In a Nutshell

The Renewable Energy Directive (RED) aims to increase the share of renewable energy sources (RES) within the European Union’s final energy consumption. It establishes a common framework for the development of renewable energy capacity in the European Union and sets a binding target for the share that renewable energy represents within the EU’s final energy consumption.

In its 2021 revision, the Commission proposed increasing the target minimum share of RES in the EU’s final energy consumption to 40% in 2030 (RED III), an increase of 8 percentage points compared to its 2018 recast (RED II), which had established a minimum RES share of 32% of final energy consumption in 2030. Since the 2021 proposal, the binding renewable target has been raised to a 42.5% RES share in 2030 as part of the RePower EU Package (RED IV). RePower EU follows the Russian invasion of Ukraine and an increasing need to reduce dependency on Russian gas.

The Directive is particularly relevant for bioenergy with carbon capture and storage (BECCS), as it regulates the use of biomass and biofuels for energy generation, affecting the feasibility of introducing BECCS in the EU, and its potential scale. RED is also highly relevant to carbon dioxide removal (CDR) methods that rely on a stable supply of renewable and low-emissions energy, such as direct air carbon capture and storage (DACCS).

The RED also impacts biomass-based CDR methods beyond BECCS. Due to the high expected demand and relatively limited supply of eligible types of biomass, competition may arise between actors proposing different potential uses for biomass. Biomass use also affects carbon storage in biogenic carbon sinks. For example, forests can be a biogenic carbon sink, provide timber, and provide residual harvest biomass for bioenergy production.

What's on the Horizon?

- A tentative political agreement on RED III was reached between the EU Parliament and the EU Council on 30 March 2023. This agreement was due to be formally approved on 17 May, but a last-minute disagreement over the role of low-carbon hydrogen produced using nuclear energy in the EU’s decarbonisation targets led to the process being postponed.
- On 19 June, the EU Council reached an agreement on RED III. The European Parliament Committee responsible for the file approved the text on 28 June. A plenary vote in the European Parliament took place on 12 September, during which the EP voted in favour of the revision. The Council adopted the final text on 9 October 2023. The text was published in the Official Journal of the EU on 31 October 2023 and entered into force on 20 November 2023.
- The energy policy framework for the post-2030 period is under discussion.

Deep Dive

Making sense of the Renewable Energy Directive

To help deliver on the EU’s increasing climate ambitions, including the EU-wide 55% emissions reduction target by 2030 and the target to achieve net neutrality by 2050, the targets set by the RED have been repeatedly increased. As a result, the RED has evolved from RED I to its latest version, RED IV. Starting from a target of 20% RES as a share of total final energy consumption by 2020 set in 2009, RED I was revised as part of the “Clean energy for all Europeans” package in 2018 to include a target of a 32% RES share by 2030, thereby becoming RED II.

In July 2021, as part of the “Fit-for-55” package, RED III was proposed and the target was raised to 40% by 2030. Following the Russian aggression against Ukraine, the Commission proposed a first amendment (RED IV) with a target of 45% as part of its “REPowerEU” plan. In November 2022, the Commission proposed a second amendment for a Council regulation to accelerate RES deployment.
In March 2023, the EU Parliament and the Council reached a tentative agreement to raise the target to a 42.5% RES share by 2030. Member states will need to increase their national contributions in their integrated National Energy and Climate Plans (NECP), which are due to be updated in 2023 and 2024, to collectively achieve the target. Achieving the target would bring EU member states’ total renewable energy generation capacity to 1236 GW by 2030.

RES considered within the RED’s scope include wind, solar, hydro, tidal, geothermal, and biomass. The binding target is supported by differentiated targets for a variety of sectors, such as heating and cooling, industry, and transport. The provisional agreement under RePowerEU also aims to remove barriers to the scale-up of renewable energy generation by making permitting processes for renewable energy installations quicker and easier. To this end, member states will define regions (so-called ‘go-to areas’) with limited environmental risks and high renewable energy generation capability, in which the permitting procedure shall be simplified.

The RED and its impacts on biomass use

Biomass is considered a RES within the provisional agreement, provided that its use meets several sustainability criteria. These include requirements that woody biomass used in energy generation follows the cascading principle – ensuring that biomass of higher quality should serve purposes demanding higher-quality biomass first – and that forest biomass may not be harvested from areas with particular significance with regard to carbon stocks or biodiversity. Furthermore, no financial support shall be granted when energy facilities use stumps and roots for energy generation (as they are considered important, for example, to protect soil carbon stocks) or when they use high-quality biomass that should be reserved for other use cases under the cascading principle, such as industrial-grade roundwood, veneer logs, and saw logs.

The provisional agreement sets out a new binding combined target of 5.5% for advanced biofuels, generally derived from non-food-based feedstocks, and renewable fuels of non-biological origin, mostly renewable hydrogen and hydrogen-based synthetic fuels, in the share of renewable energy supplied to the transport sector. The increasing need for advanced biofuels that use biomass as a feedstock may conflict with the demand for the lower-quality biomass upon which several CDR methods rely, such as BECCS and biochar.

Where does BECCS fit in?

The recognition of biomass as a renewable energy source affects the feasibility and potential scale of BECCS. BECCS can both provide renewable energy and remove carbon dioxide from the atmosphere. The 2021 proposal states that member states should not support electricity production from installations producing only electricity, as opposed to, for example, installations producing both heat and power), unless these installations are located in regions included in the Just Transition Plan, or if the installations used CCS technologies to capture and store the associated (biogenic) CO₂ emissions.

Currently, negative emissions stemming from BECCS cannot contribute towards targets set under any of the three main legislative pillars of EU climate action, namely the EU Emissions Trading System (EU ETS), the Effort Sharing Regulation (ESR), and the LULUCF Regulation.

The RED: Are sustainability criteria enough to ensure the sustainable use of biomass?

The role of biomass within the RED is important. While sustainability criteria exist to prevent the misuse of biomass for energy generation, the demand for biomass may increasingly exceed supply. Some communities might be adversely impacted, especially in terms of resource use and food security. It is therefore critical that future revisions of the RED take these concerns into consideration.

Timeline

2001 - Directive on electricity production from renewables: national indicative targets
2003 - Directive on biofuels and renewable fuels for transport: national targets for biofuels
2009 - RED I: EU target of 20% renewables by 2020 and national binding targets
2018 - RED II: 32% renewables target for 2030 – This is the piece of legislation that is currently in force
2021 - RED III: EU Green Deal: EC proposal to raise target for 2030 to 40%
2022 - RED IV: REPowerEU Plan: EC proposal to raise target for 2030 to 45% (voted as part of RED III)
• Parliamentary position agreed & endorsed 14/09/2022.
• Council general approach agreed on 29/06/2022.

30 March 2023 - Council and Parliament reach provisional agreement on the revision
17 May 2023 - A last-minute objection postponed the adoption of the revision of the Directive
19 June 2023 - The Council reached an agreement on its position
12 September 2023 - The EU Parliament voted in favour of the revision
9 October 2023 - The Council adopted the final text
31 October 2023 - The Directive was published in the Official Journal of the EU
20 November 2023 - Entry into force of RED III

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