

**PROGRESS REPORT ON THE PROMOTION AND USE OF ENERGY FROM RENEWABLE SOURCES  
PURSUANT TO ARTICLE 22 OF DIRECTIVE 2009/28/EC**

**SPAIN**

**(2017 and 2018)**

23 December 2019

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## INTRODUCTION

Spain's National Renewable Energy Action Plan (NREAP) for 2011–2020, dated 30 June 2010, was submitted to the European Commission on 6 July 2010 in accordance with 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. This Plan was later updated and replaced by a new NREAP dated 20 December 2011, which was submitted to the European Commission on 5 January 2012.

Due to this revision of the NREAP, and in accordance with Article 22 of the above Directive, the first progress report (for 2009 and 2010) was sent to the European Commission in June 2012.

Three further two-yearly reports were subsequently submitted, covering the 2011-2012, 2013-2014 and 2015-2016 periods.

### 1. Sectoral and overall shares and actual consumption of energy from renewable sources in 2017 and 2018

The shares of gross final energy consumption represented by energy from renewable sources in 2017 and 2018 within the three main sectors, as laid down by Directive 2009/28/EC, are summarised in table 1.

**Table 1: sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources<sup>1</sup>**

	2017	2018
Share of renewable energy in heating and cooling [RES-H&C <sup>2</sup> (%)]	17.62%	17.36%
Share of renewable energy in electricity [RES-E <sup>3</sup> (%)]	36.40%	35.16%
Share of renewable energy in transport [RES-T <sup>4</sup> (%)]	5.80%	6.94%
Overall share of renewable energy sources [RES <sup>5</sup> (%)]	17.56%	17.41%
<i>Of which from cooperation mechanism<sup>6</sup> (%)</i>	0	0
<i>Surplus for cooperation mechanism<sup>7</sup> (%)</i>	0	0

Table 1.a is the calculation table for the renewable energy contribution of each sector to final energy consumption in 2017 and 2018.

<sup>1</sup> Facilitates comparison with Table 3 and Table 4a of the NREAPs.

<sup>2</sup> Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Articles 5(1)b) and 5(4) of Directive 2009/28/EC divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of NREAPs applies.

<sup>3</sup> Share of renewable energy in electricity: gross final consumption of electricity from renewable sources for electricity (as defined in Articles 5(1)a) and 5(3) of Directive 2009/28/EC divided by total gross final consumption of electricity. The same methodology as in Table 3 of NREAPs applies.

<sup>4</sup> Share of renewable energy in transport: final energy from renewable sources consumed in transport (cf. Article 5(1)c) and 5(5) of Directive 2009/28/EC divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport; and 4) electricity in transport due to biofuels used in land transport. The same methodology as in Table 3 of NREAPs applies.

<sup>5</sup> Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

<sup>6</sup> In percentage point of overall RES share.

<sup>7</sup> In percentage point of overall RES share.

**Table 1a: calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)<sup>8</sup>**

	2017	2018
a) Gross final consumption of RES for heating and cooling	5,109.4	5,230.1
b) Gross final consumption of electricity from RES	8,702.9	8,431.0
c) Gross final consumption of energy from RES in transport	1,495.8	1,865.7
d) Gross total RES consumption <sup>9</sup>	15,308.0	15,526.7
e) Transfer of RES to other Member States	0.0	0.0
f) Transfer of RES from other Member States and 3rd countries	0.0	0.0
g) RES consumption adjusted for target d)+(e)+f)	15,308.0	15,526.7

Table 1.b shows details of the power generated in 2017 and 2018 in terms of output and quantity.

**Table 1.b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in Spain to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity<sup>10</sup>**

	2017		2018	
	MW	GWh	MW	GWh
<i>Hydro:</i> <sup>11</sup>	20,079.0	30,964.4	20,079.6	30,317.5
<i>non pumped</i>	14,052.0	28,731.3	14,052.6	28,203.2
<i>pumped</i>	3,337.0	0.0	3,337.0	0.0
<i>mixed</i> <sup>12</sup>	2,690.0	2,233.1	2,690.0	2,114.3
<i>Geothermal</i>	0.0	0.0	0.0	0.0
<i>Solar:</i>	7,027.1	14,397.0	7,067.6	12,744.0
<i>photovoltaic</i>	4,723.0	8,514.0	4,763.5	7,877.0
<i>concentrated solar power</i>	2,304.1	5,883.0	2,304.1	4,867.0
<i>Tide, wave, ocean</i>	0.0	0.0	0.0	0.0
<i>Wind:</i> <sup>13</sup>	23,124.5	51,231.4	23,405.1	50,557.3
<i>onshore</i>	23,124.5	51,231.4	23,405.1	50,557.3
<i>offshore</i>	0.0	0.0	0.0	0.0
<i>Biomass:</i> <sup>14</sup>	901.0	5,306.0	901.0	5,144.0
<i>solid biomass</i>	677.0	4,365.0	677.0	4,221.0
<i>biogas</i>	224.0	941.0	224.0	923.0
<i>bioliquids</i>	0.0	0.0	6.4	0.0
<i>Municipal solid waste (renewable)</i> <sup>15</sup>	242.0	772.0	241.3	755.0
<i>From biogas blended in the grid</i> <sup>16</sup>	-	16.8	-	15.6

<sup>8</sup> Facilitates comparison with Table 4a of the NREAPs

<sup>9</sup> According to Art.5(1)of Directive 2009/28/EC, gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.

<sup>10</sup> Facilitates comparison with Table 10a of the NREAPs

<sup>11</sup> Normalised in accordance with Directive 2009/28/EC and Eurostat methodology. Following the formats used for annual statistics, a breakdown by capacity is no longer provided.

<sup>12</sup> In accordance with new Eurostat methodology.

<sup>13</sup> Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

<sup>14</sup> Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

<sup>15</sup> Included based on the latest SHARES template.

<sup>16</sup> Included based on the latest SHARES template.

<i>TOTAL</i>	51,373.6	102,687.6	51,694.6	99,533.4
<i>of which in CHP</i>		1,204.0		1,209.0

Table 1.c sets out the targets for heat/cooling generation technologies, which include geothermal (including heat pumps), solar thermal, biomass (solid-state or biogas) and aerothermal energy for 2017 and 2018.

**Table 1.c: total actual contribution (final energy consumption<sup>17</sup>) from each renewable energy technology in Spain to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)<sup>18</sup>**

	2017	2018
Geothermal (excluding low temperature geothermal heat in heat pump applications)	18.8	18.8
Solar	308.4	324.3
Biomass: <sup>19</sup>	4,144.5	4,136.8
<i>solid biomass</i>	4,091.3	4,082.0
<i>biogas</i>	53.2	54.8
<i>bioliquids</i>	0.0	0.0
Municipal solid waste (renewable) <sup>20</sup>	7.0	4.2
From biogas blended in the grid <sup>21</sup>	3.5	3.8
Renewable energy from heat pumps:	627.1	742.1
<i>of which aerothermal</i>	595.6	710.0
<i>of which geothermal</i>	17.4	17.9
<i>of which hydrothermal</i>	9.4	9.4
Other	4.7	4.8
TOTAL	5,109.4	5,230.1
<i>Of which DH<sup>22</sup></i>		
<i>Of which biomass in households<sup>23</sup></i>	2,511.1	2,515.9

Table 1.d details all renewable energy sources used in the transport sector in 2017 and 2018.

**Table 1d: total actual contribution from each renewable energy technology in Spain to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)<sup>24, 25</sup>**

<sup>17</sup> Direct use and district heat as defined in Article 5(4) of Directive 2009/28/EC.

<sup>18</sup> Facilitates comparison with Table 11 of the NREAPs.

<sup>19</sup> Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

<sup>20</sup> Included based on the latest SHARES template.

<sup>21</sup> Included based on the latest SHARES template.

<sup>22</sup> District heating and / or cooling from total renewable heating and cooling consumption (RES- DH).

<sup>23</sup> From the total renewable heating and cooling consumption.

<sup>24</sup> For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

<sup>25</sup> Facilitates comparison with Table 12 of the NREAPs.

	2017	2018
- Bioethanol	17.9	23.8
- Biodiesel (FAME)	919.7	1,310.2
- Hydrotreated Vegetable Oil (HVO)	308.7	269.6
- Biomethane		
- Fischer-Tropsch diesel		
- Bio-ETBE	122.9	134.8
- Bio MTBE		
- Bio-DME		
- Bio-TAEE		
- Biobutanol		
- Biomethanol		
- Pure vegetable oil		
Total sustainable biofuels	1,369.1	1,738.3
Of which		
sustainable biofuels produced from feedstock listed in Annex IX Part A		
other sustainable biofuels eligible for the target set out in Article 3(4)e		
sustainable biofuels produced from feedstock listed in Annex IX Part B <sup>26</sup>	2.4	1.2
sustainable biofuels for which the contribution towards the renewable energy target is limited according to Article 3(4)d	1,366.8	1,737.1
Imported from third countries	103.0	380.6
Hydrogen from renewables		
Renewable electricity	126.6	127.4
Of which		
consumed in road transport	1.8	3.6
consumed in rail transport	116.0	114.7
consumed in other transport sectors	8.8	9.1
others (Please specify)		
others (Please specify)		

<sup>26</sup> The information that the ECB collects on the types of feedstock used does not currently distinguish category 1 and category 2 animal fats from other animal fats. Paragraph b of Part B of Annex IX includes only category-1 and category-2 animal fats. As disaggregated data are not available, it is not possible to break the amounts of total animal fats down by category. Therefore, the only biofuels from Annex IX Part B included in table 1d are those produced from used oils. Biofuels from animal fats have been included in the category covered by Article 3(4)(d), i.e. materials with a limited contribution.

**2. Measures taken in 2017 and 2018 and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan (Article 22(1)a) of Directive 2009/28/EC)**

**Table 2: Overview of all policies and measures**

General measures

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Royal Decree-Law 15/2018 of 5 October 2018 introducing urgent energy transition and consumer protection measures	Regulatory	Boosting self-generation of renewable electricity, a key element for consumers to be able to obtain cleaner and cheaper energy and actively contribute to the energy transition, recognising consumers' right to use the power they generate, along with the right to shared self-generation by one or more consumers, and introducing administrative and technical simplification measures aimed particularly at small-capacity power plants. Measures aimed at preventing speculation and ensuring the completion of projects that have already been granted grid access rights.	Self-generators (end users), power plant developers	Existing	2018-
Royal Decree-Law 20/2018 of 7 December 2018 introducing urgent measures to foster economic competitiveness in Spanish industry and trade	Regulatory	Introduction of 'closed distribution systems', which supply power to a reduced industrial, commercial or shared-services area.	Various participants in the electricity system	Existing	2018-

Measures targeting renewable energy in the electricity sector

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
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Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Further development of international interconnections	Soft/financial	Better security of supply, with more non-manageable renewable electricity integrated into the grid, shifting Spain away from its current status as an isolated 'energy island'.	Electricity system operators, power plant operators and rights-holders	Existing and planned	2012-2020 2016-
Ministerial Order ETU/130/2017 of 17 February 2017 updating the standard plant remuneration parameters applicable to certain renewable energy, cogeneration and waste-to-energy plants for the purposes of applying these parameters in the regulatory half-period commencing on 1 January 2017	Regulatory	A more financially efficient system based on the principle of reasonable return.	Rights-holders of plants generating electricity from renewable sources	Existing	2017-
Royal Decree 359/2017 of 31 March 2017 announcing a call for applications for the specific remuneration scheme for new plants producing electricity from renewable energy sources in the mainland electricity system	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Ministerial Order ETU/315/2017 of 6 April 2017 regulating the procedure for awarding the specific remuneration scheme to new plants producing electricity from renewable energy sources under the call for applications governed by Royal Decree 359/2017 of 31 March 2017, and approving the corresponding remuneration parameters	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Secretariat of State for Energy Decision of 10 April 2017 establishing the procedure and rules of the bidding process for the award of the specific remuneration scheme to new plants producing electricity from renewable energy sources, announced under the terms of Royal Decree 359/2017 of 31 March 2017	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
and implemented by Ministerial Order ETU/315/2017 of 6 April 2017					
Secretariat of State for Energy Decision of 10 April 2017 inviting bids for the award of the specific remuneration scheme for new plants producing electricity from renewable energy sources, in accordance with the provisions of Ministerial Order ETU/315/2017 of 6 April 2017	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Directorate-General for Energy Policy and Mines Decision of 19 May 2017 publishing the results of the bidding for the specific remuneration scheme in accordance with the provisions of Royal Decree 359/2017 of 31 March 2017 and of Ministerial Order ETU/315/2017 of 6 April 2017	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Royal Decree 650/2017 of 16 June 2017 establishing a quota of 3,000 MW of installed capacity for new plants producing electricity from renewable energy sources located in the mainland electricity system and eligible for award of the specific remuneration scheme	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Ministerial Order ETU/615/2017 of 27 June 2017 publishing the results of the bidding for the specific remuneration scheme, the corresponding remuneration parameters and the other matters applicable to the quota of 3,000 MW of installed capacity issued under the terms of Royal Decree 650/2017 of 16 June 2017	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Secretariat of State for Energy Decision of 30 June 2017 inviting bids for the specific remuneration scheme for new plants producing electricity from renewable energy sources, in accordance with Royal Decree 650/2017 of 16 June 2017	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Directorate-General for Energy Policy and Mines Decision of 27 July 2017 publishing the results of the bidding for the specific remuneration scheme in accordance with the provisions of Royal Decree 650/2017 of 16 June 2017 and of Ministerial Order ETU/615/2017 of 27 June 2017	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Directorate-General for Energy Policy and Mines Decision of 1 August 2017 whereby the winning bids for the specific remuneration scheme, announced in accordance with the provisions of Royal Decree 359/2017 of 31 March 2017 and of Ministerial Order ETU/315/2017 of 6 April 2017, are listed as 'pre-allocated' in the specific remuneration scheme register	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-
Directorate-General for Energy Policy and Mines Decision of 10 October 2017 whereby the winning bids for the specific remuneration scheme, announced in accordance with the provisions of Royal Decree 650/2017 of 16 June 2017 and of Ministerial Order ETU/615/2017 of 27 June 2017, are listed as 'pre-allocated' in the specific remuneration scheme register	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2017-

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Ministerial Order ETU/1046/2017 of 27 October 2017 establishing the remuneration for operation in the second half of the 2017 calendar year, approving standard plants and establishing the corresponding remuneration parameters applicable to certain renewable energy, cogeneration and waste-to-energy plants	Regulatory	A more financially efficient system based on the principle of reasonable return.	Rights-holders of plants generating electricity from renewable sources	Existing	2017-
Ministerial Order ETU/360/2018 of 6 April 2018 establishing the remuneration for operation in the first half of the 2018 calendar year, and approving a standard plant and the corresponding remuneration parameters, applicable to certain renewable energy, cogeneration and waste-to-energy plants	Regulatory	A more financially efficient system based on the principle of reasonable return.	Rights-holders of plants generating electricity from renewable sources	Existing	2018-
Ministerial Order TEC/1302/2018 of 4 December 2018 establishing the necessary arrangements to set up a system of aid for investment in facilities generating power from renewable sources off the Spanish mainland, and ordering that €60 million be transferred from the electricity surplus to the budget of the Energy Savings and Diversification Institute with effect from 2017	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2018-
Ministerial Order TEC/1314/2018 of 7 December 2018 establishing the necessary arrangements to set up a system of aid for investment in facilities generating power from renewable sources, and ordering that €60 million be transferred from the electricity surplus to the budget of the Energy Savings and Diversification Institute	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Completed	2018-

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
with effect in budget year 2018					
Ministerial Order TEC/1380/2018 of 20 December 2018, laying down the terms and conditions for granting aid for investments in wind or photovoltaic generation facilities located off the Spanish mainland, co-financed with the ERDF	Regulatory	Better security of supply, allowing more renewable electricity to be integrated into the grid.	Developers of power generation plants	Existing <sup>27</sup>	2018-
Royal Decree 1516/2018 of 28 December 2018 amending Royal Decree 616/2017 of 16 June 2017, regulating the direct award of subsidies to individual local authority-led projects which favour a shift towards a low-carbon economy within the framework of the 2014-2020 ERDF operational programme on sustainable growth, extending its budget and period of validity	Regulatory	Promoting renewable energy and a low carbon economy	Local authorities, to support projects to increase sustainable mobility, renewable energy use and energy efficiency	Existing <sup>28</sup>	2018-
Decision of 9 May 2018 of the Secretariat of State for Energy, approving the rules for the functioning of day-ahead and intraday power generation markets	Legislation	Creation of the continuous intraday market, allowing a more tailored approach to generation imbalances,	Electricity market participants	Existing and repealed by new rules	2018-

<sup>27</sup> Under the approved terms and conditions, the first call for applications aimed at wind power generation facilities in the Canary Islands was published in a Decision of the Energy Savings and Diversification Institute dated 27 December 2018, and a first call for applications for aid supporting investments in solar photovoltaic power generation facilities in the Balearic Islands was published in a Decision of the Directorate-General of the Energy Savings and Diversification Institute of 27 March 2019.

<sup>28</sup> Under the approved terms and conditions, the first call for applications aimed at wind power generation facilities in the Canary Islands was published via a Decision of the Energy Savings and Diversification Institute dated 27 December 2018. Moreover, the Decision of 27 March 2019 of the Directorate-General of the Institute for Energy Diversification and Saving established the first call for applications for subsidies for investments in solar photovoltaic power generation facilities in the Balearic Islands.

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
		especially for the renewable sector.			

Measures targeting renewable energy for thermal use

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
1. BIOMCASA, GEOCASA and SOLCASA programmes	Financial	Establishing of a system for financing projects submitted by ESCOs [1] which, as well as promoting the ESCOs themselves, promotes high-quality systems using solar thermal, geothermal or biomass energy adapted to the needs of users of hot water and heating/cooling systems in buildings.	ESCOs, commonhold associations and other building owners	Existing	2009-
2. Integration of renewable energy in public buildings	Soft	Integration of renewable energy in public buildings	Public authorities	Existing	2012-2020
3. GIT ( <i>Grandes Instalaciones Térmicas</i> or 'large-scale thermal plants') programme: funding for approved developers of large-scale thermal plants using energy from renewable sources in building and industry	Financial	Promotion of large-scale thermal energy production plants in buildings based on the use of renewable sources of energy (biomass, solar thermal and geothermal). This new line of funding is intended for projects that, due to their size and complexity, fall outside the limits set in the calls for funding under the BIOMCASA, SOLCASA and GEOTCASA programmes and therefore constitutes a system for funding large-scale plants in such areas through ESCOs.	ESCOs, building sector and industry	Existing	2011-
4. Second call for applications for aid to	Financial	Fostering and incentivising of reform measures that help reduce carbon dioxide	Owners of buildings with legal personality, residential	Completed	2017-2018 [2]

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
finance energy-related retrofits of existing buildings ('PAREER II')		emissions, through energy savings, improvements in energy efficiency and the use of renewable sources of energy (solar thermal and geothermal) in existing buildings, whatever they are used for and irrespective of the legal status of their owners or rights-holders.	commonhold associations and groups of commonhold associations, property owners' groups, businesses that operate, lease or hold concessions for buildings and ESCOs [1].		

[1] Energy service companies (ESCOs).

[2] The deadline for submitting applications was 31 December 2018. Once the applications have been assessed and approved, the works are to be carried out within a two-year period.

#### Measures specific to the solar sector

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
1. Proposals to boost professionalism in the sector.	Information / Training	Improvement of general plant quality. Change in attitudes towards solar energy.	Installers, developers and end-users	Under development	2011-2020
2. Helping to standardise components and arrangements for solar thermal plants	Promotion	Optimisation of production processes, cost reduction and better market penetration by this technology.	Certifying entities, laboratories, technology centres, manufacturers and installers	Existing	2013-2020

#### Measures specific to the biomass, biogas and waste sectors

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
1. Regulation and standardisation of biomass fuels	Regulatory	Standardisation of the various types of biomass for domestic use, including specific regulations and standards for pellets, etc.	Public authorities, AENOR (Spanish standardisation body)	Under development	2000-
2. Monitoring of national and	Soft	Monitoring of and reaction to	All sector participants	Under	2016-2020

international biomass markets.		fluctuations in national and international markets.		development	
3. Setting of sector-specific energy-recovery targets for certain flows of waste with fully or partially renewable content	Regulatory	Reduction of the current high volume of waste and increase in energy recovery.	Public authorities, waste management companies, potential corporate consumers	Planned	2015-...

#### Measures specific to the biofuels sector

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
1. Ministerial Order TEC/1420/2018 of 27 December 2018, containing implementing rules on detailed aspects of the National System for Sustainability Verification regulated by Royal Decree 1597/2011 of 4 November 2011 on the sustainability criteria for biofuels and bioliquids, the National System for Sustainability Verification and the double value of certain biofuels for the purposes of their calculation	Regulatory	Implementing legislation going into the necessary detail for the use of the national system for sustainability verification, moving forward in verification control to meet the requirements of EU legislation.	Biofuels sector	Existing	2019-2020
2. Royal Decree 235/2018 of 27 April 2018, establishing the calculation methods and reporting requirements relating to the greenhouse gas emission intensity of fuels and energy in transport; amending Royal Decree 1597/2011 of 4 November 2011 regulating the sustainability criteria applicable to biofuels and bioliquids, the national sustainability verification system and the double counting of certain biofuels; and setting an indicative target for the sale or consumption of advanced biofuels	Regulatory	Monitoring of the reduction in greenhouse gas emissions throughout the entire life cycle for each unit of energy from fuel or energy supplied in transport. Adaptation of the sustainability criteria for biofuels and bioliquids to match those laid down in Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Changes to the National Sustainability Verification System for biofuels and bioliquids	Transport fuel and energy sector	Existing	2018-2020



Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
		Promotion of the use of advanced biofuels.			

#### Measures adopted since 1 January 2019

##### General measures:

Spain's draft National Integrated Energy and Climate Plan (NECP) for 2021-2030 was sent to the European Commission at the beginning of 2019. It lays the groundwork for modernising the Spanish economy, positioning Spain at the forefront of renewable energy use, developing rural areas, improving human health and the environment, and achieving social justice.

Starting out from the core target of reducing greenhouse gas emissions by 21% on the 1990 level, the draft NECP aims to have renewables accounting for 42% of Spain's end energy use by 2030 and renewable sources contributing 74% of power generation by 2030. These goals would, in turn, reduce Spain's external energy dependency by 15 percentage points from the current 74% to 59% by 2030; improve energy efficiency by 39.6%; create between 250,000 and 364,000 net jobs per year between 2021 and 2030; mobilise around €236 billion over the course of the decade; and bring estimated health co-benefits in the form of 2,222 fewer premature deaths caused by air pollution in 2030 compared to the trend scenario.

The NECP is part of the 'Strategic Energy and Climate Framework: a proposal for modernisation and job creation in Spain', a process which also includes drafting a preliminary Climate Change and Energy Transition Bill and the 'Just Transition Strategy'.

##### Measures targeting renewable energy in the electricity sector

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
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Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Royal Decree 244/2019 of 5 April 2019 regulating the administrative, technical and economic conditions of the self-generation of electricity (RD 244/2019)	Regulatory	<p>Completion of the regulatory framework on self-generation that began with Royal Decree-Law 15/2018.</p> <p>Introduction of the concept of shared self-generation so commonhold associations can begin to adopt this formula.</p> <p>Introduction of a simplified compensation mechanism for the energy generated and not consumed instantaneously by small consumers of self-generated energy.</p> <p>Cutting of red tape, especially for small consumers of self-generated energy.</p>	Consumers of self-generated energy	Existing	2019-
Ministerial Order TEC/427/2019 of 5 April 2019 establishing the remuneration for operation in the second half of the 2018 calendar year, approving standard plants and establishing the corresponding remuneration parameters applicable to certain renewable energy, cogeneration and waste-to-energy plants.	Regulatory	A more financially efficient system based on the principle of reasonable return.	Rights-holders of plants generating electricity from renewable sources	Existing	2019-
Royal Decree-Law 17/2019 of 22 November 2019, adopting urgent measures for the necessary adaptation of the remuneration criteria used in the electricity system and reacting to the shut-down of operations at thermal power stations	Regulatory	<p>A more financially efficient system based on the principle of reasonable return.</p> <p>Access and connection for new renewable facilities on former sites of nuclear power or coal plants.</p>	Rights-holders of plants generating electricity from renewable sources	Existing	2019-

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Ministerial Order adopting technical instructions complementing the unified regulation on electrical system measurement points	Legislation	Boost for self-generation, in particular through distributed generation of renewable power, with the aim of boosting the use of this option in self-generation	All sector participants	Planned	2019-
Decision of the Secretary of State for Energy approving certain operational procedures for adaptation to Royal Decree 244/2019 of 5 April 2019, regulating the administrative, technical and economic conditions for consuming self-generated power	Legislation	Boost for self-generation, in particular through distributed generation of renewable power, with the aim of boosting the use of this option in self-generation	All sector participants	Planned	2019-
Royal Decree regulating the connection network codes	Legislation	Establishment, in accordance with European legislation, of requirements for connection between generators and demand, including renewable generation.	All sector participants	Planned	2019
Royal Decree on access and connection	Legislation	Establishment and simplification of criteria for access and connection, including renewable generation.	All sector participants	Planned	2019
National Markets and Competition Commission Decision of 10 October 2019, approving the adaptation of the rules for the functioning of the day-ahead and intraday markets and of certain operating procedures to allow for the opening of the continuous intraday market on the Iberian electricity market to be brought forward to 15:00 CET, in accordance with the Decision of the Agency for the Cooperation of Energy Regulators No 04/2018 of 24 April 2012, adopted under Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity	Legislation	Changes to electricity markets with the aim of facilitating integration with European markets, especially for the renewables sector.	Electricity market participants	Existing	2019-

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
allocation and congestion management					

Measures specific to the biofuels sector

Name and reference of the measure	Type of measure (*)	Expected result (**)	Targeted group and/or activity (***)	Existing or planned	Start and end dates of the measure
Circular 1/2019 of 13 March 2019 issued by the National Markets and Competition Commission regulating the management of the mechanism promoting the use of biofuels and other renewable fuels in transport	Regulatory	Regulation of management of the mechanism promoting the use of biofuels within the framework of the obligation to use such fuels in the transport sector, including aspects relating to verifying sustainability.	Entire biofuel value chain	Existing	2019-2020

## **2.a. Description of progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy**

The following administrative simplification measures have been taken with the aim of reducing the red tape involved in installing facilities using renewable energy sources:

Firstly, as already mentioned, there is Royal Decree-Law 15/2018 of 5 October 2018 introducing urgent energy transition and consumer protection measures. It introduced a series of measures aimed at facilitating self-generation of renewable electricity, a key element for consumers to be able to obtain cleaner and cheaper energy and actively contribute to the energy transition. The right to consume one's own power generation at no charge has therefore been recognised, along with the right to shared self-generation by one or more consumers. The text introduces administrative and technical simplification measures aimed particularly at small-capacity power plants. The red tape previously involved in commissioning this type of facility has been significantly cut.

The following measures have also been taken with regard to the formalities for facilities that generate power from renewable sources of energy:

- simultaneous environmental and technical assessment of dossiers, cutting the overall time it takes to process files to three or four months;
- training for developers on the environmental impact assessment, provided by the Secretariat of the State for the Environment with the aim of speeding up processes and improving understanding of the procedure to be followed;
- training for the staff involved in processing dossiers, provided by the Directorate-General for Energy Policy and Mines (as the authority competent for this industry) with the aim of simplifying and speeding up processing.

## **2.b. Description of measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements.**

The measures taken and/or planned during 2017-2018 to optimise the transmission and distribution of electricity produced from renewable sources are summarised below:

### ▪ Electricity transmission network development plan (2015-2020)

On 16 October 2015, the Spanish Cabinet approved the 2015-2020 electricity transmission network development plan.

The Plan primarily aims to ensure the security of electricity supply. It also introduces environmental and financial efficiency criteria and covers the infrastructure necessary to guarantee security of supply within the 2015-2020 planning window.

The factors taken into account in the plan were as follows:

- Fulfilment of electricity grid security and reliability requirements and, consequently, security of supply criteria.

- Minimisation of the overall environmental impact. A strategic environmental assessment was conducted on the electricity transmission network planning. Environmental objectives were part of the planning process from the outset through the participation of the Ministry of Agriculture, Fisheries, Food and Environment.
- Increase of international connection capacity as a means of improving Spain's integration into the single energy market, thus helping to reduce electricity prices.
- Integration of renewable energy into the grid in order to help achieve the targets set for this area for 2020.
- Meeting of demand arising from new industrial activity.
- Network planning in response to an analysis of possible alternatives and costs, making it possible to prioritise investments in order of urgency, adding the consideration of financial aspects to the other criteria.
- Updating the electricity transmission network development plan (2015-2020)

After the Plan had been adopted it was decided that it should include exceptional initiatives that were not originally part of it. These include modules in sub-stations located in both mainland and non-mainland Spain, allowing the power generated from renewable sources to be fed out, as well as initiatives to supply high-speed trains and a new submarine cable linking Majorca and Menorca (as well as dismantling the existing one, which was commissioned in 1975 and is now damaged and out of service).

Amendments to the planning instrument for electricity transmission systems are covered by Article 4(4) of the Electricity Sector Act (Act 24/2013 of 26 December 2013). In order to incorporate these new measures into the Plan, the process of amending the specific aspects of *Energy planning: Electricity transmission network development plan (2015-2020)* was launched in May 2017.

In 2017, the authorities of the Autonomous Communities affected by the change gave their opinions on the proposal, the stakeholders were consulted and a report on the proposal was obtained from the National Markets and Competition Commission. This amendment of specific points of *Energy planning: Electricity transmission network development plan (2015-2020)* – originally adopted by the Spanish Cabinet on 16 October 2015 – was approved by the Cabinet on 27 July 2018, as published in a Decision of the Secretary of State for Energy of 30 July 2018 which appeared in the Official State Gazette on 3 August 2018.

- Further development of international interconnections

Following the entry into service of the cable through the eastern Pyrenees (the commercial operation of this cable commenced in October 2015), doubling the power exchange capacity between Spain and France (from 1,400 MW to 2,800 MW), work has continued on the project to establish a new submarine interconnection running through the Bay of Biscay from the Basque Country.

A transformer/phase-shifter in Arkale (Basque Country) was commissioned in 2017, enabling greater use to be made of the exchange capacity between Spain and France.

Even with the 2015 increase, however, Spain's degree of grid interconnection at the end of 2018 was 6.2% and between the Iberian Peninsula and France it was 2.3% of the installed electricity-

generating capacity, which is well below the interconnection target of at least 10% of installed electricity-generating capacity for all Member States by 2020 envisaged for the Energy Union, and even further from the 15% set for 2030. Even with the interconnections planned to date, Spain will be the only country in continental Europe below the 10% target, necessitating the development of new interconnections.

The current legislation states that the developer should bear connection costs, while the transmitter and distributor are responsible for initially covering the costs of reinforcement or expansion of the transmission and distribution grids, respectively. In other words, Spain applies the 'shallow' approach defined in Decision 2009/548/EC. The legislation on the method for remunerating the transmission and distribution activities guarantees that these operators recover their investments.

As for the specific scope of the connection costs that the developer is required to bear in relation to power generation facilities, under the third additional provision of Royal Decree 1955/2000 of 1 December 2000, the applicant is required to bear the cost of: any new installations necessary between the border point and the point of connection to the transmission or distribution network; upgrading the transmission or distribution company's lines so that they are on the same voltage as the connection point, where necessary; and upgrading the transmission or distribution company's transformer to the same voltage as the connection point.

This will not be applicable to generation facilities falling within the scope of Royal Decree 1699/2011 of 16 November 2011, regulating grid connection by small-capacity power generation facilities.

The remuneration paid to the rights-holders of transmission and distribution facilities is governed by the following ministerial orders:

- Ministerial Order IET/981/2016 of 15 June 2016 establishing the remuneration paid to rights-holders of electricity transmission facilities in 2016.
- Ministerial Order IET/980/2016 of 10 June 2016 establishing the remuneration paid to electricity distribution companies in 2016.

### **3. Description of the support schemes and other measures currently in place that are applied to promote energy from renewable sources and developments in the measures used with respect to those set out in the National Renewable Energy Action Plan**

#### **a) Support systems established by Spain to promote the use of energy from renewable sources in the electricity sector**

The European Commission's decision of 10 November 2017 (case SA.40348) recognised Spain's current scheme supporting the generation of electricity using renewable energy, high-efficiency heat and power cogeneration, or waste (specific remuneration scheme) as compliant with EU state aid rules because it contributes to the EU's climate-change-related targets while also preserving competition.

This support scheme has been in place since 2013 and applies to new beneficiaries as well as to facilities already benefiting from previous support.

Under the scheme, beneficiaries receive support in the form of a premium on top of the market price of electricity, so they have to respond to market signals. This premium is meant to help the facilities to offset the costs that cannot be recovered from the sale of electricity on the market, and to obtain a reasonable return on their investments.

Since 2016, new plants have accessed this aid through a competitive bidding process in which facilities using different technologies compete with one other, demonstrating the positive effects of competition: companies are willing to invest in new facilities with very low levels of government support. The beneficiaries awarded aid through this bidding process will only be compensated if, in the coming years, the market price drops to a level significantly below today's market prices. This protection against an unexpectedly sharp fall in market prices helps developers to secure project financing, and therefore complete projects on time. This will help Spain, and thus the EU as a whole, to achieve its ambitious environmental and climate-change-related goals.

For the management of renewable electricity facilities' economic rights, all authorised power-generating facilities are required to be listed on the Ministry for Ecological Transition's register of power-generating facilities.

Moreover, so that the specific remuneration scheme for generation facilities using renewable energy sources, high-efficiency cogeneration and waste can be properly awarded and monitored, those facilities have to be listed on the specific remuneration scheme register kept by the Directorate-General for Energy Policy and Mines.

Details of the specific remuneration scheme register are reported to the National Markets and Competition Commission each month so that the amounts due to facilities can be correctly settled.

The specific remuneration scheme register currently includes the details of over 60,000 eligible facilities, with a total generation capacity of around 40,000 MW. Of these facilities, 95% use solar photovoltaic technology and have an installed capacity of approximately 4,700 MW.

Similarly, Ministerial Order TEC/1380/2018 of 20 December 2018 was published with the aim of increasing electricity generation from renewable sources off the Spanish mainland. This Order lays down the terms and conditions for granting aid to investments in wind or photovoltaic generation facilities located off the Spanish mainland, co-financed with the ERDF.

Consequently, a call for applications, on a competitive basis, for aid supporting investments in wind power generation facilities in the Canary Islands – co-financed by the ERDF under Axis 4 (Low-Carbon Economy) of Spain's 2014-2020 Multi-regional Operational Programme – was published in 2018. The budget for the aid to be granted as a result of this call for applications is €80 million. Successful applicants must undertake to build the wind power facilities in question, which must be completed by 30 June 2022, with no cost overrun for the system.

## **b) Support systems established by Spain to promote the use of energy from renewable sources in heating and cooling**

### ***Financial support***



- *Funding programmes*

In 2009, a system was introduced to fund ESCO projects to generate heat from renewable sources. It had two specific aims: to promote the development of this type of company, and to increase the use of biomass, geothermal and solar energy while guaranteeing system quality and offering products tailored to the needs of users of hot water and heating/cooling systems in buildings.

Table 3b. Support schemes for thermal renewable energy

Programme	Installed capacity (kW)	Programme funding (loan amount in EUR)	Final energy consumption (kWh)	Aid per unit (EUR/kWh)
SOLCASA	126	47,877	189,975	0.380
<b>TOTAL</b>	<b>126</b>	<b>47,877</b>	<b>189,975</b>	<b>0.380</b>
Programme	Installed capacity (kW)	Programme funding (loan amount in EUR)	Final energy consumption (kWh)	Aid per unit (EUR/kWh)
SOLCASA	235	142,320	185,761	0.594
<b>TOTAL</b>	<b>235</b>	<b>142,320</b>	<b>185,761</b>	<b>0.594</b>

The BIOMCASA, GEOCASA and SOLCASA programmes have certain limitations with regard to the amount per project and are supplemented by the large-scale thermal plant (GIT) programme for the three renewable energy sources mentioned above.

The GIT programme applies to projects requiring significant investment and has a different system of technical and financial guarantees. This line of funding is intended for projects that, due to their size and complexity, fall outside the limits set in the calls for applications for funding under the BIOMCASA, SOLCASA and GEOTCASA programmes and so establish a system for funding large-scale plants in those areas.

These programmes lay down certain technical guarantees applicable to plant development and establish commitments to supply a certain quantity of energy, to deliver cost savings to end-users and to run promotional information campaigns targeting both sectors involved in developing the projects and end-users.

The calls to apply for funding under these programmes remained open throughout 2017 and 2018.

These programmes make total or partial funding available to ESCOs that have previously been authorised by the Energy Savings and Diversification Institute to receive it. A number of requirements regarding supply capacity and technical and financial capacity and solvency must be met to obtain this authorisation. These requirements can be met through agreements with other undertakings operating in the sector that specialise in specific aspects of the energy management process. Authorisation gives an undertaking access to the line of funding and also allows it to use the logos of the programme for which it has been authorised and to take part in the promotional activities carried out under that programme.

Users are given a long-term supply contract at an energy price below what they would have had to pay had they opted for a system using conventional fuels. This price ensures that the cost of the facility itself and its operation and maintenance is recovered. The interest rates set are also among the lowest on the market. This financing is therefore attractive to ESCOs, which then pass these savings on to users.

While the BIOMCASA programme was in place, 97 ESCOs applied for authorisation and 64 were authorised. A total of 71 thermal biomass projects were financed under the energy sales model, amounting to funding of €8,000,000 (100%), installed thermal capacity of 23 MW, primary energy consumption of 48.2 GWh/year and the avoidance of 11,960 tonnes of CO<sub>2</sub> emissions.

For the BIOMCASA II programme, at 31 December 2018 a total of 57 ESCOs had applied for authorisation, and five of them were authorised. Up to that date, 31 thermal biomass projects had been financed under the energy sales model, amounting to funding of €4,151,771 (83% of the available budget), installed thermal capacity of 11.4 MW, energy consumption of 21.8 GWh/year and avoidance of 6,761 tonnes of CO<sub>2</sub> emissions.

For the SOLCASA programme, at 31 December 2018 a total of 59 energy service companies had applied for authorisation, and 39 of them were authorised. At that date, 28 solar thermal projects had been financed under the energy sales model, amounting to funding of €2,683,321 (just over 50% of the available budget), installed thermal capacity of 3.18 MW, a final energy saving of 4,050 MWh per year and avoidance of 1,436 tonnes of CO<sub>2</sub> emissions.

For the GEOCASA programme, a total of 36 companies applied for authorisation, and 23 of them were authorised. Overall, 13 geothermal energy projects were financed under the energy sales model, amounting to funding of €1.9m, installed thermal capacity of 1.9 MW, energy demand of 5.7 GWh per year and avoidance of 1,092 tonnes of CO<sub>2</sub> emissions.

For the GIT programme, by that same date a total of 39 ESCOs had applied for authorisation, and 12 of them were authorised. Overall, 14 projects were financed under the energy sales model, amounting to funding of €9,126,480 (53.6% of the available budget), with biomass-fuelled installed thermal capacity of 34.7 MW, energy consumption of 50.6 GWh per year and avoidance of 12,374 tonnes of CO<sub>2</sub> emissions. A loan of €1,274,240 has been granted to fund an industrial geothermal energy project with a capacity of 724 kW and an expected energy consumption of 1,365,464 kWh.

A second call for applications for grants to finance energy-related retrofits of existing buildings ('PAREER II') was published in December 2017. Its initial budget was €125.6 million, later increased by an additional €78 million. The four original initiative categories – two of them geared towards improving the energy efficiency of buildings and the other two specifically relating to the promotion of renewable thermal energy (replacing conventional energy sources with solar and geothermal energy) – have been retained in this second call.

In 2018 and 2019, 19 applications were received for measure 4 ('geothermal'), representing direct aid of 1,058,746 and financing facilities of €19,200. These figures reflect submitted applications, as they are currently being processed.

### **c) Support systems established by Spain to promote the use of energy from renewable sources in transport**

#### ***Regulation***

- *Mandatory use of biofuels*

The sixteenth additional provision of the Hydrocarbon Industry Act (Act 34/1998 of 7 October 1998) sets annual targets – mandatory as of 2009 – for biofuels and other renewable fuels used in transport. It also

authorises the Ministry of Energy, Tourism and the Digital Agenda to enact the provisions necessary to establish a mechanism for promoting the use of biofuels and other renewable fuels for transport purposes, and states that the government may amend the targets and set additional ones.

Royal Decree 1085/2015 of 4 December 2015, on promoting biofuels, set a minimum mandatory annual overall target for the sale or consumption of biofuels of 4.3% for 2016 and of 5%, 6%, 7% and 8.5% for 2017, 2018, 2019 and 2020, respectively, in terms of energy content. These targets are considerably more ambitious than the targets previously set in Article 41 of Act 11/2013 of 26 July 2013: 4.1% for both diesel and the overall figure, and 3.9% for petrol. This Royal Decree also eradicated individual product-specific targets, establishing only an overall target for mandatory minimum biofuel consumption. This means that the parties subject to these obligations have the flexibility of being able to use biofuel certificates for both diesel and petrol to achieve their targets.

Royal Decree 1085/2015 of 4 December 2015 limits the contribution of first-generation biofuels, establishing that the percentage of biofuels produced from cereals and other starch-rich crops, sugar, oilseed or other crops planted on farmland as main crops primarily for energy purposes may not exceed 7%.

Finally, this Royal Decree sets an indicative goal: those operators who are required to prove that they meet these targets for the sale or consumption of biofuels for transport purposes should aim to have advanced biofuels making up 0.1% of energy content in 2020.

Royal Decree 1597/2011 of 4 November 2011, regulating the sustainability criteria applicable to biofuels and bioliquids, the national sustainability verification system and the double value allocated to certain biofuels for calculation purposes, establishes a list of feedstocks used to make biofuels whose energy content is doubled for the purpose of proving compliance with the requirement to sell or consume biofuels for transport purposes and the renewable energy target for all forms of transport. In order to use these values in the calculation, the certification entity must first establish what information and documentation the parties subject to this requirement must submit as proof of origin.

The parties subject to these biofuel use obligations are:

- a) Wholesalers, as defined in Article 42 of the Hydrocarbon Industry Act (Act 34/1998 of 7 October 1998), for annual sales on the Spanish market, excluding sales to other wholesalers.
- b) Retail distributors of oil products, as defined in Article 43 of Act 34/1998 of 7 October 1998, for that portion of their annual sales on the Spanish market not supplied by wholesalers or other retail distributors.
- c) Consumers of oil products, for that portion of their annual consumption not supplied by wholesalers or by retail distributors of oil products.

In order to achieve the mandatory biofuel sale and consumption targets in the most efficient manner possible, Ministerial Order ITC/2877/2008 of 9 October 2008, establishing a mechanism for promoting the use of biofuels and other renewable fuels in transport, provides temporary flexibility mechanisms for calculating the quantities of biofuel sold or consumed and provides a system of certification and compensatory payments that allows entities bound by the system to transfer certificates. It also acts as a mechanism for monitoring fulfilment of the obligation.

A 'certificate' for the purposes of meeting the biofuel sale or consumption obligation is understood to be a document, issued at the request of an entity, stating that it has demonstrated the sale or consumption of one toe of biofuel within a given year (as per Article 2(3) of Ministerial Order ITC/2877/2008 of 9 October 2008 establishing a mechanism for promoting the use of biofuels and other renewable fuels in transport).

Parties subject to this scheme that lack the certificates needed to comply with their obligations are required to make compensatory payments. According to the Order, this payment amounts to €763 per certificate (one certificate is equivalent to one toe).

The revenue generated by this requirement each calendar year is paid into a single compensatory payment fund that the certification entity distributes among those entities that have a certified surplus in excess of their obligations.

If the compensatory payments are made, the obligations established are deemed to have been met, provided at least 50% of the regulatory target has been achieved. Otherwise, the obligations laid down for achievement of the annual targets for minimum biofuel and other renewable fuel content will not be deemed to have been met, which constitutes a very serious infringement of Act 34/1998 of 7 October 1998. The imposition of administrative penalties arising from such an infringement will not affect the compensatory payments due – these must always be paid.

As a flexibility mechanism, Article 9 of this Ministerial Order also allows certification account-holders to transfer the biofuel certificates they hold to the accounts of other entities, provided that they first notify the Certification Entity. The distinction between petrol and diesel biofuel certificates must be maintained at all times.

Ministerial Order ITC/2877/2008 of 9 October 2008 appointed the National Energy Commission – now the National Markets and Competition Commission – as the entity responsible for issuing biofuel certificates, for managing the certification mechanism and for overseeing the biofuel marketing obligation.

The organisational and operational rules for this mechanism are laid down in National Markets and Competition Commission Circular 1/2019 of 13 March 2019 on the management of the mechanism promoting the use of biofuels and other renewable fuels in transport. In particular, it establishes the procedures, standards and rules pertaining to applications to open Certification Accounts, to applications for the issue of biofuel certificates and to transfers of certificates, and it lays down the management procedures for the Book-Entry System kept by the National Markets and Competition Commission.

It must be stressed that this obligation is the mechanism used to achieve the energy targets – in terms of the contribution of biofuels – for the introduction of renewable sources of energy in transport.

### ***Financial support***

- *Tax exemption for biofuel pilot projects*

Under Article 51 of the Excise Duty Act (Act 38/1992), the manufacture or importing of biofuels for the purposes of pilot projects involving the development of less-polluting products are exempt from the tax on hydrocarbon fuels under certain conditions laid down in implementing regulations. This exemption only applies to biofuels, and not to any other products that might be blended with those biofuels.

'Pilot projects for the technological development of less-polluting products' means experimental and time-limited projects addressing the production or use of such products, with the aim of demonstrating the technical or technological feasibility of their production or use, excluding the subsequent industrial exploitation of the results of such projects. Projects involving a small quantity of products, below the threshold laid down in the implementing regulations, can be considered to have proven fulfilment of these conditions.

This scheme is managed by the Spanish Tax Office's Customs and Excise Duties Department. Article 105 of the Excise Duty Regulation provides that, once the exemption application is approved, the management centre will issue the requisite decision recognising the exemption for the period requested by the parties concerned, which may not exceed five years.

A limit is set in the Excise Duty Regulation for the purposes of accrediting the experimental nature of the project, i.e. that it is limited to demonstrating the technical or technological feasibility of manufacture or use of the product. This condition will be deemed to have been demonstrated when the quantity of biofuel produced does not exceed 5,000 litres per year.

### **3.1. Please provide the information on how supported electricity is allocated to final customers for purposes of Article 3 (6) of Directive 2003/54/EC (Article 22(1)b) of Directive 2009/28/EC)**

Under Article 110 *bis* of Royal Decree 1955/2000 of 1 December 2000 regulating the transmission, distribution, marketing, supply and authorisation procedures for electricity facilities, consumers must be informed of the origin of the electricity they use and its impact on the environment. More specifically, the Article requires that the following information be included with the bills sent to end customers and in any promotional material made available:

- how much each primary energy source contributes to the overall mix of primary energy sources used to generate electricity for the entire Spanish electricity system during the previous year (or the year before that, in the case of bills issued from January to March), including details of imports;
- details of where environmental impact information is published; as a minimum, this information must include details of total CO<sub>2</sub> emissions and radioactive waste produced in the electricity sector during the previous year (or the year before that, in the case of bills issued from January to March), and how much of this environmental impact is due to the electricity sold by the company during the previous year (or the year before that, in the case of bills issued from January to March).

Retailers must also inform their end customers how much each primary energy source contributed to the total amount of electricity supplied by that retailer – i.e. the proportional breakdown of each retailer's sales in the Spanish electricity system – during the previous year and the associated environmental impact. For each electricity retailer, the contribution referred to above covers all of their sales in the Spanish electricity system.

Pursuant to Article 110 *bis*(3) of that Royal Decree, the National Markets and Competition Commission approved Circular 1/2008 of 7 February 2008 on informing consumers about the origin and environmental impact of the electricity they use. This Circular provides the standard format to be used by distributors and retailers for providing the information detailed above in the bills they issue, and also establishes the method to be used to calculate how much each primary energy source contributes to the total amount of electricity supplied by a given retailer and the associated environmental impact.

The second section of the Circular therefore states that any retailer selling electricity to end customers must, in accordance with the sole final provision of Ministerial Order ITC/1522/2007 of 24 May 2007 establishing rules on guarantees of origin for electricity from renewable sources and high-efficiency cogeneration, provide information on the number of guarantees of origin redeemed to each of its customers during the previous year.

This reporting to end customers is to be based on the information published by the National Energy Commission on its website and other information accessible on a restricted, individual basis, using the template provided in Annex II to the Circular.

The Directorate-General for Energy Policy and Mines Decision of 23 May 2014, establishing the standard electricity bill template and laying down its minimum contents, regulates the content and standard format of the bills to be sent to consumers availing of the regulated tariff known as the 'voluntary price for the small-scale consumer', as well as to consumers not entitled to this regulated tariff but being charged it on a provision basis until a free-market supply contract is established, by the retailers authorised to offer this tariff, known as the 'reference retailers'.

This Decision also lays down the minimum mandatory content and an optional template for 'reference retailers' to use when billing consumers entitled to the regulated tariff who have opted to be charged an annual fixed price, and for free-market retailers to use when billing consumers on a low-voltage supply (up to 15 kW).

In any case, according to this Decision, the end consumer's bill must include information on the contribution of each primary energy source to the overall mix of sources used to generate the overall amount of electricity sold by the retailer in question and across the entire Spanish electricity system during the previous year, as well as stating where environmental impact information can be found. This environmental impact information must include as a minimum the total CO<sub>2</sub> emissions and radioactive waste produced in the electricity sector during the prior year (or the year before that, in the case of bills issued between January and March), and how much of this environmental impact is due to the electricity sold by the company. National Markets and Competition Commission Circular 1/2008 of 7 February 2008 applies to all of the above.

Moreover, according to the Decision of 23 May 2014, consumers' bills should also reflect information about their rights as regards the ways of settling complaints.

#### **4. Information on how the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material**

Following an amendment enacted by Royal Decree 235/2018 of 27 April 2018, Royal Decree 1597/2011 of 4 November 2011, regulating the sustainability criteria applicable to biofuels and bioliquids, the

national sustainability verification system and the double value allocated to certain biofuels for calculation purposes, now lists the feedstocks used to make biofuels whose energy content is doubled for the purpose of proving compliance with the requirement to sell or consume biofuels for transport purposes and the renewable energy target for all forms of transport.

This list transposes Annex IX to Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015.

In order to use these values in the calculation, the certification entity must first establish what information and documentation the parties subject to this requirement must submit as proof of origin.

Annex IX contains a new list of feedstocks for making biofuels.

The aforementioned 2018 Royal Decree also amends Royal Decree 1085/2015 of 4 December 2015, on promoting biofuels, to include an indicative goal of having advanced biofuels making up 0.1% of energy content in 2020.

## **5. Information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system**

Guarantees of origin are electronic certificates issued at the request of the party concerned that prove that a certain number of megawatt-hours of the electricity produced in a plant over a specific period of time has been generated from renewable sources or by high-efficiency cogeneration.

In Spain, Ministerial Order ITC/1522/2007 of 24 May 2007 regulates the guarantee of origin of electricity from renewable sources and high-efficiency cogeneration. It was amended by Ministerial Order ITC/2914/2011 of 27 October 2011, which, in particular, partially transposed Directive 2009/28/EC.

Circular 6/2012 of 27 September 2012 issued by the National Energy Commission (now the National Markets and Competition Commission) established the rules governing the organisation and operation of the system guaranteeing the origin of electricity from renewable sources and high-efficiency cogeneration.

In 2015, Ministerial Order IET/931/2015 adapted the existing rules to the changes to the system of aid applicable to renewable energy, cogeneration and waste (the specific remuneration scheme), as well as adapting it to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency.

The legislative changes that had taken place since the publication of the National Markets and Competition Commission Circular 6/2012 of 27 September 2012 were implemented in a new Circular – National Markets and Competition Commission Circular 1/2018 of 18 April 2018 – which repealed Circular 6/2012 and also adapted certain definitions to reflect common usage among our European neighbours.

Moreover, on 4 March 2016, the General Assembly of the AIB (Association of Issuing Bodies) accepted the National Markets and Competition Commission's application to become a member of that association. The corresponding formal agreement between the National Markets and Competition Commission and the AIB was signed on 26 July 2016. Therefore, since March 2016 it has been possible

to export and import guarantees of origin for energy via the AIB hub. This new option is compatible with exports to and imports from the systems of certain non-AIB countries.

Guarantees of origin have a standard size of 1 MWh. As a minimum requirement, guarantees of origin also include data relating to identification, location, commissioning date, energy type, plant capacity, operating period and support system, as well as the date, the country of issue and a unique identification number.

Currently, the National Markets and Competition Commission is the body responsible throughout Spain for issuing guarantees of origin for electricity generated from renewable energy sources and by high-efficiency cogeneration, as well as for managing those guarantees. It may carry out these tasks either directly or through a third party, following authorisation by the Secretariat of State for Energy at the Ministry of Energy, Tourism and the Digital Agenda. This third party must be independent of the generation, distribution and sales activities and must be appointed in accordance with the relevant legislation on public procurement.

#### Book-entry system for guarantees of origin

The National Markets and Competition Commission has established a book-entry system for guarantees of origin for electricity generated from renewable energy sources and by high-efficiency cogeneration. The purpose of the system is to record information and manage these guarantees of origin.

The use of electronic means to run this system is mandatory. This electronic management is carried out using the National Markets and Competition Commission's electronic document registry, in accordance with Ministerial Order PRE/878/2010 of 5 April 2010, establishing the 'authorised electronic contact address' system provided for by Article 38(2) of Royal Decree 1671/2009 of 6 November 2009.

This book-entry system holds information on the number of guarantees of origin issued as well as transfers and all other related operations.

Revenue obtained from the sale of guarantees of origin must be accounted for separately. During the first quarter of each year, the producers in whose name guarantees of origin are issued must send the National Markets and Competition Commission a report on their plans for using this revenue, which may be allocated to the development – under a special scheme – of new plants generating electricity from renewable sources of energy or cogeneration that would not be cost-effective under the current remuneration scheme, or to general research and development with the aim of improving the environment as a whole.

After verifying the information provided in the application, the National Markets and Competition Commission issues the guarantee of origin, which takes the form of an entry in the corresponding electricity production account.

The issue of guarantees of origin corresponding to production month  $m$  must take place before the last day of month  $m+10$ , and a given year's guarantees must always be issued by 28 February of the next year. Guarantees will be deemed to have been issued to the rights-holder of the plant, the initial holder of the guarantees.



Transfers of guarantees of origin must be requested from the National Markets and Competition Commission by the guarantee holder so that the corresponding entry can be made in the relevant account.

Importing guarantees of origin is subject to the same rules as issuing them.

Traders may submit accreditations of guarantees of origin issued in other Member States to the National Markets and Competition Commission in order to obtain the same accreditation as issued by the guarantee of origin system in Spain, provided they are issued in accordance with the requirements laid down by Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, and Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. The guarantee of origin must be issued by a body designated by a European Union Member State. When there are doubts as to the accuracy, reliability or veracity of a guarantee of origin issued by another Member State, the National Markets and Competition Commission may refuse to recognise this guarantee, notifying the Secretariat of State for Energy so that it can inform the European Commission.

Guarantees of origin may only be exported by the rights-holders of electricity generation plants.

Electricity producers entitled to receive payment under the specific remuneration scheme regulated by Royal Decree 413/2014 of 6 June 2014, regulating electricity production from renewable sources of energy, cogeneration and waste, that apply for guarantees of origin for export purposes must waive their rights under the specific remuneration scheme applicable to each guarantee of origin exported. In accordance with Article 11(6) of that Royal Decree, this specific remuneration scheme must include remuneration for the energy covered by the guarantee and remuneration for the investment corresponding to the period considered, as well as any other items covered by the specific remuneration scheme.

Amounts for rights that the producer has to waive will be treated, where appropriate, as income payable under the payment system provided for by Royal Decree 2017/1997 of 26 December 1997 organising and regulating the procedure for paying tariff-based transmission, distribution and trading costs, permanent system costs and costs associated with diversification and security of supply.

#### Control, penalties and evaluation of the regulatory framework

- The National Markets and Competition Commission will carry out the checks and inspections it deems necessary to perform its duties in issuing guarantees of origin for electricity generated from renewable sources and by high-efficiency cogeneration.
- Rights-holders of plants subject to this Ministerial Order must guarantee sufficient physical access to the plants to allow performance of the required checks, verifications and, where applicable, inspections.
- Retailers must also facilitate access to their records and accounts to allow the checking and verification of transfers and cancellations of guarantees of origin, final consumer energy readings and revenue from the sale of guarantees of origin.



industrial etc.) **												
Energy crops (grasses, etc.) and short rotation trees (please specify)												
others (Please specify)												
<b>Biomass supply for transport:</b>												
Common arable crops for biofuels (please specify main types)												
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)												
others (Please specify)												

\* Amount of raw material if possible in m<sup>3</sup> for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste

\*\* The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C(2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

Data broken down by country or region of origin are not available for the feedstocks used for the biofuels consumed in Spain. Table 4 does not therefore show figures for this sector. For information purposes, data obtained from the biofuel statistics compiled by the National Markets and Competition Commission's Biofuel Certification Entity can be found below:

Biofuel	Origin of the feedstocks used to make it	2017	2018
Biodiesel	Spain	1.64%	0.34%
	Rest of EU	11.24%	5.07%
	Outside of EU	87.12%	94.59%
HVO	Spain	0.00%	0.00%
	Rest of EU	0.00%	0.00%
	Outside of EU	100.00%	100.00%
Bioethanol	Spain	18.83%	15.81%
	Rest of EU	25.00%	42.46%
	Outside of EU	56.17%	41.73%

The information needed to complete Table 4a is also not available for biofuels.

**Table 4a: Current domestic agricultural land use for production of crops dedicated to energy production (ha)**

Land use	Surface (ha)	
	2017	2018
1. Land used for common arable crops (wheat, sugar beet etc.) and oilseeds (rapeseed, sunflower etc.)		
Wheat (soft and hard)		
Barley		
Maize		
Sunflower and safflower		
Oilseed rape		
2. Land used for short rotation trees (willows, poplars, etc.)		
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)		

### Developing biomass fuel regulation and standardisation

The BIOmasud Plus project was completed in December 2018. Its general aim was to promote a sustainable market for solid Mediterranean biofuels by developing and extending a quality and sustainability certification system. This was to be achieved by examining existing barriers, identifying solutions and emphasising control of system sustainability and quality. This project has led to the BIOmasud® quality and sustainability certification manual being updated and extended, as well as the drafting of preliminary standards for new biomass types, namely walnut shells, pistachio shells, and olive and grapevine clippings.

The preliminary standards and minor amendments proposed as a result of this project have been forwarded to Technical Standardisation Committee 164 (the Solid Biofuels Committee), which has already started work on updating the standards.

The biomass types for which standards were already in place – olive stones (UNE 164003 standard), hazelnut shells, almond shells, pine nut shells and chopped pineapple (included in UNE 164004) – have also been reviewed.

With regard to the certification of domestic wood pellets, the Spanish association AVEBIOM has been commissioned by the European Pellet Council to develop and issue the ENplus® quality mark based on the ISO 17225-2 standard. As a result of this, it is estimated that of Spain's total 2018 pellet production of 593,000 tonnes, 504,000 tonnes were marketed bearing the EN PLUS A1 mark.

### Study of the biomass market in Spain

In 2014, a monitoring study was conducted into the thermal biomass market in Spain. The first results of this study were made available in mid-2015, and monitoring continues today. It was considered necessary to perform an in-depth follow-up into the composition of this market, incorporating a methodology with which to obtain quarterly prices for the various biomass types available on the market and a comparative analysis of the trend in those prices against other similar national and international indices.

In 2017 and 2018 trends in biomass prices were rather uneven. In terms of electricity uses, while in late 2018 wood chip costs had increased compared to early 2017 (mainly in the last quarter), olive cake saw

a significant decline over the same period. Turning to thermal uses, over the same period, leaving aside fluctuations due to seasonality, the price of pellets and briquettes increased, while wood and chips remained stable and the price of fruit stones and shells fell.

**7. Information on changes in commodity prices and land use in 2015 and 2016 associated with increased use of biomass and other forms of energy from renewable sources, with references, where available, to relevant documentation on these impacts**

In the case of Spain, the limited use of domestic feedstocks means that the impact on land use within a global market such as the market for feedstocks used for biofuel manufacture is negligible. Feedstock prices followed the international market trend.

**8. Description of the development and share of biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material (Article 22(1) i) of Directive 2009/28/EC).**

**Development Biofuels**

Production and consumption of biofuels made from the feedstocks listed in Annex IX of Directive 2009/28/EC (ktoe)

<i>Feedstock as listed in Annex IX Part A of Directive 2009/28/EC</i>	2017	2018
<i>a) Algae if cultivated on land in ponds or photobioreactors</i>		
<i>b) Biomass fraction of mixed municipal waste, but not separated household waste subject to recycling targets under point (a) of Article 11(2) of Directive 2008/98/EC</i>		
<i>c) Bio-waste as defined in Article 3(4) of Directive 2008/98/EC from private households subject to separate collection as defined in Article 3(11) of that Directive</i>		
<i>d) Biomass fraction of industrial waste not fit for use in the food or feed chain, including material from retail and wholesale and the agro-food and fish and aquaculture industry, and excluding feedstocks listed in part B of this Annex</i>		
<i>e) Straw</i>		
<i>f) Animal manure and sewage sludge</i>		
<i>g) Palm oil mill effluent and empty palm fruit bunches</i>		
<i>h) Tall oil pitch</i>		
<i>i) Crude glycerine</i>		
<i>j) Bagasse</i>		
<i>k) Grape marcs and wine lees</i>		
<i>l) Nut shells</i>		
<i>m) Husks</i>		
<i>n) Cobs cleaned of kernels of corn</i>		
<i>o) Biomass fraction of wastes and residues from forestry and forest-based industries, i.e. bark, branches, pre-commercial thinnings, leaves, needles, tree tops, saw dust, cutter shavings, black liquor, brown liquor, fibre sludge, lignin and tall oil</i>		
<i>p) Other non-food cellulosic material as defined in point (s) of the second paragraph of Article 2</i>		
<i>q) Other ligno-cellulosic material as defined in point (r) of the second</i>		

<i>paragraph of Article 2 except saw logs and veneer logs</i>		
<i>Feedstock as listed in Annex IX Part B of Directive 2009/28/EC</i>		
<i>a) Used cooking oil</i>	<i>2.4</i>	<i>1.2</i>
<i>b) Animal fats classified as categories 1 and 2 in accordance with Regulation (EC) No 1069/2009 of the European Parliament and of the Council</i>		

#### Resource assessment

We are unable to provide a resource assessment of the feedstock listed in Annex IX of Directive 2009/28/EC focusing on the sustainability aspects relating to the effect of the replacement of food and feed products for biofuel production.

Nevertheless, given the low use of this type of feedstock, the potential impact of replacement can be considered negligible.

#### **9. Information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality in 2017 and 2018**

Royal Decree 1597/2011 of 4 November 2011 regulating the sustainability criteria applicable to biofuels and bioliquids, the national sustainability verification system and the double-counting of certain biofuels does not yet include a definition of the data to be provided by economic operators for this purpose.

However, in the case of Spain the effects referred to under point 9 are negligible due to the limited use of domestic feedstocks for biofuel production.

#### **10. Calculation of the net greenhouse gas emission savings due to the use of energy from renewable sources**

Table 6 shows the estimated greenhouse gas emission savings attributable to the use of renewable energy for 2017 and 2018, differentiating between greenhouse gas emissions attributable to the use of renewable electricity, the use of renewable energy in heating and cooling and the use of renewable energy in transport.

**Table 6: Estimated GHG emission savings (\*) from the use of renewable energy (t CO<sub>2</sub>eq)**

Environmental aspects	2017	2018
<i>Total estimated net GHG emission saving from using renewable energy<sup>29</sup></i>	<b>60,308,848</b>	<b>60,392,874</b>
Estimated net GHG saving from the use of renewable electricity	40,685,521	39,414,401
Estimated net GHG saving from the use of renewable energy in heating and cooling	16,220,593	16,660,637
Estimated net GHG saving from the use of renewable energy in transport	3,402,734	4,317,836

<sup>29</sup> The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

(\*) The data refer solely to the estimated reduction in CO<sub>2</sub> emissions. In the electricity sector these have been calculated from actual renewable production, without standardisation, compared to emissions from a combined-cycle natural gas plant.

**11. Information on (for 2017 and 2018) and estimates of (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020**

**Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in [Member State] (ktoe)<sup>30, 31</sup>**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production	2,026	2,866	2,704	3,326	2,040	3,106	1,323	1,220	0	0

**11.1 Details of statistical transfers, joint projects and joint support scheme decision rules**

No statistical transfers have been made to date.

**12 Information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates**

Information on the share of biofuels produced from waste comes from the Biofuel Statistics published by the National Markets and Competition Commission's Biofuel Certification Entity. As the body responsible for certifying compliance with the biofuel consumption obligation, the ECB obtains data via the SICBIOS software.

**13 Please provide the amounts of biofuels and bioliquids in energy units (ktoe) corresponding to each category of feedstock group listed in part A of Annex VIII taken into account by that Member State for the purpose of complying with the targets set out in Article 3(1) and (2), and in the first subparagraph of Article 3(4)**

Feedstock group	2017	2018
Cereals and other starch-rich crops	135.1	155.8
Sugars	8.6	3.3
Oil crops	1,225.4	1,579.3

<sup>30</sup> Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report Member State may correct the data of the previous reports.

<sup>31</sup> When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. -x ktoe).