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Status Review of Renewable Support Schemes in Europe for 2018 and 2019

CEER report

Renewables Work Stream
of
Electricity Working Group

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INFORMATION PAGE

Abstract

This document (C20-RES-69-04) constitutes the latest update to the regular CEER Status Reviews of Renewable Energy Support Schemes in Europe and builds on the previous CEER reports C18-SDE-63-03, C16-SDE-56-03, C14-SDE-44-03, C12-SDE-33-03 and C10-SDE-19-04a.

The purpose of these CEER Status Review publications is to collect comparable data on support for Renewable Energy Sources (RES) in Europe in order to provide policymakers, regulators and industry participants with information on support schemes for electricity from RES. The data is provided by technology and type of instrument (e.g. Feed-in tariffs, Feed-in Premiums and Green Certificates). To collect this data, a survey was conducted among CEER Members and Observers in September 2020, to explore the renewable electricity support schemes currently in place across Europe.

Target Audience

European Commission, energy suppliers, traders, gas/electricity customers, gas/electricity industry, consumer representative groups, network operators, Member States, academics and other interested parties.

Keywords

electricity; prices; contracts; tariffs; affordability; renewables, Renewable Energy Sources, RES, subsidies, support systems.

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Related Documents

CEER documents

- 2nd CEER Report on Tendering Procedures for RES in Europe, November 2020, Ref: C20-RES-67-03.
- ACER-CEER Market Monitoring Report (MMR) – Energy Retail and Consumer Protection Volume 2019, September 2020.
- CEER Paper on Unsupported RES, May 2020, Ref: C19-RES-64-04a.
- Status Review of Renewables Support Schemes in Europe for 2016 and 2017, December 2018, Ref. C18-SD-63-03.
- Status Review of Renewables Support Schemes in Europe 2014 and 2015, April 2017, Ref. C16-SDE-56-03.
- Position Paper on Renewable Energy self-generation, September 2016, Ref: C16-SDE-55-03.
- Key support elements of RES in Europe: moving towards market integration, January 2016, Ref: C15-SDE-49-03.
- Status Review of Renewables and Energy Efficiency Support Schemes in Europe 2012 and 2013, January 2015, Ref. C14-SDE-44-03.
- Status Review of Renewable and Energy Efficiency Support Schemes in Europe, December 2012, Ref: C12-SDE-33-03.
- Status Review on Renewable Energy Support, May 2011, Ref: C10-SDE-19-04a.

External documents

- European Commission, Regulation on the internal market for electricity, 2019/943, 5 June 2019.
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EXECUTIVE SUMMARY

Background

National support schemes for renewable energy sources (RES) have been subject to important changes since the adoption of the EU's Renewable Energy Directive in 2009[1]. From 2014 onwards, CEER member countries have been progressively adapting their schemes to comply with the general conditions for support to energy from renewables as set by the European Commission in its "Guidelines on State Aid for Environmental Protection and Energy" (EEAG)[2]. With the adoption of a revised Renewable Energy Directive[3] in November 2018 and the adoption of a revised Electricity Market Regulation[4], both part of the "Clean Energy for All Europeans" legislative package (Clean Energy Package, (CEP))[5], the key principles of competitiveness, non-discrimination and cost-effectiveness set out in the EEAG should become the standard criteria for RES support schemes across Europe from 2021 onwards.

Relevant issues for the further promotion of RES across Europe, such as RES targets, the type of support and the procedures to set levels of support, level of balancing responsibilities, and consumer empowerment notably through self-consumption, are subjects of this Status Review.

Objectives and contents of the document

The purpose of CEER Status Reviews is to collect comparable data on RES support in Europe in order to provide policymakers, regulators and industry participants with information on support schemes for RES electricity by technology and type of instrument (e.g. Feed-in tariffs (FiTs), Feed-in premiums (FiPs) and Green Certificates (GCs)). This document forms the latest update to the regular CEER Status Review of Renewable Support Schemes in Europe and builds on the previous CEER reports[6].

CEER member countries were asked to provide details on the type of support, the amount of supported RES and the related expenditure by technology in their country. Information and analysis provided are based on the questionnaire responses received from 28 CEER member countries. These responses enabled analysis of data on installed capacity, on the amount of MWh (Megawatt hour) receiving support and the expenditure to promote the schemes. Regulators were also asked to provide details on new installations receiving support (those installed in either 2017 or 2018), although not all countries were able to provide this data.

In addition to direct financial support given to RES, CEER member countries were also asked to provide information on RES objectives for 2030, support scheme financing mechanisms,

[1] Directive (EU) 2009/28/EC 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.
[2] European Commission Communication on Guidelines on State aid for environmental protection and energy 2014-2020, 2014/C 200/01
[3] Directive (EU) 2018/2001/EC of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.
[4] Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity.
[5] European Commission on Clean energy for all Europeans package.
[6] C10-SDE-19-04a, C12-SDE-33-03, C14-SDE-44-03 and C16-SDE-56-03; Previous reports also presented data on support schemes for energy efficiency measures. Since energy efficiency falls in the scope of responsibility of only a few National Regulatory Authorities, it has been convened to concentrate in this status review on the support for RES.

balancing responsibility and indirect support. Furthermore, the questionnaire explored aspects of self-consumption as well as net-metering, energy sharing and renewable energy communities. Since most European countries are still in the process of adapting their support schemes to the new rules set out by the state aid guidelines, the questionnaire also enquired about recent and planned changes to the schemes.

In this report "CEER member countries" is used as a term to mean all CEER Members and CEER Observers that provided data. There are varying sample sizes since not all CEER member countries provided a data set for every section.

Brief summary of the conclusions

A wide range of instruments is used to promote RES, such as investment grants, FiTs, FiPs, and GCs. This report shows that throughout Europe, the transition towards support schemes that allow more market integration of RES and include more competitive elements in the way support levels are being determined is still ongoing. As such, the major changes observed remain related to the introduction of FiP schemes, where RES producers receive support (a fixed or variable premium) in addition to their market income, and the introduction of tendering procedures, as a means to determine levels of support.

This report also shows the unit support levels (i.e. direct cost per MWh of supported electricity) for the main renewable technologies in 2018 and 2019 for the whole support system in place. These unit support levels reflect a mixture of old and new installations and possibly old and new support systems. There are wide differences across technologies and across countries which are also driven by almost decades of RES support systems.

The previous report (C18-SD-64-03) stated that the weighted average support for RES, on top of the wholesale price, decreased from 110.22 €/MWh[7] in 2015 to an average of 96.29 €/MWh across 25 countries[8] for 2017. At the same time, the weighted average support ranged from a minimum of 12.87 €/MWh (in Norway) to a maximum of 198.29 €/MWh (in the Czech Republic). Based on the data provided for the current report, the weighted average support for RES decreased from 99.62 €/MWh in 2018 to 97.95 €/MWh in 2019. Whereas the total expenditure rose from 60,080 M€ to 63,593 M€.

A decrease in support costs is important for energy customers, as the latest ACER-CEER Market Monitoring Report[9] shows that RES charges in 2019 accounted from 13% to more than 20% of consumer's bills.

The proportion of gross electricity produced receiving RES support differs widely from one country to another, ranging from 3.8% in Slovenia to 66% in Denmark, with an average of 19% across CEER member countries in 2018. This is an increase from an average proportion of around 17% in 2016.

The report also brings forward that almost no changes have been made to central features such as the nature of funding, which is still mostly non-tax levies (21 out of 28 countries). Whereas most of these countries have some specific levies on electricity or sometimes energy which are directly used to support RES electricity, France and the Czech Republic use the state budget to support RES electricity.

[7] The weighted average support for 2015 was based on 26 CEER Member countries.
[8] For 2018, 27 and for 2019, 26 CEER member countries submitted full or partial data.
[9] ACER-CEER Market Monitoring Report (MMR) – Energy Retail and Consumer Protection Volume 2019, September 2020.

In terms of market integration, RES installations increasingly have the same financial responsibility as conventional plants for electricity balancing, at least above a certain threshold of capacity installed. The report shows that for 19 CEER member countries, balancing responsibility for RES producers is a feature in the respective national support schemes. In 11 of those 19 countries, the balancing responsibility counts for all RES producers, whereas in the other 8 countries, only selected RES producers face such responsibilities.

1 Introduction

National support schemes for renewable energy sources (RES) have been subject to important changes since the adoption of the EU's Renewable Energy Directive[10] in 2009. From 2014 onwards, CEER member countries have been progressively adapting their schemes to comply with the general conditions for support to energy from renewable sources as set by the European Commission in its "Guidelines on State Aid for Environmental Protection and Energy" (EEAG)[11]. As a result, features such as RES producers' balancing responsibility and support level tendering procedures, have since been introduced in national support schemes. With the adoption of a revised Renewable Energy Directive[12] (RED II) in November 2018, and the adoption of a revised Electricity Market Regulation[13] in November 2018, both part of the "Clean Energy for All Europeans" legislative package (Clean Energy Package (CEP))[14], the key principles of competitiveness, non-discrimination and cost-effectiveness set out in the EEAG principles will become the standard criteria for RES support schemes across Europe from 2021 onwards.

RES policies, including support for renewables, can affect consumers in a number of ways, notably through overall impacts on the electrical system (e.g. grid development, market integration, etc.). In most cases, the costs for achieving the agreed renewable energy objectives will ultimately be borne by end-users, for example, if the RES support is directly added to electricity bills. It is therefore also in the interest of consumers to achieve RES deployment in the most cost-effective manner. RES charges in 2016 and 2017 were around 13% and 14% respectively of the electricity household bills, compared to 11% in 2014[15]. In 2019,[16] those RES charges accounted for a weighted average of 14% of consumer's bills. Whereas in some countries the RES charges in 2019 accounted for 13% of the consumer's bills, they accounted for over 20% for other countries.

This report forms the latest update to the regular CEER Status Reviews of Renewable Energy Support Schemes in Europe and builds on the previous CEER reports[17]. The purpose of CEER Status Reviews is to collect comparable data on RES support in Europe in order to provide policymakers, regulators and industry participants with information on support schemes for RES electricity, by technology and type of instrument (e.g. Feed-in tariffs (FiTs), Feed-in premiums (FiPs) and Green Certificates (GCs)).

In September 2020, in CEER member countries the national regulatory authorities for energy (NRAs) were asked to complete a questionnaire on national RES support schemes. The questionnaire consisted of a short description of their support scheme (type of support granted, type of financing scheme, level of market integration of RES producers and treatment of self-consumption) and of any recent or upcoming changes since the last review. The NRAs were

[10] Directive (EU) 2009/28/EC 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.
[11] European Commission Communication on Guidelines on State aid for environmental protection and energy 2014-2020, 2014/C 200/01.
[12] Directive (EU) 2018/2001/EC of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.
[13] Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity.
[14] European Commission on Clean energy for all Europeans package..
[15] ACER-CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2017 – Electricity and Gas Retail Markets Volume.
[16] ACER-CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets 2019 – Energy Retail and Consumer Protection Volume.
[17] C20-SD-63-03, C10-SDE-19-04a, C12-SDE-33-03, C14-SDE-44-03 and C16-SDE-56-03.

further asked to provide quantitative details on the amount of supported RES and the related expenditure by technology and support type. Member countries were also asked for separate details on new installations receiving support (those installed in either 2017 or 2018), although not all countries were able to provide this data. In addition to questions concerning direct financial support given to RES, members were asked about indirect support, self-consumption, net-metering and regulations related to renewable energy communities.

In this report “CEER member countries” is used as a term to indicate all CEER Members and CEER Observers that provided data. A total of 28 CEER member countries responded to the questionnaire, though there are varying sample sizes since not all countries provided a data set for every section.

2 National RES targets and key elements of national support schemes

In recent years, most CEER member countries have focused on the development of strategies for 2030 and beyond to set clear signals for investors. The RED II requests EU Member States (MS) to contribute to a common European target of at least 32% renewable energy in final energy consumption by 2030. For this purpose, EU countries had to submit national energy and climate plans (NECPs) by end of 2019.

2.1 National renewable energy targets

This report does not evaluate the performance of specific CEER member countries but intends to provide an update on the status quo. For this reason, the member countries were asked whether, and if so, which targets they set for 2030. Out of the 28 responses to the questionnaire, 22 countries have defined 2030 targets for renewable energy, either as an overall target, as a share of final energy consumption or as share in the electricity sector. Six countries reported no specific RES targets but two out of these six (the Netherlands and the UK) reported CO_2 reduction targets. For the countries that have decided on a RES share for 2030, their commitment reached an average share of 31% within final energy consumption and an average share of 53% within electricity production for 2030.

For further details regarding the RES targets by CEER member countries, see Annex 3 of this report.

2.2 Support instruments for promoting RES deployment

For the review period of 2018-2019, mainly four types of support schemes[18] were in place in Europe, namely:

- Feed-in tariffs (FiTs);
- Feed-in premiums (FiPs);
- Green Certificates (GCs); and
- Investment grants.

For each support scheme, the level of support (or the quota obligation in the case of green certificates schemes) may be either set through administrative procedures or through tendering procedures[19].

Table 1 provides an overview of the support schemes by technology which are in place in CEER member countries. Only the instruments which were detailed by CEER member countries are included here.

[18] The characteristics of the main support schemes implemented in Europe have been described in more details in the CEER report on key support elements of RES in Europe: moving towards market integration, Ref: C15-SDE-49-03, 26 January 2016.
[19] More on the tendering procedures is available in the 2nd CEER Report on Tendering Procedures for RES in Europe, November 2020, Ref: C20-RES-67-03.

Country	Type of support	Process determining the level of support or the quota	PV	Onshore wind	Offshore wind	Bio-energy	Hydro-power	Duration of support (years)
Austria	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	13 to 15
	Investment grant	Administrative procedures	✓				✓	N/A
Croatia	Feed-in Tariff	Tendering procedures	✓	✓		✓	✓	14
	Feed-in Premium	Tendering procedures	✓	✓		✓	✓	
Cyprus	Investment grant	Administrative procedures	✓					N/A
Czech Republic	Feed-in Tariff	Administrative procedures		✓[20]		✓[21/20]	✓[22]	20 to 30
	Feed-in Premium	Administrative procedures		✓[20]		✓[20]	✓[22]	
Denmark	Feed-in Premium	Tendering procedures	✓	✓	✓			-
	Feed-in Tariff	Administrative procedures					✓	
	Feed-in Premium	Administrative procedures				✓		
Estonia	Feed-in Premium	Administrative procedures	✓	✓		✓	✓	12
France	Feed-in Tariff	Tendering procedures	✓					10 to 20
	Feed-in Premium	Tendering procedures	✓	✓	✓	✓	✓	
	Feed-in Tariff	Administrative procedures	✓			✓	✓	
	Feed-in Premium	Administrative procedures		✓		✓	✓	
Georgia	Feed-in Premium	Administrative procedures	✓	✓	✓	✓	✓	-
	Investment grant	Administrative procedures	✓	✓		✓	✓	
Germany	Feed-in Premium	Tendering procedures	✓	✓	✓	✓		20
	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	
	Feed-in Premium	Administrative procedures	✓	✓		✓	✓	
Greece	Feed-in Tariff	Tendering procedures	✓	✓				20 to 25
	Feed-in Premium	Tendering procedures	✓	✓				
	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	

[20] Only residual power plants.
[21] Only for defined power plants.
[22] New/reconstructed small hydropower up to 10 MW.

Country	Type of support	Process determining the level of support or the quota	PV	Onshore wind	Offshore wind	Bio-energy	Hydro-power	Duration of support (years)
	Feed-in Premium	Administrative procedures	✓	✓		✓	✓	
Hungary	Feed-in Premium	Tendering procedures	✓	✓		✓	✓	15
	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	13 to 18
	Feed-in Premium	Administrative procedures	✓			✓	✓	5 and 15 to 20[23]
Ireland	Green certificates	Administrative procedures		✓	✓	✓	✓	15
Italy	Feed-in Premium	Tendering procedures	✓	✓	✓	✓	✓	15 to 30
	Feed-in Tariff	Administrative procedures	✓	✓	✓	✓	✓	
Latvia	Feed-in Tariff	Administrative procedures	✓	✓	✓	✓	✓	10 to 20
Lithuania	Feed-in Premium[24]	Tendering procedures	✓	✓		✓	✓	12
	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	
	Feed-in Tariff	Tendering procedures	✓	✓		✓	✓	
Luxembourg	Feed-in Premium	Tendering procedures	✓					15
	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	
	Feed-in Premium	Administrative procedures		✓		✓	✓	
Malta	Feed-in Premium	Tendering procedures	✓	✓				6 to 20
	Feed-in Tariff	Administrative procedures	✓					
	Investment grant	Administrative procedures	✓					N/A
Netherlands	Feed-in Premium	Tendering procedures	✓	✓	✓	✓	✓	8 to 15
North Macedonia	Feed-in Premium	Tendering procedures	✓					
	Feed-in Tariff	Administrative procedures		✓		✓	✓	
Norway	Green certificates	Administrative procedures	✓	✓	✓	✓	✓	15
Poland	Feed-in Premium	Tendering procedures	✓	✓	✓	✓	✓	15
	Feed-in Tariff	Tendering procedures	✓	✓	✓	✓	✓	15

[23] 5 years in case of brown premium; 15 to 20 years in case of green premium without tender.
[24] FiP applies to new power installations from 1 May 2019 onwards.

Country	Type of support	Process determining the level of support or the quota	PV	Onshore wind	Offshore wind	Bio-energy	Hydro-power	Duration of support (years)
	Feed-in Premium	Administrative procedures				✓	✓	15
	Feed-in Tariff	Administrative procedures				✓	✓	15
Portugal	Feed-in Tariff	Administrative procedures	✓	✓	✓	✓	✓	12 to 15
Romania	Green certificates	Administrative procedures	✓	✓		✓	✓	15
Slovakia	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	15
Slovenia	Feed-in Tariff	Tendering procedures	✓	✓	✓	✓	✓	15
Spain	Investment grant	Tendering procedures	✓	✓		✓	✓	20 to 30
Sweden	Green certificates	Administrative procedures	✓	✓	✓	✓	✓	15
	Investment grant	Administrative procedures	✓					
UK	Feed-in Tariff	Administrative procedures	✓	✓		✓	✓	12 to 25
	Feed-in Premium (contract for differences)	Tendering procedures	✓	✓	✓	✓	✓	
	Green certificates	Administrative procedures	✓	✓	✓	✓	✓	

Table 1: Overview of national support schemes in place by RES technologies in 2018 and 2019

It has to be highlighted that not all CEER member countries from the last report also reported data for this report and some that did not report data for the last report gave input for this current version. In the last review period, a significant increase in FiP schemes was noticeable. In 2014 – 2015 six CEER member countries had at least one FiP scheme in place and in 2016 – 2017 this number rose to 16 Member countries. The provided data for the current report shows that one additional CEER member country (17 total) introduced a FiP scheme. Compared to the last report, two more CEER member countries (19) had at least one FiT scheme in place. Investment grants are still not common and are used in six countries only. Spain is the only country that is relying solely on investment grants, although with specific particularities. Besides that, also GC schemes are still used in a very limited way. Only five countries had GC schemes in place, whereas it was already remarked in the last report that the UK is phasing out its GC scheme. In the last report it was also highlighted that 15 out of 27 CEER member countries had two or more support systems in place. For this year's report 17 out of 28 CEER member countries documented two or more support schemes. A combination of support schemes (14 CEER member countries use a combination of FiT and FiP schemes) is more often used compared to just having one support system in place (11 member countries).

In terms of the technology supported, PV, onshore wind, bioenergy[25] and hydropower are the most widely supported RES. The support of other renewable energies such as offshore wind is limited to countries with a coastline and those who have developed the relevant regulatory framework.

As seen in Table 1, the support duration can vary between schemes and technologies and in total 13 CEER member countries have a range of years for the support duration. Also 14 CEER member countries grant operational support up to 15 years, while five CEER member countries have a support duration up to 20 years. Five member countries have a support duration of more than 20 years with three even reaching up to 30 years. The shortest duration of support starts at five years.

CEER member countries modify their renewable energy support schemes in order to achieve renewable energy deployment in a cost-effective way. In recent years, alterations in support schemes were very much motivated by the provisions of the EEAG guidelines and RED II. Since the last RES Status Review, 14 countries reported changes concerning their support schemes. The other 13 countries reported no changes.

CEER member countries that reported changes to their support schemes mostly modified the way how support levels are being determined (14 responses), which shows a trend from administratively determined tariffs towards support levels being determined in competitive procedures. Eight countries also reported changes concerning the market integration of renewables, which is based on balancing responsibility for RES producers for example in FiP schemes. In the last RES Status Review, it was highlighted that three member countries changed the way of financing their RES support schemes. For the current report, seven Member countries reported changes in the financing system. Annex 5 gives a detailed overview over all changes reported.

[25] Bioenergy encompasses biogases and solid biomass.

3 Renewable electricity volumes receiving financial support

3.1 Financial support by type of RES technology

The supported renewable electricity production for 2018 and 2019 is shown in Table 2 and Table 4. As in previous RES Status Reviews, various sources of biomass and biogas are subsumed under the category bioenergy to ensure comparability across countries.

Even though more and more supported installations reach the end of their support-time and some new installations are built without receiving any support, total supported renewable electricity rose from 603 TWh in 2018 to 642 TWh in 2019 (538 TWh in 2016 and 603 TWh in 2017).

Table 3 and Table 5 show the supported installed capacity for 2018 and 2019. Overall, the supported installed capacity rose from 306 GW to 313 GW in 2019. It has to be remarked though that the Netherlands (7 GW in 2018) only reported data for 2018.

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	2,597,387	235	1,505,577	620,391	5,060,573	-	52	**9,784,214**
Belgium	-	-	-	-	-	3,391,000	-	**3,391,000**
Croatia	608,412	-	24,621	69,196	1,345,467	-	-	**2,047,696**
Cyprus	36,000	-	-	126,755	220,611	-	-	**383,366**
Czech Republic	4,209,650	-	912,265	2,307,743	600,856	-	-	**8,030,514**
Denmark	6,732,718	-	-	491,199	8,190,000	4,618,000	-	**20,031,917**
Estonia	965,256	-	19,253	12,974	490,474	-	55,336	**1,543,293**
Finland	-	-	-	-	-	-	-	**-**
France	5,199,946	-	6,458,644	9,860,727	28,095,977	-	1,960,826	**51,576,120**
Germany	41,640,599	165,226	4,799,106	40,784,324	88,684,398	19,179,478	-	**195,253,131**
Greece	297,970	-	718,450	3,793,200	6,300,257	-	-	**11,109,877**
Hungary	1,785,742	6,358	207,941	264,417	549,739	-	-	**2,814,196**
Ireland	1,289,559	-	3,588	-	6,670,139	-	-	**7,963,286**
Italy	16,210,496	1,533,176	9,736,449	20,234,211	15,567,029	-	-	**63,281,360**
Latvia	761,953	-	49,525	-	113,195	-	-	**924,673**
Lithuania	411,370	-	66,263	75,753	1,117,744	-	-	**1,671,129**
Luxembourg	164,013	-	18,224	103,270	241,571	-	-	**527,078**
North Macedonia	54,050	-	202,962	22,788	97,338	-	-	**377,138**
Malta	-	-	-	149,326	-	-	-	**149,326**
Netherlands	6,831,934	1,016,624	940	1,032,262	3,979,457	2,900,000	-	**15,761,217**
Norway	-	-	6,428,152	4,322	1,959,998	-	-	**8,392,472**
Poland	-	-	-	-	-	-	-	**-**
Portugal	1,456,472	-	1,040,291	501,699	12,160,013	-	1,915,177	**17,073,652**
Romania	360,136	-	892,681	1,648,038	6,181,569	-	-	**9,082,424**
Slovakia	1,377,384	-	672,910	601,329	5,849	-	-	**2,657,472**
Slovenia	243,517	-	118,338	249,551	6,017	-	-	**617,423**
Spain	4,867,133	-	2,972,220	12,131,692	36,213,945	-	-	**56,184,989**
Sweden	5,235,178	-	1,473,514	473,152	15,630,225	540,030	-	**23,352,099**
United Kingdom	25,322,414	-	2,272,054	7,084,660	28,175,513	26,237,558	9,298	**89,101,498**
Total	**128,659,288**	**2,721,619**	**40,593,968**	**102,642,979**	**267,657,954**	**56,866,066**	**3,940,690**	**603,082,562**

Table 2: Total renewable electricity produced that received support in 2018, by MC and technology, in [MWh]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	403	1	374	798	2,344	-	1	**3,921**
Belgium	-	-	-	-	-	1,187	-	**1,187**
Croatia	102	-	6	52	556	-	-	**716**
Cyprus	10	-	-	116	158	-	-	**283**
Czech Republic	1,381	-	340	2,092	312	-	-	**4,124**
Denmark	3,064	-	-	1,000	3,788	1,696	-	**9,548**
Estonia	150	-	8	38	312	-	-	**508**
Finland	-	-	-	-	-	-	-	**-**
France	1,034	-	1,940	8,661	14,447	-	587	**26,669**
Germany	8,413	42	1,477	45,182	52,306	6,393	-	**113,813**
Greece	83	-	240	2,645	2,860	-	-	**5,828**
Hungary	452	3	56	373	301	-	-	**1,185**
Ireland	377	-	2	-	3,087	-	-	**3,466**
Italy	4,115	535	4,250	17,595	8,618	-	-	**35,113**
Latvia	129	-	28	-	65	-	-	**222**
Lithuania	125	-	128	83	533	-	-	**869**
Luxembourg	26	-	8	129	117	-	-	**280**
North Macedonia	7	-	72	17	37	-	-	**133**
Malta	-	-	-	135	-	-	-	**135**
Netherlands	2,673	288	1	1,478	1,739	729	-	**6,908**
Norway	-	-	2,250	12	915	-	-	**3,177**
Poland	-	-	-	-	-	-	-	**-**
Portugal	322	-	426	296	5,647	-	523	**7,214**
Romania	124	-	341	1,359	2,961	-	-	**4,785**
Slovakia	310	-	707	530	3	-	-	**1,551**
Slovenia	50	-	23	257	3	-	-	**333**
Spain	980	-	899	6,909	16,982	-	-	**25,770**
Sweden	2,127	-	358	504	6,599	190	-	**9,778**
United Kingdom	5,476	-	941	10,842	12,782	8,062	17	**38,122**
Total	**31,931**	**869**	**14,877**	**101,101**	**137,474**	**18,257**	**1,128**	**305,636**

Table 3: Total renewable capacity that received support in 2018, by MC and technology, in [MW]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	2,157,252	200	1,333,587	707,297	6,207,711	-	191	**10,406,237**
Belgium	-	-	-	-	-	4,773,000	-	**4,773,000**
Croatia	768,411	64,830	24,198	72,016	1,402,331	-	-	**2,331,786**
Cyprus	39,276	-	-	124,471	238,136	-	-	**401,883**
Czech Republic	4,253,640	-	1,063,798	2,240,056	691,114	-	-	**8,248,607**
Denmark	6,181,539	-	-	542,138	8,803,000	6,184,000	-	**21,710,677**
Estonia	975,737	-	21,616	54,097	565,441	-	51,274	**1,668,165**
Finland	-	-	-	-	-	-	-	**-**
France	5,254,226	-	5,831,586	11,172,818	33,510,948	-	1,696,800	**57,466,377**
Germany	41,206,371	187,112	5,489,334	41,354,197	99,137,955	24,378,792	-	**211,753,762**
Greece	366,750	-	688,310	3,961,920	7,278,320	-	-	**12,295,300**
Hungary	1,622,311	9,238	204,913	888,400	578,633	-	-	**3,303,496**
Ireland	481,024	-	3,492	-	8,265,067	-	-	**8,749,583**
Italy	16,019,596	1,570,734	8,011,267	20,639,496	16,925,580	-	-	**63,166,672**
Latvia	686,998	-	58,564	-	137,146	-	-	**882,708**
Lithuania	447,414	-	61,887	72,943	1,411,906	-	-	**1,994,151**
Luxembourg	222,833	-	21,989	107,311	250,013	-	-	**602,146**
North Macedonia	55,102	-	169,032	23,225	101,807	-	-	**349,166**
Malta	-	-	-	175,583	-	-	-	**175,583**
Netherlands	-	-	-	-	-	-	-	**-**
Norway	-	-	6,901,116	9,346	3,486,431	-	-	**10,396,893**
Poland	-	-	-	-	-	-	-	**-**
Portugal	1,657,013	-	868,302	531,854	13,310,517	-	1,777,200	**18,144,886**
Romania	410,100	-	865,500	1,723,193	7,085,171	-	-	**10,083,964**
Slovakia	1,257,487	-	796,559	606,276	689	-	-	**2,661,012**
Slovenia	217,919	-	110,436	261,393	6,133	-	-	**595,881**
Spain	4,903,585	-	2,235,202	13,303,948	38,971,117	-	-	**59,413,852**
Sweden	6,232,930	-	1,861,585	749,389	18,681,929	588,683	-	**28,114,516**
United Kingdom	28,176,959	-	2,571,091	7,798,720	31,672,767	31,957,916	15,261	**102,192,714**
Total	**123,594,473**	**1,832,114**	**39,193,365**	**107,120,086**	**298,719,863**	**67,882,391**	**3,540,725**	**641,883,017**

Table 4: Total renewable electricity produced that received support in 2019, by MC and technology, in [MWh]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	328	1	368	974	2,548	-	1	**4,220**
Belgium	-	-	-	-	-	1,556	-	**1,556**
Croatia	119	10	6	53	576	-	-	**764**
Cyprus	10	-	-	146	158	-	-	**313**
Czech Republic	1,317	-	363	2,025	447	-	-	**4,152**
Denmark	3,068	-	-	1,086	3,815	1,696	-	**9,665**
Estonia	150	-	8	114	312	-	-	**584**
Finland	-	-	-	-	-	-	-	**-**
France	1,102	-	1,999	9,836	15,444	-	245	**28,626**
Germany	8,748	47	1,489	49,063	52,307	7,528	-	**119,182**
Greece	88	-	241	2,793	3,607	-	-	**6,729**
Hungary	425	3	54	926	236	-	-	**1,644**
Ireland	174	-	1	-	3,326	-	-	**3,501**
Italy	3,820	458	3,928	17,571	8,649	-	-	**34,426**
Latvia	125	-	28	-	65	-	-	**218**
Lithuania	120	-	128	103	1,234	-	-	**1,585**
Luxembourg	45	-	8	137	123	-	-	**314**
North Macedonia	8	-	80	17	37	-	-	**141**
Malta	-	-	-	158	-	-	-	**158**
Netherlands	-	-	-	-	-	-	-	**-**
Norway	-	-	2,455	14	1,556	-	-	**4,025**
Poland	-	-	-	-	-	-	-	**-**
Portugal	434	-	390	296	5,723	-	505	**7,347**
Romania	124	-	336	1,358	2,961	-	-	**4,779**
Slovakia	295	-	704	531	1	-	-	**1,530**
Slovenia	47	-	23	258	3	-	-	**331**
Spain	971	-	815	6,881	17,091	-	-	**25,758**
Sweden	2,236	-	440	816	8,078	190	-	**11,760**
United Kingdom	5,505	-	944	11,045	13,578	9,038	18	**40,128**
Total	**29,260**	**519**	**14,807**	**106,202**	**141,872**	**20,008**	**768**	**313,436**

Table 5: Total renewable capacity that received support in 2019, by MC and technology, in [MW]

In Figure 1 and Figure 2, the development of the supported total renewable electricity is shown in TWh. Because of the broad range of total renewable electricity receiving support, Figure 1 covers countries with supported total renewable electricity above 10 TWh in 2019 and Figure 2 depicts countries below 10 TWh of supported total renewable electricity.

Germany had the biggest increase with additional 16.5 TWh in 2019 compared to 2018, followed by the UK with additional 13.1 TWh in 2019. Overall Germany also has the largest share of supported total renewable electricity with 33% in 2019 (overall 642 TWh reported). Italy (-0.11 TWh), Latvia (-0.04 TWh), Slovenia (-0.02 TWh), and North Macedonia (-0.03 TWh) reported minor declines.

At this point it should once more be highlighted that this report is based on a snapshot. For fluctuating renewables like wind, PV and hydropower, the output depends on varying meteorological and hydrological conditions. In general, a normalised production profile would provide a deeper insight, but this kind of analysis is beyond the scope of this report. Nevertheless, besides Table 3 and Table 5, the installed capacity as provided by each MC can be found in a separately published Annex 20.

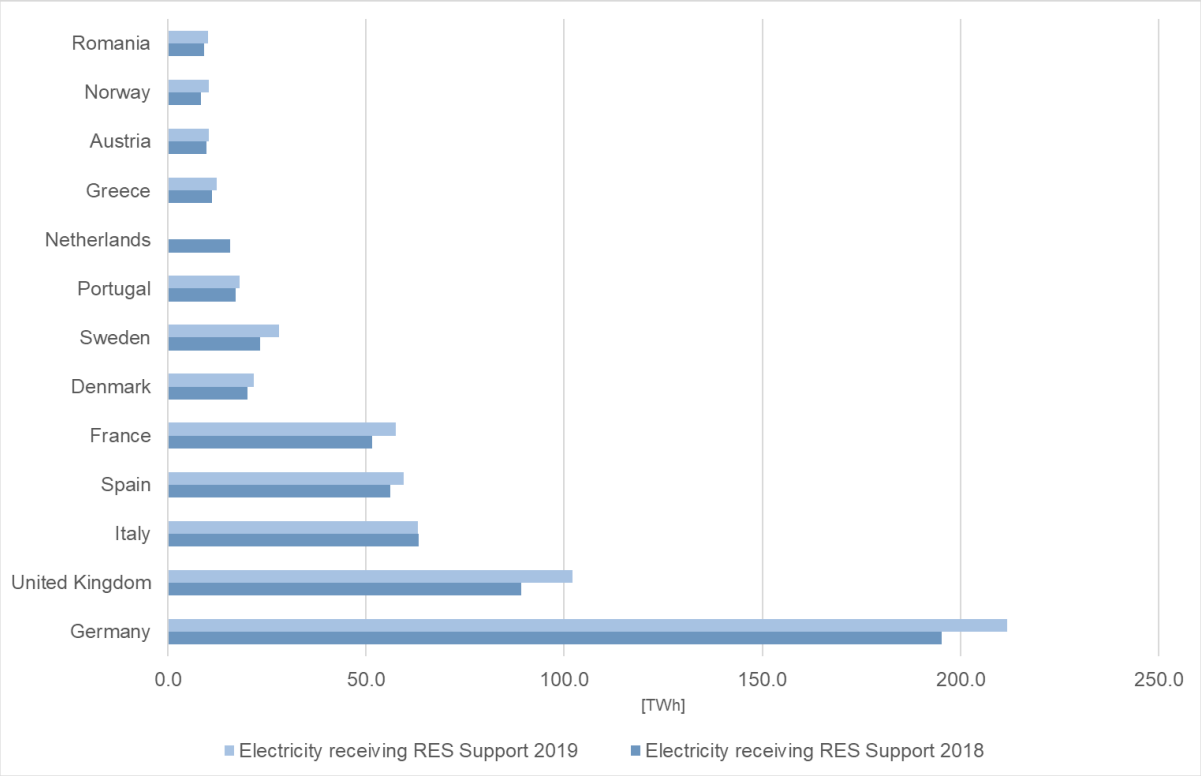

Figure 1: Total RES-originated electricity receiving support by MC, 2018 & 2019 (in [TWh] above 10 TWh)

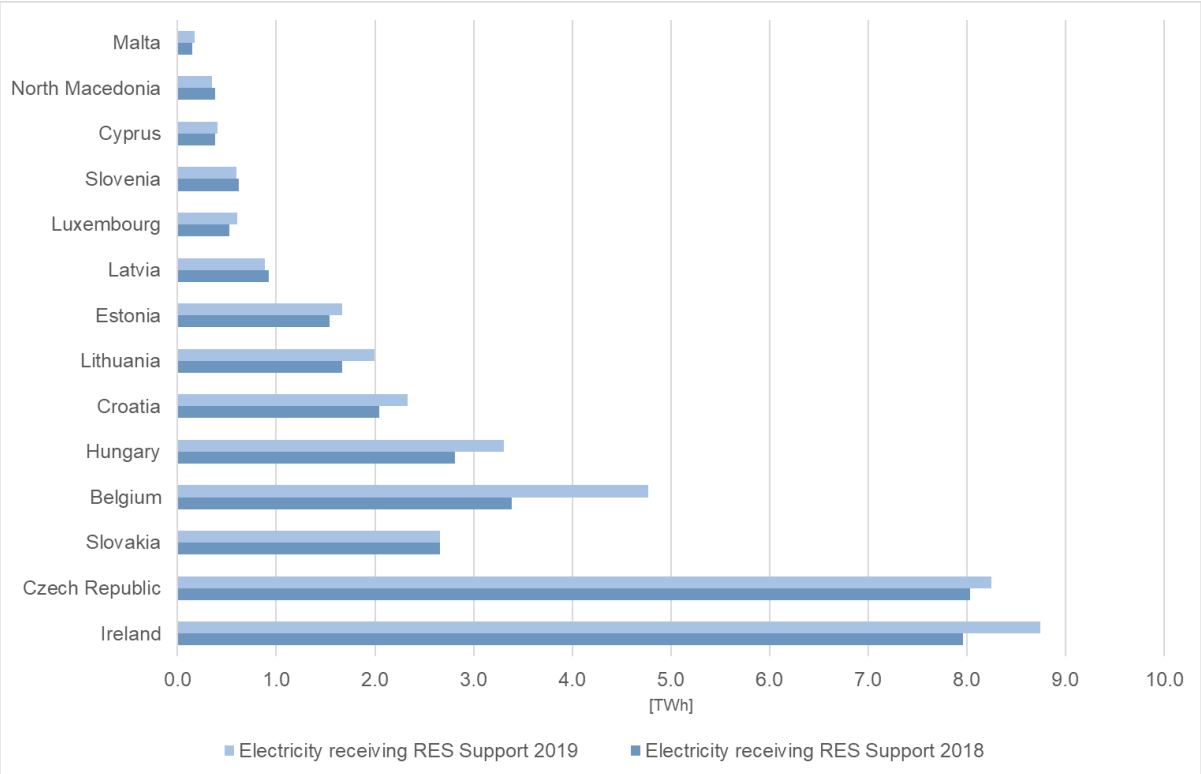

Figure 2: Total RES-originated electricity receiving support by MC, 2018 & 2019 (in [TWh] below 10 TWh)

3.2 Share of supported renewable electricity in 2018

Table 6 shows the proportion of total gross electricity produced that received renewables support in 2018. The reference year is 2018 since it reflects the latest available data for gross electricity produced[26] at the time this part of the report was drafted. Overall, the share of RES electricity receiving support increased from 16.7% in 2016 (15.5% in 2014) to 19.2% in 2018, also because the gross electricity produced decreased from 3,400 TWh in 2016 to 3,382 TWh in 2018.

Country	Electricity receiving RES support 2018	Gross electricity produced 2018	Electricity receiving support over gross 2018
Austria	9.78	69	+14.3%
Belgium	3.39	75	+4.5%
Croatia	2.05	14	+15.0%
Cyprus	0.38	5	+7.6%
Czech Republic	8.03	88	+9.1%
Denmark	20.03	30	+65.9%
Estonia	1.54	12	+12.5%
Finland	0.00	70	-
France	51.58	582	+8.9%
Germany	195.25	643	+30.4%
Greece	11.11	53	+20.9%
Hungary	2.81	32	+8.8%
Ireland	7.96	31	+25.6%
Italy	63.28	290	+21.8%
Latvia	0.92	7	+13.8%
Lithuania	1.67	4	+47.6%
Luxembourg	0.53	2	+23.9%
North Macedonia	0.38	6	+6.7%
Malta	0.15	2	+7.6%
Netherlands	15.76	114	+13.8%
Norway	8.39	147	+5.7%
Poland	0.00	170	-
Portugal	17.07	60	+28.6%
Romania	9.08	65	+14.0%
Slovakia	2.66	27	+9.9%
Slovenia	0.62	16	+3.8%
Spain	56.18	274	+20.5%
Sweden	23.35	163	+14.3%
United Kingdom	89.10	331	+26.9%
Total	**603.083**	**3,382**	**+19.2%**

Table 6: Share of total electricity produced receiving RES support in 2018 (TWh)

Figure 3 is based on data from Table 6 and as in the last status reviews, Denmark still has by far the biggest share (65%) of total gross electricity produced receiving support. Denmark is once more followed by Lithuania. On the other end, Slovenia, which was not included in the last report, had the smallest amount of RES-originated electricity receiving support compared to gross electricity produced, at 3.8%. Belgium only reported partial data due to different jurisdictions, therefore the overall share should be higher than depicted.

[26] Source Eurostat: https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_PEH/default/table, October 2020.

It is important to note that the share of supported RES electricity is not an indicator for the overall share of RES electricity in a country, especially for countries such as Austria or Norway that have a high capacity of installed hydropower. Because of the long lifetime of this type of RES installations, they might have received support in the past for which support times have already expired. This type of installation does not show up in this review because the produced electricity is no longer supported[27]. However, they still contribute to the overall RES electricity produced. Furthermore, new RES capacity may be installed without any support, which also is not covered in this report.

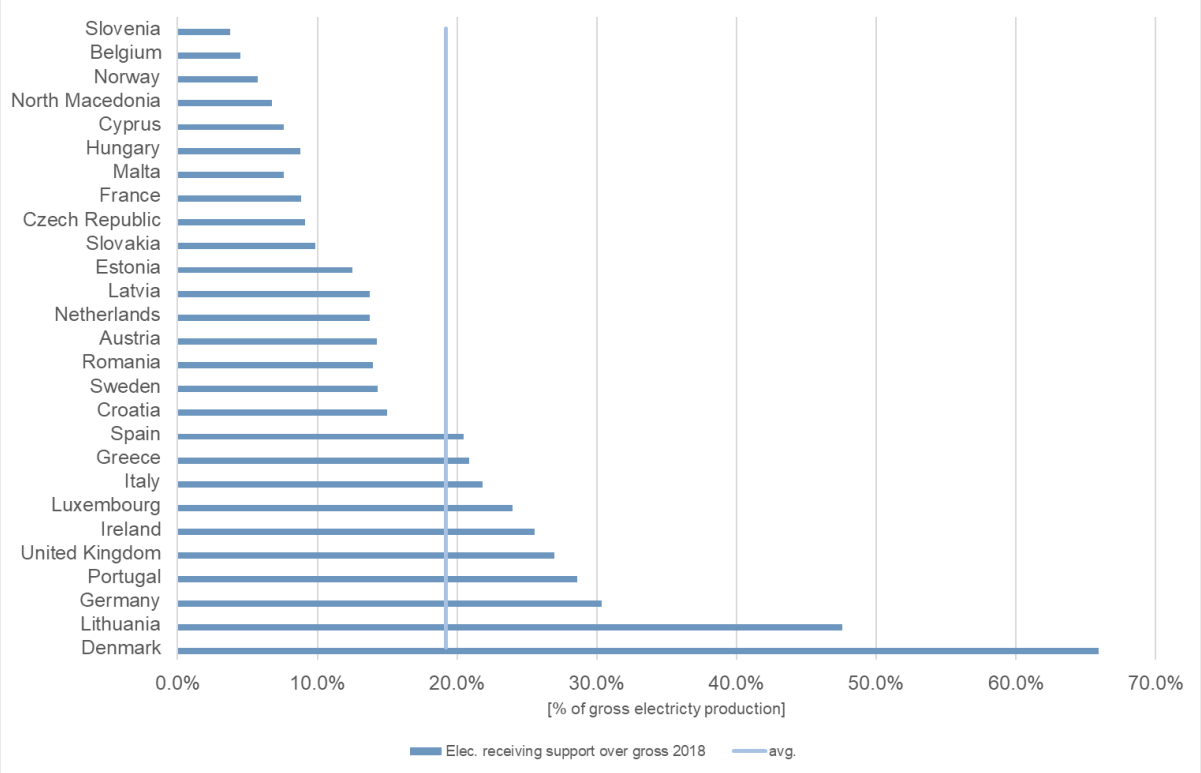

Figure 3: Share of total electricity receiving RES support in 2018

[27] CEER Paper on Unsupported RES, May 2020, Ref: C19-RES-64-04a.

4 Expenditure on RES support schemes

4.1 Financing of RES support schemes 2018 - 2019

The two main approaches to funding RES support schemes have not changed and so most member countries still use either general taxation or non-tax levies paid via the electricity bill by some or all electricity consumers. According to our survey and as displayed in Table 5 below, most countries fund their RES support schemes through non-tax levies (21 out of 28 responses). In those countries with a non-tax levy, there are different mechanisms for determining the levy. In nine cases, the government determines the levy and in another eight cases, the regulator determines the value of the levy. In Germany and Hungary levies are set by the Transmission System Operators (TSOs). In Norway and Sweden, levies are set by the electricity supplier in form of market-based prices for certificates.

Funds for the support costs can also be collected by general taxation paid by all citizens, as is the case in Denmark, Luxembourg, Malta, North Macedonia, Romania and Slovakia. It is also possible to finance the RES support directly through the state budget, like in the Czech Republic. In France, the latter has also been imposed in 2016 through the taxation of fossil fuels, the financing is decided on each year by the Parliament through a Finance Law.

A total of 23 countries reported that no changes in the way of financing RES support have occurred after 2017.

Country	Changes after 2017*	General taxation paid by all citizens	Non-tax levies paid by some or all customers via the electricity bill	Other
Austria	No	No	Yes	
Croatia	Yes	No	Yes	
Cyprus	No	No	Yes	
Czech Republic	No	No	Yes	The state budget funds subsidies to cover operating support for electricity.
Denmark	Yes	Yes	No	
Estonia	No	No	Yes	
France	No	No	No	Since January 2016, renewables support falls under the general state budget, through a dedicated purpose fund – the financing of which is decided each year by the Parliament through a Finance Law (currently, internal taxes on fossil fuels).
Georgia	No	No	Yes	
Germany	No	No	Yes	
Greece	Yes	No	Yes	
Hungary	No	No	Yes	
Ireland	No	No	Yes	

Country	Changes after 2017*	General taxation paid by all citizens	Non-tax levies paid by some or all customers via the electricity bill	Other
Italy	Yes	No	Yes	
Latvia	No	No	Yes	
Lithuania	No	No	Yes	
Luxembourg	No	Yes	Yes	
Malta	No	Yes	No	
Netherlands	No	No	No	Both non-tax levies and taxes paid by some or all customers via the energy bill.
North Macedonia	Yes	Yes	Yes	
Norway	No	No	Yes	
Poland	No	No	Yes	
Portugal	No	No	Yes	
Romania	No	Yes	No	
Slovakia	No	No	Yes	
Slovenia	No	No	No	Final customers of solid, liquid, gaseous fossil fuels or district heating end-users are also obliged to pay additional non-tax levies for financing the RES support scheme.
Spain	No	No	Yes	
Sweden	No	No	Yes	
UK	No	No	Yes	

* The last Status Review covered all changes up to 2017. In this review, participants were asked to identify any changes since then. See also Annex 7 for more information.

Table 7: Overview of ways of financing RES electricity support schemes

Sometimes there are exemptions (partial or full) to the financing contributions, e.g. for energy-intensive industries (12 countries out of 28), for self-generated electricity from RES or conventional power plants consumed on site (10 out of 28). In seven countries, network losses are exempted. Other possibilities include the partial or full exemption of low-income households (Austria), industries that are obligated to obtain a permit for greenhouse gas emission (Croatia), households and small enterprises (Hungary), or vulnerable consumers (Latvia). These exemptions may increase the financial burden for non-exempted consumers. Exemptions are further described in Annex 9.

In some cases where the costs for RES support are socialised through the state budget (e.g. France and Malta), no explicit exemption scheme for different categories of electricity consumers is in place.

It has to be highlighted though that exemptions depend on the overall financing system itself. If the financing system is based on consumed electricity taken from the public grid, then self-

consumption of self-generated electricity is not covered by the financing system in the first place. If the financing system is based on consumed electricity regardless of whether the public grid is used or not, self-consumption of self-generated electricity would be covered by that system. An exception is therefore needed if no renewable energy levies are to be imposed on this consumption.

4.2 Costs for RES support by type of technologies

In Table 8 and Figure 4 the costs of RES support across countries are compared. The methodology is the same as in the last review – the overall expenditure for supported renewable electricity was divided by gross electricity produced[28]. The intention is to show the scale of supported renewables compared to the overall size of the electricity market. Table 8 does not show support levels for renewables; these are shown in Annex 19.

Generally, those countries with higher penetration of supported renewables (as shown in Table 6) have higher RES electricity support per unit of gross electricity produced. RES electricity support expenditure per unit of gross electricity produced ranged from 0.69 €/MWh for Norway to 38.48 €/MWh for Italy, with a weighted average support of 19.12 €/MWh in 2018.

[28] Source Eurostat: https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_PEH/default/table, October 2020.

Country	RES electricity support expenditure 2018 [M€]	Gross electricity produced 2018 [TWh]	RES support per unit of gross electricity 2018 [€/MWh]
Austria	671	69	9.77
Belgium	350	75	4.66
Croatia	153	14	11.23
Cyprus	67	5	13.34
Czech Republic	1,710	88	19.42
Denmark	578	30	19.04
Estonia	83	12	6.71
Finland	-	70	-
France	4,413	582	7.58
Germany	23,691	643	36.84
Greece	1,197	53	22.47
Hungary	133	32	4.16
Ireland	87	31	2.79
Italy	11,147	290	38.48
Latvia	95	7	14.19
Lithuania	84	4	24.04
Luxembourg	52	2	23.56
North Macedonia	18	6	3.26
Malta	17	2	8.58
Netherlands	1,072	114	9.37
Norway	101	147	0.69
Poland	-	170	-
Portugal	827	60	13.86
Romania	412	65	6.35
Slovakia	301	27	11.15
Slovenia	101	16	6.19
Spain	5,751	274	20.95
Sweden	413	163	2.53
United Kingdom	6,556	331	19.82
Total	**60,080**	**3,382**	**19.12**

Table 8: RES electricity support per unit of gross electricity produced in 2018, in [€/MWh]

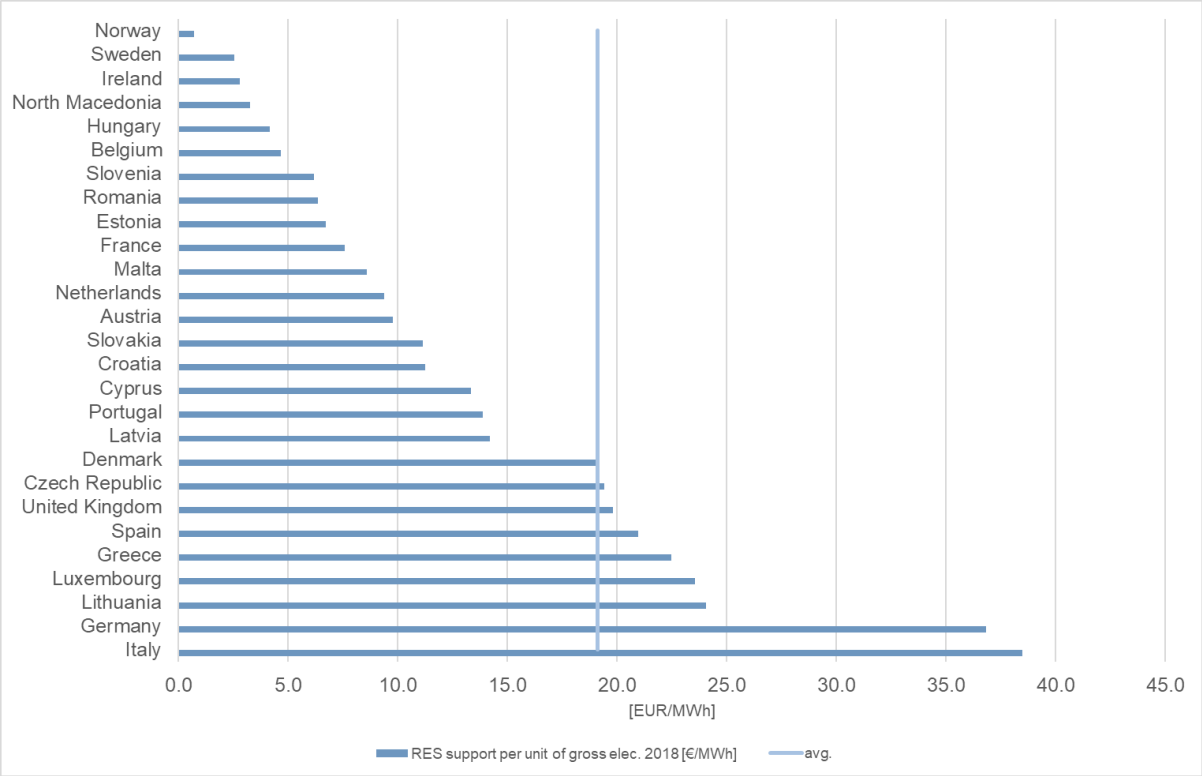

Figure 4: RES electricity support per unit of gross electricity produced in 2018, in [€/MWh]

Table 9 and Table 10[29] present the latest available data regarding the overall support system for each country. One must take into account that they present not only the current (2018 and 2019) support system itself but also reflect all the changes up to 2018 and 2019. The tables show an average support level per country and unit support levels. For support systems with FiTs, the level of subsidy was calculated by subtracting the average wholesale electricity price from the paid-out tariff. In Figure 5, the used average wholesale electricity price is shown. There are various options to calculate average market prices and there are various options to evaluate the market value of supported renewables. The values displayed are for transparency purpose only and on national levels different definitions and calculations for average wholesale electricity prices can exist.

[29] Finland and Poland are listed in both tables although no data was provided. This is due to restrictions based on the used Excel template for the calculations and links (vlookup etc.). Example: =+MAX([@[Biogas - Total biogas]]+[@[Solid biomass - Total solid biomass]];SUMMEWENNS(db[newEnergy];db[year];G138;db[Country_code];$E141;db[technology];O$140)).

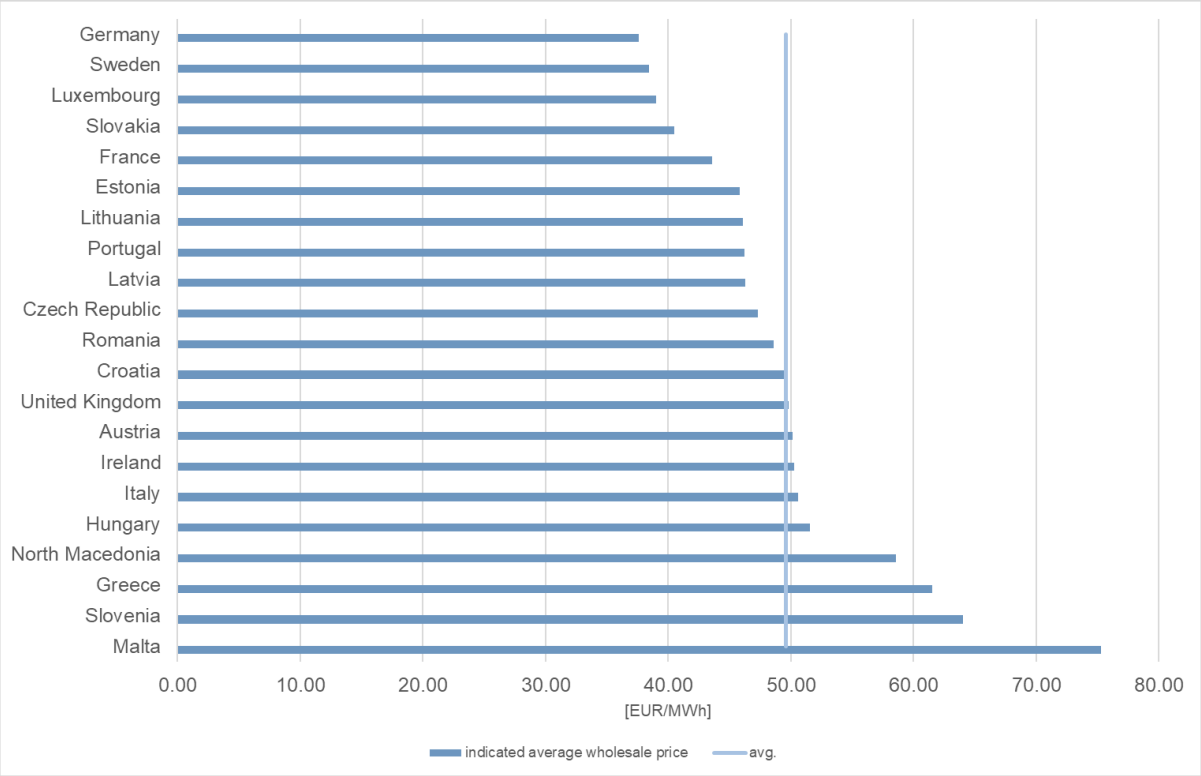

Figure 5: Average wholesale price used for calculations in 2019, in [€/MWh]

In the case of investment grants, the RES electricity support per unit of gross electricity produced – if possible – was calculated by the volume of electricity that would be generated by the installation over the lifetime of the grant.

Where in one country different support schemes are in place for the same technology and separate cost data was available, a weighted average incentive was calculated using the energy supported for each instrument as the weighting. A breakdown by both technology and scheme type can be found in Annex 19.

It should be noted that there are also administrative costs associated with RES support schemes, but these costs are not reflected in the data provided in this report. Therefore, total expenditures for RES support schemes are in general slightly higher.

Table 9 and Table 10 show the weighted average support in 2018 and 2019. The weighted average support level declined from 99.62 €/MWh in 2018 to 97.95 €/MWh in 2019. In this analysis PV still has the highest weighted average support level. From 2018 to 2019 in 15 member countries (Netherlands only supported data for 2018) this calculated weighted average support dropped and in 11 member countries it rose.

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	103.71	-3.87	11.20	227.45	48.05	-	93.49	**68.53**
Belgium	-	-	-	-	-	103.21	-	**103.21**
Croatia	118.80	-	61.72	206.62	48.30	-	-	**74.76**
Cyprus	125.00	-	-	208.00	166.00	-	-	**176.04**
Czech Republic	102.43	-	79.09	501.07	83.06	-	-	**212.88**
Denmark	17.98	-	-	73.20	22.38	51.54	-	**28.87**
Estonia	53.70	-	53.71	53.72	53.70	-	53.71	**53.70**
Finland	-	-	-	-	-	-	-	**-**
France	98.90	-	29.53	252.57	42.56	-	10.85	**85.56**
Germany	143.31	204.41	54.04	242.10	53.07	148.61	-	**121.34**
Greece	83.53	-	29.91	245.34	34.90	-	-	**107.73**
Hungary	47.66	42.37	16.20	47.59	57.60	-	-	**47.26**
Ireland	31.39	-	25.19	-	6.92	-	-	**10.89**
Italy	174.32	63.62	101.51	286.95	91.78	-	-	**176.14**
Latvia	110.61	-	97.74	-	55.89	-	-	**103.22**
Lithuania	49.80	-	35.26	325.50	33.05	-	-	**50.52**
Luxembourg	86.49	-	29.40	243.11	49.82	-	-	**98.39**
North Macedonia	125.59	-	23.32	147.70	34.59	-	-	**48.40**
Malta	-	-	-	112.76	-	-	-	**112.76**
Netherlands	53.05	27.13	43.62	80.82	57.83	127.16	-	**68.04**
Norway	-	-	12.06	12.06	12.06	-	-	**12.06**
Poland	-	-	-	-	-	-	-	**-**
Portugal	54.97	-	41.53	236.65	41.11	-	44.18	**48.41**
Romania	53.85	-	69.56	111.92	23.63	-	-	**45.36**
Slovakia	86.40	-	64.83	229.24	41.02	-	-	**113.16**
Slovenia	142.88	-	49.52	240.46	61.54	-	-	**163.63**
Spain	75.39	-	32.97	313.64	40.90	-	-	**102.36**
Sweden	15.01	-	15.01	147.64	15.01	15.01	-	**17.70**
United Kingdom	66.61	-	53.53	77.06	52.44	103.73	264.55	**73.58**
Max. support	**174.32**	**204.41**	**101.51**	**501.07**	**166.00**	**148.61**	**264.55**	**212.88**
Min. support	**15.01**	**27.13**	**11.20**	**12.06**	**6.92**	**15.01**	**10.85**	**10.89**
Weighted average across 27 Member States								**99.62**
Arithmetic average across 27 Member States								**86.09**

Table 9: Weighted average support level in 2018, in [€/MWh]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	86.05	2.37	8.88	149.23	40.82	-	11.47	**53.47**
Belgium	-	-	-	-	-	97.63	-	**97.63**
Croatia	127.45	161.41	87.21	210.65	55.01	-	-	**86.98**
Cyprus	125.00	-	-	208.00	166.00	-	-	**175.00**
Czech Republic	89.98	-	71.39	500.37	75.63	-	-	**197.83**
Denmark	23.75	-	-	70.16	22.58	58.48	-	**34.33**
Estonia	53.69	-	53.71	53.70	53.70	-	53.69	**53.69**
Finland	-	-	-	-	-	-	-	**-**
France	109.98	-	38.57	242.69	45.97	-	16.44	**88.45**
Germany	149.80	209.76	55.53	235.13	57.10	153.05	-	**121.05**
Greece	87.70	-	25.76	235.72	31.16	-	-	**98.46**
Hungary	49.83	44.20	14.17	49.51	60.98	-	-	**49.47**
Ireland	49.54	-	38.78	-	20.41	-	-	**22.02**
Italy	176.84	59.10	98.39	287.01	82.73	-	-	**174.74**
Latvia	112.55	-	95.15	-	59.41	-	-	**103.14**
Lithuania	49.45	-	29.52	317.76	34.43	-	-	**48.01**
Luxembourg	79.77	-	37.53	270.22	57.88	-	-	**103.08**
North Macedonia	121.45	-	22.42	143.89	30.45	-	-	**48.47**
Malta	-	-	-	95.21	-	-	-	**95.21**
Netherlands	-	-	-	-	-	-	-	**-**
Norway	-	-	10.97	10.97	10.97	-	-	**10.97**
Poland	-	-	-	-	-	-	-	**-**
Portugal	65.10	-	49.99	250.35	47.35	-	53.89	**55.69**
Romania	45.24	-	80.09	67.60	36.52	-	-	**45.93**
Slovakia	78.17	-	56.00	221.28	37.45	-	-	**104.13**
Slovenia	120.07	-	29.64	221.27	44.17	-	-	**146.92**
Spain	76.68	-	37.12	288.48	38.26	-	-	**97.41**
Sweden	7.37	-	7.37	263.02	7.37	7.37	-	**14.18**
United Kingdom	69.02	-	55.79	80.19	54.82	113.78	275.64	**79.17**
Max. support	**176.84**	**209.76**	**98.39**	**500.37**	**166.00**	**153.05**	**275.64**	**197.83**
Min. support	**7.37**	**2.37**	**7.37**	**10.97**	**7.37**	**7.37**	**11.47**	**10.97**
Weighted average across 26 Member States								**97.95**
Arithmetic average across 26 Member States								**84.82**

Table 10: Weighted average support level in 2019, in [€/MWh]

Figure 6 shows the development of the weighted average support per country. As stated before, the weighted average support is declining. On country-level, different developments can be observed, due to various effects that come into play. A higher average wholesale price will result in lower support levels in systems with FiTs or variable premiums. Fluctuating full load hours can also result in lower or higher overall support payments as can a fluctuating pace of development. One also must keep in mind that different support-times also influence the average support levels. The longer the support-times, the lower the annual average support levels are. However, this does not necessarily imply a lower total support volume over the full support period.

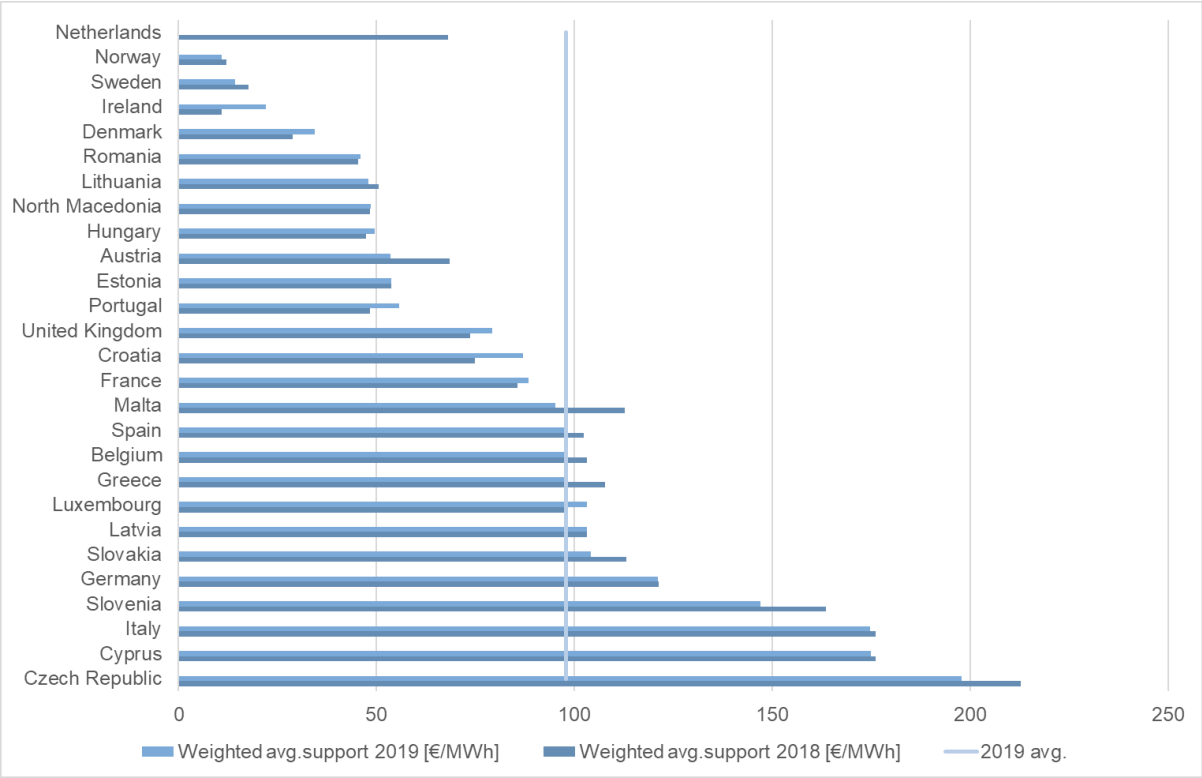

Figure 6: Weighted average support level in 2018 and 2019, by country, in [€/MWh]

4.3 Support costs for new installations

Member countries were asked to provide data on new installations from 2017 producing in 2018 and from 2018 producing in 2019. Looking only at new installations this temporal shift was chosen so that the installations had a full production year and possibly further analysis (e.g. full load hours of new installations) can be made by interested parties.

As in previous years, only a few member countries were able to provide this kind of data. There are various reasons for that, from some NRAs not being involved in RES support systems to other NRAs only having partial information.

Table 11 and Table 12 depict how much electricity was produced in the new installations only and Table 13 and Table 14 show the newly installed capacities. New onshore wind installations from 2017 produced additional 17 TWh of electricity supported in 2018, followed by new bioenergy installations which produced 12 TWh of additional electricity supported in 2018. Also, in the following year most additional supported electricity originated from onshore wind (14 TWh) followed by bioenergy (6 TWh). Looking at the additional installed capacities, also onshore wind has had the highest additional capacities of 11 GW in 2017 and 7 GW in 2018 closely followed by solar with 11 GW in 2017 and 5 GW in 2018.

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	207,308	-	47,540	72,700	244,367	-	-	571,915
Belgium	-	-	-	-	-	623,623	-	623,623
Croatia	-	-	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-	-	-
Czech Republic	-	-	749	-	57,841	-	-	58,590
Denmark	-	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-	-
Finland	-	-	-	-	-	-	-	-
France	249,088	-	280,037	1,098,094	4,365,932	-	46,833	6,039,985
Germany	-	-	-	-	-	-	-	-
Greece	15,952	-	17,804	780	535,863	-	-	570,399
Hungary	101	-	-	61,976	-	-	-	62,078
Ireland	385,972	-	-	-	1,036,539	-	-	1,422,511
Italy	105,285	-	133,404	-	146,609	-	-	385,297
Latvia	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-
North Macedonia	7,720	-	21,163	2,613	-	-	-	31,496
Malta	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-
Norway	-	-	315,773	375	1,118,924	-	-	1,435,072
Poland	-	-	-	-	-	-	-	-
Portugal	32,360	-	-	9,321	-	-	-	41,681
Romania	-	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-	-
Slovenia	-	-	3,216	-	-	-	-	3,216
Spain	-	-	-	-	-	-	-	-
Sweden	73,147	-	80,788	181,560	510,014	-	-	845,509
United Kingdom	11,043,948	-	127,289	4,141,196	8,713,487	3,653,442	1,882	27,681,245
Total	**12,120,881**	**-**	**1,027,763**	**5,568,616**	**16,729,577**	**4,277,065**	**48,715**	**39,772,617**

Table 11: Total supported RES electricity from installations new in 2017 for 2018, by MC and technology, in [MWh]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	12,831	-	27,108	69,130	477,179	-	-	586,248
Belgium	-	-	-	-	-	1,012,149	-	1,012,149
Croatia	-	-	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-	-	-
Czech Republic	-	-	91	-	22,551	-	-	22,642
Denmark	-	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-	-
Finland	-	-	-	-	-	-	-	-
France	353,110	-	223,958	1,094,617	3,052,350	-	106,071	4,830,105
Germany	-	-	-	-	-	-	-	-
Greece	77,583	-	27,477	57,802	519,550	-	-	682,412
Hungary	-	-	-	368,290	-	-	-	368,290
Ireland	2,220	-	-	-	1,847,189	-	-	1,849,409
Italy	26,575	-	56,980	-	949,025	-	-	1,032,580
Latvia	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-
North Macedonia	-	-	16,398	-	-	-	-	16,398
Malta	-	-	-	26,384	-	-	-	26,384
Netherlands	-	-	-	-	-	-	-	-
Norway	-	-	750,735	3,570	1,402,112	-	-	2,156,417
Poland	-	-	-	-	-	-	-	-
Portugal	-	-	11,682	956	39,088	-	585	52,311
Romania	-	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-	-
Slovenia	2,538	-	782	423	-	-	-	3,742
Spain	-	-	-	-	-	-	-	-
Sweden	1,005,033	-	49,014	259,135	1,802,686	-	-	3,115,868
United Kingdom	4,117,337	-	43,735	277,229	3,641,951	2,370,283	354	10,450,889
Total	**5,597,227**	**-**	**1,207,959**	**2,157,536**	**13,753,681**	**3,382,432**	**107,010**	**26,205,845**

Table 12: Total supported RES electricity from installations new in 2018 for 2019, by MC and technology, in [MWh]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	28	-	13	95	111	-	-	**247**
Belgium	-	-	-	-	-	168	-	**168**
Croatia	-	-	-	-	-	-	-	**-**
Cyprus	-	-	-	21	-	-	-	**21**
Czech Republic	-	-	0	-	26	-	-	**27**
Denmark	-	-	-	-	-	-	-	**-**
Estonia	-	-	-	-	-	-	-	**-**
Finland	-	-	-	-	-	-	-	**-**
France	40	-	69	913	2,151	-	10	**3,183**
Germany	318	-	7	1,659	5,009	1,275	-	**8,267**
Greece	4	-	7	1	255	-	-	**266**
Hungary	1	-	-	43	-	-	-	**44**
Ireland	70	-	-	-	480	-	-	**549**
Italy	35	-	29	-	109	-	-	**173**
Latvia	-	-	-	-	-	-	-	**-**
Lithuania	30	-	0	5	20	-	-	**55**
Luxembourg	-	-	-	-	-	-	-	**-**
North Macedonia	1	-	7	2	-	-	-	**9**
Malta	-	-	-	-	-	-	-	**-**
Netherlands	-	-	-	-	-	-	-	**-**
Norway	-	-	161	3	324	-	-	**488**
Poland	-	-	-	-	-	-	-	**-**
Portugal	15	-	-	10	-	-	-	**25**
Romania	-	-	-	-	-	-	-	**-**
Slovakia	-	-	-	-	-	-	-	**-**
Slovenia	-	-	1	-	-	-	-	**1**
Spain	-	-	-	-	-	-	-	**-**
Sweden	24	-	28	170	191	-	-	**412**
United Kingdom	841	-	164	7,628	2,422	986	3	**12,044**
Total	**1,404**	**-**	**486**	**10,550**	**11,098**	**2,429**	**13**	**25,979**

Table 13: Total new installed renewable capacity from 2017 that received support in 2018, by MC and technology, in [MW]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others	Total [MWh]
Austria	2	-	12	107	249	-	-	**370**
Belgium	-	-	-	-	-	309	-	**309**
Croatia	-	-	-	-	-	-	-	**-**
Cyprus	-	-	-	3	-	-	-	**3**
Czech Republic	-	-	0	-	11	-	-	**11**
Denmark	-	-	-	-	-	-	-	**-**
Estonia	-	-	-	-	-	-	-	**-**
Finland	-	-	-	-	-	-	-	**-**
France	217	-	61	871	1,307	-	35	**2,490**
Germany	426	4	22	2,862	2,023	966	-	**6,303**
Greece	22	-	9	40	236	-	-	**306**
Hungary	-	-	-	258	-	-	-	**258**
Ireland	81	-	-	-	743	-	-	**824**
Italy	4	-	10	-	664	-	-	**678**
Latvia	-	-	-	-	-	-	-	**-**
Lithuania	10	-	0	9	6	-	-	**25**
Luxembourg	-	-	-	-	-	-	-	**-**
North Macedonia	-	-	5	-	-	-	-	**5**
Malta	-	-	-	-	-	-	-	**-**
Netherlands	-	-	-	-	-	-	-	**-**
Norway	-	-	985	3	467	-	-	**1,455**
Poland	-	-	-	-	-	-	-	**-**
Portugal	-	-	14	3	66	-	59	**141**
Romania	-	-	-	-	-	-	-	**-**
Slovakia	-	-	-	-	-	-	-	**-**
Slovenia	0	-	0	0	-	-	-	**1**
Spain	-	-	-	-	-	-	-	**-**
Sweden	337	-	12	243	631	-	-	**1,222**
United Kingdom	604	-	37	986	777	582	0	**2,986**
Total	**1,702**	**4**	**1,168**	**5,385**	**7,178**	**1,857**	**93**	**17,387**

Table 14: Total new installed renewable capacity from 2018 that received support in 2019, by MC and technology, in [MW]

In Table 15 and Table 16, the average support levels for those new installations from 2017 and 2018 are depicted. As expected, the biggest difference to the analysis taking into account all supported installations can be seen for solar. The new installations have significantly lower support levels. For hydropower, on average the support levels seem to be roughly the same as previously, with only very slight declines. On average, the onshore wind support levels also declined for the reported countries.

There are some values that need to be highlighted in the case of onshore wind for Italy. Table 15 refers to very small-scale wind plants and on the contrary Table 16 refers to a few big wind farms.

Austria supports its new PV-installations smaller than 200 kW with a combination of FiT and investment grants, where the investment grant is paid out in full at the beginning. Converting[30] the investment grant into a FiT, the depicted support levels would be roughly 20 €/MWh higher.

[30] The difference was calculated by looking at how much higher the FiT would have needed to be without the given investment grant.

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others
Austria	99.66	-	31.28	48.50	51.84	-	-
Belgium	-	-	-	-	-	94.93	-
Croatia	-	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-	-
Czech Republic	-	-	70.48	-	39.03	-	-
Denmark	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-
Finland	-	-	-	-	-	-	-
France	125.85	-	43.25	62.57	37.74	-	28.15
Germany	-	-	-	-	-	-	-
Greece	74.87	-	30.22	237.36	34.90	-	-
Hungary	44.99	-	-	48.05	-	-	-
Ireland	20.23	-	-	-	6.92	-	-
Italy	151.08	-	112.49	-	178.65	-	-
Latvia	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-
North Macedonia	125.51	-	21.19	69.59	-	-	-
Malta	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-
Norway	-	-	12.06	11.11	12.06	-	-
Poland	-	-	-	-	-	-	-
Portugal	59.26	-	-	99.72	-	-	-
Romania	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-
Slovenia	-	-	44.99	-	-	-	-
Spain	-	-	-	-	-	-	-
Sweden	15.01	-	15.01	326.23	15.01	-	-
United Kingdom	58.36	-	54.36	77.11	51.62	122.45	264.55

Table 15: Support levels for installations new in 2017 producing in 2018, in [€/MWh]

Country	Bioenergy	Geothermal energy	Hydropower	Solar	Onshore wind	Offshore wind	Others
Austria	154.92	-	22.26	27.78	39.45	-	-
Belgium	-	-	-	-	-	93.46	-
Croatia	-	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-	-
Czech Republic	-	-	41.92	-	42.79	-	-
Denmark	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-
Finland	-	-	-	-	-	-	-
France	117.81	-	48.63	69.08	42.70	-	6.34
Germany	-	-	-	-	-	-	-
Greece	79.38	-	25.85	228.28	30.79	-	-
Hungary	-	-	-	48.43	-	-	-
Ireland	105.72	-	-	-	20.41	-	-
Italy	156.88	-	99.64	-	20.56	-	-
Latvia	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-
North Macedonia	-	-	10.42	-	-	-	-
Malta	-	-	-	72.32	-	-	-
Netherlands	-	-	-	-	-	-	-
Norway	-	-	10.97	11.09	10.97	-	-
Poland	-	-	-	-	-	-	-
Portugal	-	-	29.97	100.22	18.76	-	5.06
Romania	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-
Slovenia	51.72	-	21.67	23.00	-	-	-
Spain	-	-	-	-	-	-	-
Sweden	7.37	-	7.37	247.80	7.37	-	-
United Kingdom	78.59	-	62.02	74.23	54.56	139.26	275.64

Table 16: Support levels for installations new in 2018 producing in 2019, in [€/MWh]

5 Market integration of renewables

As shown in Table 17 below, balancing responsibility for RES producers was a feature of support schemes in 20 CEER member countries that participated in the survey. In 11 of the above-mentioned member countries, RES producers face the same balancing responsibilities as conventional producers, independent of their size or technology. In the remaining nine member countries, only selected RES producers, notably those falling under a FiP scheme and usually with an installed capacity above a certain threshold, bear full balancing responsibilities. In parallel, all RES producers falling under a FiT scheme are exempted from balancing responsibilities in the abovementioned countries. In 10 member countries, another institution (e.g. the TSO) is balancing responsible on behalf of supported RES producers.

Country	All RES plants without exception are responsible in exactly the same manner as any other conventional plant	Only some RES plants are responsible in exactly the same manner as any other conventional plant	Another institution (no incentive scheme in place to minimise the incurred balancing costs) has balancing responsibility on behalf of all or some of the RES electricity plants	Another institution (incentive scheme in place to minimise the incurred balancing costs) has balancing responsibility on behalf of all or some of the RES electricity plants
Austria	No	No	Yes	No
Croatia	No	Yes	No	Yes
Cyprus	No	No	Yes	No
Czech Republic	Yes	No	No	No
Denmark	Yes	No	No	No
Estonia	Yes	No	No	No
France	No	Yes	No	No
Georgia	No	No	No	No
Germany	No	Yes	No	Yes
Greece	No	No	No	Yes
Hungary	Yes	No	No	No
Ireland	Yes	No	No	No
Italy	No	Yes	No	No
Latvia	Yes	No	No	No
Lithuania	No	Yes	No	No
Luxembourg	No	Yes	No	No
Malta	No	No	Yes	No
Netherlands	Yes	No	No	No
North Macedonia	No	No	No	Yes
Norway	Yes	No	No	No
Poland	No	No	No	Yes
Portugal	No	Yes	No	No
Romania	Yes	No	No	Yes
Slovakia	No	No	Yes	No
Slovenia	No	Yes	No	No
Spain	Yes	No	No	No
Sweden	Yes	No	No	No
UK	No	Yes	No	No

Table 17: Balancing responsibilities for RES producers

In all cases where there is no balancing responsibility borne by RES producers, another institution is then usually responsible for balancing. This institution can be a network operator, a TSO or a Distribution System Operator (DSO) (e.g. in France, Germany, Malta, Poland and Romania), a short-term market operator (e.g. in Slovakia) or a specific company in charge for the operational handling of RES electricity (e.g. in Austria and Greece). Among those countries, some have introduced arrangements to ensure that the third party in charge of balancing has specific incentives to perform balancing as cost-efficient as possible (e.g. France, Germany). See Annex 11 for more details.

6 Other forms of RES support

6.1 Overview of other forms of RES support

In the survey, CEER member countries were asked about any other forms of support for RES electricity that had not been covered elsewhere in the report. This aspect is of relevance to illustrate that RES are not only supported through direct support schemes (chapter 3), but also indirectly. For example, through full or partial exemptions from specific financial contributions like taxes or levies, or through dedicated financing programs. Most respondents (14 out of 28) indicated that there are no additional forms of support in place in their countries. Compared to the last report this is a roughly constant figure.

Where other forms of support were in place, these were mostly linked to self-consumption of RES electricity (see section 6.2), to preferential tax treatments or to dedicated credit lines for investments in RES installations. The following information has been provided by the participating member countries (see also Annex 12):

Country	Other forms of RES support
Czech Republic	It is possible to provide investment subsidies for new and refurbished RES plants.
France	RES electricity plants can benefit from local, state or European direct investment subsidies (which are not accounted for in the cost of direct support). In rare case, for given technologies, support may also include specific tax or levy exemption (e.g. land tax for small agricultural methane units or a fee for occupation of the maritime public domain for offshore wind farms).
Germany	Indirect support of RES installations used for self-consumption purposes: RES producers which are self-consuming all or parts of their production are exempted fully from network charges, electricity taxation and other electricity price components. They are partly exempted from the RES surcharge paid by consumers for the electricity delivered through the grid if the installation capacity is > 10 KW (below this threshold full exemption). RES installations, which are not supported through the RES support scheme, are entitled to a compensation from the grid operator, an "avoided network charge", when connected to a lower grid level.
Italy	Tax exemptions are expected only for PV power plants. In particular: - a fiscal subtraction equal to 50% of the costs incurred up to a maximum cost of €96,000; - only for PV power plants installed in the period 1 July 2020 - 31 December 2021, a fiscal subtraction equal to 110% of the costs incurred (so-called, “super-bonus 110%”).
Lithuania	Support for investment in renewable energy technologies.
Luxembourg	Some municipalities provide additional investment support for PV installations. Producers (also small-scale PV) are eligible to request a VAT number. In that case, they do not pay VAT on the installation (17%), but a VAT payment is due on the energy they "sell" through the FiT/FiP. The VAT rate applicable on this sale of electricity is, however, only 8%. CHP plants (e.g. biomass) receive additional support for their heat production, which is not included in the numbers in this chapter.
Malta	Tax credits for some categories of enterprises that invest in RES technology.
Poland	An example of additional elements of RES support is the exemption of electricity from RES from excise tax.
Sweden	There is a tax release for micro-producers of up to 30 MWh per year.

Table 18: Overview other forms of RES Support

6.2 Indirect support for self-consumption of RES electricity

Self-consumption is defined as the use of power generated on-site by an energy consumer in order to reduce, at least in part, the purchase of electricity from the grid. Self-consumption can be relevant in the context of the drive towards greater consumer empowerment and engagement, and the realisation of Europe's renewable energy targets – as long as the impacts of self-consumption on network financing, balancing and contribution to energy taxation are properly considered in the overall framework. With increasing amounts of small-scale electricity generation connected at distribution level, particularly rooftop solar and wind, self-consumption has the potential to have a significant impact on Europe's future energy system.[31]

Similar to the last report, CEER member countries were asked to provide more details about the way self-consumption of self-generated RES and conventional electricity is addressed at the national level (for further details see Annex 13).

The following aspects can be derived from the answers provided:

- Self-consumption is in principle allowed in all participating member countries (27 out of 28 with 1 N/A);
- In most CEER member countries (17 out of 28 with 1 N/A), self-consumption is possible in combination with a support payment for the surplus electricity fed into the grid; and
- In general, there are no charges specifically designed for self-consumed RES electricity (see Table 19).

Country	Are there any charges (i.e. without using the public grid, they still have to pay grid charges for the self-consumed electricity) on self-consumption i.e. consumption of self-generated RES and/or conventional electricity?
Austria	There is a general energy tax that must be paid for consumed electricity. For self-consumed RES electricity, this tax must be paid only if more than 25,000 kWh are consumed p.a.
Croatia	There are no specific charges, but there is net metering for households.
Cyprus	Yes, self-consumers connected to the grid have to pay grid charges. No grid charges are charged for the self-produced RES electricity.
Czech Republic	Electricity produced for own consumption is exempted from paying grid charges which include payment on RES. For own consumption they may receive support in the form of a green bonus (FiP), of which the level depends on the time of putting the plant into operation.
Estonia	No.
France	There are no charges. Since 2017, all self-consumed electricity (whether subsidised or not) is exempted from taxes on electricity consumption. This represents an indirect support to self-consumption.
Georgia	No.
Germany	No.
Greece	The self-consumer pays grid charges, the RES levy (ETMEAR) and other regulated charges based on the energy that the consumer absorbs from the grid excluding the PSO Levy. The PSO levy is calculated based on the energy that the self-consumer generated plus the energy absorbed from the grid minus the energy he/she injected into the grid.

[31] For more information, notably on the impact of self-consumption on individuals (consumers and prosumers), society, on system operation and costs, and the market, please see the CEER position paper on Renewable Energy Self-Generation (Ref: C16-SDE-55-03), 16 September 2016.

Country	Are there any charges (i.e. without using the public grid, they still have to pay grid charges for the self-consumed electricity) on self-consumption i.e. consumption of self-generated RES and/or conventional electricity?
Hungary	Yes, without using the public grid (no electricity consumption or feed-in), they still have to pay the fixed part of the system usage costs.
Ireland	No.
Italy	No.
Latvia	No.
Lithuania	The Ministry of Energy has support programs for installing the RES plants.
Luxembourg	Since 1 January 2020, self-consumed renewable energy is not subject to any grid usage fee.
Malta	No charges on self-consumed electricity. In the case of prosumers benefiting from a FiT, the FiT is payable only on the units exported to the grid and self-consumed units would not benefit from the FiT. The option of self-consumption is open to all prosumers.
North Macedonia	The prosumers pay network charges for the electricity that is withdrawn from the grid when the generated electricity is not enough to cover their electricity needs.
Norway	No.
Poland	Generation of energy from RES for own needs is not supported on the basis of the RES Act. Possible support can be obtained through EU funds, investment support, various projects, etc. An exception are old renewable energy installations, which still receive renewable energy certificates for energy generated also for their own needs.
Romania	Yes, they still have to pay grid charges for the self-consumed electricity on self-consumption i.e. consumption of self-generated RES and/or conventional electricity.
Slovakia	Distribution charges.
Slovenia	They do not pay the charges for consumption of self-generated RES (kWh in real time).
Spain	Consumption from self-generation electricity is free of charges.
Sweden	There are no charges on self-consumed energy that is not fed into the public grid.
UK	A party will not pay grid charges directly for self-consumed electricity. Where that party maintains a connection to the grid, it will pay a fixed charge for doing so under reforms being introduced by Ofgem in April 2022 under its Targeted Charging Review. These reforms will cover the 'residual' element of network costs, which relates to the fixed costs of providing existing pylons and cables. It will be charged on the basis of banding of users, determined first by a party's connection voltage level, and then within each voltage level by the party's agreed capacity at higher voltages or, where an agreed capacity does not exist at lower voltages, by net volume. Ofgem is introducing this change to minimise the opportunities for a user to change its behaviour and therefore reduce/avoid its fair share of residual (i.e. fixed) network costs.

Table 19: Charges on self-consumed electricity

7 Conclusions and way forward

This review is one of a kind regarding the number of countries covered and the level of information provided about support costs by RES technologies and other relevant issues related to the promotion of RES in Europe. As with previous reports, the gathering of this information remains challenging as NRAs are not equally responsible for or involved in the administration of the RES support process itself and have limited access to the relevant data. Especially support cost data on newly installed RES plants is still hardly available, which makes it difficult to analyse the cost development for newly installed RES capacities falling under the current support schemes (with lower support costs in general). Furthermore, the analysis of the overall system is more demanding since the support frameworks are getting more complex, notably in respect to the coexistence of various support frameworks. Indeed, many CEER member countries support RES installations under different support systems, and as previously predicted, most of the member countries already provided data for more than one support framework, with old plants still falling under a FiT system and new plants supported via more market-based systems like premiums.

This report shows that the weighted average support level (all countries and support schemes taken into account) in 2018 and 2019 is roughly the same as for the last report. For 2019, the average was 97.95 €/MWh and in 2017 it was 96.29 €/MWh (110.22 €/MWh in 2015 and 99.62 €/MWh in 2018). It is not possible to determine how a potential decrease in costs of newly constructed RES, evolutions in market value of the electricity produced (considering the variability of energy prices) or other multiple factors affecting the economic conditions of such installations (grid connection or access regimes, taxes, etc.) affected those calculated supported levels. The average indicated market value for 2017 was 40.37 €/MWh and for 2019 it was 49.57 €/MWh which would indicate a declining need for support. Other above-mentioned factors cannot be evaluated but it has to be highlighted that the sample itself is not the same. This means that the countries that reported data for the last report and those that reported data for this report are not exactly the same.

Furthermore, this report as well as previous reports, do not reflect the overall electricity market system in which RES support is embedded and all the costs RES installations must bear. Different grid connection or access charge regimes lead to different cost structures for renewables. The report reflects a mixture of old, new, small, and large RES plants, and different support systems (FiT, FiP, GCs, investment grants) with varying support times. Hence, a comparison between the member countries is always based on simplifications and should be carried out with caution. With this in mind, the following observations can be retrieved from the review:

- A wide range of instruments is used to promote RES, such as investment grants, FiT, FiP, and GCs. Across Europe, the transition towards support schemes allowing for more market integration of RES and more competitive elements in the way support levels are being determined is still ongoing. As such, this report followed the path that was set during the last status review, i.e. the introduction of more FiP schemes, where RES producers receive support (a fixed or variable premium) in addition to their market income and the introduction of tendering procedures, as a means to determine levels of support.

- It is not uncommon that RES plants have the same financial responsibility as conventional plants for electricity balancing, at least above a certain threshold of capacity installed.

- No changes can be observed to other central features such as the nature of funding (mostly via non-tax levies).

- The proportion of gross electricity produced receiving RES support differs widely from one country to another ranging from 3.8% in Slovenia to 66% in Denmark, with an average across countries of approximately 19% in 2018. This is a slight increase from an average proportion of around 17% in 2016.

- In terms of support costs, there are wide differences across technologies and across countries. The weighted average support for RES, on top of the wholesale price, decreased from 99.62 €/MWh in 2018 to 97.95 €/MWh in 2019. In 2019, it ranged from a minimum of 10.97 €/MWh (in Norway) to a maximum of 197.83 €/MWh (in the Czech Republic).

- The last report highlighted that more and more RES installations are reaching the end of their support time. This trend will start to have an impact on the cost development in the coming years[32].

[32] For more info, please also see the CEER Paper on Unsupported RES, Ref: C 19-RES-64-04a, 20 May 2020.

Annex 1 – List of abbreviations

Term	Definition
ACER	The EU Agency for the Cooperation of Energy Regulators
EEAG	EU Guidelines on state aid for environmental protection and energy 2014-2020
AER	Alternative Energy Requirement Scheme
CEER	Council of European Energy Regulators
CHP	Combined heat and power
CSP	Concentrated Solar Power
DSO	Distribution System Operator
EC	European Commission
EE	Energy efficiency
EEA	European Economic Area
EU	European Union
FiP	Feed-In-Premium
FiT	Feed-In Tariff
GGP	Guidelines of Good Practice
GCs	Green Certificates
GWh	Gigawatt hour is a unit of energy equal to 1,000 MWh or 1,000,000 kWh
HECHP	High-efficiency combined heat and power
kWp	Watts-peak and kilowatts-peak is a measure of the nominal power of photovoltaic device under laboratory conditions. Kilowatts-peak (kWp) is the most common unit in the domestic context.
kWh	The kilowatt hour is a unit of energy equal to 1,000 Watt hours or 3.6 megajoules. The kilowatt hour is the most common billing unit for energy delivered to consumers.
LCOE	Levelised cost of energy
MC	CEER member country (including both Members and Observers that participated in this status review)
MS	Member State
MWh	MegaWatt hour is a unit of energy equal to 1,000 kWh or 1,000,000 Watthours
NRA	National Regulatory Authority (for energy)
PSO	Public Service Obligation
PV	Photovoltaic
REFiT	Renewable Energy Feed-In-Tariff
RE	Renewable Energy
REC	Renewable Energy Community
RED / RES Directive	The Renewable Energy Directive (2009/28/EC)
RES	Renewable Energy Sources (also used in this report to mean renewable generation)

Term	Definition
RES-E	Electricity from Renewable Energy Sources
RESS	Renewable energy support scheme
SDE+	The 'SDE+' ('Stimuleringsregeling duurzame energieproductie') is the Dutch support mechanism for renewable energy, introduced in 2007.
TSO	Transmission System Operator
TWh	The terawatt hour is a measure of energy large enough to express annual electricity generation for whole countries
XBID	Cross-Border Intraday Project

Annex 2 – Definitions

Term	Definition
Support for RES generation	The annual cost of incentives paid to RES generation as the result of national support schemes.
Technologies	
Energy from renewable sources	Energy from renewable non-fossil sources, namely aerothermal, bioenergy (including biogas and solid biomass), geothermal, hydropower, hydrothermal, ocean, solar and wind energy.
Aerothermal energy	Energy stored in the form of heat in the ambient air.
Biogas	A gas composed principally of methane and carbon dioxide produced by anaerobic digestion of biomass. The total biomass figures comprise: - landfill gas, formed by the digestion of landfilled wastes - sewage sludge gas, produced from the anaerobic fermentation of sewage sludge - other biogas such as biogas produced from the anaerobic fermentation of animal slurries and of wastes in abattoirs, breweries and other agro-food industries.
Bioenergy	This is a summary definition used to aggregate data for solid biomass and biogas.
Geothermal energy	Energy stored in the form of heat beneath the surface of solid earth.
Hydropower	Electricity generated from the potential and kinetic energy of water in hydroelectric plants.
Hydrothermal energy	Energy stored in the form of heat in the surface water.
Ocean energy	Forms of renewable energy derived from the sea including wave energy, tidal energy, river current, ocean current energy, salinity gradient energy and ocean thermal gradient energy. For the purposes of this survey, this excludes offshore wind.
Solar electricity	Solar radiation exploited for electricity production. Where possible, the following sub-categories are used: PV (photovoltaic) and CSP (concentrated solar power).
Solid biomass	The biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste. Where possible, data for solid biomass is presented using the following sub-categories: biodegradable waste and other solid biomass.
Wind energy	The kinetic energy of wind converted into electricity in wind turbines. This is comprised of offshore and onshore wind energy.
Categories of support	
Call for tenders	A type of quantity-based policy instrument whereby a tender is announced by the government for the supply of electricity from renewable energy sources, which is then supplied on a contractual basis at the price resulting from the tender. Where tenders are coupled with other forms of support e.g. Feed-in-Tariff, Feed-in-Premium or Green Certificates, these other forms of support will be considered the primary supporting policy.
Excise tax return	A taxation policy where renewable energy generators pay lower excise tax rates than conventional energy generators.
Feed-in-Premium and contracts for differences	A type of price-based policy instrument whereby eligible renewable energy generators are paid a premium price which is a payment in addition to the wholesale price. This premium can be fixed of floating; a floating premium would be calculated as the difference between an average wholesale price and a previously defined guaranteed price. In addition, under contracts for difference, if the wholesale price rises above the guaranteed price, generators are required to pay back the difference between the guaranteed price and the wholesale price.
Feed-in-Tariff	A type of price-based policy instrument whereby eligible renewable energy generators are paid a fixed price at a guaranteed level (irrespective of the wholesale price) for the RES electricity produced and fed into the grid.

Term	Definition
Green certificates	A tradable commodity proving that certain electricity is generated using renewable energy sources. May have guaranteed minimum prices. The certificates can be traded separately from the energy produced.
Investment grants	Public money paid to provide direct support to investment that increases the generation of renewable energy.
Other definitions	
Accrual basis accounting	Under the accrual basis accounting, costs are recognised with respect to the period when revenues are earned in contrast to the cash basis accounting, where costs are recognised when cash is actually paid.
Auto-consumption	Consumption of self-generated electricity.
Balancing responsibility	Producers of electricity are bearing the financial responsibility for imbalances between their forecasts and the actual electricity feed-in (financial settlement).
Guaranteed access	There is the guarantee that all electricity sold and supported obtains access to the grid, allowing the use of a maximum amount of electricity from renewable energy sources from installations connected to the grid.
Lifetime of the grant	The expected lifetime of the capital that the investment grant has been used for. This could be estimated either by the expected lifetime over which the capital is being depreciated or the payment period for any related FiT support.
Priority access	The assurance given to connected generators of electricity from renewable energy sources that they will be able to transmit electricity in accordance with connection rules at all times, whenever the source becomes available.
Priority connection	That the physical connection (link) to the transmission and/or distribution networks of generators of electricity from renewable energy sources is considered a priority over connection to generators of electricity from other sources.
Priority dispatching	When transmission system operators give the priority to generating installations using renewable energy sources in so far as the secure operation of the national electricity system permits and based on transparent and non-discriminatory criteria. Member States shall ensure that appropriate grid and market-related operational measures are taken into account in order to minimise the curtailment of electricity produced from renewable energy sources.
Public Service Obligation	In this context, a Public Service Obligation (PSO) is a levy imposed by the government on some or all final electricity customers to recover the additional costs associated with electricity from specified sources of generation,- including sustainable, renewable and indigenous sources.
Semi-shallow connection charge regime	RES generators pay less for connection than other conventional generators.
Shallow connection charge regime	The system operator pays for connection.

Annex 3 – Overview of RES objectives for 2030

Country	National RES expansion objectives for 2030			Explanation
	Overall RES objective	Objective of RES electricity share	No objective defined yet	
Austria		100%		100 % of electricity consumption should be RES electricity by 2030. The new draft of the renewables law estimates that +27 TWh until 2030 are needed with: +11 TWh PV +10 TWh Wind +5 TWh hydropower +1 TWh biomass
Croatia	32%			"The Energy Development Strategy of the Republic of Croatia until 2030 with an outlook to 2050" sets certain goals for different scenarios. Using a "reference scenario", for 2030 the share of energy from renewable sources in the gross final consumption of energy should be 36.6%, while the share of energy from renewable sources in electricity generation should be 61%.
Cyprus	23%	26%		Cyprus' national RES objectives for the period 2021-2030 in the context of EU policies are: • Share of RES in gross final energy consumption to reach 23% • Share of RES in gross final electricity consumption can reach at least 26%
Czech Republic	22%			RES share in the final energy consumption 22% Electricity 16.90% Transport 14.00% Heating and cooling 30.70%
Denmark				https://kefm.dk/Media/C/B/faktaark-klimaaftale%20(English%20august%2014).pdf
Estonia	42%			Final energy consumption must remain at 32-33 TWh/y until 2030. The share of renewable energy in total final energy consumption must be at least 42% in 2030.
France	32%	40%		The French Energy Transition for Green Growth Law (or Energy Transition Law), adopted in August 2015, sets out the following objectives: increase the share of renewables to 23% of final energy consumption by 2020; increase the share of renewables to 32% of final energy consumption and 40% of electricity production by 2030. These objectives were translated into installed capacity targets per technology for 2018 and 2023 by a ministerial decree (French multiannual energy program (PPE)) in April 2016. The multiannual energy program is currently under review for the periods 2018-2023 and 2023-2028 (publication anticipated by the end of 2018).
Georgia				National Energy and Climate Action plan is in preparation and target objective for 2030.
Germany		65%		2030: 65% share of RES based electricity in gross electricity consumption. Starting 2021, with the entering into force of the revised renewable energy Act (EEG 2020), it is foreseen to introduce a mechanism which will bring in line the national RES objective with the European RES deployment objectives.

Country	National RES expansion objectives for 2030			Explanation
	Overall RES objective	Objective of RES electricity share	No objective defined yet	
Greece	35%	60%		35% (share of RES in gross final energy consumption based on NECP), 60% (share of RES in gross final electricity consumption based on NECP).
Hungary	21%	21%		Hungary's goal for 2030 is to reach at least 21% of renewable energy in gross final energy consumption and at least 21.3% of RES in gross final electricity consumption. In case of PV, approximately 6500 MW capacity until 2030, and more than 10,000 MW until 2040 is envisaged. (see National Energy and Climate Plan of Hungary).
Ireland		70%		The target is to have renewable electricity (RES-E) of up to 70% by 2030.
Italy	30%	55%		According to Italian energy strategy defined in 2019 in compliance with the Clean Energy Package, Italy should reach an objective of 30% share of RES with respect to total final consumption and an objective of 55% RES electricity (defined as the ratio between RES gross electricity production and total gross electricity production) by 2030.
Latvia	50%			According to National Energy and Climate Plan for 2021-2030 the goal is to achieve 50% RES share in gross energy consumption by 2030. The priorities towards the goal include: • Generation adequacy and reducing energy dependency on imported fossil resources. • Expanding the use of the potential in wind energy. • Promotion of non-emission technologies under free market circumstances. • Stability or decrease of electricity prices. • Involvement of households and society in energy production. • Sustainability and improved energy efficiency (including efficient RES technologies).
Lithuania	45%			45% of final consumption (National Strategy for Energy Independence, https://enmin.lrv.lt/uploads/enmin/documents/files/Nacionaline%20energetines%20nepriklausomybes%20strategija_2018_LT.pdf)
Luxembourg	25%			25% of gross final energy consumption
Malta	11.5%	11.0%		Malta's overall RES target for 2030 is 11.5%. The RES electricity target for 2030 is 11%.
Netherlands				There has been major shift in the objectives for 2030. The objective for 2020 was related to the penetration of renewables in heat production mix (14%). The objective for 2030 is now related to the reduction of CO_2 following the Paris agreement (40%) and is set to 49% reduction in comparison of the emission in 1990.
North Macedonia				In accordance with the Decision on the national mandatory targets for the share of energy produced from renewable sources in the gross final energy consumption and for the share of energy generated from renewable sources in the final energy consumption in transport, the percentage share of renewable energy sources in the gross final energy consumption by 2020 should be 23%. Targets for 2030 are not defined yet.
Norway				N/A
Poland	23%			The goal of Poland's Energy Policy until 2040 (PEP 2040) – according to its updated draft – is at least a 23% share of RES in gross final energy consumption in 2030.

Country	National RES expansion objectives for 2030			Explanation
	Overall RES objective	Objective of RES electricity share	No objective defined yet	
Portugal	47%	80%		Contribution of renewable energy production to gross final energy consumption: 31% in 2020; 38% in 2025, 47% in 2030. Gross final electricity consumption from renewable energy sources: 60% in 2020, 69% in 2025 and 80% in 2030. National Plan for Energy and Climate, 10 July 2020.
Romania	30.7%			Romania's 2030 target is 30.7% overall share of energy from renewable sources in final gross energy consumption, increasing by 6.7% compared to 2020.
Slovakia	19.2%			19.2 % of total energy generation from RES for 2030.
Slovenia	27%	43%		27% of final energy consumption from RES, of which 43% share in the electricity sector.
Spain	42%	74%		42% of final energy consumption from RES by 2030. 74% of final electricity consumption from RES by 2030.
Sweden	23%			The expansion objective of the certificate system has been to construct 33.2 TWh RES between 2012-2030. This corresponds to 23% of the total expected energy use in Sweden 2030.
UK				The UK has a legally binding target to reduce all greenhouse gas (GHG) emissions to net zero by 2050. The government sets carbon budgets which place a restriction on the total amount of GHGs the UK can emit over successive 5-year periods. The Contracts for Difference (CfD) scheme is the UK's main mechanism for supporting new renewable electricity generation projects in Great Britain: the UK has committed to holding CfD allocation rounds around every 2 years. The UK's Offshore Wind Sector Deal, published in 2019, set out that the government and the sector would work together to deliver 30GW by 2030: the UK Government is now working with the sector to see how we can accelerate and increase that ambition.

Annex 4 – Overview of support scheme and changes

		Type of changes		
Country	**Changes after 2017**	**Financing the RES support scheme**	**Way support levels are being determined**	**Market integration of RES**
Austria	No	No	No	No
Croatia	Yes	Yes	Yes	Yes
Cyprus	Yes	No	No	No
Czech Republic	Yes	No	Yes	No
Denmark	Yes	Yes	Yes	No
Estonia	Yes	No	Yes	No
France	No	No	No	No
Georgia	Yes	Yes	Yes	Yes
Germany	Yes	Yes	Yes	N/A
Greece	Yes	Yes	Yes	Yes
Hungary	No	No	Yes	Yes
Ireland	Yes	No	Yes	Yes
Italy	Yes	No	No	No
Latvia	No	No	No	No
Lithuania	No	Yes	No	No
Luxembourg	No	No	No	No
Malta	Yes	No	Yes	No
Netherlands	Yes	No	No	No
North Macedonia	No	No	Yes	No
Norway	No	No	No	No
Poland	Yes	No	No	No
Portugal	No	No	Yes	Yes
Romania	Yes	Yes	Yes	Yes
Slovakia	No	No	Yes	No
Slovenia	No	No	No	Yes
Spain	No	No	No	No
Sweden	Yes	No	No	No
UK	No	No	No	No

Annex 5 – Description of changes since the last status review

Country	Changes after 2017
Croatia	See the answers below in this Annex.
Cyprus	The latest scheme that was enforced in April 2020 is the «Support Scheme for the generation of electricity from RES for self-consumption». In accordance with this scheme the following categories are supported: (a) PV systems (up to 10 kW) connected to the grid with net-metering method (for residential and commercial consumers) with total capacity installed up to 15MW for residential consumers and 5 MW for non-residential consumers. Additional capacity of 4 MW is reserved exclusively for public educational institutions. (b) RES-E systems (PV, biomass/biogas, high efficiency cogeneration units) (up to 10 MW) connected to the grid with net-billing method (for commercial consumers) with total capacity installed up to 40 MW. (c) RES-E Autonomous systems not connected to the grid. There are no limits for this category.
Czech Republic	No changes have been made since the last review, but the extension of notifications of all currently valid support schemes has been approved and extended until the end of 2021.
Denmark	Technology neutral tenders.
Estonia	Changed the principles of the Electricity Subsidy Scheme of Renewable Energy and the Efficiency of a Cogeneration. The amount of support paid to new renewable electricity producers for each unit of energy produced was abolished and replaced by an auction-based support system. An exception was granted to small producers – subsidies paid to producers with an electrical capacity less than 50 kW (the exception is valid until the end of 2020). The new scheme started on 1 January 2019.
Georgia	A major change was to move from long-term Power Purchase Agreement to Feed-in-Premium, so far only for HPP above 5 MW.
Germany	No direct changes have been made in the EEG as a consequence of the RED II implementation. However, in the overall RES framework, the curtailment of RES installations will no longer be treated in a separate scheme but will be integrated in the overall redispatch scheme with conventional installations.
Greece	See the answers below in this Annex.
Ireland	The Renewable Electricity Support Scheme (RESS) provides support to renewable electricity projects in Ireland. The first RESS auction took place in July 2020. This is pay-as-bid, technology neutral, with support for up to 16.5 years, uses a two-way support arrangement through Floating Feed in Premium.
Italy	The Ministerial Decree of 4 July 2019 updates the mechanisms for supporting electricity generation by some types of RES-E plants (wind, hydroelectric, waste gas treatment and PV plants), reviewing the unitary value of the tariff, different for each source and size. The unitary value of the tariff is defined through descending-bid auctions in the case of largest plants (more than 1 MW). The Ministerial Decree of 4 July 2019 reviews the support scheme, re-defining the plant capacity threshold: a. Feed in tariff (different for each source) for plants with a capacity up to 250 kW (instead of 500 kW); b. Feed in premium for plants with a capacity over 250 kW (instead of 500 kW). The premium is calculated, on hourly basis, as the difference between a total tariff, different for each source and size, and the hourly zonal energy price.
Netherlands	Projects aimed at reducing CO_2 emissions are also eligible for the scheme, so called SDE++.
Poland	From 14 July 2018, electricity producers in biogas plants and water installations can take advantage of the new support system for renewable energy sources based on feed-in tariffs (FiT) or subsidies to the market price (Feed in premium - FiP). It should also be remembered that the new support systems are provided for installations with a total installed electrical capacity of no more than 1 MW. The feed-in tariff system (FiT) is intended for micro and small installations, i.e. for RES installations with a total installed capacity of no more than 500 kW, while the system of subsidies to the market price (FiP) for installations with a total installed capacity of no less than 500 kW and not greater than 1 MW. The last major amendment to the RES Act (2019) has introduced a number of changes to the FiT/FiP system, including allowing biogas installations up to 1 MW to be added to the system, and - in the case of a FiP system - it has increased the permissible capacity of biogas installations and hydropower

Country	Changes after 2017
	plants to 2.5 MW. In addition, for RES installations benefiting from the FiT system, the fixed price has been increased up to 95% of the reference price. However, the above changes do not apply until the day of issuing a positive decision by the European Commission on the compatibility of the state aid provided for in these regulations with the internal market or until the European Commission recognises that the changes in these regulations do not constitute new state aid.
Romania	The promotion of RES-E production in Romania is achieved through the green certificates (GCs) scheme, combined with the annual mandatory quota for the acquisition of GCs. Starting with the end of 2016, the GC promotion scheme was closed for access to the scheme for new RES-E producers
Sweden	The investment grant on PV have been reduced from 30 to 20 percent of the investment cost. Since June 2020, it is also not possible to make any new applications for this grant.

Country	Changes in the financing mechanism
Croatia	Electricity suppliers are obligated to purchase a share (% determined each year) of electricity produced by the power plants in the Feed-in scheme each month (depending on their market share). Remaining part is sold on the electricity market. Also, guarantees of origin for that remaining energy are also sold on the market. Proceedings from those sources and the levies paid by all electricity customers via their electricity bill are deposited into an account from which the schemes are financed.
Denmark	From 2022 RES support will be on the Danish state budget.
Georgia	No changes so far.
Germany	The revision process of the EEG is yet not finalised. However, it is very likely that the following changes will be made: a. Additional tendering procedures will be introduced for rooftop solar installations b. The technology neutral tender for wind onshore and solar will be closed and the innovation tender, focusing on combinations of RES installations with or without storage facilities, will be expanded (more capacity will be tendered out) c. The threshold for the RES surcharge exemption for RES based self-consumption will be increased to 20 MW (today 10 MW) d. New rules for RES installations running out of support by the end of 2020 e. New rules regarding the Tenant-RES electricity-Modell
Greece	2018 was the first year that the "RES Special Account" (ELAPE) presented a surplus, for this reason it was deemed necessary to reduce the so-called "RES Fee" (ETMEAR) paid by consumers as a levy part of their energy bills. From 1 January 2019 consumers enjoy reduced charges as part of the "RES Fee". Furthermore, RAE was the responsible body for setting the ETMEAR unit charges until 2019, this responsibility has been taken by the Ministry of Energy for 2019 and 2020 while RAE will determine those charges again from 2021.
Lithuania	The FiT is no longer available; Producers can apply for FiP by winning an Auction for electricity made from RES.
Romania	In the beginning of 2018, prosumers were encouraged thus encouraging the production of distributed RES-E destined for local consumption. Regarding the prosumers, the Ministry of Environment currently runs two funding programs: - The Program for the installation of PV systems for electricity production, in order to cover the consumption needs and the delivery of the surplus in the national grid, Order no. 1.287/2018 of the Deputy Prime Minister, Ministry of Environment for the approval of the Financing Guide of the Program. Funding is granted up to 90% of the total eligible expenses, within the amount of 20,000 lei (approx. €4,000) Order no. 1.287/2018 of the Deputy Prime Minister, Minister of the Environment, for the approval of the Financing Guide of the Program for the PV systems for electricity production in order to cover the consumption needs and delivery the surplus in the national grid - The Program for the installation of PV systems for isolated households not connected to the electricity distribution grid, Order no. 1.305/2018 of the Deputy Prime Minister, Ministry of Environment for the approval of the Financing Guide of the Program Order no. 1.305/2018 of the Deputy Prime Minister, Minister of the Environment, for the approval of the Financing Guide of the Program for the installation of PV systems for the isolated households not connected to the national grid.

Country	Changes in the financing mechanism
	In the second half of 2018, ANRE (Romanian NRA) has issued the regulatory framework to enable the promotion of renewable energy production from RES capacities up to 27 kW, belonging to the prosumers.

Country	Changes in determining the support level
Croatia	In 2016 the Law on Renewable Energy Sources and High-efficient Cogeneration introduced a framework for new support schemes which are based on tendering procedures and simultaneously ended the "old" Feed-in scheme for new entries (only available for those who already signed the contract). However, we have only recently brought into force all the required regulations to start the tendering procedures – the first one is being held at this moment and ending in September 2020.
Denmark	Technology-neutral tenders.
Estonia	Changed the principles of the Electricity Subsidy Scheme of Renewable Energy and the Efficiency of a Cogeneration. The amount of support paid to new renewable electricity producers for each unit of energy produced was abolished and replaced by an auction-based support system.
Georgia	No changes. No tendering procedure yet. Support Scheme is granted to the RES developer only through PPP legislation based on direct negotiation and CBA analysis
Germany	Since 2017: The reference value for support (market premium) of PV installations (>750 KW), offshore wind and biomass installations (new > 150 KW & existing ones > or < 150 KW) is being determined through tendering procedures (2015-16: Pilot phase for ground-mounted solar installations); since 2018 tendering procedures for onshore wind installations (> 750 KW) and together for onshore wind and solar - in a technology neutral scheme - have been introduced to determine the reference value of the market premium; Since September 2020, support for combination installations (of different RES technologies - wind, solar & biomass - or between a RES installation and a storage facility) is being determined through a tendering procedure.
Greece	There has been an introduction of common (technology-neutral) RES auctions where both PV and wind RES projects could participate to determine their support levels. First technology-neutral auction took place successfully in April 2019. In addition, from 2020, the reference tariff that determines the level of support of small PV projects (P<500 kW) that are not obliged to participate in competitive auctions, is determined by the weighted average reference tariff that results from the past 3 competitive technology-specific (PV) auctions that took place before the last auction for PV projects plus a markup of 5%. Furthermore, in 2018, there were special provisions introduced for Energy Communities that enjoy higher support levels for their RES projects compared to normal RES projects.
Hungary	In Hungary, the support system for electricity from renewable sources is governed by the Renewable Energy Support Scheme (METÁR), which came into force on 1 January 2017. The system was initially built on three pillars based basically on the plant's installed capacity: a feed-in tariff (under 0.5 MW and for demonstration projects, except for wind power plants), a 'green premium' granted without tendering (under 1 MW, except for wind power plants) and a 'green premium' granted through tendering procedures (>1 MW and for wind power plants). But since 26 April 2018, producers can apply only for premium type support where producers shall sell their electricity on the market. Since 1 May 2019, premium support shall be granted only via competitive tendering procedures (except for brown premium). The so-called 'brown premium' has been introduced for existing solid biomass and biogas plants in order to ensure their further operation.
Ireland	The Renewable Electricity Support Scheme (RESS) provides support to renewable electricity projects in Ireland. The first RESS auction took place in July 2020. This is pay-as-bid, technology neutral, with support for up to 16.5 years, uses a 2-way support arrangement through Floating Feed in Premium.
Malta	Award of support by tender introduced also for RES Technologies with capacities between 400kWp and less than 1MWp as from 2020. Previously tendering procedure applied for PVs 1 MWp.
North Macedonia	The premiums, in addition to the existing feed-in tariffs, were introduced with the new Energy Law from 2018 as a new measure to support the electricity producers using renewable energy sources, which is awarded based on a tender procedure involving an auction.

Country	Changes in determining the support level
Portugal	The 2019 PV auctions introduced a tendering procedure.
Romania	Up to now, no tendering procedures have been implemented.
Slovakia	The Ministry of Economy has selected (via auction) the entity responsible for obligatory purchase of electricity from RES producers (SPP, a.s. as of 1 January 2020 effectively) The competence for imbalance settlement has shifted from 3 regional DSOs to one central entity, which is OKTE, a.s. (short-term electricity market operator).

Country	Changes related to market integration
Croatia	There is an ECO Balance group in place with our energy market operator as the balance group leader. All power plants in the Feed-in scheme have to be members and send all information required for planning to our energy market operator. Power plants with capacity above 50 kW pay a monthly fee to cover the possible expenses. Also, one of the new support schemes introduced with the Law on Renewable Energy Sources and High-efficient Cogeneration is a premium scheme where RES producers are obliged to sell electricity on the market and be balance-responsible.
Greece	Now only RES and HECHP with installed capacity P<400 kW and projects for innovative technologies can receive operating aid based on Feed-in-Tariff. Furthermore, starting from 1 January 2020, those power plants and power plants included in Art. 12 (6) of the Regulation (EU) 2019/943 get priority dispatch of their load in the day-ahead schedule. In addition, power plants that receive operating aid under Feed-in-Tariff with P≥400 kW and have begun their operations after 4 July 2019 assume balancing responsibilities.
Hungary	In Hungary, the support system for electricity from renewable sources is governed by the Renewable Energy Support Scheme (METÁR), which came into force on 1 January 2017. The system was initially built on three pillars based basically on the plant's installed capacity: a feed-in tariff (under 0.5 MW and for demonstration projects, except for wind power plants), a 'green premium' granted without tendering (under 1 MW, except for wind power plants) and a 'green premium' granted through tendering procedures (>1 MW and for wind power plants). But since 26 April 2018, producers can apply only for premium type support where producers shall sell their electricity on the market. Since 1 May 2019, premium support shall be granted only via competitive tendering procedures (except for brown premium). The so-called 'brown premium' has been introduced for existing solid biomass and biogas plants in order to ensure their further operation. Since 1 April 2020, RES power plant operators are financially responsible for balancing also in the feed-in tariff system.
Ireland	The Renewable Electricity Support Scheme (RESS) provides support to renewable electricity projects in Ireland. The first RESS auction took place in July 2020. This is pay-as-bid, technology neutral, with support for up to 16.5 years, uses a 2-way support arrangement through Floating FiP.
Portugal	The Portuguese RES electricity support scheme is based upon feed-in tariffs that are differentiated by technology. In 2019 PV auctions introduced 2 schemes for new capacity, a FiT and a payment to the system (while also receiving wholesale market prices, i.e. a FiP with a negative premium).
Romania	Romanian RES-E producers have the obligation to sell the electricity on the electricity market and they also have balancing responsibilities.

Annex 6 – Description of recent and future changes of the support scheme

Country	Recent major changes of the support scheme
Austria	
Croatia	
Cyprus	
Czech Republic	
Denmark	
Estonia	
France	Support schemes and market integration: Since the adoption of the Energy Transition Law in 2015, and in line with European Commission guidelines on State aid for environmental protection and energy, renewables support in France combines feed-in-tariffs (FiT) for small & medium scale installations (below 500 kW) and feed-in-premiums (FiP) – along with balancing responsibility – for medium & large sale installations (over 500 kW). The level of support is set either through administrative procedures (government orders defining the amount of remuneration) or, for medium & large-scale installation through bidding procedures (call for tenders, competitive dialogue procedure). Financing of RES support: Since January 2016, renewables support falls under the general State budget, through a dedicated purpose fund – the financing of which being decided each year by the Parliament through a Finance Law (currently, internal taxes on fossil fuels).
Georgia	
Germany	
Greece	
Hungary	Since 26 April 2018, producers can apply only for premium type support where producers shall sell their electricity on the market. Since 1 May 2019, premium support shall be granted only via competitive tendering procedures (except for brown premium). Since 1 April 2020, RES power plant operators are financially responsible for balancing also in the feed-in tariff system.
Ireland	
Italy	
Latvia	
Lithuania	
Luxembourg	FiT amounts were adapted for solar PV and eligibility criteria were adapted in some cases.
Malta	
Netherlands	
North Macedonia	
Norway	
Poland	
Portugal	
Romania	
Slovakia	
Slovenia	
Spain	
Sweden	

Country	Recent major changes of the support scheme
UK	The Feed-in Tariffs (FiT) scheme was closed in 2019 and was succeeded by the Smart Export Guarantee (SEG) – this was in order to lower the impact of the FiT scheme on consumer bills that was paid through levies onto electricity suppliers which are then passed onto electricity consumers. The SEG is an obligation for licensed electricity suppliers to offer a tariff and make payment to small-scale low-carbon generators for electricity exported to the National Grid, providing certain criteria are met. No major changes have been made or are planned for the CfD or Renewables Obligation.

Country	Major changes of the support scheme that are planned in the near future
Austria	
Croatia	
Cyprus	
Czech Republic	The Amendment of the Act on promoted energy sources (APES) should enter into force. It is currently in the approval phase. The new APES should regulate the new conditions for the support of electricity, heat and biomethane from RES. The operation support for the new plants, refurbished plants and maintenance support will be applied via the principle of the green bonus (FiP) or auction bonus. The tendering through auction should be newly introduced.
Denmark	
Estonia	
France	No major changes are expected; the number of installations under the feed-in-premium mechanism will continue to increase.
Georgia	Not envisaged
Germany	The renewable law (EEG) will be recast by the end of 2020 and new provisions will enter into force starting 2021. The recasting process is not finalised yet. Additional tendering procedures will be introduced for rooftop solar installations.
Greece	Currently there is a transitional mechanism in place for RES power plants. RES will assume full balancing responsibilities, same as the other conventional power plants, as soon as XBID is introduced in the Greek ID market.
Hungary	No major changes are planned.
Ireland	
Italy	
Latvia	RES support scheme has been suspended for new generators since 2012. Currently there are no plans on new RES support scheme. Nevertheless, there is ongoing work to reduce entry barriers and obstacles for RES generators to compete in open market.
Lithuania	Additional legal basis to allow for auctioning offshore starting in 2023; planning to apply the Contracts for Difference (CfD) scheme.
Luxembourg	No major changes planned.
Malta	No information available.
Netherlands	
North Macedonia	
Norway	
Poland	A significant change in the RES support systems in Poland was the entry into force (on February 18, 2021) of the Act of December 17, 2020 on the promotion of electricity generation in offshore wind farms, which specifies: 1) the terms and conditions of providing support for electricity generated in offshore wind farms; 2) rules and conditions for the preparation and implementation of investments in the construction of offshore wind farms;

Country	Major changes of the support scheme that are planned in the near future
	3) rules for management of an offshore wind farm and its power output; and 4) requirements for the construction, operation and decommissioning of offshore wind farms.
Portugal	
Romania	Romania will continue to support the promotion of RES-E production, especially by supporting prosumers, that is, the local electricity distributed generation of RES-E to meet the local consumption. Particular attention shall be paid to the transposition of the European provisions in the sense of promotion of the concepts of prosumer, aggregator and local energy community or flexibility facilities of RES-E production through aggregation and/or storage of electricity. The possibility to promote and stimulate the production of small RES-E capacities through premium feed-in-type schemes is under discussion.
Slovakia	
Slovenia	No major changes until the end of 2025.
Spain	In June 2020, there was a change in the Electricity Act, opening the possibility to tenders in order to set a long-term price for the energy for new RES plants. First tender took place on the 26 January 2021.
Sweden	The government has issued a proposition to cancel the *elcertifikat* system by 2035. They have also suggested that no new generation facilities are to be admitted to the *elcertifikat* system after 2021. The investment grant for solar PV is suggested to be replaced by a tax reduction.
UK	None.

Annex 7 – Overview of financing of RES electricity support scheme

Country	Changes after 2017	General taxation paid by all citizens	Non-tax levies paid by some or all customers via the electricity bill	Other
Austria	No	No	Yes	
Croatia	Yes	No	Yes	Described in 2a(B)
Cyprus	No	No	Yes	
Czech Republic	No	No	Yes	State budget funds for providing subsidies to cover operating support for electricity.
Denmark	Yes	Yes	No	
Estonia	No	No	Yes	
France	No	No	No	Since January 2016, renewables support falls under the general State budget, through a dedicated purpose fund – the financing of which being decided each year by the Parliament through a Finance Law (currently, internal taxes on fossil fuels).
Georgia	No	No	Yes	
Germany	No	No	Yes	
Greece	Yes	No	Yes	1) DAS (Day Ahead Scheduling): Refers to the inflow from the participation of units in the RES & CHP Registry in the day ahead electrical energy market with quantity (MW) per distribution period (1 hour) as estimated (forecast) by Independent Power Transmission Operator (IPTO) S.A. The amounts are calculated upon clearing of the DAS by DAPEEP S.A., by multiplying the aforementioned amount each hour by the corresponding system marginal price (SMP). 2) Variation (Imbalances): Refers to the inflow or outflow (this component may be a credit or debit), ultimately arising from the clearing of variations (imbalances) of the RES & CHP Registry units conducted by IPTO S.A. Essentially, the amounts are calculated by multiplying the hourly quantity variation (MWh) between the corresponding amount of RES & CHP plants that participated in the DAS and the sum of the RES & CHP actual measurements, with the corresponding System Imbalance Marginal Price (SIMP). 3) Variable Weighted Average Cost of Conventional Thermal Units (VWACCTU): Refers to the additional RES electricity compensation at the variable weighted cost of conventional thermal power plants if this compensation is higher than the sum of revenues from DAS and Variation clearing. 4) Electricity Suppliers Charge: This is a new inflow component, applicable since October 2016, under the provisions of Law 4414/2016. It refers to the inflows from the electricity Suppliers,

Country	Changes after 2017	General taxation paid by all citizens	Non-tax levies paid by some or all customers via the electricity bill	Other
				which are calculated based on the nominal difference (€/MWh) between the value of the SMP, that would have resulted if no RES had participated in the DAS (virtual SMP), and the SMP that resulted from the actual DAS clearing (actual SMP). In particular, the monthly revenues of this component are equal to the product of the Suppliers electricity sales at the Interconnected System and Network by the afore-mentioned difference. Operation Aid Revenues. (Abolished since 01.01.2019) 5) ETMEAR (Special levy for greenhouse gas emission reduction): Refers to the inflow collected by IPTO SA from the suppliers, based on the consumptions of their corresponding clients. In particular, according to the provisions of amended Art. 143 of Law 4001/2011, the level of ETMEAR is calculated and announced every 6 months by the Greek Regulatory Authority for Energy (RAE) on the basis of the remaining difference between the expenses and the revenues of the RES Special Account. ETMEAR levels are further differentiated between different categories of final consumers. ETMEAR is imposed on each MWh of electricity consumed. (The level of the fee was reduced since 01.01.2019) 6) Special levy for lignite: Refers to the inflow as calculated and collected by IPTO SA from the producers, owners of lignite units, based on their production. (Abolished since 01.01.2019) 7) CO_2 (Greenhouse gas emission allowances): Refers to the revenues from the auctioning of greenhouse gas emission allowances. 8) Transitory Mechanism for the Optimal Forecasting Accuracy: Refers to the revenues from the charges that are imposed to RES and CHP plants based on their imbalances that are required to participate directly in the electricity market. (The operation of the mechanism started in November 2019).
Hungary	No	No	Yes	
Ireland	No	No	Yes	
Italy	Yes	No	Yes	
Latvia	No	No	Yes	
Lithuania	No	No	Yes	
Luxembourg	No	Yes	Yes	
Malta	No	Yes	No	
Netherlands	No	No	No	Both non-tax levies and taxes paid by some or all customers via the energy bill.
North Macedonia	Yes	Yes	Yes	

Country	Changes after 2017	General taxation paid by all citizens	Non-tax levies paid by some or all customers via the electricity bill	Other
Norway	No	No	Yes	
Poland	No	No	Yes	
Portugal	No	No	Yes	
Romania	Yes	No	Yes	
Slovakia	No	No	Yes	
Slovenia	No	No	No	Since May 2014, (in addition to consumers of electricity) final customers of solid, liquid, gaseous fossil fuels or district heating end-users are also obliged to pay additional non-tax levies for financing the RES support scheme. The Energy Agency determines the non-tax levies on the basis of the Regulation of the method of determining and calculating the non-tax levies to provide support for the production of electricity from high efficiency cogeneration and renewable energy; the ministry responsible for energy approves any change. The Energy Agency determines the non-tax levies on the basis of the Regulation of the method of determining and calculating the non-tax levies to provide support for the production of electricity from high efficiency cogeneration and renewable energy; the ministry responsible for energy approves any change.
Spain	No	No	Yes	Since the regulatory change in 2014, the RES support scheme in Spain is not FiT, nor FiP, nor capacity payments nor quota: There is a capacity payment in €/MW for all technologies, not once but on a monthly basis. Additionally, for all technologies except hydro and wind on-shore there is an operational aid in €/kWh. The support scheme is additional to incomes in wholesale electricity market. All data about capacity installed, energy, etc., is related to RES plants with support scheme.
Sweden	No	No	Yes	
UK	No	No	Yes	

Annex 8 – Institution in charge of determining the non-tax levy as financing instrument for the national RES support scheme

Country	Changes after 2017	Government	NRA	Other
Austria	No	Yes	No	
Croatia	No	Yes	No	
Cyprus	No	Yes	No	
Czech Republic	No	No	Yes	
Denmark	N/A	N/A	N/A	
Estonia	No	No	No	TSO
France	N/A	N/A	N/A	
Georgia	No	No	Yes	
Germany	No	No	No	TSOs
Greece	Yes	Yes	No	NRA until 2019, 2019 and 2020 Government, from 2021 onward again NRA
Hungary	No	No	No	TSO (MAVIR Zrt.)
Ireland	No	No	Yes	
Italy	No	No	Yes	
Latvia	No	No	Yes	
Lithuania	No	No	Yes	
Luxembourg	No	No	Yes	
Malta	N/A	N/A	N/A	
Netherlands	N/A	N/A	N/A	
North Macedonia	No	Yes	No	
Norway	No	No	No	Market-based cost
Poland	No	No	Yes	
Portugal	No	Yes	No	
Romania	Yes	Yes	No	

Country	Changes after 2017	Government	NRA	Other
Slovakia	N/A	N/A	N/A	
Slovenia	N/A	N/A	N/A	
Spain	No	Yes	No	
Sweden	No	No	No	The price for *elcertifikaten* is market-based. The electricity supplier.
UK	No	Yes	No	

Annex 9 – Electricity being partially or fully exempted from contributing to the financing of RES support

Country	Changes after 2017	Which changes?	No exemptions for electricity from contributing to RES financing	Comment
Austria	No		Yes	The charges are determined based on grid connection level and consumed electricity from the public grid.
Croatia	Yes	The change is described in the tables later in this annex (energy-intensive industries) and (introduction of net metering).	No	
Cyprus	No		Yes	
Czech Republic	No		Yes	
Denmark	Yes	https://ec.europa.eu/competition/state_aid/cases/267128/267128_1870217_98_2.pdf	No	
Estonia	No		No	
France	No		Yes	Not applicable as electricity consumers no longer directly contribute to the financing of renewables support .
Georgia	No		No	
Germany	N/A		N/A	
Greece	Yes	See answers in the tables later in this annex.	No	
Hungary	No		No	
Ireland	No		Yes	
Italy	No		Yes	The Ministerial Decree of 21 December 2017 updates the system of concessions for energy-intensive industries. In particular, the Asos tariff component (used to collect money for the incentive of renewables), for

Country	Changes after 2017	Which changes?	No exemptions for electricity from contributing to RES financing	Comment
				consumers with a yearly consumption of at least 1 GWh and an electro-intensity of at least 20%, is progressively reduced on the basis of electro-intensity (electro-intensity is an index computed with respect to the company's annual turnover).
Latvia	No		No	
Lithuania	Yes	Consumers who meet the requirements established by law have the right to a refund of 85% of the paid price of services of public interest for the amount of electricity consumed in excess of 1 GWh per calendar year.	Yes	
Luxembourg	No		Yes	Energy-intensive industries can, under certain conditions, benefit from a lower rate for the Renewable Energy levy (*taux de la catégorie C*). To be eligible, companies have to either be connected to the 65kV grid or higher, or have a consumption of over 20 GWh per year. Companies consuming more than 2.5 GWh, whose electricity consumption accounts for a large share of the value of their activities can also be eligible, if they fulfil certain criteria. To be eligible for the Category C levy, companies have to engage in an agreement with the government through which they commit to substantial improvement of their overall energy efficiency.
Malta	No		Yes	RES support is funded through general taxation paid by all citizens.
Netherlands	No		No	
North Macedonia	No		Yes	

Country	Changes after 2017	Which changes?	No exemptions for electricity from contributing to RES financing	Comment
Norway	No		No	
Poland	No		No	
Portugal	No		No	
Romania	No		Yes	State aid SA.39042 (2014/N) – Romania RES support reduction for energy-intensive users. Until 2017 state aid was authorised by the EC SA.39042 (2014/N) – Romania. State aid scheme regarding the partial exemption of industrial electro-intensive consumers from the payment of green certificates related to the annual mandatory quota of GCs, according to the Law no. 220/2008, with modifications and subsequent completions.
Slovakia	No		No	
Slovenia	No		No	
Spain	No		No	
Sweden	No		Yes	
UK	No		No	

Changes in energy intensive industries

Country	Energy-intensive industries	Comment	Self-consumption	Comment
Austria	No		No	

Country	Energy-intensive industries	Comment	Self-consumption	Comment
Croatia	Yes	The subject's "electricity intensity" is calculated as ratio between incurred electricity costs and gross value added. The subject is then placed into a category which determines how much his RES levies are reduced (from 40% up to 80% reduction for the most energy intensive industries).	Yes	Household consumers that have a RES installation for self-consumption have to pay RES levies only for the difference between electricity taken from the grid and excess electricity they injected into the grid (determined every month).
Cyprus	No		No	
Czech Republic	No		Yes	
Denmark	No		No	
Estonia	No		Yes	For self-generated electricity that does not go to the network grid.
France	No		No	
Georgia	No		Yes	
Germany	Yes	The exemption applies only to electricity-intensive companies in sectors that compete internationally. In concrete terms, the Special Equalisation Scheme works as follows: beneficiaries pay the full EEG surcharge for the first gigawatt hour and in principle 15% of the EEG surcharge for every kilowatt hour of electricity they consume above and beyond this. This burden is limited to a maximum of 0.5% (cost intensity >= 20%) or 4% (cost intensity < 20%) of the respective enterprise's gross value added.	Yes	In principle, a reduced RES surcharge (40%) applies for self-consumed electricity. However, no RES surcharge is applied to electricity generated by self-consumer with a newly installed capacity < 10 KW; Reduced (up to 0%) RES surcharge is also applicable under certain conditions to existing installation used for self-consumption.
Greece	Yes	From 01.01.2019 and until 31.12.2028, there is a base charge of 17€/MWh for all consumers. Business organisations with activities in a sector which is included in Annex 3 of the Guidelines on State aid for environmental protection and energy 2014-2020 (hereinafter EEAG) and business organisations with activities in a sector which is included in Annex 5 of the EEAG, with electro-intensity ≥ 20% pay 15% of the base charge (2.55 €/MWh). Business organisations with activities in a sector which is included in Annex 5 of the EEAG, with electro-intensity ≥ 10% and electro-intensity < 20% pay 20% of the base charge (3.40€/MWh). Business organisations with activities in a sector which is **not** included in Annexes 3 & 5 of the EEAG, with electro-intensity ≥ 20% pay 20% of the base charge (3.40 €/MWh). Lignite mines and pumping stations with HV connections and rail transit with MV or HV connections pay 20%	Yes	Self-producers of energy from RES and HECHP are not included among those subject to the RES Levy (ETMEAR), especially and exclusively for the part of self-generated energy.

Country	Energy-intensive industries	Comment	Self-consumption	Comment
		of the base charge (3.40/MWh). Business organisations that use electricity for agriculture (LV or MV) pay 53% of the base charge (9.01 €/MWh). All consumers except for those that use electricity for agriculture must pay the full base charge of 17€/MWh for the first 250 MWh consumed annually.		
Hungary	No		No	
Ireland	No		No	
Italy	No		Yes	In Italy, the variable part of Asos tariff component (i.e. the part in c€/kWh) is applied only to the electricity withdrawn from the grid; therefore, it is not applied to self-consumed electricity.
Latvia	Yes	Reduced by 85%	Yes	
Lithuania	Yes	Consumers who meet the requirements established by law have the right to a refund of 85% of the paid price of services of public interest for the amount of electricity consumed in excess of 1 GWh per calendar year.	No	
Luxembourg	Yes	Energy-intensive industries can, under certain conditions, benefit from a lower rate for the Renewable Energy levy (*taux de la catégorie C*). To be eligible, companies have to either be connected to the 65kV grid or higher, or have a consumption of over 20 GWh per year. Companies consuming more than 2.5 GWh, whose electricity consumption accounts for a large share of the value of their activities can also be eligible, if they fulfil certain criteria. To be eligible for the Category C levy, companies have to engage in an agreement with the government through which they commit to substantial improvement of their overall energy efficiency.	Yes	Self-consumed electricity is not subject to grid fee, taxes nor levies.
Malta	No		No	
Netherlands	No		No	
North Macedonia	No		No	
Norway	Yes		No	
Poland	Yes	The President of the Energy Regulatory Office publishes each year, by 31 December, a list of energy-intensive industries, which will be partly exempted from contributing to the financing	No	

Country	Energy-intensive industries	Comment	Self-consumption	Comment
		of RES support during next year. The amount of discount depends e.g. on the amount of the intensity of electricity consumption.		
Portugal	Yes	The spreading of RES costs is based upon number of consumers per voltage level. Therefore, the majority of the costs falls upon low voltage consumers.	No	
Romania	Yes	State aid SA.39042 (2014/N) – Romania RES support reduction for energy-intensive users. Until 2017 state aid was authorised by the EC SA.39042 (2014/N) – Romania. State aid scheme regarding the partial exemption of industrial electro-intensive consumers from the payment of green certificates related to the annual mandatory quota of GCs, according to the Law no. 220/2008, with modifications and subsequent completions.	No	
Slovakia	Yes	Energy-intensive companies connected to the transmission system and having balanced diagram of electricity consumption (95% reduction from paying the System operation tariff and tariff for system services).	Yes	So-called Local sources (self-generated RES) and CHP generating plants are exempted from paying the system operation tariff.
Slovenia	Yes	Energy-intensive companies are partly exempted from contributing to the financing of RES support in the case when the electrical intensity of the final customer exceeds 5% and the average annual electricity consumption of the final customer in the last three years in the second place for which the contribution is determined exceeds 1 GWh provided that it is not a company in difficulty as defined in the law governing rescue and restructuring aid for companies in difficulty and that it has no outstanding or outstanding debt on the basis of a decision of the European Commission declaring the aid received illegal or incompatible with the internal market.	No	
Spain	No		Yes	Consumption of self-generated electricity does not pay RES support or grid costs.
Sweden	No		No	
UK	Yes		No	

Changes for network losses

Country	For network losses	Comment	Other	Comment
Austria	No		Yes	Low-income households can be partially exempted from contributing to the financing of RES support.
Croatia	Yes	The system operator procures energy to cover losses and the cost is paid through tariffs by final customers. The system operator is not considered a consumer here, so it does not pay levies.	Yes	Industries that are obligated to obtain a permit for greenhouse gas emissions (according to Environmental Protection Law) have a reduced RES levy (currently, 80% reduced, same as most energy intensive industries).
Cyprus	No		No	
Czech Republic	Yes		Yes	165/2012 §28 (5) For the invoiced period, the customer pays the component of the price of the distribution system service or the component of the transmission system price for electricity support in the amount of the product of the unit component of the distribution system service price or the unit component of the transmission system service price set by the Energy Regulatory Office and the agreed reserved power. The maximum payment for the component of the price of the distribution system service and the component of the price of the transmission system service to support electricity for the offtake or transmission point for the billing period is determined by the product of the amount of CZK 495/MWh and the total amount of electricity taken from the transmission system or distribution system at the offtake or transmission point for the invoiced period. This total amount does not include the amount of electricity consumed by pumped storage hydropower plants, consumed by the customer in island operations in the Czech Republic demonstrably separated from the electricity system, supplied through the distribution system abroad and the amount of electricity consumed for technological own electricity consumption or for electricity generation. and heat or consumed by the transmission system operator and the distribution system operator for losses in its transmission system or distribution system.
Denmark	No		No	
Estonia	Yes		No	
France	No		No	
Georgia	No		No	
Germany	Yes		N/A	
Greece	No		No	

Country	For network losses	Comment	Other	Comment
Hungary	No		Yes	The universal service system guarantees regulated electricity prices for households and small consumers, who are exempted from financing the costs of the operational support. Therefore, consumers not eligible for universal service – mainly industrial consumers – bear the costs of the operational support based on the quantity of electricity bought from the grid.
Ireland	No		No	
Italy	No		No	
Latvia	Yes		Yes	Vulnerable consumers according to regulation of the Cabinet of Ministers.
Lithuania	No		No	
Luxembourg	Yes	Contribution to RES support is only due on final consumption of electricity that was delivered through the grid. Self-consumer electricity is hence not subject to RES support obligations. Electricity used for storage purposes, under any form, in view of further retransformation and use at a later stage is also exempt from the levy.	No	
Malta	No		No	
Netherlands	No		No	
North Macedonia	No		No	
Norway	Yes		No	
Poland	No		No	
Portugal	No		No	
Romania	No		Yes	The GCs support scheme is not granted for electricity related to network losses. A portion (up to 85%) of electricity used in carrying out the specified energy-intensive processes is exempted from the Supplier Obligation which sets out the requirement on all electricity suppliers to support the promotion system by GCs.
Slovakia	No		No	
Slovenia	No		No	
Spain	No		No	

Country	For network losses	Comment	Other	Comment
Sweden	No		No	
UK	No		Yes	A proportion (up to 85%) of electricity used in carrying out specified energy-intensive processes is exempted from the Supplier Obligation which sets out the requirement on all electricity suppliers to contribute towards the funding mechanism for Contracts for Difference (CfDs). A similar exemption from 85% of indirect costs applies to the Renewables Obligation and Feed-In Tariffs (FiT): for the Renewables Obligation this came into effect in 2018 and for FiT in 2019; the only change to this exemption was the addition of a sector to the list of exempt industries. A separate exemption from the Supplier Obligation (relating to the CfD) applies for eligible green excluded electricity which is that imported from EU Member States outside the UK and supplied to consumers in Great Britain if it was generated in power stations commissioned after 1 April 2015 and is evidenced by Guarantees of Origin certificates; this exemption applies up to a pre-determined quantitative limit. A similar exemption from costs for imported electricity applies to the FiT scheme.

Annex 10 – Costs covered by the support level

Country	Changes after 2017	Full LCOE (e.g. Investment costs, operational costs, connection costs of the installation to the grid, etc.) as basis for calculating a FiT, a FiP or a fixed capacity payment	Only selected costs	Cost coverage
Austria	No	No	Yes	In general, full LCOE but i.e. costs arising from the purchase of land are not covered.
Croatia	No	Yes	Yes	For the "old" FiT scheme (which is only active for existing contracts) there was a calculation because the tariffs were pre-determined. With the new FiT and FiP schemes there is a tendering procedure and ultimately the investors determine the costs for their specific projects.
Cyprus	No	No	No	N/A – No financial support for RES systems is applied.
Czech Republic	No	Yes	No	No changes have been made since the last review. Full LCOE (e.g. Investment costs, operational costs, connection costs of the installation to the grid, etc.) as a basis for calculating is only for the FiT.
Denmark	No	Yes	No	
Estonia	No	Yes	No	
France	No	Yes	No	
Georgia	No	Yes	No	
Germany	No	Yes	N/A	
Greece	No	Yes	No	Answer for question 9a For which time period (number of years) or number of full load hours (e.g. per year or from the start of operation) is the operational support granted? Response: 25 years for CSP power plants and roof PV (P<10 kW) and 20 years for all the other RES projects.
Hungary	Yes	Yes	Yes	The price bids on tenders cannot be higher than the yearly adjusted supported price set by legislation. The actual support level (green premium) is the difference between the supported price and the reference market price. In the case of brown premiums, support level can be determined by HEA in two ways: 1. The supported price is calculated based on the operation costs of biomass or biogas-based power production. Operation costs also include maintenance and repair costs which ensure the long-term continuous operation of the power plant.; 2. In case of power plants which can be fired also with fossil energy sources, the alternative brown premium aims at preventing the switch to fossil fuels and is determined according

Country	Changes after 2017	Full LCOE (e.g. Investment costs, operational costs, connection costs of the installation to the grid, etc.) as basis for calculating a FiT, a FiP or a fixed capacity payment	Only selected costs	Cost coverage
				to the difference between biomass/biogas and fossil-based power production costs.
Ireland	Yes	Yes	No	The RESS process uses a competitive procurement process that allows participants to reflect their costs through their bid.
Italy	No	Yes	No	
Latvia	No	Yes	No	There is specific calculation for each type of RES plant, payment depends on resource type and might be different according to installed capacity (divided in two levels – large- and small-scale generation). Furthermore, to set ceiling for RES support internal rate of return (IRR) is being considered. If IRR exceeds the ceiling, support provided is being reduced.
Lithuania	No	No	Yes	If the plant is <500kW producer do not need to pay for grid balancing. Prosumers do not pay Public Service Obligations tax for surplus electricity which is delivered to grid and consumed later.
Luxembourg	No	Yes	No	No changes after 2017. Regarding questions 9a and 9b the period is 15 years.
Malta	No	Yes	No	
Netherlands	No	Yes	No	
North Macedonia	Yes	Yes	No	
Norway	No	No	No	
Poland	No	Yes	No	
Portugal	No	Yes	No	
Romania	No	No	Yes	GC in Romania does not cover the entire LCOE.
Slovakia	No	Yes	No	
Slovenia	No	Yes	No	
Spain	No	No	Yes	Connection costs of the installation to the grid are not considered by the support scheme. No changes after 2017.
Sweden	No	Yes	No	There is a support scheme for PV in Sweden is a 20% return on the initial investment. Returns from the *elcertifikat* system is not based on LCOE, and revenue is dependent on the market value of *elcertifikaten*.
UK	No	Yes	No	

Annex 11 – Market integration: balancing responsibilities

Country	Changes after 2017	Comment	All RES plants without exception are responsible in exactly the same manner as any other conventional plant	Comment	Only some RES plants are responsible in exactly the same manner as any other conventional plant	Comment
Austria	No		No		No	
Croatia	Yes		No		Yes	RES plants in FiP scheme.
Cyprus	No		No		No	
Czech Republic	No		Yes	All RES plants without exception are responsible for the balancing in exactly the same manner as any other conventional plant, but they transfer in most cases their responsibility to a trader who buys his electricity or another clearing member.	No	
Denmark	No		Yes	Balancing is handled for small PV and other small RES installations as part of the support scheme.	No	
Estonia	No		Yes		No	
France	No		No		Yes	Under the FiT scheme, public operators in charge of purchasing the electricity generated from renewable sources (Electricité de France (EDF), local distribution companies or other approved bodies) have the balancing responsibility – of which they are incentivised to minimise the costs – for all RES plants. Under the FiP scheme, RES

Country	Changes after 2017	Comment	All RES plants without exception are responsible in exactly the same manner as any other conventional plant	Comment	Only some RES plants are responsible in exactly the same manner as any other conventional plant	Comment
						plants are responsible in exactly the same manner as any other conventional plant. The level of support includes a fixed premium for all costs linked to the management of the electricity produced, thus incentivising the generators to minimise the cost of their imbalances.
Georgia	No		No		No	
Germany	N/A		No		Yes	Since 2016: all new installations > 100 KW are balancing responsible. Only existing installations before the introduction of this rule can still be exempted from balancing responsibility (FiT scheme)

Country	Changes after 2017	Comment	All RES plants without exception are responsible in exactly the same manner as any other conventional plant	Comment	Only some RES plants are responsible in exactly the same manner as any other conventional plant	Comment
Greece	Yes	From 1.11.2019, the RES and HECHP power plants that are compensated under the FiP scheme assume balancing responsibilities under the Transitory Mechanism for the Optimal Forecasting Accuracy. With the commencement of operation of the intra-day and balancing markets under the EU electricity Target Model, the RES and HECHP power plants receiving operating aid under FiP will assume full balancing responsibilities as any other conventional power plant. In addition, RES and HECHP with installed capacity P ≥ 400 kW that receive operating aid under feed-in-tariff and that have begun their operations after 4 July 2019, assume balancing responsibilities for their load.	No		No	
Hungary	Yes	Yes, there was a change. Previously, only RES power plants with an installed capacity of 0.5 MW and higher bore partially the cost of balancing in the feed-in tariff system. But since 1 April 2020, deviation surcharges in the FiT balancing group (which arise from the difference between planned and	Yes	Previously, only RES power plants with an installed capacity of 0.5 MW and higher bore partially the cost of balancing in the feed-in tariff system. But since 1 April 2020, deviation surcharges in the FiT balancing group (which arise from the difference between planned and actual production) are paid	No	

Country	Changes after 2017	Comment	All RES plants without exception are responsible in exactly the same manner as any other conventional plant	Comment	Only some RES plants are responsible in exactly the same manner as any other conventional plant	Comment
		actual production) are paid by the producers receiving feed-in tariff support. A temporary compensation system has been introduced for the period until 2025 in order to alleviate rising costs of RES producers.		by the producers receiving feed-in tariff support. A temporary compensation system has been introduced for the period until 2025 in order to alleviate rising costs of RES producers.		
Ireland	Yes	Yes, this is a change since 2017, new market arrangements in the Single Electricity Market (SEM) went live in October 2018.	Yes		No	
Italy	No		No		Yes	RES-E plants supported by CIP 6/92 or feed in tariff referred to Law 244/2007 are not responsible for imbalances.
Latvia	No		Yes		No	
Lithuania	No		No		No	
Luxembourg	No		No		Yes	The DSO is obliged for the offtake of energy subsidised through FiT, and delegates the balance responsibility for this energy to a supplier. Plants receiving the FiP or not receiving any support are responsible in the same manner as conventional plants.
Malta	No		No		No	
Netherlands	No		Yes		No	

Country	Changes after 2017	Comment	All RES plants without exception are responsible in exactly the same manner as any other conventional plant	Comment	Only some RES plants are responsible in exactly the same manner as any other conventional plant	Comment
North Macedonia	No		No		No	
Norway	No		Yes		No	
Poland	No		No		No	
Portugal	No		No		Yes	All FiT RES energy is purchased by the last resort supplier. The last resort supplier offers that energy on the wholesale market and is responsible for aggregate imbalances. Nonsubsidised RES energy makes its offers directly on the market and is responsible for imbalances. These producers can use an aggregator to maximise efficiency.
Romania	Yes		Yes	RES plants receive GCs for the amount of electricity from the imbalance.	No	
Slovakia	No		No		No	
Slovenia	No		No		Yes	If the producer sells the electricity himself (in case of FP), he is financially responsible for imbalance. But if he sells it directly to the support centre, the support centre is financially responsible for the imbalance.

Country	Changes after 2017	Comment	All RES plants without exception are responsible in exactly the same manner as any other conventional plant	Comment	Only some RES plants are responsible in exactly the same manner as any other conventional plant	Comment
Spain	No		Yes	All RES are responsible in the same manner as other plants since 2007	No	
Sweden	No		Yes		No	
UK	No		No		Yes	

Balancing responsibility for RES and incentive schemes

\country	There is another institution that has balancing responsibility on behalf of all or some of the RES electricity plants. However, there is not an incentive scheme in place for this institution to minimise the incurred balancing costs.	Comment	There is another institution that has balancing responsibility on behalf of all of some or the RES electricity plants. This institution is incentivised to minimise those balancing costs.	Comment	Other	Comment
Austria	Yes	In Austria there is a licensed company that buys all the supported RES electricity and that company is responsible for balancing costs.	No		No	

\country	There is another institution that has balancing responsibility on behalf of all or some of the RES electricity plants. However, there is not an incentive scheme in place for this institution to minimise the incurred balancing costs.	Comment	There is another institution that has balancing responsibility on behalf of all of some or the RES electricity plants. This institution is incentivised to minimise those balancing costs.	Comment	Other	Comment
Croatia	No		Yes	There is an ECO Balance group in place with our energy market operator as the balance group leader. All power plants in the Feed-in scheme have to be members and send all information required for planning to our energy market operator. Power plants with capacity above 50 kW pay a monthly fee. Balancing costs are taken from the RES support scheme fond, so there is an incentive to reduce those costs as much as possible.	No	
Cyprus	Yes	During the transitory regulation in Cyprus (prior the full implementation of the new electricity market model), the Electricity Authority of Cyprus is responsible for the imbalances caused by RES electricity. With the introduction of the competitive electricity market, all RES plants without exception will be responsible for the imbalances in exactly the same manner as any other conventional plant.	No		No	

\country	There is another institution that has balancing responsibility on behalf of all or some of the RES electricity plants. However, there is not an incentive scheme in place for this institution to minimise the incurred balancing costs.	Comment	There is another institution that has balancing responsibility on behalf of all of some or the RES electricity plants. This institution is incentivised to minimise those balancing costs.	Comment	Other	Comment
Czech Republic	No		No		No	
Denmark	No		No		No	
Estonia	No		No		No	
France	No		No		No	
Georgia	No		No		No	
Germany	No		Yes	TSO are balancing responsible for all RES electricity generated under the FiT-scheme.	N/A	
Greece	No		Yes		No	
Hungary	No		No		No	
Ireland	No		No		No	
Italy	No		No		No	
Latvia	No		No		No	
Lithuania	No		No		Yes	RES plants, which installed capacity is larger than 500 kW, are responsible for all imbalances. Plants for which capacity is smaller than 500 kW, are free of balancing charges and all imbalances they caused are covered by TSO or DSO (depends to TSO or DSO grid part the plant is launched). The TSO/DSO get financial support for managing imbalances from

\country	There is another institution that has balancing responsibility on behalf of all or some of the RES electricity plants. However, there is not an incentive scheme in place for this institution to minimise the incurred balancing costs.	Comment	There is another institution that has balancing responsibility on behalf of all of some or the RES electricity plants. This institution is incentivised to minimise those balancing costs.	Comment	Other	Comment
						Public Service Obligations taxes.
Luxembourg	No		No		No	
Malta	Yes	The DSO is responsible for the imbalances caused by RES.	No		No	
Netherlands	No		No		No	
North Macedonia	No		Yes	Electricity market operator has balancing responsibility of those RES electricity plant that have obtained stats of preferential producers. Electricity Market Operator transfers the cost for the balancing and the auxiliary services to the suppliers and traders.	No	
Norway	No		No		No	
Poland	No		Yes	PSE S.A. (Polskie Sieci Elektroenergetyczne S.A.), the state-owned transmission system operator in Poland, is the entity responsible for balancing the network. In performing its duties, it	No	

\country	There is another institution that has balancing responsibility on behalf of all or some of the RES electricity plants. However, there is not an incentive scheme in place for this institution to minimise the incurred balancing costs.	Comment	There is another institution that has balancing responsibility on behalf of all of some or the RES electricity plants. This institution is incentivised to minimise those balancing costs.	Comment	Other	Comment
				is based on the Transmission Network Code.		
Portugal	No		No		No	
Romania	Yes	Electricity suppliers have balancing responsibility on behalf of some of the RES electricity plants (prosumers).	Yes	Electricity suppliers have balancing responsibility on behalf of some of the RES electricity plants, but those are not incentivised to minimise balancing costs.	No	
Slovakia	Yes	OKTE, a.s. (short-term electricity market operator).	No		No	
Slovenia	No		No		No	
Spain	No		No		No	
Sweden	No		No		No	
UK	No		No		No	

Annex 12 - Indirect forms of RES support

Country	Other forms of RES support?	Comment
Austria	No	
Croatia	No	
Cyprus	No	
Czech Republic	Yes	It is possible to provide investment subsidies for new and refurbished RES plants.
Denmark	N/A	
Estonia	No	
France	Yes	RES electricity plants can benefit from local, state or European direct investment subsidies (which are not accounted for in the cost of direct support). In rare case, for given technologies, support may also include specific tax or levy exemption (e.g. land tax for small agricultural methane units or fee for occupation of the maritime public domain for wind offshore farms).
Georgia	N/A	
Germany	Yes	Indirect support of RES installations used for self-consumption purposes: RES producers which are self-consuming all or parts of their production are exempted fully from network charges, electricity taxation and other electricity price components. They are partly exempted from the RES surcharge paid by consumers for the electricity delivered through the grid if the installation capacity is > 10 KW (below this threshold full exemption). RES installations, which are not supported through the RES support scheme, are entitled to a compensation from the grid operator, an "avoided network charge", when connected to a lower grid level.
Greece	No	
Hungary	No	
Ireland	No	
Italy	Yes	Tax exemptions are expected only for PV power plants. In particular: - a fiscal subtraction equal to 50% of the costs incurred up to a maximum cost of €96,000; - only for PV power plants installed in the period 1 July 2020 - 31 December 2021, a fiscal subtraction equal to 110% of the costs incurred (so-called, “super-bonus 110%”).
Latvia	No	
Lithuania	Yes	Support for investment in renewable energy technologies.
Luxembourg	Yes	Some municipalities provide additional investment support for PV installations. Producers (also small-scale PV) are eligible to request a VAT number. In that case, they do not pay VAT on the installation (17%), but a VAT payment is due on the energy they "sell" through the FiT/FiP. The VAT rate applicable on this sale of electricity is, however, only 8%. CHP plants (e.g. biomass) receive additional support for their heat production, which is not included in the numbers in section 3.
Malta	Yes	Tax credits for some categories of enterprises that invest in RES technology.
Netherlands	N/A	
North Macedonia	No	
Norway	No	

Country	Other forms of RES support?	Comment
Poland	Yes	An example of additional elements of RES support is the exemption of electricity from RES from excise tax.
Portugal	No	
Romania	Yes	In the beginning of 2018, prosumers were encouraged, thus encouraging the production of distributed RES-E destined for local consumption Regarding the prosumers, the Ministry of Environment currently runs two funding programs: - The Program for the installation of PV systems for electricity production, in order to cover the consumption needs and the delivery of the surplus in the national grid, Order no. 1.287/2018 of the Deputy Prime Minister, Ministry of Environment for the approval of the Financing Guide of the Program. Funding is granted up to 90% of the total eligible expenses, within the amount of 20,000 lei (approx. €4,000) Order no. 1.287/2018 of the Deputy Prime Minister, Minister of the Environment, for the approval of the Financing Guide of the Program for the PV systems for electricity production in order to cover the consumption needs and delivery the surplus in the national grid - The Program for the installation of PV systems for isolated households not connected to the electricity distribution grid, Order no. 1.305/2018 of the Deputy Prime Minister, Ministry of Environment for the approval of the Financing Guide of the Program Order no. 1.305/2018 of the Deputy Prime Minister, Minister of the Environment, for the approval of the Financing Guide of the Program for the installation of PV systems for the isolated households not connected to the national grid.
Slovakia	N/A	
Slovenia	No	
Spain	No	
Sweden	Yes	There is a tax release for micro producers up to 30 MWh per year.
UK	No	

Annex 13 – Right to self-consumption of electricity

Country	Is self-consumption in principle allowed?	Is self-consumption of self-generated RES electricity allowed in combination with a support payment?	Changes since 2017
Austria	Yes	Yes	No changes
Croatia	Yes	No	Household consumers that have a RES installation for self-consumption pay electricity, network use and taxes/levies only for the difference between electricity taken from the grid and excess electricity they inject into the grid (determined every month). All consumers (household and non-household) with RES installations for self-consumption can get compensation from their electricity supplier for excess energy injected into the grid. They can also find someone else to sell the energy to, but cannot inject energy into the grid without having a buyer.
Cyprus	Yes	No	In 2018, CERA by Decision 124/2018, decided that the producer using photovoltaic system and/or Biomass with the method of net billing, is to be charged by his Supplier in his monthly account per generated energy unit (kWh), minus the units (kWh) injected in the network. In 2019, CERA, by Decision 16/2019, decided to review the charges and credits for net billing, net metering and self-production due to the difference in the prices for the use of transmission and distribution system of medium and low voltage. The methodology for calculating charges and credits remained the same as the existing one, until the completion of a relevant study by CERA on the rational and cost-oriented calculation of network usage charges and ancillary services of the above three categories. In 2020, CERA, by Decision 28/2020, decided to review the methodology calculating the charges for net billing and net metering so that the producer of RES to be charged only for the electricity imported from the grid. The charges should include the following tariffs: (a) use of TSO's grid, (b) use of DSO's grid, (c) recovery of the TSO's expenses, (d) auxiliary services and long-term reserve, (e) PSOs and (f) any other charges will be provided in relevant decisions of CERA.
Czech Republic	Yes	Yes	No changes
Denmark	Yes	No	No changes
Estonia	Yes	Yes	
France	Yes	Yes	A regulatory framework has been gradually introduced since 2017 to encourage the deployment of self-consumption. No major changes have been made since 2017. On the side of direct support schemes : i) feed-in-tariff contracts for small scale solar (< 100 kWc – KiloWatt crête) now include an investment premium when part of the energy is self-consumed (the operational aid being granted on each kWh injected to the grid) ; ii) self-consumption of RES electricity production is also encouraged through tendering procedures (the selected plants benefit from a fixed premium on each kWh produced, with a markup on self-consumed electricity).

Country	Is self-consumption in principle allowed?	Is self-consumption of self-generated RES electricity allowed in combination with a support payment?	Changes since 2017
Georgia	Yes	No	Group connection and virtual metering are introduced when generating facility and consumers can be located at different places or energy generated by power plants can be used by different consumers and different places.
Germany	Yes	No	
Greece	Yes	Yes	Promotion of self-consumption. Ministerial Decision ΥΠΕΝ/ΔΑΠΕΕΚ/15084/382 (FEK B' 759/5.3.2019) set the institutional framework for self-consumers using small wind power plants, biomass/biogas/bioliquids, small hydro, geothermal and CHP (previously the institutional framework was specified only for PV stations even though more technologies were eligible under law 4414/2016).
Hungary	Yes	No	No changes
Ireland	Yes	No	Apart from the new SEM market arrangements, there have been no market changes yet related to self-consumption, however, smart meters are currently being installed in Ireland and will provide customers with accurate information about their electricity import and export throughout the day, including export arising from self-generated RES electricity. The meter replacement programme commenced in 2019 and involves the upgrade of meters in every domestic and small business premises by 2024.
Italy	Yes	Yes	No changes
Latvia	Yes	Yes	No changes
Lithuania	Yes	Yes	No changes
Luxembourg	Yes	Yes	It is allowed because there is no reason for it not to be. Grid fee on self-consumer RE have been abolished on 1 January 2020. Please note that FiT is not due on self-consumer electricity.
Malta	Yes	Yes	No changes
Netherlands	N/A	N/A	
North Macedonia	Yes	No	The changes are made in the Energy Law from 2018 with inclusion of rights of the consumers that install RES generation capacity for the excess of electricity that is injected into the grid not to issue licence for performing electricity generation.
Norway	Yes	Yes	
Poland	Yes	Yes	No changes
Portugal	Yes	Yes	The law decree regarding self-consumption was revised in 2019. The goal was to follow EU directive 2018/2001 and RES and climate change goals.
Romania	Yes	Yes	Because the European trend is to achieve distributed local production, to satisfy local consumption, in 2018 prosumers with installed capacity up to 27 kW benefit from regulated electricity price, according to the regulatory framework establish by ANRE.
Slovakia	Yes	No	

Country	Is self-consumption in principle allowed?	Is self-consumption of self-generated RES electricity allowed in combination with a support payment?	Changes since 2017
Slovenia	Yes	Yes	No changes
Spain	Yes	No	New specific legislation for self-consumption in 2019 (Royal Decree 944/2019), in order to regulate and develop this model and taking advantages for consumers and for the electricity system.
Sweden	Yes	Yes	
UK	Yes	Yes	A key aim of the UK's Electricity Market Reform programme is to deliver a competitive market which supports a diverse range of low-carbon electricity generation, including generators that are not connected to the public network (i.e. supply through a private wire arrangement). The Feed-in Tariffs scheme closed in 2019 and was succeeded by the Smart Export Guarantee – this was in order to lower the impact of the Feed-in Tariffs scheme on consumer bills that was paid through levies onto electricity suppliers which are then passed onto electricity consumers.

Annex 14 – Charges for self-consumption

Country	Are there any charges (i.e. without using the public grid, they still have to pay grid charges for the self-consumed electricity) on self-consumption i.e. consumption of self-generated RES and/or conventional electricity?
Austria	There is a general energy tax that has to be paid for consumed electricity. For self-consumed RES electricity, this tax has to be paid only if more than 25,000 kWh are consumed p.a.
Croatia	There is no specific charges, but there is net metering for households.
Cyprus	Yes. Self-consumers connected to the grid have to pay grid charges. No grid charges are charged for the self-produced RES electricity.
Czech Republic	Electricity produced for own consumption is exempted from paying grid charges which include payment on RES, but on the other hand for own consumption they may receive support in the form of a green bonus (FiP), of which the level depends on the time of putting the plant into operation.
Denmark	
Estonia	No
France	There are no charges: since 2017, all self-consumed electricity (whether subsidised or not) is exempted from taxes on electricity consumption. This represents an indirect support to self-consumption.
Georgia	No
Germany	In general, the RES surcharge must also be paid for self-consumed electricity, but there are several exceptions and reduction possibilities in place.
Greece	The self-consumer pays grid charges, the RES levy (ETMEAR) and other regulated charges based on the energy that he absorbed from the grid excluding the PSO Levy. The PSO levy is calculated based on the energy that the self-consumer generated plus the energy absorbed from the grid minus the energy he injected into the grid. If the self-consumer is not connected to the grid it is not subject to the above charges.
Hungary	Yes, without using the public grid (no electricity consumption or feed-in), they still have to pay the fix part of the system usage costs.
Ireland	There are no charges on self-consumed electricity.
Italy	No
Latvia	No
Lithuania	The Ministry of Energy have support programs for installing the RES plants.
Luxembourg	Since 1 January 2020, self-consumed RE is not subject to any grid usage fee.
Malta	No charges on self-consumed electricity. In the case of prosumers benefiting from a feed-in tariff, the feed-in tariff is payable only on the units exported to the grid and self-consumed units would not benefit from the feed-in tariff. The option of self-consumption is open to all prosumers.
Netherlands	
North Macedonia	The prosumers pay network charges for the electricity that is withdrawn from the grid when the generated electricity is not enough to cover their electricity needs.
Norway	No

Country	Are there any charges (i.e. without using the public grid, they still have to pay grid charges for the self-consumed electricity) on self-consumption i.e. consumption of self-generated RES and/or conventional electricity?
Poland	Generation of energy from RES for own needs is not supported on the basis of the RES Act. Possible support can be obtained through EU funds, investment support, various projects, etc. An exception are old renewable energy installations, which still receive renewable energy certificates for energy generated also for their own needs. No fees have been introduced in the Energy Law Acts for the production of electricity for own purposes.
Portugal	The self-consumption regime allows the sale of excess production. The previous self-consumption legal framework established the possibility of a compensation payment regarding policy costs. The new legal framework removed this compensation while establishing a special TPA network tariff for self-consumption energy using the grid (regular network tariff deducted of upper voltage network tariffs and policy costs). In the new legal framework, excess production is to be sold at market prices through bilateral contracts, market participants or aggregators.
Romania	Consumption from self-generation electricity is free of charge. Yes, they still have to pay grid charges for electricity consumption from the electricity grid.
Slovakia	Distribution charges.
Slovenia	They do not pay the charges for consumption of self-generated RES (kWh in real time).
Spain	Consumption from self-generation electricity is free of charges.
Sweden	There are no charges on self-consumed energy that is not fed into the public grid.
UK	A party will not pay grid charges directly for self-consumed electricity. Where that party maintains a connection to the grid, it will pay a fixed charge for doing so under reforms being introduced by Ofgem in April 2022 under its Targeted Charging Review. These reforms will cover the 'residual' element of network costs, which relates to the fixed costs of providing existing pylons and cables. It will be charged on the basis of banding of users, determined first by a party's connection voltage level, and then within each voltage level by the party's agreed capacity at higher voltages or, where an agreed capacity does not exist at lower voltages, by net volume. Ofgem is introducing this change to minimise the opportunities for a user to change its behaviour and therefore reduce/avoid its fair share of residual (i.e. fixed) network costs.

Annex 15 – Expected major changes for self-consumption

Country	Major changes to the treatment of self-consumption of RES electricity and/or conventional electricity are planned in the near future (in view of the implementation of RED II by 2021, e.g. for jointly acting self-consumers)?
Austria	
Croatia	
Cyprus	
Czech Republic	The transposition of RED II will be implemented through an amendment of the Energy Act, Amendment of the Act on Promoted Energy Sources and other related legislation. All of the amendments include self-consumers too.
Denmark	Denmark is in the process of implementing the RED II.
Estonia	Do not know yet.
France	In addition to individual self-consumption that can benefit from direct support schemes and indirect support, the law defines the collective self-consumption rules, where one or more consumers partner with one or more producers to exchange electricity, either within one and the same building or in “geographic proximity” to each other. Since August 2018, consumers engaged in collective self-consumption operations are free to opt for a dedicated network tariffication including a rebate on self-consumed electricity (and a markup on electricity purchased from the network).
Georgia	After introducing unbundling and retail supply is deregulated, the universal supplier will be the one who will purchase excess energy produced by prosumers.
Germany	The threshold for RES self-consumption to exempted from the RES surcharge will be increased from 10 to 30kW.
Greece	No major changes planned.
Hungary	
Ireland	There are expected to be changes to the existing self-consumption arrangements due to the transposition of the Electricity and Renewables Directives. Currently, there are ongoing scoping exercises being conducted by the CRU (the Irish NRA) to determine what types of changes are needed to introduce the new requirements and also to facilitate participation by jointly acting consumers.
Italy	Article 42bis of Decree-Law no. 162/19 (coordinated with the conversion Law n. 8/20), introduces a transient discipline for the implementation of articles 21 and 22 of directive 2018/2001, aimed at acquiring elements useful for the complete transposition of directive 2018/2001. The same article 42bis of the Decree-Law no. 162/19 defined, in particular, the methods and conditions under which it is permitted, on a transitional basis, to activate collective self-consumption from RES or to create renewable energy communities and requires that the ARERA – Italian Regulatory Authority for Energy, Networks and Environment (the Italian NRA) to adopt the necessary measures to guarantee immediate implementation of the provisions of the same article 42bis of the Decree-Law no. 162/19. From this Decree-Law is derived: - the economic regulation of the shared electricity among renewable energy communities and jointly acting renewables self-consumers defined by the Italian Authority, with the resolution 318/2020/R/eel; - the tariff with which is promoting the collective self-consumption and the RES energy communities defined by the recently approved Decree of the Minister of Economic Development.
Latvia	Currently, net metering system is available for households only. Application of the system for legal entities is under discussion. Furthermore, the net metering system shall be applicable in a way that the self-consumption of RES is possible for different objectives of system users (e.g. chain of stores, electricity produced in one store might be used in another store located in another municipality). The focus when promoting self-consumption shall be

Country	Major changes to the treatment of self-consumption of RES electricity and/or conventional electricity are planned in the near future (in view of the implementation of RED II by 2021, e.g. for jointly acting self-consumers)?
	put on economically justified models, educating the public and tax benefits for green energy. Furthermore, according to milestones – there shall be new regulation on facilitated procedure for cooperation of self-generators, consumers, peer-to-peer-trading, and appropriate tax regulation in 2021.
Lithuania	No changes are planned.
Luxembourg	Collective self-consumption and energy sharing within a community will be introduced in 2021.
Malta	
Netherlands	
North Macedonia	No.
Norway	
Poland	At present, no precise plans have been published regarding subsequent changes to renewable energy support schemes, including major changes to the treatment of self-consumption of RES electricity and/or conventional electricity.
Portugal	
Romania	In Romania, the European provisions regarding aggregators with an impact on the aggregation of prosumers are being transposed. Romania will continue to support the promotion of RES-E production, especially by supporting prosumers, that is, the local electricity distributed generation of RES-E to meet the local consumption. Particular attention shall be paid to the transposition of the European provisions in the sense of promotion of the concepts of prosumer, aggregator and local energy community or flexibility facilities of RES-E production through aggregation and/or storage of electricity. The possibility to promote and stimulate the production of small RES-E capacities through premium feed-in-type schemes is under discussion.
Slovakia	
Slovenia	This area is in the domain of the Ministry of Infrastructure of the Republic of Slovenia.
Spain	As the regulation for self-consumption was released recently, changes are not expected.
Sweden	
UK	See Annex 18.

Annex 16 – Net-metering framework

Country	Net-metering in place?	What does it look like?
Austria	No	
Croatia	Yes	Household consumers that have a RES installation for self-consumption pay electricity, network use and taxes/levies only for the difference between electricity taken from the grid and excess electricity they inject into the grid (determined every month). All consumers (household and non-household) with RES installations for self-consumption can get compensation from their electricity supplier for excess energy injected into the grid. They can also find someone else to sell the energy to, but cannot inject energy into the grid without having a buyer.
Cyprus	Yes	Under the current support scheme, the net-metering category is applied for small-scale PV systems with capacity up to 10 kW, for all consumers (residential and non-residential). The PV systems can be installed (a) on the roof of legally constructed buildings or on the ground within the same plot where the legal estate is located and (b) on land where there is a permit for the extraction or construction of a well (refers only to farmers). The cost of installing the PV system, including the cost of purchasing and installing the electricity meter, is borne entirely by the beneficiaries (except in the case of vulnerable consumers). Under this support scheme, PV systems with a total installed capacity of 20MW in the following two (2) subcategories of investment can be installed using the method of net-metering: (a) PV systems for household consumers – 15MW and (b) PV systems for non-household consumers – 5MW. The clearing of the electricity is calculated by the respective supplier with whom the consumer has contracted (currently only one supplier in Cyprus), either every two months or per month (depending on the consumer's category) for a period of twelve months. Any surpluses will be transferred to the next pricing period while any deficits will be priced normally, within the specific pricing period. The last account of the twelve months will be the final settlement of the surpluses (if any). The last bill of the period of twelve months is the February or March bill, unless any relevant decision is issued by CERA for a different regulation, based on the actual data to select the optimal clearing period for the majority of producers-consumers. Any surpluses cannot be transferred from one twelve-month period to the next. The generated RES electricity is subtracted from the building's overall electricity consumption. Consumers pay only for the difference between the energy consumed and energy generated (net electricity used) plus a cost that reflects the cost of the electricity grid to support continuous supply and taxes (VAT, RES levy).
Czech Republic	No	
Denmark	N/A	
Estonia	Yes	All have two-way meters.
France	No	
Georgia	Yes	All consumers are allowed to connect to the grid – the micro generator up to 500 kW and the consumer the electricity for the self-consumption purposes; the excess electricity is delivered to the grid and netted through a reverse meter. Excess energy is carried over to the next month's bill. Consumed and generated electricity have equal value. The consumer involved in the net metering does not pay grid charges. Such a consumer only pays cost of energy based on volumetric tariffs.
Germany	No	

Country	Net-metering in place?	What does it look like?
Greece	Yes	According to Greek Law 4414/2016 (article 13, par. 7) PV, small wind power plants up to 60 kW, biomass, biogas, small hydro and CHP for self-production, are eligible. The Greek net-metering scheme (active as of the beginning of year 2015) is applicable to all solar PV systems that aim for self-consumption, and thus extends to both rooftop and ground-mounted systems. There are special limits regarding the installed capacity. In any case, the installed capacity of net-metering systems can reach up to 1,000 kWp, in the Interconnected System. Furthermore, the Ministerial Decision ΑΠΕΗ/Α/Φ1/οικ.175067 (FEK B' 1547/5.5.2017) introduced the virtual net metering applications for specific investors. Thus, legal entities governed by public or private law pursuing public or other public interest purposes of general or local scope and farmers or farming associations are allowed to develop RES projects up to 1,000 kWp in the same prefecture located a considerable distance away from the place of the actual power consumption. By virtual net metering it is possible to offset the energy produced (from a RES station) to the energy consumed by one or more auto-producer's consumption facilities and the production facility does not have to be in the same (or adjacent) space with the electrical installation and connected to it (network connection through the same supply), as is it had to with the simple net metering. The energy nettings happen on a three-year basis and the time of generation does not necessarily need to coincide with the time of consumption. Each time the electricity retailer issues an electricity bill, the electricity fed into grid and the electricity consumed has to be measured. If the difference is positive, this surplus is credited to the next electricity bill and the consumer does not pay for the competitive charges. However, any surpluses after the end of the three-year period will not be disbursed by the electricity retailer to the self-producing electricity consumer and will be annulled. If the difference is negative, i.e. more electricity was consumed than produced, and then the plant/installation operator is obliged to pay the difference. In addition, the Ministerial Decision ΥΠΕΝ/ΔΑΠΕΕΚ/15084/382 (FEK B' 759/5.3.2019) set the institutional framework for the participation of small wind power plants, biomass/biogas/bioliquids, small hydro, geothermal and CHP in the net-metering scheme (previously the institutional framework was specified only for PV stations even though more technologies were eligible to participate in the net-metering scheme under law 4414/2016). The Ministerial Decision also permitted the participation of RES technologies with an electricity storage system (up to 30 kVA) in the net-metering scheme. In case of a MV connection, the Ministerial Decision also introduced the mixing of two of the above technologies (previously the self-consumer could participate only with one technology in the net-metering scheme) and the ability for virtual net-metering between MV self-consumer connections and consumers connected to the LV grid. As far as the regulated charges are concerned (i.e. grid access charges, RES Levy and public services charges), the latter are calculated as follows: • The charges for RES Levy and grid access are calculated based on the energy absorbed • The charge for Public Services Obligations (PSOs) is based on the energy consumed
Hungary	Yes	Household-sized power installations (HMKE) with a capacity of 50 kVA or below are eligible for net metering in case that the power plant connects to the low-voltage grid. Connection to the public grid is only possible with an operational approval. If the approval is given, the local electricity trader or the universal supplier is obliged to take over the electricity fed into the public grid upon request of the producer. The electricity surplus injected to the grid is remunerated by the electricity supplier at the average electricity product price (without system usage costs and other surcharges).
Ireland	No	

Country	Net-metering in place?	What does it look like?
Italy	Yes	Net-metering can be applied to final customers with RES plant up to 500 kW or high efficiency CHP plants up to 200 kW. It is not a physical compensation between electricity withdrawn from the grid and electricity injected into the grid, but an economic compensation between their market values. Moreover, the Gestore dei Servizi Energetici S.p.A. (GSE) recognises a financial contribution, equal to the variable part (in €/kWh) of network charges and of general system charges for the minimum between electricity withdrawn from the grid and electricity injected into the grid, just as if that energy had not used the grid. This economic "net-metering" mechanism is called "*Scambio sul posto*".
Latvia	Yes	Net-metering is available for households only. The electricity feed-in network and withdrawn from network is netted when calculating levies.
Lithuania	Yes	Smart metering systems are connected to RES plants and collects data about produced energy quantity.
Luxembourg	No	
Malta	No	
Netherlands	N/A	
North Macedonia	No	
Norway	No	
Poland	Yes	Net-metering has been introduced for renewable energy prosumers.
Portugal	No	
Romania	No	
Slovakia	No	
Slovenia	Yes	In Slovenia, for households and small business customers self-consumption is also possible on a yearly compensation basis outside the support scheme (http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED7867).
Spain	Yes	In some self-consumption configurations, it is possible to get a value over the electricity injected to the grid. The value is related to the value of the energy in the wholesale market.
Sweden	No	
UK	No	

Annex 17 – Energy sharing

Country	Is there any system in place that incentivises the sharing of self-produced RES electricity (i.e. although using the public grid, no or lower grid charges are charged for the consumed (shared, self-produced) RES electricity)?	How do you define "energy sharing", i.e. describe the implemented scheme?
Austria	Yes	Sharing within the same building is already possible. In this case, the RES plant can be connected directly to the mainline within the building, which is seen as public grid, but production and consumption are netted on a 15-minute basis. And the electricity consumed via that scheme is seen as self-produced and self-consumed.
Croatia	No	
Cyprus	Yes	No grid charges are charged for the self-produced RES electricity.
Czech Republic	Yes	There is no special scheme for sharing of self-produced RES electricity, with the exception of self-consumption. These market participants must be in the green bonus regime (FiP). The amount of own electricity consumption (produced and consumed at the same time), i.e. consumed without the use of the transmission or distribution network, is not charged for network fees, system services, payment for support of electricity from supported energy sources or payment for market operator activities. Electricity tax is not even paid on the own electricity consumption.
Denmark	N/A	
Estonia	No	
France	Yes	As described in question 16, the law defines the collective self-consumption rules, where one or more consumers partner with one or more producers to exchange electricity, either within one and the same building or in “geographic proximity” to each other. The "geographic proximity" criteria require that the production and consumption sites are within a distance of 2 km and that the total power does not excess 3 MW. Since August 2018, consumers engaged in collective self-consumption operations are free to opt for a dedicated network tariffication including a rebate on self-consumed electricity (and a markup on electricity purchased from the network). The economic incentive of this tariffication option depends on the self-consumption project.
Georgia	Yes	Group of consumers can negotiate and connect to the grid RES generator up to 500 MW. It is not necessary that generator and consumption point coincide. Members of the group can negotiate on the principle of allocating generated electricity and the local DSO (who is at the same tine supplier) will allocate that part of the electricity to each member's bill.
Germany	No	
Greece	No	
Hungary	No	

Country	Is there any system in place that incentivises the sharing of self-produced RES electricity (i.e. although using the public grid, no or lower grid charges are charged for the consumed (shared, self-produced) RES electricity)?	How do you define "energy sharing", i.e. describe the implemented scheme?
Ireland	No	
Italy	Yes	The Italian Authority, with the resolution 318/2020/R/eel, defined the procedure to set up renewable energy communities and jointly acting renewables self-consumers and the economic regulation for the shared electricity among renewable energy communities and jointly acting renewables self-consumers. In particular, such a resolution foresees that the GSE returns a fee once a year; this fee is equal to: - in case of RES energy communities: the product between the shared electricity and the variable part (in c€/kWh) of transmission and distribution network tariffs (defined for the low voltage final consumers); - in case of jointly acting renewables self-consumers: the sum between i) the product between the shared electricity and the variable part (in c€/kWh) of transmission and distribution network tariffs (defined for the low voltage final consumers), and ii) the product between the shared electricity, the zonal energy price and the avoided network losses coefficient (this coefficient is defined according to the power plants voltage level: 1.2% in case of low-voltage plants, 2.6% in case of medium voltage plants). This economic regulation is not to be considered an incentive since it aims at considering the grid cost reduction deriving from self-consumption. Furthermore, the recently approved Decree of the Minister of Economic Development defined the incentive to promote the collective energy sharing and the RES energy communities, including through the use of storage systems. The incentive for self-consumed energy will be respectively equal to: - 100 €/MWh for collective self-consumption configurations; - 110 €MWh for RES energy communities. The incentives are recognized for a period of 20 years and are managed by the Gestore dei Servizi Energetici S.p.A. (GSE).
Latvia	Yes	According to the net-metering system, the RES electricity is partly exempted for levies – the self-consumption and the part of electricity feed in network is not subject for levies related to the RES support scheme, which are paid by all users.
Lithuania	Yes	A remote RES energy plant can be linked to only one point of consumption. Although, there are RES producing communities which share produced electricity among community members.
Luxembourg	Yes	Electricity produced by members of a Local RE Community, meeting the criteria set by law, and shared with consumption by other members of the same community within a 15-minute period, is not subject to any grid fee, tax or levies.
Malta	No	

Country	Is there any system in place that incentivises the sharing of self-produced RES electricity (i.e. although using the public grid, no or lower grid charges are charged for the consumed (shared, self-produced) RES electricity)?	How do you define "energy sharing", i.e. describe the implemented scheme?
Netherlands	Yes	A *PostCodeRoos* is a demarcated area within which a local energy cooperative can recruit its participants because they are entitled to a refund of the energy tax when they participate. The condition is that these participants are connected to the grid via a small consumer connection (max. 3 x 80 Ampere). This *PostCodeRoos* area is determined by the place (zip code) where the production installation for the generation is located. This 4-digit area is the heart of the rose. The *PostCodeRoos* area is formed by this heart together with all adjacent 4-digit postcode areas (which form the petals of the rose). Even if an adjacent postcode area is adjacent to the heart with a small dot, the area can be counted as a bullseye.
North Macedonia	No	
Norway	No	
Poland	Yes	The Act on Renewable Energy Sources provides for support for RES prosumers introducing electricity to the grid through preferential settlement of electricity sales. In addition, the aforementioned Act also introduces the institution of an energy cooperative, i.e. – a cooperative within the meaning of the Act of 16 September 1982 – Cooperative Law or the Act of October 4, 2018 on farmers' cooperatives, the object of which is the production of electricity or biogas or heat in RES installations and balancing the demand for electricity or biogas or heat, only for the own needs of an energy cooperative and its members, connected to an area-defined electricity distribution network with a rated voltage lower than 110 kV or a gas distribution network, or a heating network. However, it should be emphasised that in 2018-2019, to which this report relates, there were no active energy cooperatives in Poland.
Portugal	Yes	The 2019 law decree (162/2019) defines individual and collective self-consumption and as such allows energy sharing. It determines a special network tariff for self-consumption energy using the grid (regular network tariff deducted of upper voltage network tariffs and policy costs). It also establishes energy communities.
Romania	No	
Slovakia	Yes	With the local source, if its generation exceeds consumption, up to 10 % of installed capacity may be provided as reserved capacity.
Slovenia	No	
Spain	No	
Sweden	Yes	There is a tax release for self-produced RES energy that is fed into the public grid up to 30 MWh per year.

Country	Is there any system in place that incentivises the sharing of self-produced RES electricity (i.e. although using the public grid, no or lower grid charges are charged for the consumed (shared, self-produced) RES electricity)?	How do you define "energy sharing", i.e. describe the implemented scheme?
UK	No	

Annex 18 – Renewable Energy Communities

Country	Could a REC own and operate a grid under your current laws (all rights and obligations apply i.e. municipal utilities as RECs if they'd fulfil all the criteria of a REC)?	What legal changes have been made or will be made to implement the concept of RECs?
Austria	No	There is a first draft of a new renewables law which would permit a Renewable Energy Communities (REC) to own and operate a distribution grid.
Croatia	No	There have not been any legal changes to implement RECs yet, only preliminary activities.
Cyprus	N/A	There are no REC in Cyprus yet. No legal changes have been made yet concerning RECs. However, provisions for Energy Communities are included in the revision of the Law Regulating the Electricity Market which is currently under discussion.
Czech Republic	No	There will be made the next legal changes: - Amendment of the Energy Act - Amendment of the Act on promoted energy sources - Related decrees/regulations
Denmark	N/A	
Estonia	No	An amendment to the law is taking place.
France	No	The French law on energy and climate of November 8th 2019 introduces the concept of RECs, as defined in the RED II. But the practical details are not outlined yet.
Georgia	No	
Germany	Yes	In the onshore wind tenders, special rules (uniform pricing instead of pay as bid) apply for LECs. However, only few bidders participate as a LEC as the special rules do not bring many benefits since they also have to submit a valid building permit for participating. In the revision process of the EEG, it is foreseen to have local public entities financially participating in wind projects, however, only on a voluntarily basis.
Greece	No	The legislature framework for the creation and the operation of a REC in Greece was first established by Law 4513/2018. The RECs can self-consume the electricity they generate but also participate in the current normal and virtual net-metering scheme as any other generator. In addition, under Ministerial Decision ΥΠΕΝ/ΔΑΠΕΕΚ/15084/382 (ΦΕΚ Β' 759/5.3.2019) the RECs get priority review in their grid connection applications. The RECs may receive operating aid in €/MWh with favourable conditions compared to other generators (RECs with PV projects up to 1 MW and on-shore wind projects up to 6 MW may receive operating aid in a form of FiT without participating in auctions). In addition, RECs get priority review of their production licenses by RAE and get a 50% discount in the Guarantee they provide to the DSO upon the acceptance of the terms of the final connection offer to the grid.
Hungary	No	No public information available yet.
Ireland	No	The RESS scheme allows for the participation of community-led projects.

Country	Could a REC own and operate a grid under your current laws (all rights and obligations apply i.e. municipal utilities as RECs if they'd fulfil all the criteria of a REC)?	What legal changes have been made or will be made to implement the concept of RECs?
Italy	No	Article 42bis of Decree-Law no. 162/19 (coordinated with the conversion Law n. 8/20), introduces a transient discipline for the implementation of articles 21 and 22 of directive 2018/2001, aimed at acquiring elements useful for the complete transposition of directive 2018/2001. From this Decree-Law is derived: - the economic regulation of the shared electricity among renewable energy communities and jointly acting renewables self-consumers defined by the Italian Authority, with the resolution 318/2020/R/eel; - the tariff with which is promoting the collective self-consumption and the RES energy communities defined by the recently approved Decree of the Minister of Economic Development.
Latvia	No	According to the milestones set in National Energy and Climate Plan for 2021-2030, there shall be developed new regulation on RECs up to the end of July 2021, and additional research carried out until 2026. The focus in promotion self-generation, self-consumption and RECs will be on economically-justified models, educating the public and tax benefits for green energy, including financial support programs.
Lithuania	Yes	In 2020, changes were made in the Law on Energy from Renewable Sources to legitimise the REC and set their criteria and responsibilities.
Luxembourg	No	An update of National law occurred in early 2021, introducing collective electricity sharing and local renewable electricity communities.
Malta	No	Still under consideration.
Netherlands	No	
North Macedonia	No	
Norway	N/A	
Poland	No	Pursuant to the RES Act, the operator of the electricity distribution system with which the energy cluster intends to cooperate is obliged to conclude an agreement with the coordinator of the energy cluster for the provision of distribution services, referred to in Art. 5 of the Energy Law.
Portugal	Yes	Law decree 162/2019 establishes energy communities.
Romania	No	Romania is in the phase of transposing the European provisions in this respect.
Slovakia	No	In progress.
Slovenia	No	None yet.
Spain	No	Changes in the Electricity Act 24/2013.

Country	Could a REC own and operate a grid under your current laws (all rights and obligations apply i.e. municipal utilities as RECs if they'd fulfil all the criteria of a REC)?	What legal changes have been made or will be made to implement the concept of RECs?
Sweden	No	A new law covering the responsibilities of energy communities, including RECs, have been suggested by the Swedish NRA to implement the concept of RECs in Sweden. The suggestion is currently under referral.
UK	Yes	A REC can become an Independent Distribution Network Operator (IDNO).

Annex 19 – About CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national energy regulators. CEER's members and observers comprise 39 national energy regulatory authorities (NRAs) from across Europe.

CEER is legally established as a not-for-profit association under Belgian law, with a small Secretariat based in Brussels to assist the organisation.

CEER supports its NRA members/observers in their responsibilities, sharing experience and developing regulatory capacity and best practices. It does so by facilitating expert working group meetings, hosting workshops and events, supporting the development and publication of regulatory papers, and through an in-house Training Academy. Through CEER, European NRAs cooperate and develop common position papers, advice and forward-thinking recommendations to improve the electricity and gas markets for the benefit of consumers and businesses.

In terms of policy, CEER actively promotes an investment friendly, harmonised regulatory environment and the consistent application of existing EU legislation. A key objective of CEER is to facilitate the creation of a single, competitive, efficient and sustainable Internal Energy Market in Europe that works in the consumer interest.

Specifically, CEER deals with a range of energy regulatory issues including wholesale and retail markets; consumer issues; distribution networks; smart grids; flexibility; sustainability; and international cooperation.

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More information at www.ceer.eu.