



Renewable Energy Projections as Published in the National Renewable Energy Action Plans of the European Member States

This update covers 21 countries

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Disclaimer

This report has been compiled with great care. However, since the underlying NREAP documents have been published in the language of the respective Member State subtleties might have been lost in the process. Moreover, the data have been entered into the database manually: although checked, it is possible that typing errors have occurred. The original NREAP documents remain the authentic versions. The Energy research Centre of the Netherlands (ECN) and the European Environment Agency (EEA) cannot assure any responsibility for any remaining errors, if and when applicable, of the data in the this report and in the underlying database.

Abstract

This report presents an overview of all data that have been published in the National Renewable Energy Action Plans (NREAPs) so far. At the time of releasing this document (1 October 2010), 21 out of 27 European Member States had the NREAP available at the transparency platform on renewable energy. All these countries have been covered in this report. The countries considered are: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.

The report highlights a set of cross-sections of the database that has been compiled from the NREAP documents. This report will be updated regularly. The underlying database and the figures from the report are publicly available at <http://www.ecn.nl/nreap>.

Keywords

National Renewable Energy Action Plans (NREAPs), renewable energy in the European Union



Scanning the two-dimensional barcode (QR) at the left with a camera phone equipped with appropriate software will open the URL <http://www.ecn.nl/nreap>, which redirects to the ECN Policy Studies project pages (<http://www.ecn.nl/units/ps/themes/renewable-energy/projects/nreap>). New versions of this report, the database and the image files will become available for download from this location.

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Summary

The Renewable Energy Directive (2009/28/EC)¹ addresses various subjects related to the development of renewable energies in the European Member States, among others the legally binding share of renewable energy in gross final energy consumption. In Article 4 of the Directive each Member State is requested to provide a National Renewable Energy Action Plan (NREAP) by 30 June 2010. In order to draft this plan, a template was published by the Commission. Each Member State is obliged to complete a set of tables in this template on how it expects to meet its 2020 target, including the technology mix and the trajectory to reach it. The current report makes use of the fact that these tables have been defined in a consistent way. All data have been collected from the NREAP documents and they are available as a data report (this report), a database containing all data from the NREAPs (in text format) and a set of figures from the data report (in PDF and PNG). The purpose has been to allow easy comparison for further analysis by the audience².

The focus of this report, which evaluates the NREAP documents, is on the numbers and figures. All other subjects addressed in the documents, such as renewable energy policies, costs and benefits and grid integration issues have not been considered in the current analysis. Moreover, it was not the objective of this analysis to check whether the proposed policies indeed result in the projections made.

Whereas the data report focuses on the projections for the individual Member States, this summary section focuses on the aggregate results for the countries for which NREAP documents are available. In the current document, this regards the following Member States: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.

The charts and tables in this report present primary data (numbers directly taken from the NREAP documents) and secondary data (data derived from the primary data). For the secondary data, four parameters have been presented consistently throughout the report: an indicator on full load hours (applies to electricity options only), an indicator on growth rates calculated from the projected energy production (for electricity options also for changes in capacity), and indicators on per capita and per surface area achievement. Although for the two latter indicators a bias exists between countries depending on their population density, these indicators enable comparison of large and small countries in a more meaningful manner.

Table 1 indicates that, based on the current number of 21 countries incorporated in this report³, the total gross production from renewable energy sources (RES) (excluding pumped storage hydropower and for renewable transport corrected for double counting according to Article 5.1 of the Directive) amounts to 218 Mtoe in the year 2020. The largest contribution of renewable energy originates from electricity (RES-E, 45% in 2020). The second largest contribution is from renewable heating and cooling (RES-H/C, 43%) and finally renewable transport (RES-T) contributes 12% to the overall renewable target. On average this projection results in an annual growth for overall renewables up to 6% annually. These numbers will change as more NREAP documents will be released and integrated into this report.

Looking at the overall growth rates per renewable energy type, it can be observed that the growth rates are smallest for renewable heating and cooling (between 3.3% and 5.5% annually, depending on the period), and that renewable transport is growing fastest (6.8% to 8.4% annually, with a very high growth rate for the period 2005 - 2010 (32.0% per year, caused by the relatively low value for 2005). Renewable electricity has a growth rate of 5.5% to 6.4% annually. It should

¹At <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT> the Renewable Energy Directive is available for download

²At <http://www.ecn.nl/nreap> the report, the database and the image files are available for download

³The NREAP for Romania doesn't pronounce on renewable heating and cooling and renewable transport, these projections are thus missing the data overview

Table 1: *Total contribution from renewable energy sources (RES) for 21 countries: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom. See Tables 2 to 7 for details.*

	Energy				Share [%] ^a	Average annual growth		
	2005 [Mtoe]	2010 [Mtoe]	2015 [Mtoe]	2020 [Mtoe]		2005 – 2010 [%/year]	2010 – 2015 [%/year]	2015 – 2020 [%/year]
RES-E	41	54	73	98	45	5.5	6.4	6.0
RES-H/C	49	57	72	94	43	3.3	4.8	5.5
RES-T ^b	3	12	17	25	12	32.0	6.8	8.4
Total RES	93	123	163	218	100	5.8	5.7	6.0

^a The percentage refers to the share of the renewable energy types (electricity, heating and cooling and transport) in total renewable energy in the year 2020

^b Total renewable energy for transport has been corrected for electricity and hydrogen from renewable energy sources as indicated in Article 5.1 of Directive 2009/28/EC. See Table 6.

be noted however that these growth rates are *average* values, and that the conventional renewable technologies (hydropower electricity, solid biomass heating) constitute a large part of the renewable energy stock.

Table 2 shows the contribution of the renewable heating and cooling technologies in detail and Table 3 shows calculated growth rates. Based on the 21 countries included in this table it can be seen that for renewable heating and cooling the largest share in the year 2020 is from biomass (80.0%), notably solid biomass (70.8%). Second is renewable energy from heat pumps (12.2%), followed by solar thermal (5.8%) and deep geothermal heat (2.0%). From Table 3 can be seen that growth rates generally are higher for the non-biomass options (except biogas).

Table 4 shows the breakdown of the renewable electricity technologies into subcategories (where applicable) and Table 5 shows calculated growth rates. For new renewables such as wind power, solar PV and tidal, wave and ocean energy double-digit growth rates occur in the period to come. It is interesting to note that the growth rates decline over time: for most technologies the average annual growth rate is higher for the period 2010 - 2015 than for 2015 - 2020. For individual countries data can be found in the tables on growth rates in the technology-specific chapters of the report.

Taking a closer look at the mix of renewable electricity technologies for the year 2020 (Table 2), it can be observed that the most important contribution is expected from wind power (40.7% of which onshore wind power contributes 28.7%-point). The second largest technology is expected to be hydropower (31.4% of all RES-E in 2020, of which large hydropower takes 26.0%-point). Biomass electricity is responsible for 17.5% and solar electricity for 8.9% (7.2%-point from photovoltaics).

Table 6 shows the contribution of the renewable transport energy carriers and Table 7 shows calculated growth rates. According to this table, biodiesel has the largest contribution in 2020 (65.9%), followed by bio-ethanol / bio-ETBE (21.7%). The tables in the report (see the page numbers in the last column of Table 6) provide more information about the shares of Article 21.2 biofuels and imported biofuels. Renewable electricity has also a significant contribution, but this does not count for the overall renewable energy production as specified in Article 5.1 of the Directive. None of the 21 countries covered in this version of the report project a contribution from renewable hydrogen in transport.

The secondary data as depicted in the report show the merits of presenting the data using derived indicators: large countries with high projections for certain renewables countries are averaged out when presented on a per capita or a per surface area basis. The indicator on full load hours shows expected deviations between Southern European countries and Northern European countries for solar electricity technologies.

Table 2: Total renewable heating and cooling (RES-H/C) energy for 21 countries: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.

	2005 [Mtoe]	2010 [Mtoe]	2015 [Mtoe]	2020 [Mtoe]	Share [%] ^a	Share [%] ^b	Page
Geothermal	0.4	0.5	1.0	1.9	2.0	0.9	96
Solar thermal	0.7	1.4	2.7	5.5	5.8	2.5	102
Solid biomass	45.2	46.4	55.0	66.8	70.8	30.6	110
Biogas ^c	0.6	1.4	2.5	4.4	4.6	2.0	110
Bioliquids	1.1	3.6	4.1	4.4	4.6	2.0	110
Biomass (subtotal)	46.9	51.4	61.6	75.4	80.0	34.6	110
Aerothermal heat pumps	0.1	2.3	3.7	6.1	6.5	2.8	116
Geothermal heat pumps	0.2	1.2	2.3	4.0	4.2	1.8	116
Hydrothermal heat pumps	0.0	0.2	0.3	0.5	0.5	0.2	116
Renewable energy from heat pumps (subtotal)	0.6	3.9	7.0	11.5	12.2	5.3	116
Total renewable heating and cooling	48.6	57.2	72.3	94.3	100.0	43.3	-

^a The percentage refers to the share of the individual technologies in total renewable heating and cooling in the year 2020

^b The percentage refers to the share of the individual technologies in total renewable energy (electricity, heating and cooling and transport) in the year 2020

^c In 'biogas' the value for 'Bio-SNG for grid feed-in' as specified in the Dutch NREAP has been included

Table 3: Average annual growth for renewable heating and cooling (RES-H/C) energy for 21 countries: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.

	2005 – 2010 [%/year]	2010 – 2015 [%/year]	2015 – 2020 [%/year]	Page
Geothermal	5.5	14.5	12.9	97
Solar thermal	15.2	14.2	15.1	103
Solid biomass	0.5	3.5	3.9	-
Biogas ^a	17.5	12.1	11.6	-
Bioliquids	26.3	2.3	1.4	-
Biomass (subtotal)	1.8	3.7	4.1	109
Aerothermal heat pumps	75.1	10.2	10.7	-
Geothermal heat pumps	36.8	14.7	11.8	-
Hydrothermal heat pumps	50.5	8.6	8.4	-
Renewable energy from heat pumps (subtotal)	45.2	12.1	10.5	115
Average renewable heating and cooling	3.3	4.8	5.5	-

^a In 'biogas' the value for 'Bio-SNG for grid feed-in' as specified in the Dutch NREAP has been included

The growth rates for subcategories of technologies in this table have been calculated from the projections in Table 2

Table 4: Total renewable electricity (RES-E) capacity and energy for 21 countries: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.

		2005	2010	2015	2020	[%] ^a	[%] ^b	Page
Hydropower < 1MW	[GW]	2.6	2.7	2.9	3.1			42
	[TWh]	10.8	10.3	10.9	11.6			45
	[Mtoe]	0.9	0.9	0.9	1.0	1.0	0.5	-
Hydropower 1MW – 10 MW	[GW]	8.9	9.4	10.6	11.8			42
	[TWh]	32.9	32.9	35.0	38.4			45
	[Mtoe]	2.8	2.8	3.0	3.3	3.4	1.5	-
Hydropower >10MW	[GW]	92.9	93.4	98.8	106.2			42
	[TWh]	287.6	282.7	288.3	296.2			45
	[Mtoe]	24.7	24.3	24.8	25.5	26.0	11.7	-
Pumped storage hydropower	[GW]	18.7	23.4	27.3	34.5			42
	[TWh]	23.5	22.9	27.0	31.9			45
	[Mtoe]	2.0	2.0	2.3	2.7	n.a.	n.a.	-
Hydropower (subtotal excluding pumped storage)	[GW]	110.9	113.7	121.2	130.8			42
	[TWh]	336.5	335.1	344.4	358.0			45
	[Mtoe]	28.9	28.8	29.6	30.8	31.4	14.1	-
Geothermal	[GW]	0.7	0.8	1.0	1.5			50
	[TWh]	5.5	6.0	7.3	10.4			52
	[Mtoe]	0.5	0.5	0.6	0.9	0.9	0.4	-
Solar photovoltaic	[GW]	2.2	25.1	53.5	82.7			60
	[TWh]	1.5	19.8	50.9	81.8			63
	[Mtoe]	0.1	1.7	4.4	7.0	7.2	3.2	-
Concentrated solar power	[GW]	0.0	0.6	3.6	7.0			60
	[TWh]	0.0	1.2	9.0	20.0			63
	[Mtoe]	0.0	0.1	0.8	1.7	1.8	0.8	-
Solar (subtotal)	[GW]	2.2	25.7	57.1	89.7			60
	[TWh]	1.5	21.0	60.0	101.8			63
	[Mtoe]	0.1	1.8	5.2	8.8	8.9	4.0	-
Tidal, wave and ocean energy	[GW]	0.2	0.2	0.4	2.1			68
	[TWh]	0.5	0.5	0.9	6.0			70
	[Mtoe]	0.0	0.0	0.1	0.5	0.5	0.2	-
Onshore wind	[GW]	39.4	79.9	121.0	157.3			78
	[TWh]	66.3	151.3	244.5	326.9			81
	[Mtoe]	5.7	13.0	21.0	28.1	28.7	12.9	-
Offshore wind	[GW]	0.7	2.5	14.3	40.4			78
	[TWh]	1.9	8.5	45.9	131.3			81
	[Mtoe]	0.2	0.7	3.9	11.3	11.5	5.2	-
Wind power (subtotal)	[GW]	40.1	82.6	136.0	200.2			78
	[TWh]	69.8	160.2	291.9	464.3			81
	[Mtoe]	6.0	13.8	25.1	39.9	40.7	18.3	-
Solid biomass	[GW]	10.0	13.1	17.9	23.1			88
	[TWh]	52.2	66.1	96.6	130.9			91
	[Mtoe]	4.5	5.7	8.3	11.3	11.5	5.2	-
Biogas	[GW]	2.6	5.2	7.2	9.5			88
	[TWh]	12.1	27.8	40.9	56.4			91
	[Mtoe]	1.0	2.4	3.5	4.9	4.9	2.2	-
Bioliquids	[GW]	0.4	1.0	1.4	1.7			88
	[TWh]	1.4	8.6	10.9	12.7			91
	[Mtoe]	0.1	0.7	0.9	1.1	1.1	0.5	-
Biomass (subtotal)	[GW]	15.0	21.0	28.5	36.8			88
	[TWh]	65.6	102.4	148.4	200.0			91
	[Mtoe]	5.6	8.8	12.8	17.2	17.5	7.9	-
Total renewable electricity	[TWh]	479.4	625.1	852.8	1140.6			-
	[Mtoe]	41.2	53.8	73.3	98.1	100.0	45.0	-

^a The percentage refers to the share of the individual technologies in total renewable electricity in the year 2020

^b The percentage refers to the share of the individual technologies in total renewable energy (electricity, heating and cooling and transport) in the year 2020

Table 5: Average annual growth of renewable electricity (RES-E) capacity and energy for 21 countries: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.

		2005 – 2010 [%/year]	2010 – 2015 [%/year]	2015 – 2020 [%/year]	Page
Hydropower < 1MW	Capacity	0.6	1.7	1.5	-
	Energy	-0.8	1.0	1.3	-
Hydropower 1MW – 10 MW	Capacity	1.0	2.4	2.2	-
	Energy	0.0	1.3	1.9	-
Hydropower >10MW	Capacity	0.1	1.1	1.5	-
	Energy	-0.3	0.4	0.5	-
Pumped storage hydropower	Capacity	4.6	3.1	4.8	-
	Energy	-0.5	3.4	3.4	-
Hydropower (subtotal excluding pumped storage)	Capacity	0.5	1.3	1.5	41
	Energy	-0.1	0.5	0.8	44
Geothermal	Capacity	1.9	4.8	8.4	51
	Energy	1.8	4.0	7.4	53
Solar photovoltaic	Capacity	62.4	16.3	9.1	-
	Energy	68.2	20.8	10.0	-
Concentrated solar power	Capacity	n.a.	41.2	14.5	-
	Energy	n.a.	51.0	17.2	-
Solar (subtotal)	Capacity	63.3	17.3	9.5	59
	Energy	70.2	23.4	11.2	62
Tidal, wave and ocean energy	Capacity	0.4	8.7	41.7	69
	Energy	-1.3	11.5	47.3	71
Onshore wind	Capacity	15.2	8.7	5.4	-
	Energy	17.9	10.1	6.0	-
Offshore wind	Capacity	30.0	41.3	23.0	-
	Energy	34.7	40.1	23.4	-
Wind power (subtotal)	Capacity	15.6	10.5	8.1	77
	Energy	18.1	12.8	9.7	80
Solid biomass	Capacity	5.6	6.4	5.2	-
	Energy	4.8	7.9	6.3	-
Biogas	Capacity	14.9	6.9	5.7	-
	Energy	18.1	8.0	6.7	-
Bioliquids	Capacity	23.6	6.8	3.5	-
	Energy	43.1	4.9	3.1	-
Biomass (subtotal)	Capacity	6.9	6.3	5.3	87
	Energy	9.3	7.7	6.2	90
Average renewable electricity	Energy	5.5	6.4	6.0	-

The growth rates for subcategories of technologies in this table have been calculated from the projections in Table 4

Table 6: *Total renewable transport (RES-T) energy for 21 countries: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.*

	2005 [Mtoe]	2010 [Mtoe]	2015 [Mtoe]	2020 [Mtoe]	Share [%] ^a	Share [%] ^b	Page
Bioethanol / bio-ETBE	0.5	2.4	4.3	6.1	21.7	2.8	122
Biodiesel	2.4	9.6	12.5	18.7	65.9	8.6	128
Hydrogen from renewables	0.0	0.0	0.0	0.0	0.0	-	132
Renewable electricity	1.0	1.2	1.8	2.9	10.2	-	138
Other biofuels	0.2	0.2	0.2	0.6	2.2	0.3	146
Total renewable transport ^c	4.1	13.5	18.9	28.4	100.0	-	-
Total renewable transport Article 5.1 ^d	3.1	12.2	17.0	25.5	89.8	11.7	-

^a The percentage refers to the share of the individual technologies in total renewable transport in the year 2020

^b The percentage refers to the share of the individual technologies in total renewable energy (electricity, heating and cooling and transport) in the year 2020. This value is not available for electricity and hydrogen from renewable energy, see footnote *d*.

^c The value 'Total renewable transport' has not been corrected as indicated in Article 5.1 of Directive 2009/28/EC.

^d The 'Total renewable transport Article 5.1' has been calculated by subtracting electricity and hydrogen from renewable energy values from 'Total renewable transport'. This is to avoid double counting as indicated in Article 5.1 of Directive 2009/28/EC. The category 'other biofuels' has not been applied for the correction. The resulting values are used for determining the overall renewable energy production in Table 1.

Table 7: *Average annual growth for renewable transport (RES-T) for 21 countries: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Spain, Sweden, Slovenia and the United Kingdom.*

	2005 – 2010 [%/year]	2010 – 2015 [%/year]	2015 – 2020 [%/year]	Page
Bioethanol / bio-ETBE	37.3	12.2	7.4	121
Biodiesel	32.5	5.4	8.4	127
Hydrogen from renewables	n.a.	n.a.	n.a.	133
Renewable electricity	3.5	8.7	9.6	139
Other biofuels	1.2	1.9	22.1	145
Average renewable transport	27.0	7.0	8.5	-

1 Introduction

The Renewable Energy Directive (2009/28/EC) discusses various subjects related to the development of renewable energies in the European Member States, among others the legally binding share of renewable energy in gross final energy consumption. In Article 4 of the Directive each Member State is requested to provide a National Renewable Energy Action Plan (NREAP) by 30 June 2010. In order to draft this plan, a template was published by the Commission. Each Member State is obliged to complete a set of tables in this template on how it expects to meet its 2020 target, including the technology mix and the trajectory to reach it.

This report makes use of the fact that these tables have been defined in a consistent way. All data have been collected from the NREAP documents and three products are available from this:

- A data report: the current document integrates and aggregates where possible data from the individual countries, presents tables in various cross-sections and presents the data graphically;
- A set of figures: all figures from the data-report are available as separate graphic files;
- A database: all data have been entered in a database for further analysis by the audience.

These products are freely available for download from <http://www.ecn.nl/nreap>.

This first chapter explains the characteristics of this work, the target audience, limitations, countries considered. Data types are discussed, technical notes on the process of data transfer to the database are presented and the chapter ends with a listing of changes compared to the previous version of the report and the database. The further chapters in the report contain the actual figures and tables. Where necessary, figure and table captions and footnotes mention important information.

1.1 Target audience

This report is difficult to digest without context. It is therefore not the intention of the authors to provide a document for the general public, but rather to facilitate specialists to evaluate the NREAPs in an aggregate way. This target audience consists of researchers, national and European policy makers, journalists of on-topic magazines or other groups. The current report provides a general overview, where some details have been omitted in order to assist the reader. The above-mentioned database is more difficult to digest. It provides the full detail of a selection of the obligatory tables from all NREAPs and requires substantial modelling or spreadsheet skills.

1.2 Limitations of this work

Most NREAP documents have been provided in the national language. For collecting the data from these documents, the focus has been on the *tables* in the documents, notably Template⁴ Tables 1, 2, 3, 4a, 4b, 6, 7, 7a, 8, 9, 10a, 10b, 11 and 12. The originally submitted document can contain important additional information in the text belonging to the data tables. In the current version of the data report and the database it has not been possible to consider this information.

⁴The Template is available in all European languages from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Only NREAPs available from the Transparency Platform on Renewable Energy⁵ have been included. NREAPs might be available from national websites but not (yet) from the European Transparency Platform; those have not been included in this work.

Focus in the current report on evaluating the NREAP documents has been on the numbers and figures. All other subjects addressed in the documents, such as renewable energy policies, costs and benefits and grid integration issues have not been considered in the current analysis. Also, it was not the objective of this analysis to check whether the proposed policies indeed result in the projections made.

1.3 Countries considered in this version of the report

The deadline for submitting the NREAP documents was 30 June 2010. In practice, the first NREAPs were available for download from the European transparency platform starting from 2 July 2010. On 31 July 2010 a total number of 14 documents had been officially released. At the time of releasing the first version of this report (10 September 2010) a total of 19 Member State NREAP documents were available from the Transparency Platform. In this version of the data report and database (1 October 2010) 21 countries have been covered. Table 8 indicates the current status.

⁵The Transparency Platform on Renewable Energy results from Article 24 of the Directive on renewable energy which requires the Commission to establish a platform for the publication of a range of documents about renewable energy. The Platform can be found at http://ec.europa.eu/energy/renewables/transparency_platform/transparency_platform_en.htm.

Table 8: *Progress in the release of the National Renewable Energy Action Plans (NREAPs) and the set of countries considered in this report (version of 1 October 2010)*

Country	Code	July	August	September	Missing	This report
Belgium	BE				x	
Bulgaria	BG	x				x
Czech Republic	CZ			x		x
Denmark	DK	x				x
Germany	DE		x			x
Estonia	EE				x	
Ireland	IE	x				x
Greece	EL	x				x
Spain	ES	x				x
France	FR		x			x
Italy	IT		x			x
Cyprus	CY	x				x
Latvia	LV				x	
Lithuania	LT	x				x
Luxembourg	LU		x			x
Hungary	HU				x	
Malta	MT	x				x
Netherlands	NL	x				x
Austria	AT	x				x
Poland	PL				x	
Portugal	PT		x			x
Romania	RO			x		x
Slovenia	SI	x				x
Slovakia	SK				x	
Finland	FI	x				x
Sweden	SE	x				x
United Kingdom	UK	x				x
Number of countries		14	5	2	6	21

1.4 Primary and secondary data

The figures and tables in the current report present two data categories:

- Primary data: numbers directly taken from the NREAP documents, at times in a different cross-section or in a different unit;
- Secondary data: data derived from the primary data, at times using other parameters.

The report presents figures of both primary and secondary data. For secondary data, mainly grey tones are used for the bars, in order to clearly distinguish from the primary data figures, for which more colors have been used. Primary and secondary data are discussed in more detail in the following sections.

1.4.1 Primary data

The primary data directly use the numbers from the action plans. They are presented in graphical and tabular form, mostly in a five-year interval. If applicable, all data are aggregated and listed as *total* or *average* numbers.

1.4.2 Secondary data

Taking the primary data as input, various derived parameters can be obtained. These secondary data assist the reader in further evaluating the primary data and/or to compare individual countries and/or to rank them. Note that the merit of these derived indicators is not so much to underpin the NREAP projections: they rather serve to correct for differences in country size. Four examples of derived secondary indicators are discussed below.

The *indicator on full load hours* applies to electricity options only. Based on primary electricity capacity [MW] and electricity production [GWh] as available through tables 10a and 10b of the NREAPs it shows the average amount of full load hours for all renewable electricity technologies. The indicator is meant to provide a common base for comparing the way in which technology parameter assumptions have been used in the various NREAP documents. The value does not necessarily represent a reference to technology characteristics in the real world.

The *indicator on growth rates* provides information on past and future average annual growth rates, based on the renewable energy projections. In the current version of the report, these rates have been calculated for a five-year and a ten-year period, both for the past (2005 - 2010) and prospective required growth rates (starting from the year 2010). For the reader it is interesting to see the resulting growth rates based on the projections, because these indicate the level of suitability of each renewable technology to individual Member States.

The *indicator on per capita achievement* relates the projected energy yield for each renewable technology to the number of inhabitants of a country. See table 9 for the assumptions. Note that instead of using a projection of the population data for the period under consideration, a fixed value has been chosen as a reference (namely the 2008 status). For the electricity options the per capita indicator has only been calculated for *production*, not for *capacity*. This yields a more common base of comparison, without the country-specific number of full load hours blurring the indicator value.

The *indicator on per surface area achievement* relates the projected energy yield for each renewable technology to the surface area of a country. See table 9 for underlying data.

Note that for the latter two indicators a bias exists among countries depending on their population density. As can be seen in Figure 1 most countries are characterised reasonably well by the line

indicating the average European population density. A minority of countries vary significantly from this average value: countries with a higher population density are Malta, Belgium, the Netherlands, Italy, the United Kingdom and Germany. Countries with a relatively low population density are Estonia, Latvia, Lithuania, Finland and Sweden.

1.5 Technical notes on the database transfer

All available data from the abovementioned set of tables from the Template have been entered into the database. In most cases this process was straightforward, but for a few data-entries difficulties emerged. In this section these difficulties are highlighted on a per-country basis, but not further elaborated. Examples of problems that occurred:

- Changed data labels (i.e. a row has been added to the Template);
- Data split into more categories than the Template prescribes;
- Alternative units used (this has been adopted as much as possible in the database);

Another important limitation faced in the process of the data-entry transfer is that footnotes and remarks in the texts in most cases have not been processed.

In case *total* values have not been displayed in an Action Plan, but the subcategories have, this has not been corrected in the database. In the current report a total sum has been calculated for completeness. The idea behind this is to keep the database as close as possible to the original templates and not to commit errors in cases where the totals have been omitted on purpose.

Note that the table numbers in the sections below refer to the Template and not to the current report, unless otherwise stated⁶.

When mentioning ‘the Directive’ this means Directive 2009/28/EC⁷.

1.5.1 Belgium

The NREAP has not been published on the Transparency Platform on Renewable Energy yet.

1.5.2 Bulgaria

For Template Tables 7 and 7a it is not clear what the unit is in which the data have been provided. It has been entered into the database as ‘Unknown’.

1.5.3 Czech Republic

The data series for item (C) in Tables 4a/b (‘Expected final consumption of energy from RES in transport’) do not correspond: in Table 4a the series of item (J) (‘Expected RES contribution to transport for the RES-T target’) from Table 4b has been referred to. Moreover, the data series of item (J) (‘Expected RES contribution to transport for the RES-T target’) in Table 4b has not been calculated correctly. Probably the ‘-1’ component to calculate the series has been neglected.

⁶The Template is available in all European languages from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>. For the purpose of compiling the current report the version in English has been used as a reference.

⁷The Directive is available in all European languages from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT>. For the purpose of compiling the current report the version in English has been used as a reference.

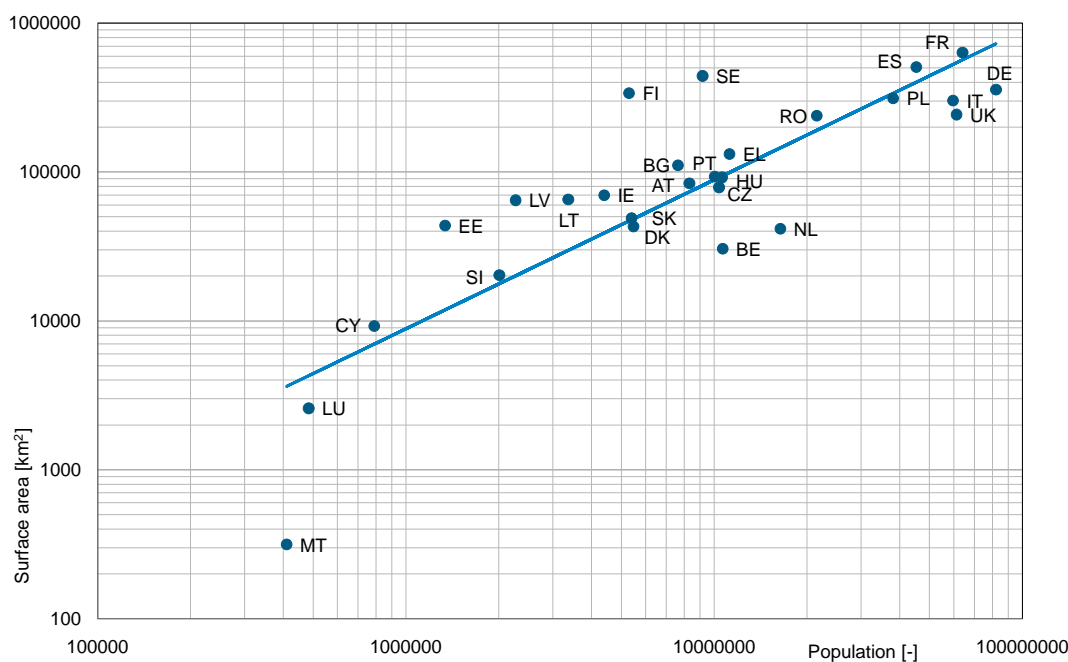


Figure 1: *Bias in countries based on population and surface area from Table 9. More densely populated countries can be found to the right of the line indicating the average population density*

Table 9: *Country data used for calculating indicators*

Country	Country code	Population 2008 [-]	Surface area [km ²]
Belgium	BE	10666866	30528
Bulgaria	BG	7640238	111002
Czech Republic	CZ	10381130	78867
Denmark	DK	5475791	43098
Germany	DE	82217837	357030
Estonia	EE	1340935	43698
Ireland	IE	4401335	69797
Greece	EL	11213785	131957
Spain	ES	45283259	505997
France	FR	63982881	632834
Italy	IT	59619290	301336
Cyprus	CY	789269	9250
Latvia	LV	2270894	64589
Lithuania	LT	3366357	65300
Luxembourg	LU	483799	2586
Hungary	HU	10045401	93030
Malta	MT	410290	316
Netherlands	NL	16405399	41528
Austria	AT	8318592	83871
Poland	PL	38115641	312685
Portugal	PT	10617575	92002
Romania	RO	21528627	238391
Slovenia	SI	2010269	20273
Slovakia	SK	5400998	49034
Finland	FI	5300484	338145
Sweden	SE	9182927	441370
United Kingdom	UK	61179256	243069
European Union (27 countries, total)	EU-27	497649125	4401582

Source: Eurostat, July 2010 (*Population on 1 January 2008 and Area of the regions (2004)* respectively)

In Table 6 only total values are reported, reason for which the table in the database has been left empty. Table 8 only reports an aggregate value, which cannot be considered in the database. The values for wind power in Tables 10a/b have been reported for the aggregate of onshore and offshore wind. In the database the entry for onshore wind power has been defined to be equal to the aggregate value (i.e. no offshore wind power in the Czech Republic). In Table 11 the values for deep geothermal seem not to have been added to the total.

1.5.4 Denmark

The trajectory as depicted in Template Table 3 differs from the trajectory calculated from Annex I of the Directive. This is presented in more detail in Table 14 on page 33 of the current report. In Template Table 6 more detail is presented than prescribed by the Template. These values have not been considered in the database. Template Table 7 differs slightly from the predefined format. It is unclear what values refer to production and consumption, so the data have not been considered in the database.

1.5.5 Germany

In the German Action Plan Template Table 6 is not reported. Several issues have occurred in Template Tables 7 and 7a: for the year 2006 imports from EU and non-EU countries are combined. All values have been reported in the database under 'EU'. Where in Template Table 7a ranges have been reported lower values have been entered into the database. For Template Table 8 other types of agricultural area have been specified. These however have not been considered for the database. In Template Table 12 upper and lower values have been specified for Article 21.2 fuels; lower values have been included in the database.

1.5.6 Estonia

The NREAP has not been published on the Transparency Platform on Renewable Energy yet.

1.5.7 Ireland

Row headers seem to be mixed in Template Table 1. Under 'Reduction for aviation limit' the total consumption after reduction for aviation limit seems to be reported. The aviation reduction has been recalculated and appears to be nonzero for the years 2005 and 2010 (both scenarios) only. For Table 7 and 7a the Action Plan does not report total values per subcategory. These total values have been calculated and entered into the database.

1.5.8 Greece

No problems encountered.

1.5.9 Spain

No data provided for Template Tables 6 and 8.

1.5.10 France

The French action plan reports values for 2008, which haven't been considered for the database and the current report. Table 4a in the first row has a typesetting problem for the year 2015: the value '8' is not considered. In Table 6 values for commercial and public sectors are aggregated under 'tertiary sector'. In the database, the aggregated values have been put under 'commercial' in the database. In Table 7 for two values are reported for C1 (biodegradable fraction of municipal solid waste including biowaste). The value entered into the database is 50% of the waste incineration plus the amount of digestion input. In Table 7a data ranges are provided for 2015 and 2020. The values in the database are the lower values of these ranges. For category B2 (by-products and processed residues from agriculture and fisheries) a value for dry and wet mass is provided. The dry mass value has been included in the database. For 2020 in A1 (direct supply of wood biomass) ranges are reported for both forests and other wooded areas; the value reported in the database here is the sum of the lower value of both ranges. In Table 8 (land used for other energy crops) France reports the value to be negligible, which has been interpreted as *zero* in the database. In Template Tables 10a/b the capacity for pumped storage hydropower has been added to total hydropower, which is not according to the template. In Table 11 renewable energy from heat pumps aggregate values have been specified for geothermal and hydrothermal sources. In the database these values are reported under 'geothermal'. In Table 2 the value for S2005 has been adapted. According to the Directive a value of 10.3% should be reported, but a value of 9.6% is mentioned. The latter corresponds to the value provided for 2005 in Table 3. This lower value has been used as an input for calculating the indicative trajectory, which results in different reference values, see Table 19 of the current report.

1.5.11 Italy

Template Table 6 has been completed in a different way than has been done for the other countries: all categories add up to 100% instead of providing per-sector shares.

1.5.12 Cyprus

In Template Table 4b row J values reported in percentages instead of ktoe. No values have been entered into the database for this category. In Template Table 6 'industry' and 'services' are aggregated. In Template Tables 7 and 7a: in case of ranges the lower values have been entered into the database (this is the case for Table 7a categories A1, A2, C1 and C3). In Table 7 imports from EU and non-EU countries have been aggregated.

1.5.13 Latvia

The NREAP has not been published on the Transparency Platform on Renewable Energy yet.

1.5.14 Lithuania

Template Table 6 is not reported on. For Template Table 7 it is unclear in what unit is reported for 'Amount of domestic resource'. It is assumed for the database that all data are in m³. In Template Table 10a/b there is no subdivision made for hydropower below 10 MW. In the database the reported category '<10 MW' is entered in the database category '1 – 10 MW' and the category '<1 MW' is reported 'not available'. In Template Table 11 no subcategorisation is specified for heat pumps. In Template Table 12 total values differ slightly from the sum of the individual contributions. Only for the year 2019 this is large: the value reported is 19% higher than calculated. In the database, the reported value has been entered.

1.5.15 Luxembourg

In Template Table 7 EU-import and non-EU-import have been aggregated.

1.5.16 Hungary

The NREAP has not been published on the Transparency Platform on Renewable Energy yet.

1.5.17 Malta

Template Table 6 could not be entered into the database as the categorisation doesn't correspond to Template. Template Table 10a/b specify 'small wind' separately. The values have been added to 'onshore wind' in the database.

1.5.18 Netherlands

In Template Tables 7, 10a/b, 11 and 12 only subcategories have been reported, these have been added for the database. In Template Table 7 category C1 also specifies an additional amount of landfill gas (1.9 TJ) which has not been covered in the subtotal in *ton ns* (wet basis). In Table 7a data have been reported in ranges for most subcategories. These data ranges have not been processed. In Template Table 11 an additional energy carrier is introduced: bio-SNG for grid feed-in. This option has been entered under the same name in the database.

1.5.19 Austria

The in NREAP calculated historic overall share of renewables for 2005 differs from the value in Annex I of the Directive. For the year 2005 the value from Template Tables 2 is thus not equal to the value in Template Table 3.

1.5.20 Poland

The NREAP has not been published on the Transparency Platform on Renewable Energy yet.

1.5.21 Portugal

Most table numbers in the Action Plan do not correspond to the numbers in the Template. In Template Table 2 the 2005 share of renewable energy does not correspond to the value in Annex A of the Directive (for example reported is 19.8% while Annex I mentions 20.5%). Also the trajectory from the Template Table 3 differs from the calculated trajectory. For details see Table 27 on page 36 in the current report.

1.5.22 Romania

Table 3 has been reported in multiple tables: in the database these tables have been merged. Table 4b has been reported in a different layout. This has been adjusted to match the Template. Percentages in Table 6 sum to 100% for each year instead of indicating the share of renewable energy per subsector. Moreover, series for 'Commercial' and 'Public' have been aggregated into 'Services'. In the database these aggregate values have been reported under 'Commercial' while 'Public' has been defined as not available. Finally, Table 11 (renewable heating) and Table 12 (renewable transport) have not been reported.

1.5.23 Slovenia

Minor deviations from Annex I of the Directive for the calculated renewable share in 2005 and the trajectory (2015 – 2019, see Table 29 on page 37 in the current report).

1.5.24 Slovakia

The NREAP has not been published on the Transparency Platform on Renewable Energy yet.

1.5.25 Finland

For Template Table 1 only one scenario is reported. The data are assumed to refer to the ‘Additional energy efficiency scenario’. Template Tables 7a and 8 are not reported on.

1.5.26 Sweden

In Template Tables 7 different units have been applied. In Template Table 8, the category ‘Land used for other energy crops’ a nonnumerical value of ‘less than 1000 ha’ (<1000) has been entered into the database. In Template Tables 10a/b the capacity and energy for pumped storage hydropower has been added to total hydropower, which is not according to the template. In Template Tables 10a/b and 11 the values for liquid biomass seem not to be added to the ‘total biomass’ category. Because they do appear to be included in the total value, no changes have been made regarding the database.

1.5.27 United Kingdom

Subcategorisation for hydropower differs from Template Table 10a/b, the breakdown has 20 MW as a reference value for most hydropower plants. This different subcategorisation cannot be considered in the database. Total values have been calculated for the period 2010 – 2020 by adding both provided categories. In Template Table 9 a deficit is reported, which probably defined for a two-year period. As this does not meet the database format, the values have been attributed to the first years of the period mentioned (2011, 2013 and 2015). A formatting issue gives several values defined under ‘district heating’ and ‘biomass in households’ in Template Table 11 (2016 and 2020).

1.6 A living document

The current document will be revised in the period to come, possibly until all NREAPs have been released. At every update of the document it is possible that additional graphs, tables or indicators will be added. The reader might recognise that the graphs in the current report are not available on the level of individual technologies (for example *onshore* and *offshore* wind power) but only address the aggregate technologies (*wind power* in this example). The breakdown tables however do specify on the individual technologies for primary data, but not (yet) for secondary data, the derived indicators. Requests for additional cross-sections of the database or new indicators can be communicated to nreap@ec.n.nl. Also corrections or other remarks are welcome.

1.7 Changes compared to the previous version of the report

The first version of the data report and database were dated 10 September 2010. In this update (1 October 2010) two countries have been added: Czech Republic and Romania.

In the first version of the data report a problem occurred in the country tables (page 149 up to the end of the document): the data entries for 'Other biofuels' in the category 'Renewable production', 'Transport' erroneously have been put at 'n.a.' for all countries in the version of 10 September 2010. This has been corrected in the second version, for the country table and as a result for the country figures as well (where applicable).

For Ireland data updates were communicated by an Irish Government representative. This regards template Table 7a (values for 2020 (B1 / B2 / total B) changed to 335 / 440 / 775 ktoe) and template Table 11: values for Solid Biomass for 2016 and 2017 have been adjusted to 394 and 399 ktoe.

2 Targets and trajectories

Annex I of Directive 2009/28/EC on the promotion of the use of energy from renewable sources (23 April 2009)⁸ is composed of two important parts. Part A specifies the national overall targets for the share of energy from renewable sources for the year 2020 and a reference value for the year 2005. Part B defines by means of formulas an indicative trajectory for each Member State, that must be attained or exceeded in the reference years specified. As mentioned in Article 3.1 of the Directive, these mandatory national overall targets are consistent with a target of at least a 20% share of energy from renewable sources in the European Community's gross final consumption of energy in 2020.

In the current section the country-specific values for the reference values, the intermediate values and the final 2020 target for the individual Member States are presented. Table 10 shows the data from Annex I for all countries explicitly. Table 11 compares the 2005 and 2020 data from Annex I to the values from the NREAP documents. Both 2005 and 2020 values may vary; the first due to problems in reproducing the historic value and the latter for example by not reaching or by exceeding the target. Data from Table 11 are graphically displayed in Figure 2.

In Tables 12 to 32 the information from the abovementioned tables is compared on a per-country basis. It allows to see whether the trajectory is being met according to the NREAP documents.

⁸Directive 2009/28/EC is available from the Transparency Platform on renewable energy (http://ec.europa.eu/energy/renewables/transparency_platform/transparency_platform_en.htm). The direct link to the document in all European languages is <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT>

Table 10: *Renewable energy shares from Annex I of the Directive [%]*

	Reference	Indicative trajectory				Target
	2005 [%]	2011-2012 [%]	2013-2014 [%]	2015-2016 [%]	2017-2018 [%]	2020 [%]
Belgium	2.2	4.4	5.4	7.1	9.2	13
Bulgaria	9.4	10.7	11.4	12.4	13.7	16
Czech Republic	6.1	7.5	8.2	9.2	10.6	13
Denmark	17.0	19.6	20.9	22.9	25.5	30
Germany	5.8	8.2	9.5	11.3	13.7	18
Estonia	18.0	19.4	20.1	21.2	22.6	25
Ireland	3.1	5.7	7.0	8.9	11.5	16
Greece	6.9	9.1	10.2	11.9	14.1	18
Spain	8.7	11.0	12.1	13.8	16.0	20
France	10.3	12.8	14.1	16.0	18.6	23
Italy	5.2	7.6	8.7	10.5	12.9	17
Cyprus	2.9	4.9	5.9	7.4	9.5	13
Latvia	32.6	34.1	34.8	35.9	37.4	40
Lithuania	15.0	16.6	17.4	18.6	20.2	23
Luxembourg	0.9	2.9	3.9	5.4	7.5	11
Hungary	4.3	6.0	6.9	8.2	10.0	13
Malta	0.0	2.0	3.0	4.5	6.5	10
Netherlands	2.4	4.7	5.9	7.6	9.9	14
Austria	23.3	25.4	26.5	28.1	30.3	34
Poland	7.2	8.8	9.5	10.7	12.3	15
Portugal	20.5	22.6	23.7	25.2	27.3	31
Romania	17.8	19.0	19.7	20.6	21.8	24
Slovenia	16.0	17.8	18.7	20.1	21.9	25
Slovakia	6.7	8.2	8.9	10.0	11.4	14
Finland	28.5	30.4	31.4	32.8	34.7	38
Sweden	39.8	41.6	42.6	43.9	45.8	49
United Kingdom	1.3	4.0	5.4	7.5	10.2	15

All percentages originate from Annex I of Directive 2009/28/EC. The indicative trajectory has been calculated from Part B of the Annex

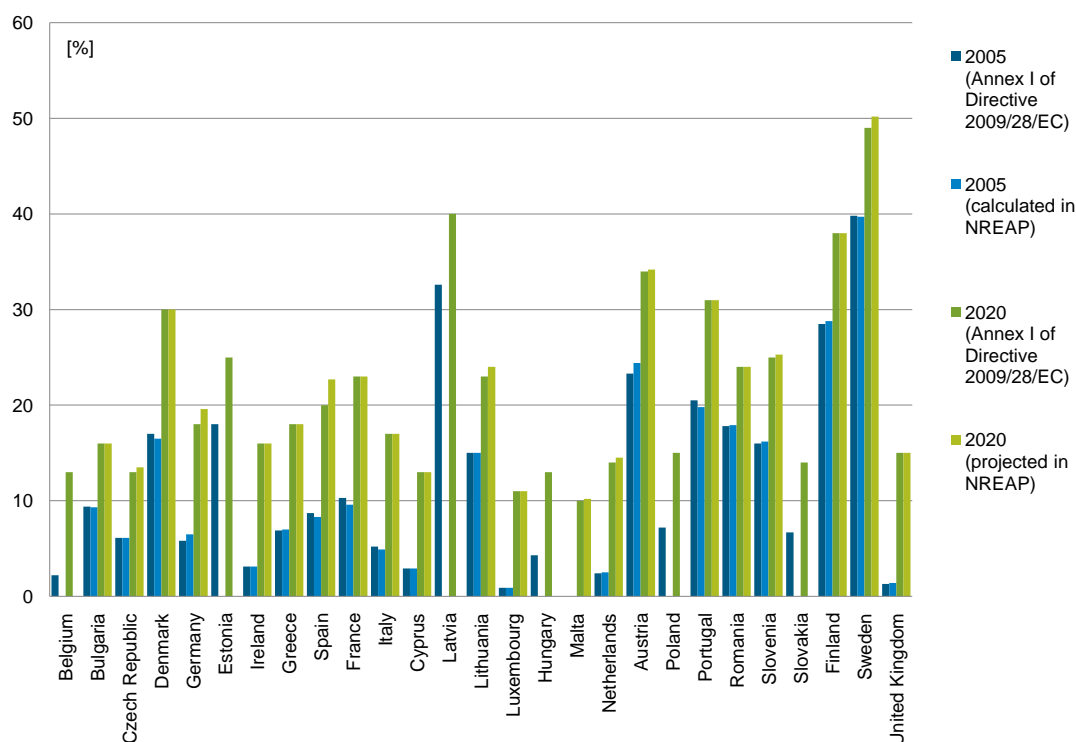


Figure 2: Renewable energy shares according to Annex I of Directive 2009/28/EC and according to the NREAP documents (Table 3 of the Template)

Table 11: Renewable energy shares according to Annex I of Directive 2009/28/EC and according to the NREAP documents (Table 3 of the Template)

	2005		2020	
	Target [%]	NREAP [%]	Target [%]	NREAP [%]
Belgium	2.2	n.a.	13.0	n.a.
Bulgaria	9.4	9.3	16.0	16.0
Czech Republic	6.1	6.1	13.0	13.5
Denmark	17.0	16.5	30.0	30.0
Germany	5.8	6.5	18.0	19.6
Estonia	18.0	n.a.	25.0	n.a.
Ireland	3.1	3.1	16.0	16.0
Greece	6.9	7.0	18.0	18.0
Spain	8.7	8.3	20.0	22.7
France	10.3	9.6	23.0	23.0
Italy	5.2	4.9	17.0	17.0
Cyprus	2.9	2.9	13.0	13.0
Latvia	32.6	n.a.	40.0	n.a.
Lithuania	15.0	15.0	23.0	24.0
Luxembourg	0.9	0.9	11.0	11.0
Hungary	4.3	n.a.	13.0	n.a.
Malta	0.0	n.a.	10.0	10.2
Netherlands	2.4	2.5	14.0	14.5
Austria	23.3	24.4	34.0	34.2
Poland	7.2	n.a.	15.0	n.a.
Portugal	20.5	19.8	31.0	31.0
Romania	17.8	17.9	24.0	24.0
Slovenia	16.0	16.2	25.0	25.3
Slovakia	6.7	n.a.	14.0	n.a.
Finland	28.5	28.8	38.0	38.0
Sweden	39.8	39.7	49.0	50.2
United Kingdom	1.3	1.4	15.0	15.0

Both reference (due to problems in reproducing the historic value) and target (for example by not reaching or by exceeding it) may vary between Annex I of the Directive and the data from the NREAP documents

Table 12: *Bulgaria: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	10.7	10.7	10.7	10.7	10.7
2013-2014	11.4	11.4	11.4	11.4	11.4
2015-2016	12.4	12.4	12.4	12.4	12.4
2017-2018	13.7	13.7	13.7	13.7	13.7
2020	16.0	16.0	16.0		16.0

For more detail on Bulgaria see the country factsheet on page 151. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 13: *Czech Republic: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	7.5	7.5	9.4	10.1	9.8
2013-2014	8.2	8.2	10.8	11.3	11.1
2015-2016	9.2	9.2	11.8	12.1	12.0
2017-2018	10.6	10.6	12.5	12.9	12.7
2020	13.0	13.0	13.5		13.5

For more detail on Czech Republic see the country factsheet on page 153. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 14: *Denmark: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	19.6	19.6	19.2	19.2	19.2
2013-2014	20.9	20.9	20.5	20.5	20.5
2015-2016	22.9	22.9	22.6	22.6	22.6
2017-2018	25.5	25.5	25.3	25.3	25.3
2020	30.0	30.0	30.0		30.0

For more detail on Denmark see the country factsheet on page 155. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 15: *Germany: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	8.2	8.2	10.8	11.4	11.1
2013-2014	9.5	9.5	12.0	12.8	12.4
2015-2016	11.3	11.3	13.5	14.4	14.0
2017-2018	13.7	13.7	15.7	16.7	16.2
2020	18.0	18.0	19.6		19.6

For more detail on Germany see the country factsheet on page 157. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 16: Ireland: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	5.7	5.7	8.1	9.0	8.6
2013-2014	7.0	7.0	10.5	11.0	10.8
2015-2016	8.9	8.9	11.8	12.2	12.0
2017-2018	11.5	11.5	12.9	14.0	13.5
2020	16.0	16.0	16.0		16.0

For more detail on Ireland see the country factsheet on page 159. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 17: Greece: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	9.1	9.1	8.8	9.5	9.2
2013-2014	10.2	10.2	9.9	10.5	10.2
2015-2016	11.9	11.9	11.4	12.4	11.9
2017-2018	14.1	14.1	13.7	14.6	14.2
2020	18.0	18.0	18.0		18.0

For more detail on Greece see the country factsheet on page 161. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 18: Spain: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	11.0	11.0	14.2	14.8	14.5
2013-2014	12.1	12.1	15.4	16.5	16.0
2015-2016	13.8	13.8	17.4	18.3	17.9
2017-2018	16.0	16.1	19.4	20.4	19.9
2020	20.0	20.0	22.7		22.7

For more detail on Spain see the country factsheet on page 163. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 19: France: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	12.8	12.2	13.5	14.0	13.8
2013-2014	14.1	13.5	15.0	16.0	15.5
2015-2016	16.0	15.5	17.0	18.0	17.5
2017-2018	18.6	18.3	19.5	20.5	20.0
2020	23.0	23.0	23.0		23.0

For more detail on France see the country factsheet on page 165. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 20: *Italy: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	7.6	7.6	8.7	9.2	9.0
2013-2014	8.7	8.7	9.9	10.5	10.2
2015-2016	10.5	10.5	11.2	12.0	11.6
2017-2018	12.9	12.9	12.9	13.8	13.4
2020	17.0	17.0	17.0		17.0

For more detail on Italy see the country factsheet on page 167. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 21: *Cyprus: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	4.9	4.9	6.8	7.1	7.0
2013-2014	5.9	5.9	7.8	8.4	8.1
2015-2016	7.4	7.5	9.0	9.7	9.4
2017-2018	9.5	9.5	10.4	11.2	10.8
2020	13.0	13.0	13.0		13.0

For more detail on Cyprus see the country factsheet on page 169. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 22: *Lithuania: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	16.6	16.6	17.0	18.0	17.5
2013-2014	17.4	17.4	19.0	20.0	19.5
2015-2016	18.6	18.6	21.0	22.0	21.5
2017-2018	20.2	20.2	24.0	24.0	24.0
2020	23.0	23.0	24.0		24.0

For more detail on Lithuania see the country factsheet on page 171. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 23: *Luxembourg: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	2.9	2.9	2.9	2.9	2.9
2013-2014	3.9	3.9	3.9	3.9	3.9
2015-2016	5.4	5.5	5.4	5.4	5.4
2017-2018	7.5	7.5	7.5	7.5	7.5
2020	11.0	11.0	11.0		11.0

For more detail on Luxembourg see the country factsheet on page 173. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 24: *Malta: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	2.0	2.0	2.3	2.6	2.5
2013-2014	3.0	3.0	3.8	5.4	4.6
2015-2016	4.5	4.5	5.5	6.8	6.2
2017-2018	6.5	6.5	9.7	9.6	9.7
2020	10.0	10.0	10.2		10.2

For more detail on Malta see the country factsheet on page 175. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 25: *Netherlands: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	4.7	4.7	4.6	5.6	5.1
2013-2014	5.9	5.9	6.6	7.7	7.2
2015-2016	7.6	7.6	8.5	9.7	9.1
2017-2018	9.9	9.9	10.9	12.1	11.5
2020	14.0	14.0	14.5		14.5

For more detail on Netherlands see the country factsheet on page 177. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 26: *Austria: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	25.4	25.4	31.1	31.4	31.3
2013-2014	26.5	26.5	31.6	31.9	31.8
2015-2016	28.1	28.1	32.1	32.4	32.3
2017-2018	30.3	30.3	32.8	33.2	33.0
2020	34.0	34.0	34.2		34.2

For more detail on Austria see the country factsheet on page 179. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 27: *Portugal: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	22.6	22.0	25.2	26.9	26.1
2013-2014	23.7	23.1	27.1	27.4	27.3
2015-2016	25.2	24.8	28.4	28.9	28.7
2017-2018	27.3	27.1	29.7	30.6	30.2
2020	31.0	31.0	31.0		31.0

For more detail on Portugal see the country factsheet on page 181. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 28: *Romania: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	19.0	19.0	18.0	19.0	18.5
2013-2014	19.7	19.7	19.4	19.7	19.6
2015-2016	20.6	20.6	20.1	20.6	20.4
2017-2018	21.8	21.8	21.2	21.8	21.5
2020	24.0	24.0	24.0		24.0

For more detail on Romania see the country factsheet on page 183. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 29: *Slovenia: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	17.8	17.8	18.2	18.7	18.5
2013-2014	18.7	18.7	19.5	20.1	19.8
2015-2016	20.1	20.0	21.2	21.8	21.5
2017-2018	21.9	21.8	22.4	23.6	23.0
2020	25.0	25.0	25.3		25.3

For more detail on Slovenia see the country factsheet on page 185. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 30: *Finland: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	30.4	30.4	30.1	31.0	30.6
2013-2014	31.4	31.4	31.6	32.2	31.9
2015-2016	32.8	32.8	32.6	33.6	33.1
2017-2018	34.7	34.7	34.7	35.7	35.2
2020	38.0	38.0	38.0		38.0

For more detail on Finland see the country factsheet on page 187. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 31: *Sweden: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	41.6	41.6	44.2	44.9	44.6
2013-2014	42.6	42.6	45.6	46.3	46.0
2015-2016	43.9	43.9	47.0	47.7	47.4
2017-2018	45.8	45.8	48.3	49.0	48.7
2020	49.0	49.0	50.2		50.2

For more detail on Sweden see the country factsheet on page 189. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Table 32: *United Kingdom: indicative trajectory for the overall renewable energy share [%] for the reference years as mentioned in Annex I part B of Directive 2009/28/EC*

Period	Annex I part B [%]	NREAP			
		Template Table 3 [%]	First year [%]	Second year [%]	Average [%]
2011-2012	4.0	4.0	4.0	4.0	4.0
2013-2014	5.4	5.4	5.0	6.0	5.5
2015-2016	7.5	7.5	7.0	8.0	7.5
2017-2018	10.2	10.2	9.0	11.0	10.0
2020	15.0	15.0	15.0		15.0

For more detail on United Kingdom see the country factsheet on page 191. The reference to Table 3 is to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Hydropower

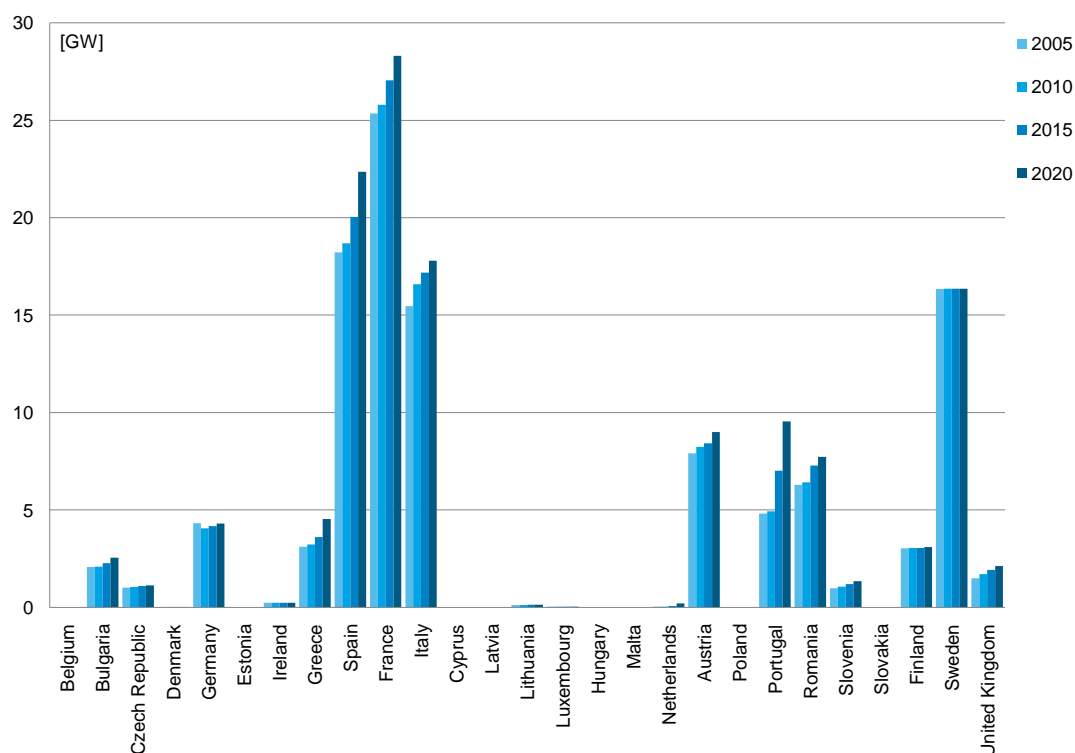


Figure 3: Projected total hydropower electric capacity [GW] for the period 2005 - 2020, all capacity ranges excluding pumped storage

Table 33: Projected total hydropower electric capacity [MW] for the period 2005 - 2020, all capacity ranges excluding pumped storage

	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	2078	2090	2280	2549	2
Czech Republic	1020	1047	1099	1125	1
Denmark	10	10	10	10	0
Germany	4329	4052	4165	4309	3
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	234	234	234	234	0
Greece	3107	3237	3615	4531	3
Spain	18220	18687	20049	22362	17
France	25349	25800	27050	28300	22
Italy	15466	16580	17190	17800	14
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	128	127	133	141	0
Luxembourg	34	38	38	44	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	37	47	68	203	0
Austria	7907	8235	8423	8997	7
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	4816	4934	7017	9548	7
Romania	6289	6413	7287	7729	6
Slovenia	981	1071	1193	1354	1
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	3040	3050	3050	3100	2
Sweden	16345	16350	16355	16360	13
United Kingdom	1501	1710	1920	2130	2
All Member States (total)	110891	113712	121176	130826	100

More information on subcategories for hydropower capacity is presented in Table 35 on page 42.

See Table 36 on page 43 for corresponding hydropower electricity production data.

Country information: Total hydropower in the NREAP for France and Sweden includes pumped storage capacity. The value for All Member States (total) should thus be lowered with approximately 4.3 GW in 2005 to 6.8 GW in 2020.

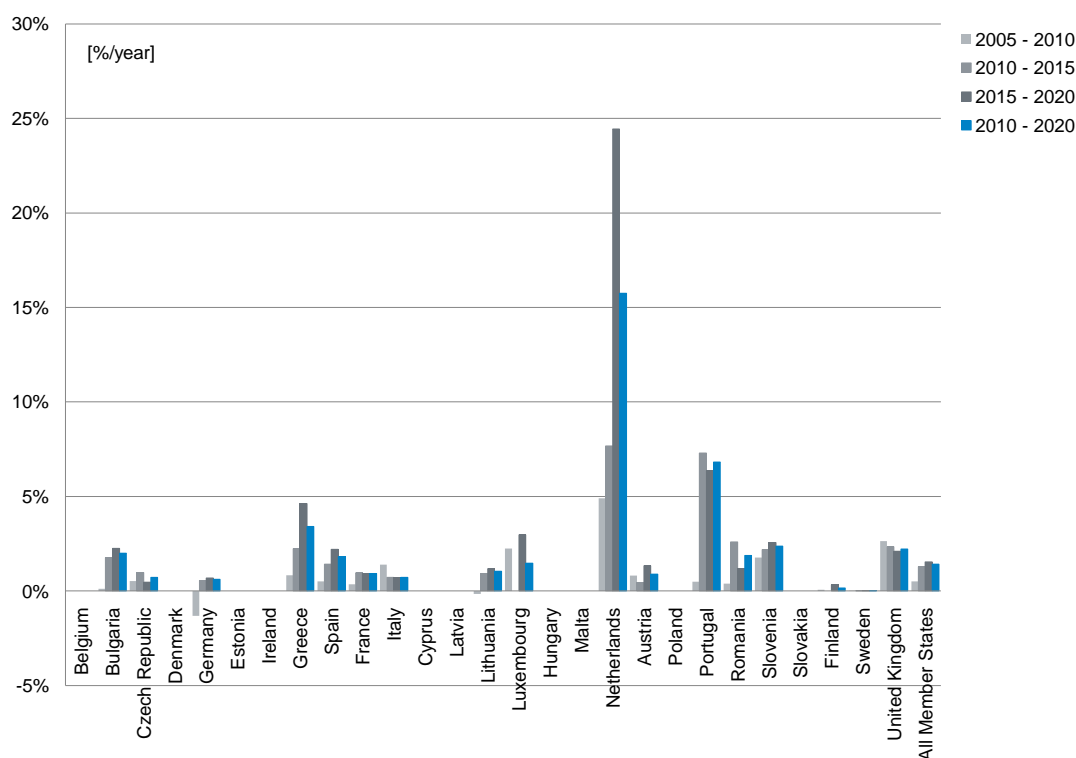


Figure 4: Calculated average annual growth for electric capacity from hydropower [%/year] for four periods, all capacity ranges excluding pumped storage

Table 34: Calculated average annual growth for electric capacity from hydropower [%/year] for four periods, all capacity ranges excluding pumped storage

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0.1	1.8	2.3	2.0
Czech Republic	0.5	1.0	0.5	0.7
Denmark	0.0	0.0	0.0	0.0
Germany	-1.3	0.6	0.7	0.6
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0.0	0.0	0.0	0.0
Greece	0.8	2.2	4.6	3.4
Spain	0.5	1.4	2.2	1.8
France	0.4	1.0	0.9	0.9
Italy	1.4	0.7	0.7	0.7
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	-0.2	0.9	1.2	1.1
Luxembourg	2.2	0.0	3.0	1.5
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	4.9	7.7	24.5	15.8
Austria	0.8	0.5	1.3	0.9
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0.5	7.3	6.4	6.8
Romania	0.4	2.6	1.2	1.9
Slovenia	1.8	2.2	2.6	2.4
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0.1	0.0	0.3	0.2
Sweden	0.0	0.0	0.0	0.0
United Kingdom	2.6	2.3	2.1	2.2
All Member States (average)	0.5	1.3	1.5	1.4

0

Hydropower electric capacity (breakdown) [MW]

Table 35: Projected hydropower electric capacity [MW] for the period 2005 - 2020, broken down into capacity ranges and pumped storage capacity

	Hydropower < 1MW					Hydropower 1MW – 10 MW					Hydropower > 10MW					Pumped storage hydropower					Total hydropower				
	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Czech Republic	123	162	191	194	154	142	147	147	147	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743
Denmark	0	0	0	0	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Germany	641	507	534	564	1073	987	1012	1043	1043	2615	2558	2620	2702	4012	6494	6494	7900	4329	4052	4165	4309	2078	2090	2280	2549
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	18	18	18	18	20	20	20	20	20	196	196	196	196	0	0	0	0	234	234	234	234	3107	3237	3615	4531
Greece	26	29	34	39	63	63	63	63	63	3018	3054	3396	4276	700	700	700	1580	234	234	234	1820	1820	18687	20049	
Spain	239	242	253	268	1534	1603	1764	1917	1917	16447	16842	18032	20177	2727	2546	3700	5700	1820	18687	20049	1820	1820	18687	20049	
France	433	441	462	483	1618	1647	1727	1897	1897	18995	19333	20269	21206	4303	4800	5800	6800	25349	25800	27050	25349	25800	27050	28300	
Italy	391	444	547	650	1947	2250	2750	3250	3250	13128	13886	13893	13900	1334	2299	2499	2600	15466	15466	15466	15466	15466	15466	15466	15466
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Luxembourg	2	2	2	3	32	36	36	41	41	101	101	101	101	1100	1100	1300	1300	34	38	38	34	38	38	38	
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Austria	308	455	465	497	692	726	743	794	794	6907	7053	7215	7707	3929	4285	4285	4285	7907	8235	8423	7907	8235	8423	8997	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania	63	63	90	109	262	324	547	620	620	4496	4524	6467	8798	537	1036	2454	4302	4816	4934	7017	4816	4934	7017	9548	
Slovenia	108	118	120	120	37	37	52	57	57	5964	6026	6650	7000	0	0	0	0	6289	6413	7287	6289	6413	7287	7729	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	30	30	30	30	280	280	280	280	280	2730	2750	2750	2790	0	0	0	0	3040	3080	3050	3040	3080	3050	3100	
Sweden	140	140	140	140	765	765	765	765	765	15397	15402	15407	15412	43	43	43	43	16345	16380	16355	16345	16380	16355	16360	
United Kingdom	56	n.a.	n.a.	n.a.	102	n.a.	n.a.	n.a.	n.a.	1343	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1501	1501	1710	1501	1501	1710	2130
All Member States (total)	2578	2651	2886	3115	8939	9417	10620	11847	11847	92916	93384	98760	106202	18685	23403	27275	34510	110891	113712	121176	110891	113712	121176	130826	

See Table 38 on page 45 for corresponding hydropower electricity production data.

Country information: *Total hydropower* in the NREAP for France and Sweden includes pumped storage capacity. The value for *All Member States (total)* should thus be lowered with approximately 4.3 GW in 2005 to 6.8 GW in 2020.

A breakdown in capacity ranges has not been provided for Bulgaria, the Netherlands and the United Kingdom. Therefore, the sum of all categories is lower than the value for *All Member States (total)*.

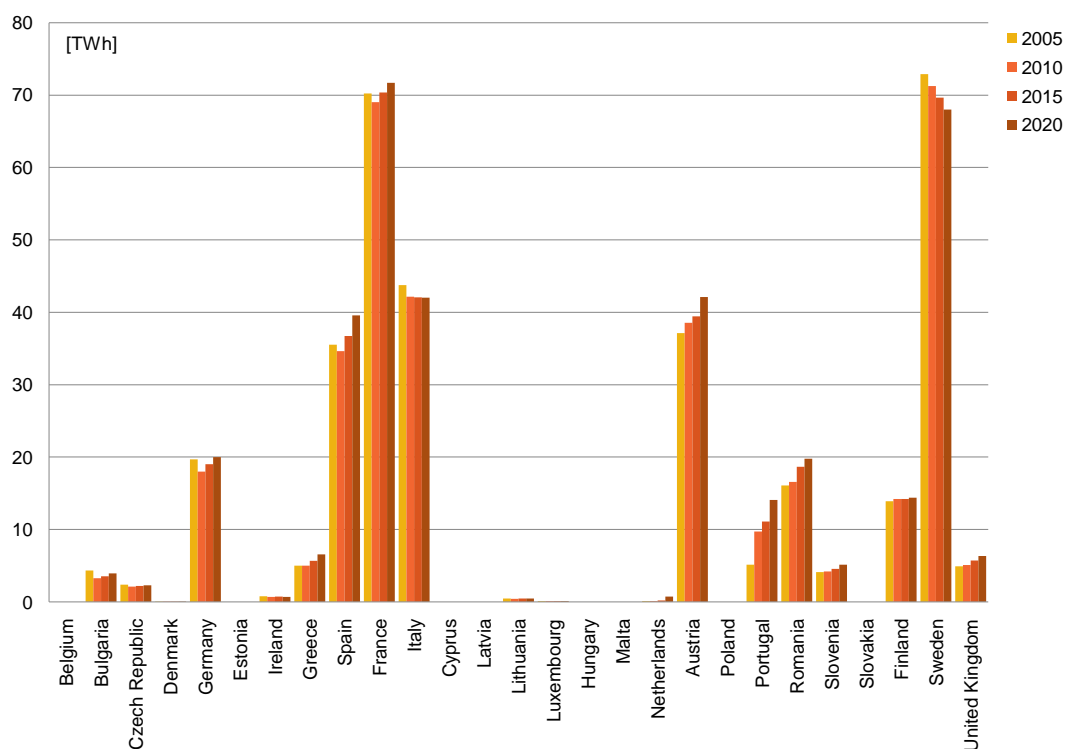


Figure 5: Projected total hydropower electricity generation [TWh] for the period 2005 - 2020, all capacity ranges excluding pumped storage

Table 36: Projected total hydropower electricity generation [GWh] for the period 2005 - 2020, all capacity ranges excluding pumped storage

	2005 [GWh]	2010 [GWh]	2015 [GWh]	2020 [GWh]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	4336	3260	3534	3951	1
Czech Republic	2380	2109	2220	2274	1
Denmark	23	31	31	31	0
Germany	19687	18000	19000	20000	6
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	760	701	714	701	0
Greece	5017	4988	5684	6576	2
Spain	35503	34617	36732	39593	11
France	70240	69024	70363	71703	20
Italy	43768	42141	42070	42000	12
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	451	432	446	470	0
Luxembourg	98	107	107	124	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	89	128	200	714	0
Austria	37125	38542	39423	42112	12
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	5118	9742	11101	14074	4
Romania	16091	16567	18679	19768	6
Slovenia	4099	4198	4559	5121	1
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	13910	14210	14210	14410	4
Sweden	72874	71249	69625	68000	19
United Kingdom	4921	5100	5730	6360	2
All Member States (total)	336490	335146	344428	357982	100

More information on subcategories for hydropower electricity generation is presented in Table 38 on page 45.

See Table 33 on page 40 for corresponding hydropower capacity data.

Country information: *Total hydropower* in the NREAP for Sweden includes energy production from pumped storage. The value for *All Member States (total)* should thus be lowered with 71 GWh (all years, see Table 38).

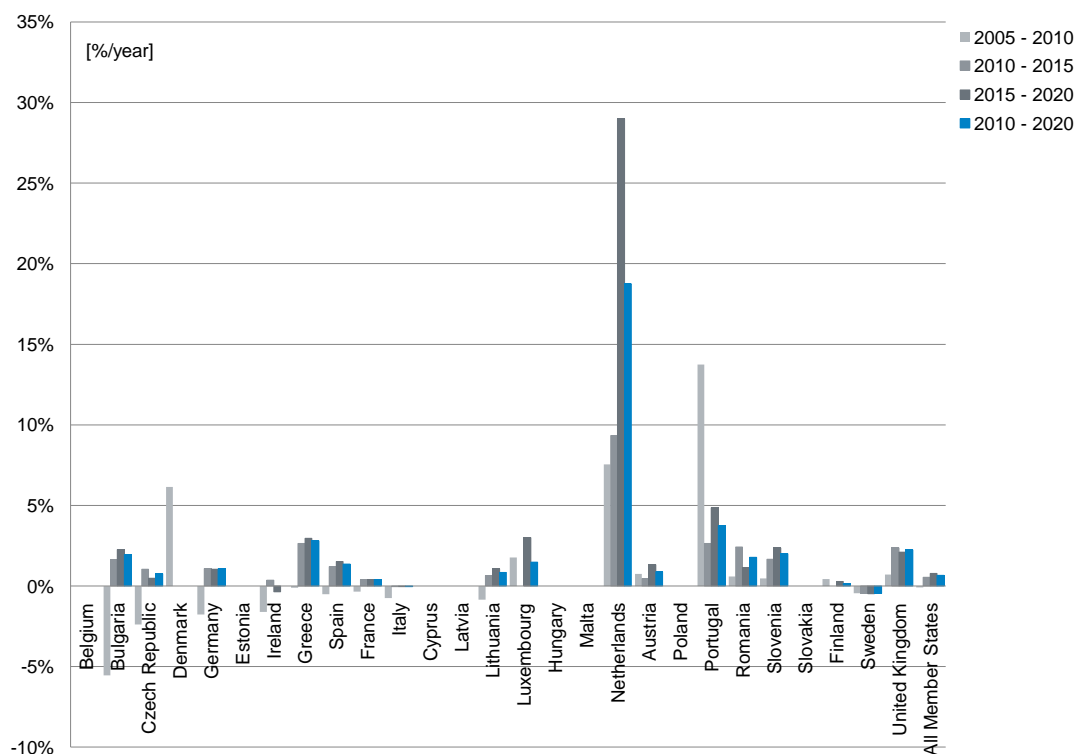


Figure 6: Calculated average annual growth for electricity generation from hydropower [%/year] for four periods, all capacity ranges excluding pumped storage

Table 37: Calculated average annual growth for electricity generation from hydropower [%/year] for four periods, all capacity ranges excluding pumped storage

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	-5.5	1.6	2.3	1.9
Czech Republic	-2.4	1.0	0.5	0.8
Denmark	6.2	0.0	0.0	0.0
Germany	-1.8	1.1	1.0	1.1
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	-1.6	0.4	-0.4	0.0
Greece	-0.1	2.6	3.0	2.8
Spain	-0.5	1.2	1.5	1.4
France	-0.3	0.4	0.4	0.4
Italy	-0.8	0.0	0.0	0.0
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	-0.9	0.6	1.1	0.8
Luxembourg	1.8	0.0	3.0	1.5
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	7.5	9.3	29.0	18.8
Austria	0.8	0.5	1.3	0.9
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	13.7	2.6	4.9	3.7
Romania	0.6	2.4	1.1	1.8
Slovenia	0.5	1.7	2.4	2.0
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0.4	0.0	0.3	0.1
Sweden	-0.5	-0.5	-0.5	-0.5
United Kingdom	0.7	2.4	2.1	2.2
All Member States (average)	-0.1	0.5	0.8	0.7

No footnote

Table 38: Projected hydropower electricity generation [GWh] for the period 2005 - 2020, broken down into capacity ranges and pumped storage capacity

	Hydropower < 10 MW										Hydropower > 10 MW										Pumped storage hydropower					Total hydropower						
	2005		2010		2015		2020		2005		2010		2015		2020		2005		2010		2015		2020		2005		2010		2015		2020	
	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]	[GWh]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	343	575	670	724	728	474	490	490	490	1060	1060	1060	1060	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Czech Republic	0	0	0	0	23	31	31	31	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Denmark	3157	2300	2450	2550	3560	4050	4250	4500	4500	12971	11650	12300	12950	7786	6989	6989	6989	6989	6989	6989	6989	6989	6989	19687	18000	19000	19000	20000	20000	20000		
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Ireland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Greece	106	112	131	150	218	593	713	833	833	4693	4283	4840	5593	593	776	776	776	776	776	776	776	776	776	35017	4988	5684	6576	6576	6576	6576		
Spain	893	831	715	803	5719	4973	4617	5477	28891	28813	31399	33314	5153	3640	6577	6577	6577	6577	6577	6577	6577	6577	6577	35503	34617	36732	39593	39593	39593	39593		
France	1796	1694	1727	1759	6111	5766	5878	5990	62332	61563	62758	63953	4705	5130	6199	6199	6199	6199	6199	6199	6199	6199	6199	70240	69024	70363	71703	71703	71703	71703		
Italy	1851	1737	2009	2281	7391	7459	8627	9796	34525	32946	31434	29923	1268	2739	2739	2739	2739	2739	2739	2739	2739	2739	2739	43768	42141	42070	42000	42000	42000	42000		
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Luxembourg	5	6	6	7	93	100	100	117	385	0	0	0	0	785	785	785	785	785	785	785	785	785	785	98	107	107	124	124	124	124		
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Austria	1448	2129	2178	2326	3247	3400	3477	3715	32430	33013	33768	36071	2738	2732	2732	2732	2732	2732	2732	2732	2732	2732	2732	37125	38542	39423	42112	42112	42112	42112		
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania	61	95	135	164	538	624	827	1108	4737	8916	8916	12562	387	0	0	0	0	0	0	0	0	0	0	5118	9742	11101	14074	14074	14074	14074		
Slovenia	451	262	270	270	155	192	247	270	3493	15848	15848	18410	0	0	0	0	0	0	0	0	0	0	0	16091	16567	18679	19768	19768	19768	19768		
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	140	150	150	150	1260	1290	1290	1310	12510	12780	12780	12960	0	0	0	0	0	0	0	0	0	0	0	13910	14210	14210	14410	14410	14410	14410	14410	
Sweden	458	458	458	458	3027	3027	3027	3027	69318	67693	66069	64444	71	71	71	71	71	71	71	71	71	71	71	72874	71249	69625	68000	68000	68000	68000	68000	
United Kingdom	44	n.a.	n.a.	n.a.	399	n.a.	n.a.	n.a.	4478	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
All Member States (total)	10753	10349	10899	11642	32916	32885	35002	38379	287565	282662	288286	296174	23486	22862	27004	27004	27004	27004	27004	27004	27004	27004	27004	336490	335146	344428	357982	357982	357982	357982	357982	

See Table 35 on page 42 for corresponding hydropower capacity data.

Country information: Total hydropower in the NREAP for Sweden includes energy production from pumped storage. The value for All Member States (total) should thus be lowered with 71 GWh (all years, see Table 38).

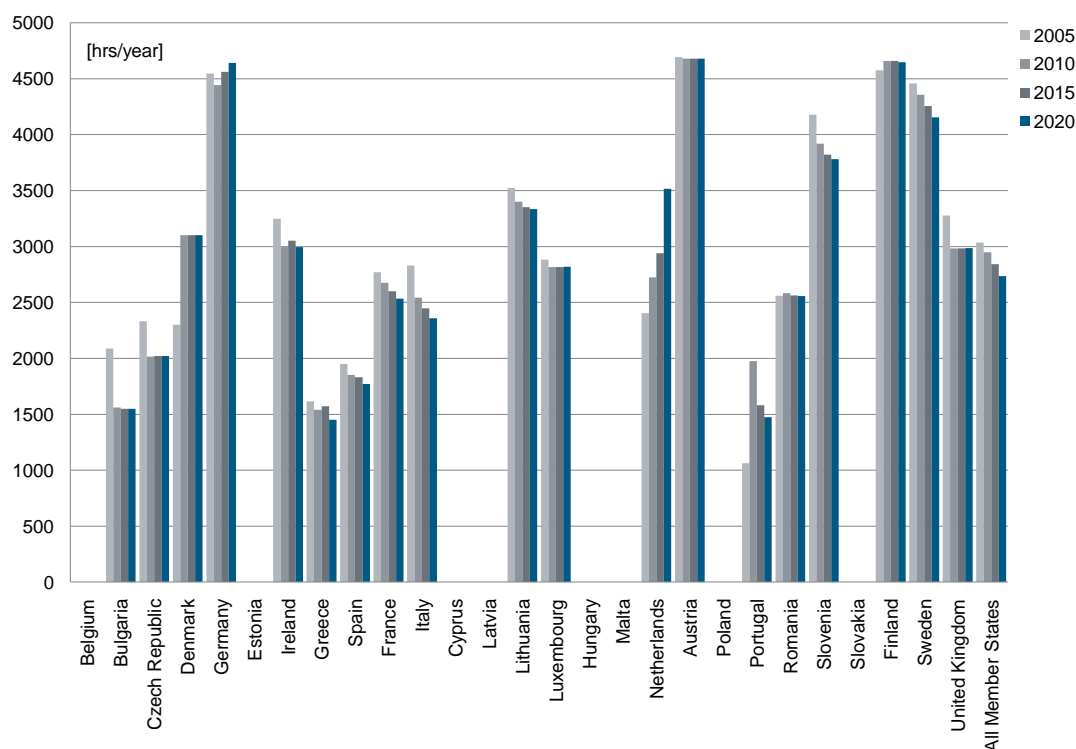


Figure 7: Calculated average number of full load hours for total hydropower [hrs/year] for the period 2005 - 2020

Table 39: Calculated average number of full load hours for total hydropower [hrs/year] for the period 2005 - 2020

	2005 [hrs/year]	2010 [hrs/year]	2015 [hrs/year]	2020 [hrs/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	2087	1560	1550	1550
Czech Republic	2333	2014	2020	2021
Denmark	2300	3100	3100	3100
Germany	4548	4442	4562	4641
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	3248	2996	3051	2996
Greece	1615	1541	1572	1451
Spain	1949	1852	1832	1771
France	2771	2675	2601	2534
Italy	2830	2542	2447	2360
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	3523	3402	3353	3333
Luxembourg	2882	2816	2816	2818
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	2405	2723	2941	3517
Austria	4695	4680	4680	4681
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	1063	1974	1582	1474
Romania	2559	2583	2563	2558
Slovenia	4178	3920	3821	3782
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	4576	4659	4659	4648
Sweden	4458	4358	4257	4156
United Kingdom	3278	2982	2984	2986
All Member States (average)	3034	2947	2842	2736

The capacity [MW] used for the calculation refers to the capacity data without pumped storage and also the electricity production [GWh] is excluding pumped storage

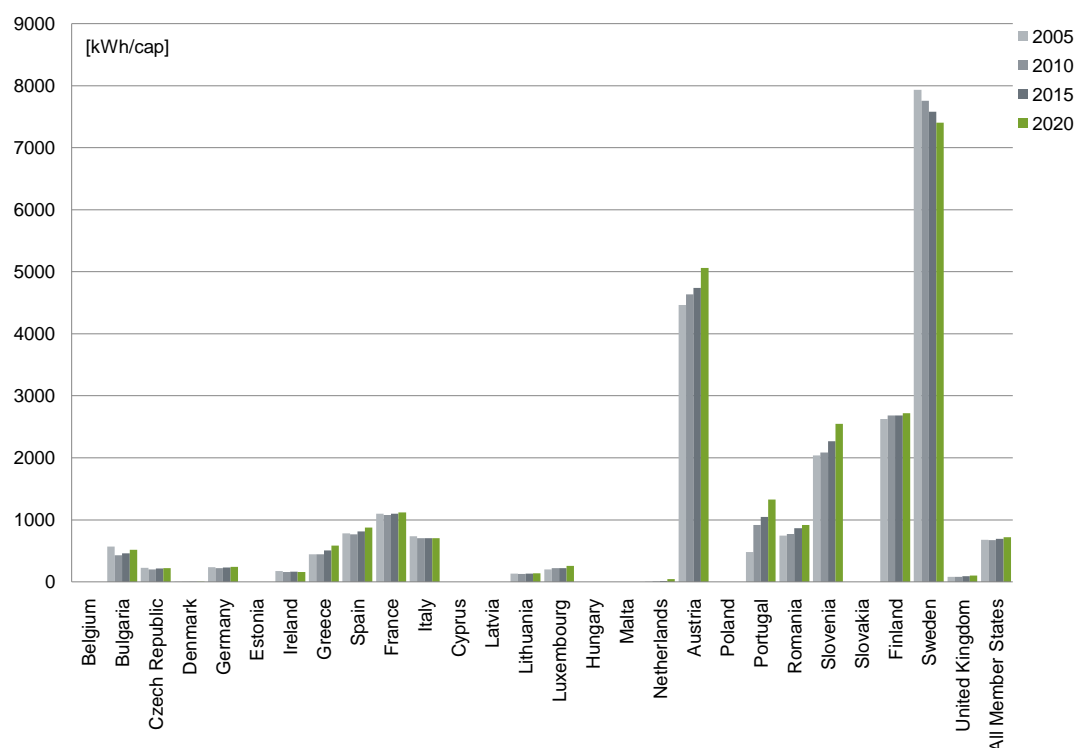


Figure 8: Calculated per capita (2008) electricity generation for total hydropower [kWh/cap] for the period 2005 - 2020

Table 40: Calculated per capita (2008) electricity generation for total hydropower [kWh/cap] for the period 2005 - 2020

	2005 [kWh/cap]	2010 [kWh/cap]	2015 [kWh/cap]	2020 [kWh/cap]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	568	427	463	517
Czech Republic	229	203	214	219
Denmark	4	6	6	6
Germany	239	219	231	243
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	173	159	162	159
Greece	447	445	507	586
Spain	784	764	811	874
France	1098	1079	1100	1121
Italy	734	707	706	704
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	134	128	132	140
Luxembourg	203	221	221	256
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	5	8	12	44
Austria	4463	4633	4739	5062
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	482	918	1046	1326
Romania	747	770	868	918
Slovenia	2039	2088	2268	2547
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	2624	2681	2681	2719
Sweden	7936	7759	7582	7405
United Kingdom	80	83	94	104
All Member States (average)	676	673	692	719

The electricity production [GWh] used for the calculation is excluding pumped storage.

The population data can be viewed in Table 9 (page 25)

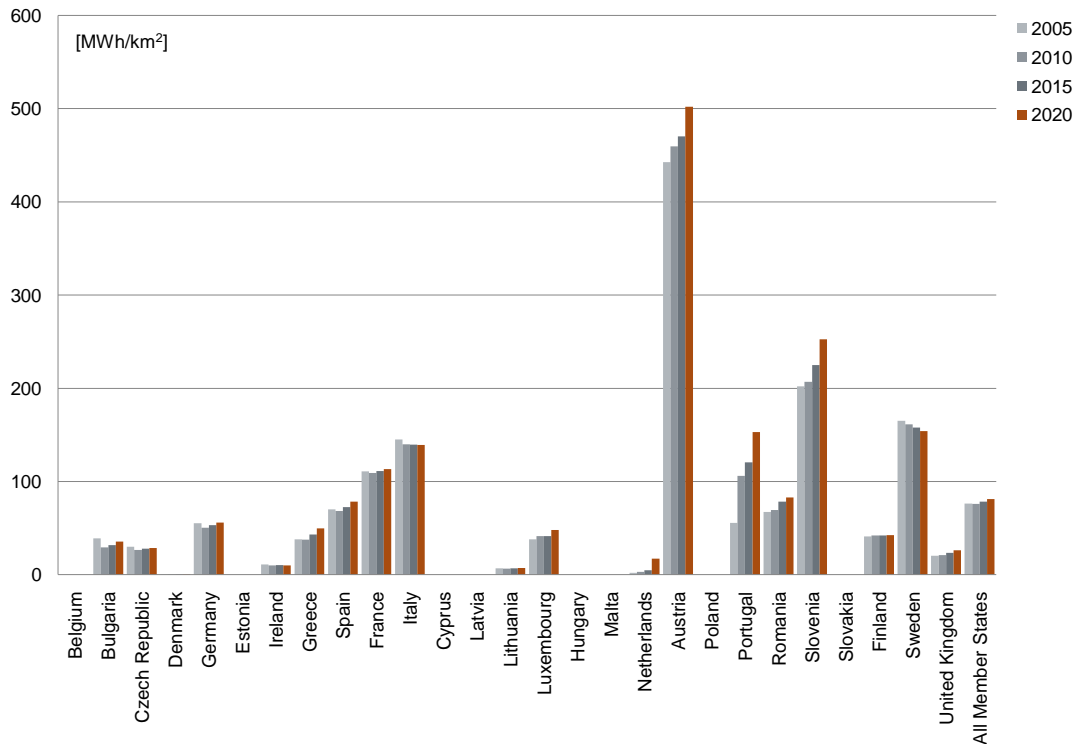


Figure 9: Calculated per surface area (2004) electricity generation for total hydropower [MWh/km²] for the period 2005 - 2020

Table 41: Calculated per surface area (2004) electricity generation for total hydropower [MWh/km²] for the period 2005 - 2020

	2005 [MWh/km ²]	2010 [MWh/km ²]	2015 [MWh/km ²]	2020 [MWh/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	39.1	29.4	31.8	35.6
Czech Republic	30.2	26.7	28.1	28.8
Denmark	0.5	0.7	0.7	0.7
Germany	55.1	50.4	53.2	56.0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	10.9	10.0	10.2	10.0
Greece	38.0	37.8	43.1	49.8
Spain	70.2	68.4	72.6	78.2
France	111.0	109.1	111.2	113.3
Italy	145.2	139.8	139.6	139.4
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	6.9	6.6	6.8	7.2
Luxembourg	37.9	41.4	41.4	48.0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	2.1	3.1	4.8	17.2
Austria	442.6	459.5	470.0	502.1
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	55.6	105.9	120.7	153.0
Romania	67.5	69.5	78.4	82.9
Slovenia	202.2	207.1	224.9	252.6
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	41.1	42.0	42.0	42.6
Sweden	165.1	161.4	157.7	154.1
United Kingdom	20.2	21.0	23.6	26.2
All Member States (average)	76.4	76.1	78.3	81.3

The electricity production [GWh] used for the calculation is excluding pumped storage.

The surface area data can be viewed in Table 9 (page 25)

Deep geothermal electricity

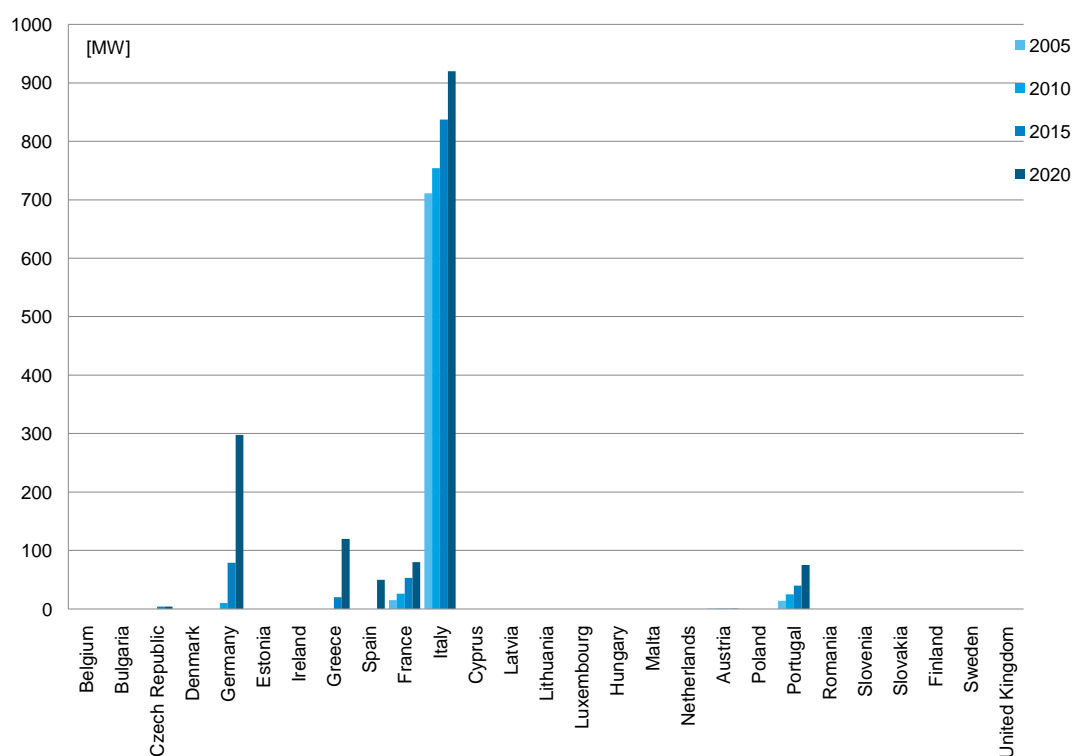


Figure 10: Projected geothermal electric capacity [MW] for the period 2005 - 2020

Table 42: Projected geothermal electric capacity [MW] for the period 2005 - 2020

	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0	0
Czech Republic	0	0	4	4	0
Denmark	0	0	0	0	0
Germany	0	10	79	298	19
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0	0
Greece	0	0	20	120	8
Spain	0	0	0	50	3
France	15	26	53	80	5
Italy	711	754	837	920	59
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0	0
Luxembourg	0	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0	0
Austria	1	1	1	1	0
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	14	25	40	75	5
Romania	0	0	0	0	0
Slovenia	0	0	0	0	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.	n.a.
All Member States (total)	741	816	1034	1548	100

See Table 44 on page 52 for corresponding geothermal electricity production data.

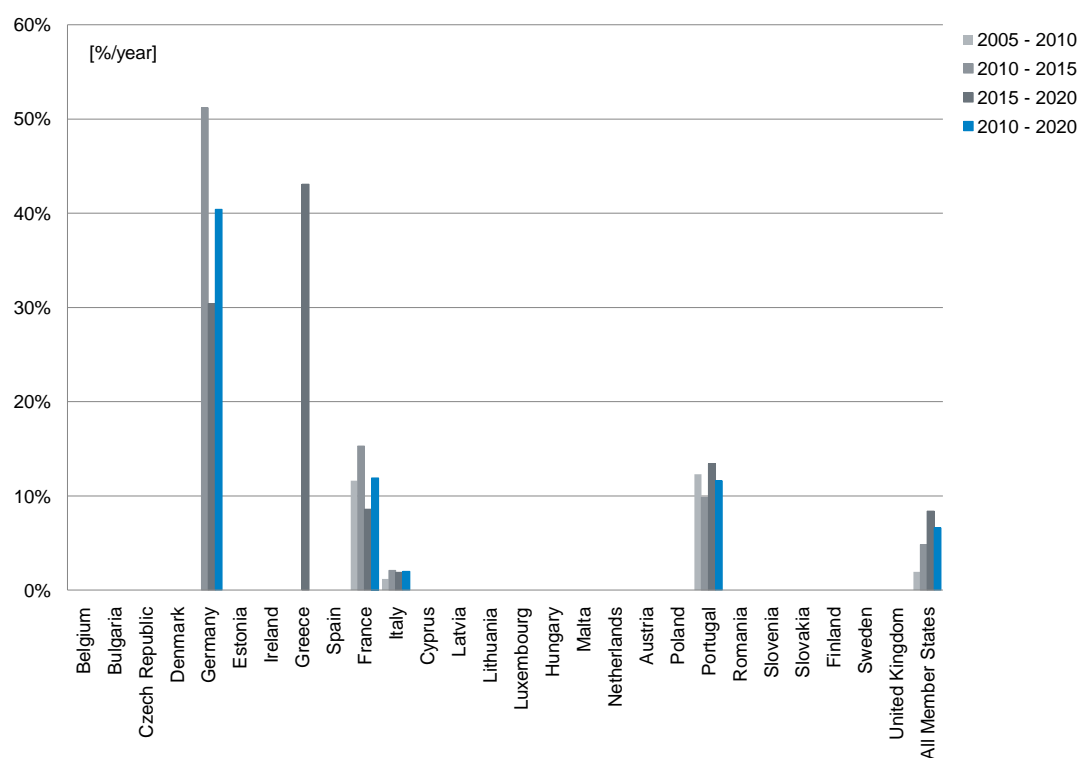


Figure 11: Calculated average annual growth for capacity of geothermal electricity [%/year] for four periods

Table 43: Calculated average annual growth for capacity of geothermal electricity [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	0.0	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	51.2	30.4	40.4
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	n.a.	n.a.	43.1	n.a.
Spain	n.a.	n.a.	n.a.	n.a.
France	11.6	15.3	8.6	11.9
Italy	1.2	2.1	1.9	2.0
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	0.0	0.0	0.0	0.0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	12.3	9.9	13.4	11.6
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	1.9	4.8	8.4	6.6

Note that a step from 0 MW to a nonzero value in the next period will result in an 'n.a.' entry in the table.

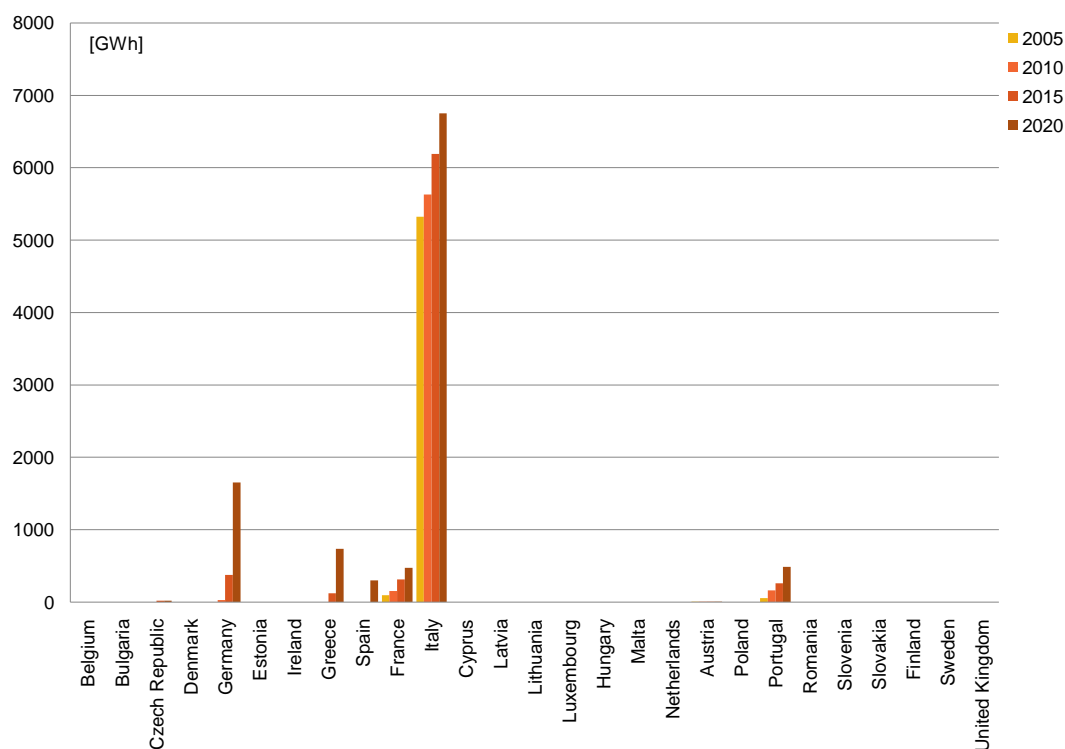


Figure 12: Projected geothermal electricity generation [GWh] for the period 2005 - 2020, all capacity ranges excluding pumped storage

Table 44: Projected geothermal electricity generation [GWh] for the period 2005 - 2020

	2005 [GWh]	2010 [GWh]	2015 [GWh]	2020 [GWh]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0	0
Czech Republic	0	0	18	18	0
Denmark	0	0	0	0	0
Germany	0	27	377	1654	16
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0	0
Greece	n.a.	0	123	736	7
Spain	0	0	0	300	3
France	95	153	314	475	5
Italy	5325	5632	6191	6750	65
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0	0
Luxembourg	0	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0	0
Austria	2	2	2	2	0
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	55	163	260	488	5
Romania	0	0	0	0	0
Slovenia	0	0	0	0	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.	n.a.
All Member States (total)	5477	5977	7285	10423	100

See Table 42 on page 50 for corresponding geothermal electricity capacity data.

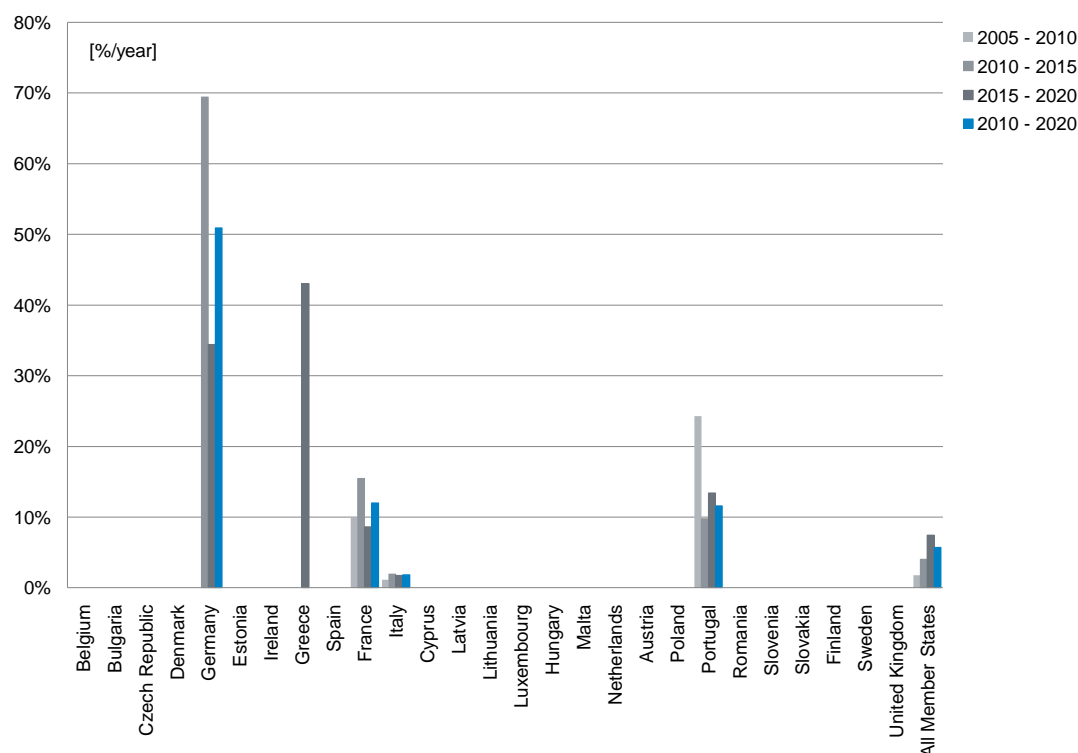


Figure 13: Calculated average annual growth for generation of geothermal electricity [%/year] for four periods

Table 45: Calculated average annual growth for generation of geothermal electricity [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	0.0	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	69.4	34.4	50.9
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	n.a.	n.a.	43.0	n.a.
Spain	n.a.	n.a.	n.a.	n.a.
France	10.0	15.5	8.6	12.0
Italy	1.1	1.9	1.7	1.8
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	0.0	0.0	0.0	0.0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	24.3	9.8	13.4	11.6
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	1.8	4.0	7.4	5.7

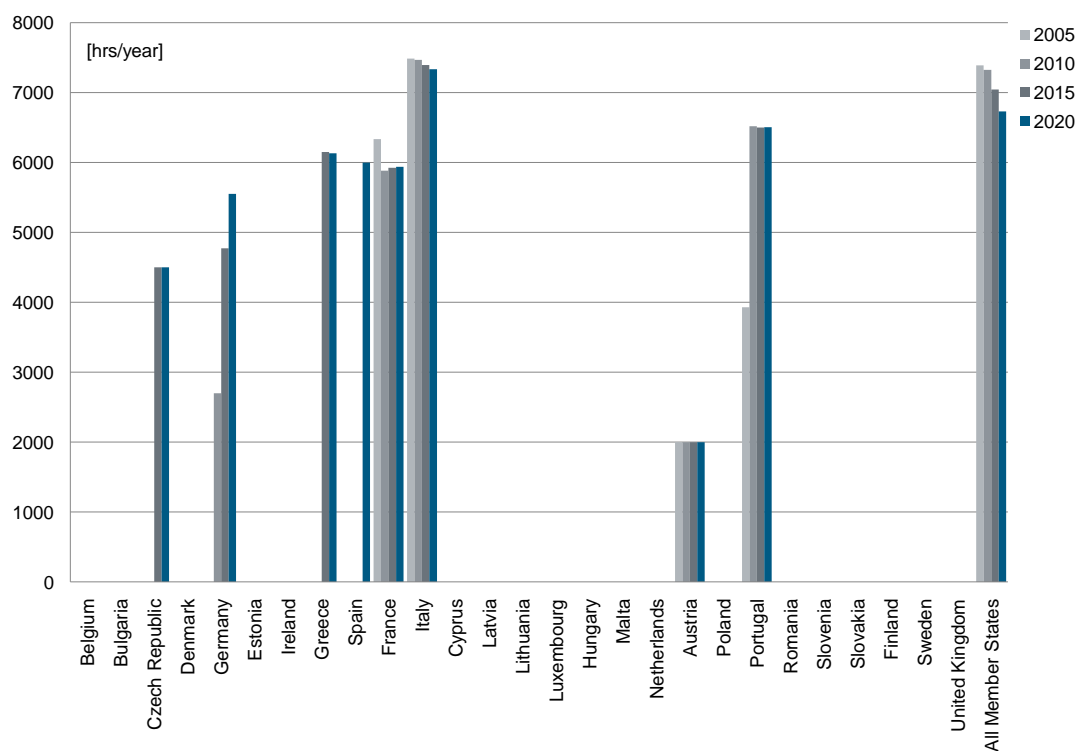


Figure 14: Calculated average number of full load hours for geothermal electricity [hrs/year] for the period 2005 - 2020

Table 46: Calculated average number of full load hours for geothermal electricity [hrs/year] for the period 2005 - 2020

	2005 [hrs/year]	2010 [hrs/year]	2015 [hrs/year]	2020 [hrs/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	4500	4500
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	2700	4772	5550
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	n.a.	n.a.	6150	6133
Spain	n.a.	n.a.	n.a.	6000
France	6333	5885	5925	5938
Italy	7489	7469	7397	7337
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	2000	2000	2000	2000
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	3929	6520	6500	6507
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	7391	7325	7045	6733

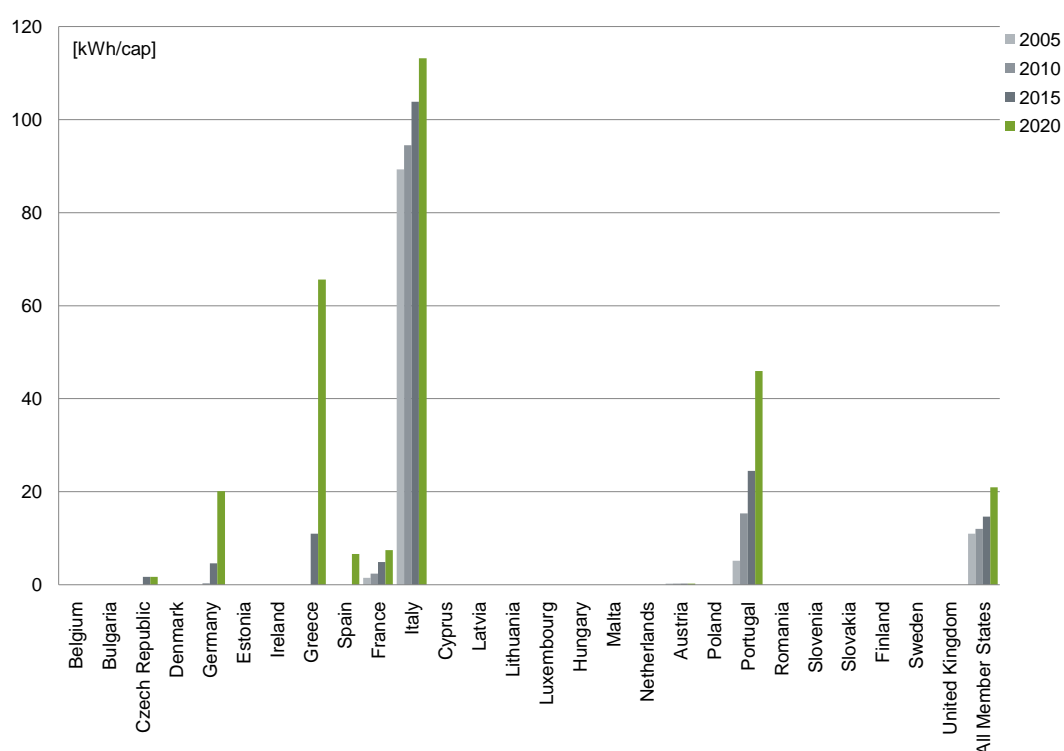


Figure 15: Calculated per capita (2008) generation of geothermal electricity [kWh/cap] for the period 2005 - 2020

Table 47: Calculated per capita (2008) generation of geothermal electricity [kWh/cap] for the period 2005 - 2020

	2005 [kWh/cap]	2010 [kWh/cap]	2015 [kWh/cap]	2020 [kWh/cap]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	0	0	2	2
Denmark	0	0	0	0
Germany	0	0	5	20
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0
Greece	n.a.	0	11	66
Spain	0	0	0	7
France	1	2	5	7
Italy	89	94	104	113
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0
Austria	0	0	0	0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	5	15	24	46
Romania	0	0	0	0
Slovenia	0	0	0	0
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	11	12	15	21

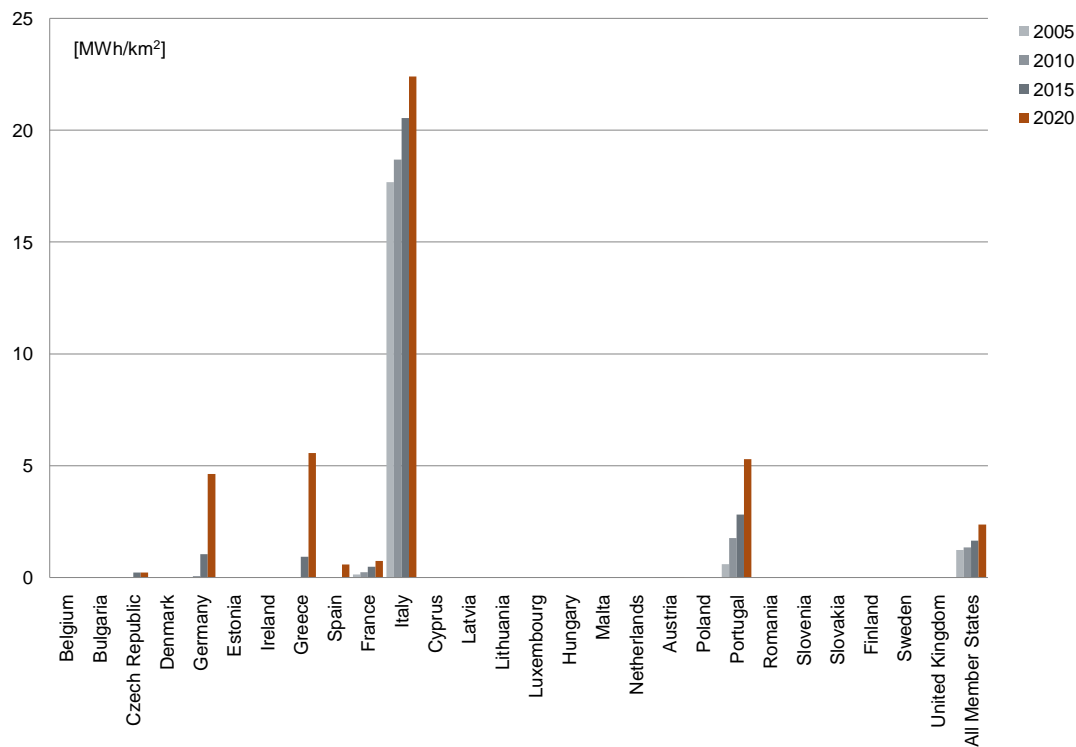


Figure 16: Calculated per surface area (2004) generation of geothermal electricity [MWh/km²] for the period 2005 - 2020

Table 48: Calculated per surface area (2004) generation of geothermal electricity [MWh/km²] for the period 2005 - 2020

	2005 [MWh/km ²]	2010 [MWh/km ²]	2015 [MWh/km ²]	2020 [MWh/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0.0	0.0	0.0	0.0
Czech Republic	0.0	0.0	0.2	0.2
Denmark	0.0	0.0	0.0	0.0
Germany	0.0	0.1	1.1	4.6
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0.0	0.0	0.0	0.0
Greece	n.a.	0.0	0.9	5.6
Spain	0.0	0.0	0.0	0.6
France	0.2	0.2	0.5	0.8
Italy	17.7	18.7	20.5	22.4
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0.0	0.0	0.0	0.0
Luxembourg	0.0	0.0	0.0	0.0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0.0	0.0	0.0	0.0
Austria	0.0	0.0	0.0	0.0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0.6	1.8	2.8	5.3
Romania	0.0	0.0	0.0	0.0
Slovenia	0.0	0.0	0.0	0.0
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0.0	0.0	0.0	0.0
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	1.2	1.4	1.7	2.4

Solar electricity

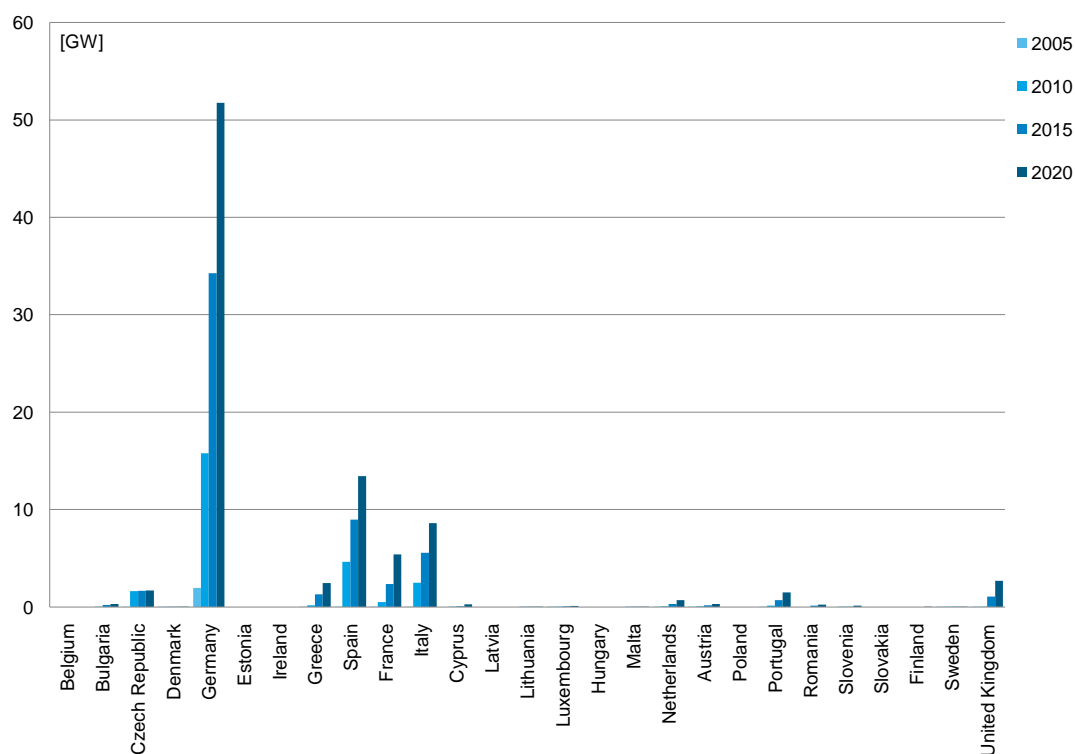


Figure 17: Projected total solar electric capacity [GW] for the period 2005 - 2020, including photovoltaic (PV) and concentrated solar power (CSP)

Table 49: Projected total solar electric capacity [MW] for the period 2005 - 2020, including photovoltaic (PV) and concentrated solar power (CSP)

	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	9	220	303	0
Czech Republic	1	1650	1680	1695	2
Denmark	3	3	4	6	0
Germany	1980	15784	34279	51753	58
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0	0
Greece	1	184	1300	2450	3
Spain	60	4653	8966	13445	15
France	25	504	2353	5400	6
Italy	34	2505	5562	8600	10
Cyprus	0	6	87	267	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	1	10	10	0
Luxembourg	24	27	88	113	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	4	27	28	0
Netherlands	51	92	317	722	1
Austria	22	90	179	322	0
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	3	156	720	1500	2
Romania	0	0	148	260	0
Slovenia	0	12	37	139	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	10	0
Sweden	4	5	7	8	0
United Kingdom	11	50	1070	2680	3
All Member States (total)	2219	25735	57054	89711	100

More information on subcategories for solar electricity capacity is presented in Table 51 on page 60.

See Table 52 on page 61 for corresponding solar electricity production data.

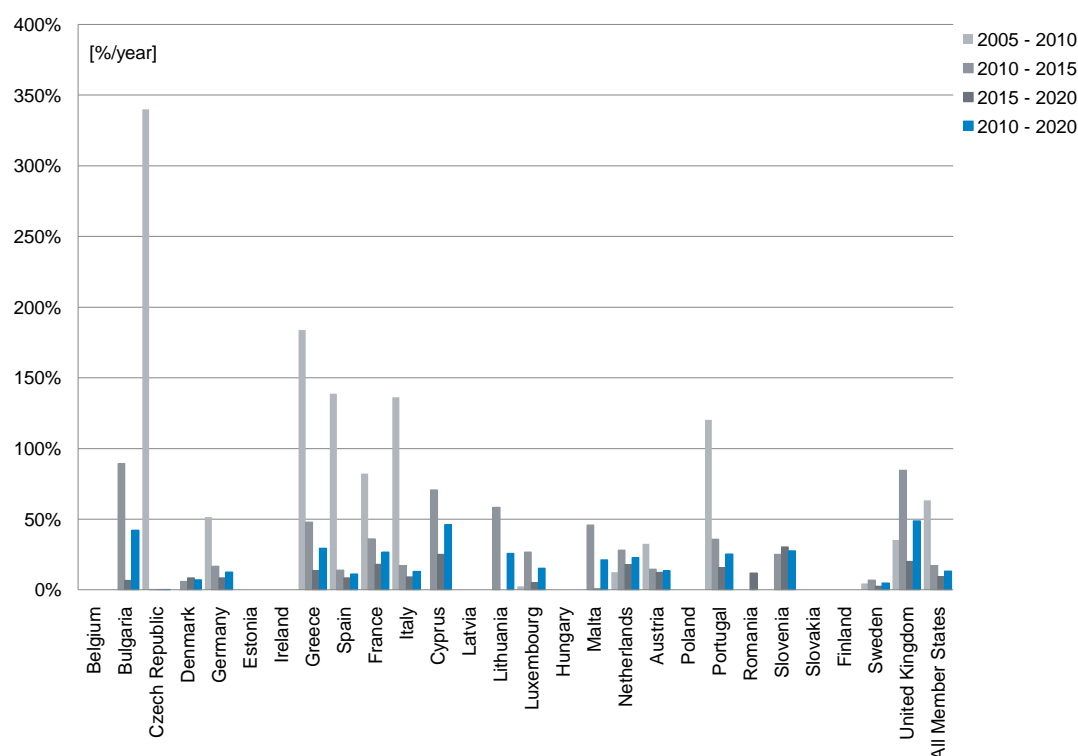


Figure 18: Calculated average annual growth for capacity of solar electricity [%/year] for four periods

Table 50: Calculated average annual growth for capacity of solar electricity [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	89.5	6.6	42.1
Czech Republic	340.0	0.4	0.2	0.3
Denmark	0.0	5.9	8.4	7.2
Germany	51.5	16.8	8.6	12.6
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	183.8	47.9	13.5	29.5
Spain	138.7	14.0	8.4	11.2
France	82.3	36.1	18.1	26.8
Italy	136.3	17.3	9.1	13.1
Cyprus	n.a.	70.7	25.1	46.2
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	58.5	0.0	25.9
Luxembourg	2.4	26.7	5.1	15.4
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	45.9	0.8	21.3
Netherlands	12.5	28.1	17.9	22.9
Austria	32.5	14.7	12.5	13.6
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	120.4	35.8	15.8	25.4
Romania	n.a.	n.a.	11.9	n.a.
Slovenia	n.a.	25.3	30.3	27.8
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	4.6	7.0	2.7	4.8
United Kingdom	35.4	84.5	20.2	48.9
All Member States (average)	63.3	17.3	9.5	13.3

The annual growth indicator has been calculated based total solar electricity (photovoltaic (PV) and concentrated solar power (CSP))

Table 51: Projected solar electric capacity [MW] for the period 2005 - 2020, broken down into photovoltaic (PV) and concentrated solar power (CSP)

	Solar photovoltaic					Concentrated solar power					Total solar electricity				
	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [MW]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	9	220	303	303	0	0	0	0	0	0	9	220	303	303
Czech Republic	1	1650	1680	1695	1695	n.a.	n.a.	n.a.	n.a.	n.a.	1	1650	1680	1695	1695
Denmark	3	3	4	6	6	0	0	0	0	0	3	3	4	6	6
Germany	1980	15784	34279	51753	51753	0	0	0	0	0	1980	15784	34279	51753	51753
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	0	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	0	0	0	0	0
Greece	60	184	1270	2200	2200	n.a.	n.a.	n.a.	n.a.	n.a.	60	184	1300	2450	2450
Spain	4021	4021	5918	8367	8367	0	0	3048	5079	5079	4021	4653	8966	13445	13445
France	25	504	2151	4860	4860	0	0	203	540	540	25	504	2353	5400	5400
Italy	34	2500	5500	8000	8000	0	5	62	600	600	34	2505	5562	8600	8600
Cyprus	0	6	37	192	192	0	0	50	75	75	0	6	87	267	267
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	1	10	10	10	0	0	0	0	0	0	1	10	10	10
Luxembourg	24	27	88	113	113	0	0	0	0	0	24	27	88	113	113
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	4	27	28	28	n.a.	n.a.	n.a.	n.a.	n.a.	0	4	27	28	28
Netherlands	n.a.	92	317	722	722	0	0	0	0	0	0	92	317	722	722
Austria	51	22	179	322	322	0	0	0	0	0	51	90	179	322	322
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	3	156	540	1000	1000	0	0	180	500	500	3	156	720	1500	1500
Romania	0	0	148	260	260	0	0	0	0	0	0	0	148	260	260
Slovenia	0	12	37	139	139	0	0	0	0	0	0	12	37	139	139
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	10	10	0	0	0	0	0	0	0	0	10	10
Sweden	4	5	7	8	8	n.a.	n.a.	n.a.	n.a.	n.a.	4	5	7	8	8
United Kingdom	11	50	1070	2680	2680	n.a.	0	0	0	0	11	50	1070	2680	2680
All Member States (total)	2219	25098	53482	82668	82668	0	637	3573	7044	7044	2219	25735	57054	89711	89711

See Table 54 on page 63 for corresponding solar electricity production data.

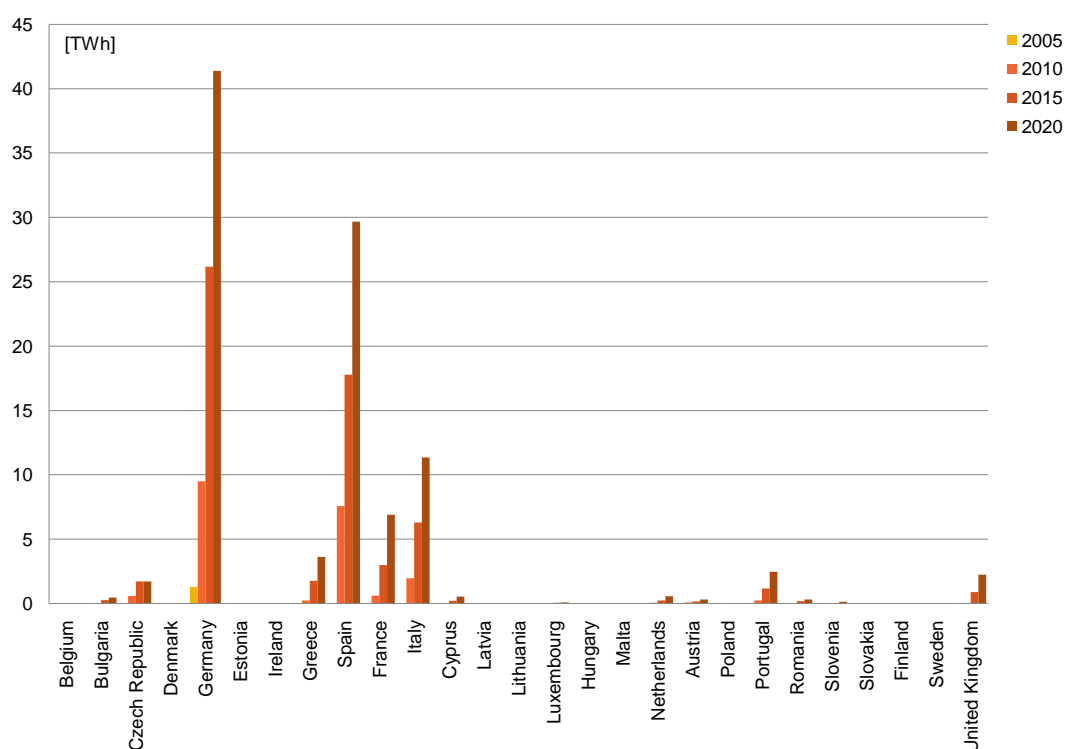


Figure 19: Projected total solar electricity generation [TWh] for the period 2005 - 2020, including photovoltaic (PV) and concentrated solar power (CSP)

Table 52: Projected total solar electricity generation [GWh] for the period 2005 - 2020, including photovoltaic (PV) and concentrated solar power (CSP)

	2005 [GWh]	2010 [GWh]	2015 [GWh]	2020 [GWh]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	12	263	454	0
Czech Republic	0	578	1708	1726	2
Denmark	2	2	3	4	0
Germany	1282	9499	26161	41389	41
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0	0
Greece	1	242	1754	3605	4
Spain	41	7561	17785	29669	29
France	22	613	2987	6885	7
Italy	31	1976	6292	11350	11
Cyprus	0	6	208	533	1
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	13	15	0
Luxembourg	18	20	65	84	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	6	41	43	0
Netherlands	40	73	250	570	1
Austria	21	85	170	306	0
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	3	230	1157	2475	2
Romania	0	0	180	320	0
Slovenia	0	12	37	139	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	0	1	3	4	0
United Kingdom	8	40	890	2240	2
All Member States (total)	1469	20956	59967	101811	100

More information on subcategories for solar electricity generation is presented in Table 54 on page 63. See Table 49 on page 58 for corresponding solar electric capacity data.

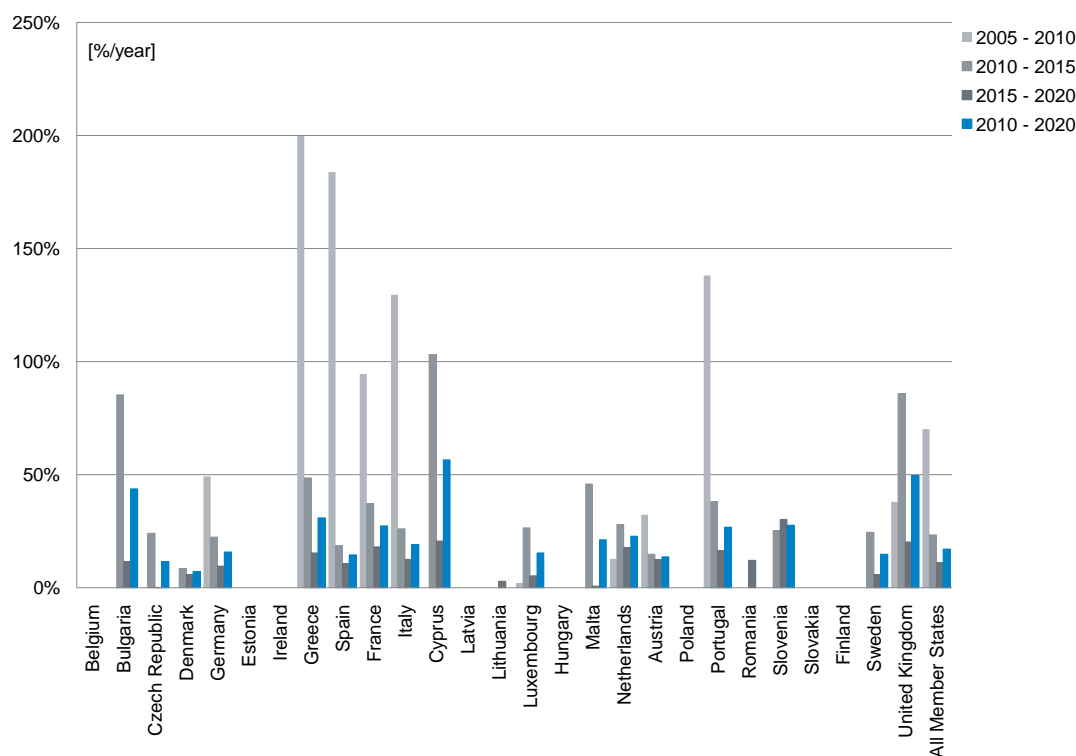


Figure 20: Calculated average annual growth for generation from solar electricity [%/year] for four periods

Table 53: Calculated average annual growth for generation from solar electricity [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	85.4	11.5	43.8
Czech Republic	n.a.	24.2	0.2	11.6
Denmark	0.0	8.4	5.9	7.2
Germany	49.3	22.5	9.6	15.9
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	199.8	48.6	15.5	31.0
Spain	183.9	18.7	10.8	14.6
France	94.5	37.3	18.2	27.4
Italy	129.6	26.1	12.5	19.1
Cyprus	n.a.	103.2	20.7	56.6
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	2.9	n.a.
Luxembourg	2.1	26.6	5.3	15.4
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	46.0	0.8	21.3
Netherlands	12.8	27.9	17.9	22.8
Austria	32.3	14.9	12.5	13.7
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	138.2	38.1	16.4	26.8
Romania	n.a.	n.a.	12.2	n.a.
Slovenia	n.a.	25.3	30.3	27.8
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	n.a.	24.6	5.9	14.9
United Kingdom	38.0	86.0	20.3	49.6
All Member States (average)	70.2	23.4	11.2	17.1

The annual growth indicator has been calculated based total solar electricity (photovoltaic (PV) and concentrated solar power (CSP))

Table 54: Projected solar electricity generation [GWh] for the period 2005 - 2020, broken down into photovoltaic (PV) and concentrated solar power (CSP)

	Solar photovoltaic					Concentrated solar power					Total solar electricity				
	2005	2010	2015	2020		2005	2010	2015	2020		2005	2010	2015	2020	
	[GWh]	[GWh]	[GWh]	[GWh]		[GWh]	[GWh]	[GWh]	[GWh]		[GWh]	[GWh]	[GWh]	[GWh]	
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	0	12	263	454	0	0	0	0	0	0	0	12	263	454	
Czech Republic	0	578	1708	1726	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	578	1708	1726	
Denmark	2	2	3	4	0	0	0	0	0	0	2	2	3	4	
Germany	1282	9499	26161	41389	0	0	0	0	0	0	1282	9499	26161	41389	
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Ireland	n.a.	n.a.	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0	0	0	
Greece	1	242	1668	2891	0	0	86	714	0	0	1	242	1754	3605	
Spain	41	6417	9872	14316	0	1144	7913	15353	0	0	41	7561	17785	29669	
France	22	613	2617	5913	0	0	365	972	0	0	22	613	2987	6885	
Italy	31	1967	6122	9650	0	9	170	1700	0	0	31	1976	6292	11350	
Cyprus	0	6	59	309	0	0	149	224	0	0	0	6	208	533	
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Lithuania	0	0	13	15	0	0	0	0	0	0	0	0	13	15	
Luxembourg	18	20	65	84	0	0	0	0	0	0	18	20	65	84	
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Malta	n.a.	6	41	43	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	6	41	43	
Netherlands	40	73	250	570	0	0	0	0	0	0	40	73	250	570	
Austria	21	85	170	306	0	0	0	0	0	0	21	85	170	306	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Portugal	3	230	797	1475	0	0	360	1000	0	0	3	230	1157	2475	
Romania	0	0	180	320	0	0	0	0	0	0	0	0	180	320	
Slovenia	0	12	37	139	0	0	0	0	0	0	0	12	37	139	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Finland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sweden	0	1	3	4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	1	3	4	
United Kingdom	8	40	890	2240	n.a.	0	8	0	0	0	8	40	890	2240	
All Member States (total)	1469	19803	50919	81848	0	1153	9043	19963	0	0	1469	20956	59967	101811	

See Table 51 on page 60 for corresponding solar electric capacity data.

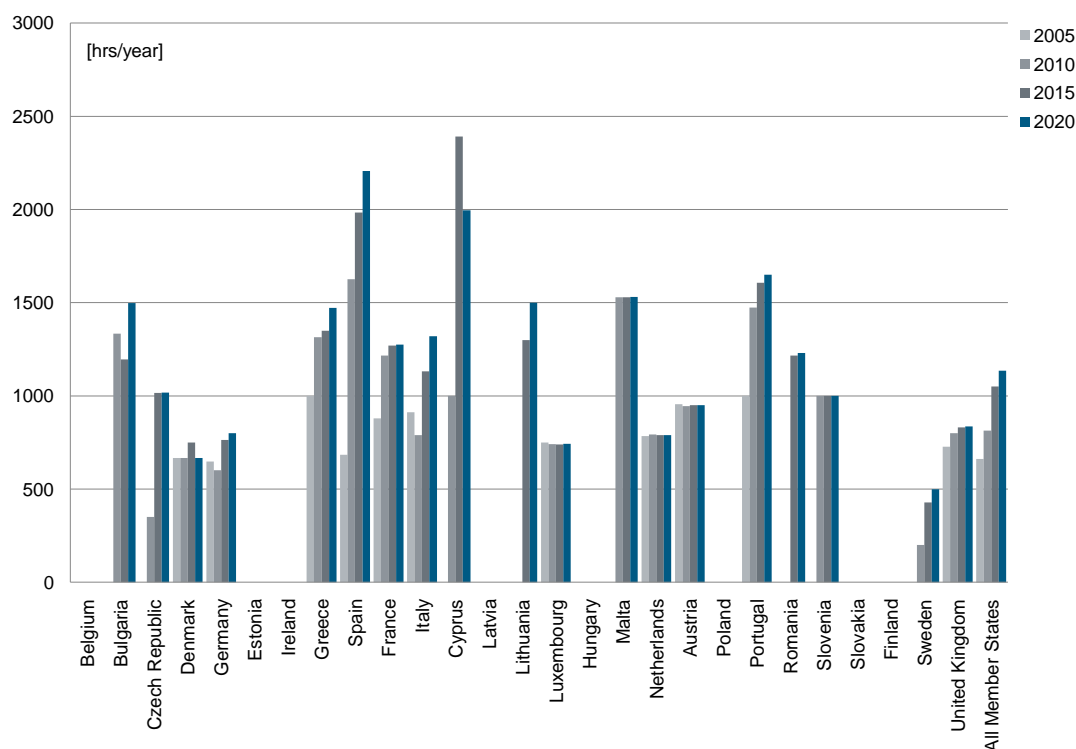


Figure 21: Calculated average number of full load hours for total solar electricity [hrs/year] for the period 2005 - 2020

Table 55: Calculated average number of full load hours for total solar electricity [hrs/year] for the period 2005 - 2020

	2005 [hrs/year]	2010 [hrs/year]	2015 [hrs/year]	2020 [hrs/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	1333	1195	1498
Czech Republic	0	350	1017	1018
Denmark	667	667	750	667
Germany	647	602	763	800
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	1000	1315	1349	1471
Spain	683	1625	1984	2207
France	880	1216	1269	1275
Italy	912	789	1131	1320
Cyprus	n.a.	1000	2391	1996
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	0	1300	1500
Luxembourg	750	741	739	743
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	1528	1530	1530
Netherlands	784	793	789	789
Austria	955	944	950	950
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	1000	1474	1607	1650
Romania	n.a.	n.a.	1216	1231
Slovenia	n.a.	1000	1000	1000
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	0
Sweden	0	200	429	500
United Kingdom	727	800	832	836
All Member States (average)	662	814	1051	1135

The full load hours have been calculated based total solar electricity (photovoltaic (PV) and concentrated solar power (CSP))

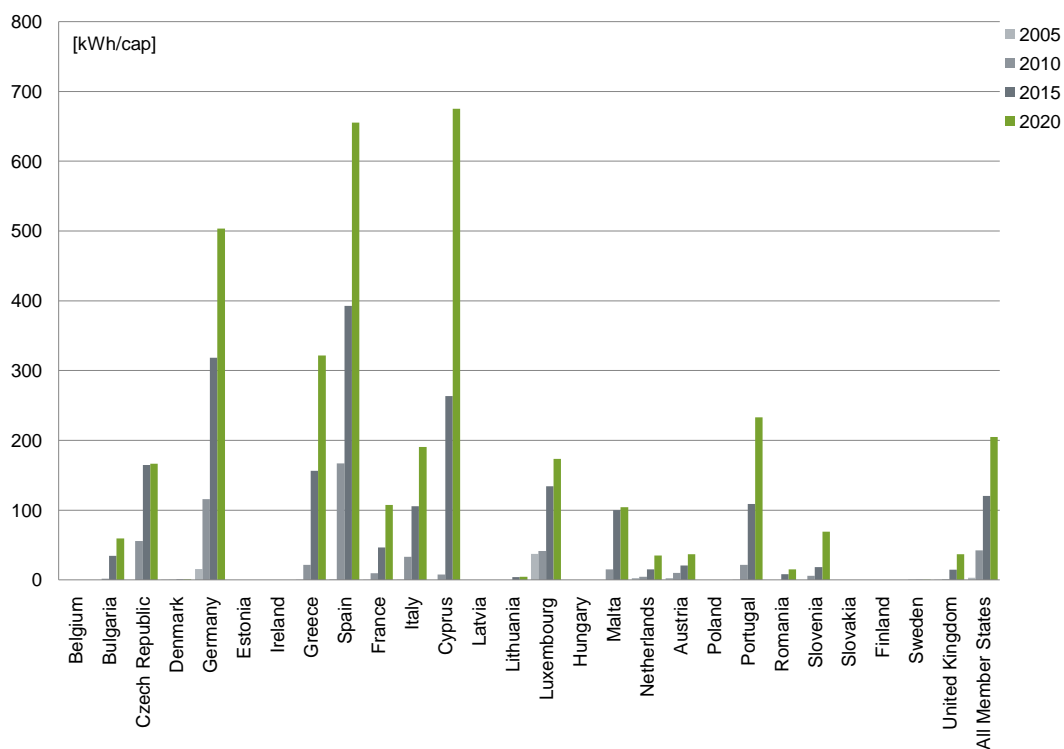


Figure 22: Calculated per capita (2008) generation for total solar electricity [kWh/cap] for the period 2005 - 2020

Table 56: Calculated per capita (2008) generation for total solar electricity [kWh/cap] for the period 2005 - 2020

	2005 [kWh/cap]	2010 [kWh/cap]	2015 [kWh/cap]	2020 [kWh/cap]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	2	34	59
Czech Republic	0	56	165	166
Denmark	0	0	1	1
Germany	16	116	318	503
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0
Greece	0	22	156	321
Spain	1	167	393	655
France	0	10	47	108
Italy	1	33	106	190
Cyprus	0	8	264	675
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	4	4
Luxembourg	37	41	134	174
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0	15	100	104
Netherlands	2	4	15	35
Austria	3	10	20	37
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	22	109	233
Romania	0	0	8	15
Slovenia	0	6	18	69
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	0	0	0	0
United Kingdom	0	1	15	37
All Member States (average)	3	42	121	205

The per capita indicator has been calculated based on total solar electricity (photovoltaic (PV) and concentrated solar power (CSP))

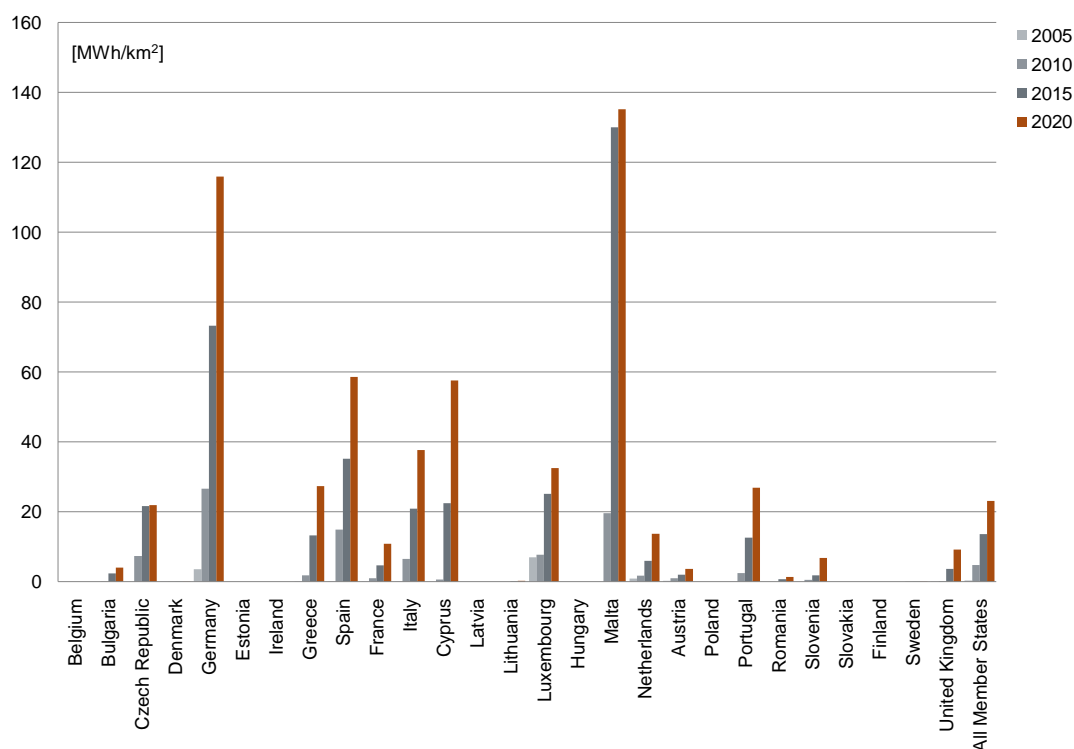


Figure 23: Calculated per surface area (2004) generation for total solar electricity [MWh/km²] for the period 2005 - 2020

Table 57: Calculated per surface area (2004) generation for total solar electricity [MWh/km²] for the period 2005 - 2020

	2005 [MWh/km ²]	2010 [MWh/km ²]	2015 [MWh/km ²]	2020 [MWh/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0.0	0.1	2.4	4.1
Czech Republic	0.0	7.3	21.7	21.9
Denmark	0.0	0.0	0.1	0.1
Germany	3.6	26.6	73.3	115.9
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0.0	0.0	0.0	0.0
Greece	0.0	1.8	13.3	27.3
Spain	0.1	14.9	35.1	58.6
France	0.0	1.0	4.7	10.9
Italy	0.1	6.6	20.9	37.7
Cyprus	0.0	0.6	22.5	57.6
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0.0	0.0	0.2	0.2
Luxembourg	7.0	7.7	25.1	32.5
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0.0	19.6	130.0	135.2
Netherlands	1.0	1.8	6.0	13.7
Austria	0.3	1.0	2.0	3.6
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0.0	2.5	12.6	26.9
Romania	0.0	0.0	0.8	1.3
Slovenia	0.0	0.6	1.8	6.9
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0.0	0.0	0.0	0.0
Sweden	0.0	0.0	0.0	0.0
United Kingdom	0.0	0.2	3.7	9.2
All Member States (average)	0.3	4.8	13.6	23.1

The per area indicator has been calculated based on total solar electricity (photovoltaic (PV) and concentrated solar power (CSP))

Tidal, wave and ocean energy

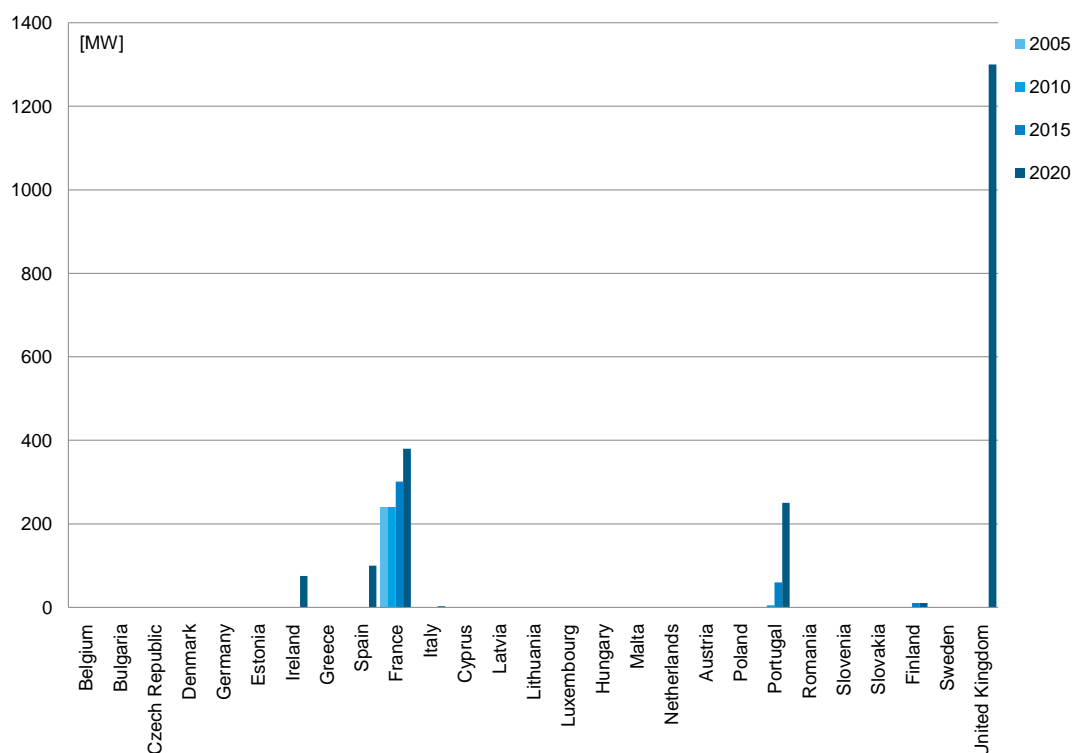


Figure 24: Projected tidal, wave and ocean energy electric capacity [MW] for the period 2005 - 2020

Table 58: Projected tidal, wave and ocean energy electric capacity [MW] for the period 2005 - 2020

	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0	0
Czech Republic	n.a.	n.a.	n.a.	n.a.	n.a.
Denmark	0	0	0	0	0
Germany	0	0	0	0	0
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	75	4
Greece	n.a.	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	100	5
France	240	240	301	380	18
Italy	0	0	0	3	0
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0	0
Luxembourg	0	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0	0
Austria	n.a.	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	5	60	250	12
Romania	0	0	0	0	0
Slovenia	0	0	0	0	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	10	10	0
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	0	0	1300	61
All Member States (total)	240	245	371	2118	100

See Table 60 on page 70 for corresponding tidal, wave and ocean energy electricity production data.

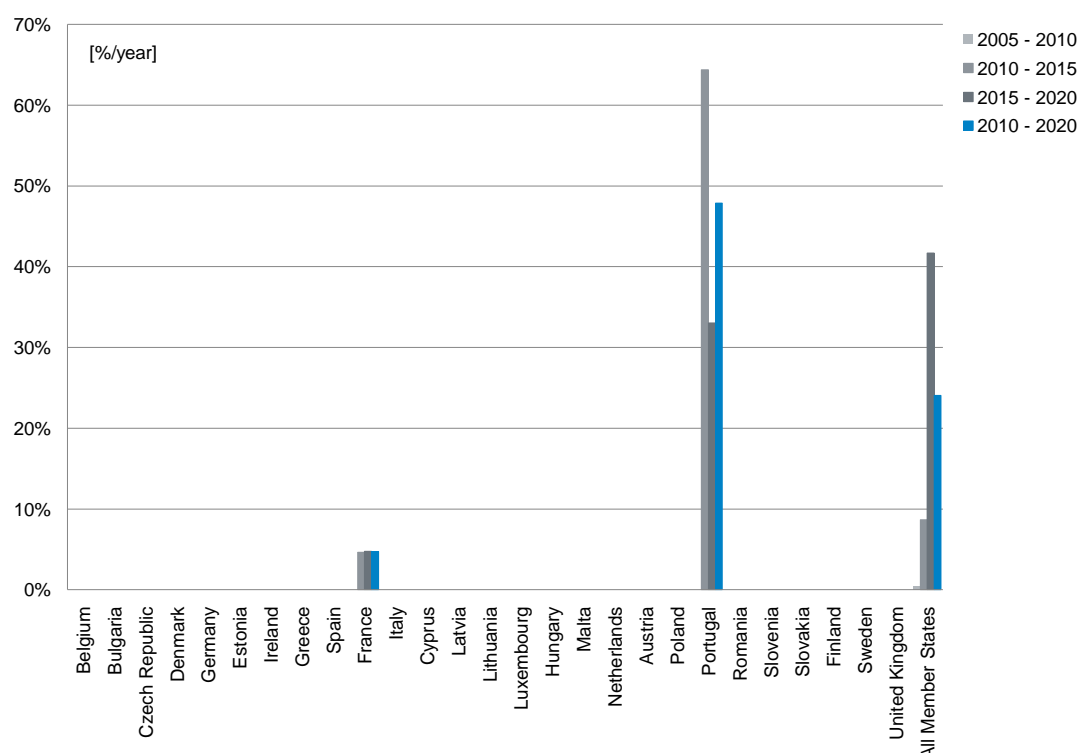


Figure 25: Calculated average annual growth for electric capacity from tidal, wave and ocean energy [%/year] for four periods

Table 59: Calculated average annual growth for electric capacity from tidal, wave and ocean energy [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	n.a.	n.a.	n.a.
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	n.a.	n.a.	n.a.	n.a.
Spain	n.a.	n.a.	n.a.	n.a.
France	0.0	4.6	4.8	4.7
Italy	n.a.	n.a.	n.a.	n.a.
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	64.4	33.0	47.9
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	0.0	n.a.
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	0.4	8.7	41.7	24.1

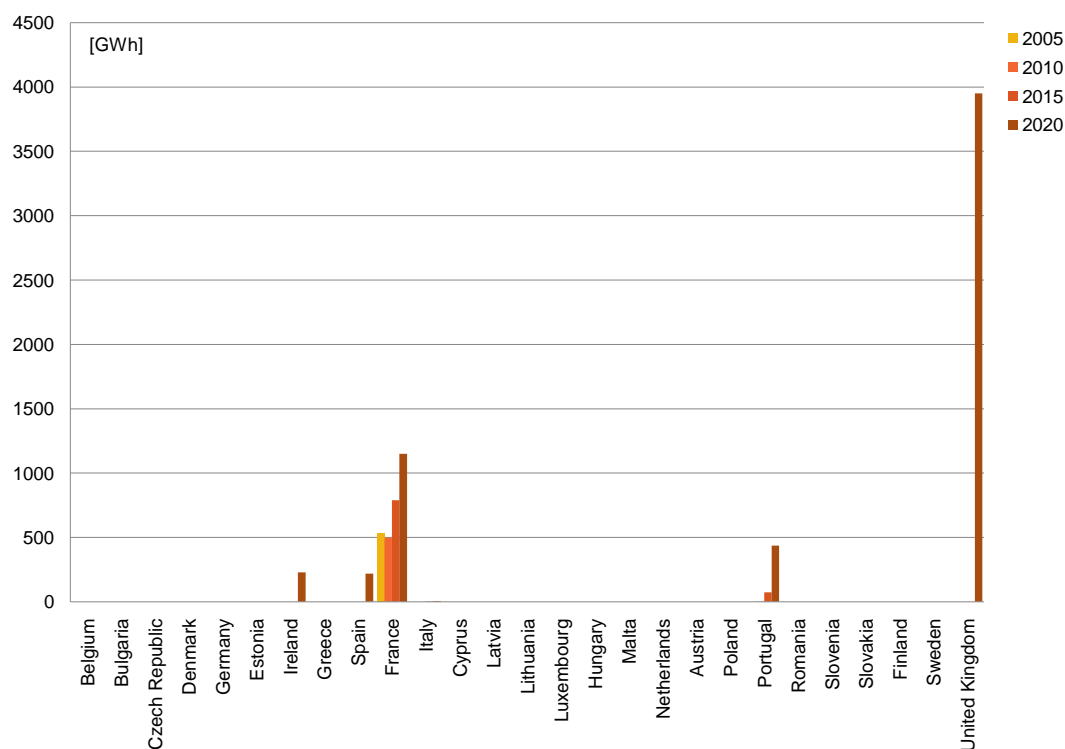


Figure 26: Projected tidal, wave and ocean energy electricity generation [GWh] for the period 2005 - 2020, all capacity ranges excluding pumped storage

Table 60: Projected tidal, wave and ocean energy electricity generation [GWh] for the period 2005 - 2020

	2005 [GWh]	2010 [GWh]	2015 [GWh]	2020 [GWh]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0	0
Czech Republic	n.a.	n.a.	n.a.	n.a.	n.a.
Denmark	0	0	0	0	0
Germany	0	0	0	0	0
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	230	4
Greece	n.a.	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	220	4
France	535	500	789	1150	19
Italy	0	0	1	5	0
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0	0
Luxembourg	0	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0	0
Austria	n.a.	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	1	75	437	7
Romania	0	0	0	0	0
Slovenia	0	0	0	0	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	0	0	3950	66
All Member States (total)	535	501	865	5992	100

See Table 58 on page 68 for corresponding tidal, wave and ocean energy capacity data.

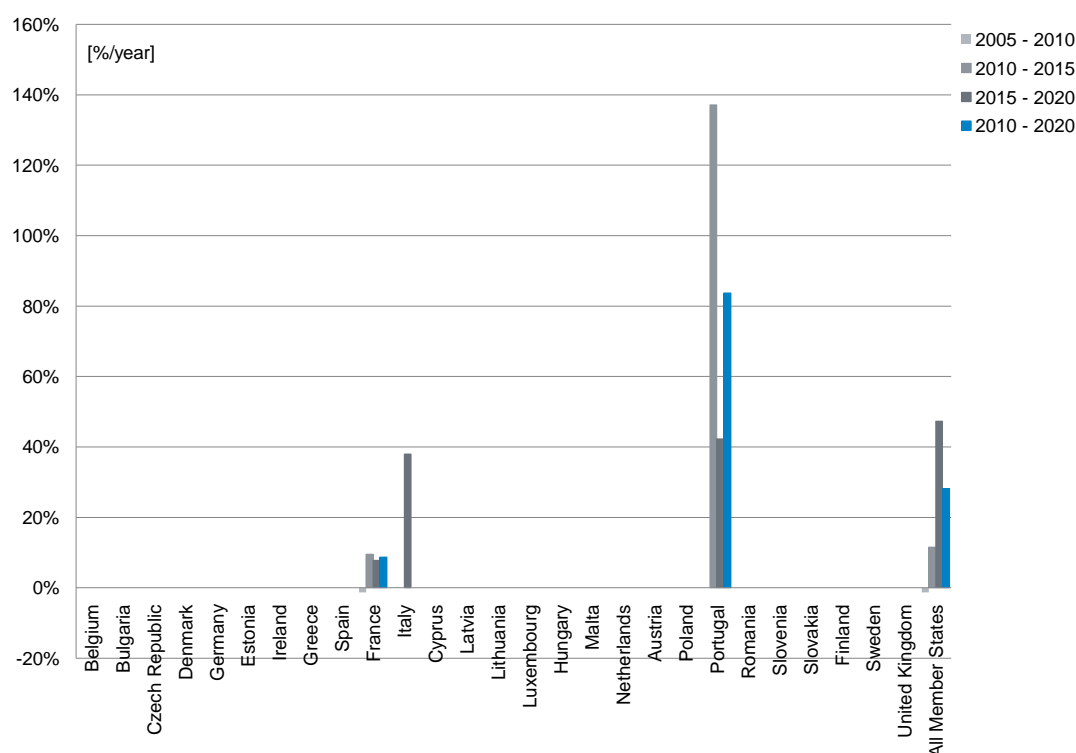


Figure 27: Calculated average annual growth for electricity generation from tidal, wave and ocean energy [%/year] for four periods

Table 61: Calculated average annual growth for electricity generation from tidal, wave and ocean energy [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	n.a.	n.a.	n.a.
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	n.a.	n.a.	n.a.	n.a.
Spain	n.a.	n.a.	n.a.	n.a.
France	-1.3	9.6	7.8	8.7
Italy	n.a.	n.a.	38.0	n.a.
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	137.1	42.3	83.7
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	-1.3	11.5	47.3	28.2

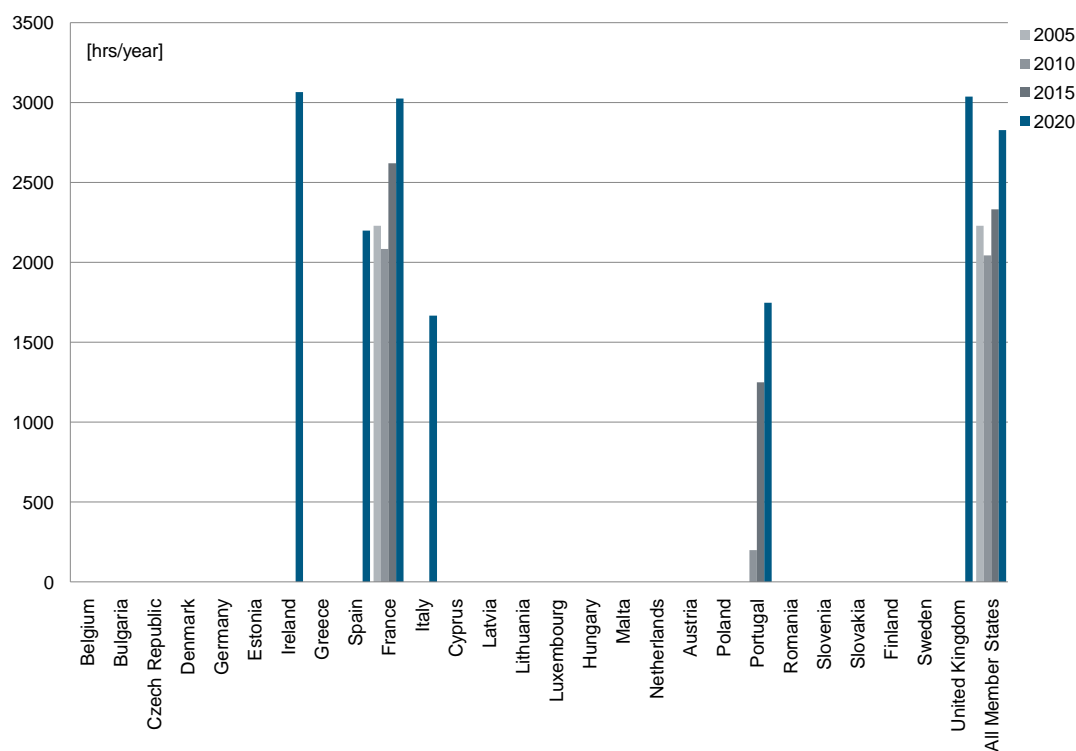


Figure 28: Calculated average number of full load hours for tidal, wave and ocean energy [hrs/year] for the period 2005 - 2020

Table 62: Calculated average number of full load hours for tidal, wave and ocean energy [hrs/year] for the period 2005 - 2020

	2005 [hrs/year]	2010 [hrs/year]	2015 [hrs/year]	2020 [hrs/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	n.a.	n.a.	n.a.
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	3067
Greece	n.a.	n.a.	n.a.	n.a.
Spain	n.a.	n.a.	n.a.	2200
France	2229	2083	2621	3026
Italy	n.a.	n.a.	n.a.	1667
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	200	1250	1748
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	0	0
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	3038
All Member States (average)	2229	2045	2332	2829

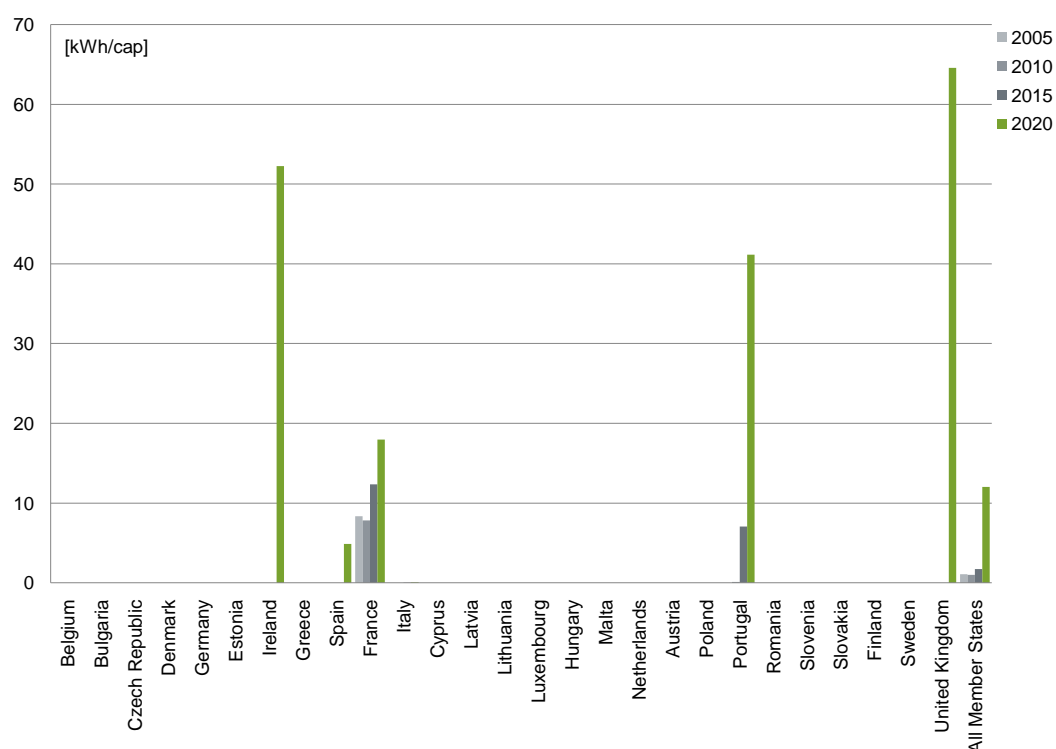


Figure 29: Calculated per capita (2008) electricity generation for tidal, wave and ocean energy [kWh/cap] for the period 2005 - 2020

Table 63: Calculated per capita (2008) electricity generation for tidal, wave and ocean energy [kWh/cap] for the period 2005 - 2020

	2005 [kWh/cap]	2010 [kWh/cap]	2015 [kWh/cap]	2020 [kWh/cap]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	0	0	0	0
Germany	0	0	0	0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	52
Greece	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	5
France	8	8	12	18
Italy	0	0	0	0
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0
Austria	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	7	41
Romania	0	0	0	0
Slovenia	0	0	0	0
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	0	0	65
All Member States (average)	1	1	2	12

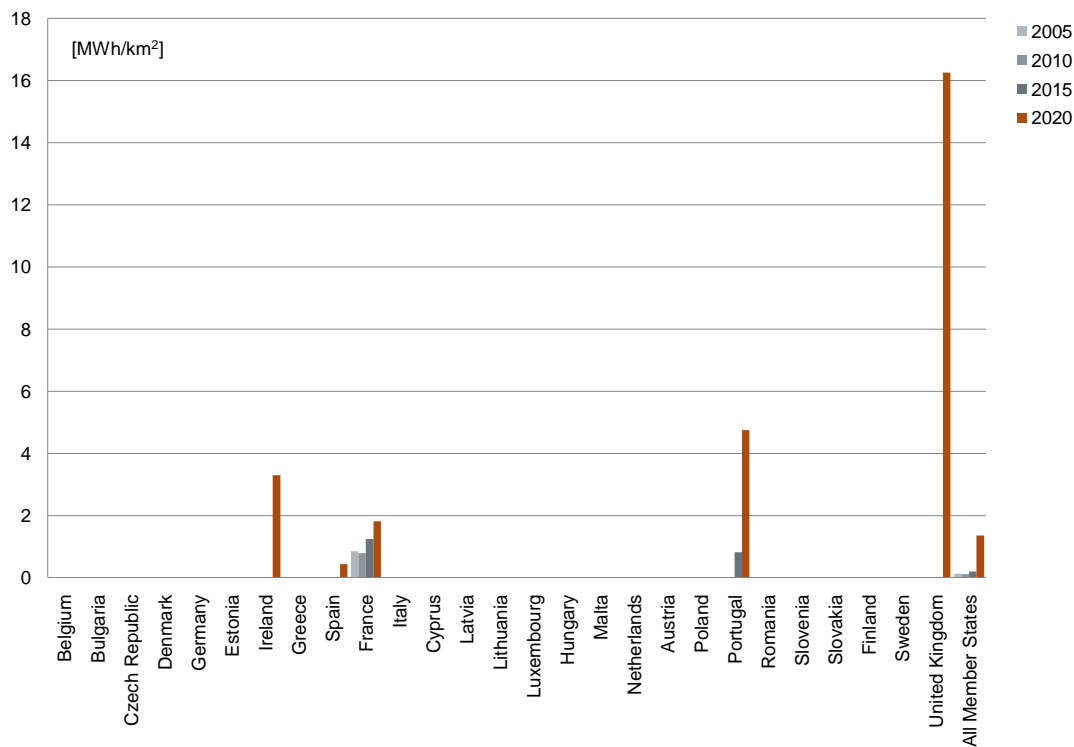


Figure 30: Calculated per surface area (2004) electricity generation for tidal, wave and ocean energy [MWh/km²] for the period 2005 - 2020

Table 64: Calculated per surface area (2004) electricity generation for tidal, wave and ocean energy [MWh/km²] for the period 2005 - 2020

	2005 [MWh/km ²]	2010 [MWh/km ²]	2015 [MWh/km ²]	2020 [MWh/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0.0	0.0	0.0	0.0
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	0.0	0.0	0.0	0.0
Germany	0.0	0.0	0.0	0.0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0.0	0.0	0.0	3.3
Greece	n.a.	n.a.	n.a.	n.a.
Spain	0.0	0.0	0.0	0.4
France	0.8	0.8	1.2	1.8
Italy	0.0	0.0	0.0	0.0
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0.0	0.0	0.0	0.0
Luxembourg	0.0	0.0	0.0	0.0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0.0	0.0	0.0	0.0
Austria	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0.0	0.0	0.8	4.7
Romania	0.0	0.0	0.0	0.0
Slovenia	0.0	0.0	0.0	0.0
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0.0	0.0	0.0	0.0
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	0.0	0.0	16.3
All Member States (average)	0.1	0.1	0.2	1.4

Wind power

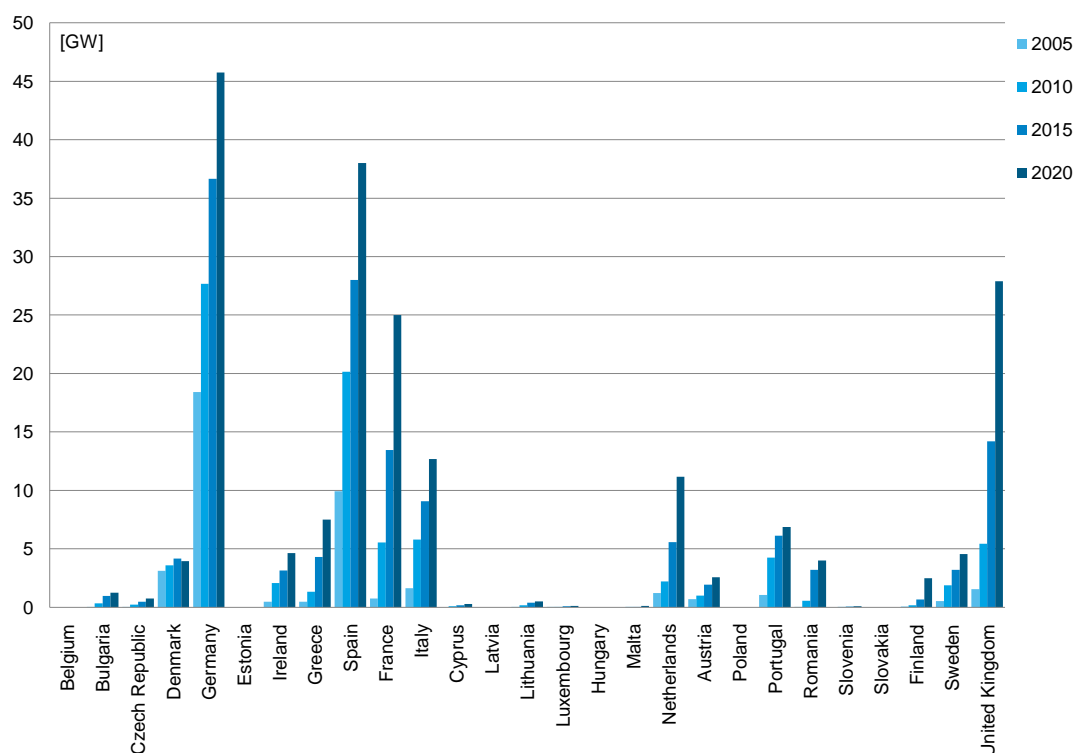


Figure 31: Projected total wind power electric capacity [GW] for the period 2005 - 2020, including both onshore and offshore wind power

Table 65: Projected total wind power electric capacity [MW] for the period 2005 - 2020, including both onshore and offshore wind power

	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	8	336	984	1256	1
Czech Republic	22	243	493	743	0
Denmark	3129	3584	4180	3960	2
Germany	18415	27676	36647	45750	23
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	494	2088	3151	4649	2
Greece	491	1327	4303	7500	4
Spain	9918	20155	27997	38000	19
France	752	5542	13445	25000	12
Italy	1639	5800	9068	12680	6
Cyprus	0	82	180	300	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	1	179	389	500	0
Luxembourg	35	35	105	131	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	0	7	110	0
Netherlands	1224	2221	5578	11178	6
Austria	694	1011	1951	2578	1
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	1063	4256	6125	6875	3
Romania	1	560	3200	4000	2
Slovenia	0	2	60	106	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	80	170	670	2500	1
Sweden	536	1873	3210	4547	2
United Kingdom	1565	5430	14210	27880	14
All Member States (total)	40067	82570	135953	200243	100

See Table 68 on page 79 for corresponding wind power electricity production data.

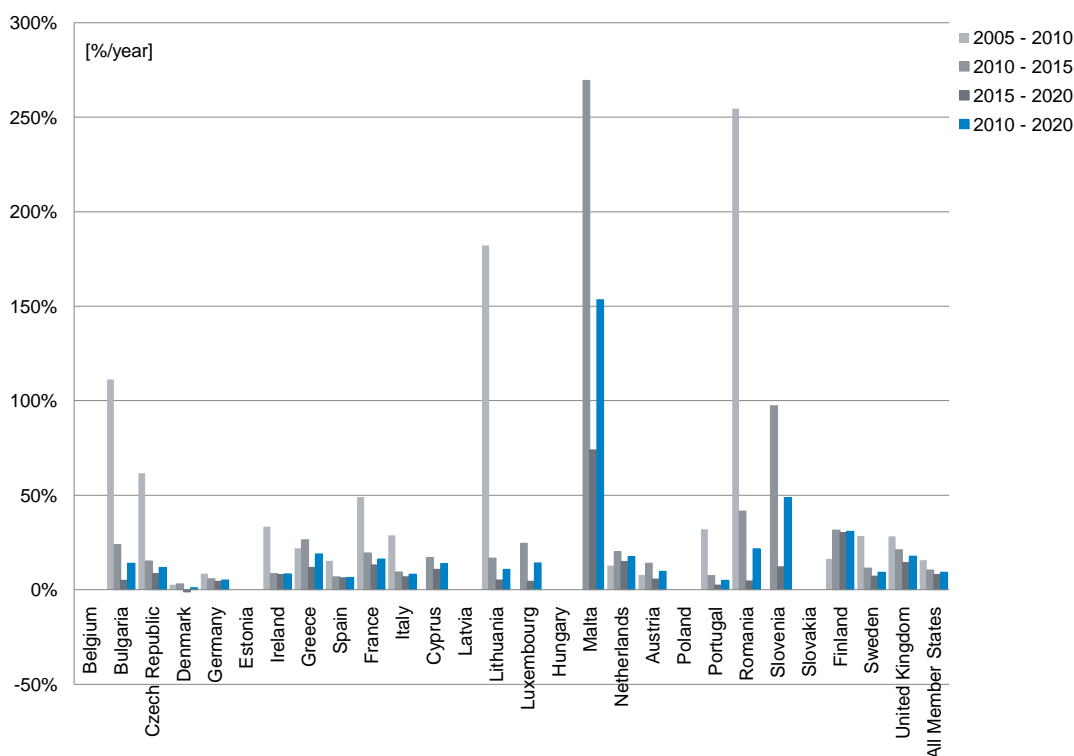


Figure 32: Calculated average annual growth for electric capacity from wind power [%/year] for four periods

Table 66: Calculated average annual growth for electric capacity from wind power [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	111.2	24.0	5.0	14.1
Czech Republic	61.7	15.2	8.5	11.8
Denmark	2.8	3.1	-1.1	1.0
Germany	8.5	5.8	4.5	5.2
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	33.4	8.6	8.1	8.3
Greece	22.0	26.5	11.8	18.9
Spain	15.2	6.8	6.3	6.5
France	49.1	19.4	13.2	16.3
Italy	28.8	9.3	6.9	8.1
Cyprus	n.a.	17.0	10.8	13.8
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	182.2	16.8	5.1	10.8
Luxembourg	0.0	24.6	4.5	14.1
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	269.4	74.0	153.5
Netherlands	12.7	20.2	14.9	17.5
Austria	7.8	14.1	5.7	9.8
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	32.0	7.6	2.3	4.9
Romania	254.5	41.7	4.6	21.7
Slovenia	n.a.	97.4	12.1	48.7
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	16.3	31.6	30.1	30.8
Sweden	28.4	11.4	7.2	9.3
United Kingdom	28.2	21.2	14.4	17.8
All Member States (average)	15.6	10.5	8.1	9.3

The annual growth indicator has been calculated based total wind power (onshore and offshore wind power)

Table 67: Projected wind power electric capacity [MW] for the period 2005 - 2020, broken down into onshore and offshore wind

	Onshore wind					Offshore wind					Total wind power				
	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2025 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2025 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2025 [MW]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	8	336	984	1236	0	0	0	0	0	0	8	336	984	1236	0
Czech Republic	22	243	493	743	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	22	243	493	743	0
Denmark	2706	2923	2929	2621	423	661	1251	1339	1339	3129	2706	3584	4180	3960	3960
Germany	18415	27526	33647	35750	0	150	3000	10000	10000	18415	27676	36647	45730	45730	45730
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	469	2052	2899	4094	25	36	252	555	555	494	494	3151	4649	4649	4649
Greece	491	1327	4303	7200	n.a.	n.a.	n.a.	300	300	491	1327	4303	7500	7500	7500
Spain	9918	20155	27847	35000	0	0	150	3000	3000	9918	20155	27997	38000	38000	38000
France	752	5542	10778	19000	0	0	2667	6000	6000	752	5542	13445	25000	25000	25000
Italy	1639	5800	8900	12000	0	0	168	680	680	1639	5800	9068	12680	12680	12680
Cyprus	0	82	180	300	n.a.	n.a.	n.a.	n.a.	n.a.	0	82	180	300	300	300
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	1	179	389	500	0	0	0	0	0	1	179	389	500	500	500
Luxembourg	35	35	105	131	0	0	0	0	0	35	35	105	131	131	131
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	0	7	15	n.a.	n.a.	n.a.	n.a.	n.a.	0	7	15	7	110	110
Netherlands	1224	1993	4400	6000	0	228	1178	5178	5178	1224	2221	5578	11178	11178	11178
Austria	694	1011	1951	2578	0	0	0	0	0	694	1011	1951	2578	2578	2578
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	1063	4256	6100	6800	0	0	25	75	75	1063	4256	6125	6875	6875	6875
Romania	1	560	3200	4000	0	0	0	0	0	1	560	3200	4000	4000	4000
Slovenia	0	2	60	106	0	0	0	0	0	0	2	60	106	106	106
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	80	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.	n.a.	80	n.a.	n.a.	n.a.	n.a.	n.a.
Sweden	513	1797	3081	4365	23	76	129	182	182	536	1873	3210	4547	4547	4547
United Kingdom	1351	4040	8710	14890	214	1390	5500	12990	12990	1565	5430	14210	27880	27880	27880
All Member States (total)	39382	79859	120963	157349	685	2541	14320	40394	40394	40067	82570	135953	200243	200243	200243

See Table 70 on page 81 for corresponding wind power electricity production data.
 Because for Finland no breakdown into onshore and offshore wind power has been specified after 2005 the sum of the subcategories in 2010, 2015 and 2020 is lower than the value for All Member States (total).

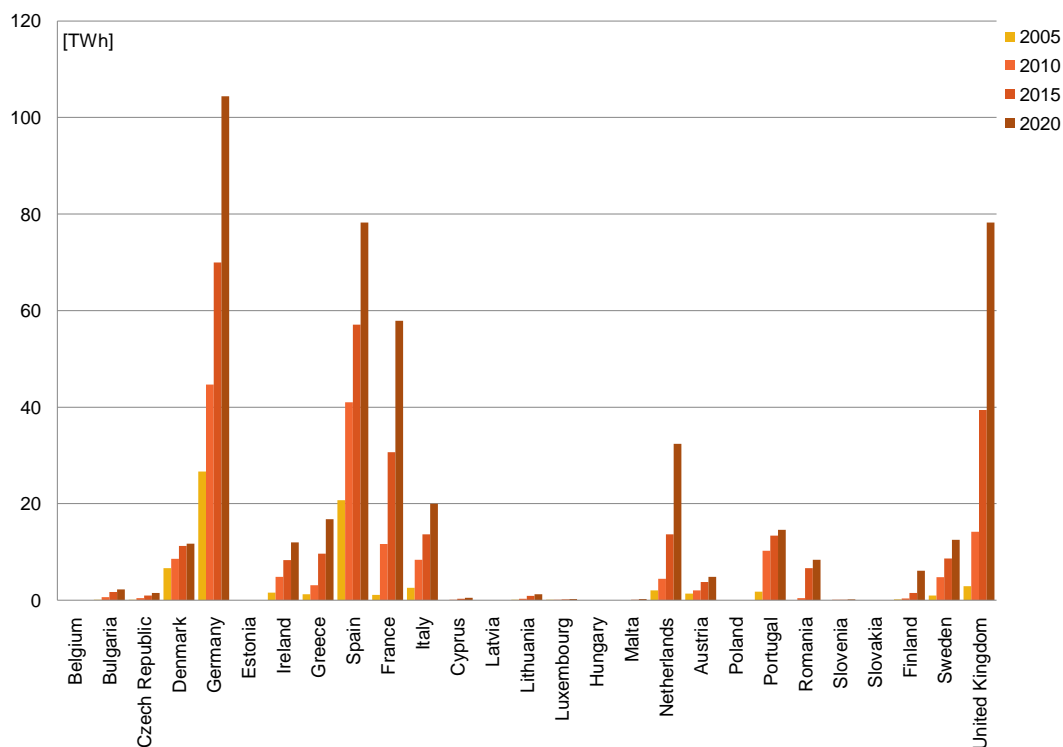


Figure 33: Projected total wind power electricity generation [TWh] for the period 2005 - 2020, all capacity ranges excluding pumped storage, including onshore and offshore wind power

Table 68: Projected total wind power electricity generation [GWh] for the period 2005 - 2020, including onshore and offshore wind power

	2005 [GWh]	2010 [GWh]	2015 [GWh]	2020 [GWh]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	5	605	1672	2260	0
Czech Republic	21	454	975	1496	0
Denmark	6614	8606	11242	11713	3
Germany	26658	44668	69994	104435	22
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	1588	4817	8339	11970	3
Greece	1267	3129	9674	16797	4
Spain	20729	40978	57086	78254	17
France	1128	11638	30634	57900	12
Italy	2558	8398	13652	20000	4
Cyprus	0	31	300	499	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	2	297	924	1250	0
Luxembourg	52	60	192	239	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	0	17	255	0
Netherlands	2067	4470	13655	32408	7
Austria	1343	2034	3780	4811	1
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	1773	10214	13400	14596	3
Romania	0	460	6614	8400	2
Slovenia	0	2	109	191	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	150	360	1520	6090	1
Sweden	939	4793	8646	12500	3
United Kingdom	2904	14150	39430	78270	17
All Member States (total)	69798	160164	291855	464334	100

More information on subcategories for wind power electricity generation is presented in Table 70 on page 81. See Table 65 on page 76 for corresponding wind power capacity data.

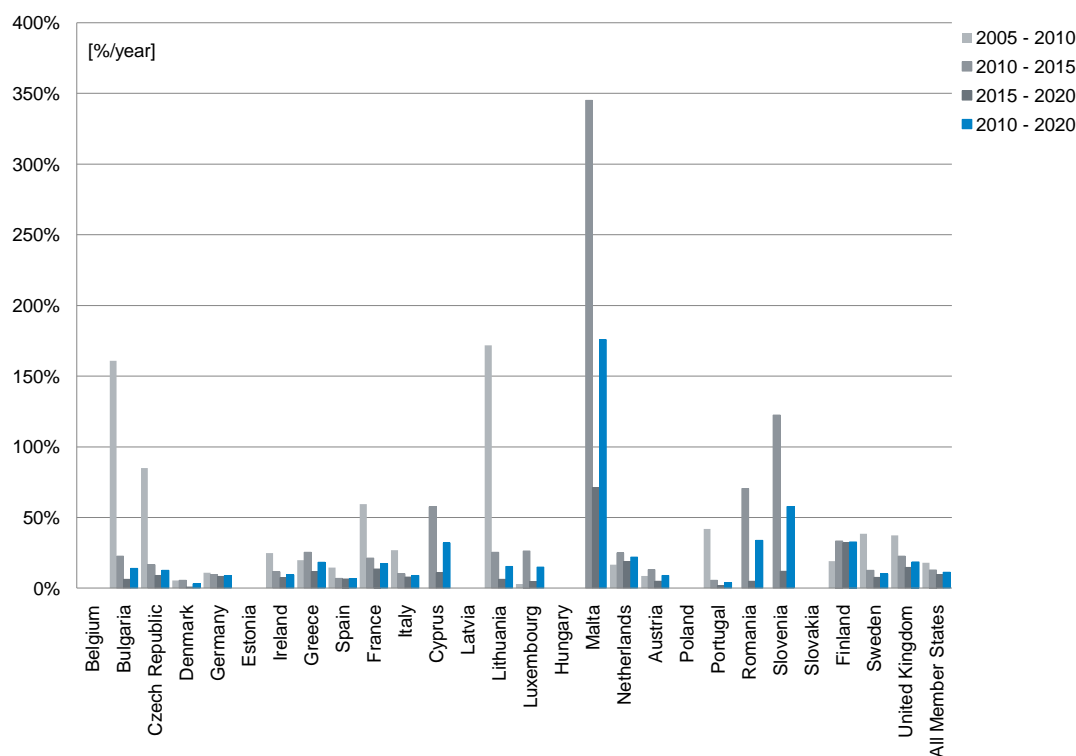


Figure 34: Calculated average annual growth for electricity generation from wind power [%/year] for four periods

Table 69: Calculated average annual growth for electricity generation from wind power [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	160.9	22.5	6.2	14.1
Czech Republic	84.9	16.5	8.9	12.7
Denmark	5.4	5.5	0.8	3.1
Germany	10.9	9.4	8.3	8.9
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	24.8	11.6	7.5	9.5
Greece	19.8	25.3	11.7	18.3
Spain	14.6	6.9	6.5	6.7
France	59.5	21.4	13.6	17.4
Italy	26.8	10.2	7.9	9.1
Cyprus	n.a.	57.5	10.7	32.0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	171.9	25.5	6.2	15.5
Luxembourg	2.9	26.2	4.5	14.8
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	345.1	70.9	175.8
Netherlands	16.7	25.0	18.9	21.9
Austria	8.7	13.2	4.9	9.0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	41.9	5.6	1.7	3.6
Romania	n.a.	70.4	4.9	33.7
Slovenia	n.a.	122.5	11.9	57.8
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	19.1	33.4	32.0	32.7
Sweden	38.5	12.5	7.7	10.1
United Kingdom	37.3	22.7	14.7	18.7
All Member States (average)	18.1	12.8	9.7	11.2

The annual growth indicator has been calculated based total wind power (onshore and offshore wind power)

Table 70: Projected wind power electricity generation [GWh] for the period 2005 - 2020, broken down into onshore wind and offshore wind

	Onshore wind					Offshore wind					Total wind power				
	2005	2010	2015	2020		2005	2010	2015	2020		2005	2010	2015	2020	
	[GWh]	[GWh]	[GWh]	[GWh]		[GWh]	[GWh]	[GWh]	[GWh]		[GWh]	[GWh]	[GWh]	[GWh]	
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	5	605	1672	2260	0	0	0	0	0	0	5	605	1672	2260	
Czech Republic	21	454	975	1496	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	21	454	975	1496	
Denmark	5158	6121	6322	6391	2485	2485	4920	5322	6614	6614	6614	8606	11242	11713	
Germany	26658	44397	61990	72664	0	271	8004	31771	26658	26658	26658	44668	69994	104435	
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Ireland	n.a.	4701	7525	10228	n.a.	116	814	1742	1588	1588	1588	4817	8339	11970	
Greece	1267	3129	9674	16125	n.a.	n.a.	n.a.	672	1267	1267	1267	3129	9674	16797	
Spain	20729	40978	56786	70502	0	0	300	7753	20729	20729	20729	40978	57086	78254	
France	1128	11638	22634	39900	0	0	8000	18000	1128	1128	1128	11638	30634	57900	
Italy	2558	8398	13199	18000	0	0	453	2000	2558	2558	2558	8398	13652	20000	
Cyprus	0	31	300	499	n.a.	n.a.	n.a.	n.a.	0	0	0	31	300	499	
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Lithuania	2	297	924	1250	0	0	0	0	2	2	2	297	924	1250	
Luxembourg	52	60	192	239	0	0	0	0	52	52	52	60	192	239	
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Malta	n.a.	0	17	38	n.a.	0	0	0	0	0	0	17	38	255	
Netherlands	2067	3667	9508	13372	803	803	4147	19036	2067	2067	2067	4470	13655	32408	
Austria	1343	2034	3780	4811	0	0	0	0	1343	1343	1343	2034	3780	4811	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Portugal	1773	10214	13420	14416	0	0	60	180	1773	1773	1773	10214	13400	14596	
Romania	0	460	6614	8400	0	0	0	0	0	0	0	460	6614	8400	
Slovenia	0	2	109	191	0	0	0	0	0	0	0	2	109	191	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Finland	150	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	150	150	150	360	1520	6090	
Sweden	877	4585	8292	12000	62	208	354	500	877	877	877	4793	8646	12500	
United Kingdom	2501	9520	20610	34150	403	4630	18820	44120	2904	2904	2904	14150	39430	78270	
All Member States (total)	66289	151291	244543	326932	1921	8513	45872	131312	69798	69798	69798	160164	291855	464334	

See Table 67 on page 78 for corresponding wind power capacity data.

For Finland no breakdown into onshore and offshore wind power has been specified after 2005. For Ireland the energy production has not been allocated to either onshore or offshore wind power for the year 2005. Therefore, the sum of the subcategories is lower than the value for All Member States (total).

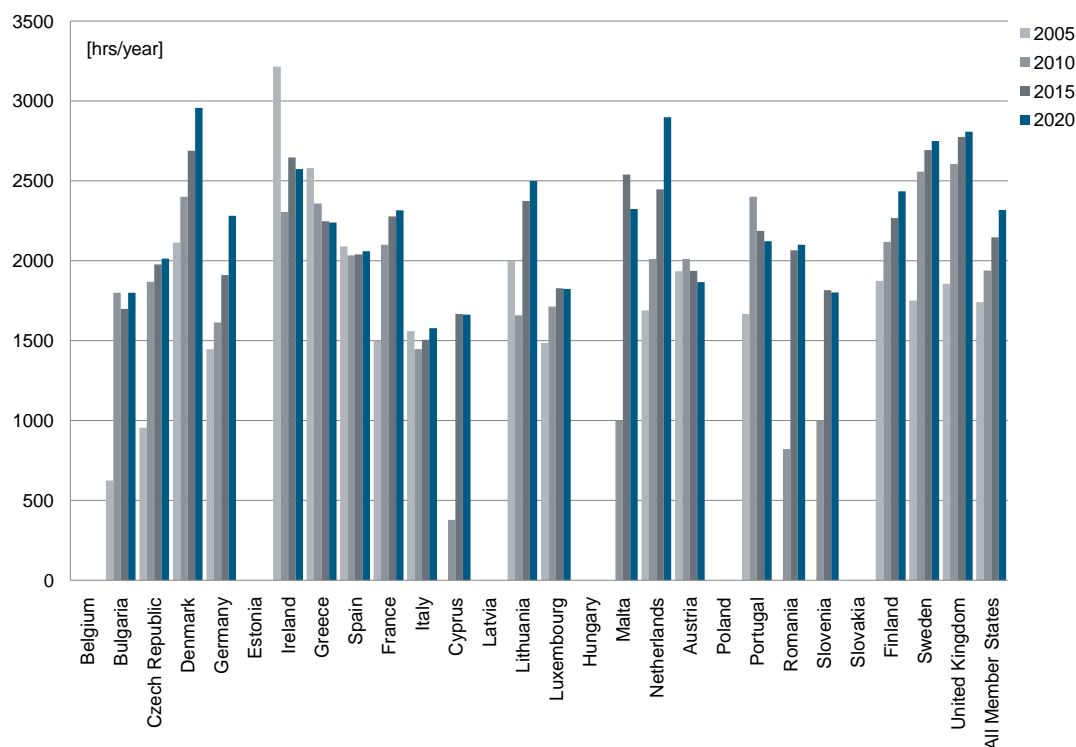


Figure 35: Calculated average number of full load hours for total wind power [hrs/year] for the period 2005 - 2020

Table 71: Calculated average number of full load hours for total wind power [hrs/year] for the period 2005 - 2020

	2005 [hrs/year]	2010 [hrs/year]	2015 [hrs/year]	2020 [hrs/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	625	1801	1699	1799
Czech Republic	955	1868	1978	2013
Denmark	2114	2401	2689	2958
Germany	1448	1614	1910	2283
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	3215	2307	2646	2575
Greece	2580	2358	2248	2240
Spain	2090	2033	2039	2059
France	1500	2100	2278	2316
Italy	1561	1448	1506	1577
Cyprus	n.a.	378	1667	1663
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	2000	1659	2375	2500
Luxembourg	1486	1714	1829	1824
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	1000	2539	2324
Netherlands	1689	2013	2448	2899
Austria	1935	2012	1937	1866
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	1668	2400	2188	2123
Romania	0	821	2067	2100
Slovenia	n.a.	1000	1817	1802
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	1875	2118	2269	2436
Sweden	1752	2559	2693	2749
United Kingdom	1856	2606	2775	2807
All Member States (average)	1742	1940	2147	2319

The full load hours have been calculated based total wind power (onshore and offshore wind power)

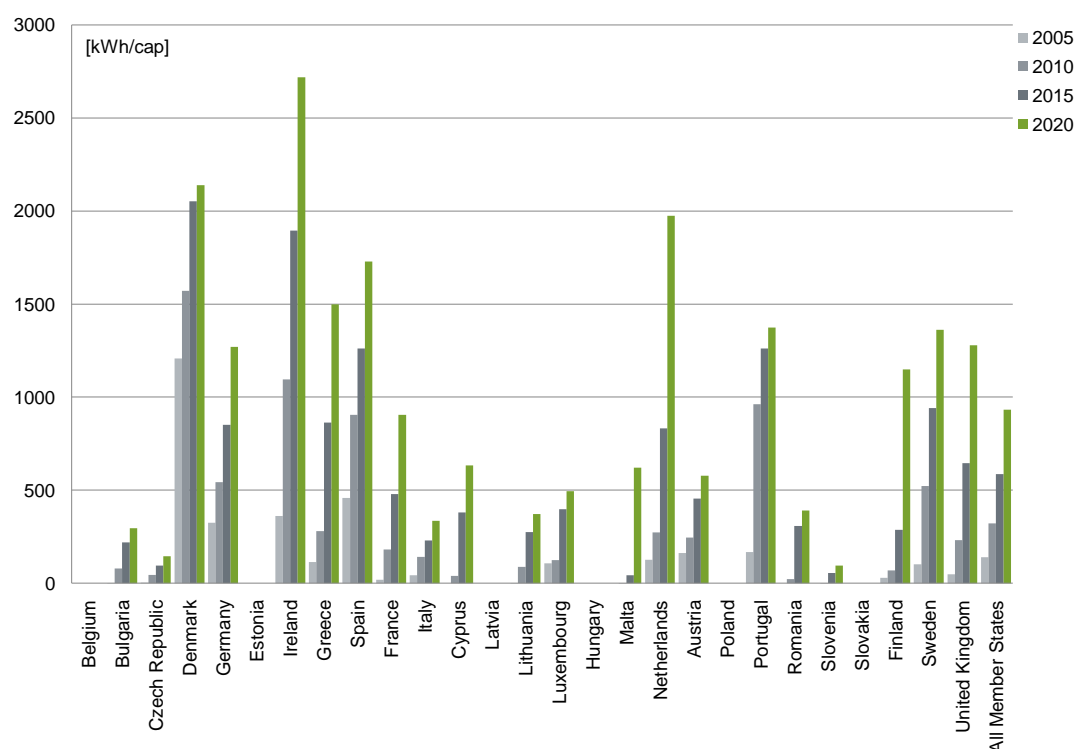


Figure 36: Calculated per capita (2008) electricity generation for total wind power [kWh/cap] for the period 2005 - 2020

Table 72: Calculated per capita (2008) electricity generation for total wind power [kWh/cap] for the period 2005 - 2020

	2005 [kWh/cap]	2010 [kWh/cap]	2015 [kWh/cap]	2020 [kWh/cap]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	1	79	219	296
Czech Republic	2	44	94	144
Denmark	1208	1572	2053	2139
Germany	324	543	851	1270
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	361	1094	1895	2720
Greece	113	279	863	1498
Spain	458	905	1261	1728
France	18	182	479	905
Italy	43	141	229	335
Cyprus	0	39	380	632
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	1	88	274	371
Luxembourg	107	124	397	494
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0	0	43	621
Netherlands	126	272	832	1975
Austria	161	245	454	578
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	167	962	1262	1375
Romania	0	21	307	390
Slovenia	0	1	54	95
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	28	68	287	1149
Sweden	102	522	942	1361
United Kingdom	47	231	644	1279
All Member States (average)	140	322	586	933

The per capita indicator has been calculated based total wind power (onshore and offshore wind power)

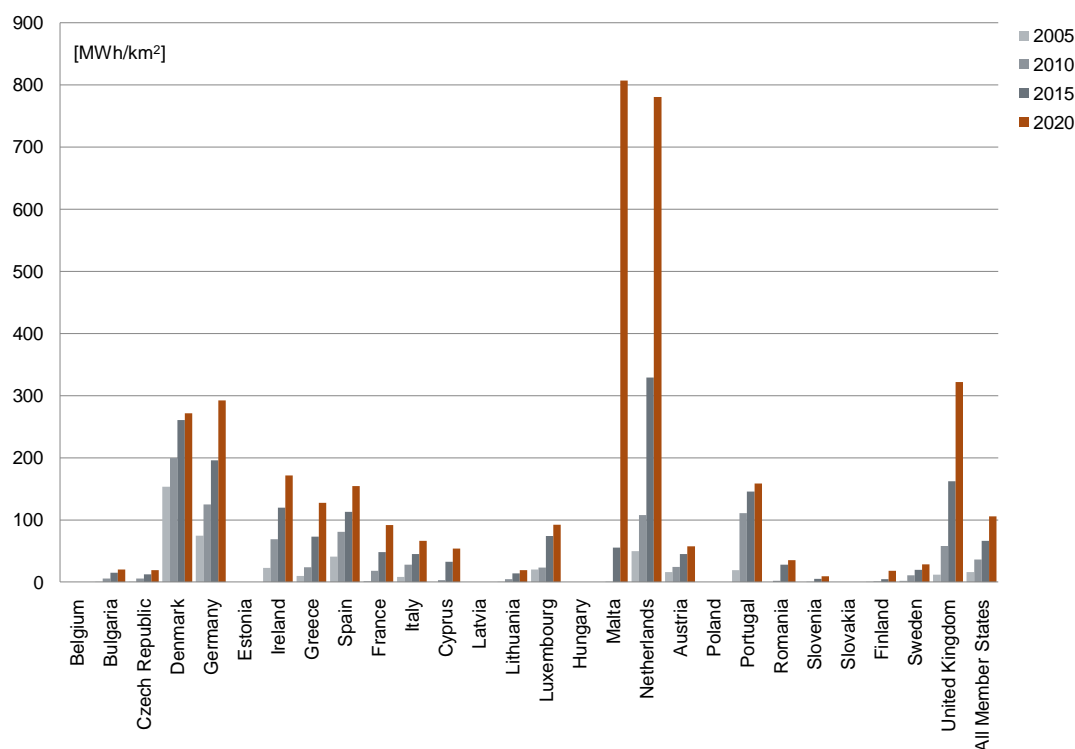


Figure 37: Calculated per surface area (2004) electricity generation for total wind power [MWh/km²] for the period 2005 - 2020

Table 73: Calculated per surface area (2004) electricity generation for total wind power [MWh/km²] for the period 2005 - 2020

	2005 [MWh/km ²]	2010 [MWh/km ²]	2015 [MWh/km ²]	2020 [MWh/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0.0	5.5	15.1	20.4
Czech Republic	0.3	5.8	12.4	19.0
Denmark	153.5	199.7	260.8	271.8
Germany	74.7	125.1	196.0	292.5
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	22.8	69.0	119.5	171.5
Greece	9.6	23.7	73.3	127.3
Spain	41.0	81.0	112.8	154.7
France	1.8	18.4	48.4	91.5
Italy	8.5	27.9	45.3	66.4
Cyprus	0.0	3.4	32.4	53.9
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0.0	4.5	14.2	19.1
Luxembourg	20.1	23.2	74.2	92.4
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0.0	0.0	55.4	807.0
Netherlands	49.8	107.6	328.8	780.4
Austria	16.0	24.3	45.1	57.4
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	19.3	111.0	145.6	158.6
Romania	0.0	1.9	27.7	35.2
Slovenia	0.0	0.1	5.4	9.4
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0.4	1.1	4.5	18.0
Sweden	2.1	10.9	19.6	28.3
United Kingdom	11.9	58.2	162.2	322.0
All Member States (average)	15.9	36.4	66.3	105.5

The per area indicator has been calculated based total wind power (onshore and offshore wind power)

Biomass electricity

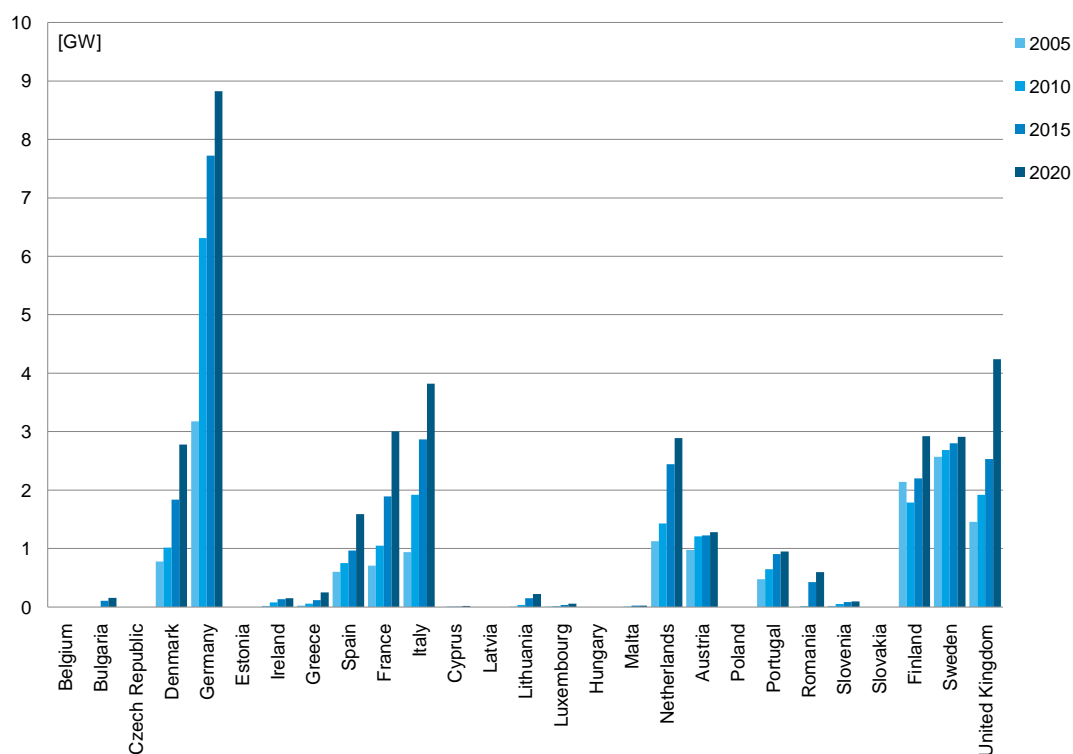


Figure 38: Projected total biomass electric capacity [GW] for the period 2005 - 2020, all biomass input categories

Table 74: Projected total biomass electric capacity [MW] for the period 2005 - 2020, all biomass input categories

	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	109	158	0
Czech Republic	n.a.	n.a.	n.a.	n.a.	n.a.
Denmark	777	1017	1837	2779	8
Germany	3174	6312	7721	8825	24
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	20	77	137	153	0
Greece	24	60	120	250	1
Spain	601	752	965	1587	4
France	707	1052	1895	3007	8
Italy	937	1918	2869	3820	10
Cyprus	0	6	10	17	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	5	34	150	224	1
Luxembourg	9	13	36	59	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	3	23	23	0
Netherlands	1128	1430	2443	2892	8
Austria	976	1211	1228	1281	3
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	476	647	907	952	3
Romania	0	14	425	600	2
Slovenia	18	51	83	96	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	2140	1790	2200	2920	8
Sweden	2568	2683	2799	2914	8
United Kingdom	1458	1920	2530	4240	12
All Member States (total)	15018	20990	28487	36797	100

More information on subcategories for biomass electric capacity is presented in Table 76 on page 88.

See Table 77 on page 89 for corresponding biomass electricity production data.

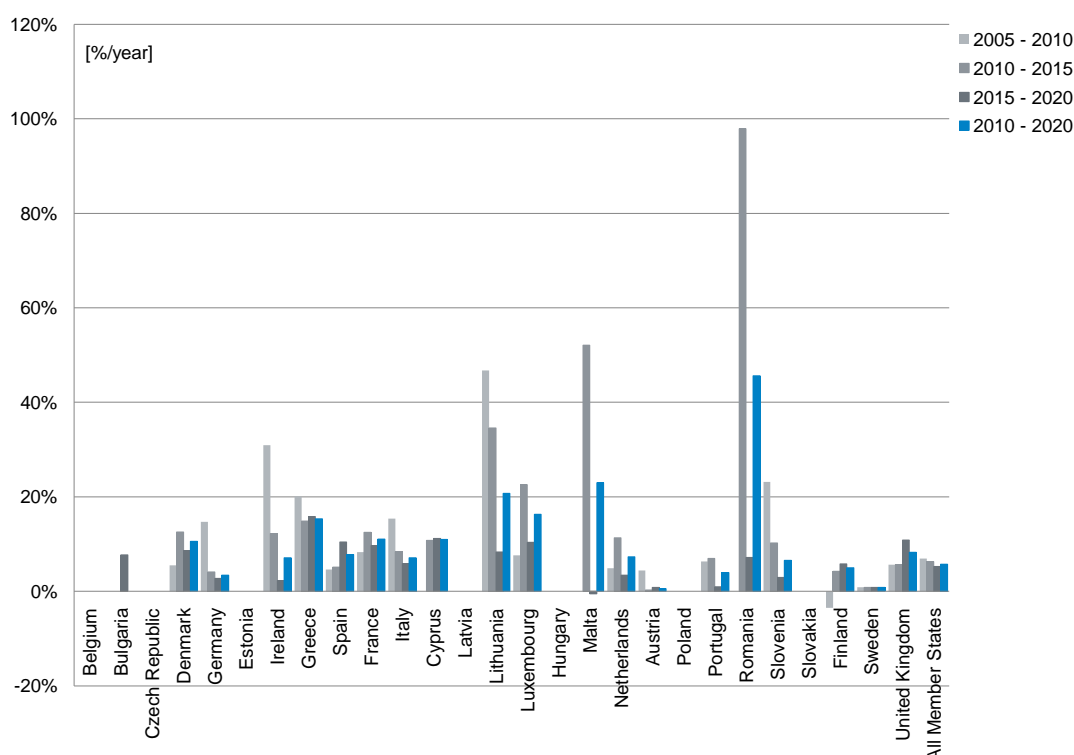


Figure 39: Calculated average annual growth for capacity of biomass electricity [%/year] for four periods, all biomass input categories

Table 75: Calculated average annual growth for capacity of biomass electricity [%/year] for four periods, all biomass input categories

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	7.7	n.a.
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	5.5	12.6	8.6	10.6
Germany	14.7	4.1	2.7	3.4
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	30.9	12.2	2.2	7.1
Greece	20.1	14.9	15.8	15.3
Spain	4.6	5.1	10.5	7.8
France	8.3	12.5	9.7	11.1
Italy	15.4	8.4	5.9	7.1
Cyprus	n.a.	10.8	11.2	11.0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	46.7	34.6	8.4	20.7
Luxembourg	7.6	22.6	10.4	16.3
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	52.1	-0.5	23.0
Netherlands	4.9	11.3	3.4	7.3
Austria	4.4	0.3	0.8	0.6
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	6.3	7.0	1.0	3.9
Romania	n.a.	97.9	7.1	45.6
Slovenia	23.2	10.2	3.0	6.5
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	-3.5	4.2	5.8	5.0
Sweden	0.9	0.9	0.8	0.8
United Kingdom	5.7	5.7	10.9	8.2
All Member States (average)	6.9	6.3	5.3	5.8

Table 76: Projected biomass electric capacity [MW] for the period 2005 - 2020, all biomass input categories

	Solid biomass					Biogas					Biobriquets					Total biomass					
	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	2005 [MW]	2010 [MW]	2015 [MW]	2020 [MW]	
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	0	0	65	93	0	0	45	65	0	0	0	0	0	0	0	0	0	0	109	158	
Czech Republic	n.a.	n.a.	n.a.	n.a.	36	113	267	417	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	109	158
Denmark	740	991	1717	2404	37	26	95	349	0	0	26	26	777	1017	1017	1017	1837	2779	2779	2779	
Germany	2427	3707	4358	4792	693	2368	3126	3796	54	237	237	237	237	3174	6312	7721	8825	8825	8825	8825	
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	2	15	75	91	18	62	62	62	0	0	0	0	0	20	77	137	153	153	153	153	
Greece	n.a.	20	20	40	24	40	100	210	n.a.	n.a.	n.a.	n.a.	n.a.	24	60	120	120	120	120	120	
Spain	449	596	745	1187	152	156	220	400	0	0	0	0	601	752	1082	1895	1895	1895	1895	1895	
France	623	888	1531	2382	84	164	363	625	0	0	0	0	707	1082	1918	2869	2869	2869	2869	2869	
Italy	653	1026	1333	1640	284	453	826	1200	0	439	710	980	937	1918	1918	10	10	10	10	10	
Cyprus	n.a.	n.a.	n.a.	n.a.	0	6	10	17	n.a.	n.a.	n.a.	n.a.	0	6	6	6	6	6	6	6	6
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	2	22	115	162	3	12	35	62	0	0	0	0	5	34	13	36	36	36	36	36	
Luxembourg	4	5	13	30	5	8	23	29	n.a.	n.a.	n.a.	n.a.	9	13	13	13	13	13	13	13	
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	0	15	15	n.a.	n.a.	8	7	n.a.	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Netherlands	966	1214	2062	2253	162	216	381	639	0	0	0	0	1128	1430	3	23	23	23	23	23	
Austria	892	1099	1114	1164	72	97	100	102	12	15	15	15	976	1211	1228	1228	1228	1228	1228	1228	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Portugal	178	273	367	367	9	37	105	150	289	334	435	435	476	647	907	907	907	907	907	907	
Romania	0	10	300	405	0	4	125	195	0	0	0	0	0	14	14	425	600	600	600	600	
Slovenia	15	22	24	34	3	30	58	61	0	0	n.a.	n.a.	18	51	51	83	83	83	83	83	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Finland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Sweden	2526	2641	2757	2872	42	42	42	42	n.a.	n.a.	n.a.	n.a.	2140	2568	2568	2568	2568	2568	2568	2568	
United Kingdom	501	580	1290	3140	957	1340	1240	1100	n.a.	n.a.	n.a.	n.a.	1458	1920	2530	2530	2530	2530	2530	2530	
All Member States (total)	9978	13109	17901	23071	2581	5177	7231	9558	355	1025	1423	1693	15018	20990	28487	28487	28487	28487	28487	28487	

See Table 79 on page 91 for corresponding biomass electricity production data.
 For Finland no breakdown into biomass input types has been provided. Therefore, the sum of all categories is lower than the value for All Member States (total).

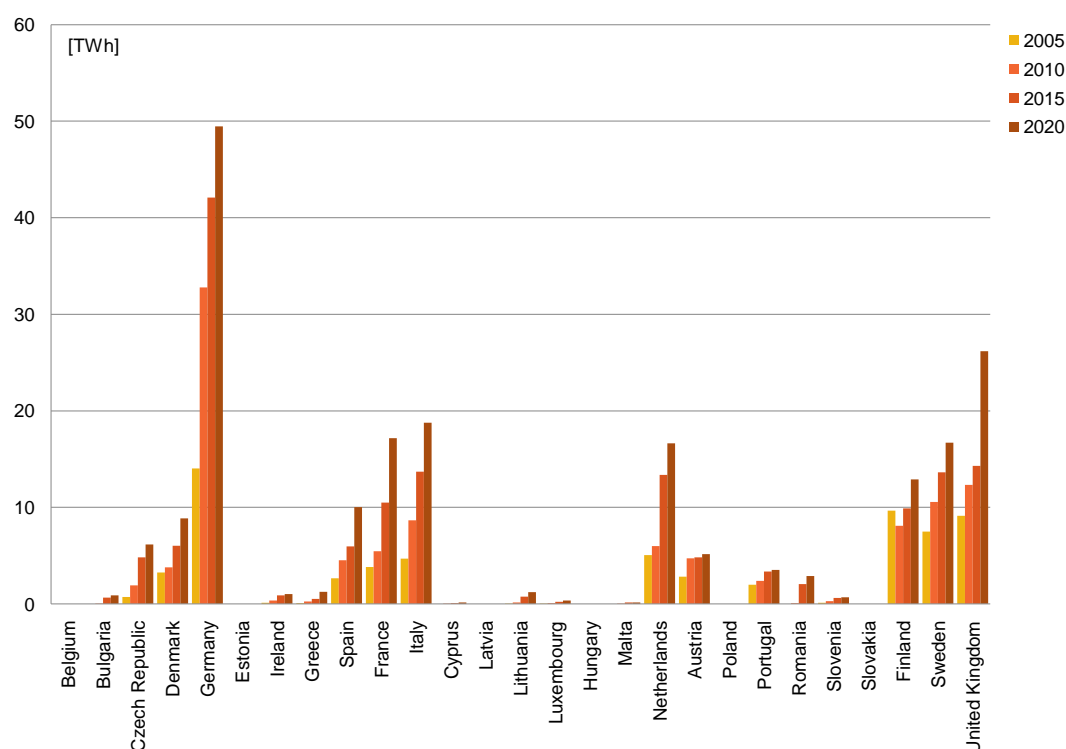


Figure 40: Projected total biomass electricity generation [TWh] for the period 2005 - 2020, all biomass input categories

Table 77: Projected total biomass electricity generation [GWh] for the period 2005 - 2020, all biomass input categories

	2005 [GWh]	2010 [GWh]	2015 [GWh]	2020 [GWh]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	2	656	871	0
Czech Republic	721	1930	4819	6165	3
Denmark	3243	3772	6035	8846	4
Germany	14025	32778	42090	49457	25
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	116	347	887	1006	1
Greece	94	254	504	1259	1
Spain	2653	4517	5962	10017	5
France	3819	5441	10496	17171	9
Italy	4675	8645	13712	18780	9
Cyprus	0	30	84	143	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	7	147	761	1223	1
Luxembourg	46	70	200	334	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	9	140	135	0
Netherlands	5041	5975	13350	16639	8
Austria	2823	4720	4826	5147	3
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	1976	2400	3358	3516	2
Romania	0	67	2050	2900	1
Slovenia	114	298	623	676	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	9660	8090	9880	12910	6
Sweden	7506	10567	13628	16689	8
United Kingdom	9109	12330	14290	26160	13
All Member States (total)	65628	102389	148351	200044	100

More information on subcategories for biomass electricity generation is presented in Table 79 on page 91.

See Table 74 on page 86 for corresponding biomass electricity capacity data.

As indicated in section 1.5.26 the subtotal for *Biomass* in Sweden does not include liquid energy carriers. For this reason the sum of all subcategories is 65 GWh higher than the value for *All Member States (total)*.

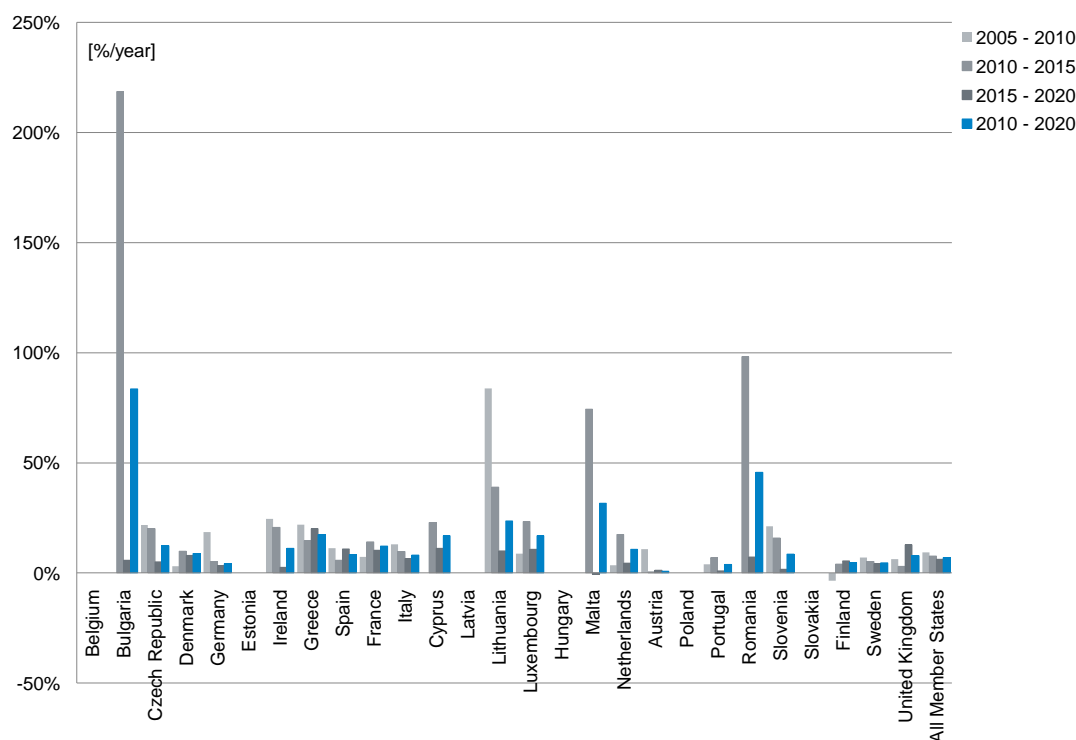


Figure 41: *Calculated average annual growth for generation from biomass electricity [%/year] for four periods, all biomass input categories*

Table 78: *Calculated average annual growth for generation from biomass electricity [%/year] for four periods, all biomass input categories*

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	218.5	5.8	83.6
Czech Republic	21.8	20.1	5.0	12.3
Denmark	3.1	9.9	7.9	8.9
Germany	18.5	5.1	3.3	4.2
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	24.5	20.6	2.5	11.2
Greece	22.0	14.7	20.1	17.4
Spain	11.2	5.7	10.9	8.3
France	7.3	14.0	10.3	12.2
Italy	13.1	9.7	6.5	8.1
Cyprus	n.a.	22.9	11.2	16.9
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	83.8	38.9	10.0	23.6
Luxembourg	8.8	23.4	10.8	16.9
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	74.3	-0.6	31.6
Netherlands	3.5	17.4	4.5	10.8
Austria	10.8	0.4	1.3	0.9
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	4.0	6.9	0.9	3.9
Romania	n.a.	98.2	7.2	45.8
Slovenia	21.2	15.9	1.6	8.5
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	-3.5	4.1	5.5	4.8
Sweden	7.1	5.2	4.1	4.7
United Kingdom	6.2	3.0	12.9	7.8
All Member States (average)	9.3	7.7	6.2	6.9

Table 79: Projected biomass electricity generation [GWh] for the period 2005 - 2020, broken down into biomass input categories

	Solid biomass					Biogas					Bioliquids					Total biomass					
	2005	2010	2015	2020	2020	2005	2010	2015	2020	2020	2005	2010	2015	2020	2020	2005	2010	2015	2020	2020	
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	0	0	387	514	357	0	2	269	357	357	0	0	0	0	0	0	2	656	871	n.a.	
Czech Republic	560	1306	3065	3294	2871	161	624	1754	2871	2871	0	0	0	0	0	721	1930	4819	6165	6165	
Denmark	2960	3578	5312	6345	2493	283	194	721	2493	2493	0	0	1	8	3243	3772	6035	6035	8846	8846	
Germany	10044	17498	21695	24569	23438	3652	13829	18946	23438	23438	329	1450	1450	1450	14025	32778	42090	42090	49457	49457	
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	8	28	567	687	319	108	320	320	319	319	0	0	0	0	116	347	887	887	1006	1006	
Greece	n.a.	73	73	364	895	94	181	431	895	895	n.a.	n.a.	n.a.	n.a.	94	254	504	504	1259	1259	
Spain	2029	3719	4660	7400	2617	623	799	1302	2617	2617	0	0	0	0	2653	4517	5962	5962	10017	10017	
France	3341	4506	8366	13470	3701	478	935	2129	3701	3701	0	0	0	0	3819	5441	10496	10496	17171	17171	
Italy	3477	4758	6329	7900	6020	1198	2129	4074	6020	6020	0	1758	3309	4860	4675	8645	13712	13712	18780	18780	
Cyprus	n.a.	n.a.	n.a.	n.a.	143	0	30	84	143	143	n.a.	n.a.	n.a.	n.a.	0	30	84	84	84	143	143
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	3	98	533	810	413	4	50	228	413	413	0	0	0	7	147	761	761	761	1223	1223	
Luxembourg	19	25	77	190	144	27	44	123	144	144	n.a.	n.a.	n.a.	0	46	70	200	200	334	334	
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	0	86	86	50	n.a.	9	54	50	50	n.a.	n.a.	n.a.	n.a.	0	9	140	140	135	135	
Netherlands	4758	5103	11189	11975	4664	283	872	2161	4664	4664	0	0	0	0	5041	5975	13350	13350	16639	16639	
Austria	2507	4131	4223	4530	581	283	553	567	581	581	33	36	36	36	2823	4720	4826	4826	5147	5147	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	934	1092	1468	1468	525	34	130	368	525	525	1008	1170	1523	1523	1976	2400	3358	3358	3516	3516	
Romania	0	48	1450	1950	950	0	19	600	950	950	0	0	0	0	0	67	298	298	2900	2900	
Slovenia	82	150	272	309	367	32	148	351	367	367	0	0	0	0	114	298	623	623	676	676	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	9640	3930	5300	7860	270	20	40	50	270	270	n.a.	n.a.	n.a.	n.a.	9660	8090	9880	9880	12910	12910	
Sweden	7452	10513	13574	16635	53	53	53	53	53	53	65	65	65	65	7506	10567	13628	13628	16689	16689	
United Kingdom	4347	5500	7990	20590	5570	4762	6830	6300	5570	5570	n.a.	n.a.	n.a.	n.a.	9109	12330	14290	14290	26160	26160	
All Member States (total)	52161	66056	96616	130946	56441	12095	27791	40885	56441	56441	1435	8599	10914	12722	65628	102389	148351	148351	200044	200044	

See Table 76 on page 88 for corresponding biomass electricity capacity data.

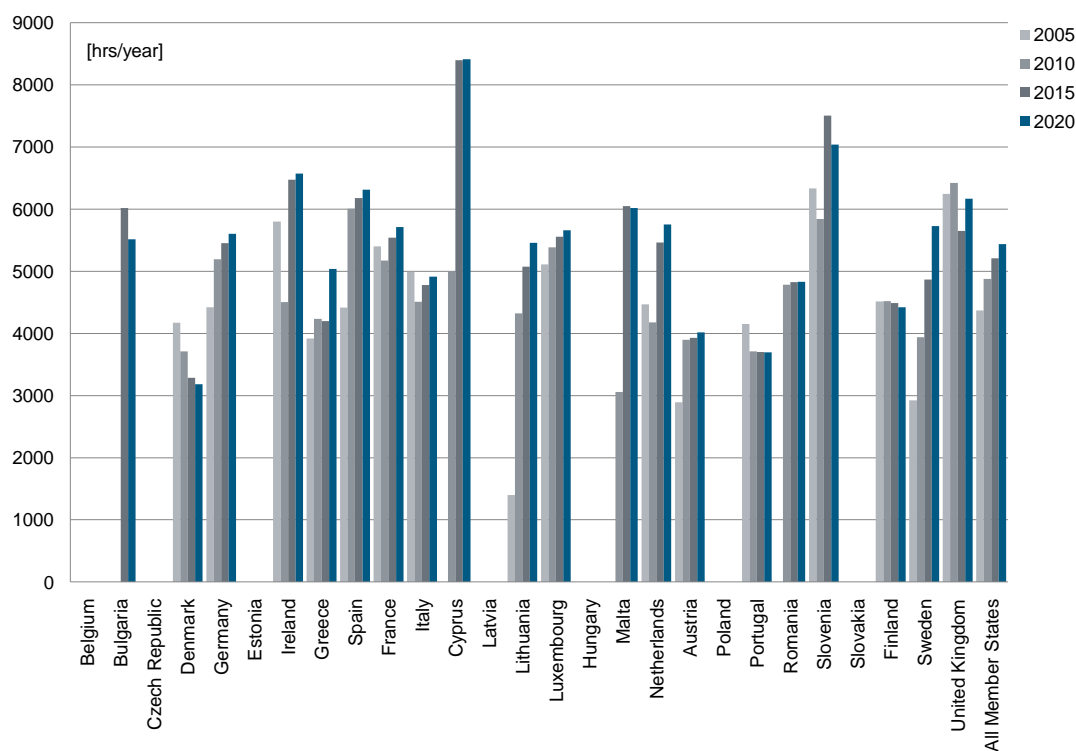


Figure 42: Calculated average number of full load hours for total biomass electricity [hrs/year] for the period 2005 - 2020, all biomass input categories

Table 80: Calculated average number of full load hours for total biomass electricity [hrs/year] for the period 2005 - 2020, all biomass input categories

	2005 [hrs/year]	2010 [hrs/year]	2015 [hrs/year]	2020 [hrs/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	6018	5513
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	4174	3709	3285	3183
Germany	4419	5193	5451	5604
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	5800	4506	6474	6575
Greece	3917	4233	4200	5036
Spain	4414	6007	6178	6312
France	5402	5172	5539	5710
Italy	4989	4507	4779	4916
Cyprus	n.a.	5000	8400	8412
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	1400	4324	5073	5460
Luxembourg	5111	5385	5556	5661
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	3056	6047	6016
Netherlands	4469	4178	5465	5753
Austria	2892	3898	3930	4018
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	4151	3709	3702	3693
Romania	n.a.	4786	4824	4833
Slovenia	6333	5843	7506	7042
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	4514	4520	4491	4421
Sweden	2923	3939	4869	5727
United Kingdom	6248	6422	5648	6170
All Member States (average)	4370	4878	5208	5437

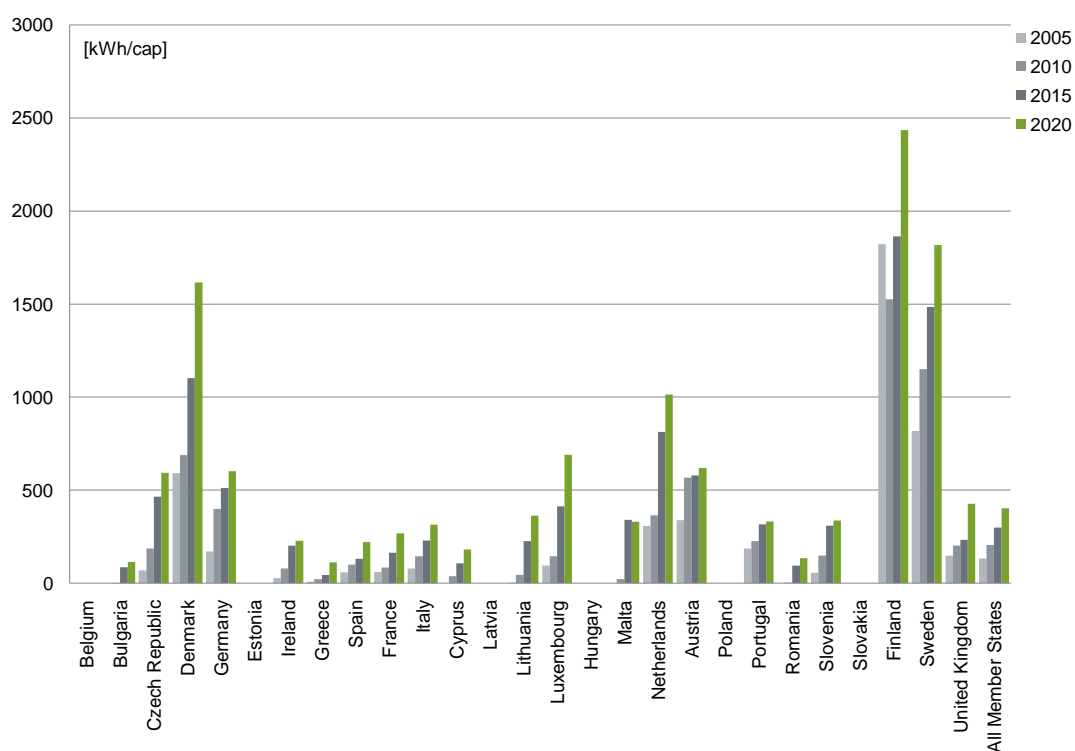


Figure 43: Calculated per capita (2008) generation for total biomass electricity [kWh/cap] for the period 2005 - 2020, all biomass input categories

Table 81: Calculated per capita (2008) generation for total biomass electricity [kWh/cap] for the period 2005 - 2020, all biomass input categories

	2005 [kWh/cap]	2010 [kWh/cap]	2015 [kWh/cap]	2020 [kWh/cap]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	86	114
Czech Republic	69	186	464	594
Denmark	592	689	1102	1615
Germany	171	399	512	602
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	26	79	202	229
Greece	8	23	45	112
Spain	59	100	132	221
France	60	85	164	268
Italy	78	145	230	315
Cyprus	0	38	106	181
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	2	44	226	363
Luxembourg	95	145	413	690
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0	21	341	330
Netherlands	307	364	814	1014
Austria	339	567	580	619
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	186	226	316	331
Romania	0	3	95	135
Slovenia	57	148	310	336
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	1822	1526	1864	2436
Sweden	817	1151	1484	1817
United Kingdom	149	202	234	428
All Member States (average)	132	206	298	402

The population data can be viewed in Table 9 (page 25)

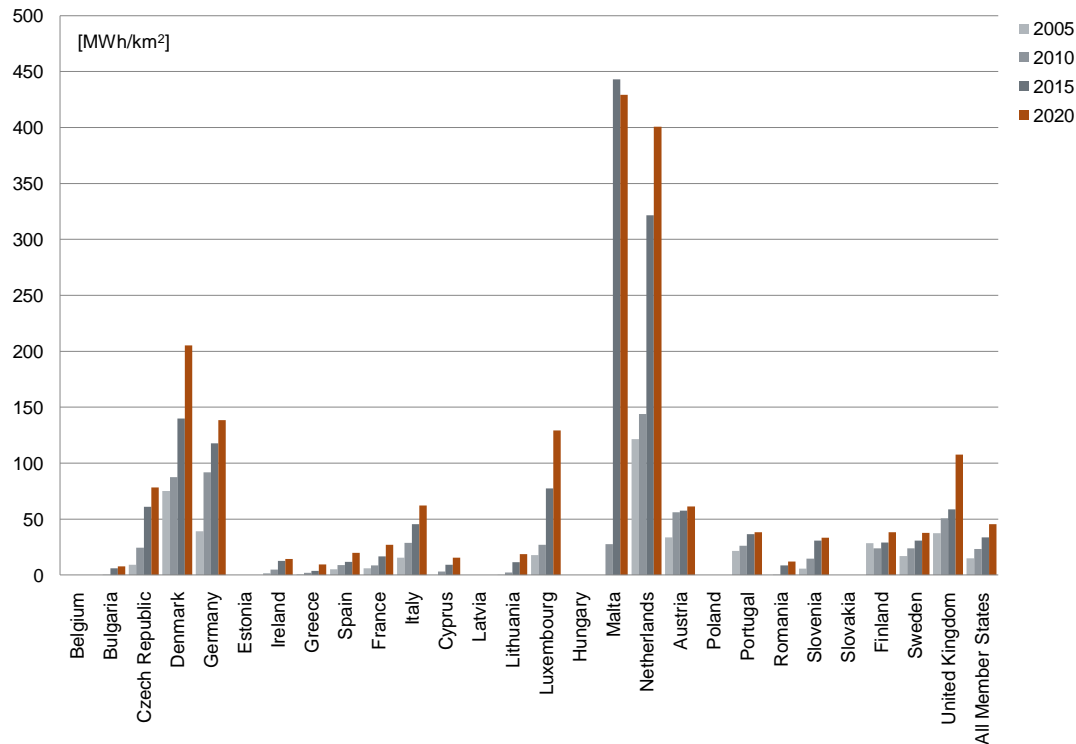


Figure 44: Calculated per surface area (2004) generation for total biomass electricity [MWh/km²] for the period 2005 - 2020

Table 82: Calculated per surface area (2004) generation for total biomass electricity [MWh/km²] for the period 2005 - 2020

	2005 [MWh/km ²]	2010 [MWh/km ²]	2015 [MWh/km ²]	2020 [MWh/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0.0	0.0	5.9	7.8
Czech Republic	9.1	24.5	61.1	78.2
Denmark	75.2	87.5	140.0	205.3
Germany	39.3	91.8	117.9	138.5
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	1.7	5.0	12.7	14.4
Greece	0.7	1.9	3.8	9.5
Spain	5.2	8.9	11.8	19.8
France	6.0	8.6	16.6	27.1
Italy	15.5	28.7	45.5	62.3
Cyprus	0.0	3.2	9.1	15.5
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0.1	2.3	11.7	18.7
Luxembourg	17.8	27.1	77.3	129.2
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0.0	27.5	443.0	429.3
Netherlands	121.4	143.9	321.5	400.7
Austria	33.7	56.3	57.5	61.4
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	21.5	26.1	36.5	38.2
Romania	0.0	0.3	8.6	12.2
Slovenia	5.6	14.7	30.7	33.3
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	28.6	23.9	29.2	38.2
Sweden	17.0	23.9	30.9	37.8
United Kingdom	37.5	50.7	58.8	107.6
All Member States (average)	14.9	23.3	33.7	45.4

The surface area data can be viewed in Table 9 (page 25)

Deep geothermal thermal energy

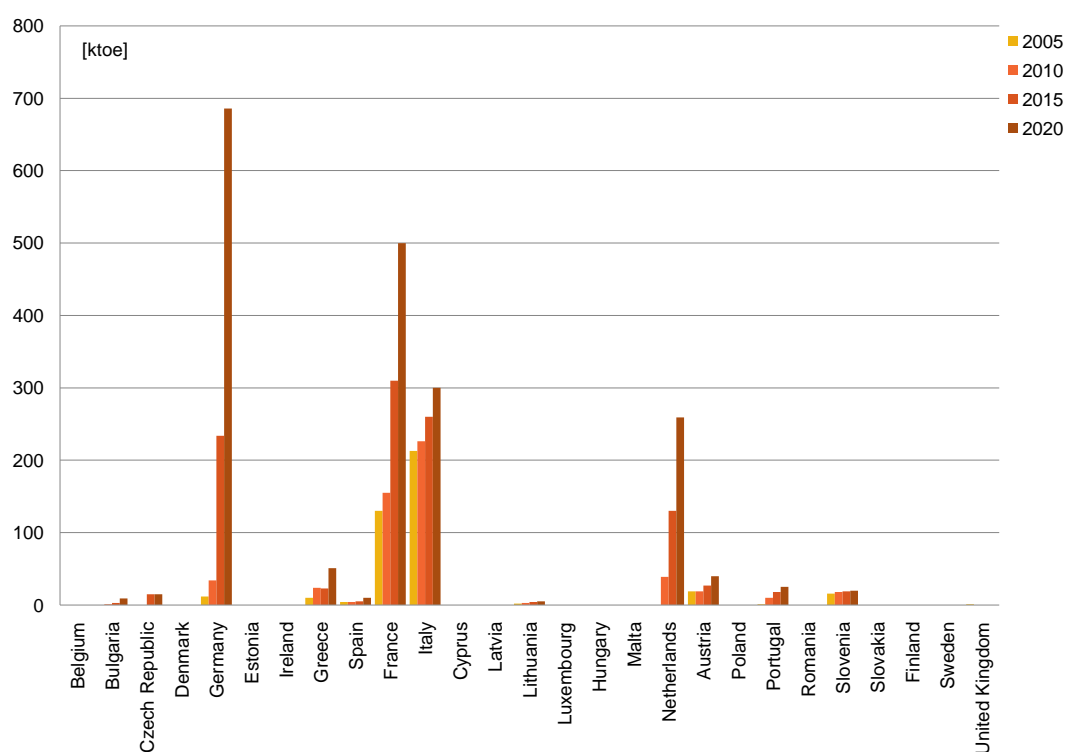


Figure 45: Projected total geothermal heat energy [ktoe] for the period 2005 - 2020

Table 83: Projected total geothermal heat energy [ktoe] for the period 2005 - 2020

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	1	3	9	0
Czech Republic	0	0	15	15	1
Denmark	0	0	0	0	0
Germany	12	34	234	686	36
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0	0
Greece	10	24	23	51	3
Spain	4	4	5	10	1
France	130	155	310	500	26
Italy	213	226	260	300	16
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	2	3	4	5	0
Luxembourg	n.a.	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	39	130	259	13
Austria	19	19	27	40	2
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	1	10	18	25	1
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	16	18	19	20	1
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	1	n.a.	n.a.	n.a.	n.a.
All Member States (total)	408	533	1048	1920	100

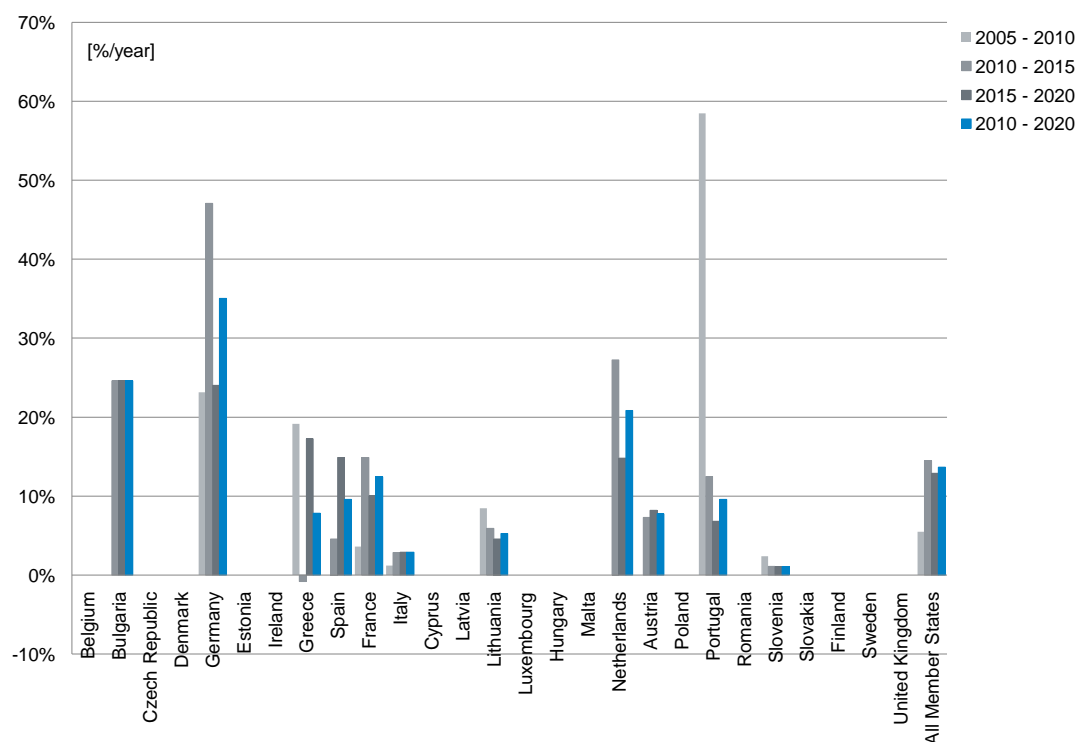


Figure 46: Calculated average annual growth for energy from geothermal heat [%/year] for four periods

Table 84: Calculated average annual growth for energy from geothermal heat [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	24.6	24.6	24.6
Czech Republic	n.a.	n.a.	0.0	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	23.2	47.1	24.0	35.0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	19.1	-0.8	17.3	7.8
Spain	0.0	4.6	14.9	9.6
France	3.6	14.9	10.0	12.4
Italy	1.2	2.8	2.9	2.9
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	8.4	5.9	4.6	5.2
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	27.2	14.8	20.8
Austria	0.0	7.3	8.2	7.7
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	58.5	12.5	6.8	9.6
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	2.4	1.1	1.0	1.1
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	5.5	14.5	12.9	13.7

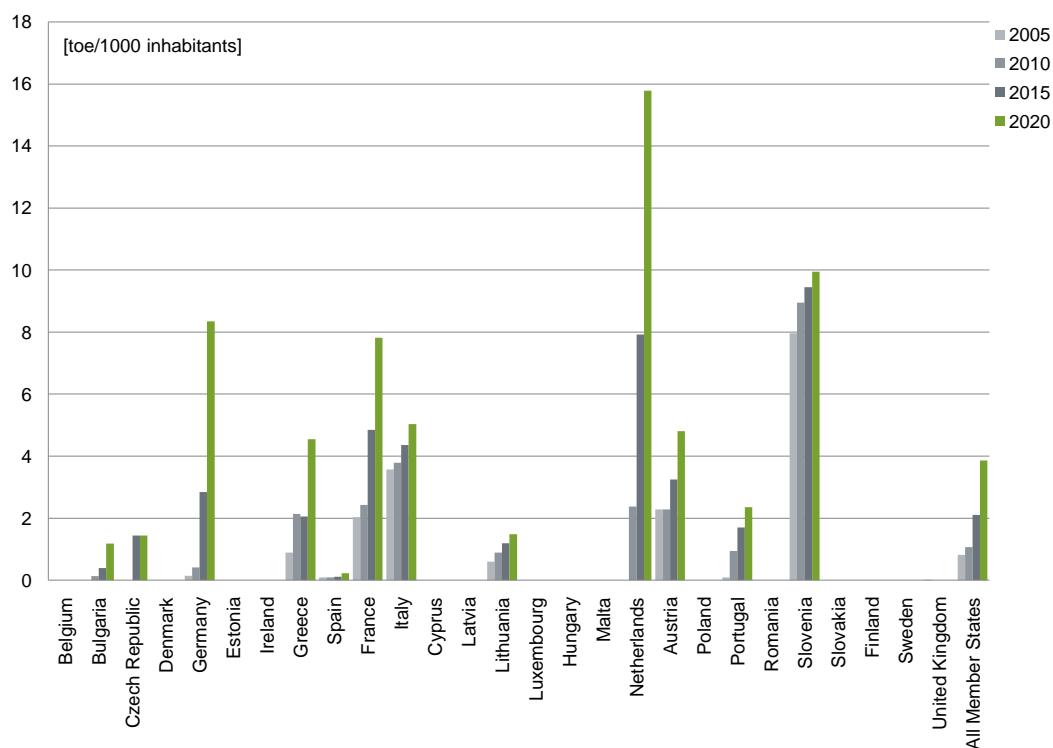


Figure 47: Calculated per capita (2008) energy for total geothermal heat [toe/1000 inhabitants] for the period 2005 - 2020

Table 85: Calculated per capita (2008) energy for total geothermal heat [toe/1000 inhabitants] for the period 2005 - 2020

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	0	0	1
Czech Republic	0	0	1	1
Denmark	0	0	0	0
Germany	0	0	3	8
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0
Greece	1	2	2	5
Spain	0	0	0	0
France	2	2	5	8
Italy	4	4	4	5
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	1	1	1	1
Luxembourg	n.a.	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	2	8	16
Austria	2	2	3	5
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	1	2	2
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	8	9	9	10
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	0	n.a.	n.a.	n.a.
All Member States (average)	1	1	2	4

The population data can be viewed in Table 9 (page 25)

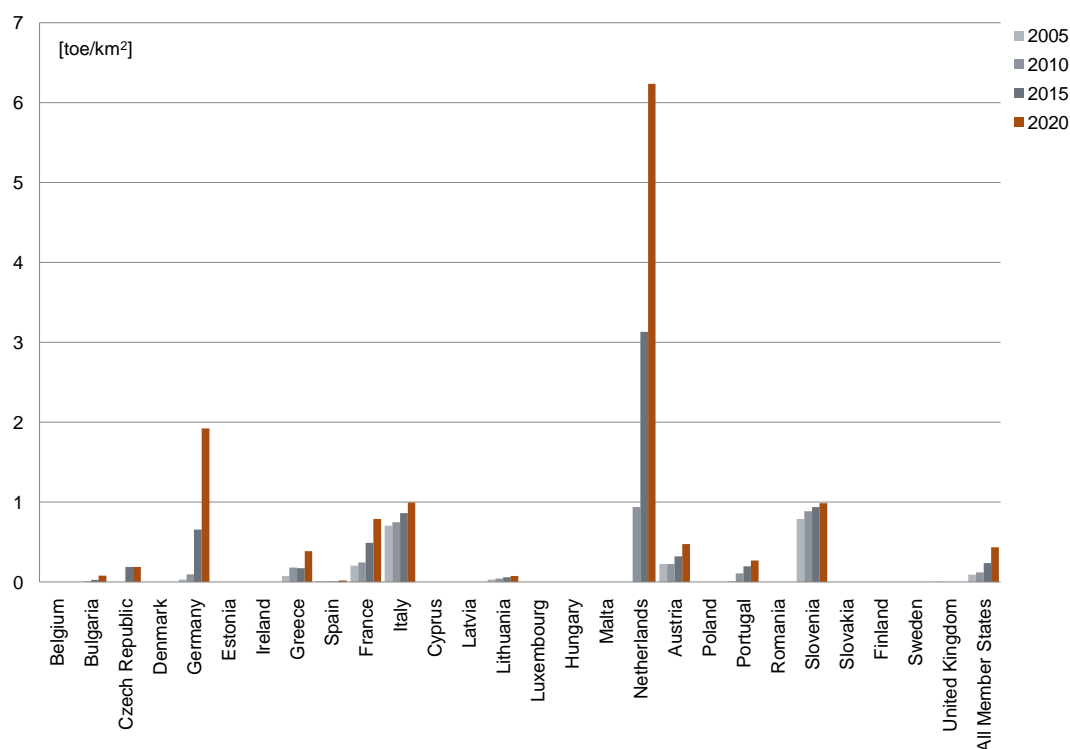


Figure 48: Calculated per surface area (2004) energy for total geothermal heat [toe/km²] for the period 2005 - 2020

Table 86: Calculated per surface area (2004) energy for total geothermal heat [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	0	0	0
Czech Republic	0	0	0	0
Denmark	0	0	0	0
Germany	0	0	1	2
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0
Greece	0	0	0	0
Spain	0	0	0	0
France	0	0	0	1
Italy	1	1	1	1
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	n.a.	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	1	3	6
Austria	0	0	0	0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	1	1	1	1
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	0	n.a.	n.a.	n.a.
All Member States (average)	0	0	0	0

The surface area data can be viewed in Table 9 (page 25)

Solar thermal energy

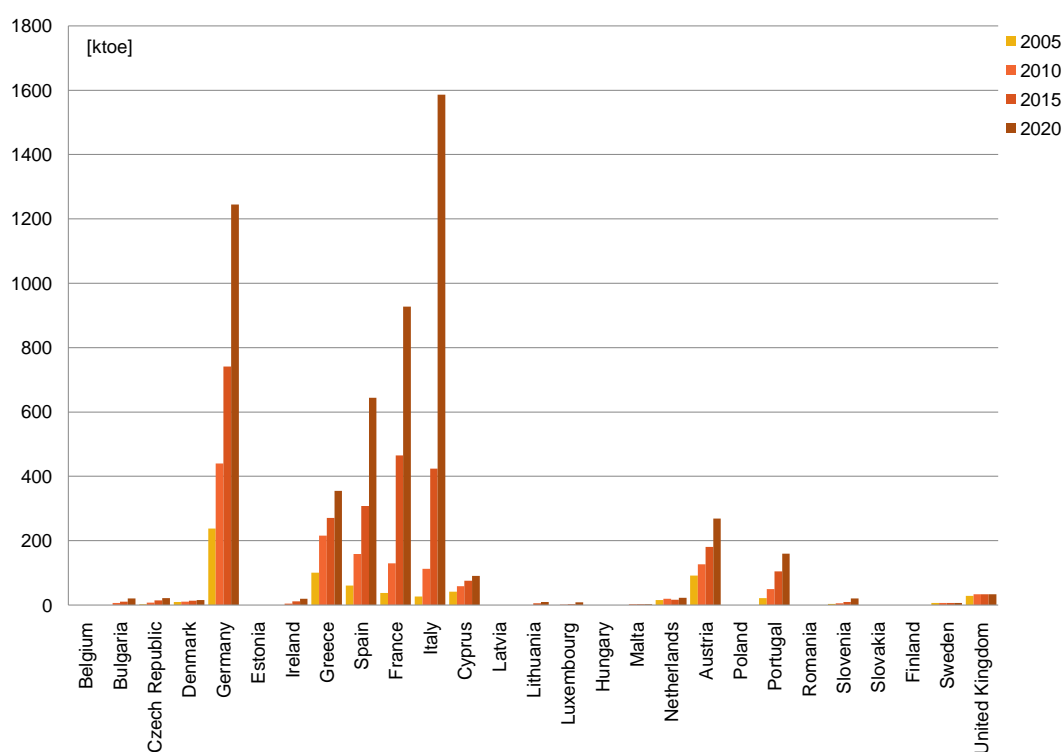


Figure 49: Projected total solar thermal energy [ktoe] for the period 2005 - 2020

Table 87: Projected total solar thermal energy [ktoe] for the period 2005 - 2020

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	6	11	21	0
Czech Republic	2	7	15	22	0
Denmark	10	11	14	16	0
Germany	238	440	741	1245	23
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	4	12	20	0
Greece	101	216	271	355	7
Spain	61	159	308	644	12
France	38	130	465	927	17
Italy	27	113	424	1586	29
Cyprus	41	59	75	90	2
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	5	9	0
Luxembourg	0	1	2	8	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	3	3	3	0
Netherlands	16	20	17	23	0
Austria	92	127	181	269	5
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	22	50	105	160	3
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	3	5	10	21	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	6	6	6	6	0
United Kingdom	29	34	34	34	1
All Member States (total)	686	1391	2699	5459	100

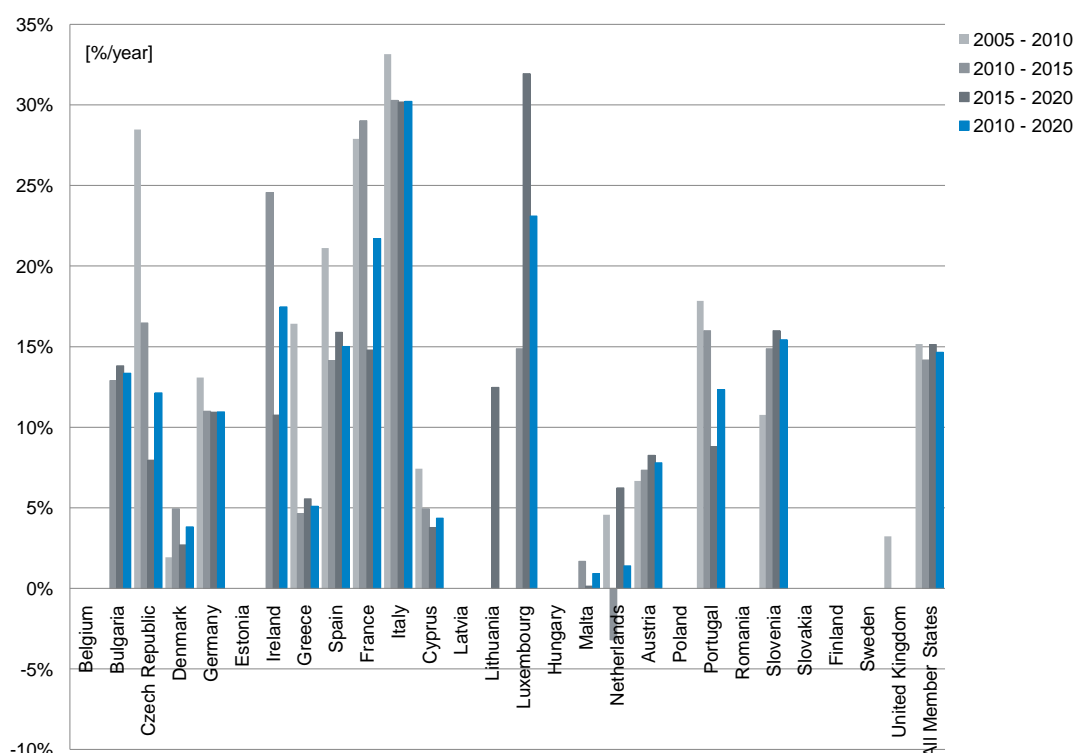


Figure 50: Calculated average annual growth for energy from solar thermal [%/year] for four periods

Table 88: Calculated average annual growth for energy from solar thermal [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	12.9	13.8	13.3
Czech Republic	28.5	16.5	8.0	12.1
Denmark	1.9	4.9	2.7	3.8
Germany	13.1	11.0	10.9	11.0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	24.6	10.8	17.5
Greece	16.4	4.6	5.5	5.1
Spain	21.1	14.1	15.9	15.0
France	27.9	29.0	14.8	21.7
Italy	33.2	30.3	30.2	30.2
Cyprus	7.4	4.9	3.8	4.4
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	12.5	n.a.
Luxembourg	n.a.	14.9	32.0	23.1
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	1.7	0.1	0.9
Netherlands	4.6	-3.2	6.2	1.4
Austria	6.7	7.3	8.2	7.8
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	17.8	16.0	8.8	12.3
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	10.8	14.9	16.0	15.4
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	0.0	0.0	0.0	0.0
United Kingdom	3.2	0.0	0.0	0.0
All Member States (average)	15.2	14.2	15.1	14.7

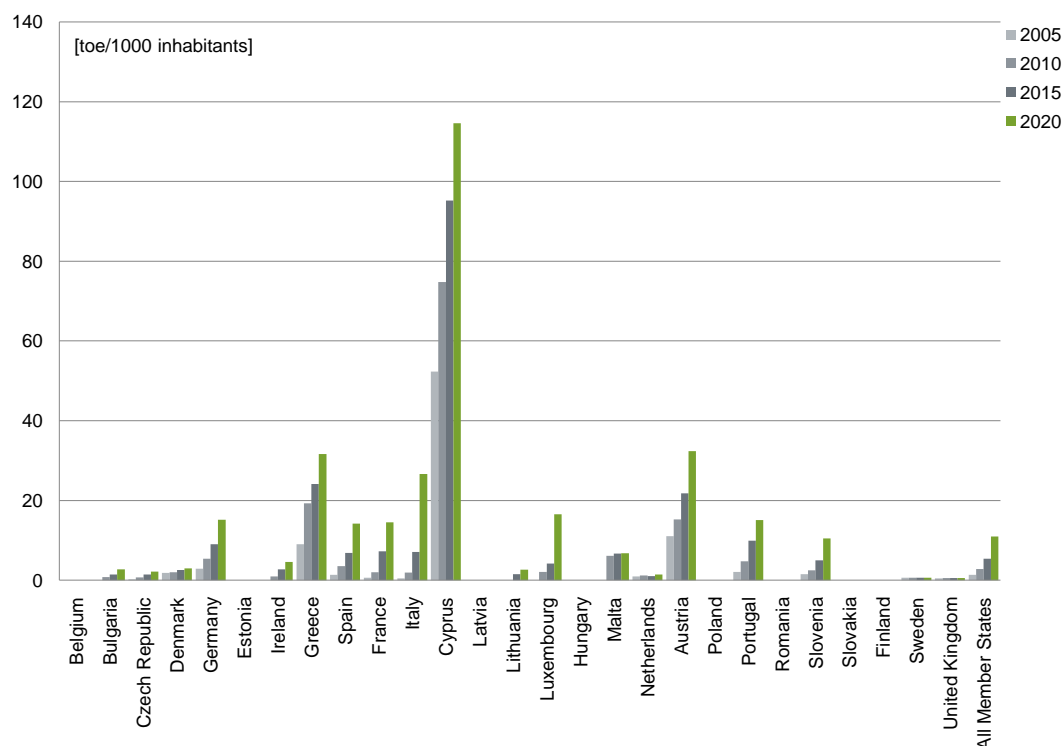


Figure 51: Calculated per capita (2008) energy for total solar thermal [toe/1000 inhabitants] for the period 2005 - 2020

Table 89: Calculated per capita (2008) energy for total solar thermal [toe/1000 inhabitants] for the period 2005 - 2020

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	1	1	3
Czech Republic	0	1	1	2
Denmark	2	2	3	3
Germany	3	5	9	15
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	1	3	5
Greece	9	19	24	32
Spain	1	4	7	14
France	1	2	7	14
Italy	0	2	7	27
Cyprus	52	75	95	115
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	1	3
Luxembourg	0	2	4	17
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	6	7	7
Netherlands	1	1	1	1
Austria	11	15	22	32
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	2	5	10	15
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	1	2	5	10
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	1	1	1	1
United Kingdom	0	1	1	1
All Member States (average)	1	3	5	11

The population data can be viewed in Table 9 (page 25)

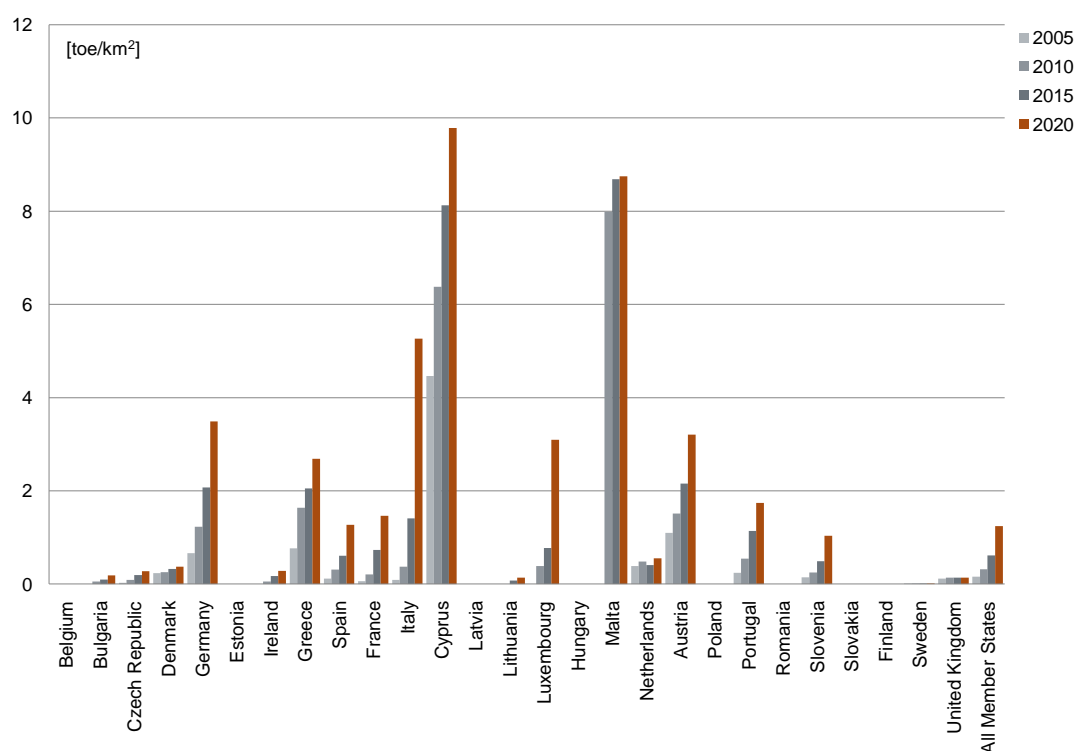


Figure 52: Calculated per surface area (2004) energy for total solar thermal [toe/km²] for the period 2005 - 2020

Table 90: Calculated per surface area (2004) energy for total solar thermal [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	0	0	0
Czech Republic	0	0	0	0
Denmark	0	0	0	0
Germany	1	1	2	3
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0
Greece	1	2	2	3
Spain	0	0	1	1
France	0	0	1	1
Italy	0	0	1	5
Cyprus	4	6	8	10
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	1	3
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	8	9	9
Netherlands	0	0	0	1
Austria	1	2	2	3
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	1	1	2
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	0	0	0	1
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	0	0	0	0
United Kingdom	0	0	0	0
All Member States (average)	0	0	1	1

The surface area data can be viewed in Table 9 (page 25)

Biomass thermal energy

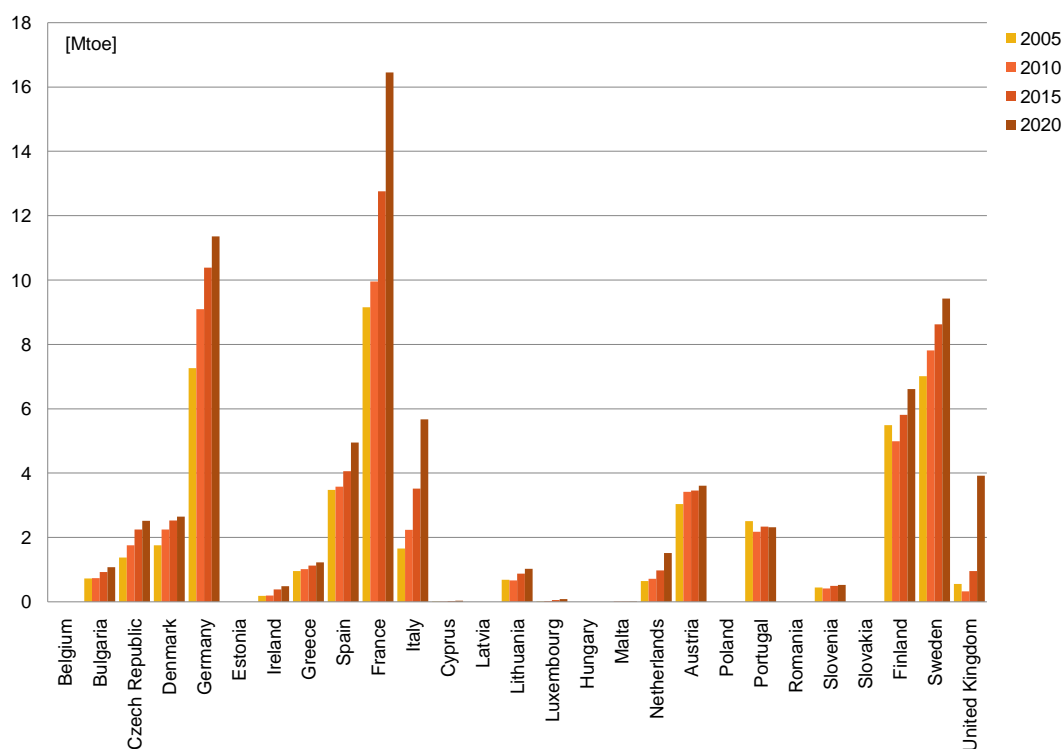


Figure 53: Projected total biomass heat energy [Mtoe] for the period 2005 - 2020, all biomass input categories

Table 91: Projected total biomass heat energy [ktoe] for the period 2005 - 2020, all biomass input categories

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	724	734	929	1073	1
Czech Republic	1374	1759	2248	2517	3
Denmark	1759	2245	2526	2643	4
Germany	7260	9092	10388	11355	15
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	183	198	388	486	1
Greece	951	1012	1128	1222	2
Spain	3477	3583	4060	4950	7
France	9153	9953	12760	16455	22
Italy	1655	2239	3521	5670	8
Cyprus	4	18	24	30	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	686	663	879	1023	1
Luxembourg	19	24	51	83	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	0	1	2	2	0
Netherlands	647	715	980	1520	2
Austria	3033	3415	3463	3607	5
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	2507	2179	2339	2322	3
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	445	415	495	526	1
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	5490	4990	5810	6610	9
Sweden	7013	7817	8622	9426	12
United Kingdom	560	323	958	3914	5
All Member States (total)	46940	51375	61571	75434	100

More information on subcategories for biomass heat energy is presented in Table 93 on page 110.

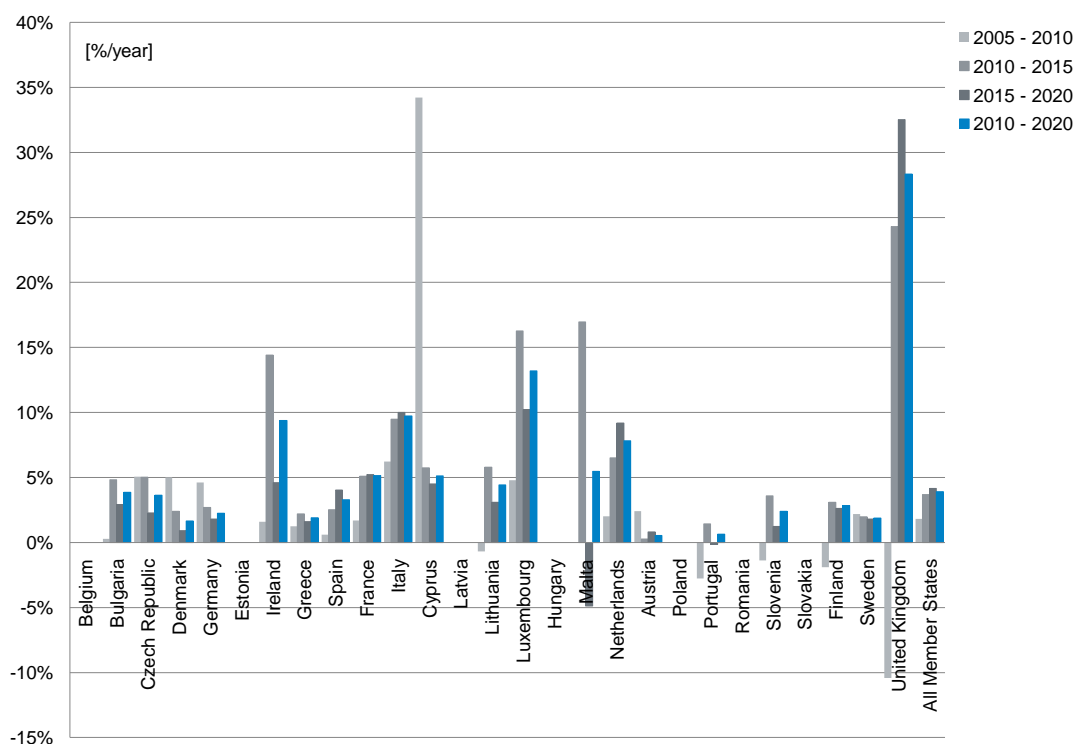


Figure 54: Calculated average annual growth for energy from biomass heat [%/year] for four periods, all biomass input categories

Table 92: Calculated average annual growth for energy from biomass heat [%/year] for four periods, all biomass input categories

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0.3	4.8	2.9	3.9
Czech Republic	5.1	5.0	2.3	3.6
Denmark	5.0	2.4	0.9	1.6
Germany	4.6	2.7	1.8	2.2
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	1.6	14.4	4.6	9.4
Greece	1.3	2.2	1.6	1.9
Spain	0.6	2.5	4.0	3.3
France	1.7	5.1	5.2	5.2
Italy	6.2	9.5	10.0	9.7
Cyprus	34.2	5.7	4.5	5.1
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	-0.7	5.8	3.1	4.4
Luxembourg	4.8	16.3	10.2	13.2
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	17.0	-4.9	5.5
Netherlands	2.0	6.5	9.2	7.8
Austria	2.4	0.3	0.8	0.5
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	-2.8	1.4	-0.1	0.6
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	-1.4	3.6	1.2	2.4
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	-1.9	3.1	2.6	2.9
Sweden	2.2	2.0	1.8	1.9
United Kingdom	-10.4	24.3	32.5	28.3
All Member States (average)	1.8	3.7	4.1	3.9

Table 93: Projected biomass heat energy [ktoe] for the period 2005 - 2020, broken down into biomass input categories

	Solid biomass					Biogas					Bioliquids					Bio-SNG for grid feed-in					Total biomass thermal energy				
	2005	2010	2015	2020	[ktoe]	2005	2010	2015	2020	[ktoe]	2005	2010	2015	2020	[ktoe]	2005	2010	2015	2020	[ktoe]	2005	2010	2015	2020	[ktoe]
Belgium	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	
Bulgaria	724	734	916	1053		0	0	13	20		0	0	0	0		0	0	0	0		724	734	929	1073	
Czech Republic	1351	1706	2137	2350		23	53	110	167		0	0	0	0		n.a.	n.a.	n.a.	n.a.		1374	1759	2248	2517	
Denmark	1714	2178	2426	2470		45	59	92	165		8	8	8	8		n.a.	n.a.	n.a.	n.a.		1759	2245	2576	2643	
Germany	6794	7516	8389	8952		154	912	1312	1692		664	688	711	8		n.a.	n.a.	n.a.	n.a.		7260	9092	10388	11355	
Estonia	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	
Ireland	176	188	362	453		7	10	26	33		0	0	0	0		n.a.	n.a.	n.a.	n.a.		183	198	388	486	
Greece	951	1012	1128	1222		36	33	63	100		0	0	0	0		n.a.	n.a.	n.a.	n.a.		951	1012	1128	1222	
Spain	3441	3550	3997	4850		86	83	260	555		0	0	0	0		n.a.	n.a.	n.a.	n.a.		3477	3583	4060	4950	
France	9067	9870	12500	15900		26	26	83	266		7	33	150	0		n.a.	n.a.	n.a.	n.a.		9153	9953	12760	16455	
Italy	1629	2206	3404	5254		4	18	24	30		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		1655	2239	3521	5670	
Cyprus	4	18	24	30		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		4	18	24	30	
Latvia	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	
Lithuania	685	657	851	973		1	6	28	50		0	0	0	0		n.a.	n.a.	n.a.	n.a.		686	663	879	1023	
Luxembourg	16	19	39	70		3	5	12	13		0	0	0	0		n.a.	n.a.	n.a.	n.a.		19	24	51	83	
Hungary	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	
Malta	n.a.	0	0	0		n.a.	1	2	2		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		0	1	2	2	
Netherlands	540	573	604	650		69	111	174	288		0	0	0	0		n.a.	n.a.	n.a.	n.a.		647	715	980	1520	
Austria	3025	3400	3447	3591		8	15	16	16		0	0	0	0		n.a.	n.a.	n.a.	n.a.		3033	3415	3463	3607	
Poland	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	
Portugal	1785	1514	1515	1484		10	10	23	37		655	801	801	0		n.a.	n.a.	n.a.	n.a.		2507	2179	2339	2322	
Romania	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	
Slovenia	401	415	483	497		0	0	0	0		43	12	28	0		n.a.	n.a.	n.a.	n.a.		445	415	495	526	
Slovakia	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	
Finland	5450	2710	3300	3940		40	30	30	60		2240	2470	2610	0		n.a.	n.a.	n.a.	n.a.		5490	4990	5810	6610	
Sweden	6992	7800	8607	9415		21	18	14	11		65	65	65	0		n.a.	n.a.	n.a.	n.a.		7013	7817	8622	9426	
United Kingdom	493	305	904	3612		67	18	54	302		n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.		560	323	958	3914	
All Member States (total)	45238	46371	55033	66766		596	1390	2312	3777		1134	3639	4077	4373		38	31	202	582		46940	51375	61571	75434	

As indicated in section 1.5.26 the subtotal for Biomass in Sweden does not include liquid energy carriers. For this reason the sum of all subcategories is 65 GWh higher than the value for All Member States (total).

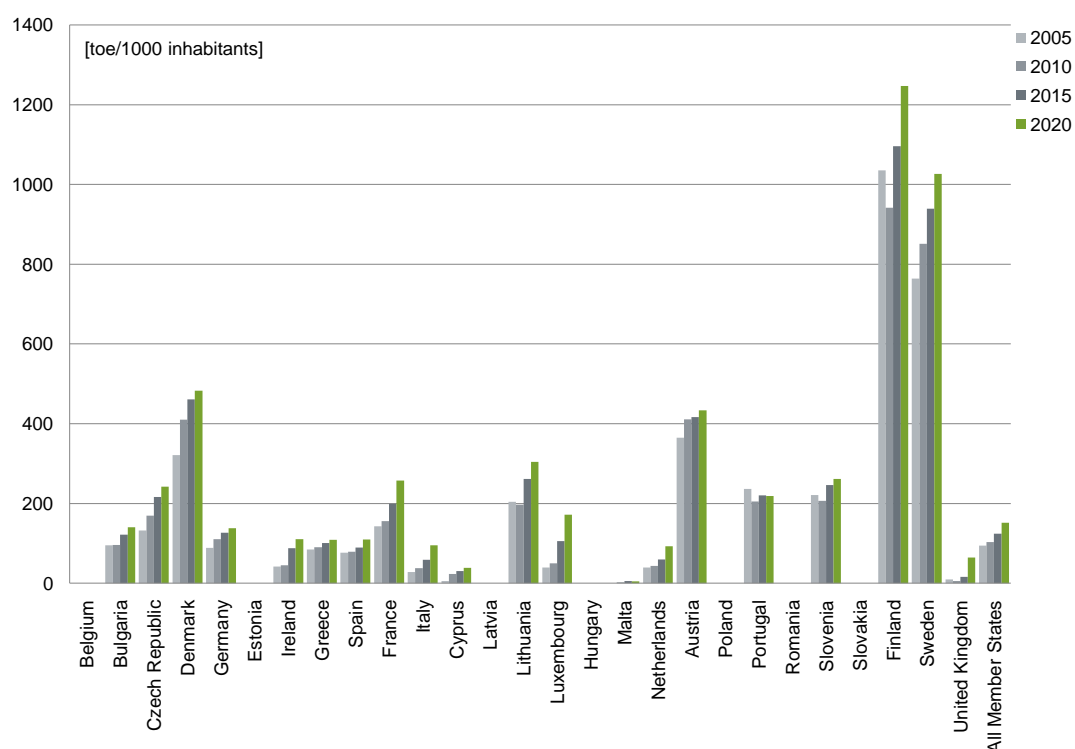


Figure 55: Calculated per capita (2008) energy for total biomass heat [toe/1000 inhabitants] for the period 2005 - 2020, all biomass input categories

Table 94: Calculated per capita (2008) energy for total biomass heat [toe/1000 inhabitants] for the period 2005 - 2020, all biomass input categories

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	95	96	122	140
Czech Republic	132	169	217	242
Denmark	321	410	461	483
Germany	88	111	126	138
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	42	45	88	110
Greece	85	90	101	109
Spain	77	79	90	109
France	143	156	199	257
Italy	28	38	59	95
Cyprus	5	23	31	38
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	204	197	261	304
Luxembourg	39	50	105	172
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0	2	5	4
Netherlands	39	44	60	93
Austria	365	411	416	434
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	236	205	220	219
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	221	206	246	262
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	1036	941	1096	1247
Sweden	764	851	939	1026
United Kingdom	9	5	16	64
All Member States (average)	94	103	124	152

The population data can be viewed in Table 9 (page 25)

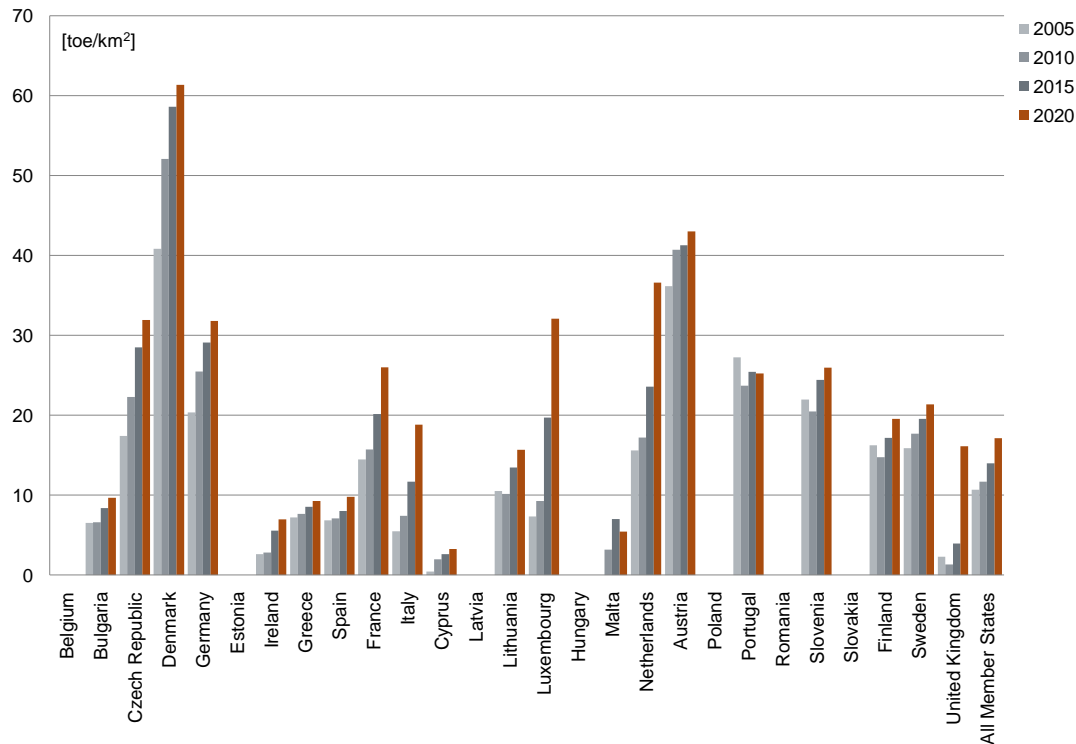


Figure 56: Calculated per surface area (2004) energy for total biomass heat [toe/km²] for the period 2005 - 2020

Table 95: Calculated per surface area (2004) energy for total biomass heat [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	7	7	8	10
Czech Republic	17	22	29	32
Denmark	41	52	59	61
Germany	20	25	29	32
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	3	3	6	7
Greece	7	8	9	9
Spain	7	7	8	10
France	14	16	20	26
Italy	5	7	12	19
Cyprus	0	2	3	3
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	11	10	13	16
Luxembourg	7	9	20	32
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	0	3	7	5
Netherlands	16	17	24	37
Austria	36	41	41	43
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	27	24	25	25
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	22	20	24	26
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	16	15	17	20
Sweden	16	18	20	21
United Kingdom	2	1	4	16
All Member States (average)	11	12	14	17

The surface area data can be viewed in Table 9 (page 25)

Renewable energy from heat pumps

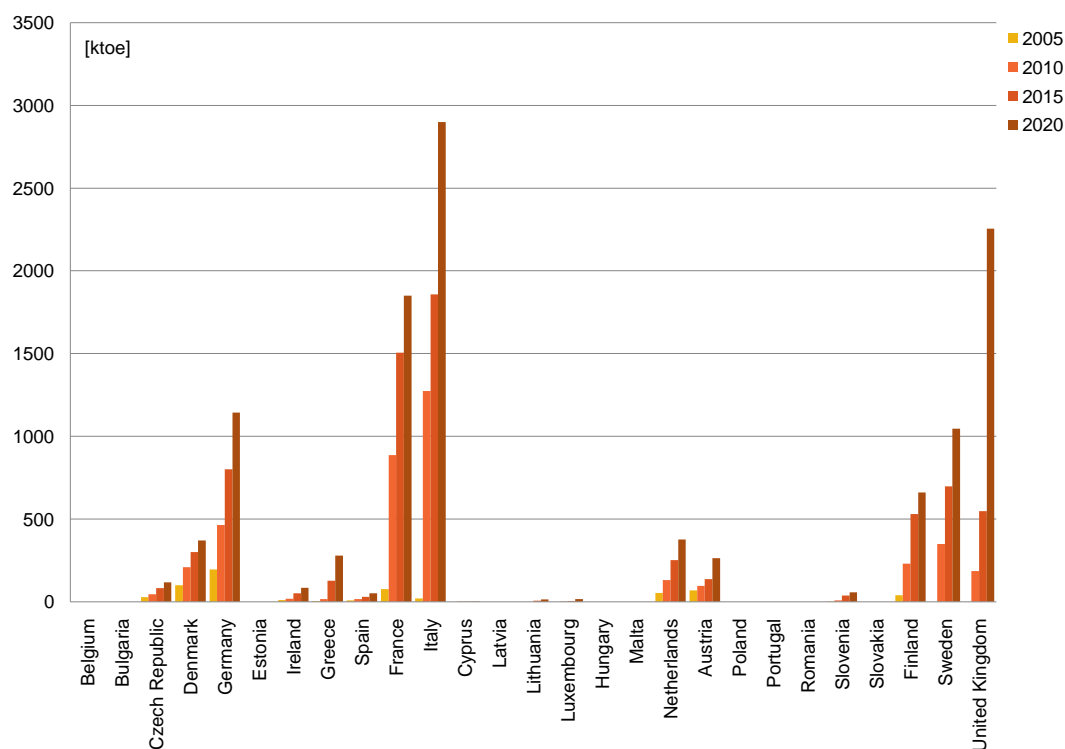


Figure 57: Projected total heat pump thermal energy [ktoe] for the period 2005 - 2020, all source types

Table 96: Projected total heat pump thermal energy [ktoe] for the period 2005 - 2020, all source types

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0	0
Czech Republic	29	45	82	118	1
Denmark	100	210	301	370	3
Germany	196	465	800	1144	10
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	10	18	51	84	1
Greece	4	17	127	279	2
Spain	8	17	31	51	0
France	76	886	1505	1850	16
Italy	21	1273	1857	2900	25
Cyprus	0	0.34	1.61	2.97	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	6	14	0
Luxembourg	0	1	4	17	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	54	132	252	377	3
Austria	69	96	137	263	2
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	n.a.	n.a.	n.a.
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	2	8	37	58	1
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	40	230	530	660	6
Sweden	0	349	697	1046	9
United Kingdom	0	186	548	2254	20
All Member States (total)	609	3933.34	6966.61	11487.97	100

More information on subcategories for heat pump thermal energy is presented in Table 98 on page 116.

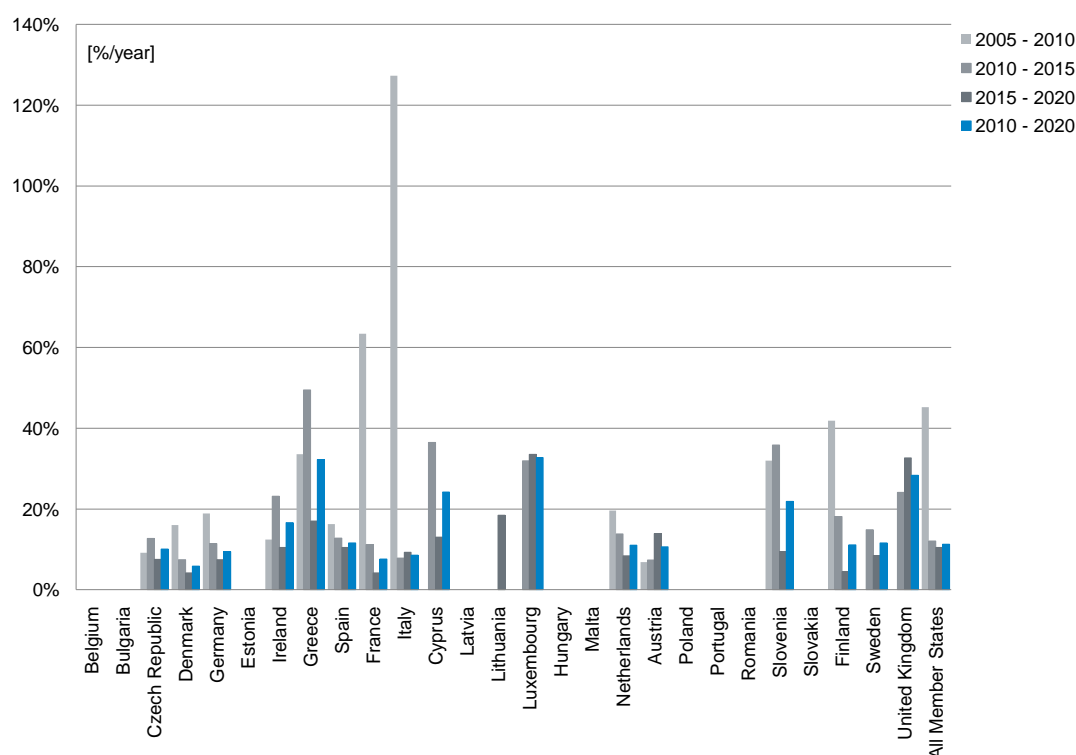


Figure 58: Calculated average annual growth for thermal energy from heat pump [%/year] for four periods, all source type

Table 97: Calculated average annual growth for thermal energy from heat pump [%/year] for four periods, all source type

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	9.2	12.8	7.6	10.1
Denmark	16.0	7.5	4.2	5.8
Germany	18.9	11.5	7.4	9.4
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	12.5	23.2	10.5	16.7
Greece	33.6	49.5	17.0	32.3
Spain	16.3	12.8	10.5	11.6
France	63.4	11.2	4.2	7.6
Italy	127.3	7.8	9.3	8.6
Cyprus	n.a.	36.5	13.0	24.2
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	18.5	n.a.
Luxembourg	n.a.	32.0	33.6	32.8
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	19.6	13.8	8.4	11.1
Austria	6.8	7.4	13.9	10.6
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	n.a.	n.a.	n.a.
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	32.0	35.8	9.4	21.9
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	41.9	18.2	4.5	11.1
Sweden	n.a.	14.8	8.5	11.6
United Kingdom	n.a.	24.1	32.7	28.3
All Member States (average)	45.2	12.1	10.5	11.3

Table 98: Projected heat pump thermal energy [ktoe] for the period 2005 - 2020, broken down into source type

	Aerothermal heat pumps					Geothermal heat pumps					Hydrothermal heat pumps					Total renewable energy from heat pumps						
	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2025 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2025 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2025 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2025 [ktoe]		
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Czech Republic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Denmark	48	91	135	170	229	52	119	166	199	0	0	0	0	0	0	29	100	45	82	118	144	
Germany	39	165	338	547	777	130	258	400	521	27	42	62	77	77	196	0	100	210	301	370	465	
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Greece	3	14	104	229	411	1	3	23	50	0	0	0	0	0	4	8	17	17	31	31	51	
France	4	5	7	10	12	4	12	22	41	2	0	0	0	0	76	21	76	886	1305	1850	2900	
Italy	16	664	1566	2175	40	49	145	425	570	2	105	146	203	203	0	0	0	0	0	0	0	
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	35	81	117	117	n.a.	90	161	242	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Austria	0	38	55	105	0	0	10	14	26	0	48	68	131	131	69	54	96	132	252	377	530	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	0	1	7	14	0	0	4	26	38	0	2	5	5	5	2	2	8	8	37	37	38	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sweden	0	50	100	150	0	0	272	544	815	0	27	54	80	80	0	40	230	349	697	1046	1446	
United Kingdom	n.a.	66	194	1301	n.a.	n.a.	120	354	953	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	186	548	2254	2254	2254	
All Member States (total)	137	2256	3667	6098	240	1150	2281	3977	29	224	338	507	609	609	3933.34	6966.61	11487.97	11487.97	11487.97	11487.97	11487.97	

For Ireland, Lithuania, Luxembourg and Finland (and the Netherlands and Austria in 2005) no breakdown into source types has been provided. Therefore, the sum of all categories is lower than the value for All Member States (total).

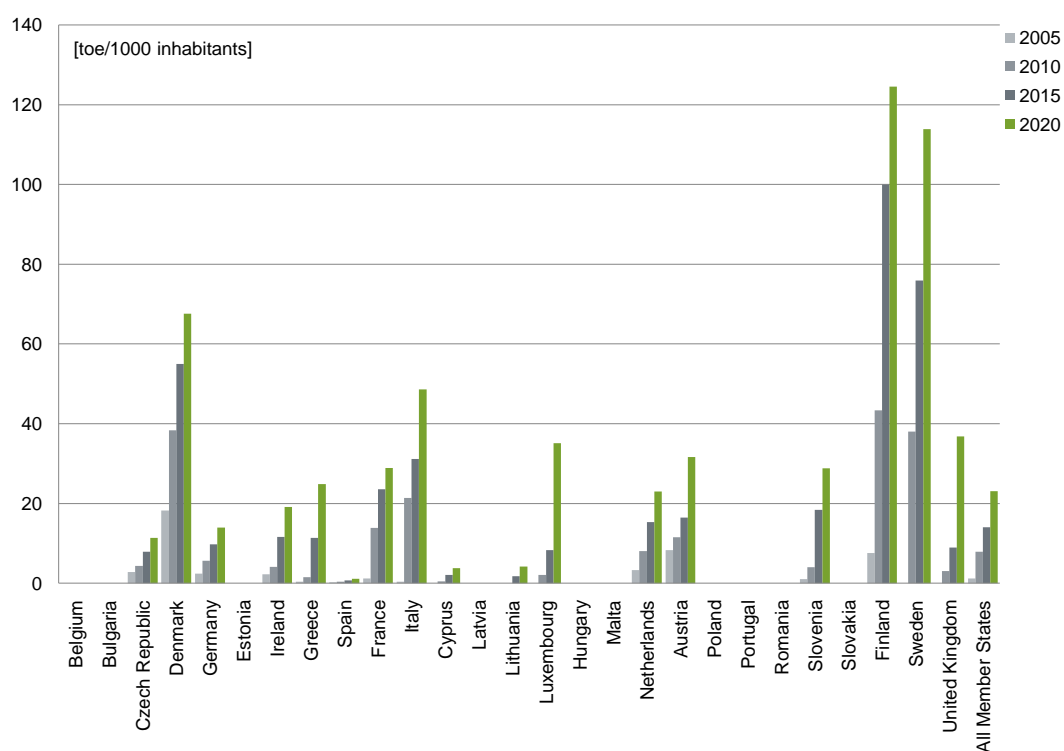


Figure 59: Calculated per capita (2008) thermal energy for total heat pump [toe/1000 inhabitants] for the period 2005 - 2020, all source types

Table 99: Calculated per capita (2008) thermal energy for total heat pump [toe/1000 inhabitants] for the period 2005 - 2020, all source types

	2005	2010	2015	2020
	[toe/1000 inhabitants]	[toe/1000 inhabitants]	[toe/1000 inhabitants]	[toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	3	4	8	11
Denmark	18	38	55	68
Germany	2	6	10	14
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	2	4	12	19
Greece	0	2	11	25
Spain	0	0	1	1
France	1	14	24	29
Italy	0	21	31	49
Cyprus	0	0	2	4
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	2	4
Luxembourg	0	2	8	35
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	3	8	15	23
Austria	8	12	16	32
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	n.a.	n.a.
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	1	4	18	29
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	8	43	100	125
Sweden	0	38	76	114
United Kingdom	0	3	9	37
All Member States (average)	1	8	14	23

The population data can be viewed in Table 9 (page 25)

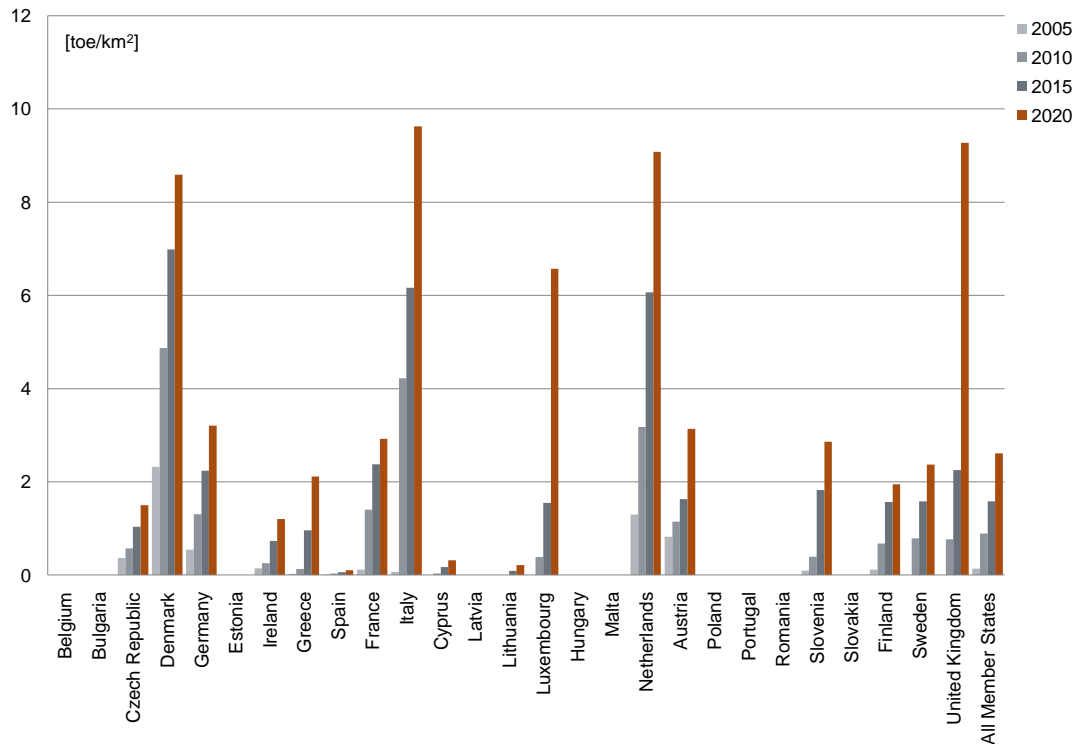


Figure 60: Calculated per surface area (2004) thermal energy for total heat pumps [toe/km²] for the period 2005 - 2020, all source types

Table 100: Calculated per surface area (2004) thermal energy for total heat pumps [toe/km²] for the period 2005 - 2020, all source types

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	0	1	1	1
Denmark	2	5	7	9
Germany	1	1	2	3
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	1	1
Greece	0	0	1	2
Spain	0	0	0	0
France	0	1	2	3
Italy	0	4	6	10
Cyprus	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	2	7
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	1	3	6	9
Austria	1	1	2	3
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	0	0	2	3
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	1	2	2
Sweden	0	1	2	2
United Kingdom	0	1	2	9
All Member States (average)	0	1	2	3

The surface area data can be viewed in Table 9 (page 25)

Bioethanol / bio-ETBE in transport

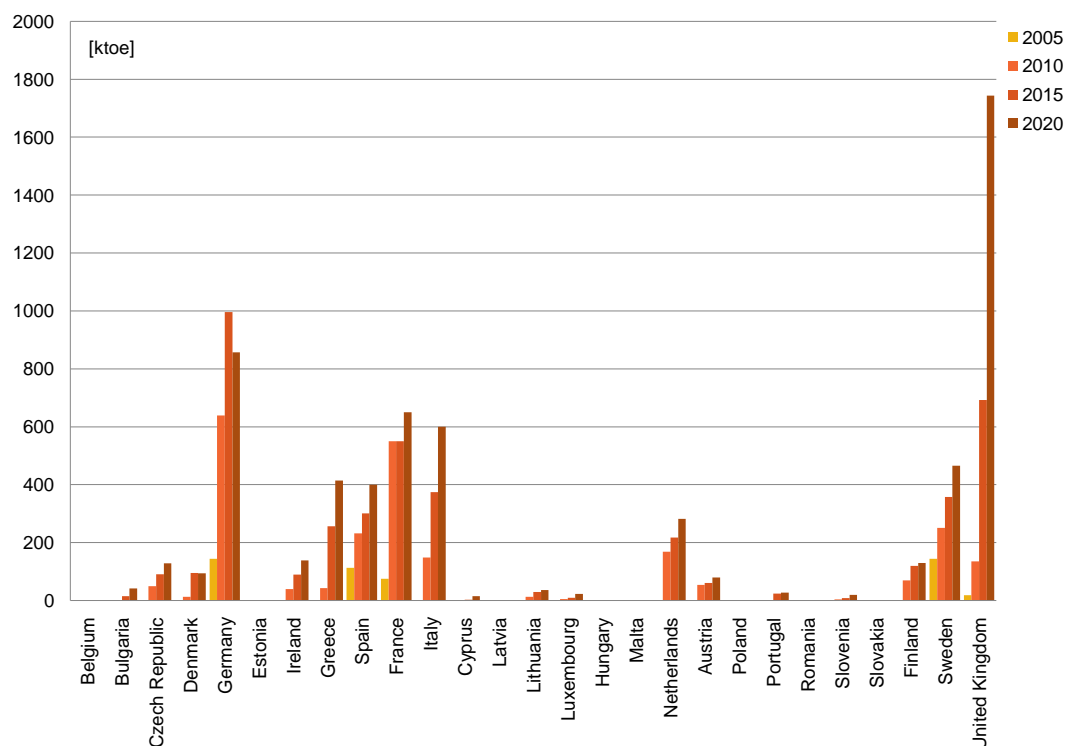


Figure 61: *Projected total bioethanol / bio-ETBE in renewable transport [ktoe] for the period 2005 - 2020*

Table 101: *Projected total bioethanol / bio-ETBE in renewable transport [ktoe] for the period 2005 - 2020*

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	15	42	1
Czech Republic	0	50	91	128	2
Denmark	0	13	95	94	2
Germany	144	639	996	857	14
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	0	40	90	139	2
Greece	n.a.	43	256	414	7
Spain	113	232	301	400	7
France	75	550	550	650	11
Italy	0	148	374	600	10
Cyprus	0	0	3	15	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	1	13	30	36	1
Luxembourg	0	5	9	23	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	168	217	282	5
Austria	0	54	61	80	1
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	24	27	0
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	0	4	8	19	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	70	120	130	2
Sweden	144	251	358	465	8
United Kingdom	18	135	692	1743	28
All Member States (total)	495	2415	4290	6144	100

More information on additional information on bioethanol / bio-ETBE in renewable transport (Article 21.2 and imported bioethanol / bio-ETBE) is presented in Table 103 on page 122.

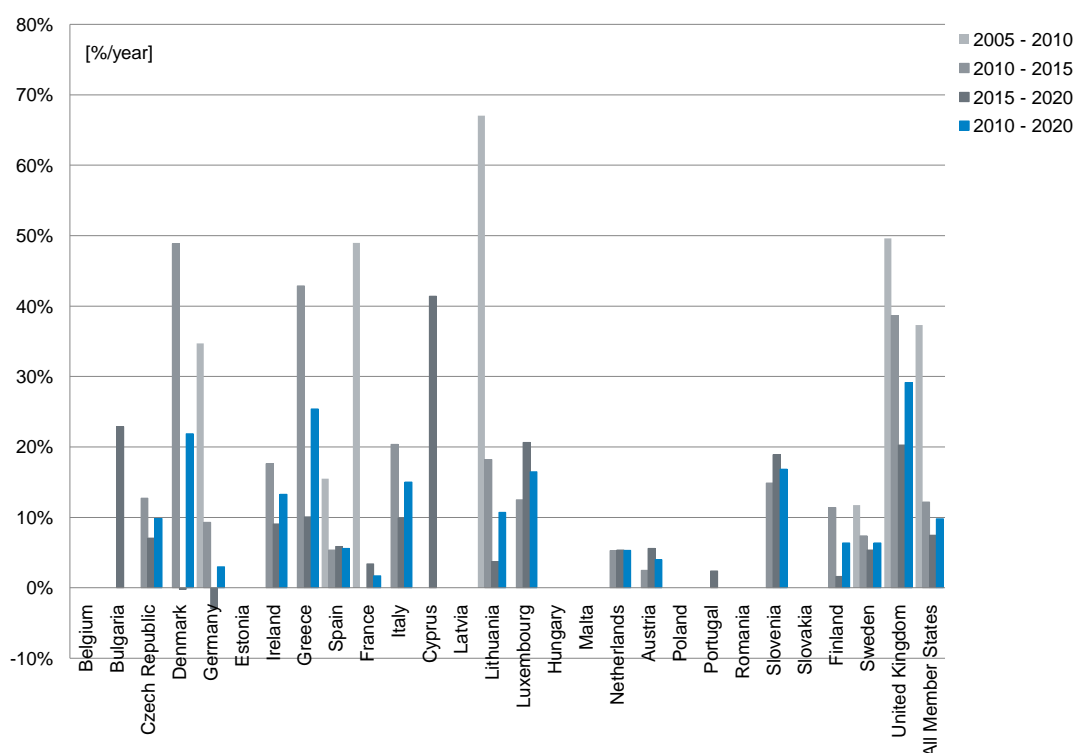


Figure 62: Calculated average annual growth for bioethanol / bio-ETBE in renewable transport [%/year] for four periods

Table 102: Calculated average annual growth for bioethanol / bio-ETBE in renewable transport [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	22.9	n.a.
Czech Republic	n.a.	12.7	7.1	9.9
Denmark	n.a.	48.9	-0.2	21.9
Germany	34.7	9.3	-3.0	3.0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	17.6	9.1	13.3
Greece	n.a.	42.9	10.1	25.4
Spain	15.5	5.3	5.9	5.6
France	49.0	0.0	3.4	1.7
Italy	n.a.	20.4	9.9	15.0
Cyprus	n.a.	n.a.	41.4	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	67.0	18.2	3.7	10.7
Luxembourg	n.a.	12.5	20.6	16.5
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	5.3	5.4	5.3
Austria	n.a.	2.5	5.6	4.0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	n.a.	2.4	n.a.
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	14.9	18.9	16.9
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	11.4	1.6	6.4
Sweden	11.8	7.4	5.4	6.4
United Kingdom	49.6	38.7	20.3	29.2
All Member States (average)	37.3	12.2	7.4	9.8

Table 103: Projected bioethanol / bio-ETBE in renewable transport [ktoe] for the period 2005 - 2020, indicating the contribution of Article 21.2 and imported bioethanol / bio-ETBE

	Bioethanol / bio-ETBE Article 21.2					Bioethanol / bio-ETBE imported					Total bioethanol / bio-ETBE				
	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	0	0	15	32	0	0	0	0	10	0	0	0	15	42	
Czech Republic	0	0	0	29	0	17	24	29	29	0	0	50	91	128	
Denmark	0	13	95	94	0	13	95	94	94	0	0	13	95	94	
Germany	0	0	32	32	0	189	482	278	278	144	144	639	996	857	
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Ireland	21	0	0	0	0	3	49	99	99	0	0	40	90	139	
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	43	256	414	n.a.	113	43	256	414	
Spain	0	0	0	52	0	25	0	0	0	0	113	232	301	400	
France	n.a.	n.a.	n.a.	n.a.	n.a.	50	50	50	50	75	75	550	550	650	
Italy	0	19	60	100	15	18	109	200	200	0	0	148	374	600	
Cyprus	0	0	0	0	0	0	3	15	15	0	0	0	3	15	
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Lithuania	0	0	n.a.	0	0	0	0	0	0	1	0	13	30	36	
Luxembourg	0	0	0	0	5	5	9	23	23	0	0	5	9	23	
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Malta	n.a.	2	4	6	6	2	4	6	6	n.a.	n.a.	n.a.	n.a.	n.a.	
Netherlands	0	17	22	34	n.a.	152	196	240	240	0	0	168	217	282	
Austria	0	0	0	0	0	14	12	11	11	0	0	54	61	80	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	
Portugal	0	0	0	0	0	0	0	0	0	0	0	24	24	27	
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	n.a.	8	n.a.	
Slovenia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	n.a.	4	n.a.	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	n.a.	8	n.a.	
Finland	0	0	20	40	0	n.a.	n.a.	n.a.	n.a.	n.a.	144	70	120	130	
Sweden	0	0	0	0	117	140	185	292	292	18	18	251	358	465	
United Kingdom	0	0	0	0	n.a.	1	1	1	1	18	18	135	692	1743	
All Member States (total)	21	51	248	433	117	672	1474	1761	495	2415	4290	6144			

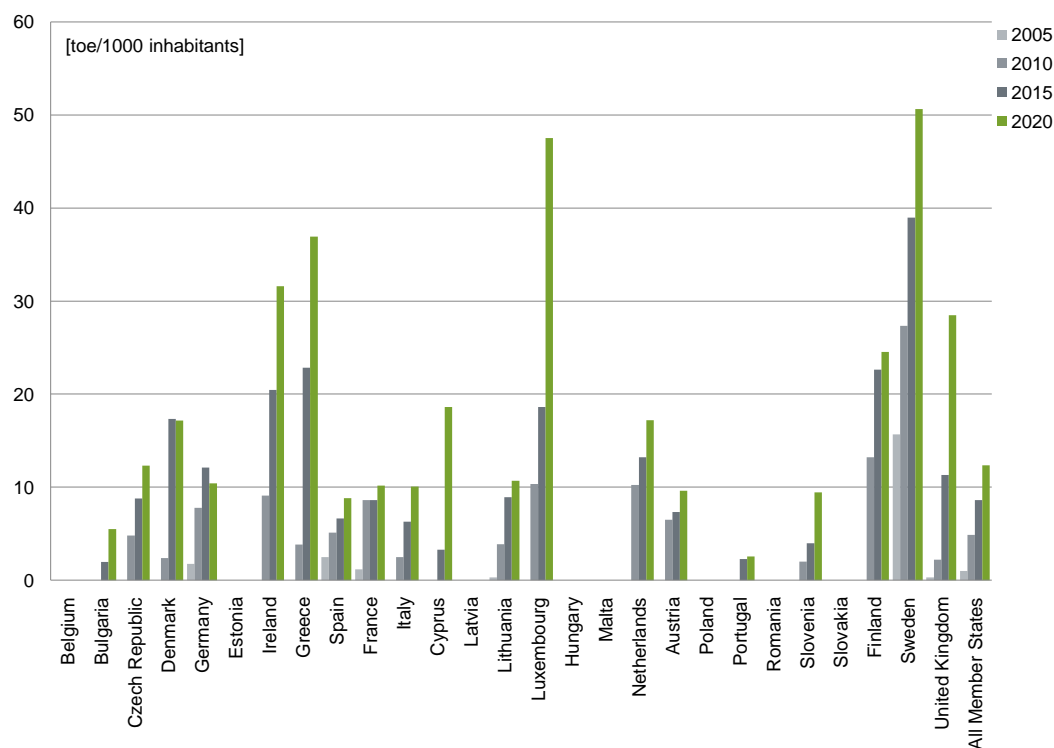


Figure 63: Calculated per capita (2008) bioethanol / bio-ETBE [toe/1000 inhabitants] for the period 2005 - 2020

Table 104: Calculated per capita (2008) bioethanol / bio-ETBE [toe/1000 inhabitants] for the period 2005 - 2020

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	2	5
Czech Republic	0	5	9	12
Denmark	0	2	17	17
Germany	2	8	12	10
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	9	20	32
Greece	n.a.	4	23	37
Spain	2	5	7	9
France	1	9	9	10
Italy	0	2	6	10
Cyprus	0	0	3	19
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	4	9	11
Luxembourg	0	10	19	48
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	10	13	17
Austria	0	6	7	10
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	2	3
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	0	2	4	9
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	13	23	25
Sweden	16	27	39	51
United Kingdom	0	2	11	28
All Member States (average)	1	5	9	12

The population data can be viewed in Table 9 (page 25)

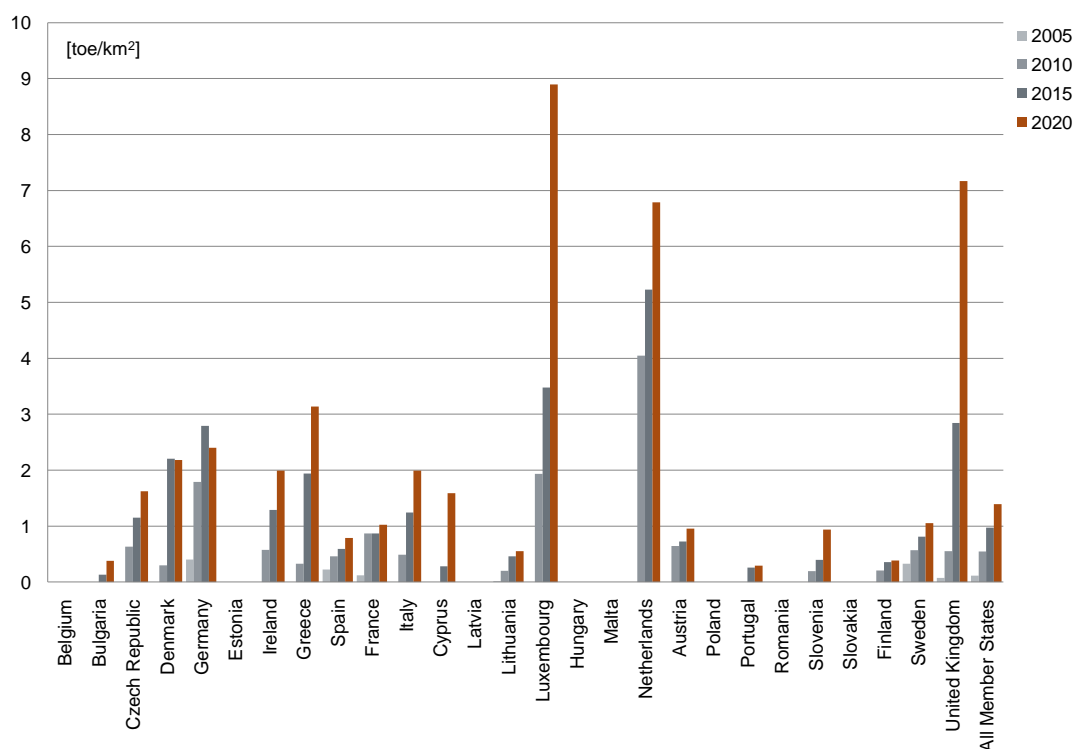


Figure 64: Calculated per surface area (2004) bioethanol / bio-ETBE [toe/km²] for the period 2005 - 2020

Table 105: Calculated per surface area (2004) bioethanol / bio-ETBE [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	0	1	1	2
Denmark	0	0	2	2
Germany	0	2	3	2
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	1	1	2
Greece	n.a.	0	2	3
Spain	0	0	1	1
France	0	1	1	1
Italy	0	0	1	2
Cyprus	0	0	0	2
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	1
Luxembourg	0	2	3	9
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	4	5	7
Austria	0	1	1	1
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	0	0	0	1
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	0	1	1	1
United Kingdom	0	1	3	7
All Member States (average)	0	1	1	1

The surface area data can be viewed in Table 9 (page 25)

Biodiesel in transport

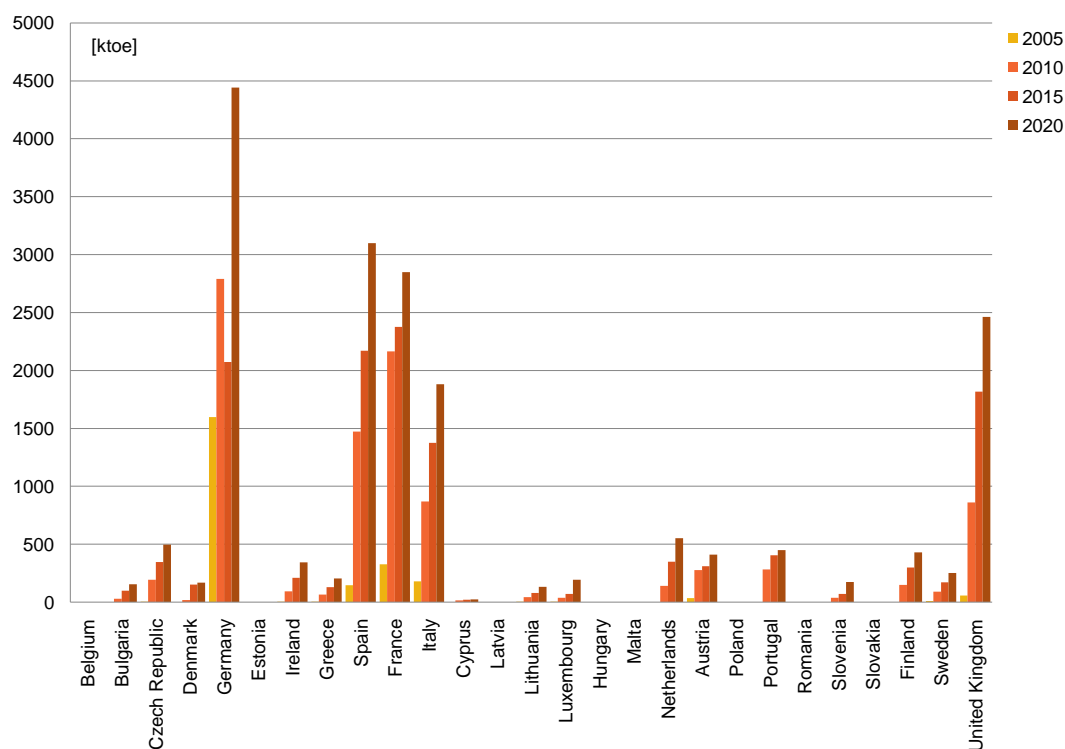


Figure 65: Projected total biodiesel in renewable transport [ktoe] for the period 2005 - 2020

Table 106: Projected total biodiesel in renewable transport [ktoe] for the period 2005 - 2020

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	30	100	154	1
Czech Republic	3	193	347	495	3
Denmark	0	18	152	167	1
Germany	1598	2790	2074	4443	24
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	1	94	209	342	2
Greece	1	64	130	203	1
Spain	145	1471	2169	3100	17
France	328	2165	2375	2850	15
Italy	179	868	1374	1880	10
Cyprus	0	15.7	19.8	23.2	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	3	42	79	131	1
Luxembourg	1	37	72	193	1
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	139	350	552	3
Austria	35	276	309	410	2
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	281	405	450	2
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	0	37	72	174	1
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	150	300	430	2
Sweden	9	89	170	251	1
United Kingdom	57	861	1818	2462	13
All Member States (total)	2360	9620.7	12524.8	18710.2	100

More information on additional information on biodiesel in renewable transport (Article 21.2 and imported biodiesel) is presented in Table 108 on page 128.

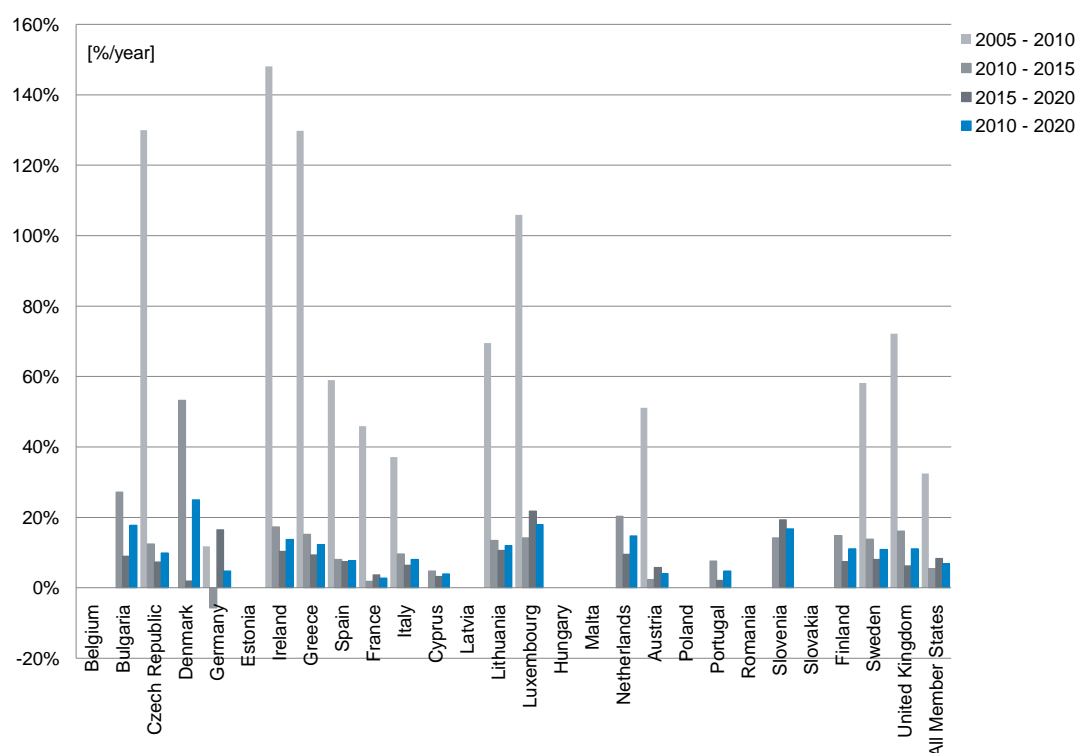


Figure 66: Calculated average annual growth for biodiesel in renewable transport [%/year] for four periods

Table 107: Calculated average annual growth for biodiesel in renewable transport [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	27.2	9.0	17.8
Czech Republic	130.0	12.4	7.4	9.9
Denmark	n.a.	53.2	1.9	25.0
Germany	11.8	-5.8	16.5	4.8
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	148.1	17.3	10.4	13.8
Greece	129.7	15.2	9.3	12.2
Spain	58.9	8.1	7.4	7.7
France	45.9	1.9	3.7	2.8
Italy	37.1	9.6	6.5	8.0
Cyprus	n.a.	4.7	3.2	4.0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	69.5	13.5	10.6	12.0
Luxembourg	105.9	14.2	21.8	18.0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	20.3	9.5	14.8
Austria	51.1	2.3	5.8	4.0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	7.6	2.1	4.8
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	14.2	19.3	16.7
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	14.9	7.5	11.1
Sweden	58.1	13.8	8.1	10.9
United Kingdom	72.1	16.1	6.3	11.1
All Member States (average)	32.5	5.4	8.4	6.9

Table 108: Projected biodiesel in renewable transport [ktoe] for the period 2005 - 2020, indicating the contribution of Article 21.2 and imported biodiesel

	Biodiesel Article 21.2					Biodiesel imported					Total biodiesel				
	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]			
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Bulgaria	0	30	100	130	0	0	0	24	0	30	100	154			
Czech Republic	0	0	0	215	6	64	104	143	3	193	347	495			
Denmark	0	18	152	167	0	18	152	167	0	18	152	167			
Germany	0	98	98	98	0	1459	610	2846	1598	2790	2074	4443			
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Ireland	21	0	0	0	n.a.	4	125	240	1	94	209	342			
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Spain	0	50	161	200	0	910	325	310	145	1471	2169	3100			
France	n.a.	n.a.	n.a.	n.a.	13	400	400	400	328	328	2165	2375			
Italy	21	72	161	250	0	73	436	800	179	868	1374	1880			
Cyprus	0	0	2	23	0	9	11	23	0	16	20	23			
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Lithuania	0	0	0	0	0	0	0	0	3	42	79	131			
Luxembourg	0	0	0	0	1	37	72	193	1	37	72	193			
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Malta	n.a.	1	1	7	n.a.	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Netherlands	0	139	70	121	0	69	245	276	0	139	350	552			
Austria	0	0	0	0	34	153	152	175	35	276	309	410			
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Portugal	0	4	6	8	0	0	0	0	0	281	405	450			
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Slovenia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
Finland	0	0	50	140	0	n.a.	n.a.	n.a.	0	150	300	430			
Sweden	0	0	0	0	0	0	0	0	9	89	170	251			
United Kingdom	0	0	0	0	n.a.	1	1	1	57	861	1818	2462			
All Member States (total)	42	413	801	1359	54	3197	2633	5598	2360	9621	12525	18710			

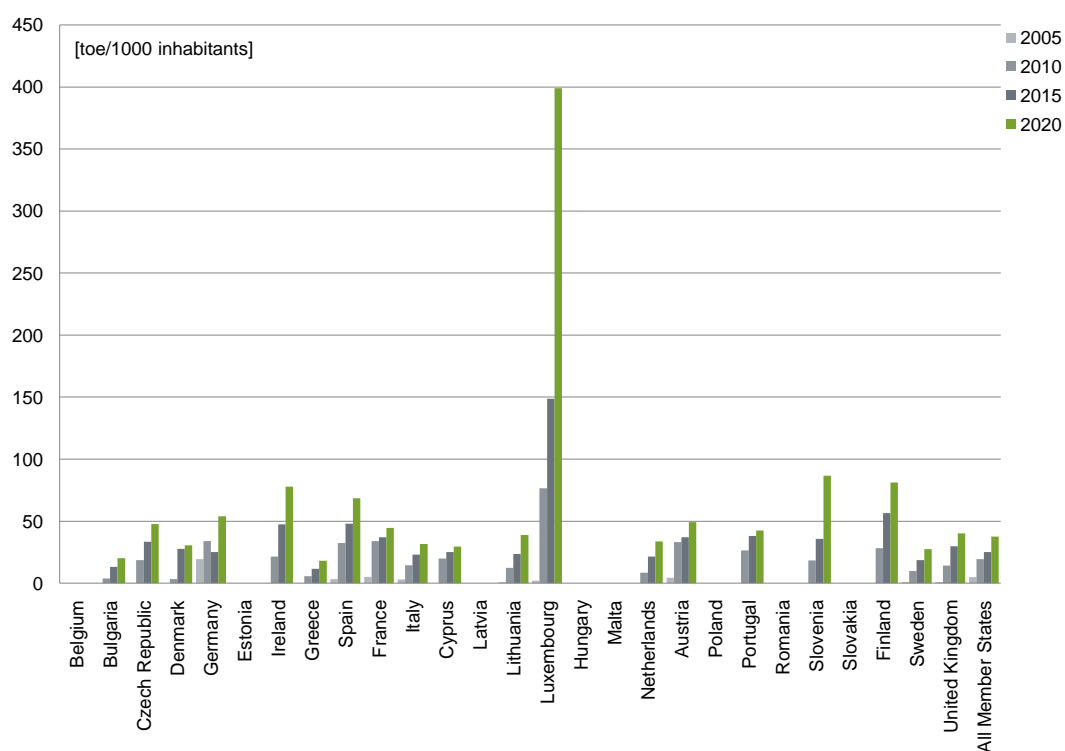


Figure 67: Calculated per capita (2008) in renewable transport for total biodiesel [toe/1000 inhabitants] for the period 2005 - 2020

Table 109: Calculated per capita (2008) in renewable transport for total biodiesel [toe/1000 inhabitants] for the period 2005 - 2020

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	4	13	20
Czech Republic	0	19	33	48
Denmark	0	3	28	30
Germany	19	34	25	54
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	21	47	78
Greece	0	6	12	18
Spain	3	32	48	68
France	5	34	37	45
Italy	3	15	23	32
Cyprus	0	20	25	29
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	1	12	23	39
Luxembourg	2	76	149	399
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	8	21	34
Austria	4	33	37	49
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	26	38	42
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	0	18	36	87
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	28	57	81
Sweden	1	10	19	27
United Kingdom	1	14	30	40
All Member States (average)	5	19	25	38

The population data can be viewed in Table 9 (page 25)

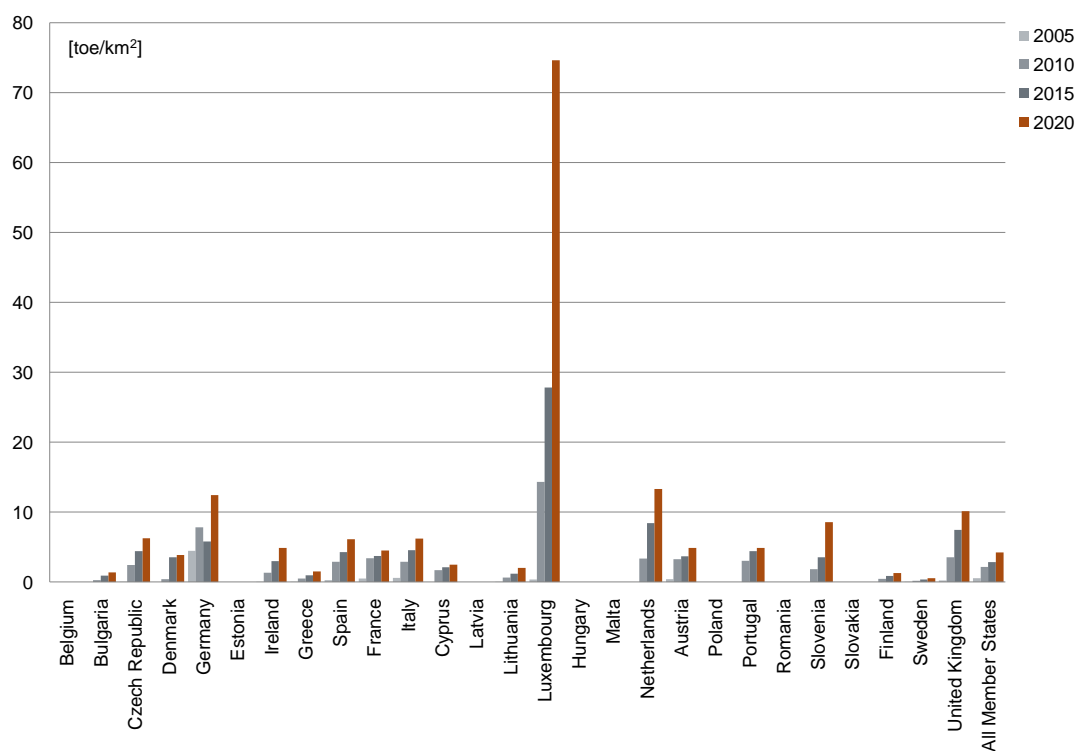


Figure 68: Calculated per surface area (2004) in renewable transport for total biodiesel [toe/km²] for the period 2005 - 2020

Table 110: Calculated per surface area (2004) in renewable transport for total biodiesel [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	1	1
Czech Republic	0	2	4	6
Denmark	0	0	4	4
Germany	4	8	6	12
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	1	3	5
Greece	0	0	1	2
Spain	0	3	4	6
France	1	3	4	5
Italy	1	3	5	6
Cyprus	0	2	2	3
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	1	1	2
Luxembourg	0	14	28	75
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	3	8	13
Austria	0	3	4	5
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	3	4	5
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	0	2	4	9
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	1	1
Sweden	0	0	0	1
United Kingdom	0	4	7	10
All Member States (average)	1	2	3	4

The surface area data can be viewed in Table 9 (page 25)

Hydrogen from renewables in transport

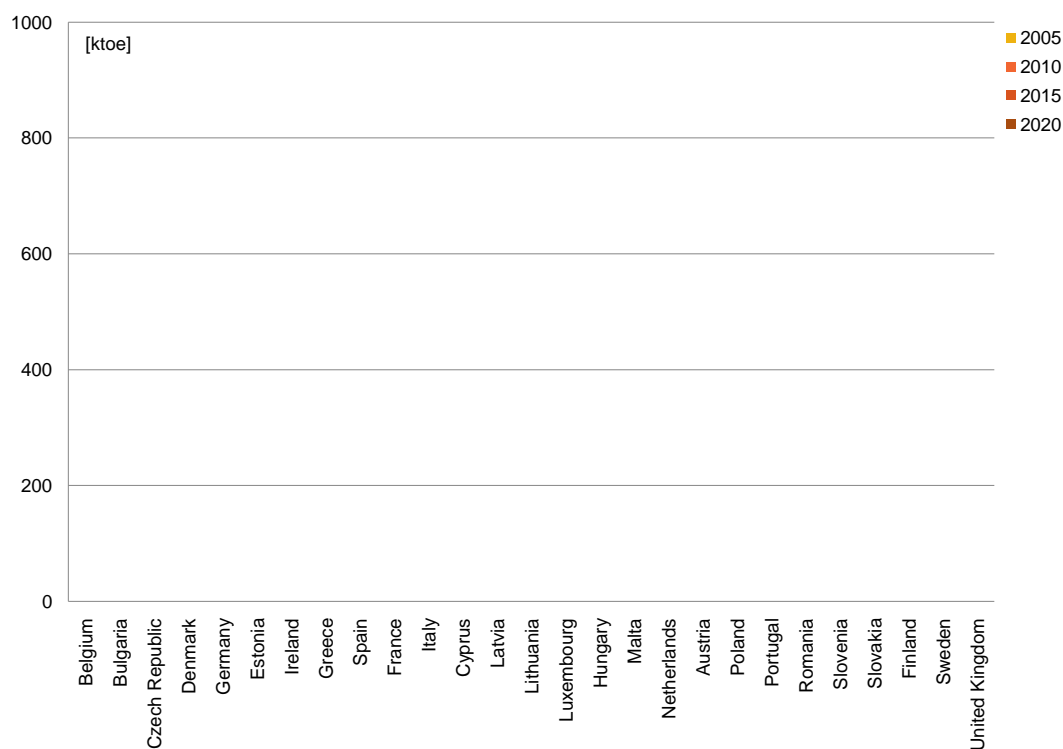


Figure 69: Projected hydrogen from renewables in transport [ktoe] for the period 2005 - 2020

Table 111: Projected total hydrogen from renewables in transport [ktoe] for the period 2005 - 2020

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0	0
Czech Republic	0	0	0	0	0
Denmark	0	0	0	0	0
Germany	0	0	0	0	0
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	0	0	0	0
Greece	n.a.	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	0	0
France	0	0	0	0	0
Italy	0	0	0	0	0
Cyprus	0	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0	0
Luxembourg	0	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0	0
Austria	0	0	0	0	0
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	0	0	0	0	0
United Kingdom	0	0	0	0	0
All Member States (total)	0	0	0	0	0

0

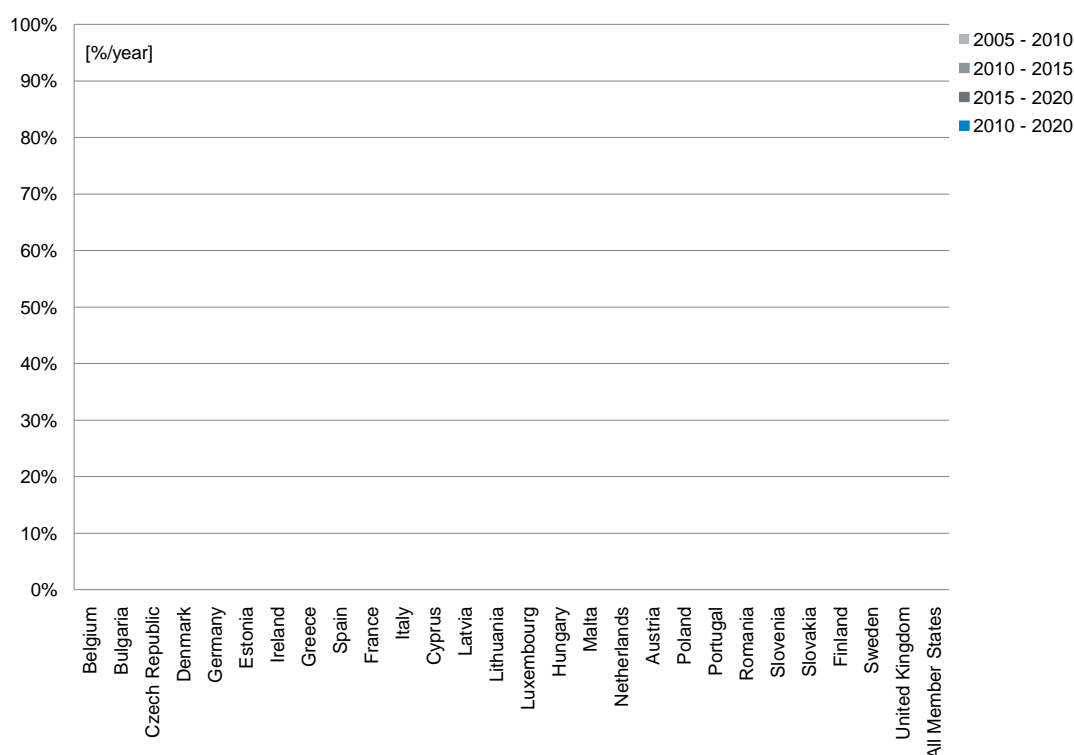


Figure 70: Calculated average annual growth for hydrogen from renewables in transport [%/year] for four periods

Table 112: Calculated average annual growth for hydrogen from renewables in transport [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	n.a.	n.a.	n.a.
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	n.a.	n.a.	n.a.
Greece	n.a.	n.a.	n.a.	n.a.
Spain	n.a.	n.a.	n.a.	n.a.
France	n.a.	n.a.	n.a.	n.a.
Italy	n.a.	n.a.	n.a.	n.a.
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	n.a.	n.a.	n.a.
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	n.a.	n.a.	n.a.	n.a.
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	n.a.	n.a.	n.a.	n.a.

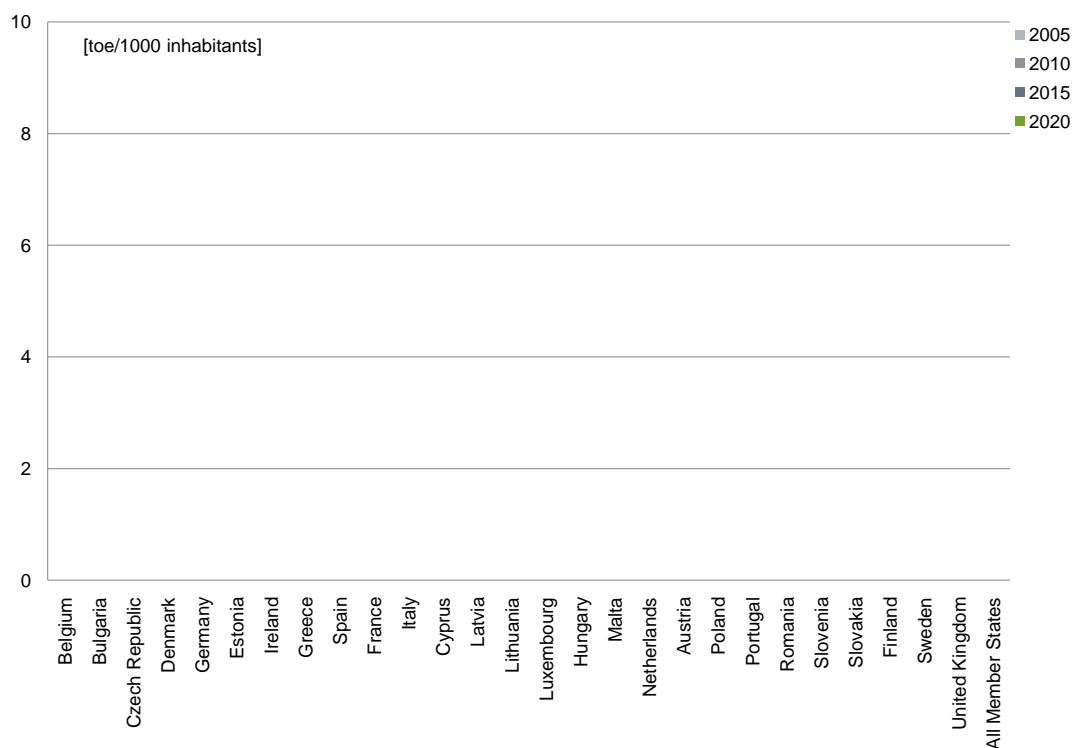


Figure 71: Calculated per capita (2008) hydrogen from renewables in transport [toe/1000 inhabitants] for the period 2005 - 2020

Table 113: Calculated per capita (2008) hydrogen from renewables in transport [toe/1000 inhabitants] for the period 2005 - 2020

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	0	0	0	0
Denmark	0	0	0	0
Germany	0	0	0	0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	0	0	0
Greece	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	0
France	0	0	0	0
Italy	0	0	0	0
Cyprus	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0
Austria	0	0	0	0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	0	0	0	0
United Kingdom	0	0	0	0
All Member States (average)	0	0	0	0

The population data can be viewed in Table 9 (page 25)

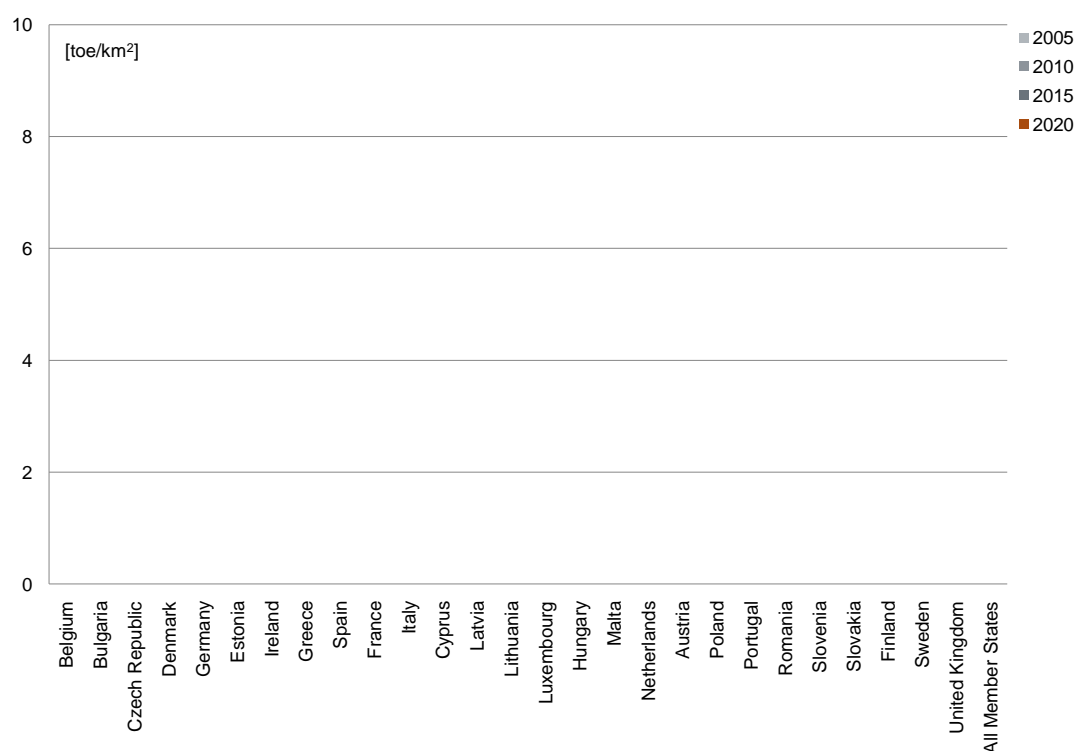


Figure 72: Calculated per surface area (2004) hydrogen from renewables in transport [toe/km²] for the period 2005 - 2020

Table 114: Calculated per surface area (2004) hydrogen from renewables in transport [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	0	0	0	0
Denmark	0	0	0	0
Germany	0	0	0	0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	n.a.	0	0	0
Greece	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	0
France	0	0	0	0
Italy	0	0	0	0
Cyprus	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	0	0	0	0
Austria	0	0	0	0
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	0	0	0	0
United Kingdom	0	0	0	0
All Member States (average)	0	0	0	0

The surface area data can be viewed in Table 9 (page 25)

Renewable electricity in transport

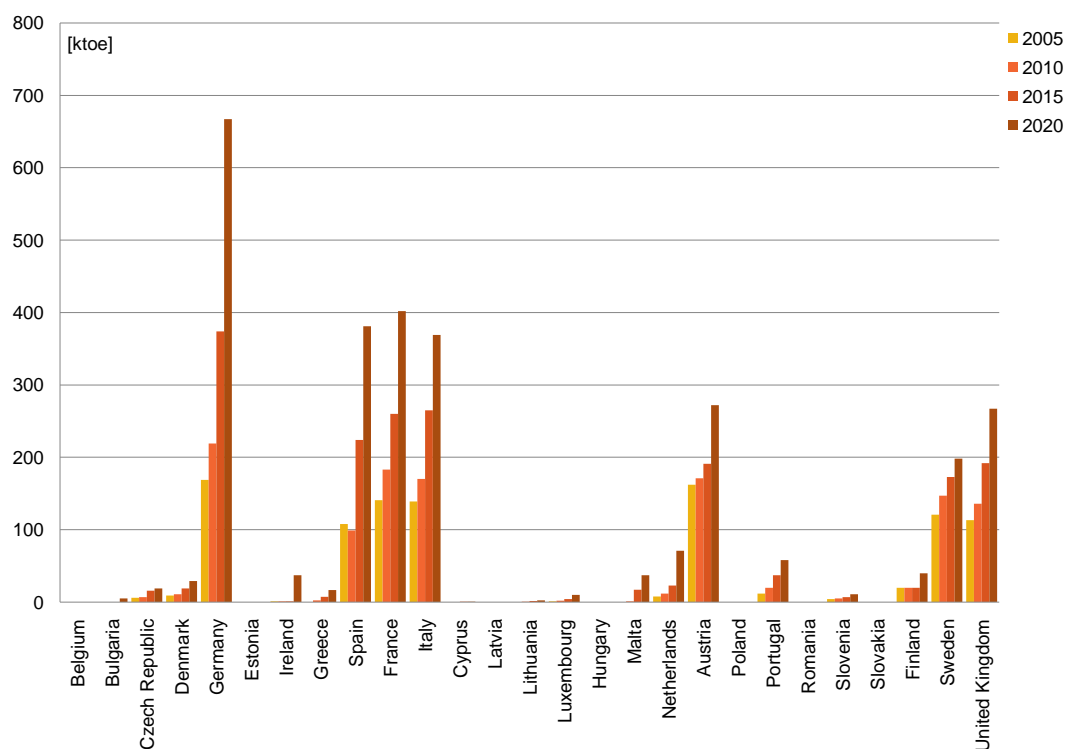


Figure 73: Projected total renewable electricity in transport [ktoe] for the period 2005 - 2020

Table 115: Projected total renewable electricity in transport [ktoe] for the period 2005 - 2020

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	5	0
Czech Republic	6	7	16	19	1
Denmark	9	11	19	29	1
Germany	169	219	374	667	23
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	1	1	1	37	1
Greece	n.a.	2	7	17	1
Spain	108	99	224	381	13
France	141	183	260	402	14
Italy	139	170	265	369	13
Cyprus	0	0	0	1	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	2	3	0
Luxembourg	1	2	4	10	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	1	17	37	1
Netherlands	8	12	23	71	2
Austria	162	171	191	272	9
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	12	20	37	58	2
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	4	5	7	11	0
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	20	20	20	40	1
Sweden	121	147	173	198	7
United Kingdom	113	136	192	267	9
All Member States (total)	1014	1207	1832	2893	100

More information on additional information on renewable electricity in transport (road and non-road transport) is presented in Table 117 on page 140.

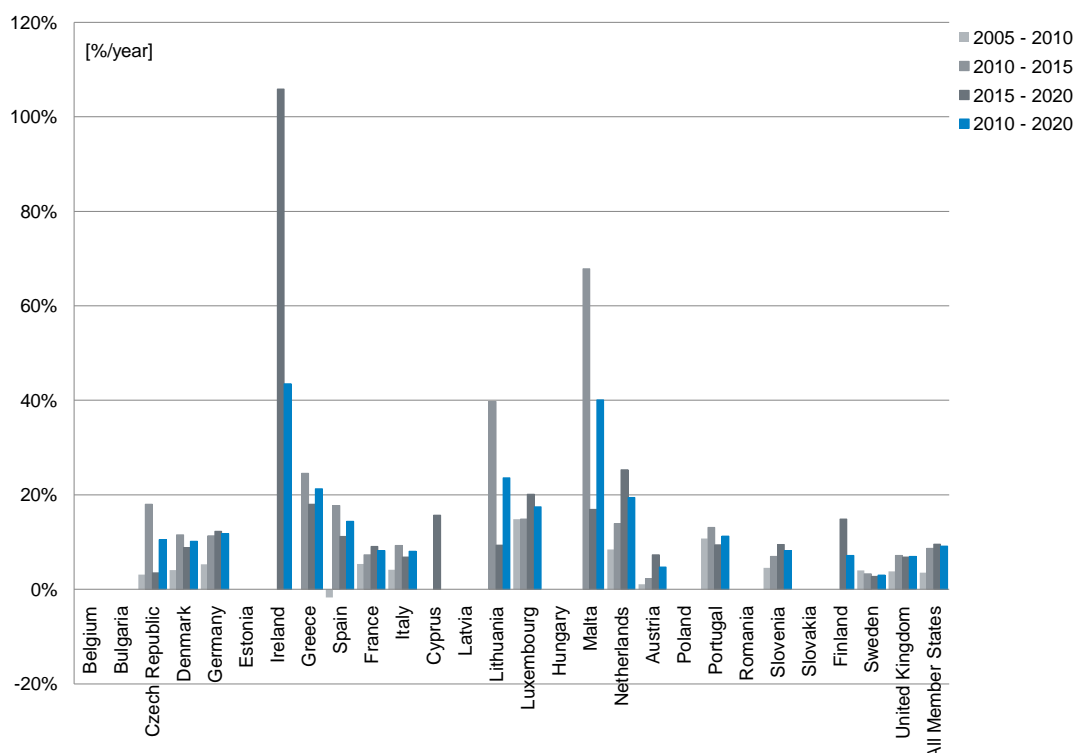


Figure 74: Calculated average annual growth for renewable electricity in transport [%/year] for four periods

Table 116: Calculated average annual growth for renewable electricity in transport [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	3.1	18.0	3.5	10.5
Denmark	4.1	11.6	8.8	10.2
Germany	5.3	11.3	12.3	11.8
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0.0	0.0	105.9	43.5
Greece	n.a.	24.6	18.0	21.3
Spain	-1.7	17.7	11.2	14.4
France	5.4	7.3	9.1	8.2
Italy	4.1	9.3	6.8	8.1
Cyprus	n.a.	n.a.	15.7	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	39.8	9.3	23.6
Luxembourg	14.9	14.9	20.1	17.5
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	67.8	16.9	40.1
Netherlands	8.4	13.9	25.3	19.5
Austria	1.1	2.2	7.3	4.8
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	10.8	13.1	9.4	11.2
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	4.6	7.0	9.5	8.2
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0.0	0.0	14.9	7.2
Sweden	4.0	3.3	2.7	3.0
United Kingdom	3.8	7.1	6.8	7.0
All Member States (average)	3.5	8.7	9.6	9.1

Table 117: Projected renewable electricity in transport [ktoe] for the period 2005 - 2020, indicating the contribution of road and non-road transport

	Renewable electricity road transport					Renewable electricity non-road transport					Total renewable electricity				
	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Bulgaria	0	0	0	3	0	0	0	0	0	0	0	0	0	5	
Czech Republic	0	0	0	1	6	7	16	19	17	19	6	7	16	19	
Denmark	0	0	4	12	9	11	15	17	17	29	9	11	19	29	
Germany	0	0	0	63	169	219	373	604	604	667	169	219	374	667	
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Ireland	n.a.	n.a.	0	34	0	1	6	11	2	17	1	1	7	37	
Greece	n.a.	1	1	5	n.a.	2	193	258	11	11	n.a.	2	7	17	
Spain	0	0	31	123	108	99	229	292	258	381	108	99	224	381	
France	0	0	31	110	141	183	229	292	292	402	141	183	260	402	
Italy	0	6	45	98	139	164	219	271	271	369	139	170	265	369	
Cyprus	0	0	0	1	0	0	0	0	0	1	0	0	0	1	
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Lithuania	0	0	0	0	0	0	0	0	0	3	0	0	2	3	
Luxembourg	0	0	0	5	1	2	3	5	5	10	1	2	4	10	
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Malta	n.a.	0	0	1	n.a.	n.a.	17	37	n.a.	37	n.a.	n.a.	n.a.	37	
Netherlands	0	0	1	24	n.a.	12	22	47	47	71	n.a.	12	23	71	
Austria	0	0	8	68	162	171	183	204	204	272	162	171	191	272	
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Portugal	0	0	5	20	12	20	32	38	38	58	12	20	37	58	
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Slovenia	0	0	0	1	4	5	7	9	9	11	4	5	7	11	
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Finland	0	0	0	10	20	20	20	20	20	40	20	20	20	40	
Sweden	0	3	6	9	121	144	167	190	190	198	121	147	173	198	
United Kingdom	0	0	4	29	113	136	187	238	238	267	113	136	192	267	
All Member States (total)	0	10	137	616	1013	1197	1690	2262	2262	2893	1014	1207	1832	2893	

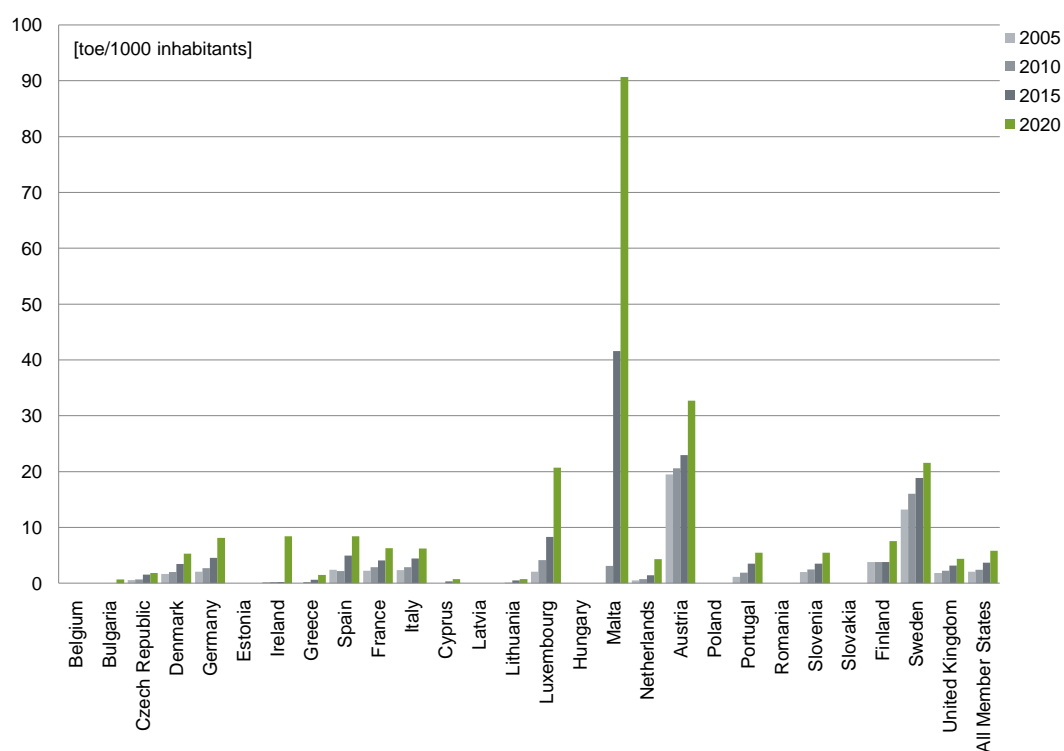


Figure 75: Calculated per capita (2008) for total renewable electricity in transport [toe/1000 inhabitants] for the period 2005 - 2020

Table 118: Calculated per capita (2008) for total renewable electricity in transport [toe/1000 inhabitants] for the period 2005 - 2020

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	1
Czech Republic	1	1	2	2
Denmark	2	2	3	5
Germany	2	3	5	8
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	8
Greece	n.a.	0	1	1
Spain	2	2	5	8
France	2	3	4	6
Italy	2	3	4	6
Cyprus	0	0	0	1
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	1
Luxembourg	2	4	8	21
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	3	42	91
Netherlands	0	1	1	4
Austria	19	21	23	33
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	1	2	3	5
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	2	2	3	5
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	4	4	4	8
Sweden	13	16	19	22
United Kingdom	2	2	3	4
All Member States (average)	2	2	4	6

The population data can be viewed in Table 9 (page 25)

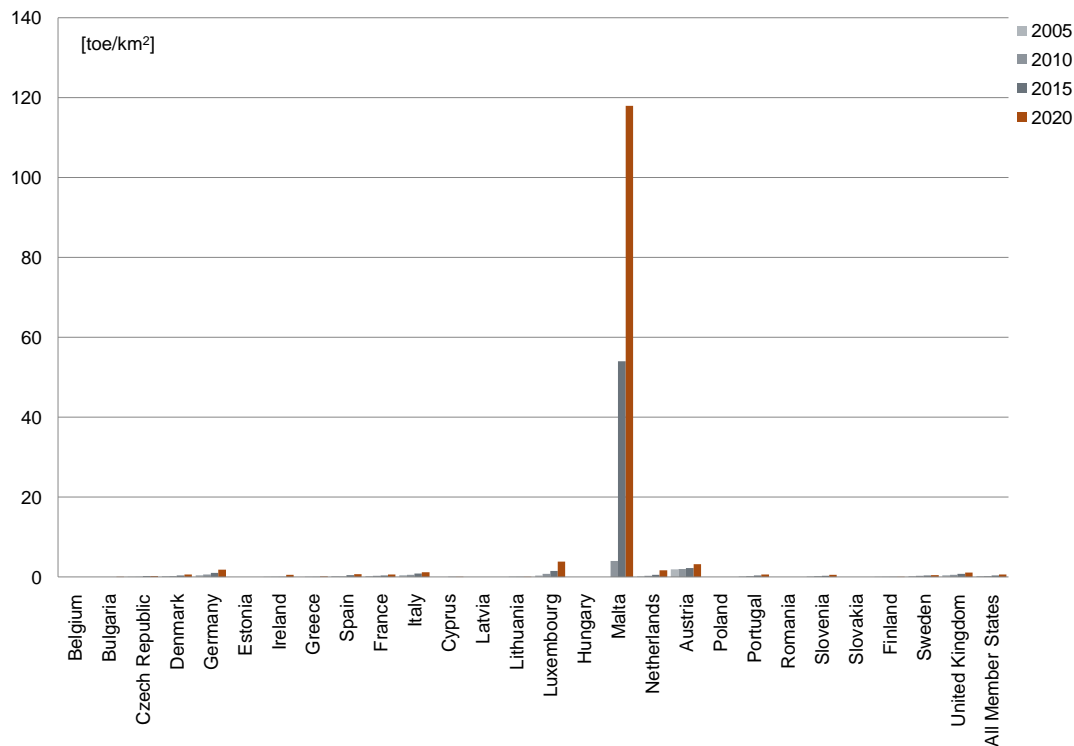


Figure 76: Calculated per surface area (2004) for total renewable electricity in transport [toe/km²] for the period 2005 - 2020

Table 119: Calculated per surface area (2004) for total renewable electricity in transport [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	0	0	0	0
Denmark	0	0	0	1
Germany	0	1	1	2
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	1
Greece	n.a.	0	0	0
Spain	0	0	0	1
France	0	0	0	1
Italy	0	1	1	1
Cyprus	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	1	2	4
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	4	54	118
Netherlands	0	0	1	2
Austria	2	2	2	3
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	1
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	0	0	0	1
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	0	0	0	0
United Kingdom	0	1	1	1
All Member States (average)	0	0	0	1

The surface area data can be viewed in Table 9 (page 25)

Other biofuels in transport

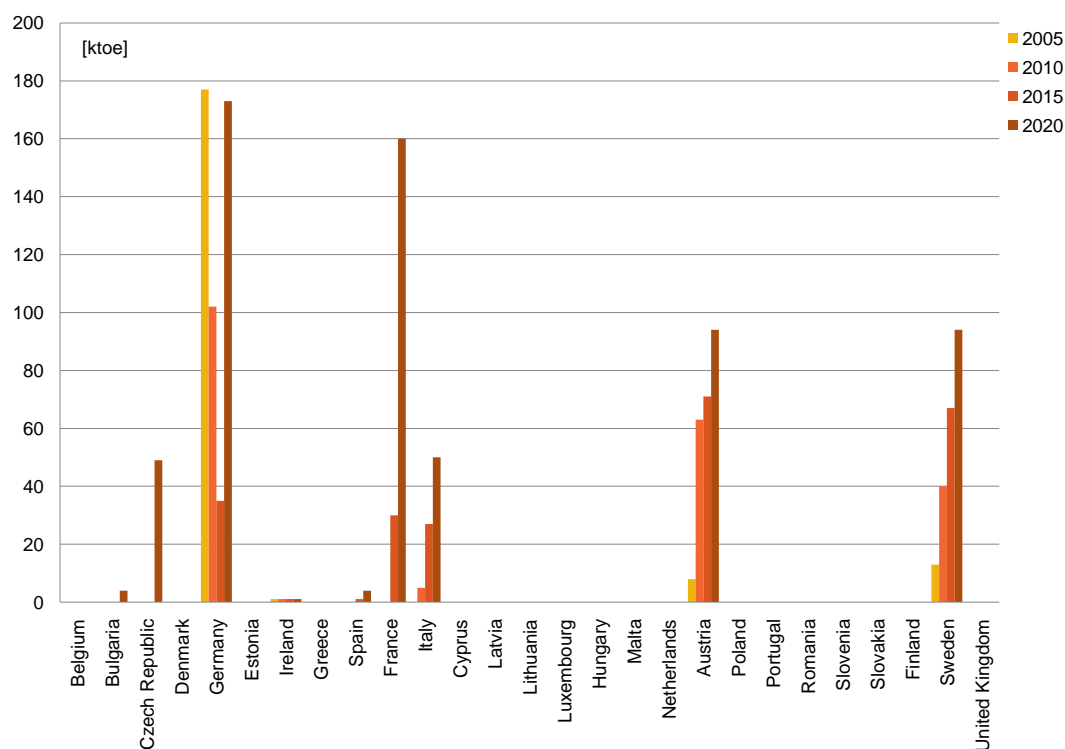


Figure 77: Projected total other biofuels in transport [ktoe] for the period 2005 - 2020

Table 120: Projected total other biofuels in transport [ktoe] for the period 2005 - 2020

	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2020 [%]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	4	1
Czech Republic	0	0	0	49	8
Denmark	0	0	0	0	0
Germany	177	102	35	173	28
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	1	1	1	1	0
Greece	n.a.	n.a.	n.a.	n.a.	n.a.
Spain	0	0	1	4	1
France	0	0	30	160	25
Italy	0	5	27	50	8
Cyprus	0	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0	0
Luxembourg	0	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.
Austria	8	63	71	94	15
Poland	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0	0
Sweden	13	40	67	94	15
United Kingdom	0	0	0	0	0
All Member States (total)	199	211	232	629	100

More information on additional information on other biofuels in transport (Article 21.2) is presented in Table 122 on page 146.

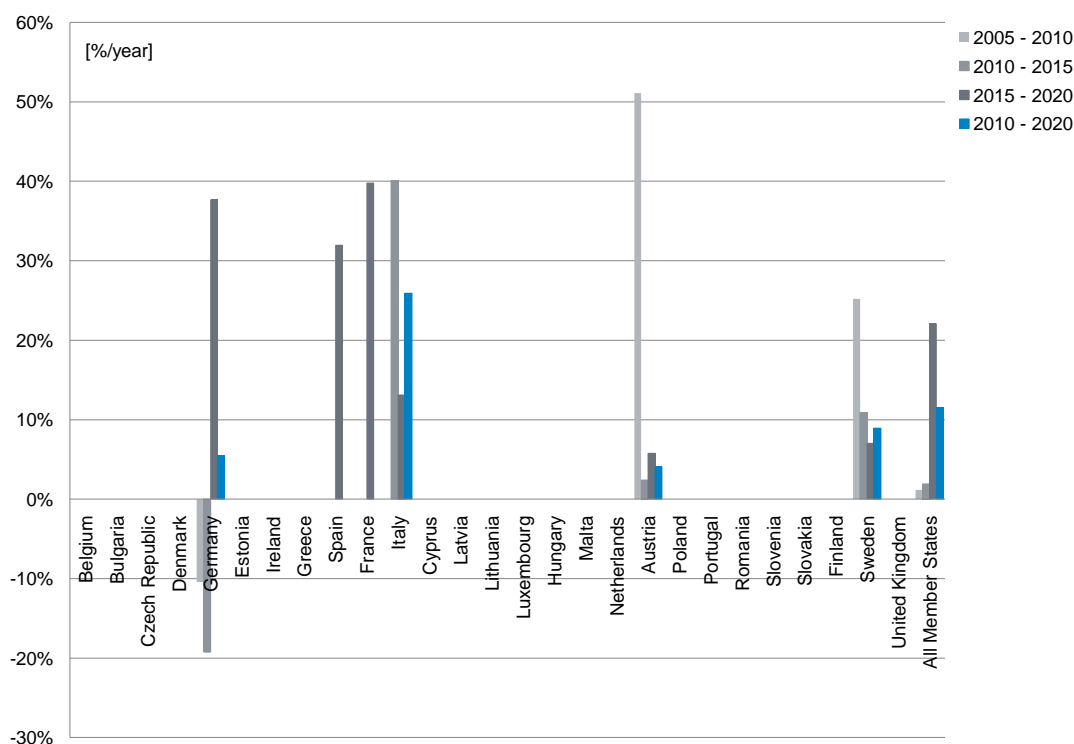


Figure 78: Calculated average annual growth for other biofuels in transport [%/year] for four periods

Table 121: Calculated average annual growth for other biofuels in transport [%/year] for four periods

	2005 - 2010 [%/year]	2010 - 2015 [%/year]	2015 - 2020 [%/year]	2010 - 2020 [%/year]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	n.a.	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.
Germany	-10.4	-19.3	37.7	5.4
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0.0	0.0	0.0	0.0
Greece	n.a.	n.a.	n.a.	n.a.
Spain	n.a.	n.a.	32.0	n.a.
France	n.a.	n.a.	39.8	n.a.
Italy	n.a.	40.1	13.1	25.9
Cyprus	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	51.1	2.4	5.8	4.1
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	n.a.	n.a.	n.a.	n.a.
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	n.a.	n.a.	n.a.	n.a.
Sweden	25.2	10.9	7.0	8.9
United Kingdom	n.a.	n.a.	n.a.	n.a.
All Member States (average)	1.2	1.9	22.1	11.5

Table 122: Projected other biofuels in transport [ktoe] for the period 2005 - 2020, indicating the contribution of Article 21.2 fuels

	Other biofuels Article 21.2				Total other biofuels in transport			
	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]	2005 [ktoe]	2010 [ktoe]	2015 [ktoe]	2020 [ktoe]
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	4	0	0	0	4
Czech Republic	0	0	0	48	0	0	0	49
Denmark	0	0	0	0	0	0	0	0
Germany	0	0	4	26	177	102	35	173
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	1	1	1	1	1	1	1	1
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	0	0	0	1	4
France	0	0	0	50	0	0	30	160
Italy	0	5	27	50	0	5	27	50
Cyprus	0	0	0	0	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0	0	0	0	0
Luxembourg	0	0	0	0	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Austria	0	0	0	0	8	63	71	94
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	94	0	40	0	0
Sweden	13	40	67	0	13	40	67	94
United Kingdom	0	0	0	0	0	0	0	0
All Member States (total)	14	46	99	273	199	211	232	629

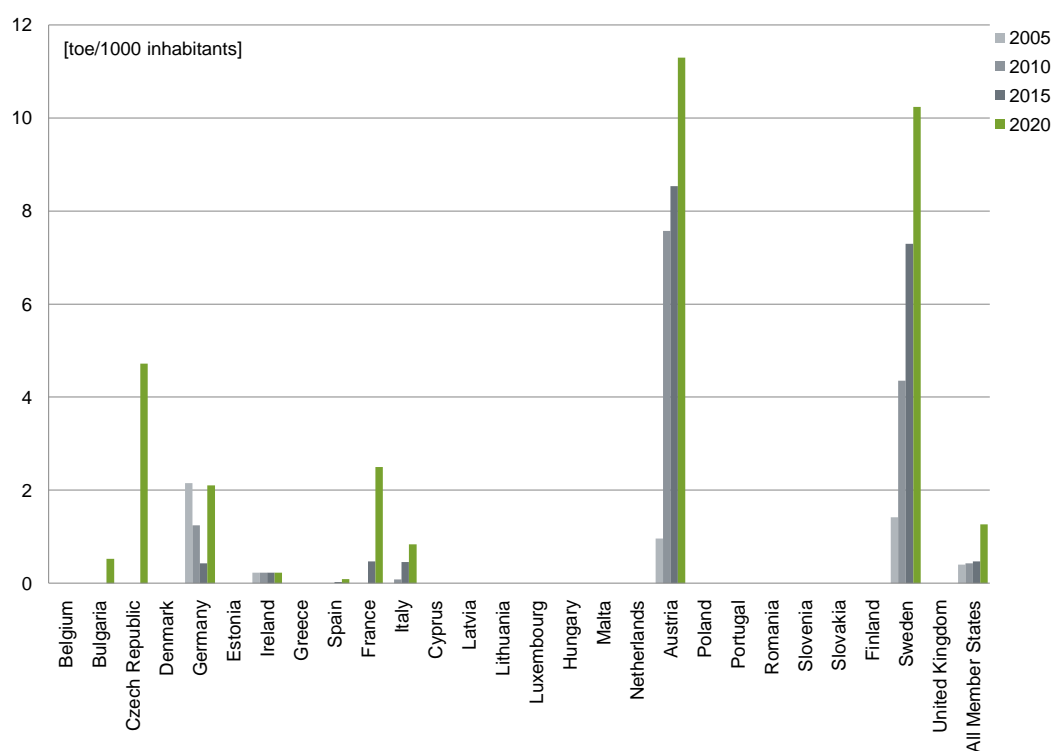


Figure 79: Calculated per capita (2008) values for total other biofuels in transport [toe/1000 inhabitants] for the period 2005 - 2020

Table 123: Calculated per capita (2008) values for total other biofuels in transport [toe/1000 inhabitants] for the period 2005 - 2020

	2005 [toe/1000 inhabitants]	2010 [toe/1000 inhabitants]	2015 [toe/1000 inhabitants]	2020 [toe/1000 inhabitants]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	1
Czech Republic	0	0	0	5
Denmark	0	0	0	0
Germany	2	1	0	2
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0
Greece	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	0
France	0	0	0	3
Italy	0	0	0	1
Cyprus	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	1	8	9	11
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	1	4	7	10
United Kingdom	0	0	0	0
All Member States (average)	0	0	0	1

The population data can be viewed in Table 9 (page 25)

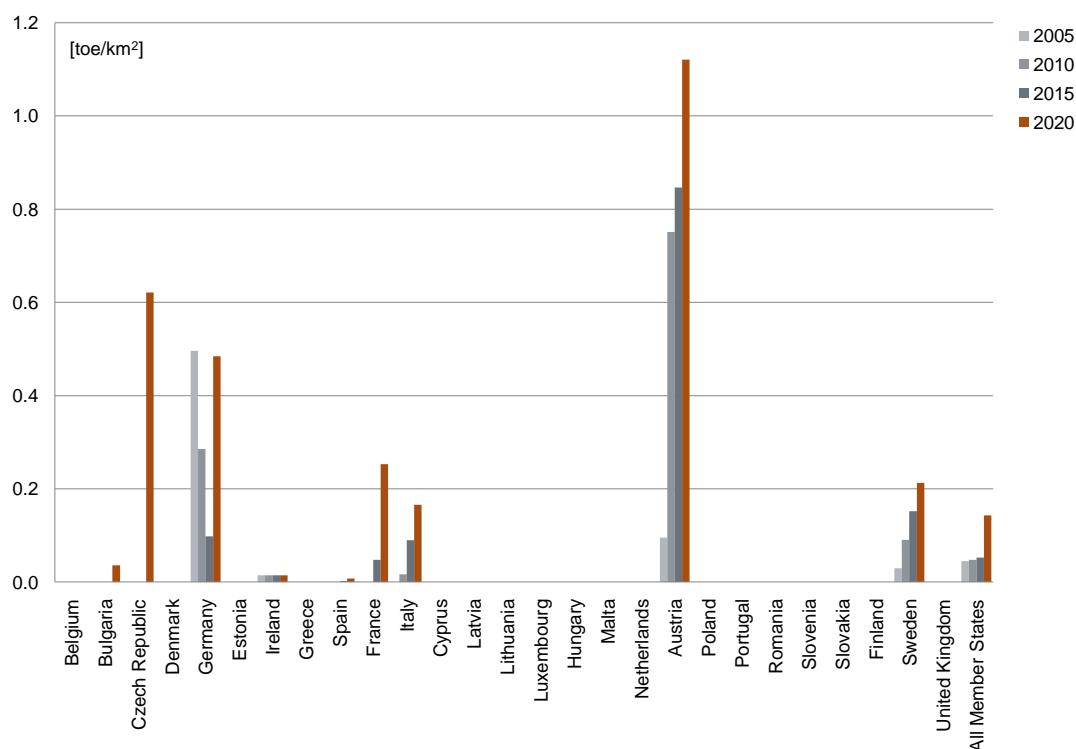


Figure 80: Calculated per surface area (2004) values for total other biofuels in transport [toe/km²] for the period 2005 - 2020

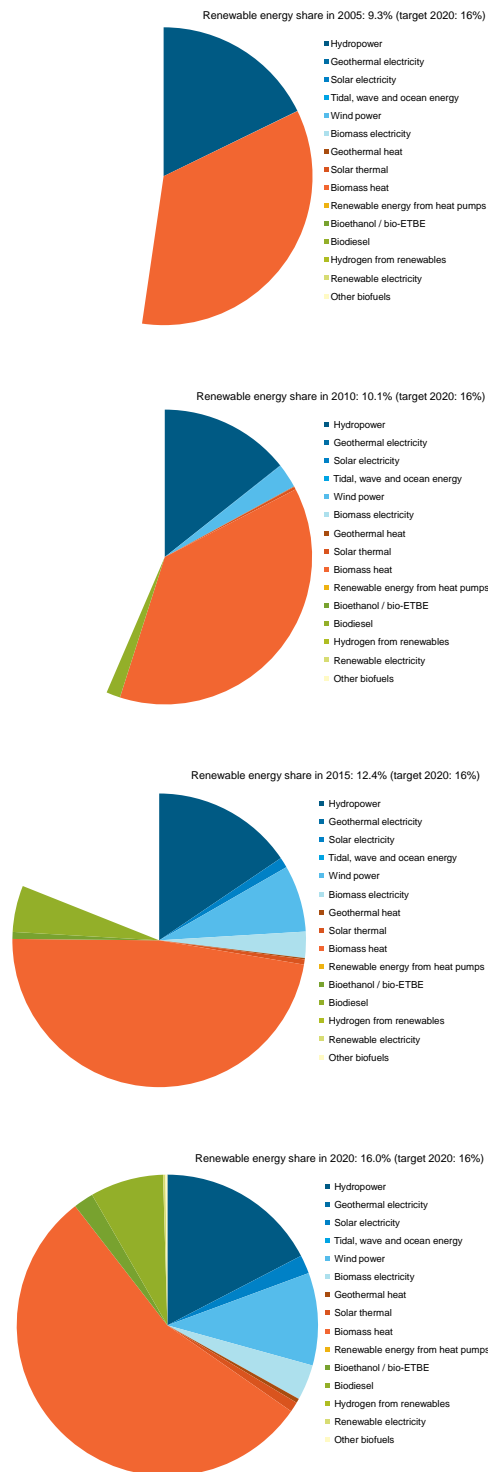
Table 124: Calculated per surface area (2004) values for total other biofuels in transport [toe/km²] for the period 2005 - 2020

	2005 [toe/km ²]	2010 [toe/km ²]	2015 [toe/km ²]	2020 [toe/km ²]
Belgium	n.a.	n.a.	n.a.	n.a.
Bulgaria	0	0	0	0
Czech Republic	0	0	0	1
Denmark	0	0	0	0
Germany	0	0	0	0
Estonia	n.a.	n.a.	n.a.	n.a.
Ireland	0	0	0	0
Greece	n.a.	n.a.	n.a.	n.a.
Spain	0	0	0	0
France	0	0	0	0
Italy	0	0	0	0
Cyprus	0	0	0	0
Latvia	n.a.	n.a.	n.a.	n.a.
Lithuania	0	0	0	0
Luxembourg	0	0	0	0
Hungary	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.
Netherlands	n.a.	n.a.	n.a.	n.a.
Austria	0	1	1	1
Poland	n.a.	n.a.	n.a.	n.a.
Portugal	0	0	0	0
Romania	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.
Finland	0	0	0	0
Sweden	0	0	0	0
United Kingdom	0	0	0	0
All Member States (average)	0	0	0	0

The surface area data can be viewed in Table 9 (page 25)

Country Tables

Bulgaria

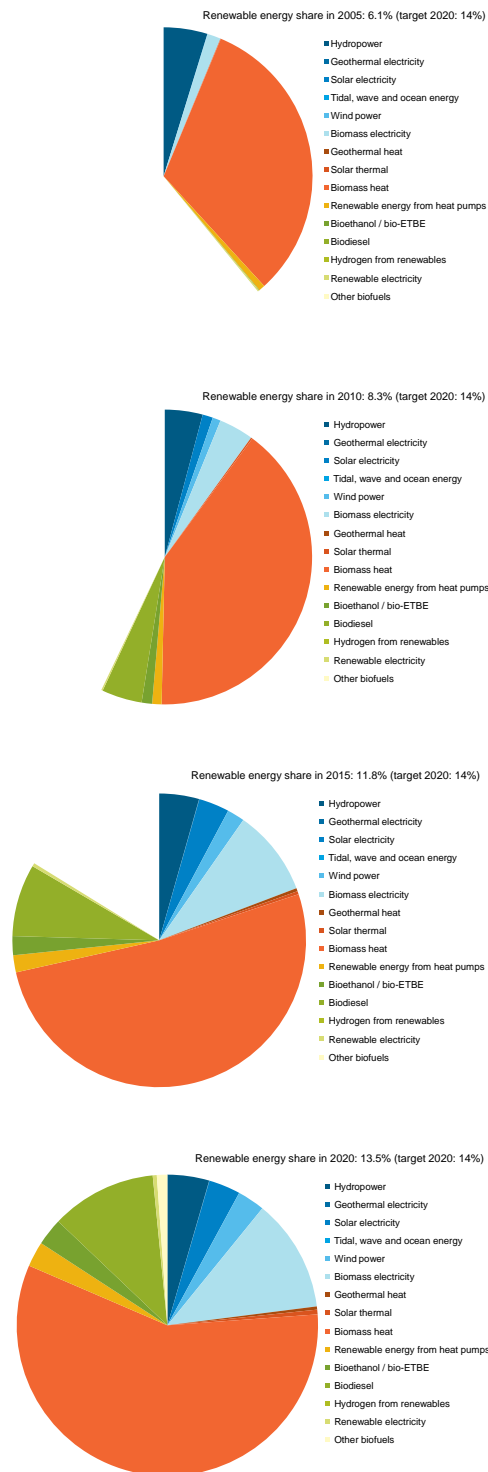


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 151 provides a background to the above figures.

	2005		2010		2015		2020	
	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]
Renewable production								
Hydropower < 10MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower 10MW - 10 MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower >10MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower (subtotal)	4336	373	99.9	39.0	3260	280	84.0	27.3
Geothermal	0	0	0.0	0.0	0	0	0.0	0.0
Solar photovoltaic	0	0	0.0	0.0	12	1	0.3	0.1
Concentrated solar power	0	0	0.0	0.0	0	0	0.0	0.0
Solar (subtotal)	0	0	0.0	0.0	12	1	0.3	0.1
Tidal, wave and ocean energy	0	0	0.0	0.0	0	0	0.0	0.0
Onshore wind	5	0	0.1	0.0	605	52	15.6	5.1
Offshore wind	5	0	0.1	0.0	605	52	15.6	5.1
Wind power (subtotal)	10	0	0.2	0.0	1210	104	27.3	11.3
Solid biomass	0	0	0.0	0.0	0	0	0.0	0.0
Biogas	0	0	0.0	0.0	2	0	0.0	0.0
Biofuels	0	0	0.0	0.0	0	0	0.0	0.0
Biomass (subtotal)	0	0	0.0	0.0	2	0	0.1	0.0
Total (according to Template Tables 10a/b)	4341	373	100.0	39.0	3879	334	100.0	32.5
Sum of all technologies (Template Tables 10a/b)	4341	373	100.0	39.0	3879	334	100.0	32.5
Gross final RES-E consumption (Template Table 4a)	206	55.2	21.5	33.3	99.8	32.5	33.3	99.8
Heating and cooling								
Geothermal	n.a.	n.a.	n.a.	n.a.	1	0.1	0.1	0.1
Solar thermal	n.a.	n.a.	n.a.	n.a.	6	0.8	0.6	0.6
Solid biomass	724	100.0	75.7	73.4	99.1	71.6	71.6	71.6
Biogas	0	0.0	0.0	0	0.0	0.0	0.0	0.0
Biofuels	0	0.0	0.0	0	0.0	0.0	0.0	0.0
Biomass (subtotal)	724	100.0	75.7	73.4	99.1	71.6	71.6	71.6
Aerothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Geothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Renewable energy from heat pumps (subtotal)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total (according to Template Table 11)	724	100.0	75.7	74.1	100.0	72.3	94.3	100.0
Sum of all technologies (Template Table 11)	724	100.0	75.7	74.1	100.0	72.3	94.3	100.0
Gross final RES-H/C consumption (Template Table 4a)	750	103.6	78.5	74.1	100.0	72.3	94.3	100.0
Transport								
Bioethanol / bio-ETBE	0	n.a.	0.0	0	0	0.0	0.0	0.0
Biodiesel	0	n.a.	0.0	30	100.0	2.9	100	87.0
Hydrogen from renewables	0	n.a.	0.0	0	0.0	0.0	0	0.0
Renewable electricity	0	n.a.	0.0	0	0.0	0.0	0	0.0
Other biofuels	0	n.a.	0.0	0	0.0	0.0	0	0.0
Total (according to Template Table 12)	0	n.a.	0.0	30	100.0	2.9	115	100.0
Sum of all technologies (Template Table 12)	0	n.a.	0.0	30	100.0	2.9	115	100.0
Gross final RES-E consumption (Template Table 4a)	0	n.a.	0.0	30	100.0	2.9	115	100.0
RES-1 including Article 21.2 (Template Table 4b)	0	n.a.	0.0	30	100.0	2.9	115	100.0
All renewables excluding co-operation mechanisms	956	100.0	100.0	1104	107.7	1585	124.3	117.4
Sum of total values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	1097	114.8	114.8	1105	107.8	1585	124.3	117.4
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	1097	114.8	114.8	1105	107.8	1585	124.3	117.4
Co-operation mechanisms								
Transfer from other Member States and third countries	n.a.	n.a.	n.a.	79	7.7	309	24.2	290
Transfer to other Member States	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total (Template Table 4a)	956	100.0	100.0	1025	100.0	1275	100.0	100.0
Final consumption								
Electricity	3129	30.3	3130	29.3	3355	27.9	3597	27.5
Additional energy efficiency	3129	30.3	3130	30.7	3171	30.8	3148	30.2
Heating and cooling	4543	44.0	4851	45.5	5640	46.9	6193	47.3
Additional energy efficiency	4543	44.0	4492	44.1	4539	44.0	4638	44.5
Transport	2642	25.6	2690	25.2	3033	25.2	3301	25.2
Additional energy efficiency	2642	25.6	2569	25.2	2599	25.2	2625	25.2
Total before aviation red. incl. efficiency	10314	100.0	10671	100.0	12028	100.0	13091	100.0
Additional energy efficiency	10314	100.0	10191	100.0	10369	100.0	10411	100.0
Total after aviation red. incl. efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Additional energy efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Heating and cooling								
Calculated heating and cooling	15.3	16.5	16.5	16.5	16.5	20.8	20.8	23.8
Electricity	10.6	10.6	10.6	10.6	10.6	10.6	10.6	20.0
Calculated electricity	10.6	10.6	10.6	10.6	10.6	10.6	10.6	20.0
Share								
Transport incl. Art. 21.2 adjustment	1.1	1.1	1.1	1.2	1.2	4.4	4.4	7.8
Calculated transport	0.0	0.0	0.0	1.2	1.2	4.4	4.4	8.3
Transport excl. Art. 21.2 adjustment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8
Overall renewable share	9.3	9.3	10.1	10.1	10.1	12.4	12.4	16.0
Calculated overall renewable share	9.3	9.3	10.1	10.1	10.1	12.4	12.4	16.0
Contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	18.8
Calculated contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.8
Contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3.0
Calculated contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.8
Transport fuels target	100	100	100	100	100	100	100	100
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	9.4	9.4	10.7	10.7	10.7	12.4	12.4	16.0

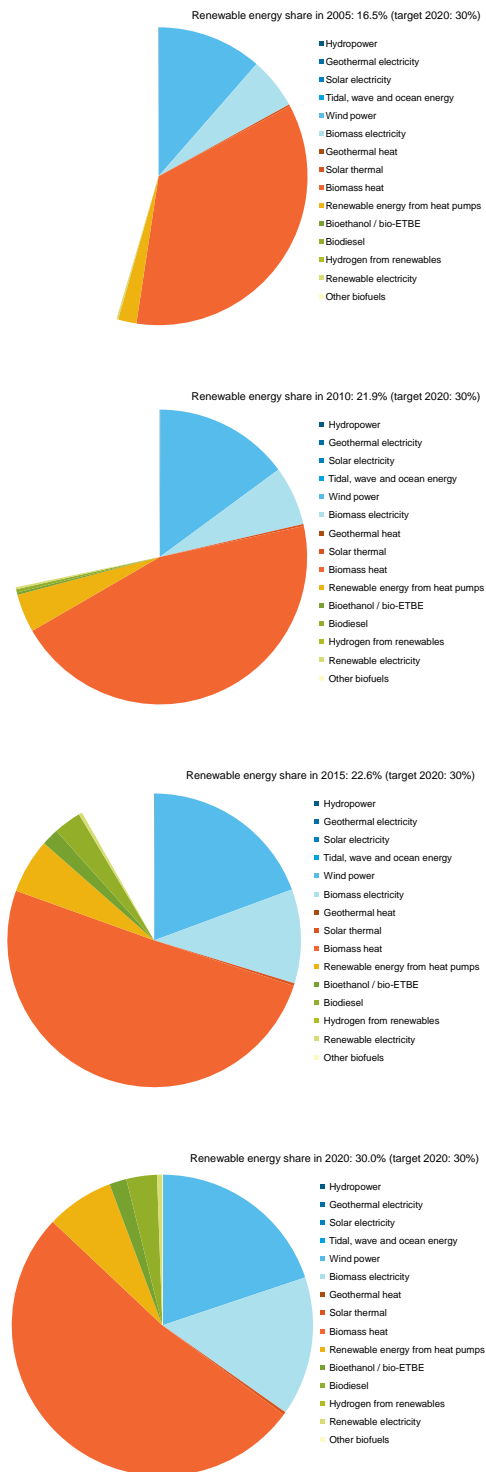
In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1., 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Czech Republic



The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 153 provides a background to the above figures.

Denmark

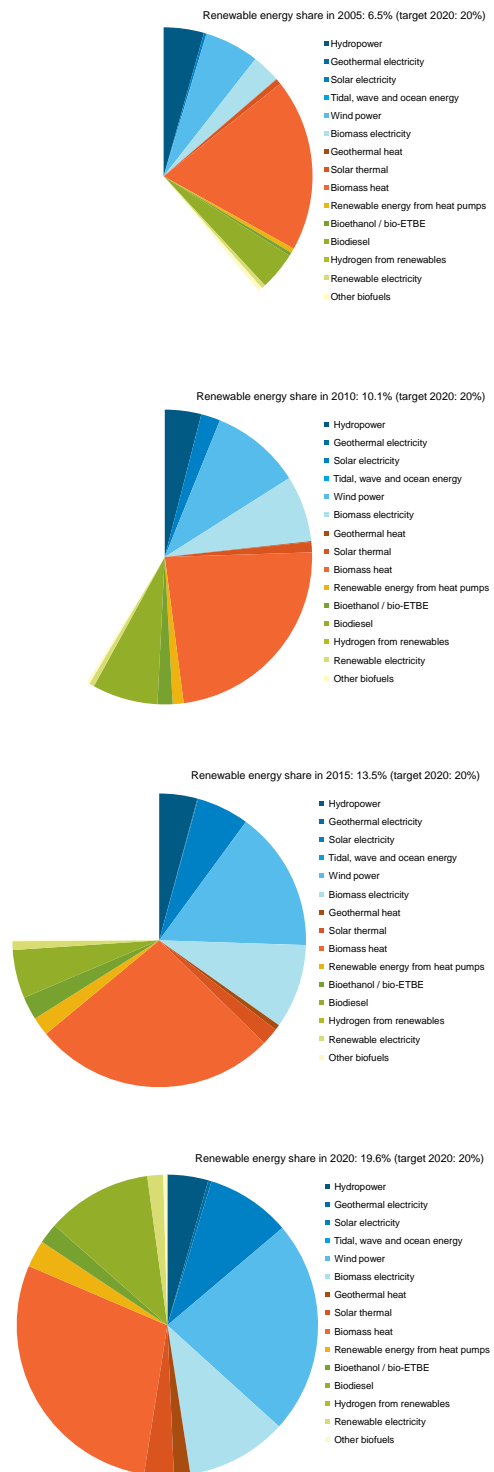


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 155 provides a background to the above figures.

	2005		2010		2015		2020	
	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]
Renewable production								
Electricity								
Hydropower < 10 MW	0	0.0	0	0.0	0	0.0	0	0.0
Hydropower 10 MW - 100 MW	23	2.0	31	3.0	31	3.0	31	3.0
Hydropower > 100 MW	0	0.0	0	0.0	0	0.0	0	0.0
Hydropower (subtotal)	23	2.0	31	3.0	31	3.0	31	3.0
Geothermal	0	0.0	0	0.0	0	0.0	0	0.0
Solar photovoltaic	2	0.0	2	0.0	3	0.0	4	0.0
Concentrated solar power	0	0.0	0	0.0	0	0.0	0	0.0
Solar (subtotal)	2	0.0	2	0.0	3	0.0	4	0.0
Tidal, wave and ocean energy	0	0.0	0	0.0	0	0.0	0	0.0
Onshore wind	5158	444.0	6121	526.0	6322	544.0	6391	550.0
Offshore wind	1456	125.0	2485	214.0	4920	423.0	5322	458.0
Wind power (subtotal)	6614	569.0	8606	740.0	11242	967.0	11713	1007.0
Solid biomass	2060	178.0	3578	308.0	5312	457.0	6345	546.0
Bioethanol	283	2.0	194	1.7	721	6.2	2493	214.0
Biofuels	0	0.0	0	0.0	1	0.0	8	0.0
Biomass (subtotal)	3243	279.0	3772	324.0	6035	519.0	8846	761.0
Total (according to Template Tables 10a/b)	9881	850.0	12412	1067.0	17312	1489.0	20595	1771.0
Sum of all technologies (Template Tables 10a/b)	9882	850.0	12411	1067.0	17311	1488.0	20594	1771.0
Gross final RES-E consumption (Template Table 4a)	850	100.0	1067	100.0	1489	100.0	1771	100.0
Gross final RES-E consumption (Template Table 4a)	850	100.0	1067	100.0	1489	100.0	1771	100.0
Heating and cooling								
Geothermal	0	0.0	0	0.0	0	0.0	0	0.0
Solar thermal	10	0.4	11	0.4	14	0.5	16	0.5
Solid biomass	1714	91.7	2178	88.3	2426	85.4	2470	81.6
Biofuels	40	2.0	59	2.7	92	3.4	165	5.4
Biomass	0	0.0	8	0.3	8	0.3	8	0.3
Biomass (subtotal)	1759	94.1	2245	91.0	2526	88.9	2643	87.3
Aerothermal heat pumps	48	2.6	91	3.7	135	4.8	170	5.6
Geothermal heat pumps	52	2.8	119	4.8	166	5.8	199	6.6
Hydrothermal heat pumps	0	0.0	0	0.0	0	0.0	0	0.0
Renewable energy from heat pumps (subtotal)	100	5.4	210	8.5	301	10.6	370	12.2
Total (according to Template Table 11)	1869	100.0	2466	100.0	2841	100.0	3028	100.0
Sum of all technologies (Template Table 11)	1869	100.0	2466	100.0	2841	100.0	3029	100.0
Gross final RES-HC consumption (Template Table 4a)	1869	100.0	2480	100.0	2855	100.5	3042	100.5
Bioethanol / bio-ETBE	0	0.0	13	31.0	95	35.7	94	32.3
Biodiesel	0	0.0	18	42.9	152	57.1	167	57.4
Hydrogen from renewables	0	0.0	0	0.0	0	0.0	0	0.0
Renewable electricity	9	100.0	11	26.2	19	7.1	29	10.0
Other biofuels	0	0.0	0	0.0	0	0.0	0	0.0
Total (according to Template Table 12)	9	100.0	42	100.0	266	100.0	291	100.0
Sum of all technologies (Template Table 12)	9	100.0	42	100.0	266	100.0	290	99.7
Gross final RES-E consumption (Template Table 4a)	9	100.0	42	100.0	266	100.0	291	100.0
RES-1 including Article 21.2 (Template Table 4b)	9	100.0	42	100.0	266	100.0	291	100.0
RES-2 including Article 21.2 (Template Table 4b)	9	100.0	42	100.0	266	100.0	291	100.0
All renewables excluding co-operation mechanisms	2718	100.0	3578	100.0	4579	122.2	4989	101.3
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	2719	100.0	3564	99.6	4579	122.2	4990	102.7
Co-operation mechanisms	2728	100.0	3575	100.0	4595	122.2	5090	102.7
Transfer from other Member States and third countries	0	0.0	0	0.0	833	22.2	63	1.3
Transfer to other Member States	0	0.0	0	0.0	0	0.0	0	0.0
Total (Template Table 4a)	2718	100.0	3578	100.0	3746	100.0	4926	100.0
Final consumption								
Electricity	3166	19.2	3144	19.1	3418	19.6	3564	19.8
Additional energy efficiency	3166	19.2	3108	19.0	3234	19.5	3247	19.9
Heating and cooling	8071	49.0	8161	49.5	8512	48.8	8727	48.5
Additional energy efficiency	8071	49.0	8042	49.3	7929	47.8	7653	46.8
Transport	5238	31.8	5189	31.5	5322	31.6	5693	31.7
Additional energy efficiency	5238	31.8	5173	31.7	5432	32.7	5520	33.8
Total before aviation red. incl. efficiency	16475	100.0	16495	100.0	17453	100.0	17984	100.0
Additional energy efficiency	16475	100.0	16324	100.0	16596	100.0	16419	100.4
Total after aviation red. incl. efficiency	16475	100.0	16495	100.0	17453	100.0	17984	100.0
Additional energy efficiency	16475	100.0	16324	100.0	16596	100.0	16346	100.0
Heating and cooling	23.2	0.2	30.8	0.2	36.0	0.2	39.7	0.2
Calculated heating and cooling	23.2	0.2	30.8	0.2	36.0	0.2	39.7	0.2
Electricity	26.8	0.2	34.3	0.2	45.7	0.3	51.0	0.3
Calculated electricity	26.8	0.2	34.3	0.2	45.7	0.3	51.0	0.3
Transport incl. Art. 21.2 adjustment	0.2	0.0	1.0	0.0	6.7	0.0	10.1	0.0
Calculated transport	0.2	0.0	0.8	0.0	5.4	0.0	8.0	0.0
Transport excl. Art. 21.2 adjustment	0.2	0.0	0.8	0.0	4.9	0.0	7.3	0.0
Overall renewable share	16.5	16.5	21.9	21.9	22.6	22.6	30.0	30.0
Overall renewable share	16.5	16.5	21.9	21.9	22.6	22.6	30.0	30.0
Contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0	0.0
Calculated contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.4	0.4
Contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0	0.0
Calculated contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0	0.0
Transport fuels target	17.0	17.0	19.6	19.6	22.9	22.9	30.0	30.0
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	17.0	17.0	19.6	19.6	22.9	22.9	30.0	30.0

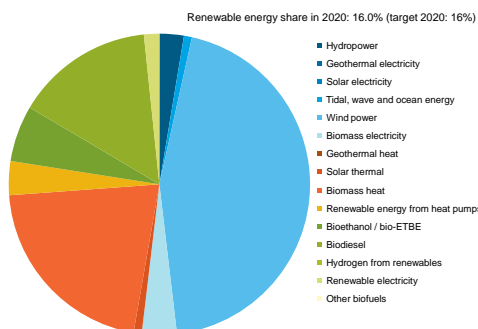
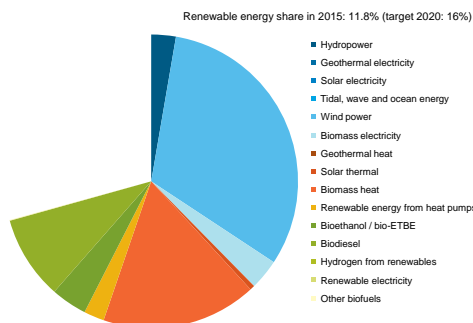
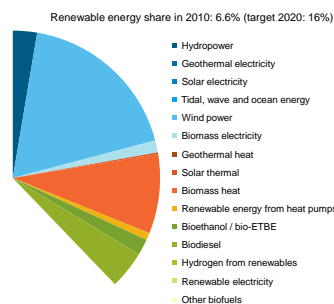
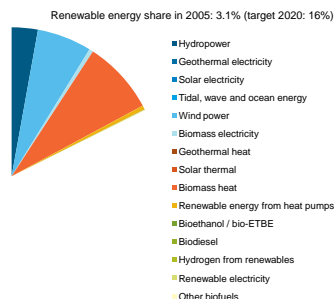
In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1
 The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario.
 Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5).
 Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Germany



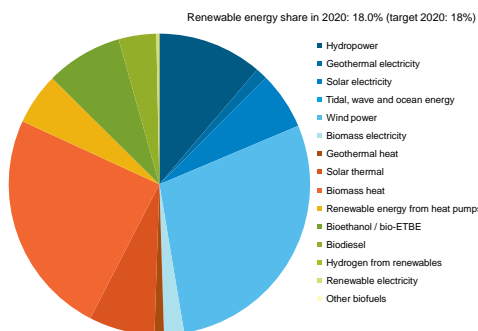
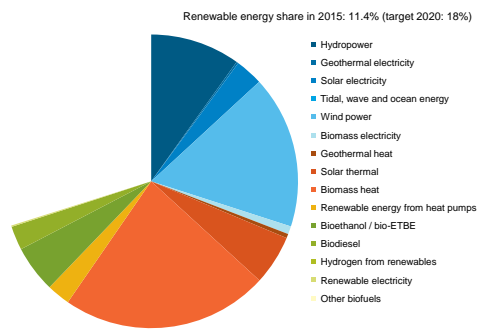
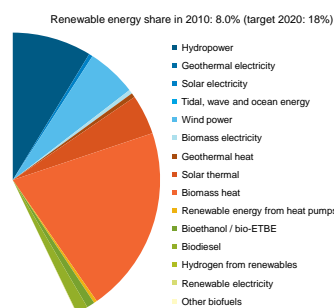
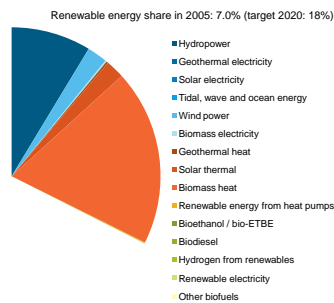
The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 157 provides a background to the above figures.

Ireland



The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 159 provides a background to the above figures.

Greece

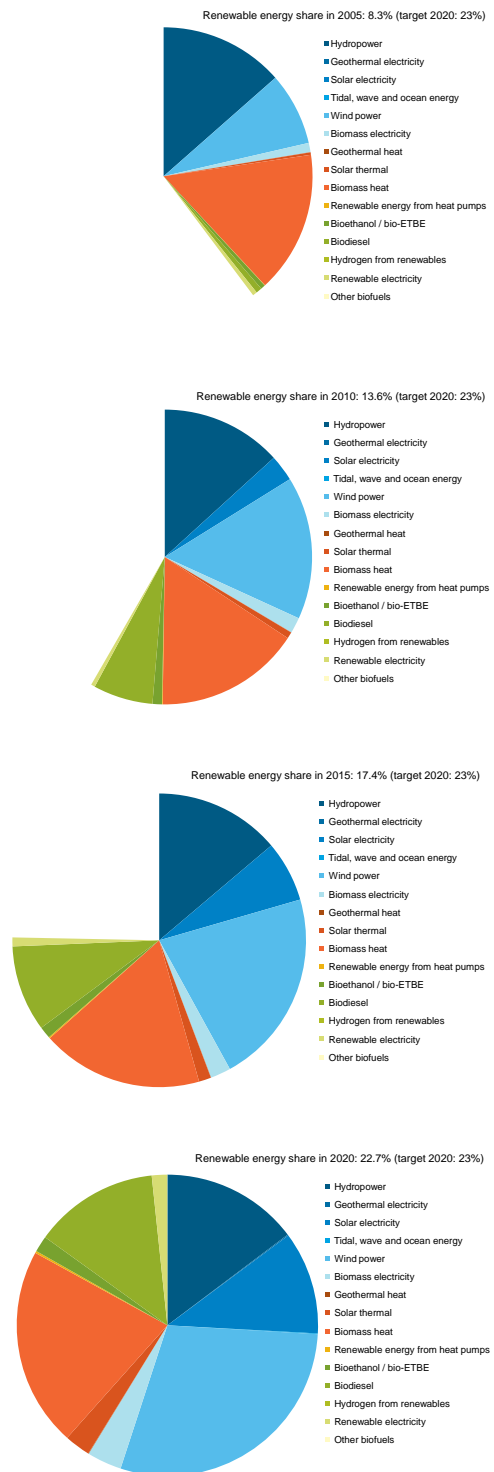


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 161 provides a background to the above figures.

	2005			2010			2015			2020		
	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]
Renewable production												
Electricity	106	9	1.8	0.6	112	10	1.4	0.5	131	11	0.8	0.4
Hydropower < 10 MW	218	19	3.8	1.2	593	51	7.6	2.6	713	4.2	8.3	3.1
Hydropower > 10 MW	4693	404	81.1	26.8	4283	368	54.6	18.5	4840	41.6	28.5	16.4
Hydropower (subtotal)	5017	431	86.7	28.6	4988	429	63.6	21.5	5684	48.9	33.5	19.3
Geothermal	n.a.	n.a.	n.a.	n.a.	0	0	0.0	0.0	123	11	0.7	0.4
Solar photovoltaic	1	0	0.0	0.0	242	21	3.1	1.0	1668	143	9.8	5.7
Concentrated solar power	n.a.	n.a.	n.a.	n.a.	0	0	0.0	0.0	86	7	0.5	0.3
Solar (subtotal)	1	0	0.0	0.0	242	21	3.1	1.0	1754	151	10.3	5.9
Tidal, wave and ocean energy	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Onshore wind	1267	109	21.9	7.2	3129	269	39.9	13.5	9674	832	57.0	32.8
Offshore wind	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wind power (subtotal)	1267	109	21.9	7.2	3129	269	39.9	13.5	9674	832	57.0	32.8
Solid biomass	n.a.	n.a.	n.a.	n.a.	73	6	0.9	0.3	73	6	0.4	0.2
Biogas	94	8	1.6	0.5	181	16	2.3	0.8	43	3	0.3	0.1
Biofuels	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Biomass (subtotal)	94	8	1.6	0.5	254	22	3.2	1.1	504	43	3.0	1.7
Total (according to Template Tables 10a/b)	5786	498	100.0	33.0	7838	674	100.0	33.8	16967	1459	100.0	57.5
Sum of all technologies (Template Tables 10a/b)	6379	548	88.2	30.4	8013	741	100.0	35.2	17739	1459	100.0	57.5
Gross final RES-E consumption (Template Table 4a)					671	99.6	33.7					
Heating and cooling												
Solar thermal		101	9.5	6.7		216	17.0	10.8		271	17.5	10.7
Solid biomass		951	89.2	63.1		1012	79.7	50.8		1128	72.9	44.5
Biogas		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
Biocombustibles		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
Biomass (subtotal)		951	89.2	63.1		1012	79.7	50.8		1128	72.9	44.5
Aerothermal heat pumps		3	0.3	0.2		14	1.1	0.7		104	6.7	4.1
Geothermal heat pumps		1	0.1	0.1		3	0.2	0.2		23	1.5	0.9
Hydrothermal heat pumps		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
Renewable energy from heat pumps (subtotal)		4	0.4	0.3		17	1.3	0.9		127	8.2	5.0
Total (according to Template Table 11)		1066	100.0	70.7		1269	100.0	63.7		1548	100.0	61.0
Sum of all technologies (Template Table 11)		1066	100.0	70.7		1269	100.0	63.7		1548	100.0	61.0
Gross final RES-HC consumption (Template Table 4a)		1066	100.0	70.7		1269	100.0	63.7		1548	100.0	61.0
Transport												
Bioethanol / bio-ETBE		n.a.	n.a.	n.a.		43	39.1	2.2		256	65.1	10.1
Biodiesel		1	100.0	0.1		64	58.2	3.2		130	33.1	5.1
Hydrogen from renewables		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
Renewable electricity		n.a.	n.a.	n.a.		2	2.2	0.1		7	1.8	0.3
Other biofuels		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
Total (according to Template Table 12)		1	100.0	0.1		110	100.0	5.5		393	100.0	15.5
Sum of all technologies (Template Table 12)		1	100.0	0.1		109	99.5	5.5		393	100.0	15.5
Gross final RES-E consumption (Template Table 4a)		1	100.0	0.1		110	100.0	5.5		393	100.0	15.5
RES-1 including Article 21.2 (Template Table 4b)		1	100.0	0.1		111	100.9	5.6		395	100.5	15.6
All renewables excluding co-operation mechanisms		1507	100.0	102.9		2050	102.9	102.9		3393	133.7	112.2
Sum of total values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))		1565	103.8		2051	102.9				3393	133.7	
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)		1615			2119					3467		
Co-operation mechanisms												
Transfer from other Member States		n.a.	n.a.	n.a.		257	12.9	33.7		856	33.7	52.9
Transfer to other Member States		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
Total (Template Table 4a)		1507	100.0	100.0		1993	100.0	100.0		2537	100.0	4341
Final consumption												
Electricity		5486	25.3		5061	22.3			5480	23.7		6179
Additional energy efficiency		5486	25.3		5061	22.3			5285	23.7		6179
Heating and cooling		8355	38.6		8644	38.1			8743	37.8		9600
Additional energy efficiency		8355	38.6		8655	38.6			8658	37.8		9600
Transport		6568	30.3		6774	29.8			6864	29.7		7257
Additional energy efficiency		6568	30.3		6528	29.8			6253	29.7		6336
Total before aviation red. incl. efficiency		21643	100.0		22714	100.0			23150	100.0		25262
Additional energy efficiency		21643	100.0		22428	189.5			22551	179.5		24114
Total after aviation red. incl. efficiency		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Additional energy efficiency		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Heating and cooling												
Calculated heating and cooling			12.8			14.7				17.9		19.7
Electricity			8.0			13.3				27.6		30.8
Calculated electricity			8.0			13.3				27.6		30.8
Transport incl. Art. 21.2 adjustment			0.0			1.7				6.3		10.1
Calculated transport			0.0			1.7				6.3		10.1
Transport excl. Art. 21.2 adjustment			0.0			1.7				6.3		10.0
Overall renewable share			7.0			8.0				11.4		18.0
Calculated overall renewable share			7.0			8.0				11.4		18.0
Contribution from co-operation mechanism			n.a.			n.a.				n.a.		n.a.
Calculated contribution from co-operation mechanism			n.a.			n.a.				n.a.		n.a.
Contribution to co-operation mechanism			n.a.			n.a.				n.a.		n.a.
Calculated contribution to co-operation mechanism			n.a.			n.a.				n.a.		n.a.
Transport fuels target			6.9			9.1				11.9		18.0
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)			6.9			9.1				11.9		18.0

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/Uri/lex/lexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

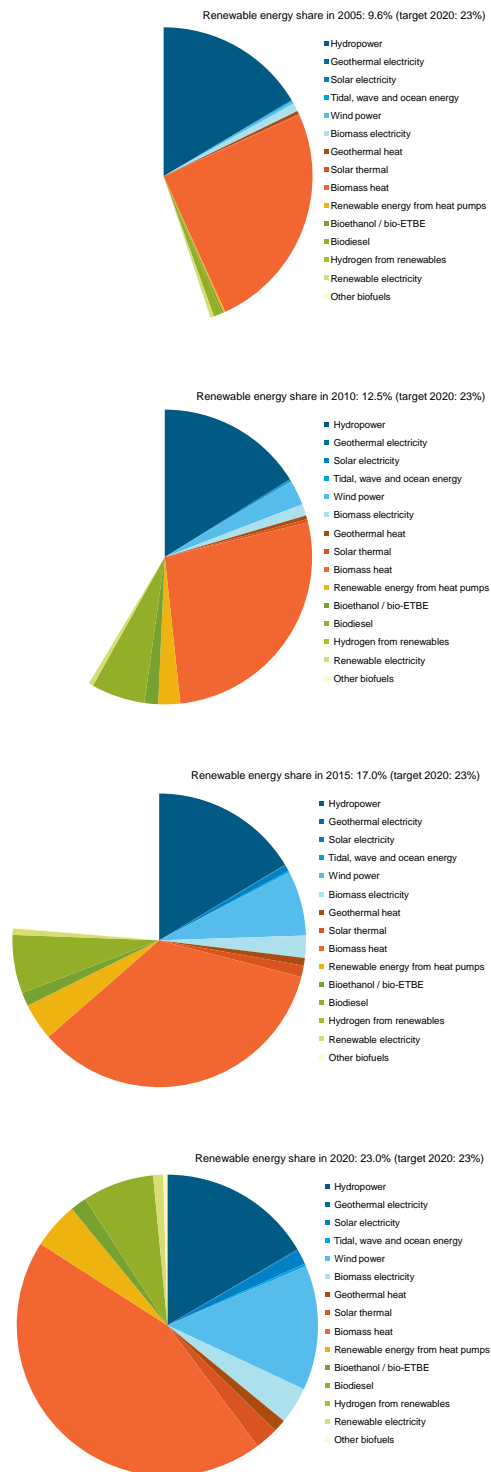
Spain



The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 163 provides a background to the above figures.

	2005			2010			2015			2020					
	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]			
Renewable production															
Electricity															
Hydropower < 10 MW	893	77	1.7	831	71	1.0	0.6	715	61	0.6	0.4	803	69	0.5	0.3
Hydropower 10 MW - 10 MW	5719	492	10.6	428	5.9	3.4	4.6	4617	397	4.4	2.4	5477	471	3.7	2.1
Hydropower > 10 MW	28891	2484	53.7	28813	2477	34.3	19.5	31399	2700	28.3	16.4	33314	2864	22.2	13.0
Hydropower (subtotal)	35503	3053	66.0	34617	2977	41.2	23.5	36732	3158	33.1	19.2	39593	3404	26.4	15.4
Geothermal	0	0	0.0	0	0	0.0	0.0	0	0	0.0	0.0	300	26	0.2	0.1
Solar photovoltaic	41	4	0.1	6417	552	7.6	4.3	9872	849	8.9	5.2	14316	1231	9.5	5.6
Concentrated solar power	0	0	0.0	1144	98	1.4	0.8	7913	680	7.1	4.1	15353	1320	10.2	6.0
Solar (subtotal)	41	4	0.1	7561	650	9.0	5.1	17785	1529	16.0	9.3	29669	2551	19.8	11.6
Tidal, wave and ocean energy	0	0	0.0	0	0	0.0	0.0	0	0	0.0	0.0	220	19	0.1	0.1
Onshore wind	20729	1782	38.5	40978	3523	48.8	27.8	56786	4883	51.2	29.7	70502	6062	47.0	27.5
Offshore wind	0	0	0.0	0	0	0.0	0.0	0	0	0.0	0.0	300	26	0.3	0.2
Wind power (subtotal)	20729	1782	38.5	40978	3523	48.8	27.8	57086	4909	51.4	29.9	78254	6729	52.2	30.5
Solid biomass	2029	174	3.8	3719	320	4.4	2.5	4660	401	4.2	2.4	7400	636	4.9	2.9
Biofuels	623	54	1.2	799	69	1.0	0.5	1302	112	1.2	0.7	2617	225	1.7	1.0
Biofuels (subtotal)	2653	228	4.9	4517	388	5.4	3.1	5962	513	5.4	3.1	10017	861	6.7	3.9
Biomass (subtotal)	53773	4624	100.0	84034	7226	100.0	56.9	110988	9543	100.0	58.1	150030	12900	100.0	58.5
Total (according to Template Tables 10a/b)	38926	3067	100.0	87673	7527	100.0	56.9	117565	9949	100.0	58.1	158053	13203	100.0	58.5
Sum of all technologies (Template Tables 10a/b)															
Gross final RES-E consumption (Template Table 4a)	4	0.1	0.0	4	0.1	0.0	0.0	5	0.1	0.0	0.0	10	0.2	0.0	0.0
Geothermal															
Solar thermal				159	4.2	1.3		308	7.0	1.9		644	11.4	2.9	
Solid biomass	3441	96.9	40.8	3550	94.3	28.0		3997	90.8	24.3		4850	85.8	22.0	
Biofuels	34	3	0.9	33	3.0	0.3		0	0.0	0.0		100	0.8	2.5	
Biofuels (subtotal)	3477	97.9	41.2	3583	95.2	28.2		4060	92.2	24.7		4950	87.5	22.4	
Aerothermal heat pumps	4	0.1	0.0	5	0.1	0.0		7	0.2	0.0		10	0.2	0.0	
Geothermal heat pumps	4	0.1	0.0	12	0.3	0.1		23	0.5	0.1		41	0.7	0.2	
Hydrothermal heat pumps	4	0.1	0.0	17	0.5	0.1		31	0.7	0.2		51	0.9	0.2	
Renewable energy from heat pumps (subtotal)	8	0.2	0.1	17	0.5	0.1		31	0.7	0.2		51	0.9	0.2	
Total (according to Template Table 11)	3550	100.0	42.1	3764	100.0	29.7		4404	100.0	26.8		5654	100.0	25.6	
Sum of all technologies (Template Table 11)															
Gross final RES-HC consumption (Template Table 4a)	3550	100.0	42.1	3764	100.0	29.7		4404	100.0	26.8		5654	100.0	25.6	
Bioethanol / bio-ETBE	113	30.9	1.3	232	12.9	1.8		301	11.2	1.8		400	10.3	1.8	
Biodiesel	145	39.6	1.7	1471	81.6	11.6		2169	80.5	13.2		3100	79.8	14.1	
Hydrogen from renewables	0	0.0	0.0	0	0.0	0.0		0	0.0	0.0		0	0.0	0.0	
Renewable electricity	108	29.5	1.3	99	5.5	0.8		224	8.3	1.4		381	9.8	1.7	
Other biofuels	0	0.0	0.0	0	0.0	0.0		1	0.0	0.0		4	0.1	0.0	
Total (according to Template Table 12)	366	100.0	4.3	1802	100.0	14.2		2695	100.0	16.4		3885	100.0	17.6	
Sum of all technologies (Template Table 12)															
Gross final RES-E consumption (Template Table 4a)	366	100.0	4.3	1802	100.0	14.2		2695	100.0	16.4		3885	100.0	17.6	
RES-1 including Article 21.2 (Template Table 4b)	366	100.0	4.3	1802	100.0	14.2		2695	100.0	16.4		3885	100.0	17.6	
RES-1 excluding Article 21.2 (Template Table 4b)	366	100.0	4.3	1852	102.8	14.6		2902	107.7	17.7		4322	111.2	19.6	
All renewables excluding co-operation mechanisms	8433	100.0	100.0	12693	100.0	100.0		16419	100.0	100.0		22057	100.0	100.0	
Sum of total values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	8432	100.0	100.0	12693	100.0	100.0		16418	100.0	100.0		22058	100.0	100.0	
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	8983			13104				17208				23130			
Co-operation mechanisms															
Transfer from other Member States	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.
Transfer to other Member States	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.
Total (Template Table 4a)	8433	100.0	100.0	12693	100.0	100.0		16419	100.0	100.0		22057	100.0	100.0	
All renewables including co-operation mechanisms															
Electricity	25080	24.6		25056	26.8			29647	29.4			35816	32.0		
Additional energy efficiency	25080	24.6		25056	26.9			28264	29.9			32269	33.3		
Heating and cooling	40254	39.5		3334	3.6			32315	32.0			31837	28.5		
Additional energy efficiency	40254	39.5		3334	3.6			31452	33.2			29849	30.8		
Transport	32407	31.8		30891	33.1			34391	34.1			39410	35.2		
Additional energy efficiency	32407	31.8		30875	33.1			31222	33.0			31681	32.6		
Total before aviation red. incl. efficiency	101845	100.0		93379	100.0			10923	100.1			112530	100.6		
Additional energy efficiency	101845	100.0		93226	100.0			94593	100.0			97041	100.0		
Total after aviation red. incl. efficiency	n.a.	n.a.		n.a.	n.a.			100866	100.0			111882	100.0		
Additional energy efficiency	n.a.	n.a.		n.a.	n.a.			0	0.0			0	0.0		
Heating and cooling															
Calculated heating and cooling															
Electricity															
Calculated electricity															
Transport incl. Art. 21.2 adjustment															
Calculated transport															
Transport excl. Art. 21.2 adjustment															
Calculated transport															
Overall renewable share															
Overall renewable share															
Contribution from co-operation mechanism															
Contribution from co-operation mechanism															
Contribution to co-operation mechanism															
Contribution to co-operation mechanism															
Transport fuels target															
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)															
Overall renewable share															
Overall renewable share															
Transport incl. Art. 21.2 adjustment															
Calculated transport															
Transport excl. Art. 21.2 adjustment															
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Contribution from co-operation mechanism															
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Contribution to co-operation mechanism															
Transport fuels target															
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)															
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Transport incl. Art. 21.2 adjustment															
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Overall renewable share															
Overall renewable share		</													

France

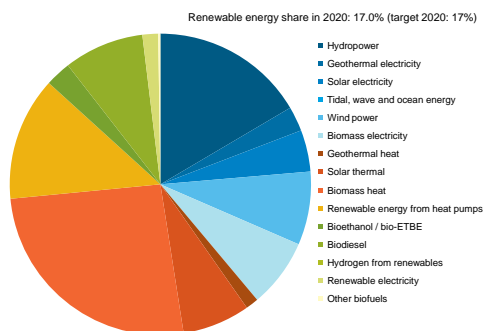
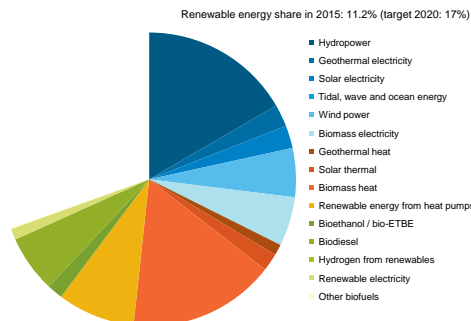
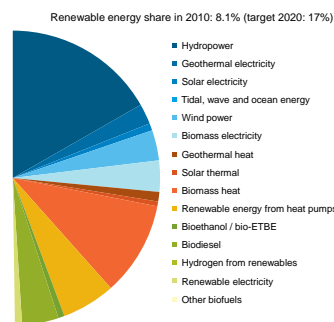
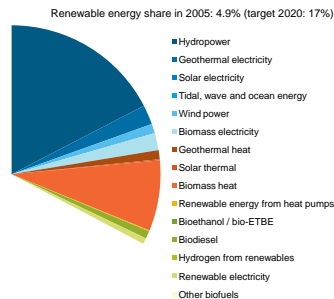


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 165 provides a background to the above figures.

Renewable production	2005			2010			2015			2020		
	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]
Hydropower < 10 MW	1796	154	2.4	1694	146	1.9	1727	148	1.5	1759	151	1.1
Hydropower 10 MW - 10 MW	6111	525	8.1	5766	496	6.6	5878	505	5.1	5990	515	3.9
Hydropower > 10 MW	62332	5360	82.2	61563	5293	70.5	62788	5396	54.3	63953	5499	41.2
Hydropower (subtotal)	70240	6040	92.6	69024	5935	79.0	70363	6050	60.9	71703	6165	46.2
Geothermal	95	8	0.1	153	13	0.2	314	27	0.3	475	41	0.3
Solar photovoltaic	22	2	0.0	613	53	0.7	2617	225	2.3	5913	508	3.8
Concentrated solar power	0	0	0.0	0	0	0.0	365	31	0.3	972	84	0.6
Solar (subtotal)	22	2	0.0	613	53	0.7	2987	257	2.6	6885	592	4.4
Tidal, wave and ocean energy	535	46	0.7	500	43	0.6	789	68	0.7	1150	99	0.7
Onshore wind	1128	97	1.5	11638	1001	13.3	22634	1946	19.6	39900	3431	25.7
Offshore wind	0	0	0.0	0	0	0.0	8000	688	6.9	18000	1548	11.6
Wind power (subtotal)	1128	97	1.5	11638	1001	13.3	30634	2634	26.5	57900	4979	37.3
Solid biomass	3341	287	4.4	4506	387	5.2	8366	719	7.2	13470	1158	8.7
Biogas	478	41	0.6	935	80	1.1	2129	183	1.8	3701	318	2.4
Biofuels	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Biomass (subtotal)	3819	328	5.0	5441	468	6.2	10496	902	9.1	17171	1476	11.1
Total (according to Template Tables 10a/b)	75839	6521	100.0	87369	7512	100.0	115577	9938	100.0	155284	13352	100.0
Sum of all technologies (Template Tables 10a/b)	6318	538	8.1	7512	640	8.8	9758	828	10.3	155284	13352	95.0
Gross final RES-E consumption (Template Table 4a)	6118	518	93.8	7073	602	93.8	115583	9407	94.7	172729	14729	95.3
Heating and cooling												
Geothermal	130	14	0.8	155	14	0.7	310	21	1.1	465	31	1.1
Solar thermal	38	0.4	0.2	130	1.2	0.6	465	3.1	1.7	927	4.7	2.6
Solid biomass	9067	965	87.0	9870	883	47.2	12500	831	45.6	15900	806	44.0
Biogas	0	0	0.0	0	0	0.0	0	0	0.0	355	2	0.0
Biofuels	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Biomass (subtotal)	9153	974	57.5	9953	895	47.6	12760	848	46.6	16455	834	45.6
Aerothermal heat pumps	27	0.3	0.2	664	6.0	3.2	1080	7.2	3.9	1280	6.5	3.5
Geothermal heat pumps	49	0.5	0.3	222	2.0	1.1	425	2.8	1.6	570	2.9	1.6
Hydrothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Renewable energy from heat pumps (subtotal)	76	0.8	0.5	886	8.0	4.2	1505	10.0	5.5	1850	9.4	5.1
Total (according to Template Table 11)	9397	1000	59.0	11121	1000	53.2	15040	1000	54.9	19732	1000	54.6
Sum of all technologies (Template Table 11)	9397	1000	59.0	11124	1000	53.2	15040	1000	54.9	19732	1000	54.6
Gross final RES-HC consumption (Template Table 4a)	9397	1000	59.0	11124	1000	53.2	15040	1000	54.9	19732	1000	54.6
Transport												
Bioethanol / bio-ETBE	75	13.8	0.5	550	19.0	2.6	550	17.1	2.0	650	16.0	1.8
Biodiesel	328	60.3	2.1	2165	74.7	10.4	2375	73.9	8.7	2850	70.2	7.9
Hydrogen from renewables	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	
Renewable electricity	141	25.9	0.9	183	6.3	0.9	260	8.1	0.9	402	9.9	1.1
Other biofuels	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	
Total (according to Template Table 12)	544	100.0	3.4	2898	100.0	13.9	3215	100.0	11.7	4062	100.0	11.2
Sum of all technologies (Template Table 12)	544	100.0	3.4	2898	100.0	13.9	3215	100.0	11.7	4062	100.0	11.2
Gross final RES-E consumption (Template Table 4a)	544	100.0	3.4	2898	100.0	13.9	3215	100.0	11.7	4062	100.0	11.2
RES-1 including Article 21.2 (Template Table 4b)	544	100.0	3.4	2948	101.7	14.1	3372	104.9	12.3	4427	109.0	12.3
All renewables excluding co-operation mechanisms	15918	1000	100.0	20912	1000	100.0	27402	1000	100.0	36121	1000	100.0
Gross final RES consumption (Template Table 4a)	16321	102.5	102.5	21348	102.1	102.1	27933	101.9	101.9	36744	101.7	101.7
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	16462	102.5	102.5	21534	102.1	102.1	28193	101.9	101.9	37146	101.7	101.7
Co-operation mechanisms												
Transfer from other Member States	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	
Transfer to other Member States	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	
Total (Template Table 4a)	15918	100.0	100.0	20912	100.0	100.0	27402	100.0	100.0	36121	100.0	100.0
Final consumption												
Electricity												
Reference scenario	45317	24.4	24.4	47378	29.5	29.5	49439	31.6	31.6	51500	26.3	26.3
Additional energy efficiency	45317	24.4	24.4	45849	24.4	24.4	46381	23.7	23.7	46913	30.2	30.2
Heating and cooling												
Reference scenario	68949	37.1	37.1	72333	45.0	45.0	75716	48.4	48.4	79100	40.4	40.4
Additional energy efficiency	68949	37.1	37.1	65966	35.2	35.2	62983	32.2	32.2	60000	38.6	38.6
Transport												
Reference scenario	45080	24.2	24.2	53100	33.0	33.0	55100	35.2	35.2	57500	29.4	29.4
Additional energy efficiency	45080	24.2	24.2	45700	24.4	24.4	44000	22.5	22.5	42100	27.1	27.1
Total before aviation red. incl. efficiency	166689	89.6	89.6	179877	111.9	111.9	187610	119.9	119.9	195745	100.0	100.0
Additional energy efficiency	166689	89.6	89.6	164549	87.6	87.6	159909	81.7	81.7	155268	100.0	100.0
Total after aviation red. incl. efficiency	186064	100.0	100.0	160758	100.0	100.0	156517	100.0	100.0	n.a.	n.a.	n.a.
Additional energy efficiency	186064	100.0	100.0	187610	100.0	100.0	195745	100.0	100.0	n.a.	n.a.	n.a.
Heating and cooling												
Heating and cooling												
Electricity												
Calculated electricity												
Transport												
Calculated transport												
Transport excl. Art. 21.2 adjustment												
Overall renewable share												
Overall renewable share												
Calculated overall renewable share												
Contribution from co-operation mechanism												
Contribution to co-operation mechanism												
Contribution to co-operation mechanism												
Transport fuels target												
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)			9.6			12.8						23.0

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Italy



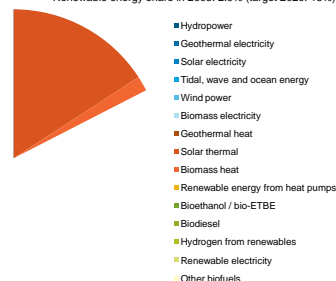
The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 167 provides a background to the above figures.

	2005			2010			2015			2020		
	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]
Renewable production												
Electricity												
Hydropower < 10 MW	1851	159	3.3	1737	149	2.6	2009	173	2.5	2281	196	2.3
Hydropower 10MW - 10 MW	7391	636	13.1	641	11.2	6.0	8627	742	10.5	9796	842	9.9
Hydropower >10MW	34525	2969	61.3	32946	2833	49.3	31434	2703	38.4	29923	2573	30.3
Hydropower (subtotal)	43768	3763	77.7	42141	3623	63.1	42070	3617	51.4	42000	3611	42.5
Geothermal	5525	458	9.4	5632	484	8.4	6191	532	7.6	6750	580	6.8
Solar photovoltaic	31	3	0.1	1967	169	2.9	6122	526	7.5	9650	830	9.8
Concentrated solar power	0	0	0.0	9	1	0.0	170	15	0.2	1700	146	1.7
Solar (subtotal)	31	3	0.1	1976	170	3.0	6292	541	7.7	11350	976	11.5
Tidal, wave and ocean energy	0	0	0.0	0	0	0.0	1	0	0.0	5	0	0.0
Onshore wind	2558	220	4.5	8398	722	12.6	13199	1135	16.1	18000	1548	18.2
Offshore wind	0	0	0.0	0	0	0.0	453	39	0.6	2000	172	2.0
Wind power (subtotal)	2558	220	4.5	8398	722	12.6	13652	1174	16.7	20000	1720	20.2
Solid biomass	3477	299	6.2	4758	409	7.1	6329	544	7.7	7900	679	8.0
Biofuels	1198	103	2.1	2129	183	3.2	4024	350	5.0	6020	518	6.1
Biofuels (subtotal)	0	0	0.0	1758	151	2.6	3309	285	4.0	4860	418	4.9
Biomass (subtotal)	4675	402	8.3	6484	743	12.9	13712	1179	16.7	18780	1615	19.0
Total (according to Template Tables 10a/b)	56356	4846	100.0	66791	5743	100.0	81918	7044	100.0	98885	8503	100.0
Sum of all technologies (Template Tables 10a/b)	56357	4847	100.0	66792	5744	100.0	81918	7044	100.0	98885	8503	100.0
Gross final RES-E consumption (Template Table 4a)	4847	403	8.3	5744	484	10.0	7044	585	12.5	8504	704	10.0
Heating and cooling												
Solar thermal	27	1.1	3.1	226	5.9	2.1	424	4.3	1.7	300	2.9	1.3
Solar thermal (subtotal)	27	1.1	3.1	226	5.9	2.1	424	4.3	1.7	300	2.9	1.3
Solid biomass	1629	85.0	21.5	2206	57.3	20.8	3404	56.2	22.0	5254	50.2	23.2
Biofuels	26	2.4	0.4	7	0.2	0.2	83	0.6	0.2	266	2.6	1.2
Biofuels (subtotal)	0	0.0	0.0	7	0.2	0.2	83	0.6	0.2	266	2.6	1.2
Biomass (subtotal)	1655	86.4	23.8	2239	58.1	21.1	3520	58.1	23.7	5670	54.2	25.1
Aerothermal heat pumps	16	0.8	0.2	1127	29.3	10.6	1566	25.8	10.5	2175	20.8	9.6
Geothermal heat pumps	4	0.2	0.1	40	1.0	0.4	145	2.4	1.0	322	5.0	2.3
Hydrothermal heat pumps	2	0.1	0.0	15	0.3	0.0	11	0.1	0.0	11	0.1	0.0
Renewable energy from heat pumps (subtotal)	2	0.1	0.0	1273	33.1	12.0	1857	30.6	12.5	2900	27.7	12.8
Renewable energy from heat pumps (subtotal)	2	0.1	0.0	1273	33.1	12.0	1857	30.6	12.5	2900	27.7	12.8
Total (according to Template Table 11)	1916	100.0	27.6	3851	100.0	36.3	6062	100.0	40.7	10456	100.0	46.2
Sum of all technologies (Template Table 11)	1916	100.0	27.6	3851	100.0	36.3	6062	100.0	40.7	10456	100.0	46.2
Gross final RES-E consumption (Template Table 4a)	1916	100.0	27.6	3851	100.0	36.3	6062	100.0	40.7	10456	100.0	46.2
Transport												
Bioethanol/ bio-ETBE	0	0.0	0.0	148	12.4	1.4	374	18.3	2.5	600	20.7	2.7
Bioethanol	179	56.3	2.6	868	72.9	8.2	1374	67.4	9.2	1880	64.8	8.3
Hydrogen from renewables	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Renewable electricity	139	43.7	2.0	170	14.3	1.6	265	13.0	1.8	369	12.7	1.6
Other biofuels	0	0.0	0.0	5	0.4	0.0	27	1.3	0.2	50	1.7	0.2
Total (according to Template Table 12)	318	100.0	4.6	1190	100.0	11.2	2040	100.0	13.7	2899	100.0	12.8
Sum of all technologies (Template Table 12)	318	100.0	4.6	1190	100.0	11.2	2040	100.0	13.7	2899	100.0	12.8
Gross final RES-E consumption (Template Table 4a)	179	56.3	2.6	1020	85.7	9.6	1775	87.0	11.9	2530	87.3	11.2
RES-1 including Article 21.2 (Template Table 4b)	358	106.3	4.9	1295	108.8	12.2	2356	115.5	15.8	3445	118.8	15.2
All renewables excluding co-operation mechanisms	6942	100.0	100.0	10615	100.0	100.0	14882	100.0	100.0	21490	100.0	95.0
Sum of total values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	6941	100.0	100.0	10614	100.0	100.0	14881	100.0	100.0	21489	100.0	95.0
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	7080	n.a.	n.a.	10785	n.a.	n.a.	15145	n.a.	n.a.	21858	n.a.	n.a.
Co-operation mechanisms												
Transfer from other Member States	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Transfer to other Member States	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total (Template Table 4a)	6942	100.0	100.0	10615	100.0	100.0	14882	100.0	100.0	22617	100.0	100.0
Final consumption												
Electricity												
Reference scenario	29749	21.1	29.805	29749	21.1	29.805	29749	21.1	29.805	29749	21.1	29.805
Additional energy efficiency	29749	21.1	30701	23.3	31465	23.8	31465	23.8	32227	24.2	32227	24.2
Heating and cooling	68501	48.5	64194	47.7	65532	46.7	66081	45.4	66499	45.7	66499	45.7
Additional energy efficiency	68501	48.5	58976	44.7	58976	44.7	60081	45.4	61185	46.0	61185	46.0
Transport	39000	27.6	36467	27.1	37986	27.1	38544	26.5	39772	25.5	39772	25.5
Additional energy efficiency	39000	27.6	37054	28.1	35513	26.8	35513	26.8	35513	26.8	35513	26.8
Total before aviation red. incl. efficiency	141226	100.0	134643	100.0	140399	100.0	145566	100.0	145566	100.0	145566	100.0
Additional energy efficiency	141226	100.0	131801	100.0	132422	100.0	132422	100.0	132422	100.0	132422	100.0
Total after aviation red. incl. efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Additional energy efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Heating and cooling												
Reference scenario	10.1	2.8	6.5	10.1	2.8	6.5	10.1	2.8	6.5	10.1	2.8	6.5
Additional energy efficiency	10.1	2.8	6.5	10.1	2.8	6.5	10.1	2.8	6.5	10.1	2.8	6.5
Calculated heating and cooling	10.1	2.8	6.5	10.1	2.8	6.5	10.1	2.8	6.5	10.1	2.8	6.5
Electricity												
Reference scenario	16.3	16.3	0.9	16.3	16.3	0.9	16.3	16.3	0.9	16.3	16.3	0.9
Additional energy efficiency	16.3	16.3	0.9	16.3	16.3	0.9	16.3	16.3	0.9	16.3	16.3	0.9
Calculated electricity	16.3	16.3	0.9	16.3	16.3	0.9	16.3	16.3	0.9	16.3	16.3	0.9
Transport incl. Art. 21.2 adjustment	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6
Calculated transport	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6
Transport excl. Art. 21.2 adjustment	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6
Overall renewable share	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6
Calculated overall renewable share	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6	10.1	3.5	6.6
Contribution from co-operation mechanism	11.2	4.9	8.1	11.2	4.9	8.1	11.2	4.9	8.1	11.2	4.9	8.1
Contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Calculated contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Transport fuels target	10.0	7.6	5.2	10.0	7.6	5.2	10.0	7.6	5.2	10.0	7.6	5.2
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	10.0	7.6	5.2	10.0	7.6	5.2	10.0	7.6	5.2	10.0	7.6	5.2

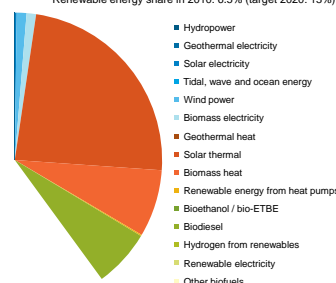
In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1., 4a., 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Cyprus

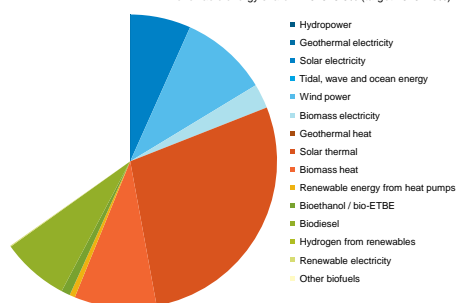
Renewable energy share in 2005: 2.9% (target 2020: 13%)



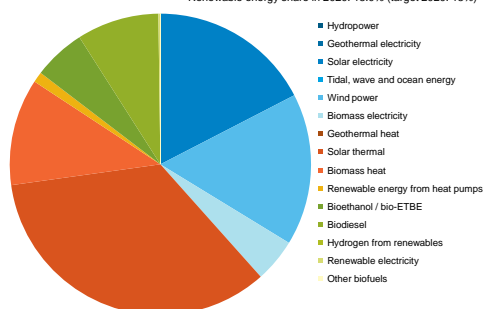
Renewable energy share in 2010: 6.5% (target 2020: 13%)



Renewable energy share in 2015: 9.0% (target 2020: 13%)



Renewable energy share in 2020: 13.0% (target 2020: 13%)

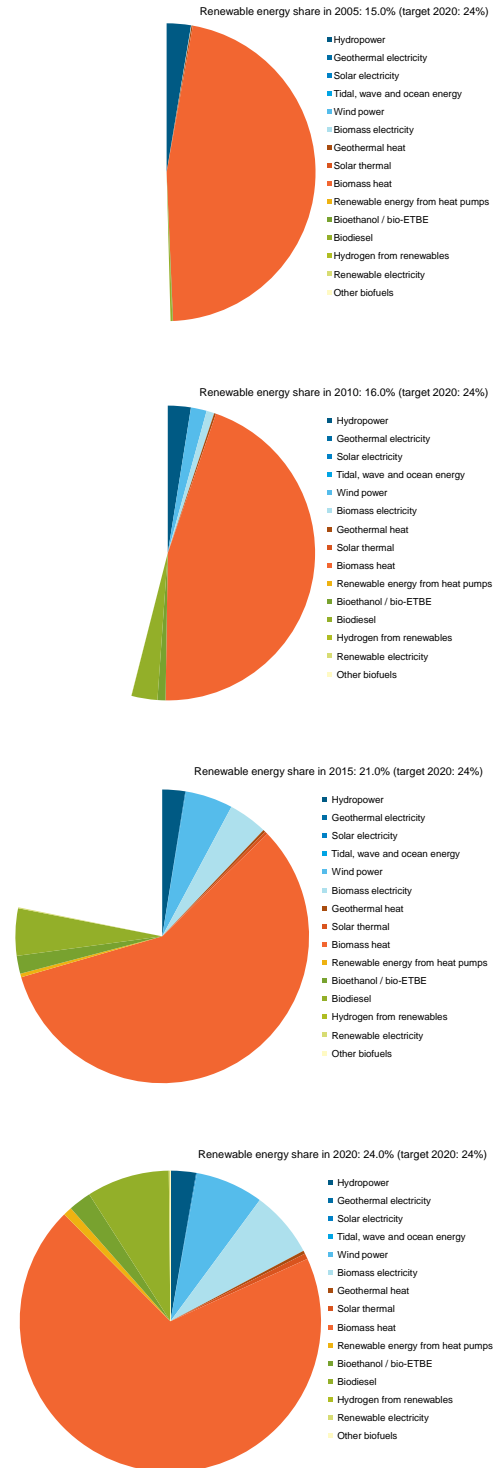


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 169 provides a background to the above figures.

	2005			2010			2015			2020		
	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]
Renewable production												
Electricity												
Hydropower < 10 MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower 10 MW - 10 MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower > 10 MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower (subtotal)	0	0	n.a.	0	0	0.0	0	0	0.0	0	0	0.0
Geothermal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Solar photovoltaic	0	0	n.a.	6	1	8.8	0	0	0.0	59	5	10.0
Concentrated solar power	0	0	n.a.	0	0	0.0	0	0	0.0	149	13	25.2
Solar (subtotal)	0	0	n.a.	6	1	8.8	0	0	0.0	208	18	35.1
Tidal, wave and ocean energy	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Onshore wind	0	0	n.a.	31	3	45.6	31	3	45.6	300	26	50.7
Offshore wind	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wind power (subtotal)	0	0	n.a.	31	3	45.6	31	3	45.6	300	26	50.7
Solid biomass	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Biogas	0	0	n.a.	30	3	44.1	30	3	44.1	84	7	14.2
Biofuels	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Biomass (subtotal)	0	0	n.a.	30	3	44.1	30	3	44.1	84	7	14.2
Total (according to Template Tables 10a/b)	0	0	n.a.	68	6	100.0	68	6	100.0	592	51	100.0
Sum of all technologies (Template Tables 10a/b)	0	0	n.a.	67	6	98.5	67	6	98.5	592	51	100.0
Gross final RES-E consumption (Template Table 4a)	0	0	n.a.	20	2	342.1	20	2	342.1	46	4	90.4
Heating and cooling												
Geothermal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Solar thermal	41	90.8	86.0	59	76.0	51.8	59	76.0	44.2	75	74.4	44.2
Solid biomass	4	9.2	8.8	18	23.6	16.1	18	23.6	14.2	24	24.0	14.2
Biogas	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Biofuels	n.a.	n.a.	n.a.	18	23.6	16.1	18	23.6	14.2	24	24.0	14.2
Biomass (subtotal)	4	9.2	8.8	18	23.6	16.1	18	23.6	14.2	24	24.0	14.2
Aerothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Geothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Renewable energy from heat pumps (subtotal)	0	0.0	0.0	0	0.4	0.3	0	0.4	0.3	2	1.6	0.9
Total (according to Template Table 11)	45	100.0	94.7	78	100.0	68.1	78	100.0	59.4	101	100.0	59.4
Sum of all technologies (Template Table 11)	45	100.0	94.7	78	100.0	68.1	78	100.0	59.4	101	100.0	59.4
Gross final RES-H/C consumption (Template Table 4a)	48	105.6	100.0	78	100.4	68.4	78	100.4	59.4	101	100.0	47.1
Transport												
Bioethanol / bio-ETBE	0	n.a.	0.0	0	0.0	0.0	0	0.0	0.0	3	11.5	1.5
Biodiesel	0	n.a.	0.0	16	100.0	13.8	16	100.0	11.6	20	87.2	11.6
Hydrogen from renewables	0	n.a.	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Renewable electricity	0	n.a.	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Other biofuels	0	n.a.	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Total (according to Template Table 12)	0	n.a.	0.0	16	100.0	13.8	16	100.0	13.4	23	100.0	14.6
Sum of all technologies (Template Table 12)	0	n.a.	0.0	16	100.0	13.8	16	100.0	13.3	23	99.9	14.6
Gross final RES-E consumption (Template Table 4a)	0	n.a.	0.0	16	101.9	14.0	16	101.9	13.5	23	101.3	14.4
RES-1 including Article 21.2 (Template Table 4b)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gross final RES consumption (Template Table 4a)	48	100.0	100.0	114	100.0	100.0	114	100.0	100.0	170	100.0	100.0
Sum of total values from Template Tables 10a/b, 11 and 12 (graphs)	45	94.7	99	99	87.0	87.0	99	87.0	102.5	174	175	262
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	45	94.7	99	99	87.0	87.0	99	87.0	102.5	175	175	262
Co-operation mechanisms												
Transfer from other Member States	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Transfer to other Member States	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Total (Template Table 4a)	48	100.0	100.0	114	100.0	100.0	114	100.0	100.0	170	100.0	100.0
Final consumption												
Electricity	374	22.5	37.4	464	26.6	37.4	464	26.6	37.4	573	29.4	31.6
Additional energy efficiency	374	22.5	37.4	463	26.6	37.4	463	26.6	37.4	548	29.1	31.3
Heating and cooling												
Reference scenario	530	31.9	480	27.5	480	27.5	480	27.5	480	517	26.5	55.1
Additional energy efficiency	530	31.9	480	27.6	480	27.6	480	27.6	480	509	27.0	52.7
Transport												
Reference scenario	682	41.1	721	41.3	721	41.3	721	41.3	721	771	39.5	82.5
Additional energy efficiency	682	41.1	720	41.3	720	41.3	720	41.3	720	744	39.5	76.8
Total before aviation red. incl. efficiency	1884	113.4	1921	110.1	1919	110.2	1919	110.2	1919	2150	110.1	23.5
Additional energy efficiency	1884	113.4	1919	110.2	1919	110.2	1919	110.2	1919	2080	110.4	22.4
Total after aviation red. incl. efficiency	1661	100.0	1744	100.0	1744	100.0	1744	100.0	1744	1952	100.0	100.0
Additional energy efficiency	1661	100.0	1742	100.0	1742	100.0	1742	100.0	1742	1884	100.0	20.23
Heating and cooling												
Calculated heating and cooling	9.1	9.1	16.2	16.3	16.3	16.3	16.3	16.3	16.3	20.0	20.0	23.5
Electricity												
Calculated electricity	0.0	0.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	8.4	8.4	16.0
Transport incl. Art. 21.2 adjustment												
Calculated transport	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Transport excl. Art. 21.2 adjustment	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.1	3.1	4.9
Overall renewable share												
Overall renewable share	2.9	2.9	6.5	6.5	6.5	6.5	6.5	6.5	6.5	9.0	9.0	13.0
Contribution from co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calculated contribution from co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calculated contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transport fuels target												
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	2.9	2.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	7.4	7.4	10.0

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages (%) have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1., 4a, 10a/b, 11 and 12 it is meant to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>.

Lithuania

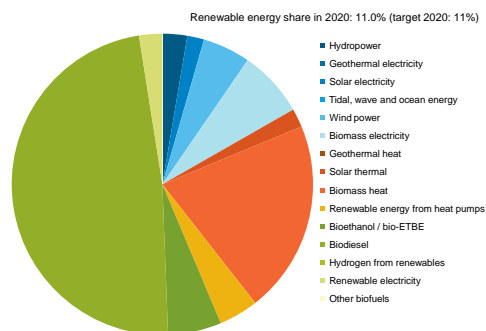
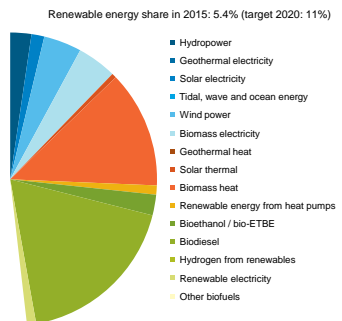
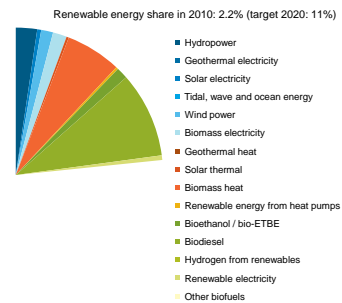
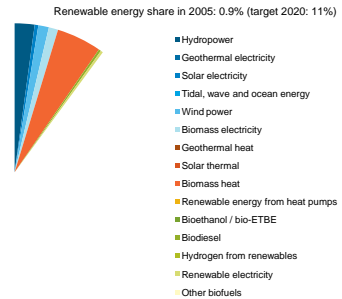


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 171 provides a background to the above figures.

Renewable production	Electricity	2005			2010			2015			2020		
		[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]
Renewable production	Hydropower < 10 MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Hydropower 10 MW - 10 MW	66	6	14.3	0.8	79	7	9.0	0.9	93	8	4.3	0.7
	Hydropower > 10 MW	385	33	83.7	4.5	353	30	40.3	3.8	353	30	16.5	2.7
	Hydropower (subtotal)	451	39	98.0	5.3	432	37	49.3	4.7	446	38	20.8	3.4
	Geothermal	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	0.0
	Solar photovoltaic	0	0	0.0	0.0	0	0	0.0	0.0	13	1	0.6	0.1
	Concentrated solar power	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	0.0
	Solar (subtotal)	0	0	0.0	0.0	0	0	0.0	0.0	13	1	0.6	0.1
	Tidal, wave and ocean energy	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	0.0
	Wind power (subtotal)	2	0	0.4	0.0	297	26	33.9	3.2	924	79	43.1	7.0
Offshore wind	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	0.0	
Onshore wind	2	0	0.4	0.0	297	26	33.9	3.2	924	79	43.1	7.0	
Solid biomass	3	0	0.7	0.0	98	8	11.2	1.1	533	46	24.9	4.0	
Biogas	4	0	0.9	0.0	50	4	5.7	0.5	228	20	10.6	1.7	
Biofuels	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	0.0	
Biomass (subtotal)	7	1	1.5	0.1	147	13	16.8	1.6	761	65	35.5	5.7	
Total (according to Template Tables 10a/b)	460	40	100.0	5.4	876	75	100.0	9.5	2143	184	100.0	16.1	
Sum of all technologies (Template Tables 10a/b)	460	40	100.0	5.4	876	75	100.0	9.5	2143	184	100.0	16.1	
Gross final RES-E consumption (Template Table 4a)	38	96.1	5.2		74	98.2	9.3		182	98.8	15.9	17.2	
Heating and cooling													
Geothermal													
Solar thermal													
Solid biomass													
Biogas													
Biofuels													
Biomass (subtotal)													
Aerothermal heat pumps													
Geothermal heat pumps													
Hydrothermal heat pumps													
Renewable energy from heat pumps (subtotal)													
Total (according to Template Table 11)													
Sum of all technologies (Template Table 11)													
Gross final RES-HC consumption (Template Table 4a)													
Bioethanol / bio-ETBE													
Biodiesel													
Hydrogen from renewables													
Renewable electricity													
Other biofuels													
Total (according to Template Table 12)													
Sum of all technologies (Template Table 12)													
Gross final RES-E consumption (Template Table 4a)													
RES-1 including Article 21.2 (Template Table 4b)													
Gross final RES consumption (Template Table 4a)													
Sum of all values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))													
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)													
Co-operation mechanisms													
Transfer from other Member States and third countries													
Transfer to other Member States													
Total (Template Table 4a)													
All renewables including co-operation mechanisms													
Electricity													
Additional energy efficiency													
Heating and cooling													
Additional energy efficiency													
Transport													
Additional energy efficiency													
Total before aviation red. incl. efficiency													
Additional energy efficiency													
Total after aviation red. incl. efficiency													
Additional energy efficiency													
Heating and cooling													
Calculated heating and cooling													
Electricity													
Calculated electricity													
Transport incl. Art. 21.2 adjustment													
Calculated transport													
Transport excl. Art. 21.2 adjustment													
Overall renewable share													
Calculated overall renewable share													
Contribution from co-operation mechanism													
Calculated contribution from co-operation mechanism													
Contribution to co-operation mechanism													
Calculated contribution to co-operation mechanism													
Transport fuels target													
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)													
Overall renewable share													

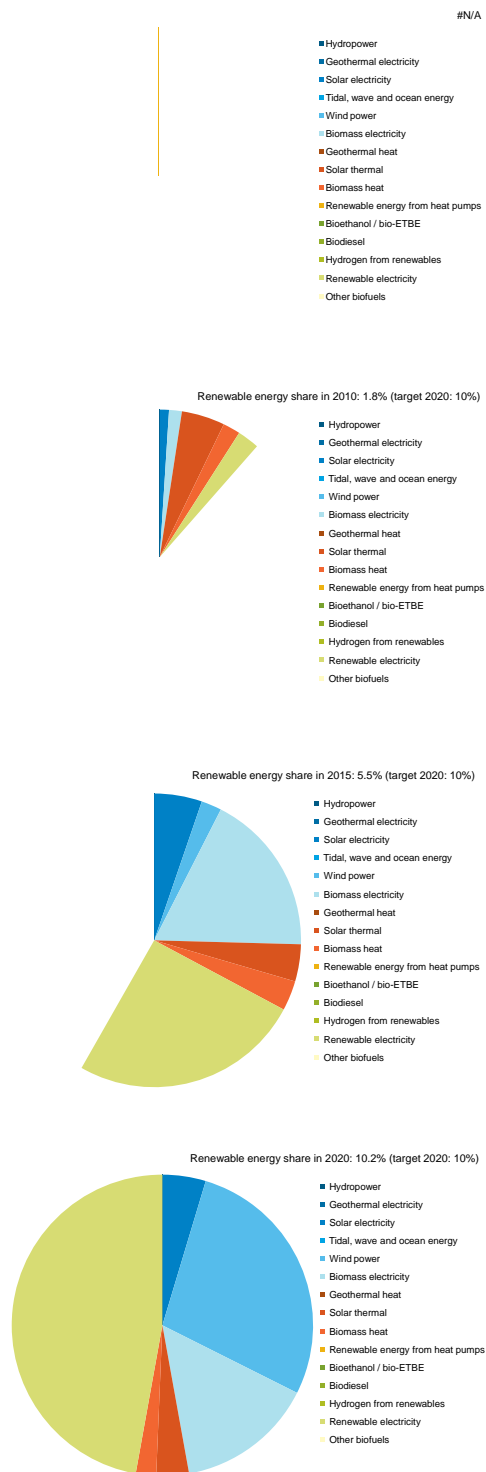
In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Luxembourg



The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 173 provides a background to the above figures.

Malta

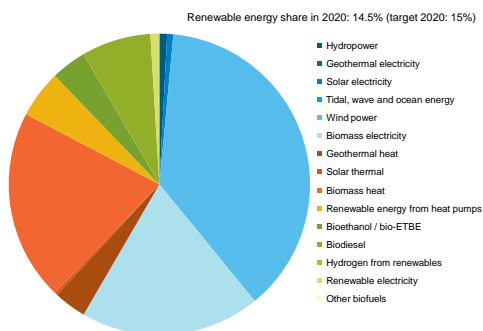
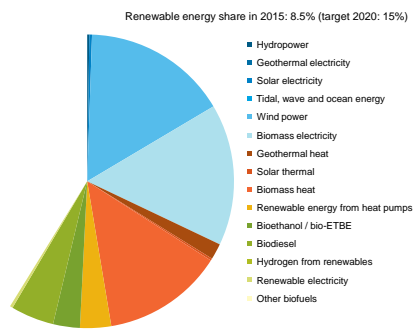
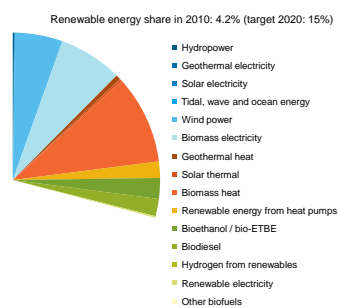
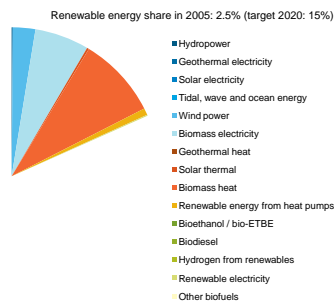


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 175 provides a background to the above figures.

		2005			2010			2015			2020				
		[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]		
Renewable production	Electricity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Hydropower < 10MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Hydropower 10MW - 10 MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Hydropower >10MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Hydropower (subtotal)	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0		
	Geothermal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Solar photovoltaic	n.a.	n.a.	n.a.	6	1	41.6	6.7	41	4	20.7	13.1	43	4	9.9
	Concentrated solar power	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
	Solar (subtotal)	0	0	0.0	6	1	41.6	6.7	41	4	20.7	13.1	43	4	9.9
	Tidal, wave and ocean energy	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
	Wind power	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
	Wind power (subtotal)	0	0	0.0	0	0	0.0	0.0	0	0	0.0	0	0	0.0	
	Onshore wind	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
	Offshore wind	n.a.	n.a.	n.a.	0	0	0.1	0.0	0	0	0.0	0.0	38	3	8.9
	Wind (subtotal)	0	0	0.0	0	0	0.1	0.0	0	0	0.0	0.0	216	19	50.0
	Solid biomass	n.a.	n.a.	n.a.	9	1	58.3	9.3	86	7	43.1	27.2	86	7	19.8
	Biogas	n.a.	n.a.	n.a.	0	0	0.0	0.0	0	0	0.0	0.0	50	4	11.5
	Biofuels	n.a.	n.a.	n.a.	9	1	58.3	9.3	86	7	43.1	27.2	86	7	19.8
	Biomass (subtotal)	0	0	0.0	9	1	58.3	9.3	86	7	43.1	27.2	86	7	19.8
	Total (according to Template Tables 10a/b)	n.a.	n.a.	n.a.	15	1	100.0	16.0	198	17	100.0	63.2	433	37	100.0
	Sum of all technologies (Template Tables 10a/b)	0	0	0.0	15	1	100.0	16.0	198	17	100.0	63.2	433	37	100.0
	Gross final RES-E consumption (Template Table 4a)	n.a.	n.a.	n.a.	1	1	78.1	12.5	17	17	99.7	63.0	433	37	99.4
Heating and cooling	Geothermal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Solar thermal	n.a.	n.a.	n.a.	3	71.4	31.5		3	55.4	10.1		3	61.7	5.0
	Solid biomass	n.a.	n.a.	n.a.	0	0.0	0.0		0	0.0	0.0		0	0.0	0.0
	Biogas	n.a.	n.a.	n.a.	1	28.6	12.6		2	44.6	8.2		2	38.5	3.1
	Biocombustibles	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Biomass (subtotal)	0	0	0.0	1	28.6	12.6		2	44.6	8.2		2	38.5	3.1
	Aerothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Geothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Hydrothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Renewable energy from heat pumps (subtotal)	0	0	0.0	0	0.0	0.0		0	0.0	0.0		0	0.0	0.0
	Total (according to Template Table 11)	4	100.0	44.1	4	100.0	44.1		5	100.0	18.3		4	100.0	8.1
	Sum of all technologies (Template Table 11)	0	0	0.0	4	100.0	44.1		5	100.0	18.3		4	100.0	8.1
	Gross final RES-HC consumption (Template Table 4a)	n.a.	n.a.	n.a.	4	133.3	50.0		5	101.0	18.5		5	111.9	9.1
Transport	Bioethanol / bio-ETBE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Biodiesel	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Hydrogen from renewables	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Renewable electricity	n.a.	n.a.	n.a.	1	43.0	16.0		17	327.9	63.1		37	275.3	67.7
	Other biofuels	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Total (according to Template Table 12)	3	100.0	37.3	3	100.0	37.3		5	100.0	19.3		14	100.0	24.6
	Sum of all technologies (Template Table 12)	0	0	0.0	1	43.0	16.0		17	327.9	63.1		37	275.3	67.7
	Gross final RES-E consumption (Template Table 4a)	n.a.	n.a.	n.a.	3	100.7	37.5		5	96.2	18.5		15	96.2	23.6
	RES-1 including Article 21.2 (Template Table 4b)	n.a.	n.a.	n.a.	4	134.2	50.0		7	134.6	25.9		18	133.1	32.7
All renewables excluding co-operation mechanisms	Gross final RES consumption (Template Table 4a)	n.a.	n.a.	n.a.	8		100.0		27		100.0		55		100.0
	Sum of total values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	0	0	0.0	7		81.4		10		37.6		18		32.7
Co-operation mechanisms	Transfer from other Member States and third countries	0	0	0.0	6				39				79		
	Transfer to other Member States	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.
	Total (Template Table 4a)	n.a.	n.a.	n.a.	8		100.0		27		100.0		55		100.0
Final consumption	Electricity	n.a.	n.a.	n.a.	226	43.7			258	44.7			291	46.6	
	Additional energy efficiency	n.a.	n.a.	n.a.	215	49.5			244	49.8			270	50.6	
Heating and cooling	Reference scenario	n.a.	n.a.	n.a.	46	8.9			66	11.4			76	12.2	
	Additional energy efficiency	n.a.	n.a.	n.a.	45	10.4			63	12.9			73	13.7	
Transport	Reference scenario	n.a.	n.a.	n.a.	152	29.4			159	27.6			165	26.4	
	Additional energy efficiency	n.a.	n.a.	n.a.	152	35.0			159	32.4			165	30.9	
Total before aviation red. incl. efficiency	Reference scenario	n.a.	n.a.	n.a.	517	100.0			577	100.0			625	100.0	
	Additional energy efficiency	n.a.	n.a.	n.a.	506	116.6			561	114.5			605	112.9	
Total after aviation red. incl. efficiency	Reference scenario	n.a.	n.a.	n.a.	n.a.	n.a.			n.a.	n.a.			n.a.	n.a.	
	Additional energy efficiency	n.a.	n.a.	n.a.	434	100.0			490	100.0			534	100.0	
Heating and cooling	Calculated heating and cooling	n.a.	n.a.	n.a.	7.9				7.9				6.2		
	Electricity	n.a.	n.a.	n.a.	8.9				8.9				6.8		
	Calculated electricity	n.a.	n.a.	n.a.	0.6				0.6				13.8		
	Transport	n.a.	n.a.	n.a.	2.8				2.8				10.7		
	Calculated transport	n.a.	n.a.	n.a.	2.6				2.6				10.9		
	Transport excl. Art. 21.2 adjustment	n.a.	n.a.	n.a.	2.0				2.0				8.2		
Overall renewable share	Overall renewable share	n.a.	n.a.	n.a.	1.8				1.8				5.5		
	Calculated overall renewable share	n.a.	n.a.	n.a.	1.8				1.8				5.5		
	Contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.				n.a.				n.a.		
	Contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.				n.a.				n.a.		
	Calculated contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.				n.a.				n.a.		
	Transport fuels target	n.a.	n.a.	n.a.	n.a.				n.a.				n.a.		
	Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	n.a.	n.a.	n.a.	0.0				2.0				4.5		

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1., 4a, 10a/b, 11 and 12 it is meant to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Netherlands

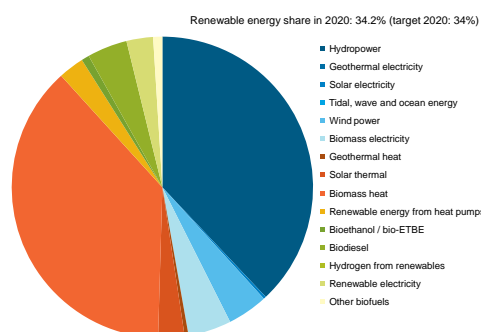
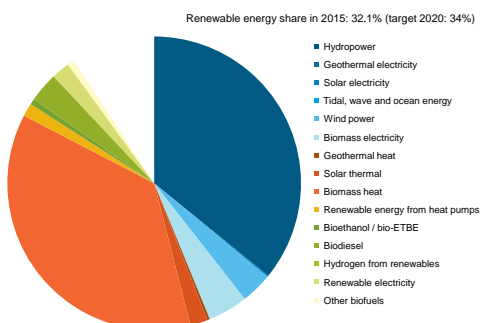
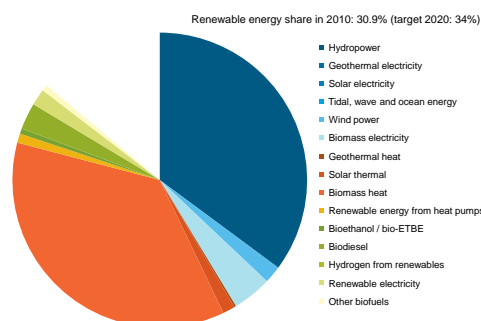
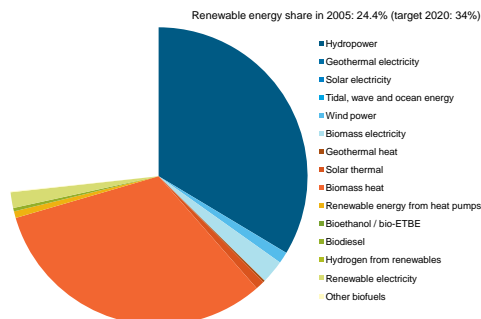


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 177 provides a background to the above figures.

	2005	2010	2015	2020
	[GWh]	[GWh]	[GWh]	[GWh]
	[%]	[%]	[%]	[%]
Renewable production				
Electricity				
Hydropower < 10 MW	n.a.	n.a.	n.a.	n.a.
Hydropower 10MW - 10 MW	n.a.	n.a.	n.a.	n.a.
Hydropower > 10MW	n.a.	n.a.	n.a.	n.a.
Hydropower (subtotal)	89	128	200	714
Geothermal	0	0	0	0
Solar photovoltaic	40	73	250	570
Concentrated solar power	0	0	0	0
Solar (subtotal)	40	73	250	570
Tidal, wave and ocean energy	0	0	0	0
Onshore wind	2067	3667	818	13372
Offshore wind	0	803	357	19036
Wind power (subtotal)	2067	4470	1174	32408
Solid biomass	4758	5103	11189	11975
Biogas	283	872	2161	4664
Bio-liquids	0	0	0	0
Biomass (subtotal)	5041	5975	13350	16639
Total (according to Template Tables 10a/b)	7233	10636	27442	50317
Sum of all technologies (Template Tables 10a/b)	7237	10646	27455	50331
Gross final RES-E consumption (Template Table 4a)	622	915	2360	4326
	622	915	2360	4326
Heating and cooling				
Geothermal	0	39	130	259
Solar thermal	16	20	17	23
Solid biomass	540	573	604	650
Biogas	69	111	174	288
Bio-liquids	0	0	0	0
Bio-SNG for grid feed-in	38	31	202	582
Biomass (subtotal)	647	715	980	1520
Aerothermal heat pumps	n.a.	35	81	117
Geothermal heat pumps	n.a.	90	161	242
Hydrothermal heat pumps	n.a.	0	3	11
Renewable energy from heat pumps (subtotal)	n.a.	132	252	377
Total (according to Template Table 11)	717	906	1380	2179
Sum of all technologies (Template Table 11)	717	906	1379	2179
Gross final RES-H/C consumption (Template Table 4a)	717	906	1380	2179
	717	906	1380	2179
Transport				
Bioethanol/ bio-ETBE	0	168	217	282
Biodiesel	0	139	350	552
Hydrogen from renewables	0	0	0	0
Renewable electricity	8	12	23	71
Other biofuels	n.a.	n.a.	n.a.	n.a.
Total (according to Template Table 12)	8	319	591	905
Sum of all technologies (Template Table 12)	8	319	590	905
Gross final RES-E consumption (Template Table 4a)	8	319	591	905
RES-T including Article 21.2 (Template Table 4b)	8	475	685	1097
Gross final RES consumption (Template Table 4a)	1339	2128	4307	7340
Sum of total values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	1347	2140	4308	7339
Transfer from other Member States and third countries	0	0	0	0
Transfer to other Member States	0	0	0	0
Co-operation mechanisms				
Total (Template Table 4a)	1339	2128	4307	7340
Reference scenario	10347	10627	11210	11681
Additional energy efficiency	10347	10627	11210	11681
Reference scenario	28436	n.a.	n.a.	n.a.
Additional energy efficiency	28436	24612	24618	24989
Reference scenario	11351	n.a.	n.a.	n.a.
Additional energy efficiency	11351	11699	11419	10634
Reference scenario	54010	n.a.	n.a.	n.a.
Additional energy efficiency	54010	51008	51698	52088
Reference scenario	53717	n.a.	n.a.	n.a.
Additional energy efficiency	53717	50240	50554	50532
Heating and cooling				
Calculated heating and cooling	2.5	3.7	5.6	8.7
Electricity	2.5	5.7	5.6	8.7
Calculated electricity	6.0	8.6	21.0	37.0
Transport incl. Art. 21.2 adjustment	0.1	4.1	6.0	10.3
Transport excl. Art. 21.2 adjustment	0.1	0.1	2.7	8.5
Overall renewable share	2.5	4.2	8.5	14.5
Calculated overall renewable share	2.5	4.2	8.5	14.5
Contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.
Calculated contribution from co-operation mechanism	0.0	0.0	0.0	0.0
Contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.
Calculated contribution to co-operation mechanism	0.0	0.0	0.0	0.0
Transport fuels target				
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	2.4	4.7	7.6	14.0

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to the counting of certain biofuels (lines 2) and renewable electricity in road transport (lines 2,5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Austria

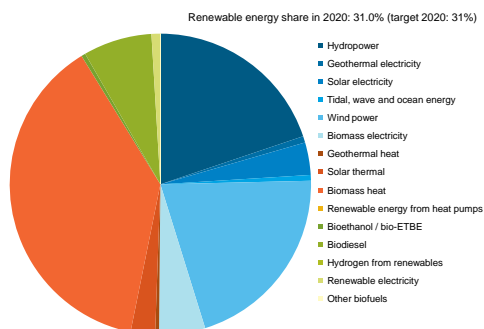
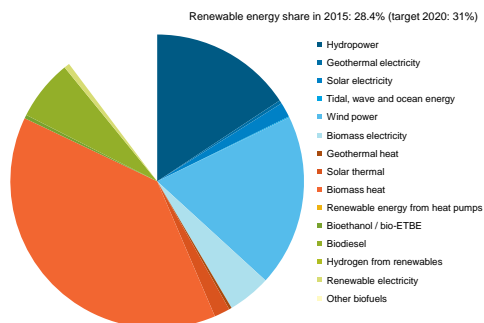
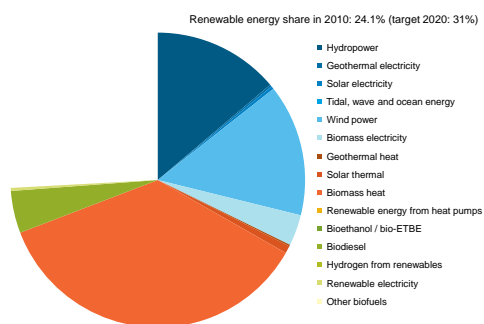
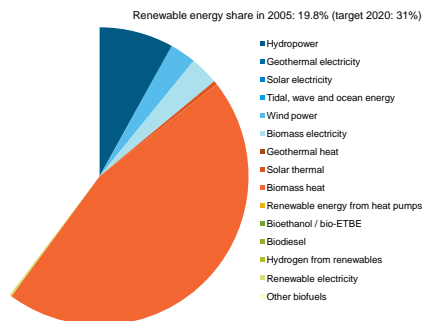


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 179 provides a background to the above figures.

	2005		2010		2015		2020	
	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]
Renewable production								
Electricity	1448	3.5	2129	4.7	2178	4.5	2326	4.4
Hydropower < 10 MW	3247	7.9	3400	7.5	3477	7.2	3715	7.1
Hydropower > 10 MW	32430	78.8	33013	72.7	33768	70.1	36071	68.9
Hydropower (subtotal)	37125	31.92	38542	84.9	39423	33.90	42112	80.4
Geothermal	2	0.0	2	0.0	2	0.0	2	0.0
Solar photovoltaic	21	2.0	85	7.0	170	15.0	306	26.0
Concentrated solar power	0	0.0	0	0.0	0	0.0	0	0.0
Solar (subtotal)	21	2.0	85	7.0	170	15.0	306	26.0
Tidal, wave and ocean energy	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wind power	1343	11.5	2034	17.5	3780	32.5	4811	41.4
Wind power (subtotal)	0	0.0	0	0.0	0	0.0	0	0.0
Onshore wind	2507	21.6	4131	35.5	4223	36.3	4520	39.0
Offshore wind	283	2.4	533	4.6	567	4.9	581	5.0
Solid biomass	283	2.4	4131	35.5	4223	36.3	4520	39.0
Biomethane	283	2.4	4131	35.5	4223	36.3	4520	39.0
Biogas	283	2.4	4131	35.5	4223	36.3	4520	39.0
Biomass (subtotal)	2623	22.3	4067	35.2	4826	41.5	5147	44.3
Total (according to Template Tables 10a/b)	41314	35.2	45383	39.2	48200	41.44	52377	45.04
Sum of all technologies (Template Tables 10a/b)	41314	35.2	45383	39.2	48200	41.44	52377	45.04
Gross final RES-E consumption (Template Table 4a)	3480	29.8	5277	45.1	48201	41.44	52378	45.03
Heating and cooling								
Solar thermal	92	2.9	127	3.5	181	4.8	269	6.4
Solid biomass	3025	94.1	4419	93.0	3447	90.5	3501	85.9
Biomethane	6	0.2	0	0.0	0	0.0	0	0.0
Biogas	0	0.0	0	0.0	0	0.0	0	0.0
Biomass (subtotal)	3033	94.4	4419	93.4	3463	90.9	3607	86.3
Aerothermal heat pumps	0	0.0	0	0.0	55	1.4	105	2.5
Geothermal heat pumps	0	0.0	0	0.0	4	0.1	26	0.6
Hydrothermal heat pumps	0	0.0	0	0.0	18	0.4	11	0.3
Renewable energy from heat pumps (subtotal)	69	2.1	110	2.6	137	3.5	263	6.3
Total (according to Template Table 11)	3213	100.0	4777	100.0	3808	100.0	4179	100.0
Sum of all technologies (Template Table 11)	3213	100.0	4777	100.0	3808	100.0	4179	100.0
Gross final RES-HC consumption (Template Table 4a)	3213	100.0	4777	100.0	3808	100.0	4179	100.0
Transport								
Bioethanol / bio-ETBE	0	0.0	54	9.6	61	9.7	80	9.3
Biodiesel	35	17.1	0.5	276	48.9	3.5	309	49.0
Hydrogen from renewables	0	0.0	0	0.0	0	0.0	0	0.0
Renewable electricity	162	79.0	2.4	171	30.3	2.2	191	30.3
Other biofuels	8	3.9	0.1	63	11.2	0.8	71	11.3
Total (according to Template Table 12)	205	100.0	3.0	564	100.0	7.1	631	100.0
Sum of all technologies (Template Table 12)	205	100.0	3.0	564	100.0	7.1	631	100.0
Gross final RES-E consumption (Template Table 4a)	205	100.0	3.0	564	100.0	7.1	631	100.0
RES-1 including Article 21.2 (Template Table 4b)	205	100.0	3.0	567	100.5	7.1	643	101.9
All renewables excluding co-operation mechanisms	6735	100.0	7952	100.0	8392	100.0	9266	100.0
Sum of all values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	6808	101.1	7952	100.0	8392	100.0	9267	100.0
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	6970	101.1	8123	101.1	8585	101.1	9539	101.1
Co-operation mechanisms								
Transfer from other Member States	0	0.0	0	0.0	0	0.0	0	0.0
Transfer to other Member States	0	0.0	0	0.0	0	0.0	0	0.0
Total (Template Table 4a)	6735	100.0	7952	100.0	8392	100.0	9266	100.0
Final consumption								
Electricity	5725	20.7	5634	21.9	6091	21.8	6666	21.8
Additional energy efficiency	5725	20.7	5634	21.9	5817	22.3	6377	23.5
Heating and cooling	13206	47.8	12007	46.7	13009	46.6	14274	46.6
Additional energy efficiency	13206	47.8	12007	46.7	12203	46.7	12802	47.2
Transport	8945	32.4	8336	32.4	9055	32.5	10065	32.9
Additional energy efficiency	8945	32.4	8336	32.4	8374	32.1	8414	31.0
Total before aviation red. incl. efficiency	27610	100.0	25726	100.0	27893	100.0	30622	100.0
Additional energy efficiency	27610	100.0	25726	100.0	26113	100.0	27109	100.0
Total after aviation red. incl. efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Additional energy efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Heating and cooling								
Calculated heating and cooling	24.3	24.3	30.5	30.5	31.2	31.2	32.6	32.6
Electricity								
Calculated electricity	60.8	60.8	69.3	69.3	71.2	71.2	70.6	70.6
Transport incl. Art. 21.2 adjustment	2.3	2.3	6.8	6.8	7.7	7.7	11.4	11.4
Transport excl. Art. 21.2 adjustment	2.3	2.3	6.8	6.8	7.7	7.7	11.4	11.4
Overall renewable share	24.4	24.4	30.9	30.9	32.1	32.1	34.2	34.2
Overall renewable share	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Contribution from co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calculated contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calculated contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transport fuels target	23.3	23.3	25.4	25.4	28.1	28.1	34.0	34.0
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	23.3	23.3	25.4	25.4	28.1	28.1	34.0	34.0

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2,5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/UriLex/UriLex.do?uri=CELEX:32009D0548:EN;NOT>

Portugal

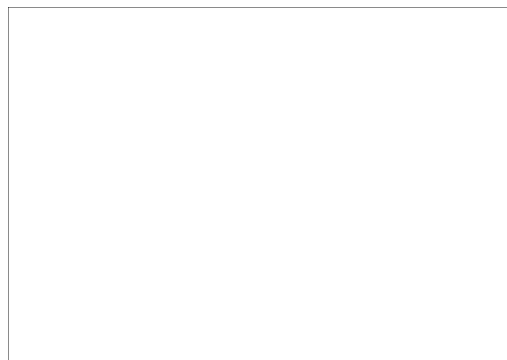
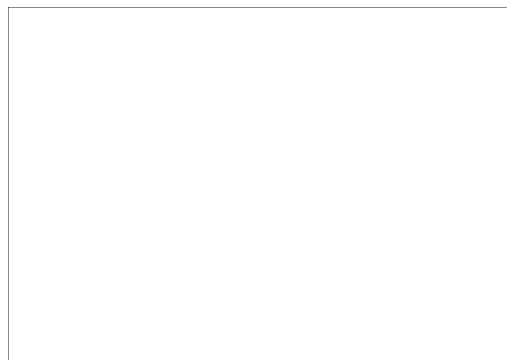
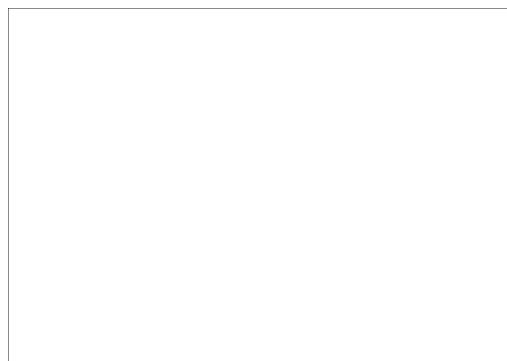
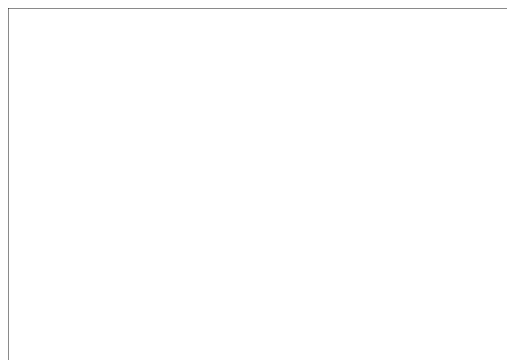


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 181 provides a background to the above figures.

Renewable production	Electricity	2005			2010			2015			2020				
		[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]		
	Hydropower < 10 MW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Hydropower 10 MW - 10 MW	381	33	4.3	827	71	3.6	16	1108	95	3.8	1.8	1511	130	4.2
	Hydropower >10MW	4737	407	53.1	8916	767	39.2	17.1	9993	859	34.0	15.9	12562	1080	35.3
	Hydropower (subtotal)	5118	440	57.3	9742	838	42.8	18.7	11101	955	37.7	17.6	14074	1210	39.6
	Geothermal	55	5	0.6	163	14	0.7	0.3	260	22	0.9	0.4	488	42	1.4
	Solar photovoltaic	3	0	0.0	230	20	1.0	0.4	797	69	2.7	1.3	1475	127	4.1
	Concentrated solar power	0	0	0.0	0	0	0.0	0.0	360	31	1.2	0.6	1000	86	2.8
	Solar (subtotal)	3	0	0.0	230	20	1.0	0.4	1157	99	3.9	1.8	2475	213	7.0
	Tidal, wave and ocean energy	0	0	0.0	1	0	0.0	0.0	75	6	0.3	0.1	437	38	1.2
	Onshore wind	1773	152	19.9	10214	878	44.9	19.6	13420	1154	45.6	21.3	14416	1240	40.5
	Offshore wind	0	0	0.0	0	0	0.0	0.0	60	5	0.2	0.1	180	15	0.5
	Wind power (subtotal)	1773	152	19.9	10214	878	44.9	19.6	13480	1159	45.5	21.3	14596	1255	41.0
	Solid biomass	934	80	10.5	1092	94	4.8	2.1	1468	126	5.0	2.3	1468	126	4.1
	Bio-gas	34	3	0.4	130	11	0.4	0.2	368	32	1.3	0.6	595	45	1.5
	Biofuels	1008	87	11.3	1170	101	5.1	2.2	1523	131	5.2	2.4	1523	131	4.3
	Biomass (subtotal)	1976	170	22.1	2400	206	10.5	4.6	3358	289	11.4	5.3	3516	302	9.9
	Total (according to Template Tables 10a/b)	8925	767	100.0	22751	1956	100.0	43.7	29430	2531	100.0	46.7	35584	3060	100.0
	Sum of all technologies (Template Tables 10a/b)	8925	767	100.0	22751	1956	100.0	43.7	29430	2531	100.0	46.7	35584	3060	100.0
	Gross final RES-E consumption (Template Table 4a)	1337	174.2	34.6	22750	1956	100.0	43.7	29351	2531	100.0	46.7	35586	3060	100.0
	Heating and cooling	1	0.0	0.0	10	0.4	0.2	0.2	18	0.7	0.3	0.3	25	1.0	0.4
	Solar thermal	22	0.9	0.6	50	2.2	1.1	0.5	105	4.3	1.9	0.9	160	6.4	2.6
	Solid biomass	1785	70.6	46.2	1514	67.6	33.5	15.1	1515	61.5	27.9	1484	50.2	24.6	
	Bio-gas	10	0.7	0.2	10	0.4	0.2	0.1	21	0.9	0.3	21	0.9	0.3	
	Biofuels	713	28.2	18.4	655	29.2	14.2	6.8	801	32.5	14.8	801	32.0	13.9	
	Biomass (subtotal)	2508	99.1	64.9	2179	97.3	48.7	23.3	2339	95.0	43.1	2322	92.6	38.4	
	Aerothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Geothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Hydrothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Renewable energy from heat pumps (subtotal)	0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0
	Total (according to Template Table 11)	2530	100.0	65.4	2240	100.0	50.0	24.6	2462	100.0	45.4	25.07	100.0	41.5	
	Sum of all technologies (Template Table 11)	2531	100.0	65.5	2239	100.0	50.0	24.6	2462	100.0	45.4	25.07	100.0	41.5	
	Gross final RES-HC consumption (Template Table 4a)	2529	100.0	65.4	2240	100.0	50.0	24.6	2462	100.0	45.4	25.07	100.0	41.5	
	Bioethanol / bio-ETBE	0	0.0	0.0	0	0.0	0.0	0.0	24	5.2	0.4	27	5.0	0.4	
	Biodiesel	0	0.0	0.0	281	93.4	6.3	2.6	405	86.9	7.5	450	84.1	7.4	
	Hydrogen from renewables	0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	
	Renewable electricity	12	100.0	0.3	20	6.6	0.4	0.4	37	7.9	0.7	58	10.8	1.0	
	Other biofuels	0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	
	Total (according to Template Table 12)	12	100.0	0.3	301	100.0	6.7	466	466	100.0	8.6	535	100.0	8.9	
	Sum of all technologies (Template Table 12)	12	100.0	0.3	301	100.0	6.7	466	466	100.0	8.6	535	100.0	8.9	
	Gross final RES-E consumption (Template Table 4a)	12	100.0	0.3	301	100.0	6.7	466	466	100.0	8.6	535	100.0	8.9	
	RES-1 including Article 21.2 (Template Table 4b)	12	100.0	0.3	305	101.3	6.8	479	479	102.8	8.8	574	107.3	9.5	
	Gross final RES consumption (Template Table 4a)	3866	100.0	100.0	4476	100.0	100.0	5421	100.0	100.0	100.0	6044	100.0		
	Sum of all technologies in Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	3297	85.3	85.3	4477	100.0	100.0	5422	100.0	100.0	100.0	6044	100.0		
	Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	3310	86.3	86.3	4496	100.0	100.0	5452	100.0	100.0	100.0	6102	100.0		
	Transfer from other Member States	0	0.0	0.0	0	0.0	0.0	0	0	0.0	0.0	0	0.0		
	Transfer to other Member States	0	0.0	0.0	0	0.0	0.0	0	0	0.0	0.0	0	0.0		
	Total (Template Table 4a)	3866	100.0	100.0	4476	100.0	100.0	5421	100.0	100.0	100.0	6044	100.0		
	Final consumption														
	Electricity	4076	21.3	21.3	4076	21.3	21.3	5547	28.5	28.5	28.5	6044	n.a.		
	Additional energy efficiency	4076	21.3	21.3	5201	27.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Heating and cooling	7706	40.4	40.4	7706	40.4	40.4	8197	42.1	42.1	n.a.	n.a.	n.a.		
	Additional energy efficiency	7706	40.4	40.4	7839	40.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Transport	5980	31.3	31.3	5980	31.3	31.3	5743	29.5	29.5	n.a.	n.a.	n.a.		
	Additional energy efficiency	5980	31.3	31.3	5986	31.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
	Total before aviation red. incl. efficiency	19094	100.0	100.0	19094	100.0	100.0	19467	100.0	100.0	n.a.	n.a.	n.a.		
	Additional energy efficiency	19094	100.0	100.0	19293	100.0	100.0	19467	100.0	100.0	n.a.	n.a.	n.a.		
	Total after aviation red. incl. efficiency	19094	100.0	100.0	19094	100.0	100.0	19467	100.0	100.0	n.a.	n.a.	n.a.		
	Additional energy efficiency	19094	100.0	100.0	19293	100.0	100.0	19467	100.0	100.0	n.a.	n.a.	n.a.		
	Heating and cooling	31.9	31.9	31.9	30.7	30.7	30.7	31.9	31.9	31.9	n.a.	n.a.	n.a.		
	Calculated heating and cooling	32.8	32.8	32.8	28.6	28.6	28.6	50.5	50.5	50.5	n.a.	n.a.	n.a.		
	Electricity	32.8	32.8	32.8	37.6	37.6	37.6	55.3	55.3	55.3	n.a.	n.a.	n.a.		
	Calculated electricity	0.2	0.2	0.2	5.0	5.0	5.0	8.0	8.0	8.0	n.a.	n.a.	n.a.		
	Transport incl. Art. 21.2 adjustment	0.2	0.2	0.2	5.1	5.1	5.1	5.1	5.1	5.1	n.a.	n.a.	n.a.		
	Calculated transport	0.2	0.2	0.2	5.0	5.0	5.0	5.0	5.0	5.0	n.a.	n.a.	n.a.		
	Transport excl. Art. 21.2 adjustment	19.8	19.8	19.8	24.1	24.1	24.1	28.4	28.4	28.4	n.a.	n.a.	n.a.		
	Overall renewable share	20.2	20.2	20.2	23.2	23.2	23.2	24.1	24.1	24.1	n.a.	n.a.	n.a.		
	Calculated overall renewable share	19.8	19.8	19.8	24.1	24.1	24.1	28.4	28.4	28.4	n.a.	n.a.	n.a.		
	Contribution from co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.a.	n.a.	n.a.		
	Calculated contribution from co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.a.	n.a.	n.a.		
	Contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.a.	n.a.	n.a.		
	Calculated contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.a.	n.a.	n.a.		
	Transport fuels target	20.5	20.5	20.5	22.6	22.6	22.6	25.2	25.2	25.2	n.a.	n.a.	n.a.		
	Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	20.5	20.5	20.5	22.6	22.6	22.6	25.2	25.2	25.2	n.a.	n.a.	n.a.		

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>.

Romania

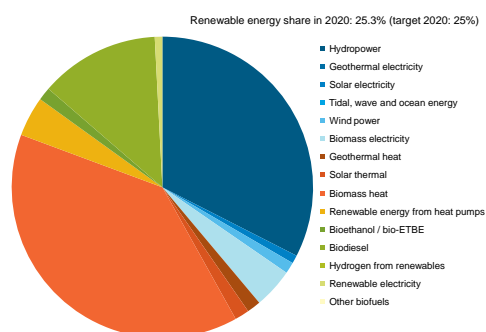
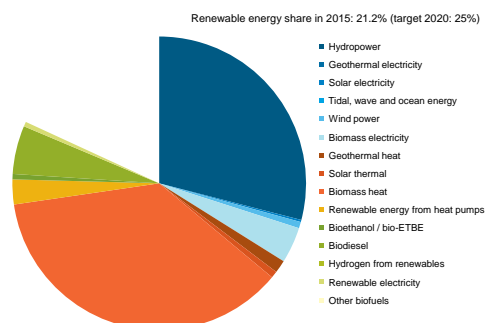
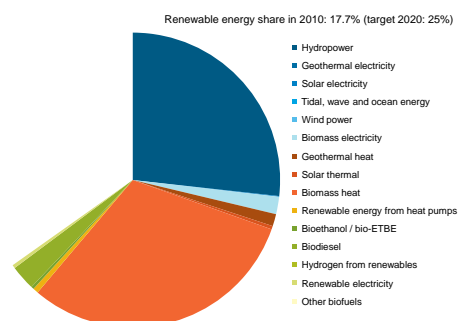
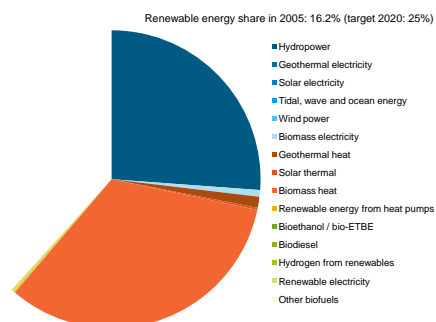


Template Tables 11 and 12 were not reported in the Romanian NREAP document. Constructing total RES pie charts is thus not possible. The table on page 183 only provides information on RES-E and gross final energy consumption for Romania.

		2005		2010		2015		2020		
		[GWh]	[%]	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]	[%]
Renewable production	Electricity	61	0.4	95	0.6	135	1.2	164	1.4	0.2
	Hydropower < 10MW	538	3.3	624	3.7	1054	9.1	1195	10.3	3.8
	Hydropower 10MW - 10 MW	15493	46.3	15848	92.7	17490	150.4	18410	158.3	21.8
	Hydropower > 10MW	16091	138.4	16567	142.5	18679	160.6	19768	170.0	23.4
	Geothermal	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Solar photovoltaic	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Concentrated solar power	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Solar (subtotal)	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Tidal, wave and ocean energy	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Onshore wind	0	0.0	460	2.7	914	8.0	1389	12.1	4.5
	Offshore wind	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Wind power (subtotal)	0	0.0	460	2.7	914	8.0	1389	12.1	4.5
	Solid biomass	0	0.0	18	0.1	18	0.1	18	0.1	0.0
	Biogas	0	0.0	19	0.1	19	0.1	19	0.1	0.0
	Biofuels	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Biomass (subtotal)	0	0.0	67	0.4	67	0.4	67	0.4	0.0
Total (according to Template Tables 10a/b)		16091	138.4	17094	147.0	25233	236.7	31388	269.9	37.1
Sum of all technologies (Template Tables 10a/b)		16091	138.4	17094	147.0	25233	236.7	31388	269.9	37.1
Gross final RES-E consumption (Template Table 4a)		1347	9.7	1433	9.7	2333	98.6	2660	98.8	36.7
Heating and cooling	Geothermal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Solar thermal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Solid biomass	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Biogas	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Biofuels	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Biomass (subtotal)	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Aerothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Geothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Hydrothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Renewable energy from heat pumps (subtotal)	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Total (according to Template Table 11)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Sum of all technologies (Template Table 11)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Gross final RES-HC consumption (Template Table 4a)	3516	n.a.	714	n.a.	3000	n.a.	4038	n.a.	55.6
Transport	Bioethanol / bio-ETBE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Biodiesel	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Hydrogen from renewables	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Renewable electricity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Other biofuels	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total (according to Template Table 12)		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sum of all technologies (Template Table 12)		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gross final RES-E consumption (Template Table 4a)		58	n.a.	275	n.a.	436	n.a.	564	n.a.	7.8
RES-1 including Article 21.2 (Template Table 4b)		58	n.a.	275	n.a.	436	n.a.	564	n.a.	7.8
Gross final RES consumption (Template Table 4a)		4921	100.0	4829	100.0	5769	100.0	7268	100.0	100.0
Sum of all values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))		1384	28.1	1470	32.5	2367	41.0	2699	41.0	37.1
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)		1384	28.1	1470	32.5	2367	41.0	2699	41.0	37.1
Co-operation mechanisms	Transfer from other Member States and third countries	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	Transfer to other Member States	0	0.0	0	0.0	0	0.0	0	0.0	0.0
All renewables including co-operation mechanisms	Total (Template Table 4a)	4921	100.0	4829	100.0	5769	100.0	7268	100.0	100.0
	Reference scenario	4601	16.7	5350	20.4	6189	20.1	7439	21.6	19.7
	Additional energy efficiency	4601	16.7	5350	20.7	5655	19.8	6334	20.9	17.1
Heating and cooling	Reference scenario	18779	68.2	16056	61.1	18943	61.4	20696	60.2	55.7
	Additional energy efficiency	18779	68.2	15788	61.0	17572	61.4	18316	60.5	50.6
Transport	Reference scenario	4139	15.0	4856	18.5	5707	18.5	6239	18.2	16.7
	Additional energy efficiency	4139	15.0	4725	18.3	5379	18.8	5628	18.6	15.3
Total before aviation red. incl. efficiency	Reference scenario	27519	100.0	26261	100.0	30838	100.0	34374	100.0	100.0
	Additional energy efficiency	27519	100.0	25863	100.0	28606	100.0	30278	100.0	100.0
Total after aviation red. incl. efficiency	Reference scenario	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Additional energy efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Heating and cooling	Heating and cooling	187	0.7	179	0.7	179	0.7	179	0.7	0.5
	Calculated heating and cooling	18.7	0.7	17.9	0.7	17.9	0.7	17.1	0.7	0.5
Electricity	Electricity	30.1	1.1	27.5	1.1	27.5	1.1	41.9	1.2	11.3
	Calculated electricity	29.3	1.1	26.8	1.1	26.8	1.1	41.3	1.2	11.1
Transport incl. Art. 21.2 adjustment	Transport	1.4	0.0	5.8	0.2	5.8	0.2	8.1	0.2	2.3
	Calculated transport	1.4	0.0	5.8	0.2	5.8	0.2	8.1	0.2	2.3
Transport excl. Art. 21.2 adjustment	Transport	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Calculated transport	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Overall renewable share	Overall renewable share	17.9	0.1	17.5	0.1	17.5	0.1	20.1	0.1	5.3
	Calculated overall renewable share	17.9	0.1	17.5	0.1	17.5	0.1	20.1	0.1	5.3
	Contribution from co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Calculated contribution from co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Calculated contribution to co-operation mechanism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transport fuels target	Transport fuels target	17.8	0.1	19.0	0.1	19.0	0.1	20.6	0.1	5.7
	Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	17.8	0.1	19.0	0.1	19.0	0.1	20.6	0.1	5.7

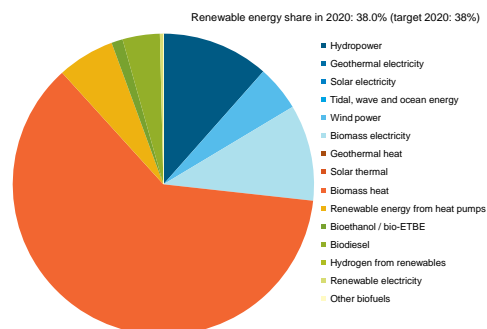
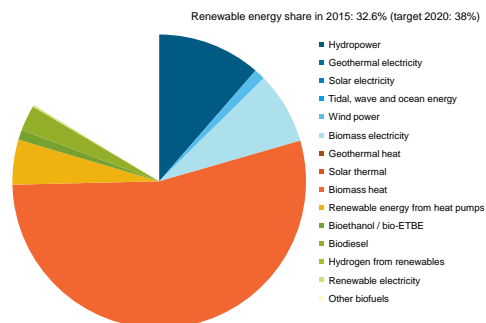
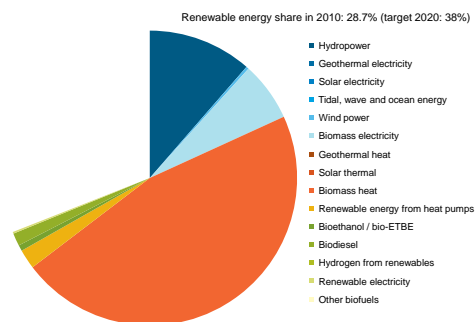
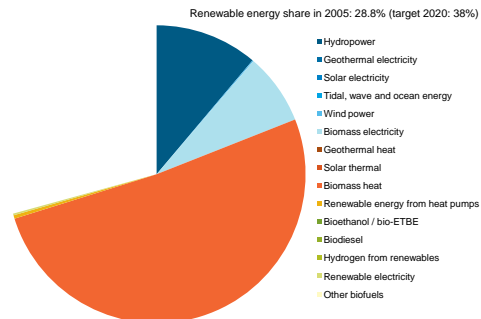
In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1.
 The columns indicating percentages (%) have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario.
 Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5).
 Where is referred to Tables 1., 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

Slovenia



The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 185 provides a background to the above figures.

Finland

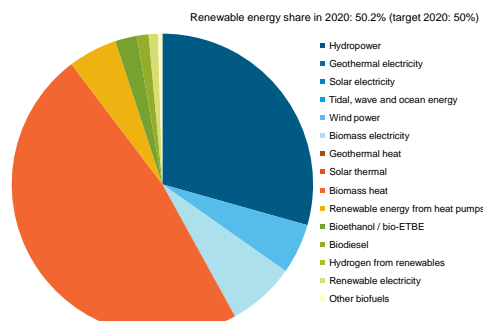
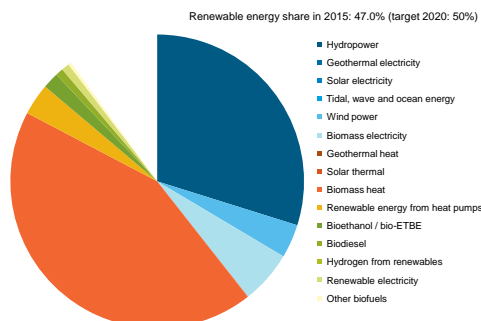
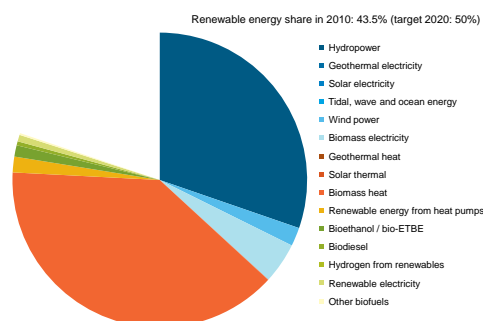
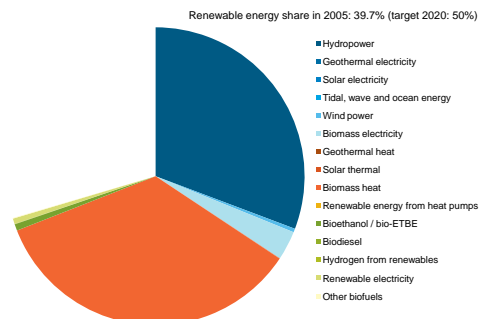


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 187 provides a background to the above figures.

	2005		2010		2015		2020	
	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]	[GWh]	[%]
Renewable production								
Electricity	140	12	0.6	0.2	150	13	0.6	0.1
Hydropower < 10 MW	1260	108	5.3	1.4	1290	111	5.7	1.5
Hydropower > 10 MW	12510	1076	52.7	14.2	12780	1099	49.9	12.3
Hydropower (subtotal)	13910	1196	58.6	15.8	14210	1222	55.5	13.7
Geothermal	0	0	0.0	0.0	0	0	0.0	0.0
Solar photovoltaic	0	0	0.0	0.0	0	0	0.0	0.0
Concentrated solar power	0	0	0.0	0.0	0	0	0.0	0.0
Solar (subtotal)	0	0	0.0	0.0	0	0	0.0	0.0
Tidal, wave and ocean energy	0	0	0.0	0.0	0	0	0.0	0.0
Onshore wind	150	13	0.6	0.2	n.a.	n.a.	n.a.	n.a.
Offshore wind	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wind power (subtotal)	150	13	0.6	0.2	360	31	1.6	0.4
Solid biomass	9640	829	40.6	11.0	3930	338	17.3	4.6
Biofuels	20	2	0.1	0.0	40	3	0.2	0.0
Biofuels (subtotal)	n.a.	n.a.	n.a.	n.a.	4120	354	18.2	4.8
Biomass (subtotal)	9660	831	40.7	11.0	8090	696	35.7	9.5
Total (according to Template Tables 10a/b)	23730	2040	100.0	27.0	22660	1948	100.0	26.4
Sum of all technologies (Template Tables 10a/b)	23720	2030	99.3	26.9	22660	1950	100.1	26.4
Gross final RES-E consumption (Template Table 4a)								
Heating and cooling								
Solar thermal	0	0	0.0	0.0	0	0	0.0	0.0
Solid biomass	5450	98.6	72.1		2710	52.0	36.7	
Biofuels	40	0.7	0.5		30	0.6	2.1	
Biofuels (subtotal)	5490	99.3	72.6		2240	43.0	30.4	
Aerothermal heat pumps	n.a.	n.a.	n.a.	n.a.	4980	95.6	67.5	
Geothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydrothermal heat pumps	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Renewable energy from heat pumps (subtotal)	n.a.	n.a.	n.a.	n.a.	230	4.4	3.1	
Total (according to Template Table 11)	5530	100.0	73.1		5210	100.0	70.6	
Sum of all technologies (Template Table 11)	5530	100.0	73.1		5210	100.0	70.6	
Gross final RES-H/C consumption (Template Table 4a)								
Bioethanol / bio-ETBE	0	0	0.0	0.0	70	30.4	0.9	
Biodiesel	0	0	0.0	0.0	150	65.2	2.0	
Hydrogen from renewables	0	0	0.0	0.0	0	0	0.0	
Renewable electricity	20	100.0	0.3		20	8.7	0.3	
Other biofuels	0	0	0.0	0.0	0	0	0.0	
Total (according to Template Table 12)	20	100.0	0.3		230	100.0	3.1	
Sum of all technologies (Template Table 12)	20	100.0	0.3		240	104.3	3.3	
Gross final RES-E consumption (Template Table 4a)					220	95.7	3.0	
RES-1 including Article 21.2 (Template Table 4b)	0	0	0.0	0.0	230	100.0	3.1	
Gross final RES consumption (Template Table 4a)	7560	100.0	100.0		7380	100.0	100.0	
Sum of all values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	7570	100.1			7368	99.8		
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	7590				7398			
Transfer from other Member States and third countries	0	0	0.0	0.0	0	0	0.0	0.0
Transfer to other Member States	0	0	0.0	0.0	0	0	0.0	0.0
Total (Template Table 4a)	7560	100.0	100.0		7380	100.0	100.0	
Final consumption								
Electricity	7530	28.7			n.a.	n.a.		
Additional energy efficiency	7530	28.7			7550	29.3		
Heating and cooling	13970	53.2			n.a.	n.a.		
Additional energy efficiency	13970	53.2			14010	54.5		
Transport	4220	16.1			n.a.	n.a.		
Additional energy efficiency	4220	16.1			4030	15.7		
Total before aviation red. incl. efficiency	26260	100.0			n.a.	n.a.		
Additional energy efficiency	26260	100.0			25750	100.0		
Total after aviation red. incl. efficiency	n.a.	n.a.			n.a.	n.a.		
Additional energy efficiency	n.a.	n.a.			n.a.	n.a.		
Heating and cooling	400				370			
Calculated heating and cooling	39.6				37.2			
Electricity	27.0				26.0			
Calculated electricity	27.0				25.8			
Transport incl. Art. 21.2 adjustment	0.0				6.0			
Calculated transport	0.5				5.7			
Transport excl. Art. 21.2 adjustment	0.5				5.7			
Overall renewable share	28.8				28.7			
Calculated overall renewable share	28.8				28.7			
Contribution from co-operation mechanism	0.0				0.0			
Calculated contribution from co-operation mechanism	0.0				0.0			
Contribution to co-operation mechanism	0.0				0.0			
Calculated contribution to co-operation mechanism	0.0				0.0			
Transport fuels target	100				100			
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	28.5				30.4			
Share								
Electricity	7530	28.7			n.a.	n.a.		
Additional energy efficiency	7530	28.7			7550	29.3		
Heating and cooling	13970	53.2			n.a.	n.a.		
Additional energy efficiency	13970	53.2			14010	54.5		
Transport	4220	16.1			n.a.	n.a.		
Additional energy efficiency	4220	16.1			4030	15.7		
Total before aviation red. incl. efficiency	26260	100.0			n.a.	n.a.		
Additional energy efficiency	26260	100.0			25750	100.0		
Total after aviation red. incl. efficiency	n.a.	n.a.			n.a.	n.a.		
Additional energy efficiency	n.a.	n.a.			n.a.	n.a.		
Heating and cooling	400				370			
Calculated heating and cooling	39.6				37.2			
Electricity	27.0				26.0			
Calculated electricity	27.0				25.8			
Transport incl. Art. 21.2 adjustment	0.0				6.0			
Calculated transport	0.5				5.7			
Transport excl. Art. 21.2 adjustment	0.5				5.7			
Overall renewable share	28.8				28.7			
Calculated overall renewable share	28.8				28.7			
Contribution from co-operation mechanism	0.0				0.0			
Calculated contribution from co-operation mechanism	0.0				0.0			
Contribution to co-operation mechanism	0.0				0.0			
Calculated contribution to co-operation mechanism	0.0				0.0			
Transport fuels target	100				100			
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)	28.5				30.4			

In "Final consumption" values for the year 2005 refer to the "base year" in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the "Additional energy efficiency" scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/Uri/UriServ/Uri?uri=CELEX:32009D0548:EN:NOT>

Sweden

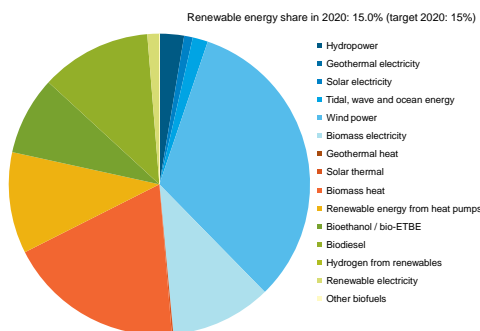
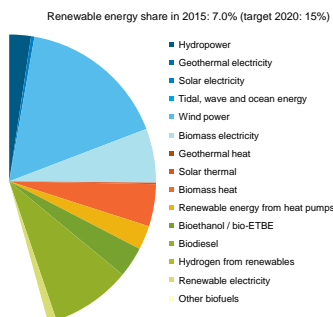
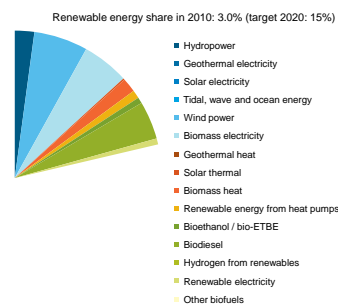
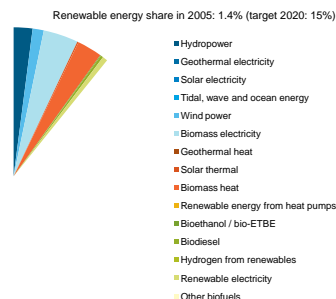


The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 189 provides a background to the above figures.

	2005	2010	2015	2020
	[GWh]	[ktoe]	[%]	[%]
Renewable production				
Electricity				
Hydropower < 10 MW	458	39	0.6	0.3
Hydropower 10 MW - 10 MW	3027	260	3.5	1.7
Hydropower > 10 MW	69318	5821	78.1	37.1
Hydropower (subtotal)	72874	6266	89.5	45.8
Geothermal	n.a.	n.a.	n.a.	n.a.
Solar photovoltaic	0	0	0.0	0.0
Concentrated solar power	n.a.	n.a.	n.a.	n.a.
Solar (subtotal)	0	0	0.0	0.0
Tidal, wave and ocean energy	n.a.	n.a.	n.a.	n.a.
Onshore wind	877	75	1.1	0.6
Offshore wind	62	5	0.1	0.0
Wind power (subtotal)	939	81	1.2	0.6
Solid biomass	7452	641	9.2	4.7
Biofuels	53	5	0.1	0.0
Biomethane	65	6	0.1	0.0
Biomass (subtotal)	7506	645	9.2	4.7
Total (according to Template Tables 10a/b)	81384	6998	100.0	51.1
Sum of all technologies (Template Tables 10a/b)	81319	6929	99.9	50.9
Gross final RES-E consumption (Template Table 4a)	6065	94.4	48.3	n.a.
Heating and cooling				
Solar thermal	n.a.	n.a.	n.a.	n.a.
Solid biomass	6992	98.7	51.1	49.7
Biofuels	21	2	0.2	0.2
Biomethane	65	0.9	0.5	0.4
Biomass (subtotal)	7078	99.9	51.7	50.2
Aerothermal heat pumps	0	0	0.0	0.0
Geothermal heat pumps	0	0	0.0	0.0
Hydrothermal heat pumps	0	0	0.0	0.0
Renewable energy from heat pumps (subtotal)	0	0	0.0	0.0
Total (according to Template Table 11)	7084	100.0	51.7	51.7
Sum of all technologies (Template Table 11)	7084	100.0	51.7	51.7
Gross final RES-HC consumption (Template Table 4a)	144	50.0	1.1	n.a.
Transport				
Biodiesel	9	3.1	0.1	n.a.
Hydrogen from renewables	0	0	0.0	0.0
Renewable electricity	121	42.0	0.9	n.a.
Other biofuels	13	4.5	0.1	n.a.
Total (according to Template Table 12)	238	100.0	2.1	n.a.
Sum of all technologies (Template Table 12)	237	99.7	2.1	n.a.
Gross final RES-E consumption (Template Table 4a)	288	100.0	2.1	n.a.
RES-1 including Article 21.2 (Template Table 4b)	301	104.5	2.2	n.a.
All renewables excluding co-operation mechanisms				
Gross final RES consumption (Template Table 4a)	13689	100.0	100.0	100.0
Sum of all values from Template Tables 10a/b, 11 and 12 (corr. Art 5(1))	14249	104.1	102.4	101.1
Sum of all technologies in Template Tables 10a/b, 11 and 12 (graphs)	14363	162.12	n.a.	n.a.
Co-operation mechanisms				
Transfer from other Member States	n.a.	n.a.	n.a.	n.a.
Transfer to other Member States	n.a.	n.a.	n.a.	n.a.
All renewables including co-operation mechanisms				
Total (Template Table 4a)	13689	100.0	100.0	100.0
Reference scenario	12987	37.6	13650	36.1
Additional energy efficiency	12987	37.6	13089	36.3
Reference scenario	13190	38.2	15339	40.6
Additional energy efficiency	13190	38.2	14448	40.0
Reference scenario	7473	21.6	7923	20.9
Additional energy efficiency	7473	21.6	7686	21.3
Reference scenario	34519	100.0	37826	100.0
Additional energy efficiency	34519	100.0	36689	100.0
Reference scenario	n.a.	n.a.	n.a.	n.a.
Additional energy efficiency	n.a.	n.a.	n.a.	n.a.
Heating and cooling				
Heating and cooling	n.a.	n.a.	n.a.	n.a.
Calculated heating and cooling	53.7	57.0	57.0	59.8
Electricity	50.9	54.9	54.9	58.9
Calculated electricity	4.0	7.4	7.4	10.7
Transport	4.0	7.5	7.5	10.7
Calculated transport	3.9	6.9	6.9	9.7
Transport incl. Art. 21.2 adjustment	n.a.	n.a.	n.a.	n.a.
Transport excl. Art. 21.2 adjustment	n.a.	n.a.	n.a.	n.a.
Overall renewable share				
Overall renewable share	39.7	43.5	43.5	50.2
Calculated overall renewable share	n.a.	n.a.	n.a.	n.a.
Contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.
Calculated contribution from co-operation mechanism	n.a.	n.a.	n.a.	n.a.
Contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.
Calculated contribution to co-operation mechanism	n.a.	n.a.	n.a.	n.a.
Transport fuels target				
Transport fuels target	39.8	41.6	43.9	100
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)				49.0

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009D0548:EN:NOT>

United Kingdom



The *pie charts* have been based on absolute energy values in ktoe whereas the figure *titles* display information on the share of renewables in a specific year in comparison to the target for the year 2020. The shares also contain information about the future gross final energy consumption, which in some countries might increase considerably up to 2020. For some countries the above figures may therefore seem counter-intuitive. The table on page 191 provides a background to the above figures.

Renewable production	Electricity	2005			2010			2015			2020		
		[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]	[GWh]	[ktoe]	[%]
Hydropower < 10 MW		44	n.a.	0.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower 10 MW - 100 MW		399	34	1.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower > 100 MW		4478	385	18.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hydropower (subtotal)		4921	423	20.6	5100	439	16.1	10.2	5730	493	9.5	5.3	6360
Geothermal		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Solar photovoltaic		8	1	0.1	40	3	0.1	0.1	890	77	1.5	0.8	2240
Concentrated solar power		n.a.	n.a.	n.a.	0	0	0.0	0.0	0	0	0.0	0.0	0
Solar (subtotal)		8	1	0.1	40	3	0.1	0.1	890	77	1.5	0.8	2240
Tidal, wave and ocean energy		n.a.	n.a.	n.a.	0	0	0.0	0.0	0	0	0.0	0.0	3950
Onshore wind		2501	215	10.5	9520	819	30.1	19.0	20610	1772	34.2	19.0	34150
Offshore wind		403	35	1.7	4630	398	14.6	9.2	18820	1618	31.2	17.4	44120
Wind power (subtotal)		2904	250	12.2	14150	1217	44.7	28.3	39430	3390	65.4	36.4	78270
Solid biomass		4347	374	18.2	5500	473	17.4	11.0	7900	687	13.2	7.4	20590
Biogas		4762	409	20.0	6830	587	21.6	13.0	6300	542	10.4	5.8	5570
Biofuels		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Biomass (subtotal)		9109	783	38.2	12330	1060	39.0	24.6	14290	1229	23.7	13.2	26160
Total (according to Template Tables 10a/b)		n.a.	n.a.	n.a.	31630	2720	100.0	63.2	60330	5187	100.0	55.7	116970
Sum of all technologies (Template Tables 10a/b)		16942	157	n.a.	31620	2720	100.0	63.2	60340	5188	100.0	55.7	116980
Gross final RES-E consumption (Template Table 4a)		1506	n.a.	73.5	2720	100.0	100.0	63.2	5187	100.0	55.7	116980	1059
Heating and cooling													
Geothermal													
Solar thermal													
Solid biomass													
Biogas													
Biofuels													
Biomass (subtotal)													
Aerothermal heat pumps													
Geothermal heat pumps													
Hydrothermal heat pumps													
Renewable energy from heat pumps (subtotal)													
Total (according to Template Table 11)													
Sum of all technologies (Template Table 11)													
Gross final RES-E consumption (Template Table 4a)													
Transport													
Bioethanol / bio-ETBE													
Biodiesel													
Hydrogen from renewables													
Renewable electricity													
Other biofuels													
Total (according to Template Table 12)													
Sum of all technologies (Template Table 12)													
Gross final RES-E consumption (Template Table 4a)													
RES-1 including Article 21.2 (Template Table 4b)													
Gross final RES consumption (Template Table 4a)													
Sum of total values from Template Tables 10a/b, 11 and 12 (graphs)													
All renewables excluding co-operation mechanisms													
Co-operation mechanisms													
Transfer from other Member States													
Transfer to other Member States													
Total (Template Table 4a)													
All renewables including co-operation mechanisms													
Electricity													
Additional energy efficiency													
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Additional energy efficiency													
Transport													
Additional energy efficiency													
Total before aviation red. incl. efficiency													
Additional energy efficiency													
Total after aviation red. incl. efficiency													
Additional energy efficiency													
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Electricity													
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Overall renewable share													
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Contribution to co-operation mechanism													
Contribution to co-operation mechanism													
Calculated contribution to co-operation mechanism													
Transport fuels target													
Overall renewable share (trajectory periods 2011-2012 and 2015-2016)													

In 'Final consumption' values for the year 2005 refer to the 'base year' in Template Table 1. The columns indicating percentages [%] have data displayed in bold. This is a reference to the parameter used for calculating the percentage. For calculating the shares values have been taken from the 'Additional energy efficiency' scenario. Art. 21.2 adjustment refers to double counting of certain biofuels (times 2) and renewable electricity in road transport (times 2.5). Where is referred to Tables 1, 4a, 10a/b, 11 and 12 it is mean to the Template, prepared by the European Commission and available for download at <http://eur-lex.europa.eu/lex/lexServ.do?uri=CELEX:32009D0548:EN:NOT>

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