

# FINAL RECAST RENEWABLE ENERGY DIRECTIVE FOR 2021-2030 IN THE EUROPEAN UNION

## ICCT POLICY UPDATES

SUMMARIZE

REGULATORY

AND OTHER

DEVELOPMENTS

RELATED TO CLEAN

TRANSPORTATION

WORLDWIDE.

## BACKGROUND

As part of the EU2020 climate and energy package, the European Union passed two major directives on bioenergy and biofuels in 2009: The Renewable Energy Directive (RED) (2009/28/EC<sup>1</sup>) and the Fuel Quality Directive (FQD) (2009/30/EC<sup>2</sup>). The RED set targets for renewable energy consumption, including a sub-target mandating 10% of energy used in transport to be produced with renewable sources. The FQD set a greenhouse gas (GHG) reduction target for fuel suppliers, requiring them to reduce the GHG intensity of the fuel mix by 6% in 2020. These two directives also introduced a set of sustainability criteria excluding biofuels produced on land with high biodiversity value or carbon stocks and fuels made from feedstocks originating from recently deforested land or drained peatland. Furthermore, biofuels were required to provide at least a 35% GHG reduction compared to fossil fuels in order to be accounted in the renewable energy target and to be eligible for public financial support. The EU directives did not include accounting of indirect land use change (ILUC) emissions caused by the increased demand of food and feed crops for biofuels production. The EU attempted to limit ILUC with the “ILUC Directive”, an amendment to the RED and FQD that capped the contribution of food and feed-based biofuels used in transport to a maximum share of 7% of transport fuels and introduced a non-binding 0.5% sub-target for advanced biofuels.

In November 2016, the European Commission published a large package of measures in its ‘Clean Energy for all Europeans’ initiative<sup>3</sup>. As part of this package, the Commission adopted a legislative proposal for a recast of the Renewable

- 1 Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, Official Journal of the European Union, L 140/16, April 23, 2009. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32009L0028>
- 2 Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC, Official Journal of the European Union, L 140/88, April 23, 2009. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32009L0030>
- 3 “Clean Energy for All Europeans,” DG Energy, European Commission, accessed March 7, 2018. <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans>

Energy Directive (RED II<sup>4</sup>). The European Parliament and the EU Council proposed amendments and a final compromise deal among the EU institutions was agreed on 14 June, 2018.<sup>5</sup> This policy update provides an overview of the provisions relating to transport fuels in the final compromise document.

## MANDATE FOR RENEWABLE ENERGY SOURCES IN TRANSPORTATION

In RED II, the overall EU target for Renewable Energy Sources (RES) consumption by 2030 has been raised from the originally proposed 27% to 32%. The Commission's original proposal did not include a sub-target for RES in the transport sector, however this has been reintroduced in the final agreement: Member states must require fuel suppliers to supply a minimum of 14% of the energy consumed in road and rail transport by 2030 as renewable energy. The exact trajectory to achieve these targets will be defined for each member states in the Integrated National Energy and Climate Plans. These plans will be designed by each member state following the guidelines set out in the Energy Union Governance Regulation<sup>6</sup>.

Within the 14% transport target, there is a sub-target for advanced biofuels produced from feedstocks in Part A of Annex IX. These fuels must be supplied at a minimum of 0.2%<sup>7</sup> of transport energy in 2022, 1% in 2025 and increasing to at least 3.5% by 2030. Advanced biofuels will be double-counted towards both the 3.5% target and towards the 14% target. Biofuels produced from feedstocks in Part B of Annex IX will be capped at 1.7% in 2030 and will also be double counted towards the 14% target.

Feedstocks included in Annex IX are as follows:

- » Part A (i.e. advanced biofuels):
  - Algae, if cultivated on land in ponds or photobioreactors;
  - Biomass fraction of MSW from unsorted household waste;
  - Bio-wastes separately collected from households;
  - Biomass fraction of agro-industrial waste not fit for food or feed;
  - Straw;
  - Animal manure;
  - Sewage sludge;
  - Palm oil mill effluent and empty palm fruit bunches;
  - Tall oil pitch;
  - Crude glycerine;
  - Bagasse;
  - Grape marcs and wine lees;

4 Kristine Bitnere, *The European Commission's renewable energy proposal for 2030*, (ICCT: Washington, DC 2017). [https://www.theicct.org/sites/default/files/publications/RED%20II\\_ICCT\\_Policy-Update\\_vF\\_jan2017.pdf](https://www.theicct.org/sites/default/files/publications/RED%20II_ICCT_Policy-Update_vF_jan2017.pdf)

5 General Secretariat of the Council of the European Union, Interinstitutional file, Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources - Analysis of the final compromise text with a view to agreement, 21 June 2018, [http://www.consilium.europa.eu/register/en/content/out/?&typ=ENTRY&i=LD&DOC\\_ID=ST-10308-2018-IN17](http://www.consilium.europa.eu/register/en/content/out/?&typ=ENTRY&i=LD&DOC_ID=ST-10308-2018-IN17)

6 European Commission, DG Energy, 'Governance of the Energy Union'. Accessed on 07/03/2018 <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/governance-energy-union>

7 All percentages in this list refer to the total final energy consumed in the road and rail transport sector.

- Nut shells;
  - Husks;
  - Cobs cleared of kernels of corn;
  - Waste and residues from forestry and forest industries: bark, branches, pre-commercial thinnings, leaves, needles, tree tops, saw dust, cutter shavings, black liquor, brown liquor, fibre sludge, lignin, and tall oil;
  - Other non-food cellulosic material, including for instance perennial grasses, but also non-starchy cover crops before and after main crops as well as ley crops. This category also includes industrial residues after the extraction of vegetable oils, sugars, starches and proteins.
  - Other ligno-cellulosic materials, including for instance woody short rotation crops, pulp logs and other forest-based biomass, but excluding veneer logs and saw logs.
- » Part B:
- Used cooking oil
  - Animal fats with high risk for human health (Category 1) and animal fats suitable for soil enhancement and chemical industry (Category 2)

The maximum contribution of biofuels produced from food and feed crops will be frozen at 2020 consumption levels plus an additional 1% with a maximum cap of 7% of road and rail transport fuel in each member state. If the total share of conventional biofuels is less than 1% by 2020 in any member state, the cap for those countries will still be 2% in 2030. Further, if the cap on food and feed crops in a member state is less than 7%, the country may reduce the transport target by the same amount (for example, a country with a food and feed crop cap of 5% could set a transport target as low as 12%). “Intermediate crops” such as catch-and-cover crops are exempt from this cap. Fuels produced from feedstocks with “high indirect land-use change-risk” will be subjected to a more restrictive cap at the 2019 consumption level, and will then be phased out to 0% by 2030 unless they are reevaluated and certified as “low indirect land-use change-risk.” “Low indirect land-use change-risk” feedstocks include those that are produced on land that was not previously cultivated.

Renewable electricity will count 4 times its energy content towards the 14% renewable energy in transport target when used in road vehicles, and 1.5 times when used in rail transport. The renewable electricity used in road vehicles and rail can be calculated on the basis of either the average share of renewable electricity in the EU or in the member state where the electricity is supplied. The Commission will also develop a framework to guarantee that the renewable electricity used in transport is in addition to the baseline of renewable electricity generation in each member state.

Fuels used in the aviation and maritime sectors are excluded from the 14% obligation but these sectors can opt to contribute to the target. The contribution of non-food renewable fuels supplied to these sectors will count 1.2 times their energy content.

Given the overall sub-target of 14% sustainable biofuels, and the cap on conventional biofuels set at 7%, the implicit target for advanced alternative fuels is 7%. This is close to the 6.8% target proposed by the Commission in 2016, but because of the double-counting provisions, the actual magnitude of the mandate for advanced alternative fuels is likely to be significantly lower.

## SUSTAINABILITY CRITERIA FOR BIOFUELS, AND SOLID AND GASEOUS BIOMASS FUELS USED IN TRANSPORT, POWER, HEATING AND COOLING

Similar to the 2020 RED and FQD, the RED II defines a series of sustainability and GHG emission criteria that liquid biofuels and bioliquids used in transport must comply with in order to be counted towards the overall RES target and to be eligible for financial support by public authorities. Some of these criteria are inherited from the original RED, while others are new or reformulated. In particular, the RED II introduces sustainability and GHG criteria for solid and gaseous biomass fuels used to produce power, heating and cooling<sup>8</sup> (hereafter ‘bioenergy’), in addition to transport biofuels.

The required GHG emission savings for transport biofuels and bioenergy are listed in Table 1. As in the 2020 RED, economic operators have the option to either use default GHG intensity values provided in the Directive or to calculate actual values for their pathway. The Commission can revise and update the default values of GHG emissions<sup>9</sup> when technological developments make it necessary.

**Table 1.** Greenhouse gas savings thresholds for transportation biofuels and for solid and gaseous biomass producing power, heating and cooling.

Valid for plants entering into operation	Transport biofuels	Transport renewable fuels of non-biological origin	Electricity, heating and cooling
Before October 2015	50%	*	*
After October 2015	60%	*	*
After January 2021	65%	70%	70%
After January 2026	65%	70%	80%

\* No mandatory GHG savings threshold until 2021

In addition to the GHG emission criterion, biofuels, bioliquids and biomass fuels from agricultural biomass should comply with the following land criteria and thus not be produced from raw materials originating from:

- » High Biodiversity land (as of January 2008), including;
  - Primary forests;
  - Area designated for nature protection or for the protection of rare and endangered ecosystems or species<sup>10</sup>; and
  - Highly biodiverse grasslands.
- » High Carbon stock land that changed use after 2008 from one of the following categories:
  - Wetlands;
  - Continuously forested land;

8 The sustainability criteria apply solely to plants with a total rated thermal input above 20 MW for installations producing power, heating, cooling or fuels from solid biomass fuels and to plants with total rated thermal input capacity equal to or exceeding 2 MW for installations using gaseous biomass fuels.

9 Default GHG emission values as well as detailed calculation rules are included in Annex V (for liquid biofuels) and Annex VI (for solid and gaseous biomass for power and heat production) of the Directive.

10 Although the text indicates that exceptions can be provided if there is proof that the production of the raw material did not affect the conservation purposes.

- Other forested areas with trees higher than five meters and canopy cover between 10% and 30%.
- » Land that was peatland in January 2008<sup>11</sup>.

The RED II also introduces new sustainability criteria for biofuels and bioenergy obtained from raw materials originating from forests. The Directive mandates that harvesting takes place with legal permits, the harvesting level does not exceed the growth rate of the forest, and that forest regeneration takes place. In addition, areas of high conservation value, such as wetlands and peatlands, must be protected and the impacts of forest operations on soil and biodiversity should be minimized.

In addition, biofuels and bioenergy from forest materials must comply with requirements which mirror the principles contained in the EU Land Use, Land Use Change and Forestry (LULUCF) regulation<sup>12</sup>. Specifically, the country of origin of the biomass feedstock must be signatory of the Paris Agreement<sup>13</sup>, must have submitted a Nationally Determined Contribution to the United Nations Framework Convention on Climate Change (UNFCCC) covering emissions and removals from LULUCF sector and showing emissions do not exceed removals, and has a national system in place for accounting for LULUCF emissions and removals in accordance with the requirements in the Paris agreement.

The criteria above apply either at the country level or at forest sourcing area level, and the Commission will define implementation guidelines by 31 January 2021.

Biofuels and bioenergy produced from waste and residues listed in Annex IX and described above only need to comply with the GHG emission criterion. Nonetheless, operators and national authorities must implement and report management plans to address potential impacts on soil quality and soil carbon for the removal of agricultural residues used for biofuels and bioenergy.

## MEMBER STATES FLEXIBILITIES

The RED II provides greater flexibility to member states on implementation choices concerning the transport mandate and sustainability criteria compared to the 2020 RED. According to the Directive, member states:

- » can exempt or distinguish between different fuel suppliers and energy carriers when defining their trajectory to achieve the 14% minimum sub-target in the transport sector;
- » are free to choose the most suitable form of support for RES in transport, for example volume mandates, energy mandates or GHG emission savings targets;
- » can distinguish between different types of conventional biofuels and set different limits for each category (for example, setting a lower cap on oil crops than other types of food and feed crops);
- » can set lower limits on food and feed-based biofuels than prescribed in the RED II and may also reduce the 14% renewable energy in transport target by the same

<sup>11</sup> Although the text provides an exception if evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.

<sup>12</sup> European Commission, DG Clima, Land Use and Forestry regulation for 2021 – 2030. [https://ec.europa.eu/clima/lulucf\\_en#tab-0-0](https://ec.europa.eu/clima/lulucf_en#tab-0-0)

<sup>13</sup> The Paris Agreement, United Nations Framework Convention on Climate Change, Accessed on 07/03/2018 <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

amount (for example, a country choosing to set a food and feed crop cap at 0% could set the transport target as low as 7%);

- » can set a different cap level for biofuels produced by feedstocks in Part B of Annex IX if justified by the local availability of such feedstocks; and
- » can define additional sustainability criteria for bioenergy but not for biofuels.

## FUTURE OUTLOOK

EU Member States must adopt the provisions from the RED II and transpose them into national legislation by 30 June, 2021. Nonetheless, many technical details will need to be determined in the near- to medium-term by the Commission. These include:

- » The Commission will review the overall 32% RES target by 2023, as well as the 14% sub-target for transport, and could propose to increase, but not decrease, the targets;
- » The Commission must review the feedstocks included in Annex IX every two years and may add feedstocks to the list, but cannot remove any;<sup>14</sup>
- » The Commission must set out criteria by February 2019 to define both “high indirect land-use change-risk” and ‘low indirect land-use change-risk’ feedstocks. These findings will be reviewed by 2023;
- » The Commission must set a GHG reduction threshold for recycled carbon fuels by January 2021, and by December 2021 must specify the methodology for GHG accounting for these fuels and for renewable fuels of non-biological origin;
- » By January 2021, the Commission must define the operational guidance required to demonstrate compliance with the sustainable forest management criteria and the LULUCF requirements;
- » In 2026, the Commission must propose a regulatory framework for the promotion of renewable energy for the post-2030 period.

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<sup>14</sup> Feedstocks that must be processed to biofuels through advanced technologies will be included in Part A, while feedstocks processed through commercially available technologies will be included in Part B.