

Progress report: Energy produced from renewable sources in Belgium 2015-2016

Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009



Photo credit: Nobelwind
National compilation
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Drawn up by the National/Regional Energy Consultation Group (Groupe de concertation Etat-Régions en matière d'énergie/Energie-overleggroep Staat-Gewesten – CONCERE-ENOVER), in which the following government departments are represented:

Federal Government

Federale Overheidsdienst Economie, KMO, Middenstand en Energie - Service Public Fédéral Economie, PME, Classes Moyennes et Energie (Federal Public Service Economy, SMEs, Self-employed and Energy), Algemene Directie Energie - Direction Générale de l'Energie (Directorate-General for Energy)

Regional authorities

Flemish Region

Vlaams Energieagentschap (Flemish Energy Agency)

Walloon Region

Direction générale opérationnelle de l'Aménagement du territoire, du Logement, du Patrimoine et de l'Energie (Operational Directorate-General for Town and Country Planning, Housing, Heritage and Energy), Département de l'Energie et du Bâtiment durable (Department of Energy and Sustainable Building)

Brussels-Capital Region

Bruxelles Environnement – Leefmilieu Brussel (Brussels Environment)¹

On the cover, the Nobelwind project in the North Sea. Achieved in December 2017, it is now the fourth biggest offshore wind farm in Belgium, located 45 km off the coast from Ostend. The 165 MW capacity of the park is equivalent to the energy consumption of around 186 000 households.

¹ Formerly the Institut Bruxellois de Gestion de l'Environnement /Brussels Instituut voor Milieubeheer (Brussels Institute for Management of the Environment).

Glossary

AATL/BROH	L'Administration de l'Aménagement du Territoire et du Logement/Bestuur Ruimtelijke Ordening en Huisvesting	Department of Land Use Planning and Housing
AREI/RGIE	Algemeen Reglement op de Elektrische Installaties/Règlement Général sur les Installations Electriques	General Regulation on Electrical Installations
BHG/RBC	Brussels Hoofdstedelijk Gewest/Région de Bruxelles-Capitale	Brussels Capital Region
BIM/IBGE	Brussels Instituut voor Milieubeheer/Institut bruxellois pour la gestion de l'environnement	Brussels Institute for Management of the Environment, environment and energy authority for the Brussels Capital Region
BMM/UGMM	Beheerseenheid van het Mathematisch Model (van de Noordzee)/Unité de gestion du Modèle Mathématique (de la Mer du Nord)	Management Unit of the North Sea Mathematical Model
BNSWEP	Belgian North Sea Wind Energy Platform	
BRUGEL	Reguleringscommissie voor energie in het Brussels Hoofdstedelijk Gewest / Commission de regulation pour l'énergie en Région de Bruxelles-Capitale	Regulatory Board for Energy in the Brussels Capital Region
BS/MB	Belgisch Staatsblad/ Moniteur Belge	Belgian official gazette
BWLKLE/COBRACE	Brussels Wetboek van Lucht, Klimaat en Energie/ Code Bruxellois de l'Air, du Climat et de l'Energie	Brussels Air, Climate and Energy Code
BWRO/ COBAT	Brussels Wetboek voor Ruimtelijke Ordening/ Code Bruxellois pour l'Amenagement du Territoire	Brussels Town and Country Planning Code
CBE/CBS	Collège des Bourgmestres et Echevins/ College van Burgemeester en Schepenen	Municipal Executive
Concessions domaniales/ Domeinconcessie	An administrative agreement under which the public authority grants a user exclusive right of occupancy of a publicly owned site temporarily for a specific purpose, on a long-term but precarious and revocable basis, against payment	
COP	coefficient of performance	
CREG	Commissie voor de Regulering van de Elektriciteit en het Gaz/Commission de Régulation de l'Electricité et du Gaz	Electricity and Gas Regulation Board
CWaPE	Commission wallonne pour l'Energie	Walloon Energy Commission
CWATUPE	Code Wallon de l'Aménagement du Territoire, de l'Urbanisme, de Patrimoine et de l'Energie	Walloon Town and Country Planning, Housing, Heritage and Energy Code
DSO	Distribution system operator	
Elia	Belgian high-voltage transmission system operator	
EPE/TSE	Etude prospective électricité/ Toekomstgerichte Studie Elektriciteit	Prospective electricity study

FEDESCO	Public energy services company (ESCO) set up in March 2005 as a public limited company	
FOD/SPF	Federale Overheidsdienst/ Service Public Fédéral	Federal Public Service
Recast EPBD	Recast European Directive on the Energy Performance of Buildings	
RW	la Région wallonne	Walloon Region
RES	renewable energy sources	
Sibelga	Operator of electricity and natural gas distribution networks for the 19 municipalities of the Brussels Capital Region	
SPW	Service Public de Wallonie	Wallonia Public Service
TRDE	Technisch Reglement Distributie Elektriciteit	Technical Regulation on Electricity Distribution
TSO	Transmission system operator	
VG	Vlaams Gewest	Flemish Region
Vlarea	Vlaams Reglement inzake Afvalvoorkoming en beheer	Flemish Waste Prevention and Management Regulation
VLIF	Vlaams Landbouwinvesteringsfonds	Flemish Agricultural Investment Fund
VREG	Vlaamse Regulieringsinstantie voor de Elektriciteits and Gasmarkt	Flemish Regulatory Body for the Electricity and Gas Market

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Question 1: Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (n-1; n-2 e.g. 2010 and 2009) (Article 22(1)(a) of Directive 2009/28/EC).

Please fill in the actual shares and actual consumption of renewable energy for the preceding 2 years in the suggested tables.

Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources.

	2015	2016
RES - H&C (%)	7.76%	8.14%
RES – E (%)	15.54%	15.75%
RES - T (%)	3.81%	5.89%
Total RES share (%)	7.94%	8.65%
of which from cooperation mechanism	0.00%	0.00%
surplus for cooperation mechanism	0.00%	0.00%

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

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

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

[4] Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

[5] In percentage point of overall RES share.

[6] In percentage point of overall RES share.

Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)

	2015	2016
(A) Gross final consumption of RES for heating and cooling	1 432.47	1 532.74
(B) Gross final consumption of electricity from RES	1 164.69	1 188.47
(C) Gross final consumption of energy from RES in transport	289.15	469.75
(D) Gross total RES consumption (A) + (B) + (C)	2 886.31	3 190.96
(E) Transfer of RES to other Member States	0.00	0.00
(F) Transfer of RES from other Member States and third countries	0.00	0.00
(G) RES consumption adjusted for target (D) - (E) + (F)	2 886.31	3 190.96

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

Table 1.b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in Belgium to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable sources in electricity

			2015		2016	
			MW	GWh	MW	GWh
Hydro:			112.00	330.33	115.00	333.37
	non-pumped		112.00	333.60	115.00	338.17
		<1MW	11.00	27.91	11.00	27.72
		1MW–10 MW	55.00	185.47	58.00	192.33
		>10MW	46.00	120.23	46.00	118.12
	pumped (pure)		1 310.00	1 099.95	1 310.00	1 119.07
	mixed (total)		0.00	0.00	0.00	0.00
Geothermal			0.00	0.00	0.00	0.00
Solar:			3 122.00	3 052.93	3 300.00	3 086.34
	of which	photovoltaic	3 122.00	3 052.93	3 300.00	3 086.34
	of which	solar thermal	0.00	0.00	0.00	0.00
Tide, wave, ocean			0.00	0.00	0.00	0.00
Wind:			2 176.00	5 056.32	2 370.00	5 573.08
	of which	onshore	1 463.80	2 819.53	1 657.80	3 218.76
	of which	offshore	712.20	2 301.09	712.20	2 310.42
Biomass:			821.00	4 638.71	793.00	4 405.76
	of which	solid biomass	588.00	3 553.95	561.00	3 389.50
	of which	biogas	183.00	954.51	186.00	985.84
	of which	bioliquids	50.00	130.25	46.00	30.42
TOTAL			7 177.00	13 078.28	7 541.00	13 398.55
of which in CHP*				2 253.17		2 154.28

[1] Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

[2] In accordance with new Eurostat methodology.

[3] Take into account only those complying with applicable sustainability criteria, cf. Article 5(1), last subparagraph, of Directive 2009/28/EC.

Table 1b: Additional information (GWh)

	2015	2016
Renewable Municipal Solid Waste	869.31	871.22
Renewable electricity accounted in transport	-402.27	-447.87
ADJUSTED TOTAL (equal to Table 1a item B)	13 545.32	13 821.90

Table 1c: Total actual contribution (final energy consumption) from each renewable energy technology in Belgium to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable sources in heating and cooling (ktoe)

	2015	2016
Geothermal	1.50	1.58
Solar	22.31	22.98
Biomass	1 334.15	1 431.52
of which solid biomass	1 223.15	1 324.68
of which biogas	104.23	102.51
of which bioliquids	6.77	4.32
Heat pumps	40.38	44.88
of which aerothermal	17.32	18.29
of which geothermal	0.08	0.08
of which hydrothermal	0.01	0.01
TOTAL	1 398.34	1 500.95
of which DH	0.00	0.00
of which biomass in households	540.35	616.92

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

[2] District heating and/or cooling from total renewable heating and cooling consumption (RES- DH).

[3] From the total renewable heating and cooling consumption.

Table 1c: Additional information (GWh)

	2015	2016
Renewable Municipal Solid Waste	34.13	31.79
ADJUSTED TOTAL (equal to Table 1a item B)	1 432.47	1 532.74

Table 1d: Total actual contribution from each renewable energy technology in Belgium to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable sources in the transport sector (ktoe)

No multipliers

	2015	2016
Biogasoline	38.05	40.63
of which Article 21(2)	0.00	0.00
Biodiesel	216.51	390.61
of which Article 21(2)	0.00	6.16
Hydrogen of renewable origin	0.00	0.00
Renewable electricity	34.59	38.51
of which road transport	0.24	0.52
of which rail transport	33.91	37.14
of which all other transport	0.44	0.85
Other renewables	0.00	0.00
of which Article 21(2)	0.00	0.00
TOTAL	289.15	469.75

With multipliers

	2015	2016
Biogasoline	38.05	40.63
of which Article 21(2)	0.00	0.00
Biodiesel	216.51	390.61
of which Article 21(2)	0.00	6.16
Hydrogen of renewable origin	0.00	0.00
Renewable electricity	34.59	38.51
of which road transport	0.24	0.52
of which rail transport	33.91	37.14
of which all other transport	0.44	0.85
Other renewables	0.00	0.00
of which Article 21(2)	0.00	0.00
TOTAL	340.98	533.69

[1] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

[2] From the whole amount of bioethanol/bio-ETBE.

[3] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

[4] From the whole amount of biodiesel.

[5] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

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

Table 2: Overview of all policies and measures

** Type of measure:*

FIN = financial measure

REG = regulatory measure

NB = non-binding measure

*** Expected result:*

GV/MC = behavioural change

KTOE = energy generated or consumed

MW = installed capacity (in MW)

**** Targeted group and/or activity:*

INV = investors

INST = installers or producers

ADM = public administration

GEB/UTIL = end-users, public

MIX = stakeholders

Name and reference of the measure	Type of measure*	Expected result **	Targeted group and/or activity***	Existing or planned	Start and end dates of the measure
Federal Government					
Mandatory blending of sustainable biofuels	REG	KTOE	INST	Existing	2009-2013 2013-2016
Tax advantages for electric vehicles and charging points	FIN	GV	GEB	Existing	2011-2013
Preparation of national policy framework for Directive 2014/94/EU on the deployment of alternative fuels infrastructure	REG	MW	INV	Planned	
Revision offshore wind power support mechanism	FIN	KTOE	INV	Existing	2014
Flemish Region					
1. Energy plan for renewable energy 2020 (update of renewable energy sub-targets)	REG	MW	Various	Existing	2014-
2. Solar plan	FIN/REG/NB	MW/KTOE/GV	Various	Existing	2016-
3. Solar map	NB	MW/GV	Various	Existing	2016-
4. Green energy weather report	NB	MW/GV	Various	Existing	2016-
5. Abolition of restriction of allowing PV extensions only after 36 months	REG	MW	Various	Existing	2016-
6. Exemplary role of public bodies	NB	MW	ADM	Existing	2016-
7. Extension of mandatory proportion of renewable energy in building regulations	REG	KTOE	INV	Existing	2014-
8. Simplification of participation opportunities in order to meet the minimum share of renewable energy sources in new buildings	REG	MW	INV	Existing	2017-
9. Extension of energy loan	FIN	KTOE	Various	Existing	2016-
10. Wind Plan 2020	NB	MW	Various	Existing	2014-
11. Wind Guide	NB	MW	INV	Existing	2016-
12. Survey on support for wind energy	NB	GV	Various	Existing	2011-
13. Green Heat Action Plan and Heat Plan 2020	FIN/REG/NB	MW/KTOE/GV	Various	Existing	2016-
14. Increase in grant for solar water heaters and heat pumps	FIN	KTOE	INV	Existing	2016-
15. Green heat call	FIN	KTOE	INV	Existing	2013-
16. Heat map	NB	KTOE/GV	INV/ADM	Existing	2016-
17. Alliance of heating networks between various Flemish	REG/NB	GV	ADM	Existing	2016-

Government departments					
18. Survey on energy awareness and energy behaviour	NB	GV	Various	Existing	2008-
19. Website and publications	NB	GV	Various	Existing	2002 -
20. Inventory of renewable energy in Flanders	NB	GV	Various	Existing	2012 -
Walloon Region					
Setting of post-2012 quotas (2012-2016)	FIN/REG	MW	INV	Existing	2012>
New system, or system of green certificate envelopes with reservation	FIN/REG	MW	INV	Existing	July 2014
System of green certificate envelopes with reservation	FIN/REG	MW	INV	Existing	2024
Support for biogas injection via the green certificate mechanism and introduction of a guaranteed price	FIN/REG	MW	INV/UTIL	Planned	
Creation of a cross-departmental biomass committee	REG		ADM	Existing	
Methods for calculating and implementing financial compensation in the event of activation of flexibility	REG/FIN	MW			>2016
Grants for boilers & heating network	FIN/REG	MW	UTIL	Existing	2013
SOLTHERM Decree	FIN/REG	MW	INV/UTIL	Existing	2013
Biomass boiler grant	FIN/REG	MC/MW	INV/UTIL	Existing	2011-2012
Wind: 2020 production target	NB	MW	INV	Existing	2012>
Wind: Map of potential	REG	MW	ADM/INV	Existing	In progress
Biometh Platform	REG	MC	INV	Existing	2011
Biometh/biogas study	NB	MC	ADM	Existing	2011
Biomass sustainability criterion	REG	MC	ADM/INV	Existing	2011>
PV up to 10kW: QUALIWATT	FIN/REG	KTOE	INV	Existing	2014>
Brussels Capital Region					
1. Single point of contact for professional project initiators	NB	MC/MW	INV/UTIL/INST	Existing	2011>
2. Energy House	NB	MC/MW	INV/UTIL/INST	Planned/ Existing	2011>
3. Simplification of conditions for awarding 'energy' grants	REG/FIN	MC/MW	INV/ADM	Existing	2011>
4. Simplification of administration of 'energy' grant dossiers	REG	MC	INV	Existing	2011>
5. Revision of calculation of green certificates granted to PV installations	REG/FIN	MC/MW	INV/ADM	Existing	mid-2011>
6. Simplification of procedure for certification of installations and granting of green certificates	REG	MC	ADM	Existing	mid-2011>

7. Determination of green certificate quotas up to 2025 and stabilising mechanisms	REG	MW/KTOE	INV	Existing	end 2012>
8. Support framework for biomethane injection in SIBELGA network	REG	MW/KTOE	INV	Existing	mid-2011>
9. Carrying out of studies for monitoring PV, ST and heat pumps + geothermal installations	NB/REG	MC	ADM/INST	Existing	2011-2012
10. Introduction of certification for installers	REG	MC	INST	Planned/ Existing	2011>
11. Introduction of a 'minesweeper' for wind	NB	MC/MW	ADM/INV	Existing	mid-2011>
12. Establishment of a wind measurement campaign	NB/REG	MC/MW	ADM/INV	Existing	mid-2011>
13. Carrying out of a study on biomass potential and heating network	NB	MC	ADM	Existing	2010-2011
14. Adaptation of legislation to integrate biomass sustainability criteria	REG	MC	ADM/INV	Existing	mid-2011>
15. Carrying out of a study on air quality of biomass heating installations	NB/REG	MC	ADM/INV	Existing	2011-2012
16. Adaptation of the energy performance of buildings calculation method for biomass	REG	MC/MW	ADM/INV	Existing	mid-2011>
17. Addition of a 'zero energy' criterion for BATEX 2012 call for projects	NB	MC/MW	ARCH/INV	Existing	2012>
18. Introduction of a sustainable building labelling system (benchmark)	NB	MC/MW	ARCH/INV/UTIL	Planned/ Existing	2011>

Federal Government

Mandatory blending of sustainable biofuels

In 2009, the Federal Government made it mandatory to blend 4% by volume of sustainable biofuel into the fossil fuels placed on the market.

In 2013, this policy was continued by means of a new Law. Registered oil companies placing diesel and/or petrol on the market must incorporate a minimum percentage of sustainable biofuels in fossil motor fuels corresponding to a nominal volume of 1% below the maximum percentage, as established in the applicable standard. In concrete terms, this amounts to 4% by volume for petrol and 6% by volume for diesel on an annual basis. Provision has been made for administrative penalties if these percentages are not met.

From 1 January 2017, the Federal Government increased the mandatory blending percentage (on an annual basis) for petrol to 8.5% by volume. The Royal Decree (of 21 July 2016), which provides the legal basis for this requirement, in this way opens the door to petrol E10.

By Royal Decree of 4 April 2014 the support scheme was amended from a fixed price to a variable price scheme. This new support scheme applies to all domain concessions for which the financial close takes place after 1 May 2014. The price of green certificates will be determined by a factor estimating the economic cost of offshore wind power, the Levelised Cost of Energy (LCOE), and will be evaluated regularly to take account of changes in production costs and electricity prices.

The new minimum price applicable under this new support scheme is calculated as follows:

Minimum price = LCOE – [reference price of electricity – correction factor]

where:

- LCOE equals EUR 138 per MWh;
- the correction factor is equal to 10% of the reference price of electricity

For installations with a domain concession granted after 1 July 2007 for which the financial close takes place after 1 May 2014 and which have been authorised to connect directly to the onshore electricity transmission network, the minimum price is increased by EUR 12 per MWh.

Flemish Region

Energy Plan for renewable energy 2020 (update of renewable energy sub-targets)

In 2014, the Flemish Government established sub-targets for green heat and for the various green electricity technologies. These sub-targets have been updated to take account of the latest developments in planned projects and growth forecasts. Stakeholder consultation was organised for this purpose in 2016. The new sub-targets were approved by the Flemish Government. Achievement of the sub-targets will be monitored under the Solar Plan, the Wind Plan and the Heat Plan.

Solar Plan

The Solar Plan is a Flemish Government action plan to increase the share of solar energy in Flanders. The plan contains 14 different actions which focus on the public authorities, citizens and businesses. Some measures which have been carried out are summarised in the following sections.

Other actions which are in preparation:

- tendering of support for major PV projects
- the involvement of different sectors to arrive at a sector-related declaration of commitment concerning the installation of PV installations
- launch of an energy efficiency fund for business investment
- review of the representative categories for PV in the calculation of the unprofitable top margin (the difference between the cost of green and grey power)
- issue of a solar guide to promote solar panel investments via crowdfunding and participation
- model tender specifications for PV

Solar Map

The Solar Map, which was launched on 20 March 2017 via www.energiesparen.be/zonnekaart, refines the theoretical potential previously calculated by VITO. The average solarisation and potential energy

generated by solar panels and solar boilers is determined for each of the more than 2.5 million roofs. The calculation takes into account factors such as the orientation and inclination of each roof (part), as well as the shadow from surrounding buildings or trees. The main aim of the Solar Map is to raise the awareness of potential investors of the possibilities offered by their individual roof area. For the Solar Map, the Flemish Energy Agency (VEA) cooperated with Informatie Vlaanderen (AIV) and VITO (the Flemish Institution for Technological Research) for the creation of the dataset for each individual roof. The datasets were processed with an external partner into a user-friendly online instrument. In 2017, the Solar Map already received more than 500 000 single hits.

Green energy weather report

Since 20 June 2016, the Flemish Energy Agency has published a daily green energy weather report on www.energiesparen.be/weerbericht. This shows (for each province) the impact of the weather conditions (wind, sun) on the previous day on the energy generated by solar panels, solar boilers and wind turbines. During the first year following the launch (20 June 2016 to 19 June 2017), the weekly summary bulletin of this weather report was shown on regional TV channels on Monday evenings. Since then, the TV1 channel also supplements its daily weather forecast with information on solar and wind energy in Flanders. VTM sporadically announces forecasted solar and wind energy in its weather bulletin. This communication initiative creates positive coverage of the possibilities of green energy sources.

Abolition of the restriction of allowing PV extensions only after 36 months

Until 2015, support for small-scale installations was considerably higher than for larger installations. To avoid misuse by artificially dividing up installations, the condition was introduced in the Energy Decree (*Energiedecreet*) that an installation could be extended only after 36 months. In the meantime, the support for installations < 10 kW has been abolished and larger installations within the present representative project categories (10-250 kW and 250-750 kW) have comparable unprofitable top margins. The 36-months rule was therefore acting as a restriction and has hence been abolished.

Exemplary role of public bodies

The Flemish Government is installing solar panels on suitable roofs of its buildings, which it owns and fits into its property strategy, or making the roofs of these buildings available. Solar panels can only be placed if the building concerned is sufficiently energy-efficient. At the Energy and Climate Summit of 1 December 2016, various government agencies entered into commitments (Education, Limburg Investment Company (Limburgse Investeringsmaatschappij - LRM), Facilitair Bedrijf (support services for the Flemish authorities), local government, etc.).

Extension of mandatory proportion of renewable energy in building regulations

For urban planning applications for permits or registrations from 1 January 2014, all new (or equivalent) housing, offices and schools in Flanders must obtain a minimum amount of energy from renewable sources.

For public offices and schools, the obligation already applies to work which was registered or for which a planning application was made from 1 January 2013.

The Flemish Government decided to extend the minimum proportion of renewable energy to non-residential buildings for which an application for a permit or registration is made from 1 January 2017. The obligation was also extended to major energy refurbishments for which an application for a permit or registration is made from 1 March 2017, for both residential and non-residential buildings. The obligation to produce renewable energy per m² useful floor area was raised from 10 to a minimum of 15 kWh/year for residential buildings for which an application for a permit or registration is made from 1 March 2017. This increase also applies for new buildings and refurbishments with a permit or registration from 1 January 2018.

Simplification of participation opportunities in order to meet the minimum share of renewable energy sources in new buildings

This participation was possible only on condition of participation in an organisation specifically focusing on renewable energy projects within its own province or an adjacent municipality. Setting up such an organisation in each province represented an extra administrative burden for interested project developers. On the other hand, most project developers had already set up a company for participation in renewable energy projects carried out in the Flemish Region. A change has now been made. Participation is authorised for projects within the entire Flemish Region. Since the companies established to promote environmentally compatible energy production often also pursue other objectives, such as energy-saving, the condition was also abolished that the company may only carry out renewable energy projects. A register still has to be kept which links the participation one for one with additional energy production from renewable energy.

Extension of energy loan

An [energy loan](#) at a favourable interest rate serves to finance works to save energy in the home. This loan can also be used to finance the installation of a solar boiler, PV panels or a heat pump. To strengthen the impact of this measure, the maximum amount which can be lent was raised from EUR 10 000 to EUR 15 000, the duration was lengthened and the target group was extended.

Wind Plan 2020

At the end of 2014, a process was launched to speed up the implantation of large-scale wind energy in Flanders (Fast Lane Wind Energy). The investigation covers the ambitions which can be achieved in Flanders for onshore wind energy and the consequences this entails in both a legal and a policy context.

The analysis of the existing situation and the policy conducted resulted at the end of 2016 in the drafting of a concept paper Wind Power 2020 (the Flemish Wind Plan). This process aims to create a partnership in the form of a wind pact, under which, in consultation, a general target for additional wind turbines in Flanders is shared between the provinces. In addition, a rolling action plan has been developed to eliminate as far as possible the bottlenecks identified towards facilitation and realisation.

One of these actions is the determination of the wind energy potential in the longer term. At present, wind turbines in Flanders are installed in areas which come within the current policy framework, explained in the circular for large-scale wind turbines. These areas are becoming increasingly full and additional sites are becoming scarcer. Within the Wind Energy Core Team, and on the basis of the tools and expertise developed in the Fast Lane trajectory, further research is being carried out with relevant stakeholders into the potential available in Flanders and its consequences.

Wind Guide

Under the Wind Plan 2020, efforts are being made to strengthen involvement and increase support. A Wind Guide has been developed for this purpose in which successful wind turbine projects can serve as an example. This Wind Guide is a manual with concrete tips for local government and developers of wind energy projects. Participation exists in all shapes and sizes. The Wind Guide presents various cases from Flanders and beyond. The Wind Guide also covers common concerns, the permit procedure and various ways for wind energy producers to work and cooperate with local stakeholders. It will be supplemented on a regular basis with new examples of good practices.

Survey on support for wind energy

The Flemish Energy Agency, together with the Flemish Regulatory Authority for the Electricity and Natural Gas Market (VREG), carries out an annual survey of the support for wind energy among 1 000 Flemish households. These results create positive media coverage of the subject: [draagvlak windenergie 2017.pdf \(476 kB\)](#)

On 2 June 2017, the concept paper Heat Plan 2020, the successor to the Green Heat Action Plan, was approved by the Flemish Government. The Heat Plan 2020 contains various measures to fast-track the application of green heat in Flanders. Measures are in preparation on the following themes:

- Heating networks: including two-yearly evaluation of the green heat call, making further energy data available for heating networks and/or refining of the heat map, further development of the regulatory framework for heating or cooling networks by providing for social energy measures, focusing on information and unburdening of local government.
- Deep geothermal: including the development of a guarantee scheme for deep geothermal, European project with cooperation and support via Geothermal ERA NET, provision of a calculation method for deep geothermal in the energy performance legislation for new buildings.
- Biomass other (i.e. non-household installations): including extension of the green heat call to installations smaller than 1MW, provision of sustainability criteria for biomass, research into how the support for biomass can be shifted towards heat utilisation (CHP).
- Heat pumps: including minimum share of renewable energy, grants for network operators, focus on impact of electricity tariffs on installation of heat pumps, improvement of heat pump data in renewable energy inventory and measures for the quality assurance of the installation.
- Solar boilers: including research into potential for large-scale solar boilers, quality assurance for the installations.
- Cross-sector measures: including more efficient granting of aid for micro-CHP based on investment aid instead of certificates, research into introduction of guarantees of origin for green gas and green heat, exemplary function of government agencies, inclusion of green heat in refurbishment advice, focus on innovation in green heat and impact in EPB.

The measures already developed are described in the following sections.

Increase in grant for solar boilers and heat pumps

To boost the production of green heat, the grants for solar boilers and heat pumps have been systematically increased for households and SMEs. In 2017, the grant for solar boilers for households amounts to EUR 550 per m², with a maximum of EUR 2 750 and 40% of the total bill. For businesses, the grant amounts to EUR 200 per m², with a maximum of EUR 10 000.

The grants for heat pumps range from EUR 300 to EUR 4 000, depending on the type of heat pump.

Green heat call

Additional aid is granted for the green heat produced by large-scale installations from biomass (> 1 MW)). The aid scheme for green heat received final approval by the Flemish Government in 2013 and was adjusted in 2015 and 2016. In 2015, the call was extended to include aid for deep geothermal projects. In 2016, the possibility was made available in the green energy call also to apply for aid for heat recovery from new waste incineration plants. As far as businesses are concerned, the aid scheme comes under the rules of the General Block Exemption Regulation.

The aid is granted in the form of an investment subsidy and allocated via a call system. A call is launched at least every 12 months. The applicant indicates the percentage of the eligible costs needed. The percentage is limited to a maximum percentage, taking account of the maximum percentages provided for in the General Block Exemption Regulation. The projects are ranked on the basis of the amount of the percentage of aid applied for. Projects with the lowest aid percentage applied for are the first to receive support until the available budget has been utilised in full. In the period 2013-2017, 5 calls were organised.

Projects using residual heat or producing biomethane and injecting it into the natural gas network are also eligible for the call.

Heat Map

On behalf of the Flemish Energy Agency, Vito developed a heat map at the end of 2015. This heat map not only indicates where heat could be available and where there is a large demand for heat, but also includes an overall cost-benefit analysis. In addition, areas are also mapped where heating networks, recovery of residual heat and CHP show varying degrees of profitability. In places where these options are more profitable than the baseline options, these energy-efficient applications must be examined under the European Energy Efficiency Directive. The obligation to carry out individual cost-benefit analyses and of the feasible options represents the transposition of the Directive in VLAREM. The heat map, the underlying report and the map data were published on 3 June 2016 on the Geopunt.be website. Interested initiators and/or local government can use this rough analysis to examine where it is appropriate to carry out further detailed research into the feasibility of heating networks.

Alliance of heating networks between various Flemish Government departments

On 18 September 201, a first meeting took place of the alliance of heating networks within the Flemish Government. Staff of the Environment Department (formerly Flanders Spatial Department), the Regional Economics Department and the Flemish Energy Agency, which all from their different perspectives have heating networks as common ground, commit to closer cooperation. In future, the services will cooperate further on the following common issues:

- Provincial target 2030;
- Incorporating heating networks in time (other works) and space;
- Evaluation of green heat call (and coordination of support frameworks for heating networks);
- Tackling existing buildings for heating networks in urban areas;
- Information and involvement of local government;
- Communication.

Survey on energy awareness and energy behaviour

The Flemish Energy Agency carries out a two-yearly market survey of 1 000 households on attitude, knowledge, action and intentions of Flemish households concerning their energy consumption, generation of their own green energy and the Flemish energy policy. These results create positive media coverage on the subject.

Survey of the year 2017:

- the full presentation: [grafisch rapport 2017.pdf \(1.35 MB\)](#)
- a brief summary: [beknopte resultaten REG enquête 2017.pdf \(3.31 MB\)](#)

Website and publications

The website www.energiesparen.be focuses on energy-saving and green energy. In addition to providing information on large-scale and small-scale production opportunities for green energy, grants, RESCert installers and participative projects of energy cooperations, it also looks at the myths and misconceptions on which opposition is often based.

The Flemish Energy Agency also distributes leaflets and brochures. <http://www.vlaanderen.be/nl/publicaties/energie>

Walloon Region

Reform of support for electricity production from renewable energy sources

➤ *The green certificate quota system applicable to volume of electricity supply*

All electricity suppliers are required to surrender to the Walloon Energy Commission (CWaPE) a quarterly quota of green certificates set by the Government. The quota is expressed by a percentage representing the ratio of the number of green certificates to be produced to the number of electricity MWh supplied to final customers in the Walloon Region.

The quota to be achieved by suppliers and network operators is set in Article 25(3) of the Walloon Government Decree of 30 November 2006, but account is taken of the upward revision for 2015 and 2016 in the Walloon Government Decree of 3 April 2014:

- 19.40% between 1 January 2013 and 31 December 2013;
- 23.10% between 1 January 2014 and 31 December 2014;
- 27.70% between 1 January 2015 and 31 December 2015;
- 31.40% between 1 January 2016 and 31 December 2016.

The Decree of 26 November 2015 determines the quotas for the period from 2017 to 2024:

- 34.03% between 1 January 2017 and 31 December 2017;
- 35.65% between 1 January 2018 and 31 December 2018;
- 37.28% between 1 January 2019 and 31 December 2019;
- 37.90% between 1 January 2020 and 31 December 2020;
- 34.03% between 1 January 2021 and 31 December 2021;
- 35.65% between 1 January 2022 and 31 December 2022;
- 37.28% between 1 January 2023 and 31 December 2023;
- 37.90% between 1 January 2024 and 31 December 2024.

➤ *Establishment of a new system, or system of green certificate envelopes with reservation, which came into force on 1 July 2014 for all electricity plants of all capacities with the exception of photovoltaic plants with a capacity of up to 10 kW.*

In its Decree of 3 April 2014, the Walloon Government set the annual additional electricity production per sector. The production was then converted into additional green certificate envelopes per sector.

The new provisions on the green certificate system came into force on 1 July 2014.

Producers wishing to obtain green certificates for their electricity production sites must reserve them with the authorities in advance.

Once producers have been approved by the authorities and authorised to come into operation and their installation is completed, they must apply to the accredited body for preparation of the CGO (Certificate of Guarantee of Origin). The approved body forwards that to the Walloon Energy Commission and it is assessed with a view to granting green certificates.

The additional green certificate allocations were established for 2014, 2015 and 2016 by the Walloon Government Decree of 3 April 2014.

By Decree of 26 November 2015, the Government also fixed the number of additional green certificates for the period from 2017 to 2024.

The Walloon Energy Commission issues green certificates to each green-certified electricity producer quarterly, in proportion to the net amount of electricity produced and according to the estimated extra production cost of the sector and the measured environmental performance (rate of CO₂ saving) of the installation compared to standard reference production.

Solar thermal energy

Appointment of a facilitator for major solar thermal energy systems

The facilitator's remit is part of the Walloon Region's energy policy. The main aim is to encourage demand for collective solar water heaters and large systems by raising awareness amongst target groups, helping with the design and monitoring of new projects in Wallonia, without seeking to usurp the design consultant's role, and providing project designers, consultants, etc., with relevant information on the installation of large solar water-heating systems (chiefly in the tertiary and collective housing sectors).

Biomass

➤ *Call for biomethanisation projects*

BIOMETH 10 is a programme put in place to promote, support and oversee (large-scale monitoring) the installation of micro-biomethanisation units in agricultural undertakings in Wallonia. Its main object is to

obtain a technical and economic reference system in the short term for small-scale agricultural micro-biomethanisation (power up to 10 kW of electricity).

In September 2013, 72 farmers expressed an interest in the programme. 26 applications were accepted and they will be awarded EUR 15 000 assistance for the purchase of that type of installation (possibly in addition to agricultural support).

➤ *Call for biomass projects*

At the beginning of 2014, applications were invited in the following four areas:

- management and recovery of digestate: support for a pilot project to reduce the volume of digestate (e.g. phase separation, partial drying or conversion to granules);
- management and storage of biogas: support for a project to develop a pilot technology for biogas management. This should improve the stability and adaptability of electricity production by cogeneration in terms of power and periods;
- biomass from animal fats from abattoirs: development of a pilot project to recover waste from abattoirs;
- injection of biogas into the natural gas network: there is no biogas purification and injection unit in Wallonia. In view of the many advantages of that technology, the Government therefore wishes to support the development of a unit.

Eight projects were eventually approved and subsidised. For the 'injection of biogas into the natural gas network' aspect, three EUR 75 000 budgets have been allocated to project initiators for additional research.

➤ *'Wood energy' working group (January to March 2014)*

Wood has become an essential source of energy in our Region, contributing to the renewable energy production objectives set for Wallonia. Wood, wind, photovoltaic, geothermal and other biomasses constitute the renewable energy mix. Although renewable, wood biomass is not inexhaustible and quantitative objectives that should be set for it must be considered.

The working group aims to evaluate the potential and limits of wood as a resource and the role it might play in years to come. Every aspect of the topic (energy, economic, environmental and industrial) has been addressed and discussed.

➤ *Appointment of a bioenergy facilitator*

The facilitator's remit is part of the Walloon Region's energy policy. The main aim is to raise awareness amongst target groups, help with the design and monitoring of new projects in Wallonia, without seeking to usurp the design consultant's role, and provide project designers and consultants.

➤ *Creation of a cross-departmental biomass committee*

In accordance with the conclusions of the Walloon 'wood energy' strategy, the Government established the cross-departmental biomass committee. It is composed of members from different Walloon administrations (agriculture, environment, energy and economy), the Walloon regulator and experts.

The tasks of the committee are:

- To finalise the document on the Walloon 'wood energy' strategy;
- To participate, with the Ministers for Energy, Agriculture and the Environment, in drawing up a 'biomass energy' strategy document;
- To submit an opinion to the various Ministers concerned on the legal texts relating to 'wood energy' management (negative list, etc.);
- To submit own initiative opinions to the various Ministers concerned on 'wood energy' management;

- To propose a 'biomass' declaration document enabling DGO4 and CWaPE to decide on the sustainability of the resource and observance of the utilisation cascade principle;
- To submit an opinion on the 'wood energy' files by means of the 'biomass' declaration;
- To submit to the Walloon Government any own-initiative opinion that the Committee deems useful and relevant.

➤ *Support for biogas injection*

In order to reduce our dependence on imported fossil gas, it is important to support biomethane injection. This injection into the natural gas networks will allow optimum recovery of both heat and electricity. A working group has been set up to identify the type and appropriate level of support. Draft legislation is being prepared based on the results.

Wind

The Walloon Government has agreed to a general review of wind policy, setting an ambitious wind energy production target of 3 800 gigawatts/hour by 2020 based on the principle of establishing a progressive annual process. Three instruments have been devised for the administration:

1. Reference framework: adopted by the Walloon Government in July 2013 with the aim of:
 - ✓ safeguarding the quality of life for citizens
 - ✓ protecting biodiversity
 - ✓ conserving the landscape
 - ✓ encouraging local and citizen participation

2. Positive map of suitable sites

3. Legislative framework.

The last two instruments (positive map and decree) have not yet been finalised in 2014.

Photovoltaic

➤ The Walloon Government ordered a gradual reduction in the support scheme for Solwatt installations between 1 December 2011 and 31 March 2013.

For installations after 31 March 2013, the scheme changed to 1 green certificate per MWh for 10 years. However, as the market has slowed down since the system was altered on 31 March 2013, in July 2013 the Walloon Government adopted a transitional scheme applicable to installations after 31 March 2013. That scheme provided for the application of a grant rate of 1.5 green certificate per MWh for 10 years for the first tranche of 5 kWc power.

➤ *Establishment of the Quali watt system*

Since 1 March 2014, new photovoltaic solar installations with power of up to 10 kW have been subject to the Quali watt investment grant rules and are no longer eligible for green certificates.

The Quali watt system is for photovoltaic installations with power of up to 10 kW brought into service from 1 March 2014.

The mechanism provides for the payment of an annual grant for five years by the operator of the distribution system to which the installation is connected for installations meeting the following conditions:

- new installations
- maintained for a minimum of five years
- satisfying the criteria in the Quali watt standard contract.

In accordance with Article 19 *quarter*, §4, of the Decree of 30 November 2006 on the promotion of electricity produced from renewable energy sources or cogeneration (*Arrêté du 30 novembre 2006 relatif à la promotion de l'électricité produite au moyen de sources d'énergie renouvelables ou de cogénération*), the

maximum number of installations eligible for production support annually, set at 12 000, is divided between distribution network operators (DNOs) in accordance with the rules laid down by the Walloon Energy Commission.

The amount of the grant is fixed in advance by the Walloon Energy Commission on the basis of methodology published on its website in order to obtain, for a standard 3 kWc installation, an investment payback time of eight years and a 5% rate of return. The calculation of the rate of return takes into account, besides payment of the grant, the saving generated by the compensation scheme on the electricity bill of a typical customer connected to the same distribution network.

Accordingly, the amount of the grant calculated by the Walloon Energy Commission depends on the distribution network to which the installation is connected (grants differ from one distribution network operator to another).

The Walloon Energy Commission revises the amount of the grant twice a year and publishes the amount on its website three months before it enters into force.

Finally, the grant for an installation may be increased or reduced every year from the second year if the price on the electricity market differs by more than 10% from the price originally used by the Walloon Energy Commission when the grant was published.

Thus the Quali watt plan is synonymous with quality, since **it reinforces** the quality standards for panels and their installation, providing **a guarantee of quality** for households choosing photovoltaic energy.

The Quali watt grant is awarded by the network operator if the following conditions are satisfied:

- a copy of the certificate of competence issued by RESCERT, certifying that the installer of photovoltaic solar systems has undergone certification training, in accordance with the rules laid down by the Government in the Walloon Government Decree of 27 June 2013 establishing a certification system for installers of renewable energy production systems and specialists in work related to energy efficiency (*Arrêté du Gouvernement wallon du 27 juin 2013 mettant en place un système de certification des installateurs de systèmes de production d'énergie à partir de sources renouvelables et des professionnels des travaux liés à l'efficacité énergétique*);
- a declaration of compliance of the installation based on the template drawn up by the Administration and published on the DGO4-Energie website (<http://www.energie.wallonie.be>);
- a copy of the 'factory inspection' certificate showing the location of the production site for the photovoltaic panels;
- for beneficiaries that are natural persons, a copy of the standard contract for photovoltaic installations, published on the website of the *Direction générale opérationnelle – Aménagement du territoire, Logement, Patrimoine et Energie* (Operational Directorate-General for Town and Country Planning, Housing, Heritage and Energy), Wallonia Public Service DGO4 (<http://www.energie.wallonie.be>), completed and signed by the producer and the installer;
- proof that the photovoltaic panels have been certified to standard IEC 61215 for crystal modules and standard IEC 61646 for thin layers, as well as to standard IEC 61730 when the panels are integrated in or superimposed on a building. Certification must be by a test laboratory accredited to standard ISO 17025 by BELAC, the accreditation organisation of the Federal Public Service Economy, SMEs, Self-Employed and Energy, or another national accreditation body with which BELAC has reciprocal recognition.

Deep geothermal

In July 2011, the Walloon Government confirmed its policy plans for an incentive framework to encourage the development of deep geothermal. It is funding three pilot projects, the first two of which have already been selected:

- a first low-temperature deep geothermal project, harnessing potential in the Mons area for the collective urban heating system with a heating network;
- a second medium-temperature deep geothermal pilot for electricity production, possibly to be combined with heat distribution through a heating network;
- the third pilot was to be identified in the light of the results from the first two.

Work to develop deep geothermal has been (and will be) initiated in a number of areas:

- determining the potential for geothermal in Wallonia
- studies of obstacles to deep geothermal
- developing an appropriate incentive framework for deep geothermal
- developing an appropriate legal framework for deep geothermal.

Hydropower

Currently the hydropower potential in Wallonia is generally harnessed satisfactorily, both on high head sites on waterways (to the right of the dams built for navigation) or in the rehabilitation of old lower head and lower capacity installations on non-navigable waterways.

SOFICO (the waterways management body in Wallonia) has identified 21 existing and usable sites on waterways and these are included in a capital investment programme. The Walloon Government approved the environmental impact report on 12 July 2012; the report's recommendations were adopted by the SOFICO board on 12 July 2013 and the decision to adopt the programme, the environmental statement and the measures monitoring the environment impact were published.

Estimated total additional potential on the Meuse is 52 GWh, on the Sambre 9 GWh and on the Ourthe 10 GWh. According to the actors consulted, all those sites could be equipped by 2020.

Brussels Capital Region

Production from renewable energy in a heavily urbanised area is a challenge which the Brussels Capital Region has resolved to meet since the early 2000s. The continuation of these efforts is now incorporated in the Integrated Plan for Air, Climate and Energy (PACE) adopted by the Brussels Government in June 2016. This plan aims to enable the Region to achieve the following two strategic objectives:

- reduce its greenhouse gas emissions by 30% by 2025 (compared to 1990);
- double its production of energy from renewable sources and in this way achieve 849 GWh of renewable energy by 2020.

In October 2016, the Brussels Government adopted its renewable energy strategy, which is based on a scenario of a very significant increase in the installation of photovoltaic solar panels and the deployment of heat pumps. In this context, the Region is deploying its energy and considerable financial resources, in particular part of the EUR 75 million from climate fund receipts, with a view to:

- the regional and municipal public authorities assuming an exemplary role by continuing their energy control efforts in their building stock and by equipping their best roofs with photovoltaic solar panels through a programme entitled SolarClick. By 2020, this programme will allow an increase in photovoltaic capacity thus installed by 13 MWc, with 85 000 m² of panels and a CO₂ saving in the order of 4 500 tonnes/year from 2020;
- facilitating and promoting solar energy on shared roofs of apartment blocks;
- introducing specific coaching for SMEs, microenterprises and the non-market sector to control their energy consumption and install photovoltaic solar panels. The federations or confederations are the drivers of action here and will receive assistance to offer their members coaching in energy, for which funds will be earmarked to carry out work such as, for example, the deployment of installations using renewable sources of energy.
- introducing loans at preferential rates for households (Brussels green loan) and public housing companies, which will enable them to invest in renewable energies and more specifically in photovoltaic energy.

Adaptation of the green energy legislation

Drawing on its experience since the system was set up in 2004, the Brussels Capital Region has continued its efforts to optimise the 'green certificates' mechanism. This has led to the adoption, in December 2015, of a new 'Green Electricity' Decree, the main contributions of which are the following:

- compliance with the European legislation;
- improvement of the certification procedure (see question 2A) ;

- abolition in the future (2018) of the compensation scheme (net metering).

Associated actions

In addition to the initiatives in place for several years, such as the sustainable building facilitator, training and the Energy House, in 2015-2016 more specific initiatives on renewables were put in place, for instance:

- The encouragement of consumers through financial support for supplementary local and regional initiatives.
- The Brussels Capital Region in this way accompanies professionals too in the development of renewable energy installations within its territory. 2015 was characterised by greater integration of RES actions in the various activities, including the organisation of a heat pump workshop to increase the number of technical issues and detailed guidance for the facilitator. An analysis of grouped RES purchases and other potential funding was also carried out.

Question 2a: Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy (Article 22(1)(e) of Directive 2009/28/EC).

Flemish Region

Introduction of an environmental permit

On 25 April 2014, the Decree on the environmental permit (*Decreet betreffende de omgevingsvergunning*) received final approval. It sets out the procedure for issuing environmental permits. This new Decree is a framework decree. Its practical implementation will become clear from the implementing legislation to be drawn up. The environmental permit came into force in Flanders with effect from 23 February 2017.

The purpose of an environmental permit is to integrate the former separate building and environmental permits and to streamline the provision of advice and decision-making power in the permit procedure. It is a means of increasing the efficiency of granting permits with maximum synergy of the steps to be taken. Provision is made for a greater focus on the preliminary stage of granting a permit and effective cooperation between the initiator and authorities concerned and between these authorities with one another.

Walloon Region

'Wood Energy' Working Group (January to March 2014)

The task of the Working Group is to assess the potential and the limits of wood as a resource and the role it might play in future years. Every aspect of the subject (energy, economic, environmental and industrial issues) has been addressed and discussed.

After the four meetings, recommendations were drawn up for the Group, relating to various aspects:

1. Composition of the Wallonia Economic Office for Wood (*Office Economique Wallon du Bois* – OEWB): appointment of a representative of the wood energy sector to the OEWB board and an observer from the Minister's office.
2. Specific 'wood energy' mission for the OEWB: to task the OEWB (in collaboration with DGO4-Energy, DGO3-DNF (Department of Nature and Forestry), 'wood energy' facilitators, etc.) with collecting and coordinating the flow of wood energy data.
3. Prioritisation of uses of wood biomass: development of a Walloon reference framework for prioritisation of uses of wood biomass and precise definition of the term 'sub-product' within the meaning of the Decree on waste (*Décret relatif aux déchets*). Rapid definition of the procedural framework referred to in Article 4 bis, §2, 2°, of the Decree on waste.
5. Development of resin-rich areas: request for the introduction of measures required to maintain and develop forest production in Wallonia.
6. Recyclable wood: ascertainment that B wood collected in Wallonia is widely used and has no potential for the development of biomass energy.
7. The roadside 'wood resource': finding that this is not a significant wood biomass resource in Wallonia.
8. The issue of financial support for wood energy: need to continue and refine work on analysis of the impact of financial support for wood energy, in terms of competition with the other uses of the wood biomass.
9. Air pollution from wood burning: study the impact of domestic wood burning on air pollution by making a clear distinction between the various types of fuel and the appliance used. Need for advanced research

on consumption of heating wood in Wallonia (type of appliance, type of wood, geographical distribution) and introduction of periodic monitoring tools. Advice to take the necessary steps to reduce particle emissions from wood burning.

10. The Walloon Energy Commission wood biomass reference framework: desire for examination of this framework to be continued without delay.

11. Cross-departmental biomass committee: encouragement for this committee to be set up without delay.

Participation in trade fairs to inform the public about the possibilities offered by bioenergy

Wind reference framework

The Walloon Government has updated the reference framework for the location of wind farms in the Walloon Region and adopted new sectoral conditions for the development of wind power.

Appointment of 'facilitators' for each renewable technology

An expert, more commonly known as a 'facilitator', is appointed for each renewable technology (heat pumps, photovoltaic, solar heating, bioenergy) to reinforce the promotion of renewable energy to all key actors.

The role of the facilitator is relatively wide-ranging: supporting project promoters, answering technical questions, keeping up to date with the latest technological developments and advising on existing aid.

Creation of the cross-departmental biomass committee

In accordance with the conclusions of the Walloon 'wood energy' strategy, the Government established the cross-departmental biomass committee. It is composed of members from different Walloon administrations (agriculture, environment, energy and economy), the Walloon regulator and experts.

The tasks of the committee are:

- To finalise the document on the Walloon 'wood energy' strategy;
- To participate, with the Ministers for Energy, Agriculture and the Environment, in drawing up a 'biomass energy' strategy document;
- To submit an opinion to the various Ministers concerned on the legal texts relating to 'wood energy' management (negative list, etc.);
- To submit own initiative opinions to the various Ministers concerned on 'wood energy' management;
- To propose a 'biomass' declaration document enabling DGO4 and CWaPE to decide on the sustainability of the resource and observance of the cascade use principle;
- To submit an opinion on the 'wood energy' files by means of the 'biomass' declaration;
- To submit to the Walloon Government any own-initiative opinion that the Committee considers to be useful and relevant.

Brussels Capital Region

In the period in question, the Region continued to liaise with stakeholders in the sector. Possibilities for improvements in the administrative procedures regarding green certificates for renewable installations were given careful consideration.

The Decree of 17 December 2015 on the promotion of green electricity (*Arrêté du 17 décembre 2015 relatif à la promotion de l'électricité verte/Besluit van 17 december 2015 betreffende de promotie van groene*

elektriciteit) currently provides that certifying bodies take charge of the entire certification procedure. It is therefore the certifying bodies which must be contacted for the certification processes and no longer the Brussels energy regulator BRUGEL. The certifying bodies are also responsible for visiting the installation concerned and for issuing the certificate, where appropriate. This Decree will have the effect of reducing the burden on BRUGEL, and of expediting the certification procedure for green electricity production installations. Apart from the savings by BRUGEL, that arrangement will ultimately achieve a real time saving for green electricity producers, in so far as most of these certifying bodies also carry out the general acceptance of the electrical installation.

Question 2b: Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements (Article 22(1)(f) of Directive 2009/28/EC).

In addition to the measures contained in the National Action Plan, the federal and regional regulators are currently working in conjunction with the transmission system operators (TSOs) and distribution system operators (DSOs) to improve access to the grid for electricity from renewable energy sources. The possibility of flexible access in the event of congestion problems is currently being considered for access to both the transmission network and the distribution network.

In principle, grid connection and reinforcement are the responsibility of the system operator, who thus initially bears the associated costs. However, connection rates are charged – these are published on the Electricity and Gas Regulation Board (CREG) website – and the system operator can recover the connection costs. The producer ultimately pays the connection costs through those charges, although for certain categories of customer there is a way of sharing costs. However, the regulations that have now been introduced by the national regulator offer customers the option of carrying out specific work for connection to the transmission network themselves or of having it done by a third party they have appointed.

There are various exceptions to those general principles, for instance:

In the Flemish Region the connection costs are limited. Thus the grid connection costs paid by ‘green’ producers are limited to the costs of virtual connection, i.e. the costs of the shortest distance between the installation and the network.

The transmission system operator must finance one third of the costs of the undersea cable, up to a maximum of EUR 25 million for a project of 216 MW or more. The EUR 25 million funding is reduced *pro rata* if the project is less than 216 MW.

The system operator pays the costs of technical modification (deep connection costs).

Initiatives are being or have been launched to examine the various challenges associated with the transition to smart networks, in consultation with the actors concerned.

The offshore platform² is designated as a project of common interest (PCI) by the EU. Until now the various North Sea wind farms have each been connected to the onshore network separately. The development of the mesh network means that the wind farms will be connected to high-voltage stations to be built on two platforms, Alpha and Beta. These platforms will in turn be connected to the onshore network.

This solution has enormous technical, economic and ecological advantages. Developing a real offshore network is safer, cheaper and better for the environment than connecting each wind farm ‘from point to point’ as is the case at the moment.

In future the aim is to connect the mesh network to an international platform linked to direct current. With those links it will be possible to transport larger capacities over longer distances. Neighbouring countries such as England and the Netherlands for instance are currently working to develop networks in their territorial waters in the North Sea.

In practice that means that an international platform with connections can provide access to other energy sources, such as hydropower in Scandinavia. Those sources can be used when there is no wind in the North Sea. The connections would, on the other hand, also be able to store wind power when there is an

² Text from Elia – the Belgian high-voltage network operator.

energy surplus. Belgian users would be able to obtain green electricity from this new North Sea network even if there is no wind.

This plan ties in with the European Commission's energy policy and the North Sea Countries Offshore Grid Initiative project of the Member States on the North Sea.

Flemish Region

Smart networks

The transition to smart energy networks in Flanders is monitored firstly via the Policy Platform (*Beleidsplatform*). This platform brings together the parties in and outside the Flemish Government that have an interest in smart networks and smart meters. Its purpose is to obtain a general overview of the actions in progress and monitor them.

The focus here is, firstly, on network-related aspects of smart networks and the efficient integration of decentralised production in the network (including technological possibilities, interface with spatial planning) and, secondly, on the market opportunities for smart networks and smart meters and their impact on consumers (including aspects such as privacy, energy saving, influence on social energy policy, effect on billing, market processes, energy services, link to electric cars, etc.).

At present, work is being carried out on the development of the regulatory framework which supports the introduction of a smart meter. The smart meter (known as a 'digital meter' in Flanders) is the first step towards the development of a smart network. A monitoring committee has been set up to keep interested parties up to date with the concrete legislative steps.

Solution for capacity restrictions in the network

The VREG considers that connection of decentralised production (and in future also offtake) under the flexible access regime allows better utilisation of the grid. This flexibility in support of the grid entails a cost and the legislation must stipulate by whom and how this cost is borne.

As a first step towards creating a regulatory framework for flexible connections, the VREG added an article to the technical regulations enabling connection with flexible access under normal grid operation conditions, where a connection of a production installation is concerned, and when this connection would have had to be refused under the standard rules in force due to lack of capacity from congestion. This flexible access can in principle only be applied temporarily, pending the implementation of a planned grid reinforcement. This flexible access can exceptionally be applied definitively for technical-economic reasons, subject to the agreement of the VREG.

On 15 February 2016, the VREG issued a policy opinion (ADV-2016-1) for the general framework for flexibility in the medium and high voltage electricity distribution network and the local electricity transmission network. In this opinion, a distinction was drawn between commercial and technical flexibility. The aim of this opinion, addressed to the Flemish legislator, is to advocate a start to a regulatory framework for flexibility so that the main definitions, principles and recognition of different market roles are established, a basis can be given to a contractual framework between the various parties and the role, new tasks and responsibilities of the DSO can be clarified. At the moment, how best to formulate the development of a higher regulatory framework for this purpose is under examination.

The connections with flexible access are in the meantime being successfully applied with various distribution system operators.

A pilot project launched by Eandis together with Elia is running successfully in Waaslandhaven and has now been operational for more than a year.

At present, there are 70 production units in Flanders with a flexible connection, with an installed capacity of 249 MW including 153 MW from wind turbines.

The former congestion in the coastal area has ended now that the Stevin project is operational.

Walloon Region

The general rule in the Walloon Region is to prioritise the connection of production installations using renewable energy sources and good quality/high efficiency cogeneration units, and those generating electricity from waste and recovery from industrial processes.

The priority is divided into connection, injection and investment in network infrastructures.

Connection

Exploratory studies (Article 84 RTTL;³ Article 72 RTD⁴) and applications for connection (Article 100 RTTL; Article 81 RTD) for such installations are to be given priority over other applications currently being considered by the system operator. The connection of those installations (Article 113 RTTL; Article 90 RTD) is also treated as a priority, at least by comparison with non-urgent work, i.e. if a delay to the work does not endanger persons or potentially cause real direct damage to existing installations. A simplified procedure is applied to tests of the connection's compliance for the installations concerned, when they are standardised and less than 25 MW (Article 117 RTTL).

Production / injection

Congestion on the network is managed according to the priority assigned to production installations using renewable energy sources and high quality/high efficiency cogeneration units, and to those generating electricity from waste and recovery from industrial processes (Article 173 RTTL).

Small installations of less than 10 kVA connected to the low-voltage network are allowed to offset offtake and injections for each period between two index readings (annual). In practice, the simplified support scheme applies to over 120 000 installations in the Walloon Region, mainly photovoltaic generators.

There is currently no injection charge for use of the network for small installations with power of ≤ 10 kVA.

Investments

The general principle is that producers invest in the necessary infrastructure for connecting their installation to the system operator's site, whilst the operator is responsible for upstream investments: site and grid reinforcement.

In order to be able to ensure that the planned work is compatible with actual applications for connection, the system operator is required, when drawing up the modification plan (= investments), to describe the most recent situation known (updated quarterly) as regards injection capacities and studies carried out at the request of the applicant producers (Article 28 RTTL and RTD). TSOs and DSOs must also exchange all relevant information (Article 28 RTTL; Article 228 RTD) and coordinate their investments, in terms of both technical solutions adopted and implementation periods.

The regulator (Walloon Energy Commission) approves and monitors the content and compatibility of the work described in the modification plans. If any shortcomings are noted, it may ask the system operator to

³ Walloon Government Decree of 26 January 2012 on revision of the technical regulations for management of the local electricity transmission network in the Walloon Region and access to the network (*Arrêté du Gouvernement wallon du 26 janvier 2012 relatif à la révision du règlement technique pour la gestion du réseau de transport local d'électricité en Région wallonne et l'accès à celle-ci*).

⁴ Walloon Government Decree of 3 March 2011 approving the technical regulations for management of the electricity distribution networks in the Walloon Region and access to the networks (*Arrêté du Gouvernement wallon du 03 mars 2011 approuvant le règlement technique pour la gestion des réseaux de distribution d'électricité en Région wallonne et l'accès à ceux-ci*).

make the necessary investments in order to fulfil its legal obligations (Article 15 DWe⁵), including those related to the integration of renewable products.

The local transmission system operator is required in particular to present quarterly reports of injection capacities at sites.

When the system operator is unable in the short or medium term to guarantee the availability of the grid to absorb all production, a connection contract with flexible access may be concluded. It should be noted that several such contracts have been brought into operation in the past two years. The Decree also provides for a compensation mechanism in case of activation of flexibility limiting the injection subject to compliance with certain conditions. To do so, a Walloon Government Decree was adopted on 10 November 2016 to set the terms for the calculation and implementation of the financial compensation.

Brussels Capital Region

In the Brussels-Capital Region there are no costs associated with the injection of electricity into the grid, irrespective of the power of the decentralised generation unit.

In the period 2015-2016, there were no measures specifically linked to the injection of electricity generated from an installation using renewable energy sources. In any case such measures are not specifically needed. The Brussels Capital Region electricity grid is highly meshed. This configuration allows electricity generated from renewable energy sources in decentralised production units to be injected more easily. Therefore it has not been necessary to alter the conditions of the procedures for authorising permit applications for such infrastructures.

For the transmission and distribution of electricity from renewable sources, the Brussels Capital Region has jurisdiction over the distribution system operator and the regional transmission system operator.⁶

For the sharing of costs for modification of the grid, the distribution system operator in the Brussels Capital Region works on a regulated model. By definition, allowance is made in the prices for the costs to be passed on. The prices are established by a 'cost-reflexive' method, i.e. they must reflect actual costs. Since 1 July 2014 (sixth State reform), pricing has been a regional competence and hence the responsibility of the Brussels regulator, BRUGEL. A new pricing system was published in September 2014. However, there were no changes resulting in the passing on of charges for the period under review in this report.

⁵ DWe: Decree of 12 April 2001 on the organisation of the regional electricity market (*Décret du 12 avril 2001 relatif à l'organisation du marché régional de l'électricité*).

⁶ The Brussels Capital Region does not take any measures relating to TSOs since transmission (in the European sense) is a federal competence. For an overview of the distribution of competences: http://economie.fgov.be/fr/consommateurs/Energie/Politique_energetique/Contexte_Belge/concertation_Etat_Regions_matiere_energie/#.UnDQ0iLpr_g

Question 3: Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan (Article 22(1)(b) of Directive 2009/28/EC).

The Federal Government and the regions have support schemes based on an annually increased quota and negotiable certificates to promote electricity generation from renewable sources, taking account of the powers assigned.

Those instruments are supplemented by a range of investment support mechanisms introduced at federal and regional level. These mechanisms are described in detail in the National Action Plan.

Table 3: Support schemes for renewable energy

Flemish Region

	2015		2016	
Flemish Region				
RES support scheme				
Green electricity certificate system				
Obligation/quota (%)	15.0%		16.7%	
Penalty (€/GEC)	100		100	
Minimum price (€/GEC, starting date installation in 2015 and 2016)	93		93	
Average price (€/GEC)	90.41		88.46	
Total cost (€ million)	1 163,4		1 134.3	
Electricity distribution system operator grant	Number	Total	Number	Total
Solar boiler private individuals	6 033	€14 182 000	5 038	€12 090 000
Solar boiler non-private individuals	77	€146 000	85	€152 000
Heat pump private individuals	1.534	€902 000	1 351	€742 000
Heat pump non-private individuals	46	€70 000	38	€48 000
Total		€15 300		€13 032 000
Budget call green heat (€ million)	Call 3: 3.7		Call 4: 10.2	

Clarification for minimum price

In the reform of the support mechanisms in 2012, the minimum green electricity price for all technologies was equal to EUR 93/certificate. The amount of support received by an installation with a starting date from 1 January 2013 is now dependent only on the 'banding factor' applicable to the project category concerned (or, with a project-specific support calculation, the project itself).

For installations starting before 1 January 2013, the reform also makes the support finite. Unless otherwise provided, the support period for such installations is now limited to ten years. That period can be extended, with the above minimum of EUR 93/certificate also applicable for the extension period.

Walloon Region

		2015		2016	
Walloon Region					
Electricity generation					
Instrument	Obligation/quota (%)	27.70%		32.40%	
	Penalty (€/unit)	100.00 €		100.00 €	
	Min. guarantee (€/unit)	65.00 €		65.00 €	
	Average certificate price	70.76 €		68.14 €	
	Total GEC cost (€)	604 516 124.40		622 669 929.58	
Investment aid					
Biomethanisation	average €/unit	335 371	3 353 706	180 292	540 875
Biomass boilers	average €/unit	28 661	171 966	30 929	216 501
Biomass cogeneration	average €/unit	- €	0 €	1 037 870	4 151 482
Fossil cogeneration	average €/unit	129 528	518 113	94 533	472 667
Large wind	average €/unit	- €	0 €	867 221	867 221
Hydroelectricity	average €/unit	385 900	771 800	100 051	300 153
Heat pump	average €/unit	13 960	27 920	22 517	225 180
Small wind	average €/unit	19 060	57 180	18 980	18 980
Solar heat	average €/unit	9 668	19 335	8 411	16 823
Geothermal	average €/unit	- €	0 €	- €	- €
Investment grants					
Heat pump (hot water)	€/unit	347 €	60 050	612 €	96 028
Biomass boilers	average €/unit	1 882	105 400	1 338	85 650
Heat pump (heating)	average €/unit	1 696	242 478	1 399	96 500
Solar heat	average €/unit	3 952	1 150 031	5 002	505 182
			6 447 979		7 593 243

Tax reductions and deductions are not included.

* It is not possible with current instruments to evaluate aid for the production of renewable energy for transport.

Brussels Capital Region

The Brussels Capital Region supports individuals and undertakings in projects to invest in equipment for electricity generation from renewable sources. Brussels Environment⁷ offers an energy grant scheme (which cannot be combined with the previous scheme) for both individuals and undertakings.

Since 2016, reversible heat pumps are eligible for the tertiary sector, provided that the coefficient of performance (COP) of the installation (according to EN 14511) is equal to or exceeds the requirements of the latest version of the European eco-label.

⁷ Formerly the Brussels Institute for Management of the Environment (*Institut Bruxellois de Gestion de l'Environnement/Brussels Instituut voor Milieubeheer*).

A breakdown of energy grants awarded in 2015 and 2016 appears in the following table:⁸

Energy grants	2015			2016		
	Total	No of cases	Average aid/unit	Total	No of cases	Average aid/unit
Solar heating panels	€27 666	53	€ 182	€147 943	25	€ 918
Heat pumps	€106 264	30	€ 542	€0 338	17	€ 961
Geothermal	€6 540	2	€8 270	€0	0	€0
Cogeneration	€137 444	11	€9 768	€54 516	16	€40 907
Photovoltaic panels	€35 960	7	€ 137	€36 963	7	€ 280
Total	€1 003 873	103	€ 746	€89 760	65	€13 689

Source: Brussels Environment

The Brussels Capital Region also issues green certificates (GECs) to promote green electricity. Their issue is linked to the production by the installation and the CO₂ savings this enables compared to reference installations.

The following table shows the GECs granted for each type of technology for 2015 and 2016. It should be noted that from 2016, green certificates are also granted for electricity produced by the turbine coupled to the incinerator of Neder-Over-Heembeek.⁹

⁸ From 2016, the premiums for cogeneration, photovoltaic and geothermal were abolished under the premium scheme. The figures for these abolished premiums shown in the table for 2016 correspond to premiums under the scheme for 2015 but granted in the financial year 2016.

⁹ See question 2.

Data for 2015 and 2016

Green certificates (GECs)	Unit	2015	2016
Quota	%	4.5%	8.2%
Penalty	EUR/missing GEC	€100	€100
(Weighted) average price of green certificate	EUR/GEC	€8 266	€8 547
GECs granted for photovoltaic panels	No of GECs	196 750	185 048
GECs granted for rapeseed oil (liquid biomass) cogeneration	No of GECs	3 412	4 090
GECs granted for biogas cogeneration	No of GECs	15 262	14 681
GECs granted for natural gas cogeneration	No of GECs	51 178	59 804
GECs granted for incinerator	No of GECs	0	102 252
Total granted	No of GECs	266 601	365 875
Estimate of total annual cost based on average GEC price	EUR	€22 037 239	€31 271 336

Source: BRUGEL, 'Rapport sur le fonctionnement du marché des certificats verts et des garanties d'origine', 2015 & 2016, p.42 & p.46.

Table 3a: Overview of all Belgian measures

Abbreviations used in the table:

Type of measure	Expected result	Targeted group and/or activity	EX = existing
R=regulatory	GV= behavioural change	INV=investors	or
FIN=financial	MW = installed capacity (MW)	GEB= end-users; ADM=government departments	PL = planned
NB=non-binding	KTOE=energy generated/consumed (ktoe)	INST=installers, biofuels production	
		T/DSO = Transmission/distribution system operator	

Name and reference of measure	Type of measure	Expected result	Targeted group and/or activity	EX = Existing PL = planned	Starting date
1. Promotion of renewable energy					
1.1. Electricity from offshore wind power					
Demarcation of an area reserved for construction of offshore wind farms	R	MW	ADM	EX	2000>
Award of public domain concessions	R	MW	INV	EX	2000>
Support for electricity generation from renewable energy sources (green certificates)	FIN	KTOE	INV	EX	2002>
Efficient system for production variations	FIN	KTOE	INV	EX	2009>
Contribution to cabling costs	FIN	MW	INV	EX	2008>
1.2 Onshore electricity					

Mechanism for green certificates with guaranteed minimum price	FIN	KTOE	INV	EX	2002>
Green energy quotas	FIN	KTOE	Electricity suppliers	EX	2002>
Specific value of green certificates for photovoltaic energy (Flemish Region)	FIN	KTOE	DSO	EX	2006>
Multiplication factor (Walloon Region)				EX	
Set-off principle for systems with capacity under 10 kVA	FIN	KTOE	Producers	EX	2008
Grant of guarantee of origin labels	R	KTOE	INV	EX	2002>
Abolition of restrictions on wind turbines in agricultural areas (Flemish Region)	R	MW	INV	EX	2009>
Action plans for purchase of green electricity by the government	NB	GV	ADM	EX	2009>
1.3. Heating and cogeneration					
Cogeneration certificates	FIN	KTOE	Electricity suppliers	EX	2005>
Additional support for green heat	FIN	KTOE	INV	PL	>2012
Call green heat (Flemish Region)	FIN	KTOE	INV	EX	2013>
2. Promotion of investment in renewable energy					
Tax relief for investments in renewable energy (private individuals)	FIN	MW	INV	EX	2002-2011
Tax deduction for investments in renewable energy (undertakings)	FIN	MW	INV	EX	2004>
Tax relief for interest on a loan and tax relief on interest for investments in renewable household energy (private individuals)	FIN	MW	INV	EX	2009–2011
FEDESCO financing of a third investor	FIN	MW	ADM	EX	2007>2015
Grants for the installation of renewable energy equipment	FIN	MW	Undertakings	EX	continuous
			Private	EX	
Agricultural investments (VLIF)	FIN	MW	Agriculture and horticulture sector	EX	continuous
Contribution to connection costs for an installation with renewable energy sources (Flemish Region)	FIN	MW	DSO	EX	2004>
Additional support for local authorities	FIN	MW	Local government	EX	2004>
Mandatory (preliminary) renewable energy feasibility study for new housing (> 1 000 m ²) and extensively refurbished housing 5 000 m ² and over	R	GV	INV	EX	2008>
Subsidy for construction of particularly innovative and model housing	FIN	MW	Architects	EX	2007>
Grant for heating networks	FIN	MW	INV	EX	2008>
LGO for biogas injection					
Compulsory proportion of renewable energy in building regulations	R	KTOE	INV	EX	2014>
Energy loan	FIN	KTOE	INV	EX	2007>
Strategic environmental support (Flemish Region)	FIN	KTOE	INV	EX	2013>
3. Promotion of transport with renewable energy sources					
3.1. Electric vehicles					
Tax relief and grants for electric vehicles and charging points	FIN	GV	GEB	EX	2010-2012
Exemplary role of government	NB	GV	ADM	EX	2010>
3.2. Promotion of biofuels					
Mandatory blending of sustainable biofuels	R	KTOE	Oil companies	EX	01/07/2009-30/06/2011

					01/07/2011– 30/06/2013
					17/07/2013
					21/07/2016
Licence for marketing of non-standardised biofuels and pure rapeseed oil	R	KTOE	Car manufacturers, distributors of petroleum products, farmers	EX	November 2006>
Tax exemption for sustainable biofuel quotas	FIN	GV	Oil companies	EX	01/11/2006– 30/09/2013
Exemption for pure rapeseed oil	FIN	GV	Farmers	EX	March 2006>
4. Administrative simplification					
Single federal interface for energy infrastructure permits	R	Administrative simplification	ADM	PL	2016>
Wind farm construction circular	R	MW	Licensing authorities	EX	2001<
Wind farms in agricultural areas	R	MW	Licensing authorities	EX	2008>
Biogas plant construction circular	R	MW	Licensing authorities	EX	2006>
Working group on coordination of policy and actors in the biomethanisation sector	R, guidance		Agricultural cooperatives	EX	2009>
Exemption from permits for solar panels	R	MW	INV	EX	2008>
5. Network access					
Electricity infrastructure development plans (and prospective electricity studies)	R	MW	INV, TSO		Three-yearly
Financing of the BeProne platform for network reliability	NB		ADM, universities	EX	2009>
Priority network connection for installations generating electricity from renewable energy sources	R	KTOE	TSO, DSO	EX	2002>
Priority access to the network for installations generating electricity from renewable sources	R	KTOE	TSO, DSO	EX	2002>
Technical regulations for the connection of decentralised production installations operating in parallel to the distribution network	R	KTOE	INST	EX	2001>
Simple reporting for installations with a capacity of less than 5kW with a monophasic connection or less than 100 kW with a triphasic connection	NB	MW	GEB	EX	2009>
Development of smart grids (including pilot projects)	R	MW	DSO	PL	2009>
6. Cooperation between Federal Government and regions					
Cooperation agreement on energy consultation*	R	Consultation	ADM	EX	1993>
Installer certification platform	NB	Harmonisation	ADM	EX	2009>
Additions to General Regulation on Electricity Installations laying down technical rules for renewable energy installations (note 71)*	NB	Cooperation	ADM, INV	EX	07/10/2008> >
7. Consumer protection and information					
Public information on renewable energy	NB	GV	GEB	EX	Continuous
Support for authorities in the promotion of renewable energy (e.g. facilitators, help desks)	NB	GV	Public	EX	Continuous
Government promotion campaigns (telephone support, website, professional support, magazines, advertising campaigns, leaflets, instruments, reference material, etc.)	NB	GV	Public	EX	Continuous
Raising awareness amongst professionals in the sector (technical seminars, competitions, technical sheets, etc.)	NB	GV	INV, architects	EX	Continuous
Training for installers of RES domestic installations (solar heat and photovoltaic)	Training	GV	INST	EX	2003>
Certification of installers for small-scale renewable energy installations	R	GV	INST	EX	2012>

Creating interest in wind power projects amongst local actors and citizens (participative wind power)	FIN, guidance	MW	Municipalities and individuals	EX	2008>>
Preparation of reference material (good practice guides, vade-mecum, etc.)	NB	GV	INST	EX	Continuous
Publication of annual statistics: installed power, price, amount of renewable energy generated	NB	GV	ADM, public	EX	Continuous
8. Exemplary role of Government					
Special rules on the promotion of energy efficiency and renewable energy in public buildings, more specifically the Regie der Gebouwen (Public Buildings Administration)	NB	GV, MW, KTOE	ADM	EX+PL	2008>>
9. R&D, research					
Environmental Innovation Programme 2	FIN	Knowledge	Research centres	EX	2009
Research into clarifying and resolving problems in the renewable energy sector, Brussels Capital Region	NB	MW	INV	EX	Continuous
Feasibility study of heating networks	R, FIN	KTOE	ADM	EX	2009
Study of support for green heat production	NB	KTOE	ADM	EX	2010

Federal Government

Offshore support mechanisms

The tradable certificates schemes established by the Federal Government are based, in the case of offshore wind energy, on an obligation of the transmission system operator (Elia) to buy the certificates at a minimum price set by federal legislation. The purchase of green certificates from offshore wind energy production by the TSO is based on an agreement between the TSO and the producer, subject to approval by the regulator (CREG). This system, established through the Royal Decree of 16 July 2002 (see above) has been amended in 2014 as follows:

- For wind energy produced from installations with a financial close up to 1 May 2014, the minimum purchase price by the TSO for green certificates amounts to:
 - EUR 107 per MWh for electricity originating from the first 216 MW of installed capacity;
 - EUR 90 per MWh for electricity originating from installed capacity above 216 MW.
- For wind energy produced from installations with a financial close after 1 May 2014, the minimum purchase price by the TSO for green certificates is calculated as follows: minimum price = LCOE – [reference price of electricity – correction factor]
where:
 - LCOE is equal to EUR 138 per MWh;
 - the correction factor is equal to 10% of the reference price of electricity.

These minimum prices are guaranteed for a period of 20 years.

Rem.: The minimum purchase price for installations with a financial close after 1 May 2014 can be equal to zero if production occurs while the imbalance tariff for a positive imbalance is equal to or less than EUR -20 per MWh.

The main legal principles on which these different support systems are based are:

- Law of 19 April 1999 on the organisation of the electricity market (*Loi relative à l'organisation du marché de l'électricité/Wet van 19 april 1999 houdende de organisatie van de elektriciteitsmarkt*);
- Royal Decree of 16 July 2002 on the establishment of mechanisms to promote electricity generated from renewable energy sources (*Arrêté royal du 16 juillet 2002 relatif à l'établissement de mécanismes visant la promotion de l'électricité produite à partir des sources d'énergie renouvelables/Koninklijk Besluit van 16 juli*

2002 betreffende de instelling van mechanismen voor de bevordering van elektriciteit opgewekt uit hernieuwbare energiebronnen);

- Royal Decree of 30 March 2009 on production variations on installations for electricity generation from wind in offshore areas (*Arrêté royal du 30 mars 2009 relatif aux écarts de production des installations de production d'électricité à partir des vents dans les espaces marins/Koninklijk Besluit van 30 maart 2009 betreffende productie-afwijkingen op installaties voor de productie van elektriciteit uit wind in zeegebieden*);

- Law of 10 June 2006 on biofuels (*Loi du 10 juin 2006 concernant les biocarburants/Wet van 10 juni 2006 betreffende de biobrandstoffen*).

2. Development of support systems

The Federal Government and the regions have developed their own support schemes for investments with a view to promoting renewable electricity production.

- *Investment aid*

In addition to the measures presented under point 2 of this report, mention is made of the following:

- Contribution to financing connection costs of offshore wind farms

The transmission system operator must finance one third of the costs of the undersea cable, up to a maximum of EUR 25 million for a project of 216 MW or more. The EUR 25 million is reduced *pro rata* when the project is for less than 216 MW.

- Tax relief on investments for undertakings

Undertakings are also allowed tax relief for certain investments in renewable energy. The percentage of the relief is between 13.5% and 20.5%, based on the trend in the average consumer price index. Investments in energy generation from renewable energy sources that are eligible for tax relief are:

- *systems for collecting direct or diffuse sunlight;*
- *use of wind power;*
- *hydroelectric power plants generating power up to a maximum capacity of 1 MW;*
- *energy generation from waste incineration*
- *use of gas from anaerobic waste fermentation;*
- *heat pumps.*

3. Periodic review

- *Support for production (negotiable green electricity certificates)*

No periodic review is planned.

- *Investment aid*

- Contribution to the financing of offshore wind farm connection costs: no periodic review is planned. This measure supplements the range of measures introduced by the Federal Government to support the development of offshore wind farms on the Belgian Continental Shelf and is thus monitored by CREG3.

- Tax relief for investment by undertakings: the fiscal support scheme can be reviewed every financial year. However, the scheme has not been amended for some years.

Flemish Region

Green electricity certificate scheme

The Flemish Government promotes electricity generation from renewable energy sources through the green electricity certificate (GEC) scheme.

The main legal principles on which this support scheme is based are:

- Decree of 8 May 2009 laying down general provisions on energy policy (Energy Decree) (*Decreet van 8 mei 2009 houdende algemene bepalingen betreffende het energiebeleid (Energiedecreet)*);
- Flemish Government Decree of 19 November 2010 laying down general provisions on energy policy (Energy Decree) (*Besluit van de Vlaamse Regering van 19 november 2010 houdende algemene bepalingen over het energiebeleid (Energiebesluit)*).

Reform of green electricity certificate scheme

A reform of the support scheme for green electricity and good quality cogeneration followed from the evaluation of the support mechanism provided for by the Decree to be carried out in 2012. The evaluation started a year earlier than planned with a view to having a reformed support mechanism in place on 1 January 2013.

Mechanisms were also incorporated in the reform to include more regular evaluations of the operation of the support mechanism and in particular the certificates market, to enable the Flemish Government to respond to developments in the certificates market more promptly and to continue to ensure that it operated efficiently.

The Decree provided for a number of major adjustments to the certificate scheme in order to coordinate the grant of support more with the support needed to make the project sufficiently viable, *inter alia* by making the certificate support finite, introducing 'banding' and eliminating redundancies in the support and guarantee of origin functions.

Since the reform of the support mechanism, the Flemish Energy Agency has produced an annual report on the calculation of the unprofitable top margin, from which the banding factor for the various representative project categories is determined. The calculation methodology is described in the annexes to the amended Energy Decree (*Energiebesluit*). The Flemish Energy Minister 'approves' the calculations and publishes the banding factors for the following period, or may submit a proposal for a variation to the Flemish Government, which can establish different banding factors in a decree. The reports and banding factors are published on the website: <http://energiesparen.production.cloud.kanooh.be/monitoring-en-evaluatie/rapporten>.

The Minister also sets a maximum banding factor annually. For 2015 and 2016 this maximum banding factor was 1.

For technologies without a fuel cost, the banding factor is also updated during the project period in line with the electricity price trend.

The Flemish Region is thereby implementing the recent Commission guidelines, which are aimed at calculating the appropriate support for each technology and phasing the support out gradually as regular evaluations show that that is possible.

Walloon Region

The main legal bases for the various support schemes are:

Decree of 12 April 2001 on the organisation of the regional electricity market (*Décret du 12 avril 2001 relatif à l'organisation du marché régional de l'électricité*);

Walloon Government Decree of 30 November 2006 on the promotion of electricity produced from renewable energy sources or cogeneration (*Arrêté du Gouvernement wallon du 30 novembre 2006 relatif à la promotion de l'électricité produite au moyen de sources d'énergie renouvelables ou de cogénération*);

Walloon Government Decree of 30 March 2006 on public service obligations in the electricity market (*Arrêté du Gouvernement wallon du 30 mars 2006 relatif aux obligations de service public dans le marché de l'électricité*).

Development of support systems

- *Investment support*

Investment grant (and exemption from property tax):

Undertakings are eligible for a grant for investments in energy generation from renewable energy sources. The amount of support is equal to 50% of the extra cost admissible for small and medium-sized enterprises and 20% to 30% for large enterprises (depending on geographical location). The admissible extra cost varies according to the technology.

Grants are also available to individuals for the installation of biomass boilers, heat pumps and solar thermal panels.

- *Support for production*

A mechanism to support electricity generation from renewable energy sources and good quality cogeneration has been in place in Wallonia since 1 January 2003.

Like Flanders and Brussels, Wallonia has adopted a green certificate scheme, which is managed by the Walloon Energy Commission.

The green electricity support mechanism comprises three financing systems, in the form of production subsidies:

- *Green certificate quota applicable to amount of electricity supplied.*

All electricity suppliers are required to surrender a green certificate quota set by the Government to the Walloon Energy Commission every quarter. This quota is made up of a percentage representing the ratio of the number of green certificates to be produced and the number of MWh of electricity supplied to final customers in Wallonia. The green certificates are granted under certain conditions by the Walloon Energy Commission to producers of renewable energy. One of these conditions for installations after 1 July 2014 is the reservation of green certificates in advance within envelopes determined by the Government.

- *The system for guaranteed purchase of green certificates by the local transmission system operator, ELIA.*

The Walloon Energy Commission issues green certificates quarterly to each producer of electricity certified as green, in proportion to the net amount of electricity generated and according to the estimated additional production cost of the sector and the measured environmental performance of the installation (rate of CO₂ savings) compared to standard reference production.

- Under the Quali watt system, distribution system operators pay a grant to photovoltaic installations with power of up to 10 kW.

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

European Directive 2009/72/EC on the internal market in electricity (repealing Directive 2003/54/EC) requires all suppliers to provide their customers with transparent information on the energy sources used to ensure the electricity supply (fuel mix disclosure).

In Belgium, the regional regulator approves those fuel mixes on the basis of a simple declaration, except for electricity from renewable energy sources (RES) and electricity from high-efficiency cogeneration (CHP) plants. Since it is physically impossible to trace electrons, the three regional legislations establish the cancellation of guarantees of origin (LGO or GO) as the only form of evidence for renewable electricity and high-efficiency cogeneration. That tracing method was based on a harmonised rule on the internal market in the European Union.

Flemish Region

Article 7.4.1 of the Decree of 8 May 2009 laying down general provisions on energy policy ('the Energy Decree') requires all electricity suppliers to indicate on their bills and on all printed and electronic promotional materials the fuel mix of the energy source of the electricity they have supplied in the previous year to the relevant customers in the Flemish Region, in total and for the product offered.

In accordance with Articles 6.3.4 to 6.3.5 of the Flemish Government Decree of 19 November 2010 laying down general provisions on energy policy ('the Energy Decree'), as from 1 March of the current year all electricity suppliers must indicate on each bill or accompanying document and in the promotional materials sent directly to final customers the source of the electricity that they supplied to final customers via the transmission or distribution network in the previous calendar year.

The electricity source must be broken down into the following categories:

- i. electricity generated from renewable energy sources;
- ii. electricity generated in good quality cogeneration plants;
- iii. electricity generated from fossil fuels;
- iv. electricity generated in nuclear power stations;
- v. electricity from an unknown source.

That breakdown is also known as the 'fuel mix'.

The fuel mix must be shown both for the total supplies by the supplier ('total fuel mix') and for the product supplied or offered to the final customer concerned ('fuel mix by product').

VREG check on correctness of the fuel mix

The Flemish Regulatory Body for the Gas and Electricity Market (VREG) must check whether the information given by the supplier in accordance with this obligation is correct. The VREG explains in an annual report how the fuel mix is calculated and indicates for each supplier the percentages for the origin of the electricity it has supplied in the previous year, which have been agreed by the VREG after checking.

For the first time, the latest VREG fuel mix report contained much more detailed information on the geographical and technological sources of the guarantees of origin submitted by each electricity supplier.

The latest report appears on the VREG website:

<http://www.vreg.be/sites/default/files/document/rapp-2017-07.pdf>

For the first time, an infographic based on this information has also been published:

In September 2015, the VREG launched a new free tool on [vreg.be](http://www.vreg.be) - *De Herkomstvergelijker* (the origin comparer).

When choosing an electricity supplier, compare the origin of the electricity – where does the electricity come from and which sources of energy are used to generate the electricity?

Via this online module, consumers can compare the origin of electricity for electricity contracts on offer in Flanders. In this way, households and businesses can choose energy suppliers on the basis of the origin of electricity.

In the non-liberalised market, it was very simple. Electricity came from the mains socket and that was that. In today's market with various players and many types of contract, the consumer chooses which electricity comes from the mains socket. Fossil energy, nuclear energy or renewable energy. Norwegian, French,... or preferably green electricity from your own country? You have a preference for biomass or solar energy? It is for the consumer to choose.

The customer therefore has an additional element on which to base the choice of an electricity supplier. In addition to the price (via the V-test) and the service (via the Servicecheck) of energy suppliers, the consumer can also compare the origin of the electricity. It is possible to choose electricity originating from a clearly defined region/country and generated from specific sources of energy.

The module currently contains data for 2016. The data are updated each year.

Via this module, the consumer can:

1. check out the energy sources for the electricity offered for each contract (renewable, cogeneration, fossil, nuclear energy).

An electricity supplier sometimes offers more than one electricity contract. Check out the origin of each contract of a specific electricity supplier in 2016.

2. make a comparison between different electricity suppliers concerning the origin of the electricity supplied in 2016, based on:

- country of origin
- details of the sources of energy.

De Herkomstvergelijker can be found at www.vreg.be/nl/herkomst-stroom

Households and businesses in Flanders entering into a green electricity contract can then check via GROENCHECK on [vreg.be](http://www.vreg.be) the percentage of green electricity supplied to their specific offtake point over the past 12 months. This too is a service supplied free of charge by the VREG. More information on this subject is obtainable via www.vreg.be/groencheck.

Walloon Region

The allocation of supported electricity to final consumers is exactly the same as the allocation of unsupported electricity to final consumers, since strictly speaking there is no connection between the system of support for renewable energy production (2009/28) and the obligation of transparency of sources (2003/54).

The guarantee of origin issued for renewable energy and cogeneration is merely a traceability instrument, which, after commercial transactions, enables each renewable and cogeneration MWh to be clearly and unequivocally attributed to a particular consumer. That allows consumers to choose which electricity product they want (100% renewable, 50% renewable, 0% renewable) from the different suppliers thus encouraged to differentiate themselves.

Furthermore, all consumers in the same category (quantity of electricity consumed) make an identical contribution to financing the support.

For billing, the Walloon Region applies the federal legislation under which the details of the energy mix are shown on electricity bills.

Brussels Capital Region

In May 2016, the online tool '[Green check](#)' devised by BRUGEL enables Brussels consumers to check, through their EAN code, the proportion of green electricity declared by their supplier and that validated by BRUGEL.

A breakdown of the energy grants awarded in 2013 and 2014 appears in the following table.

Question 4: Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material (*Article 22(1)(c) of Directive 2009/28/EC*)

The Federal Government and the regions have devised various support schemes, each within their spheres of competence, for the production of renewable electricity. Those different approaches, reflected in a different number of green electricity certificates awarded per sector or a different guaranteed minimum price according to sector, by definition take account of the differences in advantages and costs between the sectors.

Federal Government

From assessment year 2013 (i.e. for expenditure paid in 2012), the tax relief for all energy-saving expenditure is abolished except for roof insulation. The tax relief is 30% of actual expenditure. For assessment year 2013 (2012 revenue), the maximum reduction per household is EUR 2 930.

Flemish Region

Green electricity certificates can be granted for the use of non-recyclable waste.

For uses offering additional advantages compared to others, such as fermentation of manure, organic/biological waste, vegetable, fruit and garden waste, the unprofitable top margin is calculated separately and a banding factor is allocated.

To encourage the use of biomass from waste and residual flows for renewable energy, the Flemish Government has co-financed the ARBOR (Accelerating Renewable Energies through Valorisation of Biogenic Organic Raw Material) Interreg project (2012-1015). ARBOR is designed to encourage an innovative and sustainable approach for energy production from biomass in North-West Europe (NWE), with the following objectives (www.arbornwe.eu):

- removing technological, regulatory and logistical barriers in the development of an efficient and productive value chain for the conversion of biomass flows into energy and the exploitation of residual flows from the conversion process;
- evaluation of the sustainability and economic aspects of the various conversion technologies for the biomass flows researched;
- benchmarking of the incentives and obstacles in the regulatory and policy framework in the various NWE regions;
- development of regional strategies for a more integrated, ecological and economically efficient exploitation of biomass flows for electricity generation, heat and cooling in the light of the regional and national 2020 targets.

Walloon Region

In regard to electricity generation, in order to offset the relative maturity of the sectors and put their support in perspective, a multiplying factor has been put in place, influencing the rate at which green energy certificates are granted. The table below shows the updating coefficients:

	Sector (and total installed power)	Rate granted (GEC/MWh)	Minimum guaranteed level of support (EUR/MWh)	Theoretical maximum support level (EUR/MWh)
Walloon Region	Fossil cogeneration (≤ 20 MW)	0.1 to 0.4	6.5 to 25	10 to 40
	Biomass (≤ 20 MW)	0.1 to 1	6.5 to 65	10 to 100
	Hydro (≤ 20 MW)	1	65	100
	Wind	1	65	100
	Biomass cogeneration (≤ 5 MW)	0.1 to 2	6.5 to 130	10 to 200
	Photovoltaic (≤ 10 kWc)	6 to 7	390 to 455	600 to 700
	Photovoltaic (10 - 250 kWc)	1.2 to 6	160 to 390	170 to 600
	Photovoltaic (> 250 kWc)	1 to 4.1	65 to 265	150 to 408

Question 5: Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system (Article 22(1)(d) of Directive 2009/28/EC).

Flemish Region

Use of guarantees of origin as proof of origin of electricity supplied

The VREG monitors the surrender of guarantees of origin (GOs), guaranteeing to electricity customers in the Flemish Region the origin of electricity supplied to final customers that is generated from renewable sources.

The regulations on the award and use of guarantees of origin as proof of the origin of the electricity supplied are set out in Article 7.1/1.1 to 7.1/1.4 and Article 7.4.1 of the Energy Decree (*Energiedecreet*) and Article 6.2/3.1 to 6.2.5 of the Energy Decree (*Energiebesluit*).

Those articles transpose in the Flemish Region Article 15 of Directive of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

Issue of GOs by the VREG

The VREG issues guarantees of origin to owners of production installations in the Flemish Region, or to natural or legal persons designated for this purpose by the owners, for every 1 000 kWh of electricity generated in the installation from renewable energy sources in the Flemish Region.

Only one guarantee of origin is issued for the same 1 000 kWh of electricity generated, regardless of the energy source or technology. The guarantees of origin issued by the VREG are registered in a central database, in the same way as imported foreign GOs (see below).

Guarantees of origin are applied for by sending the Flemish Energy Agency (*Vlaams Energieagentschap*) application documents, consisting of a correctly and fully completed application form, in a specified format, and the documents in support of the application indicated on the application form.

After the application has been accepted, the guarantees of origin are issued monthly per tranche of 1 000 kWh of generated electricity. The remaining number of kWh is carried over to the following month.

The electricity generated is the amount of net electricity production. The amount of net electricity production is the electricity produced, less the electricity offtake measured, or the equivalent electricity offtake from the utility facilities of the production installation.

If the utility facilities use energy sources other than electricity, their equivalent electricity offtake is calculated by the Flemish Energy Agency as the electricity that can be generated with the same amount of energy in a reference installation.

If the application for a guarantee of origin shows that the electricity offtake or the equivalent electricity offtake is small compared to the electricity produced, the Flemish Energy Agency may decide to calculate the net electricity production on the basis of an estimate from total electricity production.

Management of GOs

The VREG manages the issued guarantees of origin in an online database, which can be used free of charge. The details recorded for each guarantee of origin include: the holder of the certificate, registration number, a number of data on the production installation (e.g. place of production, rated capacity), renewable energy source used, year and month of production.

The status of the guarantee of origin is also registered in the database: surrendered, not yet surrendered, used in situ (= cannot be surrendered), exported or expired.

GO trading

Guarantees of origin are freely negotiable. Sales of GOs, including import and export, are registered in the central database. The VREG provides the opportunity to announce offers of and requests for guarantees of origin.

Every month the VREG publishes the average transaction price of the guarantees of origin registered in the central database, the number of guarantees of origin issued, per technology, and the number of guarantees of origin imported and exported, broken down into countries of destination and countries of origin and technologies.

Import and export of GOs

A guarantee of origin from a different region or a country in the European Economic Area can be imported into the Flemish Region if the owner proves to the VREG that certain conditions have been satisfied.

After the competent body in the other region or country has transferred the necessary information for the guarantee of origin electronically to the VREG and the guarantee of origin has been made permanently unusable in the other region or country, the guarantee of origin is made available in the central database with the status 'not yet surrendered', unless more than twelve months have elapsed since the end of the production period for the amount of energy in question, in which case the status is 'expired'.

The VREG is a member of the Association of Issuing Bodies (AIB) (website <http://www.aib-org.net>). Guarantees of origin produced by a body that is a member of the AIB in the European Energy Certification System (EECS) and is specifically registered with the AIB as an 'issuing body' for guarantees of origin for electricity from renewable energy sources in all cases satisfy the above conditions and can therefore be imported into the Flemish Region.

Such guarantees of origin must then be imported into the Flemish Region in accordance with the protocol laid down by the AIB in 'The Principles and Rules of Operation of Members of the Association of Issuing Bodies for the European Energy Certification System' (on the AIB website), supplemented by the specific domain protocol for Flanders.

The specific domain protocol for Flanders has been published as an annex to VREG's BESL-2011-7 (pdf), on the establishment of the detailed technical rules on the use of green energy certificates as a guarantee of origin: http://www.vreg.be/sites/default/files/uploads/domain_protocol_vreg_flanders_v8_07092017.pdf

Surrender of GOs

The supply of electricity in the Flemish Region as an amount of electricity from renewable energy sources is authorised if the amount thus supplied corresponds to the relevant number of kWh on the guarantees of origin of electricity from renewable energy sources surrendered to the central database.

Every month suppliers surrender a number of guarantees of origin for electricity generated from renewable energy sources and a number of guarantees of origin for electricity generated from good quality cogeneration corresponding to the amount of electricity they have sold in the previous month to customers in the Flemish Region as electricity from renewable energy sources and the amount they have sold in the previous month to customers in the Flemish Region as electricity from good quality cogeneration.

The guarantees of origin may be issued by the VREG or by a department accredited for that purpose by the Federal Government, the other regions or another country.

A guarantee of origin must be surrendered within twelve months of the end of the production period for the amount of energy in question.

Only guarantees of origin with 'not yet surrendered' status may be surrendered.

The VREG compares the number of guarantees of origin surrendered each month with the amount of electricity which suppliers have supplied to their customers that month as electricity from renewable energy sources or electricity from good quality cogeneration.

Suppliers provide the VREG with a monthly list of customers connected to the network of the system operator or transmission system operator which they supply with electricity from renewable energy sources or good quality cogeneration, indicating, for each customer, the proportion of electricity from renewable energy sources or good quality cogeneration in the total electricity supply to that customer.

System operators and transmission system operators report monthly to the VREG and the relevant supplier the aggregated offtake figures for customers, broken down into the proportion of electricity from renewable energy sources and good quality cogeneration in the total amount of electricity supplied to those customers.

The VREG checks every month whether the suppliers have surrendered the correct number of guarantees of origin. If the supplier has not surrendered sufficient guarantees of origin, an administrative penalty may be imposed.

The VREG then offers electricity customers the opportunity to check on its website whether, and to what extent, their electricity supply has been generated from renewable energy sources and good quality cogeneration.

See <http://www.vreg.be/groencheck>

Reliability of the GO system and protection against fraud

Fraud-proofing is guaranteed by avoiding double counting of the same amount of green electricity.

The VREG is the only body designated to issue GOs for the production of electricity in the Flemish Region.

Article 7.1.8. Energy Decree (Energiedecreet)

The supply of electricity in the Flemish Region as an amount of electricity from renewable energy sources or from good quality cogeneration shall be permitted if the amount of electricity thus supplied corresponds to the respective number of guarantees of origin submitted to the VREG.

Article 7.1.9.

The Flemish Government shall determine the conditions under which guarantees of origin issued by the competent body of the Federal Government, other regions or other countries may be accepted for the supply of electricity as indicated in Article 7.1.8. These conditions must be objective, transparent and non-discriminatory.

Walloon Region

In the Walloon Region, the 'disclosure' mechanism for electricity from renewable sources (RES-E) and electricity generated from cogeneration units (CHP) is entirely based on guarantees of origin. No other proof that the electricity is green is accepted, just as no sale of electricity from renewable sources or cogeneration units is allowed if the relevant guarantees of origin have not been cancelled. Imports and exports of guarantees of origin from Member States that have implemented the rules on the European Electricity Certificate System (EECS) of the Association of Issuing Bodies (AIB) are accepted immediately.

Guarantee of origin

Electricity from certified renewable or cogeneration (CHP) units is allocated guarantees of origin whether or not the units receive support. Only electricity normally sold after injection into the network or, more rarely, directly into the production site is granted guarantees of origin. A guarantee of origin can only be issued for the net electricity produced. Guarantees of origin may be RE-GOs or CHP-GOs, or a combination of the two.

The Walloon Energy Commission, the energy market regulator for the Walloon Region, has been assigned the role of issuing body. The system is administered entirely by the electronic registers of the CWaPE, which grants quarterly guarantees of origin to producers on the basis of quarterly production reports. The

guarantees of origin are issued in accordance with the EECS rules. They are then exchanged within the Member States applying the EECS rules. There is no record of any applications for import or export from a non-EECS Member State.

The green energy certificate (support function) and the guarantee of origin (disclosure function) are completely separate. They are used exclusively for their respective purposes in order to avoid double counting or misuse. Guarantees of origin can be used only for disclosure. Cancellation of a guarantee of origin in no way affects the validity of the green energy certificate for purposes of compliance with the quota, and vice versa.

Disclosure

The disclosure system is implemented by Article 11, §2, 3°, of the Walloon Government Decree of 30 March 2006 on public service obligations in the electricity market, which requires electricity suppliers to indicate the source of the electricity supplied the previous year in their contracts and bills.

Article 43, §2, of the Walloon Government Decree of 30 March 2006 on public service obligations in the electricity market provides that electricity suppliers must inform the Walloon Energy Commission by 31 March each year of the source of the electricity supplied in the previous year. The Walloon Energy Commission verifies the reliability of this information and draws up an annual report on its findings. The fuel mix calculation is partly based solely on the cancelled guarantees of origin (RE-GOs and/or CHP-GOs) and partly on suppliers' declarations on fossil and fissile energy sources. To avoid double counting of the energy from renewable sources, the renewable part is deducted from the calculation of the residual fuel mix for the producer's generation system. The Belgian fuel mix calculated under the RE-DISS (Reliable Disclosure Systems for Europe) project (European Platform for Electricity Disclosure - EPED) is used for electricity purchased on the electricity exchange.

The Walloon Energy Commission uses the data provided by the distribution and transmission system operators to establish the amount of electricity supplied. On the basis of those data, the suppliers declare the total amount of electricity sold for each of their products.

Guarantees of origin are used in the monthly review of proportions of energy from renewable sources or renewable cogeneration units in the energy mix to be allocated to each offtake point. In addition, suppliers may still cancel the guarantees of origin for contracts not stamped as green but containing electricity from renewable or cogeneration units. Monthly and annual totals are aggregated to determine the annual disclosure.

The cancellation of guarantees of origin relates only to authorised electricity suppliers, mainly to strengthen competition in the energy market. Accordingly, no final consumers are authorised to cancel guarantees of origin for their own use. Self-producers are legally required to cancel their RE-GOs or CHP-GOs *pro rata* to their consumption. These mechanisms ensure that RE and CHP attributes correspond to physical energy.

References:

- Walloon Government Decree on public service obligations in the electricity market, 30 March 2006 (*Arrêté du Gouvernement wallon relatif aux obligations de service public dans le marché de l'électricité, 30 mars 2006*), <http://wallex.wallonie.be/index.php?doc=8986>
- Ministerial Order establishing the method for determining primary energy sources used to generate electricity, 13 December 2006 (*Arrêté ministériel établissant la méthode de détermination des sources d'énergie primaire utilisées pour produire de l'électricité, 13 décembre 2006*) – (*Moniteur belge/Belgisch Staatsblad of 22 December 2006, p. 73884*), <http://wallex.wallonie.be/index.php?doc=9393>
- Decree on the organisation of the regional electricity market, 12 April 2001, (<http://wallex.wallonie.be/index.php?doc=9075>)

Brussels Capital Region

In the Brussels Capital Region, BRUGEL, the local regulatory body for the electricity and gas markets, is responsible for issuing guarantees of origin and managing the system. BRUGEL has been a member of the

Association of Issuing Bodies (AIB) since 2008. The AIB promotes the use of a standardised system, based on a harmonised environment, structures and procedures to ensure the reliability of international energy certificate systems. This standardised system is called the EECS® (European Energy Certification System) and its details are set out in the Principles and Rules of Operation (PRO, i.e. the EECS rules) and supporting documents. Membership of the AIB, compliance with the PRO and the interconnection with other members ensure that the procedures for granting, transferring and cancelling guarantees of origin are reliable and transparent.

For the period 2015-2016, almost all the green electricity production installations in the Brussels Capital Region were consumers of their own electricity or assimilated. For the period 2015-2016, the electricity produced by the municipal waste incinerator remained the sole beneficiary of transferable GOs for the portion of electricity injected into the grid. In 2015, 106 818 GOs were granted in this way¹⁰ and in 2016, 111 021 GOs.¹¹ In 2016, 46% of the total supply of electricity in Brussels was green.¹²

¹⁰ BRUGEL, *'Rapport sur le fonctionnement du marché des certificats verts et des garanties d'origine'*, 2015, p.42.

¹¹ BRUGEL, *'Rapport sur le fonctionnement du marché des certificats verts et des garanties d'origine'*, 2016, p.46.

¹² *Ibid.*, p.33.

Question 6: Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes (Article 22(1)(g) of Directive 2009/28/EC).

*It is suggested that **Tables 4 and 4a** are used to provide more detailed information on the biomass supply.*

Table 4: Biomass supply for energy use

* Amount of raw material if possible in m³ for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste.

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

	Amount of domestic raw material (*)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (*)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non-EU(*)		Primary energy in amount of imported raw material from non EU (ktoe)	
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
<i>Biomass supply for heating and electricity:</i>	10 634 399	11 898 582	1 698	1 827	847 121	805 793	259	242	918 330	1 678 931	214	395
Direct supply of wood biomass from forests and other wooded land energy generation (fellings etc.)	1 972 678	2 424 831	367	459	-	-	-	-	-	-	-	-
Indirect supply of wood biomass (residues and co-products from wood industry etc.)	3 405 359	3 485 285	678	675	643 080	606 924	194	183	858 859	1 635 134	205	388
Energy crops (grasses, etc.) and short rotation trees (please specify)	20 521	1 268	49	49	2 171	1 721	1	0	59 472	43 797	9	6
Agricultural by-products / processed residues and fishery by-products	558 697	728 283	87	94	22 664	9 156	7	3	-	-	-	-
Biomass from waste (municipal, industrial etc.)	4 497 939	5 070 923	459	494	-	-	-	-	-	-	-	-
Others (e.g. alternative fuels in the cement industry)	179 206	187 993	58	56	179 206	187 993	58	56	-	-	-	-
<i>Biomass supply for transport:</i>	239 288	239 325	149	249	1 151 464	1 176 400	340	504	39	-	106	-
Common arable crops for biofuels (wheat, sugar beet, rape seed)	239 288	239 325	149	249	1 151 464	1 176 400	340	504	39	-	106	-
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)	-	-	-	-	-	-	-	-	-	-	-	-
Others (alternative fuels in the cement industry)	-	-	-	-	-	-	-	-	-	-	-	-

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

Land use	Surface (ha)	
	TO	
	2011	2012
1. Land used for common arable crops (wheat, sugar beet etc.) and oilseeds (rapeseed, sunflower etc.) (Please specify main types)	15 212	14 593
Wheat	-	-
Sugar beet	-	-
2. Land used for short rotation trees (willows, poplars). (Please specify main types)	145	165
Willows	63	68
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)	138	190
Miscanthus	83	105

Question 7: Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources. Please provide where available references to relevant documentation on these impacts in your country (Article 22(1)(h) of Directive 2009/28/EC).

When assessing commodity price impacts, it is suggested to consider at least the following commodities: common food and feed crops, energy wood, pellets.

Changes in raw material prices and land use as a result of the increased use of biomass and other renewable energy sources are not known to have any effects.

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

Table 5: Production and consumption of Article 21(2) biofuels (ktoe)

[1] Biofuels from waste, residues, non-food cellulosic materials and ligno-cellulosic materials.

	2015	2016
Production – Fuel type X (Please specify)	0.00	0.00
Consumption – Fuel type Annex IX - Part B - (b) Animal fats	0.00	6.16
Total production Article 21(2) biofuels	0.00	0.00
Total consumption Article 21(2) biofuels	0.00	6.16
% share of Article 21(2) biofuels in total RES-T	0.00	0.15%

Question 9: Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within your country in the preceding 2 years. Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within your country (*Article 22(1)(j) of Directive 2009/28/EC*).

The production of biofuels is not known to have had any adverse effects on biodiversity, water and soil quality.

Question 10: Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (Article 22(1)(k) of Directive 2009/28/EC).

For the calculation of net greenhouse gas emission savings from the use of renewable energy, the following methodology is suggested:

For biofuels: In accordance with Article 22(2) of Directive 2009/28/EC. ValBiom

For electricity and heat it is suggested to use the EU-wide fossil fuel comparators for electricity and heat as set out in the report on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling,^{13 14} if no later estimates are available.

If a Member State chooses not to use the suggested methodology for estimating the net greenhouse gas emission savings, please describe what other methodology has been used to estimate these savings.

Table 6: Estimated GHG emission savings from the use of renewable energy (t CO₂-eq)

Environmental aspects	TO	TO
Tonne CO ₂	2015	2016
Total estimated net GHG emission saving from using renewable energy [1]		
Estimated net GHG saving from the use of renewable electricity		
Estimated net GHG saving from the use of renewable energy in heating and cooling		
Estimated net GHG saving from the use of renewable energy in transport		

¹³ The report is available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0011:FIN:NL:PDF>

¹⁴ The report can be consulted at:

http://ec.europa.eu/energy/renewables/transparency_platform/doc/2010_report/com_2010_0011_3_report.pdf.

Question 11: Please report on (for the preceding 2 years) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020 (Article 22(1)(l) and (m) of Directive 2009/28/EC).

Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in Belgium (ktoe)^{15, 16}

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production	0	0	0	0	0	0	0	0	0	0

¹⁵ Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report, the Member State may correct the data of the previous reports.

¹⁶ When filling in the table for deficit production, please market the shortage of production using negative numbers (e.g. -x ktoe).

Question 11a: Please provide details of statistical transfers, joint projects and joint support scheme decision rules.

Belgium has not yet made any statistical transfers.

Question 12: Please provide information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates (Article 22(1)(n), of Directive 2009/28/EC).

Please note that in the first progress report (2011 report) Member States are invited to outline their intentions with regard to the questions addressed in Article 22(3)(a) to (c). In addition, Member States are also welcome to provide any other information considered relevant to the specific situation of developing renewable energy of each Member State.

Flemish Region

According to figures from the 2006 household waste sorting campaign in Flanders, the renewable share of residual waste on an energy basis is 47.78%. The method is explained in the report on determination of the renewable share of residual waste (Vito, April 2009).

Walloon Region

The biodegradable organic fraction of incinerated waste is estimated to be 47% of total inter-municipal waste. The net calorific value of the organic part of the waste is estimated to be 4.24 GJ per tonne. The fraction of primary energy considered to be renewable is 511 GWh (reference: ICEDD, energy report 2013).

Brussels Capital Region

The Neder-Over-Heembeek municipal waste incinerator linked to an electricity generating turbine is the only installation in Brussels using waste to generate electricity. Guarantees of origin have been granted to it for the share of electricity generated from the organic fraction of the incinerated waste. This share is determined on the basis of the 'Carbon-14' method in accordance with the current standards.

In 2015, this installation enabled 460 547 tonnes of waste to be recovered. BRUGEL issued guarantees of origin for the share of electricity from renewable sources of this production estimated at 106 818 GWh.¹⁷ In 2016, 499 000 tonnes of waste (488 639 tonnes) of which 335 000 tonnes of household waste from the Brussels Capital Region and 164 000 tonnes of waste from shops, municipalities, and businesses were recovered.¹⁸ Net production of electricity reinjected into the Elia grid amounted to 239 757 GWh, for which the regulator BRUGEL issued guarantees of origin for the renewable share, estimated at 111 021 GWh.¹⁹

¹⁷ BRUGEL, 'Rapport sur le fonctionnement du marché des certificats verts et des garanties d'origine', 2015, p.42.

¹⁸ <https://www.bru-energie.be/index.html>

¹⁹ BRUGEL, 'Rapport sur le fonctionnement du marché des certificats verts et des garanties d'origine', 2016, p.6.