

Renewable Energy Directive

Revision of Directive (EU) 2018/2001

This briefing is one in a series of 'implementation appraisals', produced by the European Parliamentary Research Service (EPRS), on the operation of existing EU legislation in practice. Each briefing focuses on a specific EU law, which is likely to be amended or reviewed, as envisaged in the European Commission's annual work programme. 'Implementation appraisals' aim to provide a succinct overview of publicly available material on the implementation, application and effectiveness to date of an EU law, drawing on input from EU institutions and bodies, as well as external organisations. They are provided by the EPRS Ex-Post Evaluation Unit, to assist parliamentary committees in their consideration of new European Commission proposals, once tabled.

SUMMARY

The Renewable Energy Directive, Directive (EU) 2018/2001, (RED II), established a common framework for the promotion of energy from renewable sources in the EU and set a binding target of 32 % for the overall share of energy from renewable sources in the EU's gross final consumption of energy in 2030. It also established sustainability and greenhouse gas emissions saving criteria for biofuels, bioliquids and biomass fuels and lays down rules on financial support to enhance the use of renewable energy usage. The RED II is a recast of the Directive 2009/28/EC (RED I). The recast was made as part of the 'Clean energy for all Europeans package'.

In January 2020, the European Parliament adopted its resolution on the European Green Deal, emphasizing the need for more ambitious action to address climate change and meet environmental objectives. The resolution highlighted the essential role of energy in the transition to a net-zero greenhouse gas emissions economy, and particularly the importance of decarbonising the energy system. For these reasons, the resolution called for the revision of the RED in line with the new climate ambitions by establishing new binding obligations for individual Member States (not to fall below the EU 2020 targets).

In August 2020, the Commission published an Inception Impact Assessment (IIA) to support the legislative proposal for the amendment of the RED, which will examine the potential to increase the 2030 renewable energy target, and review the levels of ambition at the sectoral level. The IIA also informs on other objectives for the revision of the RED II, including the introduction of elements of the Energy System Integration and Hydrogen strategies.

In November 2020, the Commission published the Renewable Energy Progress Report, which indicated that in recent years (until 2018) there had been a stable growth in the overall share of renewable energy sources (RES) at the EU level. In 2018, the EU reached a share of 18.0 % (18.9 % for EU-27) of renewable energy in gross final energy consumption, which stood above the indicative trajectory (16 %) to reach the 2020 targets. The EU was also above the more ambitious trajectory that Member States had defined in their national renewable energy action plans (NREAPs).

Background

'Energy from renewable sources' or 'renewable energy' is defined as 'energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas'.¹ The definition comes from [Directive \(EU\) 2018/2001](#) on the promotion of the use of energy from renewable sources (Renewable Energy Directive, RED II) adopted in December 2018.

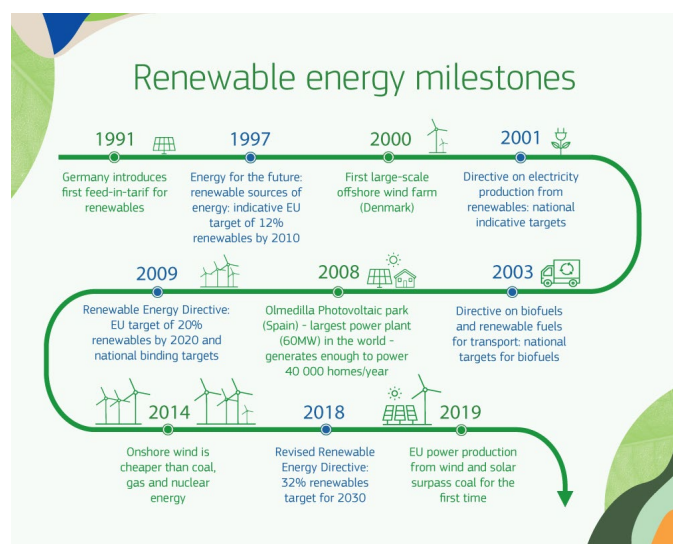
Directive (EU) 2018/2001 is a [recast](#) of the Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (RED I), establishes an overall policy for the production and promotion of energy from renewable sources in the EU (see also the renewable energy in the EU milestones in Figure 1). The RED I, among others, established a 20% target for the overall share of energy from renewable sources in the EU's gross final consumption of energy in 2020, which was raised to 32% target to be achieved by 2030 in the RED II. The progress in the EU renewable energy policy is presented in Figure 1.

The recast was part of the [Clean energy for all Europeans package](#). The package aimed to help the EU to achieve ambitious European Green Deal objectives, starting with at 40% in the greenhouse gas emission target - the cut of (at least) 40% and at least 32% share of the renewable energy, and the objective for Europe to become the first climate-neutral continent, with net zero greenhouse gas emissions by 2050. The package focused on eight legislative acts, including the renewable energy directive, the energy efficiency directive (2018/2002/EU), the energy performance of buildings directive (2018/844/EU), the regulation on the governance of the Energy Union and Climate Action (2018/1999/EU), regulations concerning the electricity market design, as well as non-legislative initiatives.

The RED II:

- established a common framework for the promotion of energy from renewable sources;
- set a 32% target for the overall share of energy from renewable sources in the EU's gross final consumption of energy in 2030;
- laid down rules:
 - on financial support for electricity from renewable sources,
 - on self-consumption of such electricity,
 - on the use of energy from renewable sources in the heating and cooling sector and in the transport sector,
 - on regional cooperation between Member States, and between Member States and third countries,
 - on guarantees of origin,
 - on administrative procedures and
 - on information and training;

Figure 1: Milestones for renewable energy in the EU



Source: [Renewable energy in Europe](#), European Commission.

- established sustainability and greenhouse gas emissions saving criteria for biofuels, bioliquids and biomass fuels.

Based on Regulation on the [Governance of the Energy Union and Climate Action \(EU\) 2018/1999](#), Member States are obliged to prepare national energy and climate plans ([NECPs](#)) for 2021-2030, which outline how the EU countries intend to achieve the new 2030 targets for renewable energy and for energy efficiency greenhouse gas emissions reductions. The REDII also obliged Member States to prepare national renewable energy action plans ([NREAPs](#)), as well as progress reports, and submit them to the Commission.

The deadline for transposition into national law by Member States for most other elements of the REDII was set for 30 June 2021, when the REDI will be repealed. It means that the REDII new provisions have yet to fully take effect, even if they had been already changed to better fit to more ambitious climate action priorities.

To achieve the renewable energy target, Member States can apply for EU funding, e.g. from structural funds, EIB loans, the [Horizon Europe](#) programme, and [the Recovery and Resilience Facility](#) (with its initiatives such as Power Up).

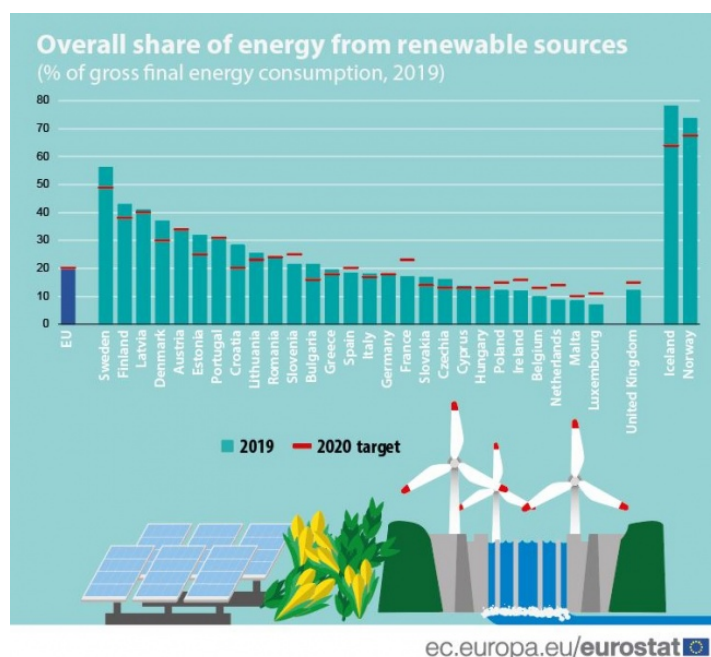
Eurostat data on energy from renewable sources in the EU

According to Eurostat [data](#), in 2019, renewable energy represented 19.7 % of energy consumed in the EU-27 (compared with 9.6 % in 2004), only 0.3 % short of the 2020 target of 20 %. The share of renewable energy among the EU Member States was the highest in Sweden (56.4 %), followed by Finland (43.1 %) and Latvia (41.0 %). No other EU Member State reached a share over 40 %, although Denmark (37.2 %) is close. As for the EEA countries, Norway and Iceland reached the level of over 70 % share (see Figure 2).

In 2019, the share of energy from renewable sources used in transport activities in the EU-27 reached 8.9 % (compared with 1.6 % in 2004), while the EU set a common target of 10 % for the share of renewable energy (including liquid biofuels, hydrogen, biomethane, 'green' electricity, etc.) used in transport by 2020. The highest share of renewable energy in transport fuel consumption was in Sweden (30.3 %), Finland (21.3 %), and in the Netherlands (12.5 %). As for the EEA countries, Norway reached the level of 27.6 %.

The Eurostat observed a growth in electricity generated from renewable energy sources in 2009-2019, mainly due to an expansion in three renewable energy sources across the EU: wind power, solar power and solid biofuels (including renewable wastes). In 2019, with 34% of gross electricity consumption in the EU-27 coming from renewable energy sources, wind and hydro power accounted for two-thirds of it (35 % each). The remaining one-third of electricity generated was from solar power (13 %), solid biofuels (8 %) and other renewable sources (9 %).

Figure 2: Renewable energy consumption, 2019



Source: European Commission - [Eurostat](#).

Based on the data collected, the Eurostat concluded that ‘while the EU as a whole is on course to meet its 2020 targets, some [Member States](#) will need to make additional efforts to meet their obligations as regards the two main targets: a) the overall share of energy from renewable sources in the gross final energy consumption, and b) the specific share of energy from renewable sources in transport.

EU-level reports

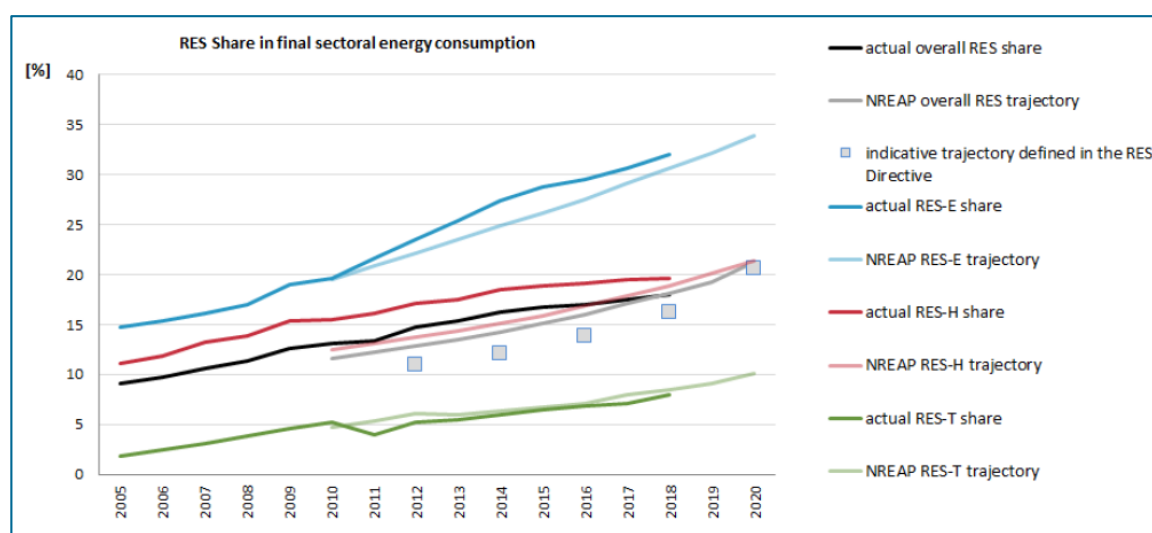
Reports from the European Commission

Renewable Energy Progress Report

In line with the reporting obligations set in the RED I and the Directive on Indirect Land Use Change (ILUC)², the European Commission published the Renewable Energy Progress Report in October 2020 ([COM\(2020\) 952 final](#)) with the aim of providing the latest insights about the progress towards the 2020 renewable energy targets. The report covered the progress made at the EU-28 level until 2018, and it is primarily based on energy statistics transmitted by the Member States to Eurostat up to 2020. The report built further on the Member States fifth biannual renewable energy progress [report](#) (2017-2018) and on complementary technical analysis carried out during 2020. It also examined the potential regarding co-operation mechanisms and analysed the administrative frameworks, as well as biofuels sustainability.

The report indicated that in recent years (until 2018) there had been a stable growth in the overall share of renewable energy sources (RES) at EU level. In 2018 the EU reached a share of 18.0% (18.9% for EU-27) of renewable energy in gross final energy consumption, which stood above the indicative trajectory (16%) to reach the 2020 targets. The EU was also above the more ambitious trajectory that Member States defined in their [National Renewable Energy Action Plans](#) (NREAPs). The shares of renewable energy at the sectoral level had also been, in general, above the indicative trajectories to reach the 2020 targets. Sectoral shares in electricity (RES-E) and heating and cooling (RES-H&C) had been systematically above the targets both at EU level and regarding NREAPs. Concerning sectoral shares in transport (RES-T), the levels were slightly below the planned share in the NREAPs, which according to the report, was partially due to the debate about biofuels policy and the respective adjustments to its legal framework³ (see Figure 3).

Figure 3: Actual and planned renewable energy shares for the EU (2005-2020, %)



Source: European Commission Progress Report COM(2020) 952 final – Eurostat and National Renewable Energy Action plans (NREAP).

The report concluded that investments in renewable energy were increasingly market-driven, and confirmed the decrease in public subsidies, particularly for new projects. This has been the result of the considerable cost reductions in renewable energy technologies, the implementation of more competitive support schemes to reduce subsidies, and the zero or low-cost auctions results in a number of European countries. At the national level, twelve Member States had in 2018 renewable energy shares above the 2020 targets, eleven other met or exceeded the indicative trajectory established in RED I for 2017-2018, whereas five Member States (France, Ireland, the Netherlands, Poland and Slovenia) failed to meet these targets.

The report also provided some insights about the prospects for the 2020 renewable energy targets and concluded that most of the Member States would meet their targets, although Belgium, France, and Poland were at severe risk of failing to do so. Additionally, the Netherlands and Luxembourg were at moderate risk of not meeting the targets. Regarding the transport sector, in 2018 only Finland and Sweden had exceeded the 10% share of renewable energy required. The modelling for 2020 showed that 16 Member States would achieve or exceed the target, and the report urged the 11 remaining Member States to take action in order to ensure compliance with the renewable energy obligations.

Inception Impact Assessment (2020)

In August 2020, the Commission published an [Inception Impact Assessment](#) (IIA) to support the legislative proposal for the amendment of the RED II to potentially increase the 2030 renewable energy targets. Additionally, the amendment of RED II may have the objective of providing specific new actions in line with energy initiatives and strategies presented in 2020 so the EU can adapt to a higher climate ambition for 2030, which will be key to achieve climate neutrality in 2050.

The impact assessment is to be carried out following the adoption of the [2030 Climate Target Plan](#)⁴, and will build further on the [impact assessment](#) accompanying its proposal. The impact assessment will be based on existing and projected econometric tools, scientific literature and other data available, in addition to several specific studies that are being and have been commissioned to underpin the analytical part. A consultation process will also be launched in order to gather the views of different stakeholders on how the RED II could be improved.

The overall objective of the impact assessment is to ensure the sufficient contribution of renewable energy to the achievement of more ambitious EU climate targets. The aim of the RED II revision is to translate into legal measures some of the actions proposed in the initiatives and strategies under the European Green Deal. The revision also has the aim of improving synergies with other legislation such as the Energy Efficiency Directive, which will also be revised.

The main objectives of the initiative include:

- a potential review of the minimum 32 % renewable energy target, including a revision of the levels of ambition at the sectoral level;
- introduction of elements of the Energy System Integration and Hydrogen strategies, such as the promotion of electrification of renewable fuels like green hydrogen. The following elements could be included:
 - an increase of the renewable energy deployment in the power, heating and cooling and transport sectors;
 - a better use of waste heat, in line with a more 'circular' energy system;
 - an improved integration of renewable energies in buildings, following the Renovation Wave initiative;
 - a boost in the development of renewable and other low-carbon fuels such as advanced biofuels or hydrogen, in hard-to-decarbonise sectors, in line with the upcoming Strategy on Sustainable and Smart Mobility and related initiatives for RefuelEU aviation and maritime;

- › the introduction of comprehensive terminology and a certification system including associated greenhouse gases and based on a robust life-cycle approach and traceability system.

Based on the results of the 2030 Climate Target Plan and the assessment of the final national energy and climate plans (NECPs), the IIA presents some policy options to assess which elements of the RED II should be adapted or modified:

- › Option 1 – No policy change (baseline scenario).
- › Option 2 – Non-regulatory alternative policy measures such as training, information campaigns, etc.
- › Option 3 – Making the RED II more ambitious in line with the 2030 Climate Target Plan, which would probably involve a revision of Articles 3, 23, 24 and 25.
- › Option 4 – Amend RED II to effectively translate the actions proposed in line with the EGD into legal measures, which would potentially imply reviewing the RED II parts related to renewable energy in heating and cooling, transport and buildings. It would also include a revision of the sustainability and greenhouse gas emissions saving criteria, as well as new provisions on public procurement, terminology and certification of fuels.
- › Option 5 – Potential combinations of options 2, 3 and 4.

Considering that the amendments to the Directive will be targeted, no implementation plan will be established, according to the IIA. To ensure the correct and timely transposition of the amended Directive, the Commission will provide guidance on the new provisions and encourage discussions with Member States in committee and concerted action.

European Parliament position / MEPs' questions

Resolutions of the European Parliament

The European Parliament has always advocated for the promotion of renewable energy sources and has underlined the importance of establishing mandatory targets for 2020 and 2030. In June 2016, it adopted a [resolution](#) following the Renewable Energy Progress Report in which called on the Commission to rise the ambition level of the climate and energy package for 2030. The Parliament advocated for an increase of the RES target to at least 30 % to be implemented by means of individual national targets. During [works](#) on the proposal of the RED II, the Parliament proposed even more ambitious the EU binding target of at least 35% share of renewable energy to be accompanied by national targets.

On 15 January 2020 it adopted a [resolution](#) about the European Green Deal, emphasizing the need for more ambitious action to address climate change and meet environmental objectives. The resolution highlighted the essential role of energy in the transition to a net-zero greenhouse gas emissions economy, and particularly the importance of decarbonising the energy system. For these reasons, the resolution called for the revision of the RED in line with the new climate ambitions by establishing new binding obligations on individual Member States. The resolution also underlined that in order to achieve the EU climate goals, all sectors must make efforts to increase their share of renewable energy, phasing out fossil fuels. In this regard, it welcomed the announcement of the offshore wind strategy. Another important point presented in the resolution was about mobilising industry for a clean and circular economy, highlighting the potential for on-site production of renewable energy of buildings and the essential role of sustainable-sourced materials. In line with the sustainable mobility strategy, the resolution emphasized the importance of developing zero-emission ports using renewable energy, and following the 'Farm to Fork' strategy, it called for the promotion of the sustainable use of renewable raw materials.

MEPs' selected questions

Written question by Gilles Lebreton (ENF), 31 January 2019

In his question, MEP Lebreton stressed that the new Renewable Energy Directive 2018/2001, as well as the previous one (regulation 2009/28/EC), do not give a definition of renewable energy. He referred to an opinion of the Advocate-General (Case C-4/16), who noted that Directive 2009/28/EC defined renewable energy as 'energy from renewable non-fossil sources' (Article 2(a)).

MEP Lebreton asked the Commission about the reason for not having provided a definition of renewable energy or at least minimum criteria that would allow to compare the efficiency and performance of the various sources of renewable energy. He also asked if the Commission would lay down comparative criteria for the different sources of renewable energies by 2021 in order to put an end to discrimination in the implementation of Article 4 of Directive 2018/2001.

Answer given by Mr Arias Cañete on behalf of the European Commission, 14 March 2019

Mr Cañete answered that the recast of the Renewable Energy Directive defined renewable energy by listing its sources in order to emphasize the nature of the energy sources rather than classifying them by virtue of their intrinsic efficiency and performance values. He also explained that the Commission is not responsible for providing a definition different than the one provided by the co-legislators in Article 2 of Directive 2018/2001, and that any interpretative guidelines to compare renewable energy sources' criteria was being considered.

Written question by Carmen Avram (S&D), 19 February 2020

MEP Avram's question was about the need for concrete, binding and ambitious actions to protect and restore EU forests in the EU Biodiversity Strategy. She stressed that the recast of the Renewable Energy Directive failed at further limiting the use of subsidies harmful to the environment or climate, and that clear rules need to be established in order to prevent forests being burned for energy purposes.

MEP Avram asked the Commission to detail its plan to implement more ambitious and binding actions related to EU forests. She also asked what would be the particular actions to protect and restore forests and to effectively enforce nature protection legislation.

Answer given by Mr Sinkevičius on behalf of the European Commission, 12 August 2020

Mr Sinkevičius answered that the protection and restoration of forests, the enforcement of environmental legislation and the integration of biodiversity considerations in different policy areas such as energy would be part of the 2030 Biodiversity Strategy. He also stated that this strategy would have as main objectives effective forest preservation, identifying and addressing the causes of biodiversity loss as well as identifying measures that would help Member States improve and restore ecosystems. Finally, Mr Sinkevičius indicated that the Commission would also review the regulation on land use, land use change and forestry.

Written question by Michal Wiezik (PPE), 7 July 2020

The question referred to sustainability criteria for bioenergy in the light of the European Green Deal. MEP Wiezik stressed that the Biodiversity Strategy indicates that the revised Renewable Energy Directive 'also promotes the shift to advanced biofuels based on residues and non-reusable and non-recyclable waste. This approach should continue for all forms of bioenergy. The use of whole trees and food and feed crops for energy production – whether produced in the EU or imported – should be minimised'. He asked the Commission to confirm that article 29 and Annex IX of the Renewable Energy Directive, which cover sustainability criteria for bioenergy, would be reviewed following the Green Deal and Biodiversity Strategy and included in the impact assessment the Commission was conducting.

Answer given by Ms Simson on behalf of the European Commission, 19 August 2020

In her answer, Ms Simson confirmed that the Commission would review where necessary the level of ambition of the revised Renewable Energy Directive. She stressed that the Commission would develop operational guidance in 2021 on the new sustainability criteria to forest biomass for energy in order to improve the Renewable Energy Directive implementation, in line with Article 29 and by reviewing the list of feedstock of Annex IX with the aim to adding feedstock according to Article 28 of the Directive.

EU citizens opinions on clean and renewable energy

Overall, 93 % of the Eurobarometer surveys' respondents thought that 'climate change is a serious problem' and 90 % thought that the EU 'must ensure access to clean energy'. For 41 % of respondent 'shifting from fossil fuels to renewable energy sources to combat climate change' is the most important element of the EU energy policy.

Ninety two per cent of respondents (rise by 3 percentage points since 2017) thought that it was 'important that their national government sets ambitious targets to increase the amount of renewable energy used, such as wind or solar power, by 2030', with 55 % thinking it is "very important". Ninety per cent of respondents thought there was a need to encourage more investments in the renewable energy, eg. wind, solar.

Source: [Europeans attitudes on climate change](#), Special Eurobarometer 490, September 2019, and [European's attitudes on EU energy policy](#), Special Eurobarometer 492, September 2019.

European Court of Auditors

In 2019, the European Court of Auditors (ECA) published a special [report](#) on wind and solar power for electricity generation, which pointed out that 'between 2005 and 2017, the share of renewables in the generation of electricity in the EU doubled, from around 15 % to almost 31 %. The main driver for this growth was the increase in wind and solar photovoltaic (PV) power' and that 'the first catalyst towards the progress in renewables was the directive itself [RED I], and the second the Member States' support schemes to incentivise investment'. Yet, the ECA warned that the achievement of the EU target of at least 32 % for 2030 can be jeopardised by the lack of national targets.

Based on the audit, the ECA recommended: 'a focus on closing gaps to meet the 2020 targets; an improvement in timeliness of statistical data on renewables; the holding of sufficient auctions to increase renewable capacity for electricity; the creation of a more favourable environment for renewable electricity generation through simplification of administrative procedures; the promotion for investment in grid infrastructure and interconnectors; and better monitoring to mitigate the absence of binding national targets'.

European Commission consultation of stakeholders

Between 3 August 2020 and 21 September 2020, the Commission was gathering feedback on the evaluation of the existing Directive and potential solutions for the planned revision, and received 374 [responses](#) from stakeholders.

From 17 November 2020 until 9 February 2021, the Commission organised a [public consultation](#) process to receive input, which would contribute to the Commission's preparatory work for the review and the revision of the Directive. The results of the consultations were not published yet.

Petitions

In 2017-2020, the EP Committee on Petitions (PETI) received four petitions, two in German, one in Italian and one in Romanian. One case is already closed, three are still ongoing. Three cases had an EU dimension, while one had a national level dimension. All petitions were related to energy or environment, or both areas. In detail, the petitions were related to promotion of renewable energy (with regard to RED I), installing solar panels on public buildings, the law for the expansion of renewable energy in one of the Member States, and clarifications regarding the EU legislation on energy efficiency.

Citizen's inquiry (AskEP)

In 2018-2020, the EP received 31 inquiries, seven in 2018 and in 2019, and seventeen in 2020. The inquiries asked for information and actions, and commented on citizen's innovations. Thematically, they concerned different aspects of renewable energy (including geothermal and solar energy), as well as nuclear energy and radioactive materials. There was also one inquiry asking for interview with the EP President to discuss energy independence strategies.

MAIN REFERENCES

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ENDNOTES

- ¹ [Directive \(EU\) 2018/2001](#) on the promotion of the use of energy from renewable sources), OJ L 328, 21.12.2018.
- ² [Directive \(EU\) 2015/1513](#) of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources.
- ³ The uncertainty generated by this debate about the future policy framework of biofuels slowed down investments in biofuel production capacity including advanced biofuels, which are defined in the RED as biofuels produced from a positive list of feedstock comprised mostly of wastes and residues. The adoption of RED II generated an increase in advanced biofuels investment, however this is not reflected in the 2018 data.
- ⁴ On 17 September 2020 the European Commission adopted the communication ‘Stepping up Europe’s 2030 climate ambition - Investing in a climate-neutral future for the benefit of our people’, also known as the 2030 EU Climate Target Plan. The European Commission proposal consisted in an updated 2030 emissions reduction target of 50 % (and towards 55%) compared to 1990 levels, from the current 40 %. More information about this initiative can be found in the [Legislative Train Schedule site](#).

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