prevention of biodiversity loss, which is negatively impacted by the indirect land use change associated to the production of certain biofuels, bioliquids and biomass fuels***. Likewise, inadequate planning of the installations of large wind or photovoltaic projects can have undesired effects on biodiversity, on landscapes, and on local communities. (Left 224) The indirect effects of deforestation and soil compaction, the effects of wind turbines and the conflicts of land use with regard to solar parks should also be taken into account.*** Contributing to these climate and environmental objectives constitutes a deep and longstanding intergenerational concern for Union citizens and the Union legislator. ***The European Union should thus promote fuels in quantities which balance the necessary ambition with the need to avoid contributing to direct and indirect land-use change.*** As a consequence, the changes in the way the transport target is calculated should not affect the limits established on how to account toward that target certain fuels produced from food and feed crops on the one hand and high indirect land-use change-risk fuels on the other hand. In addition, in order not to create an incentive to use biofuels and biogas produced from food and feed crops in transport ***and to take into consideration the war against Ukraine***, Member States should continue to be able to choose whether count them or not towards the transport target. If they do not count them, they may reduce the greenhouse gas intensity reduction target accordingly, assuming that food and feed crop-based biofuels save 50% greenhouse gas emissions, which corresponds to the typical values set out in an annex to this Directive for the greenhouse gas emission savings of the most relevant production pathways of food and feed crop-based biofuels as well as the minimum savings threshold applying to most installations producing such biofuels. ***In addition, Member States should also consider securing additional food supply to stabilise global food commodity markets.***

(31a) Account should be taken of Article 349 of the Treaty on the Functioning of the European Union (TFEU), which acknowledges the particular vulnerability of the outermost regions arising from their remoteness from mainland regions, insularity, small size, difficult topography and climate and economic dependence on a few products, a combination that severely restrains their development and generates substantial extra costs in many areas, particularly for transport. Efforts being made and targets set at European level for greenhouse gas reduction must be adapted to this difficult situation, balancing environmental objectives against the high social costs for these regions.

CA 16

Article 27

~~Calculation rules with regard to the minimum shares of renewable energy in the transport sector~~ Calculation rules in the transport sector and with regard to renewable fuels of non-biological origin regardless of their end use

- ~~For the calculation of the minimum shares referred to in the first and fourth subparagraphs of Article 25(1), the following provisions shall apply:~~

- ~~for the calculation of the denominator, that is the energy content of road and rail transport fuels supplied for consumption or use on the market, petrol, diesel, natural gas, biofuels, biogas, renewable liquid and gaseous transport fuels of non-biological origin, recycled carbon fuels and electricity supplied to the road and rail transport sectors, shall be taken into account;~~

- ~~for the calculation of the numerator, that is the amount of energy from renewable sources consumed in the transport sector for the purposes of the first subparagraph of Article 25(1), the energy content of all types of energy from renewable sources supplied to all transport sectors, including renewable electricity supplied to the road and rail transport sectors, shall be taken into account. Member States may also take into account recycled carbon fuels.~~

~~For the calculation of the numerator, the share of biofuels and biogas produced from the feedstock listed in Part B of Annex IX shall, except for in Cyprus and Malta, be limited to 1,7 % of the energy content of transport fuels supplied for consumption or use on the market. Member States may, where justified, modify that limit, taking into account the availability of feedstock. Any such modification shall be subject to approval by the Commission;~~

- ~~for the calculation of both numerator and denominator, the values regarding the energy content of transport fuels set out in Annex III shall be used. For the determination of the energy content of transport fuels not included in Annex III, the Member States shall use the relevant ESO standards for the determination of the calorific values of fuels. Where no ESO standard has been adopted for that purpose, the relevant ISO standards shall be used. The Commission is empowered to adopt delegated acts in accordance with Article 35 to amend this Directive by adapting the energy content of transport fuels, as set out in Annex III, in accordance with scientific and technical progress.~~

- **For the calculation of the greenhouse gas intensity reduction referred to in Article 25(1), first subparagraph, point (a), the following rules shall apply:**

- **the greenhouse gas emissions savings shall be calculated as follows:**

(i) for biofuel and biogas, by multiplying the amount of these fuels supplied to all transport modes by their emissions savings determined in accordance with Article 31;

(ii) for renewable fuels of non-biological origin and recycled carbon fuels, by multiplying

the amount of these fuels that is supplied to all transport modes by their emissions savings determined in accordance with delegated acts adopted pursuant to Article 29a(3);

(iii) for renewable electricity, by multiplying the amount of renewable electricity that is supplied to all transport modes by the fossil fuel comparator $EC_{F(e)}$ set out in in Annex V shall be used until 31 December 2029. From 1 January 2030 onwards, the comparator $E_{F(t)}$ set out in in Annex V shall be used.

However, the greenhouse gas emissions savings achieved in 2030 by the use of renewable electricity in transport, calculated in application of the EF(t) comparator, shall constitute an additional contribution of renewable electricity of what was already achieved up until 31 December 2029 with the ECF(e) comparator for the calculation of emission savings from 2030 onwards.

- **the baseline referred to in Article 25(1) shall be calculated by multiplying the amount of energy supplied to the transport sector by the fossil fuel comparator $E_{F(t)}$ set out in Annex V;**

- **for the calculation of the relevant amounts of energy, the following rules shall apply:**

(i) in order to determine the amount of energy supplied to the transport sector, the values regarding the energy content of transport fuels set out in Annex III shall be used;

(ii) in order to determine the energy content of transport fuels not included in Annex III, the Member States shall use the relevant European standards for the determination of the calorific values of fuels. Where no European standard has been adopted for that purpose, the relevant ISO standards shall be used;

(iii) the amount of renewable electricity supplied to the transport sector is determined by multiplying the amount of electricity supplied to that sector by the average share of renewable electricity supplied in the territory of the Member State in the two previous years. By way of exception, where electricity is obtained from a direct connection to an installation generating renewable electricity and supplied to the transport sector, that electricity shall be fully counted as renewable;

(iv) the share of biofuels and biogas produced from the feedstock listed in Part B of Annex IX in the energy content of fuels and electricity supplied to the transport sector shall, except in Cyprus and Malta, be limited to 1,7 %.

If the list of feedstock set out in Part B of Annex IX is amended in accordance with Article 28(6), the cap of such biofuels and biogas shall be increased accordingly and shall be based on an impact assessment by the Commission.

- **the greenhouse gas intensity reduction from the use of renewable energy is determined by dividing the greenhouse gas emissions saving from the use of biofuels, biogas and renewable electricity supplied to all transport modes by the baseline.**

The Commission is empowered to adopt delegated acts in accordance with Article 35 to supplement this Directive by adapting the energy content of transport fuels, as set out in Annex III, in accordance with scientific and technical progress;

1a. For the calculation of the targets referred to in Article 25(1), first subparagraph, point (b), the following rules shall apply:

(a) for the calculation of the denominator, that is the amount of energy consumed in the transport sector, all fuels and electricity supplied to the transport sector shall be taken into account;

(b) for the calculation of the numerator, the energy content of advanced biofuels and biogas produced from the feedstock listed in Part A of Annex IX and renewable fuels of non-biological origin supplied to all transport modes in the territory of the Union shall be taken into account;

(c) the shares of advanced biofuels and biogas produced from the feedstock listed in Part A of Annex IX and of renewable fuels of non-biological origin supplied in the aviation and maritime modes shall be considered to be 1,2 times their energy content.';

- ~~For the purposes of demonstrating compliance with the minimum shares referred to in Article 25(1):~~
- ~~the share of biofuels and biogas for transport produced from the feedstock listed in Annex IX may be considered to be twice its energy content;~~
- ~~the share of renewable electricity shall be considered to be four times its energy content when supplied to road vehicles and may be considered to be 1,5 times its energy content when supplied to rail transport;~~
- ~~with the exception of fuels produced from food and feed crops, the share of fuels supplied in the aviation and maritime sectors shall be considered to be 1,2 times their energy content.~~

Related recital:
(32) Expressing the transport target as a greenhouse gas intensity reduction target makes it unnecessary to use multipliers to promote certain renewable energy sources. This is because different renewable energy sources save different amounts of greenhouse gas emissions and, therefore, contribute differently to a target. Renewable electricity should be considered to have zero emissions, meaning it saves 100% emissions compared to electricity produced from fossil fuels. This will create an incentive for the use of renewable electricity since renewable fuels and recycled carbon fuels are unlikely to achieve such a high percentage of savings. Electrification relying on renewable energy sources would therefore become the most efficient way to decarbonise road transport. In addition, in order to promote the use of advanced biofuels and biogas and renewable fuels of non-biological origin in the aviation and maritime modes, which are difficult to electrify, it is appropriate to keep the multiplier for those fuels supplied in those modes when counted towards the specific targets set for those fuels.

CA 17

Article 27

~~Calculation rules with regard to the minimum shares of renewable energy in the transport sector~~ Calculation rules in the transport sector and with regard to renewable fuels of non-biological origin regardless of their end use

3. ~~For the calculation of the share of renewable electricity in the electricity supplied to road and rail vehicles for the purposes of paragraph 1 of this Article, Member States shall refer to the two-year period before the year in which the electricity is supplied in their territory.~~

~~By way of derogation from the first subparagraph of this paragraph, to determine the share of electricity for the purposes of paragraph 1 of this Article, in the case of electricity obtained from a direct connection to an installation generating renewable electricity and supplied to road vehicles, that electricity shall be fully counted as renewable.~~

~~In order to ensure that the expected increase in demand for electricity in the transport sector beyond the current baseline is met with additional renewable energy generation capacity, the Commission shall develop a framework on ad ditionality in the transport sector and shall develop different options with a view to determining the baseline of Member States and measuring additionality.~~

~~For the purposes of this paragraph, where electricity is used for the production of renewable liquid and gaseous transport fuels of non-biological origin, either directly or for the production of intermediate products, the average share of electricity from renewable sources in the country of production, as measured two years before the year in question, shall be used to determine the share of renewable energy.~~

Where electricity is used for the production of renewable fuels of non- biological origin, either directly or for the production of intermediate products, the average share of electricity from renewable sources in the country of production, as measured two years before the year in question, shall be used to determine the share of renewable energy.'

~~However, electricity obtained from direct connection to an installation generating renewable electricity may be fully counted as renewable electricity where it is used for the production of renewable liquid and gaseous transport fuels of non-biological origin, provided that the installation:~~ **Electricity obtained from direct connection to one or several installations generating renewable electricity may be fully counted as renewable electricity where it is used for the production of renewable fuels of non- biological origin, provided that the installation** demonstrates that the electricity concerned has been supplied without taking electricity from the grid, or the installations generating renewable electricity do not receive support in form of operating aid for the production of renewable fuels of non-biological origin, or such support has ended.

Electricity that has been taken from the grid may be counted as fully renewable provided that it 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. This can be fulfilled by complying with the following requirements.

To demonstrate the renewable properties, fuel producers should be required to conclude one or more renewable power purchase agreements with installations generating electricity for an amount that is at least equivalent to the amount of electricity that is claimed as fully renewable. The installations generating renewable electricity do not receive support in form of operating aid, or such support has ended.

The balance between the renewable electricity purchased through one or several power purchase agreements and the amount of electricity taken from the grid to produce the fuel shall be achieved on a yearly basis in order for the production to be fully qualified as renewable fuel of non-biological origin.

Electricity that has been taken or reinjected from an energy storage facility from the grid may be counted as fully renewable provided that it 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 requirements in this Article, or, where not applicable, equivalent requirements shall apply to renewable fuels of non-biological origin imported in the Union.

Related recitals:
(33) Direct electrification of end-use sectors, including the transport sector, contributes to ***system*** efficiency and facilitates the transition to an energy system based on renewable energy. It is therefore in itself an effective means to reduce greenhouse gas emissions. The creation of a framework on additionality applying specifically to renewable electricity supplied to electric vehicles in the transport is therefore not required.
(34) Electricity obtained from direct connection to one or several installations generating renewable electricity may be fully counted as renewable electricity where it is used for the production of renewable fuels of non- biological origin. Installations demonstrate that the electricity concerned has been supplied without taking electricity from the grid or receiving support. Electricity taken from the grid may be counted as fully renewable provided that it is produced exclusively from renewable sources and the renewable properties and other appropriate criteria have been demonstrated by the conclusion of a power purchasing agreement and without the support of operating aid. The balance between purchase and consumption shall be done on a yearly basis in order for the production to be fully qualified as renewable fuel of non-biological origin. Renewable properties of that electricity are to be claimed only once and only in one end-use sector. The same shall apply to renewable fuels of non-biological origin imported in the Union.

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Article 28

Other provisions on renewable energy in the transport sector

- With a view to minimising the risk of single consignments being claimed more than once in the Union, Member States and the Commission shall strengthen cooperation among national systems and between national systems and voluntary schemes and verifiers established pursuant to Article 30, including, where appropriate, the exchange of data. Where the competent authority of one Member State suspects or detects a fraud, it shall, where appropriate, inform the other Member States.

- ~~The Commission shall ensure that a Union database is put in place to enable the tracing of liquid and gaseous transport fuels that are eligible for being counted towards the numerator referred to in point (b) of Article 27(1) or that are taken into account for the purposes referred to in points (a), (b), and (c) of the first subparagraph of Article 29(1). Member States shall require the relevant economic operators to enter into that database information on the transactions made and the sustainability characteristics of those fuels, including their life-cycle greenhouse gas emissions, starting from their point of production to the fuel supplier that places the fuel on the market. A Member State may set up a national database that is linked to the Union database ensuring that information entered is instantly transferred between the databases.~~

~~Fuel suppliers shall enter the information necessary to verify compliance with the requirements laid down in the first and fourth subparagraphs of Article 25(1) into the relevant database.~~

- ~~By 31 December 2021, Member States shall take measures to ensure the availability of fuels from renewable sources for transport including with regard to publicly accessible high-power recharging points and other refuelling infrastructure as provided for in their national policy frameworks in accordance with Directive 2014/94/EU.~~

- ~~Member States shall have access to the Union database referred to in paragraph 2 of this Article. They shall take measures to ensure that economic operators enter accurate information into the relevant database. The Commission shall require the schemes that are the subject of a decision pursuant to Article 30(4) of this Directive to verify compliance with that requirement when checking compliance with the sustainability criteria for biofuels, bioliquids and biomass fuels. It shall publish, every two years, aggregated information from the Union database pursuant to Annex VIII to Regulation (EU) 2018/1999.~~

- ~~By 31 December 2021, the Commission shall adopt delegated acts in accordance with Article 35 to supplement this Directive by specifying the methodology to determine the share of biofuel, and biogas for transport, resulting from biomass being processed with fossil fuels in a common process, and by specifying the methodology for assessing greenhouse gas emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels, which shall ensure that credit for avoided emissions is~~

~~not given for CO_2 the capture of which has already received an emission credit under other provisions of law.~~ **By 31 December 2024, the Commission shall adopt delegated acts in accordance with Article 35 to supplement this Directive by specifying the methodology to determine the share of biofuel, and biogas for transport, resulting from biomass being processed with fossil fuels in a common process.**

- By 25 June 2019 and every two years thereafter, the Commission shall review the list of feedstock set out in Parts A and B of Annex IX with a view to adding feedstock in accordance with the principles set out in the third subparagraph.

The Commission is empowered to adopt delegated acts in accordance with Article 35 to amend the list of feedstock set out in Parts A and B of Annex IX by adding, but not removing, feedstock. Feedstock that can be processed only with advanced technologies shall be added to Part A of Annex IX. Feedstock that can be processed into biofuels, or biogas for transport, with mature technologies shall be added to Part B of Annex IX.

Such delegated acts shall be based on an analysis of the potential of the raw material as feedstock for the production of biofuels and biogas for transport, taking into account all of the following:

- the principles of the circular economy and of the waste hierarchy established in Directive 2008/98/EC;

- the Union sustainability criteria laid down in Article 29(2) to (7);

- the need to avoid significant distortive effects on markets for (by-)products, wastes or residues; ***taking into account the future availability of raw materials and the need to avoid market distortion leading to massive imports of raw materials.***

- the potential for delivering substantial greenhouse gas emissions savings compared to fossil fuels based on a life- cycle assessment of emissions; ***taking into account available volumes of feedstock and share of pre-existing competing industrial uses with due regard to national specificities;***

- the need to avoid negative impacts on the environment and biodiversity;

- the need to avoid creating an additional demand for land.

- By 31 December 2025, in the context of the biennial assessment of progress made pursuant to Regulation (EU) 2018/1999, the Commission shall assess whether the obligation relating to advanced biofuels and biogas produced from feedstock listed in Part A of Annex IX ~~laid down in the fourth subparagraph of Article 25(1)~~ **laid down in Article 25(1), first subparagraph, point (b)** effectively stimulates innovation and ensures greenhouse gas emissions savings in the transport sector. The Commission shall analyse in that assessment whether the application of this Article effectively avoids double accounting of renewable energy.

The Commission shall, if appropriate, submit a proposal to amend the obligation relating to advanced biofuels and biogas produced from feedstock listed in Part A of Annex IX laid down in the fourth subparagraph of Article 25(1).