

THE EUROPEAN COMMISSION'S RENEWABLE ENERGY PROPOSAL FOR 2030

ICCT POLICY UPDATES

SUMMARIZE
REGULATORY
AND OTHER
DEVELOPMENTS
RELATED TO CLEAN
TRANSPORTATION
WORLDWIDE.

SUMMARY

On November 30, 2016, the European Commission (EC) published a formal proposal¹ to the EU Council and the European Parliament to recast Renewable Energy Directive (RED) 2009/28/EC², which will expire at the end of 2020. The proposed new directive, called RED II, would succeed the existing regulation and enter into effect on January 1, 2021. RED II proposes a set of policy measures to achieve a 27% renewable energy share from energy consumed by the electricity, heating and cooling, and transportation sectors by 2030. The 27% target was endorsed by the EU Council in October 2014 and is binding at the EU level.

Regarding renewable energy for transportation, RED II would mandate that 6.8% of transportation fuels must derive from renewable sources, specifically advanced alternative fuels and renewable electricity. The proposed mandate would apply to fuel suppliers rather than member states, as is the case with RED. According to the proposal, food-based biofuels cannot be counted toward the mandate, and their role in achieving the 27% renewable energy target should decline over time. Advanced alternative fuels, renewable electricity, and food-based biofuels must demonstrate proof of compliance with the sustainability criteria set by RED and extended by the proposed RED II, as well as additional criteria for biomass produced from forestry feedstock.

BACKGROUND

In 2009, the European Union (EU) established Renewable Energy Directive (RED) 2009/28/EC³ and the revised Fuel Quality Directive (FQD) 98/70/EC⁴ through Directive 2009/30/EC⁵. The RED defined a renewable energy share target for transportation fuels of 10% by 2020. The FQD set a target for reduction of life-cycle greenhouse gas (GHG) emissions from transportation fuels of 6% by 2020. At

1 https://ec.europa.eu/energy/sites/ener/files/documents/1_en_act_part1_v7_1.pdf
2 <http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32009L0028>
3 <http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32009L0028>
4 <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:01998L0070-20151005>
5 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0088:0113:EN:PDF>

the time, the European Commission's (EC's) impact assessment⁶ estimated that these targets would be achieved mainly through the use of food-based biofuels because of their commercial availability. However, food-based biofuels have since been criticized for causing indirect land use change (ILUC) emissions that were not included in the GHG accounting in the directives. The RED allowed advanced biofuels produced from non-food feedstock to count twice toward the 10% renewable energy target. This was intended to promote investments in biofuel production, which requires high capital costs but has a limited impact on ILUC.

In 2015, the EU approved ILUC Directive 2015/1513,⁷ which amended the RED and the FQD to address ILUC. This directive capped the contribution of food-based biofuels to the RED 10% renewable energy target at 7% by 2020. It also introduced a flexible target for advanced biofuels at 0.5% of total road transport fuel by 2020. Member states may choose to set lower targets if they can prove limited potential for the sustainable production of biofuels produced from non-food feedstocks. The cap and the target are voluntary for the FQD.

RED and FQD have been widely criticized for regulatory uncertainty related to addressing ILUC and for the lack of a binding mandate for advanced biofuels. It took 3 years for the EU to decide to limit food-based biofuels. The cap is set at the same share of renewable energy that member states aim to achieve in transportation by 2020 because of slower-than-expected biofuels uptake.⁸ The flexible nature of the advanced biofuels target makes it a weak policy instrument for investment promotion in advanced biofuel production, which requires high capital costs. Therefore, the EC's proposal for 2021 through 2030 aims, in particular, to support the development and commercialization of advanced alternative fuels and to clarify the role of food-based biofuels.

RENEWABLE ENERGY MANDATE FOR TRANSPORTATION

On November 30, 2016, the EC published a formal proposal⁹ to the EU Council and the European Parliament to recast RED 2009/28/EC¹⁰, which will expire at the end of 2020. The proposed new directive, called RED II, would succeed the existing regulation and enter into effect on January 1, 2021. The proposal suggests a set of policy measures to achieve a 27% renewable energy share from energy consumed by the electricity, heating and cooling, and transportation sectors by 2030. The 27% target was endorsed by the EU Council in October 2014 and is binding at the EU level.

As part of that comprehensive 2030 target, RED II would mandate that 6.8% of transportation fuels must derive from renewable sources, specifically advanced alternative fuels and renewable electricity. Fuel suppliers may achieve this target through blending renewable fuels, such as:

- » Advanced and conventional non-food biofuels and biogas produced from low-carbon feedstocks listed in Annex IX, Parts A and B, of RED and the proposed RED II (see lists in following paragraphs);

6 <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52008SC0085>

7 <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015L1513>

8 <https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports>

9 https://ec.europa.eu/energy/sites/ener/files/documents/1_en_act_part1_v7_1.pdf

10 <http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32009L0028>

- » Renewable liquid and gaseous transport fuels of non-biological origin;
- » Waste-based fossil fuels; and
- » Renewable electricity.

Renewable energy used in all transport modes can contribute toward this target, although only road and rail are obligated sectors. The EC has proposed that advanced alternative fuels used for aviation and maritime can be counted 1.2 times toward the 6.8% renewable energy mandate. This would provide a small additional incentive to develop and apply biofuels in these sectors.

In addition, the RED II proposes a sub-target of 3.6% blending for advanced biofuels coming from the feedstocks listed in RED Annex IX, Part A, by 2030, starting with a sub-mandate for 0.5% blending in 2021. The feedstocks that can be used to achieve this sub-mandate are algae, biowaste from households and industry, agriculture residues (e.g., straw), industrial residues (e.g., husks, nut shells), forestry residues (e.g., branches, black liquor), and energy crops. This sub-mandate for advanced feedstocks should help to promote emerging technologies for biofuel production, such as cellulose hydrolysis and pyrolysis.

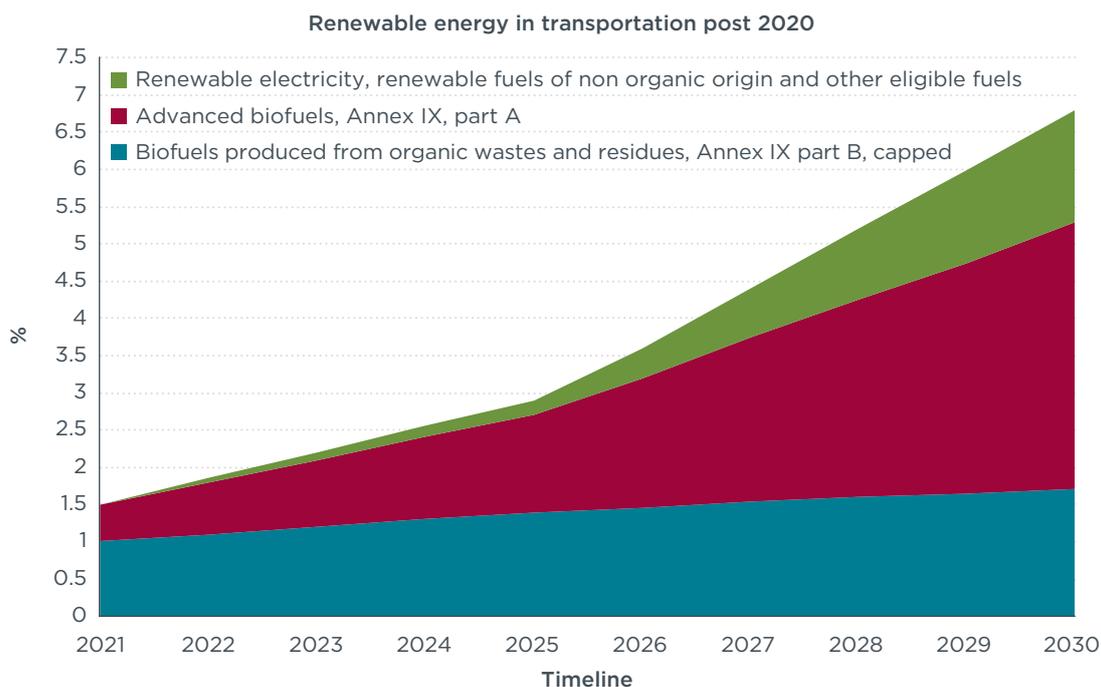
RED II would exclude the following fuels from Part A, and therefore they would not be applicable toward achieving the sub-mandate:

- » Fuels produced from renewable liquid and gaseous fuels of non-biological origin¹¹;
- » Carbon captured and utilization for transport purposes; and
- » Bacteria, if the energy source is renewable.

However, these fuels are still eligible to be counted toward the overall 6.8% renewable energy target for transportation. The figure below shows the renewable energy mandate for fuel suppliers from 2021 through 2030.

The figure reflects the RED II proposal requirement for fuel suppliers to have a 1.5% minimum energy share for the overall renewable energy mandate beginning in 2021, which includes a 0.5% minimum share for advanced biofuels produced from the feedstocks listed in Annex IX, Part A. The overall share of biofuels produced from Annex IX, Part B, can be smaller than 1%–1.7%, as indicated in the figure. If this share is smaller, the overall renewable energy mandate should be achieved through other eligible feedstocks.

¹¹ [Liquid or gaseous fuels other than biofuels whose energy content comes from renewable energy sources other than biomass, and which are used in transport \(Directive 2009/28/EC\).](#)



After the proposal is approved and implemented by EU member states, the EC is allowed to approve a delegated act to add feedstocks to this list, but it cannot remove any. According to the proposal, the EC should evaluate the feedstocks every 2 years.

RED II would limit the contribution of conventional low-carbon biofuels (Annex IX, Part B, of RED and the proposal for RED II) at 1.7% of the 6.8% mandate. This would ensure a competitive advantage to fuels that are still being commercialized and developed. The feedstocks for conventional low-carbon biofuels are animal fat of Categories 1 and 2; used cooking oil; and molasses, which is a byproduct of sugar production. Molasses is a new addition to Annex IX, Part B, based on projections of expanding EU sugar production. However, the EC's impact assessment does not address the potential competition for feedstock from other economic sectors (e.g., food and feed) where molasses is being used.

Renewable electricity used for transportation can be counted according to one of the following methods:

- » Average renewable energy share in the EU grid,
- » Average renewable energy share in the national grid of the EU member state, or
- » 100% of electricity obtained from direct connection to an installation generating renewable electricity that is not connected to the grid.

RED II would allow member states to count food-based biofuels toward the overall 27% renewable energy target, but this contribution is capped at 7% of total road and rail transport fuels in 2021 and would decrease to 3.8% by 2030. Member states would be free to set lower limits or to cap certain feedstocks. It is expected that some member states may choose to cap the contribution of vegetable oils-based biodiesel because of higher ILUC GHG emissions.¹² Otherwise, the cap does not differentiate between food-based biofuels with higher or lower ILUC emissions.

¹² https://ec.europa.eu/energy/sites/ener/files/documents/Final%20Report_GLOBIOM_publication.pdf

The table below provides a comparison of the RED 2020 renewable energy framework and the EC's proposal for the RED II 2030 framework.

COMPARISON OF RENEWABLE ENERGY TARGETS FOR TRANSPORTATION FOR 2020 AND 2030

	2020 targets (RED)	2030 proposed targets (RED II)
Type of target	<ul style="list-style-type: none"> Life-cycle GHG emission reduction target for fuel suppliers Renewable energy mandate for member states 	<ul style="list-style-type: none"> Renewable energy mandate for fuel suppliers
Target level	<ul style="list-style-type: none"> 6% GHG reduction compared to 2010 10% renewable energy blending: <ul style="list-style-type: none"> Non-binding 0.5% advanced biofuels target 7% cap on food-based biofuels 	<ul style="list-style-type: none"> 6.8% advanced alternative fuel blending: <ul style="list-style-type: none"> 3.6% feedstocks in Annex IX, Part A 1.7% cap on Annex IX, Part B, feedstocks
Eligible feedstocks	Food-based biofuels, advanced biofuels, renewable liquid and gaseous transport fuels of biological origin, and renewable electricity	Advanced biofuels, renewable liquid and gaseous transport fuels of non-biological origin, waste-based fossil fuels, and renewable electricity; food-based biofuels are excluded

RED II would discontinue the aforementioned 10% renewable energy mandate and the 6% life-cycle GHG emission reduction target after the end of 2020 and would not directly amend the FQD.

The RED and FQD promoted solutions that were the most cost-efficient in terms of feedstock availability and technologies. Thus, food-based biofuels had a competitive advantage over advanced biofuels. Moreover, the 6% life-cycle GHG emission reduction target in the FQD did not account for ILUC emissions and thus did not sufficiently incentivize low-carbon advanced biofuels. To avoid a continuation of these problems, the EC's proposal for RED II states that food-based biofuels usage should be reduced to address ILUC. Most importantly, the 2030 targets for transport described in RED II provide a clear signal of support and policy certainty for emerging low-carbon alternative fuel technologies.

The EC's proposal for RED II indicates that by the end of 2025, the EC should assess whether the renewable energy mandate effectively stimulates innovation and promotes GHG emission savings in the transport sector, as well as whether the applicable GHG savings requirements for biofuels and biogas are appropriate.

SUSTAINABILITY CRITERIA FOR RENEWABLE ENERGY USED IN TRANSPORTATION

In 2009, as a part of RED, the EU introduced sustainability criteria for food-based biofuels to limit adverse effects on GHG levels, the environment, biodiversity, social issues, food prices, and direct and indirect land use change from the renewable energy and GHG reduction targets for 2020. These criteria stated that biofuels should not be obtained from highly biodiverse land, land with high carbon stock, and peatland that was classified as such in 2008 (this does not recognize the widespread conversion of peatlands to agriculture before 2008). The sustainability criteria were accompanied by a GHG emission savings threshold and calculation

methodology for renewable fuels, not including ILUC emissions. This threshold was set to increase for new installations over time.

For the 2030 framework, the EC has proposed in RED II to keep the sustainability criteria that applied in the 2020 framework and to expand them by forbidding usage of peatland, including paludiculture, where cultivation is paired with rewetting.

In addition, RED II would introduce sustainability criteria for feedstocks sourced from forest biomass. These criteria require compliance with applicable national/subnational laws and, if none apply, with a local assessment. The requirements include

- » Harvesting with legal permits,
- » Protecting areas with high conservation value,
- » Minimizing the impacts of forest harvesting on soil quality and biodiversity,
- » Regenerating cleared forest, and
- » Harvesting without exceeding the long-term production capacity of the forest.

According to the proposal for RED II, these criteria should be included in national law or in voluntary sustainability certification schemes. Member states or management systems of the forest holding should address these requirements so that the economic operator would be able to claim compliance with the criteria. The implementers of the criteria are free to interpret them according to the local conditions. For example, allowable forest biomass removals may depend on locally specific factors, such as slope and proximity to waterways.

There are no similar sustainability criteria for eligible agricultural biomass (e.g., straw) used for advanced biofuels in RED II. The 2020 RED required cross-compliance for food crops with EU Council Regulation No 1306/2013, Annex II, which regulates agricultural practice with respect to environmental impacts, in the article on sustainability criteria. This has now been moved to the recital, which means that its implementation is not required. This action is based on the EC reasoning that EU energy policy should not interfere with existing agriculture policy. In addition, the EC assumes that most farmers supplying residues for biomass would be eligible for the EU common agriculture policy's direct payments (subsidies), which require compliance with EU Council Regulation No 1306/2013, Annex II. Moreover, these requirements have not been included in biofuels certification schemes to avoid duplication with agriculture policy. Nevertheless, this was the only major sustainability criterion in RED that addressed minimum soil cover and, in particular, agricultural residues. Its optional status in RED II is likely to be of concern if demand for residues grows as a result of advanced biofuel production. Consistent and complete residue removal could cause severe soil carbon loss in some areas.

As a part of the sustainability criteria, RED II would tighten the GHG emission saving threshold. RED II specifies that advanced biofuels produced from Annex IX feedstocks should meet a 70% GHG emission saving requirement starting in 2021. For installations that began operation before 2021, the GHG emission savings threshold from the 2020 RED still applies. The figure below shows the timeline.

PROPOSED TIMELINE FOR THE INCREASE IN THE GHG EMISSION SAVINGS THRESHOLD

Installations in operation	2014– Oct. 4, 2016	Oct. 5, 2015	...	2021–2030
On or before Oct. 5, 2015	50%			
Starting operation from Oct. 5, 2015	60%			
All biofuels produced from feedstock listed in Annex IX and installations in operation from Jan. 1, 2021				70%

RED II would amend the GHG emission accounting methodology by providing an opportunity to claim default or actual GHG emission values for the following:

- » Soil nitrogen dioxide (NO₂) emissions that are included in cultivation of GHG emissions,
- » Vegetable oil extraction that is included in processing GHG emissions, and
- » Transport and distribution emissions of the final fuel.

According to the EC's proposal for RED II, fuels produced from wastes and residues other than agricultural, aquaculture, fisheries, and forestry residues do not need to demonstrate compliance with the sustainability criteria other than the GHG emission savings threshold. It is worth keeping in mind that RED defines *waste* as "any substance or object which the holder discards or intends or is required to discard according to the Waste Framework Directive 2008/98/EC¹³ [WFD]." The WFD requires waste prevention and management according to a hierarchy principle that prioritizes reuse and recycling over recovery for energy purposes. RED II would reserve the EC's right to adopt a delegated act for assessing a methodology for GHG emission savings from renewable liquid and gaseous transport fuels of non-biological origin and waste-based fossil fuels, and to introduce a minimum GHG emission saving requirement for these fuels as additional sustainability criteria. ILUC Directive 2015/1513 had required the EC to generate a proposal permitting the use of renewable liquid and gaseous transport fuels of non-biological origin for compliance with a 10% renewable energy target. In addition, RED II would allow the EC to adopt a separate methodology to determine the share of biofuel resulting from biomass co-processed with fossil fuels.

All of the aforementioned sustainability criteria would apply to biofuels regardless of the geographical origin of the biomass; thus, operators in other countries in and outside of Europe would have to comply with the sustainability criteria also.

The proposal maintains language from the 2020 RED stating that EU member states should not refuse to take into account, on other sustainability grounds, biofuels obtained in compliance with the sustainability criteria. In addition, RED II would allow member states to impose additional sustainability criteria.

¹³ RED Directive 2009/28/EC and Directive 2008/98/EC

The EU Regulatory Scrutiny Board (RSB)¹⁴ issued a negative opinion¹⁵ on the impact assessment supporting the EC's proposal for RED II. The RSB noted that the impact assessment is primarily focused on how to deliver a particular volume of renewable energy in the transport sector, but it does not address the sustainability of biofuels directly, including the important issue of ILUC (and associated GHG emissions). The RSB suggested that consideration should be given to an additional policy option that addresses the deficiencies in the current sustainability criteria (i.e., absence of ILUC) and that would apply equally to all biofuels (i.e., advanced and food-based).

TIMELINE FOR APPROVAL OF THE PROPOSAL

The EC's proposal for RED II will go through the ordinary procedure to be published in the *Official Journal of the European Union*—meaning the EU Council and the European Parliament must approve it before it can come into force. According to the rules of the procedure, there is no time constraint for the approval, but it could take about 15 months from the publication of the proposal. If the EU Council does not approve the Parliament position, the proposal would enter a second reading, in which the Parliament would have 3 months to produce revisions on the EU Council's position.

14 The RSB was established by EC Decision C (2015)3263 and has been operational as of July 1, 2015. The RSB replaces the Impact Assessment Board and contributes to the EC's Better Regulation Policy by scrutinizing the quality of impact assessments, ex-post evaluations, and fitness checks, and by issuing opinions on the related draft reports.

15 http://ec.europa.eu/smart-regulation/impact/ia_carried_out/cia_2016_en.htm#ener