



WALLOON ENERGY COMMISSION

SPECIFIC ANNUAL REPORT 2007

CD-8f24-CWaPE

on

'The Evolution of the Green Certificate Market'

Issued in accordance with Article 29 of the Arrêté of the Walloon Government of 30 November 2006 concerning the promotion of green power.

26 June 2008

Specific annual report for 2007 by CWaPE on the evolution of the green certificate market (GCs)

1 Subject

The Arrêté of 30 November 2006 concerning the promotion of green power¹, specifies in Article 29 that:

"Article 29. By 30 April, CWaPE shall issue a specific report concerning the evolution of the market for certificates of origin and the green certificate market. This report shall in particular mention the number of green certificates issued for each technology and energy source during the year in question, the green certificates supplied to CWaPE as per Article 25, the average price of a green certificate and the fines imposed on system operators and suppliers for non-compliance with quotas.

The report shall also mention the number of certificates of origin issued for each technology and energy source during the year in question, the certificates of origin supplied to CWaPE, the average price of a certificate of origin, and the number of certificates of origin exported to and imported from other regions or countries.

This report shall be supplied to the Walloon Government."

Article 25 of the same Arrêté provides that:

"Article 25. § 1. By the end of the second month following the end of a quarter, system suppliers and operators shall supply CWaPE with a number of green certificates consistent with the quota imposed on them by this Article. For this purpose, they shall notify CWaPE of the number and characteristics of the green certificates they intend to include in their quota, as well as the total power supplied in the Walloon Region during the quarter under consideration. (...)

....

§3. The quota shall be:

- (...)
- 7 % between 1st January 2007 and 31 December 2007;
- 8 % between 1st January 2008 and 31 December 2008;
- 9 % between 1st January 2009 and 31 December 2009;
- 10 % between 1st January 2010 and 31 December 2010;
- 11 % between 1st January 2011 and 31 December 2011;
- 12 % between 1st January 2012 and 31 December 2012.

In the course of 2009, the CWaPE shall analyse the situation of the green certificate market, particularly concerning the equilibrium of the market, and the impact of the mechanism on electricity prices, and evaluate the necessity of increasing the quotas set out above from 1st January 2010. That evaluation shall be sent to the Minister by 1st September 2009.

By 1st January 2010, the Government shall set new quotas applicable from 1st January 2013, and, taking account in particular of the development of the market for green certificates in the Walloon Region and the targets set by the European Union."

This report relates essentially to the market for green certificates (GCs), to the extent that the market for certificates of origin (CO) will only be fully operational from 2008 onward. For information, the report does show the number of CO issued by the CWaPE in 2007 for certified generation sites in the Walloon Region.

¹ This arrêté was amended by the arrêts of 25 January 2007 and 20 December 2007.

2 The green certificate system

2.1 Legal framework and goals

Within the scope of European directive 96/92/EC² concerning common rules for the internal market in electricity, the Walloon Region, within its area of competence relating to power distribution (grids with a voltage less than or equal to 70 kV), adopted a décret on 12 April 2001 concerning the organization of the regional electricity market, hereafter referred to as the Décret. This Décret covers the following concerns in particular:

- the gradual opening-up of the market for consumers and the introduction of a principle of competition between producers/suppliers;
- the determination of the rules by which the market operates under the control of a regulator: the Walloon Energy Commission (CWaPE);
- the determination of public-service obligations binding the market operators, including a green certificate system to encourage all efficient technologies for the generation of power from renewable energy and cogeneration.

On 30 November 2006, the Walloon Government adopted the Arrêté concerning the promotion of green power, and repealing the Arrêté of 4 July 2002 and all subsequent arrêtés amending it. This new Arrêté, hereafter referred to as AGW-PEV, supplies a detailed description of the green certificate system applicable in Wallonia.

The supporting mechanism for the generation of green power set up in the Walloon Region is also based on the following two European directives:

- Directive 2001/77/EC of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market;
- Directive 2004/8/EC of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market.

These directives make the promotion of green power an EU priority due to its contribution to:

- the security and diversification of the energy supply;
- environmental protection (and in particular the reduction of greenhouse gas emissions) and sustainable development;
- the reinforcement of competition on the internal power market;
- economic (regional and local development) and social (job creation on a local scale) cohesion.

For these reasons, and in order to achieve national targets, these directives explicitly specify that the Member States shall set up supporting mechanisms for quota systems (green certificates).

On 16 July 2002, the Belgian federal government adopted the Royal Decree on the setting-up of mechanisms for the purpose of promoting power generated from renewable energy sources and creating a minimum-price system for the purchase of green certificates by transmission system operators (TSOs).

² This has since been repealed by Directive 2003/54/EC concerning common rules for the internal market in electricity.

2.2 Main legislative changes in 2007

On 16 March 2006, the Walloon Government adopted a series of measures intended to guarantee the equilibrium of the Walloon market for green certificates. In 2007, these decisions resulted in amendments to the Décret (4 October 2007) and the AGW-PEV in 2007 (20 December 2007).

Most of these amendments came into force from 1st January 2008 and concern the following measures:

1. The period for which green certificates are issued rose from 10 to 15 years, although a reduction coefficient ('k' factor) is applied for the last five years.³ This factor is determined by the Minister, for each green power production system, on a proposal from CWaPE and adapted every three years (AGW-EPI, Article 15).
2. The rates of issuance of green certificates were amended for certain generation systems:
 - a. For biomass generation, the issue of green certificates is limited to the first tranche of 20 MW, as is the case for hydroelectric generation or cogeneration (Décret Article 38§8)⁴ ;
 - b. For biomass generation, *"where a facility which is recovering energy mainly from biomass except wood, derived from industrial activities taking place on the site of the generation facility, uses a particularly innovative process and is compatible with the principles of sustainable development, the Government may decide, after CWaPE has given its opinion on the particularly innovative character of the process used, to limit to 2 the rate of carbon dioxide saving for all the output of the generation facility, resulting from the total of the power generated on the same production site, within a limit of less than 20 MW"* (Décret, Article 38§3);
 - c. For photovoltaic solar generation, the level of support is increased by application of a multiplier coefficient instead of a coefficient based on the level of CO2 savings. 38§6). The multiplier coefficients applicable depending on the power of the facility are shown in Article 15quater of AGW-PEV. These coefficients are reviewed by the Government every two years based on a report by the CWaPE.
3. The number of green certificates awarded to facilities commissioned before 1st May 2001, referred to as "historic" facilities, is reduced by a coefficient "q" determined per electricity generation system by the Government based on an opinion by the CWaPE (AGW-PEV, Article 15bis and annex).
4. The reduction in the quota of green certificates to be submitted by a supplier to a using a large amount of electricity having entered into a sector-specific agreement has been amended in order to increase the reduction granted for these end customers.

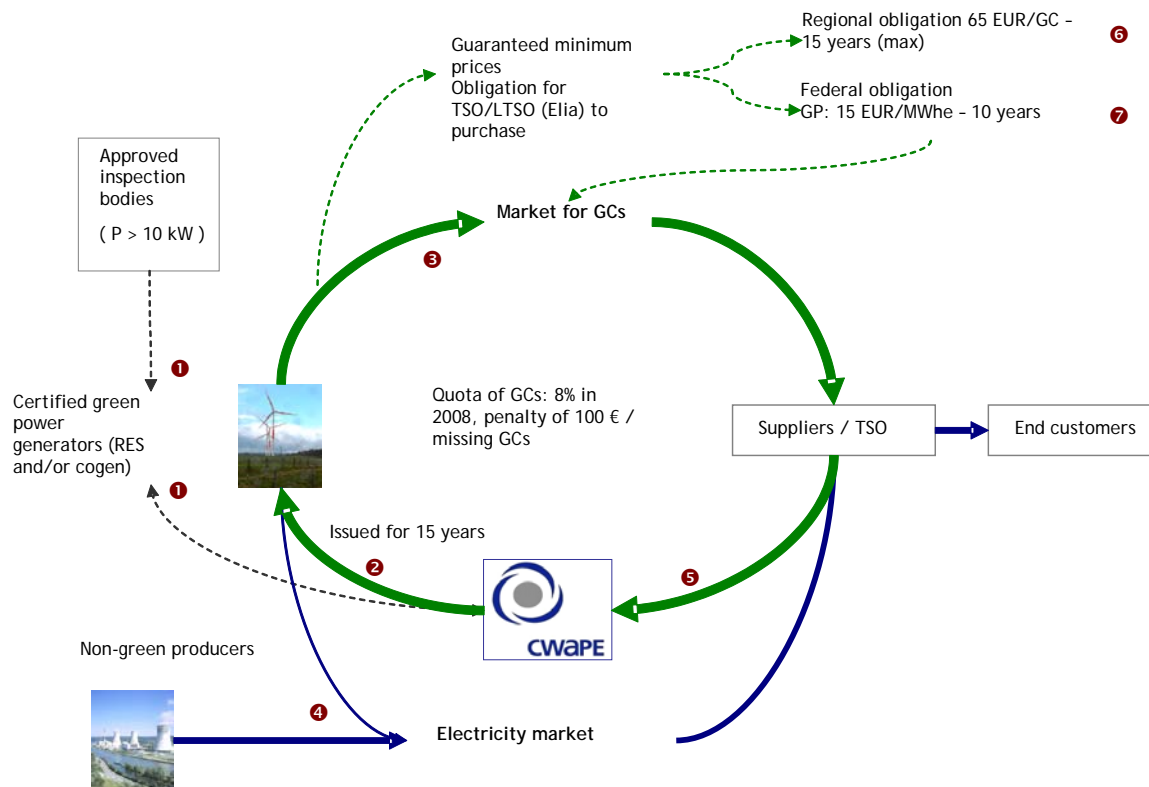
The arrêté of the Walloon Government of 30 March 2006 on public service obligations in the electricity market (AGW-OSP) was also amended on 20 December 2007 so as to replace the support mechanism for generation by a green certificate purchase obligation mechanism incumbent on the local transmission system operator (Elia) at a guaranteed minimum price.

³ The values prevailing for the period 2008-2011 are given in the Ministerial Arrêté of 21 March 2008.

⁴ For biomass generation, this provision only covers generation sites where a certificate of origin was issued after 26/10/2007 (Décret of 04/10/2007 - Article 20)

2.3 The principle of the green certificates system

The diagram below shows the support mechanism of green certificates (GCs) that has prevailed since 1st January 2008.⁵



Any electricity producer wishing to register an electricity generation site must submit a prior application for issue (DPO) to the CWaPE. A certificate of origin (CO) drawn up by an approved inspection body must be enclosed with the application,⁶ in order to certify the facility's compliance. Once the application has been accepted by the CWaPE, the generation site is registered as a certified green power generation site. (1).

Every quarter, the producer sends the energy meter readings to the CWaPE. On this basis, the CWaPE issues the GCs (2). Once in possession of the GCs, can trade them with any buyer operating on the GC market (3), irrespective of the sale of the physical electricity generated(4). These green certificates are valid for 5 years.

Every quarter, returns of electricity supplies in Wallonia declared by suppliers and partly measured by the transmission system operators are sent to the CWaPE. Based on this information, the suppliers and transmission system operators are bound to give⁷ the CWaPE a quota of GC proportional to the quantity of electricity supplied during the quarter⁸. A fine of € 100 per missing certificate is levied (5).

As an alternative solution to the disposal of green certificate, a system of green certificate purchase obligations incumbent on the local transmission system operator (GRLTL Elia) at a guaranteed minimum price of €65 was foreseen in the Décret⁹ (6).

A guaranteed price was also provided for by the Federal Government (GRT Elia). By way of example, for photovoltaic systems, the guaranteed price is € 150 per MWh. The green certificates purchased by GRT are then sold on the GC market(7).

⁵ The diagram presenting the system prevailing in 2007 is shown in the specific annual report for 2006 on the evolution of the market of GCs (see report CD-7104-CWaPE of 13 September 2007 - page 4).

⁶ Except for installations with a developable net output capacity of less than 10 kWe which are subject to a simplified procedure (AGW-PEV, Article 6 and Art. 7, §2.) where the CO is drawn up directly by the CWaPE.

⁷ Via this operation, the green certificates are redeemed: they are rendered unusable in the database.

⁸ A quota reduction has been provided for, to be used by consumers of over 5 GWh per quarter and per operating site (AGW-PEV, Article 25, §4)

⁹ Via this operation, the green certificates are redeemed: they are rendered unusable in the database.

2.4 The main concepts relating to the issuance of green certificates

2.4.1 Definition of green power generation (Décret, Art. 2)

Renewable energy sources: any energy source other than fossil fuels and nuclear fission, the consumption of which does not limit its future use, in particular hydraulic energy, wind energy, solar energy, geothermal energy, biogas, organic products and waste from agriculture and forestry, and the biodegradable organic portion of waste (Décret, Art. 2, 4°). **Biomass:** renewable material (in solid, liquid or gaseous form) derived from the biodegradable fraction of products, waste and residues from agriculture (including substances of plant and animal origin), forestry and related industries, as well as the biodegradable fraction of industrial and household waste (Décret, Art.2, 4°bis).

Cogeneration: simultaneous generation, in a single process, of thermal and electric and/or mechanical energy (Décret, Art.2, 2°bis). **High-quality cogeneration and trigeneration:** combined generation of heat (or cold) and power, designed according to the customer's heat or cold requirements, which saves energy compared with the separate generation of the same quantities of heat and power (and if applicable of cold) in modern reference facilities, the annual operating yield of which is defined and published annually by CWAPE (Décret, art.2, 3°).

Green power: power generated from renewable or high-quality cogeneration sources, the generation system for which generates a *minimum saving of 10% on carbon dioxide* emissions compared with the emissions defined and published annually by CWAPE for traditional generation in modern reference facilities. (Décret, art. 2, 5°).

2.4.2 Principles of issuance of green certificates (Décret, Art. 38)

A **green certificate** is a transferable certificate issued by CWAPE to producers of green power for a number of net kWh generated which is equal to 1 MWh divided by the carbon dioxide saving rate (Décret, art. 38, §2 and §7). By derogation, the Government may, based on an opinion issued by the CWAPE, apply a *multiplier coefficient*, which may be a sliding scale reduction over time, to the number of green certificates issued for the electricity generated by photovoltaic solar panels, according to arrangements that it shall decide (Décret, Art. 38, §6).

The carbon dioxide saving rate is calculated by dividing the carbon dioxide saving achieved by the system under consideration by the carbon dioxide emissions of the traditional reference electric system, the emissions of which are defined and published annually by CWAPE. (Décret, Art. 38, §2). **Carbon dioxide emissions** are those generated by the green power generation as a whole and include fuel production and transport, emissions during combustion if applicable, and waste processing if applicable. All emissions from the facility are taken into account in the case of hybrid facilities. The various **carbon dioxide emission coefficients** for each green power generation system under consideration are approved by CWAPE (Décret, Art. 38, §4).

Output ceilings and thresholds: The carbon dioxide saving rate is limited to 1 for the output generated per facility above a power output capacity above 5 MW. Below this threshold, a ceiling of 2 is applied (Décret, Article 38, §2)¹⁰. As regards hydroelectric generation, high quality cogeneration or generation of electricity from biomass, green certificates are issued to the electricity produced by these facilities up to an electric output capacity of 20 MW (Décret, Article 38, §8).

Reduction coefficients: based on an opinion from the CWAPE, the Government may reduce the number of green certificates to reflect the age of the green power generation facility, its viability and the generation system Décret, Article 38, §5).

¹⁰ For biomass generation, "where a facility which is recovering energy mainly from biomass except wood, derived from industrial activities taking place on the site of the generation facility, uses a particularly innovative process and is compatible with the principles of sustainable development, the Government may decide, after CWAPE has given its opinion on the particularly innovative character of the process used, to limit to 2 the rate of carbon dioxide saving for all the output of the generation facility, resulting from the total of the power generated on the same production site, within a limit of less than 20 MW" (Décret, Article 38, §3).

2.5 Conditions and procedure for the issuance of green certificates (AGW-PEV)

2.5.1 Green power metering procedures and code

The number of green certificates (GCs) issued is equal to the issue rate (τ) multiplied by the net power generated by the facility (E_{enp} , expressed in MWh_e):

$$\text{Number of GC} = \tau \times E_{\text{enp}} \quad (\text{GC/MWh})$$

The net electricity generated is the gross electricity generated minus the electricity required by the functional elements, i.e. equipment that consumes energy (primary, electricity, heat, cold) necessary for the electricity generation cycle, encompassing fuel production and, if applicable, waste processing (AGW-PEV Art. 2 10°).

Green certificates are granted both for electricity consumed by a producer and for electricity fed into the grid or transmitted via direct power lines (AGW-PEV, Art. 15 §2). Any exportation of green power generated has no impact on the issuance of green certificates. The net electricity produced (E_{enp}) taken into consideration is measured prior to transformation and dispatch to the grid (AGW-PEV, Art. 15 §3).

The rate of issuance (k) depends on:

- the measured *environmental performance* of the facility (CO2 saving rate);
- the *decentralised nature* (output capacity thresholds, ceilings on CO2 saving rate);
- the *viability of the generation system* (multiplier coefficients for photovoltaic, reduction factors "k" after 10 years and "q" for historic facilities).

For further information on the calculation of issuance rates, a brochure and *software* are available on site of the CWaPE, giving more detail about the calculation methods to be applied to the majority of green power generation systems.

*A metering code*¹¹, drawn up by the Minister pursuant to Article 9 of the AGW-PEV, which lays down the principles and methods applicable to the metering of the quantities of energy taken into account for the calculation of the number of green certificates to be issued to green power generation facilities (AGW-PEV Art. 15§3).

2.5.2 Certification of a green power generation facility

Green certificates (and certificates of origin) are issued for the generation of green power by a generation facility only if an approved inspection body¹² has verified that the quantities of electricity generated from this site can be clearly identified and measures, in particular to certify the energy sources (renewable in nature) and the efficiency of the conversion (the viability of cogeneration). In concrete terms, an approved body issues a certificate of conformity for the facility, known as a *certificate of origin* (AGW-PEV, Article 7), to the electricity generation facility, whose energy metering complies with the *metering code*.

This document mentions, in particular, the energy sources used, the generation technology and the net developable output capacity of the facility. The certificate of origin supplies the *metering algorithms*, i.e. the mathematical operations enabling the various quantities of energy to be calculated. The main algorithms are: the metering algorithm for the net power generated (E_{enp}) - self-consumption (E_{ac}) - supplied locally (E_{eloc}) - fed into the grid (E_{einj}); the metering algorithm for the net heat recovered (E_{qnv}); the metering algorithm for the net cooling energy recovered (E_{fnv}) the metering algorithm for entering energies (E_{e}).

Besides the spot checks and targeted checks arranged by the CWaPE (AGW-PEV, Art.8) and the checks following modifications, each facility has to be checked by an approved body (AGW-PEV, Art.7) at a frequency depending on the net developable electric output capacity ($P_{\text{end}} > 20$ kW):

¹¹ The Ministerial Arrêté of 12 March 2007, which describes the procedures and code applicable to the metering of the quantities of energy published in the Belgian Law Gazette on 20 April 2007 - Annex: "Procedures and metering code for electricity generated from renewable energy sources and/or cogeneration".

¹² The list of approved inspection bodies may be consulted on the CWaPE website: www.cwape.be.

every year; 10 kW < Pend < 20 kW: every 5 years; Pend < 10 kW: these facilities are covered by a simplified procedure¹³ which waives the involvement of an approved inspection body.

2.5.3 Prior application for the issuance of green certificates

To obtain green certificates (and certificates of origin), a producer must first submit a *prior application for issue* to CWaPE, enclosing a copy of the certificate of origin (AGW-PEV Art. 10). The CWaPE checks that the application is complete and complies with the legislation, and notifies its decision. Starting from the date of notification of acceptance by CWaPE, the right to obtain green certificates is guaranteed for a period of 15 years (AGW-PEV Art. 15 §1).

2.6 Level of support for green producers:

To supplement the financial value of the electricity generated and, if appropriate, the sale of certificate of origin, the maximum income to which a green producer may aspire from the sale of its green certificates is directly linked to the amount of the fine:

$$\text{Max. income} = \tau \times \text{fine} \quad (\text{€/MWh})$$

The following table gives, for information only, the theoretical maximum (excluding tax) that a green producer could expect, depending on the generation system concerned.

The actual income could even be higher if we take account of the fiscal aspects. Indeed, purchase of green certificates, unlike fines, is tax-deductible for suppliers liable to corporation tax.

In this table, the guaranteed minimum income (if it meets the conditions to benefit from the purchasing obligations or the generation subsidy) through federal or regional purchasing obligations is also shown.

This table does not take account of any reduction factors which apply after 10 years of issuance, or for historic sites from 1st January 2008. Likewise, the ceilings on the rate of issuance that apply above 5 and 20 MW are not taken into consideration.

| Systems | Rate of issuance (GC/MWh) | Minimum guaranteed income (EUR/MWh) | Theoretical maximum income excluding tax (€/MWh) |
|-------------------------------|---------------------------|-------------------------------------|--|
| 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-electric (≤ 20 MW) | 1 | 65 | 100 |
| Wind | 1 | 65 | 100 |
| Biomass cogeneration (≤ 5 MW) | 0.1 to 2 | 6.5 to 130 | 100 to 200 |
| Photovoltaic | 1 to 7 | 150 to 455 | 150 to 700 |

Table 2.1: Level of support for various generation systems

¹³ AGW-PEV, Art. 7, §2

2.7 The market for green certificates

2.7.1 The supply side: green certificates issue to green producers - (AGW-PEV, Art. 13)

Each green producer supplies its metering statements to CWaPE on a quarterly basis. On the basis of these statements and of the metering algorithms (see 2.5.2 - Certification of a green power generation facility), CWaPE calculates the issuance rate (GC/MWhe) and issues a number of green certificates proportional to the number of MWh generated in each certificate electricity generation facility. These green certificates are valid for 5 years. The CWaPE issues green certificates quarterly in non-paper form. After each issue, the CWaPE sends green producers an account statement giving details of issuance and the situation of their account.

2.7.2 Organisation

The database (AGW-PEV, Art. 21):

The authenticity of green certificates is guaranteed by their registration in a centralised database managed by CWaPE. This contains an inventory of green certificates issued, their certificate of origin, their date of issuance, their holder and the operations recorded (issuance, transactions, redemption from quota, expiry of validity).

Transactions:

CWaPE must be notified of all transactions involving green certificates so that they can be authenticated and recorded in the green certificate register.

The market actors trade green certificates independently of CWaPE. Once the transaction is completed, the seller notifies CWaPE of the transfer of ownership of the green certificates by filling in the appropriate form and complying with the procedure set up by CWaPE.

After each operation, the CWaPE sends green producers an account statement giving details of issuance and the situation of their account.

Intermediaries:

Any individual or body which registers with the CWaPE database may perform green certificate transactions. It is therefore possible that ultimately some end customers will decide to purchase the green certificates relating to their consumption on the market and sell them to their electricity providers in return for special electricity prices (irrespective of factors linked to the green certificates).

On the initiative of EDORA, the federation of generators of electricity from renewable energy sources, BELPEX, the Belgian electricity exchange, has announced that it is setting up a green certificate exchange which will start trading in 2008. The advantage of this system will be that it will guarantee the confidentiality of transactions with respect to buyers and sellers at the time of the transaction and provide a spot price for green certificates.

2.7.3 The demand side: the quota return for suppliers

Obligations:

Each supplier is bound to send the CWaPE every quarter¹⁴ a number of green certificates consistent with the number of MWh supplied to its end customers located in the Walloon Region multiplied by the current quota. In the case of system operators, the quota is applicable to the power supplied by them to end customers and to their own power consumption. For holders of a limited licence to provide their own supply, the quota is applicable on the basis of the electricity consumed which has transited via the transmission network, the local transmission network or a distribution network (AGW-PEV, Art. 25, §2).

The quota return procedure for suppliers includes four stages:

- quarterly supply statements sent to CWaPE;
- number of green certificates to be supplied calculated by CWaPE on the basis of the quota, with reductions if applicable;
- "quota return" green certificates are redeemed in the database;
- calculation by CWaPE of the fines to be levied if there is a shortfall in the number of green certificates supplied.

The quota to be achieved by suppliers and system operators is as follows (AGW-PEV, Art. 25, §3):

- 7% in 2007
- 8% in 2008
- 9% in 2009
- 10% in 2010
- 11% in 2011
- 12% in 2012

These rates have been calculated, in particular, on the basis of the potential evolution of green power generation. Depending on the evolution of the green power market, the Walloon Government may revise these quotas (AGW-PEV, Art. 25 §4).

In the course of 2009, the CWaPE shall analyse the situation of the green certificate market, particularly concerning the equilibrium of the market, and the impact of the mechanism on electricity prices, and evaluate the necessity of increasing the quotas set out above from 1st January 2010. That evaluation shall be sent to the Minister by 1st September 2009 (AGW-PEV, Art. 25, §3).

By 1st January 2010, the Government shall set new quotas applicable from 1st January 2013, and, taking account in particular of the development of the market for green certificates in the Walloon Region and the targets set by the European Union (AGW-PEV, Art. 25 §3).

The green certificates included in the quotas are currently limited to green certificates issued in the Walloon Region¹⁵.

Moreover, the Brussels-Capital Region recognises green certificates issued to any green power generation facility certified in the Walloon Region within 10 years of that facility being taken into industrial use¹⁶.

The reduction (AGW-PEV, Art. 25, §5):

In 2007, suppliers providing green power to an end customer whose consumption in the quarter under consideration is greater than 5 GWh for one site, and who have signed an agreement with the Walloon Region to improve its energy efficiency in the short, medium and long-term, e.g.: sector agreements, ...) could benefit from a reduction in the number of green certificates that had to be submitted to the CWaPE.

¹⁴ Before the end of the second month after the end of the quarter under consideration (i.e. by 30 April, 31 July, 31 October and 28/29 February)

¹⁵ Décret. Art. 40 : *"The conditions and arrangements under which similar certificates issued to generators of electricity produced in the other regions of Belgium, in the areas covered by Article 6 of the law, or abroad, may be included in the quota mentioned in paragraph 1 shall be determined by the Government, based on an opinion of the CWaPE."*

¹⁶ Arrêté by the Brussels Minister in charge of energy dated 3 May 2005 on recognition of Walloon green certificates to allow them to be counted towards compliance with the obligation imposed on suppliers in the Brussels Capital Region by Article 28, §2 of the electricity order.

The reduction granted for each site was:

- 1/4 of the quota, for the tranche of quarterly electricity consumption between 5 and 25 GWh;
- Z, for the tranche of quarterly electricity consumption greater than 25 GWh, where $Z = \text{quota} - 2$. This ultimately means a fixed quota of 2% for this portion, whatever the quota required of the suppliers.

When the end customer is supplied by several suppliers at the same site, the reduction in the number of green certificates is distributed pro rata between the suppliers according to the volumes supplied by each.

Cost reductions subsequent to the provisions of this paragraph are passed on directly to each of the end customers by which they have been generated.

Example concerning the 2007 quotas:

Take an end customer which meets the requirements for the quota reduction and consumes 35 GWh during one quarter. Without any reduction, this customer's supplier would have had to present 2 450 GCs.

For the portion between 0 and 5 GWh, this customer's supplier will need to meet the full quota requirements, i.e., in 2007, 7% of 5 000 MWh, i.e. 350 GCs. For the second tranche, between 5 GWh and 25 GWh, the supplier must fulfil a quota reduced by 25%, i.e. $(7\% \times \frac{3}{4}) \times (25\ 000 - 5\ 000)$ MWh = 1050 GCs. For the third tranche, over 25 GWh, the supplier's quota is cut to 2%, i.e. $2\% \times (35\ 000 - 25\ 000)$ MWh = 200 GCs. In all, the supplier must supply 1 600 GCs, which corresponds to an effective quota of 4.6%. The reduction granted in this way to the supplier on behalf of its customer will therefore be 850 GCs, a reduction of approximately 35%.

From 1st January 2008, the eligibility threshold for sites changes from minimum quarterly consumption of 5 GWh to 1.25 GWh. Therefore, the number of sites potentially eligible is higher¹⁷. The reduction applicable has also increased based on the following formulae:

- for the tranche of quarterly electricity consumption between 0 and >5 GWh, application of the quota from the previous year increased by half the growth in the annual quota (i.e. 7.5% in 2008);
- for the tranche of quarterly electricity consumption between 5 and 25 GWh; application of 50% of the annual quota (i.e. 4% in 2008);
- for the tranche of quarterly electricity consumption above 25 GWh; application of an annual quota of 2%.

The sanction scheme (AGW-PEV, Art. 30):

In the event of non-compliance with the quotas mentioned, the supplier or the transmission system operator is bound to pay an administrative fine for the quarter under consideration. The fine is set by the Walloon Government and is currently set at € 100 per missing certificate. The amount of this fine has remained unchanged since the second quarter of 2003 (€75 for the first quarter of 2003).

¹⁷ See OPINION CD-7i04-CWaPE-170 of 5 September 2007 concerning 'further reductions of quotas for businesses in sector agreements'

2.7.4 The guaranteed purchase price mechanism for green certificates

Regional obligation for LTSO (Elia) to buy green certificates

Since 1st January 2008, the aid to generation mechanism has been replaced by a mechanism which obliges Elia, the local transmission system operator (LTSO) to purchase green certificates (Décret Art. 40). The AGW-OSP of 30 March 2006 determines the procedures and arrangements for the submission of the application and the implementation of this purchase obligation (Articles 24(3) to (6)).

The price of a green certificate for which the LTSO has a purchase obligation is € 65/GC. The term of the purchase obligation starts running in the month following the commissioning of the facility and is a maximum of 180 months.

To benefit from this purchase guarantee, the green producer is bound to submit an application to the administration. The period of validity of purchase obligations is determined by the CWaPE based on a methodology that it publishes. The cumulative amount of the purchase price of the green certificates must enable the excess generation cost compared with the market price to be compensated during the depreciation period of the facility in question, including rewarding the capital invested at a reference rate of return set out in Article 15 of AGW-PEV¹⁸.

By derogation, facilities with low output capacity (≤ 10 kW) will not have to submit an application and will benefit from an automatic purchase guarantee for a period of 180 months.

The decision to opt for the guaranteed price or for the sale of the green certificates on the green certificate market is made by the green power generator each time that it submits its quarterly metering statements.

Green certificates purchased by Elia are directly redeemed in the database. Through this mechanism, excess supply is reduced, which will contribute to stabilising the price of green certificates on the Walloon market.

Federal obligation for LTSO (Elia) to buy green certificates

Within the scope of its public-service mission, and in application of the Royal Decree of 16 July 2002 on the setting-up of mechanisms to promote electricity generated from renewable energy sources (RES), the transmission system operator (Elia) is obliged to purchase green certificates granted to a green power producer from the latter at a minimum set price which depends on the generation technology:

| Generation technology | Price per MWhe-RES |
|--|---------------------------|
| Off-shore wind energy | 107 / 90 € ¹⁹ |
| On-shore wind energy | 50 € |
| Hydro-electric energy | 50 € |
| Solar energy | 150 € |
| Other renewable energy sources (including biomass) | 20 € |

This obligation takes effect when the generation facility is commissioned, for a period of ten years.

In practice, only green certificates issued to photovoltaic facilities in the tranche of output capacity which does not have a multiplier coefficient (> 10 or 250 kWc as the case may be) (rate of issue 1 GC/MWh) are concerned in the Walloon Region, as only in that case is the repurchase price by the system operator (150 €/GC) higher than the 100 € fine per missing certificate.

The system operator (Elia) must offer these certificates on the market in order to recoup the cost of this obligation. The net difference between the purchase price of the green certificates by the system operator and the selling price on the market is financed by a surcharge on the tariffs for connection to and use of the grid.

¹⁸ See ministerial arrêté of 21 March 2008 setting out the reference rates of return used to determine the factor "k".

¹⁹ Per licence, 107 €/GC for the first 216 MW and 90 €/GC for the balance.

3 Results for 2007

3.1 Generation facilities

3.1.1 Generation facility certification

For production sites with net developable output capacity greater than 10 kW, three inspection bodies accredited by Belac as per the NBN ISO/IEC 17020 standard and approved by the Minister of Energy issue certificates of origin to green power generation facilities. These bodies are: AIB-Vinçotte, Bureau Technique Verbrugghen (BTV), SGS Statutory Services Belgium.

In 2007, 20 new sites were certified by these bodies (79 MW)²⁰ :

- a photovoltaic solar facility (Alan&Co in Verviers) with an output capacity of 42 kW;
- two hydroelectric power stations (Moulin Hick in Val-Dieu, Vertwatt in Couvin) with a total output capacity of 110 kW;
- five wind power sites (Waldico in Ghislenghien, Enairgies du Hainaut in Dour/Quiévrain, SPE Power Company in Dinant/Yvoir, Energy 2030 Branch in Chevetogne, Electricité du Bois du Prince in Fosses-la-Ville/Mettet) with a total output capacity of 44 414 kW;
- a facility generating electricity from biogas (Idelux at the thermal power station at Habay-la-Neuve with an output capacity of 444 kW);
- eight biomass cogeneration facilities (Sodecom in Quévy, Electrawinds in Mouscron, Oléo in Virginal, Verlac in Alleur, Arboretum in Péruwelz, Hôtel Mercure in Nimy, Renogen in Amel and Erda in Bertrix) with a total output capacity of 31 227 kW;
- three natural gas-fired cogeneration facilities (Biesbroucq in Pecq, Vitafish in Dottignies, CPAS in Namur) with an output capacity of 2 445 kW.

For generation facilities with a net developable output capacity of less than or equal to 10 kW, the CWaPE issues an origin certificate directly, in accordance with a simplified procedure published on its site.²¹. In 2007, applications for certification were submitted to the CWaPE for 33 new sites (111 kW):

- twenty-seven photovoltaic solar facilities with an output capacity of 67 kW;
- four hydro-electric facilities with an output capacity of 33 kW;
- two fossil-fuel cogeneration facilities (natural gas) with an output capacity of 11 kW.

Besides the initial certification stage, approved bodies carry out regular inspections of all certified sites.

At any time, the CWaPE may also carry out inspections or require an inspection to be carried out by an inspection body, and examine whether the information in the certificate of origin correspond to the real situation.

Amendments to the certificate of origin are also issued if the facility, measuring equipment or any other information specified on the certificate of origin is changed.

Where biomass inputs are used (local or imported), the certification also covers the traceability and demonstration of the renewable character of these inputs.

A number of sites already in existence in 2006 had undergone changes leading, in particular, to additional output capacity of approximately 4 200 kW.

²⁰ The year of commissioning does not necessarily correspond to the year of certification (for example, that is the case of historic facilities).

²¹ See www.cwape.be: "Note sur les certificats verts et les labels de garantie d'origine : principes des mécanismes de soutien et de marquage de l'électricité produite à partir de sources d'énergie renouvelables et/ou de cogénération dans le cas des installations de faible puissance ($P \leq 10$ kW)". EN = "Note on green certificates and certificates of origin: principles of support mechanisms and marking of electricity generated from renewable energy sources and/or cogeneration in the case of facilities with low output capacity ($P \leq 10$ kW)"

3.1.2 Green power generation sites

At the end of 2007, 177 green power generation sites met the requirements for the issuance of green certificates. Their total capacity was approximately 565 MW (see Annex 1). The number of green producers corresponding to these sites was 132. It should be noted that two sites in existence in 2006 were suspended in 2007.

| Situation at the end of 2007 | Number of sites | Output capacity (kW) |
|------------------------------|-----------------|----------------------|
| Photovoltaic | 36 | 128 |
| Hydro-electric | 54 | 107 076 |
| Wind | 21 | 123 476 |
| Biomass | 10 | 95 634 |
| Biomass cogeneration | 29 | 78 564 |
| Fossil fuel cogeneration | 27 | 160 397 |
| Total | 177 | 565 274 |

Table 3.1: Green power generation sites at the end of 2007

"Historic" sites, i.e. sites in existence before the introduction of the mechanism of green certificates in the Walloon Region²², represent slightly under 300 MW or about 53% of the net developable output capacity at the end of 2007.

| Situation at the end of 2007 | Number of sites | Output capacity (kW) | % Total output capacity |
|------------------------------|-----------------|----------------------|-------------------------|
| Photovoltaic | 0 | 0 | 0 % |
| Hydro-electric | 36 | 105 594 | 99 % |
| Wind | 3 | 1 208 | 1 % |
| Biomass | 5 | 14 903 | 16 % |
| Biomass cogeneration | 3 | 30 204 | 38 % |
| Fossil cogeneration | 14 | 145 663 | 91 % |
| Total | 61 | 297 573 | 53 % |

Table 3.3: "Historic" green power generation sites at the end of 2007

At the end of 2007, there were 43 sites with low output capacity (10 kW) covered by the simplified procedure, with a total of 140 kW (see Annex 1).

| Situation at the end of 2007 | Number of sites | Output capacity (kW) |
|------------------------------|-----------------|----------------------|
| Photovoltaic | 35 | 86 |
| Hydro-electric | 6 | 44 |
| Fossil cogeneration | 2 | 11 |
| Total | 43 | 140 |

Table 3.3: "Low output capacity" green power generation facilities at the end of 2007

²² Sites commissioned before 1st May 2001, when the Décret was published in the Belgian Law Gazette.

3.1.3 Generation of green power, green certificate and certificates of origin

The number of green certificates issued for green power generated in 2007 was 1 561 359 compared with 1 173 169 in 2006, i.e. an increase of nearly 35% (40% for 2006-2005) ²³.

Changes in the breakdown of the certified power smoothed by splitting pro rata by number of days where a statement covers two years, and the relevant green certificates issued are described in the following table and illustrations. The breakdown in certificates issued per generation system is also shown in detail in Annex 2. The graph below gives an image of the cumulative issue of green certificates (smoothing the issues over the issue period).

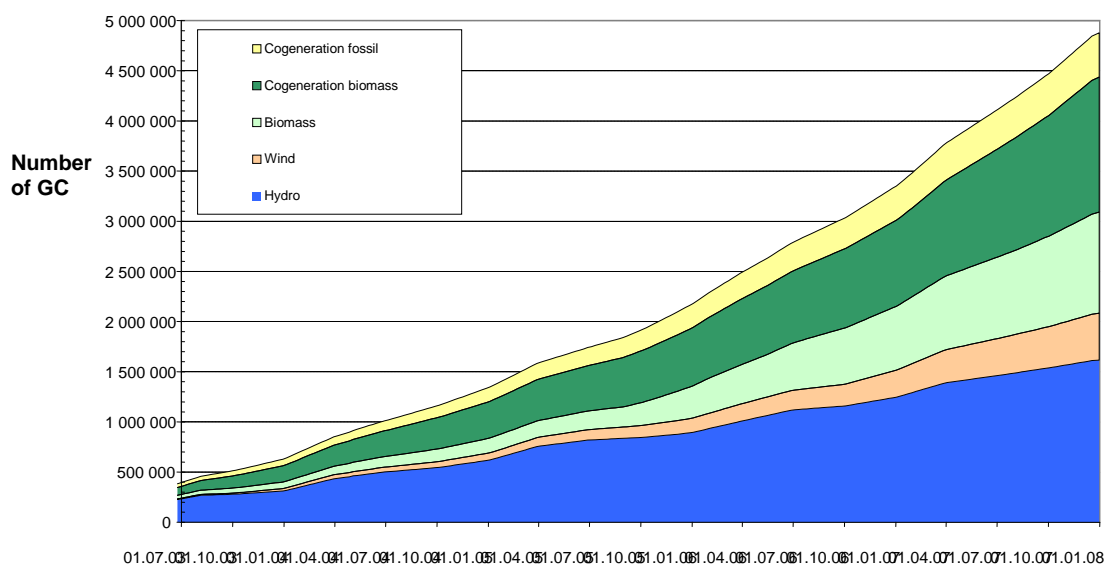


Figure 3.1: Cumulative production of green certificates for the period 2003-2007

| GCs issued | 2003 (consolidated) | 2004 (consolidated) | 2005 (consolidated) | 2006 (consolidated) | 2007 (provisional) |
|----------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|
| Photovoltaic | 0 | 1 | 2 | 9 | 25 |
| Hydro-electric | 310 988 | 305 024 | 277 690 | 350 275 | 377 909 |
| Wind | 25 244 | 46 132 | 70 927 | 126 149 | 204 840 |
| Biomass | 65 167 | 81 501 | 172 681 | 315 894 | 379 548 |
| Biomass cogeneration | 162 520 | 200 356 | 217 504 | 277 075 | 497 315 |
| Fossil cogeneration | 65 963 | 76 271 | 95 365 | 103 766 | 101 721 |
| Total | 629 882 | 709 286 | 834 169 | 1 173 169 | 1 561 359 |

Table 3.4-1: Issue of green certificates for the period 2003-2007

²³ During the year, there is a time-lag between the generation of green power and the issuance of the relevant green certificates (see section 3.2 about the market for green certificates). Green certificates are not issued continuously during the year, but on the basis of quarterly statements supplied by the producer. This means that the generation periods covered by these statements do not necessarily coincide with the calendar quarters. Moreover, in the case of new sites, certificates may be issued for different periods due to the certification and notification procedure. Corrections may also be made to certificates issued.

| Year | 2006 | | | | 2007 | | | | Increase in GCs issued |
|----------------------|---------------|------------------|----------------------|---------------------|---------------|------------------|----------------------|---------------------|------------------------|
| | Capacity (MW) | Production (MWh) | Number of GCs issued | Issue rate (CV/MWh) | Capacity (MW) | Production (MWh) | Number of GCs issued | Issue rate (CV/MWh) | |
| Photovoltaic | 0,018 | 9 | 9 | 1,000 | 0,128 | 25 | 25 | 1,000 | + 192% |
| Hydro | 107 | 350 276 | 350 276 | 1,000 | 107 | 377 909 | 377 909 | 1,000 | + 8% |
| Wind | 75 | 126 149 | 126 149 | 1,000 | 123 | 204 840 | 204 840 | 1,000 | + 62% |
| Biomass | 96 | 501 821 | 315 894 | 0,629 | 96 | 576 441 | 379 548 | 0,658 | + 20% |
| Cogeneration biomass | 52 | 275 964 | 277 075 | 1,004 | 79 | 434 025 | 497 315 | 1,146 | + 79% |
| Cogeneration fossil | 152 | 884 854 | 103 766 | 0,117 | 160 | 878 115 | 101 721 | 0,116 | - 2% |
| Total | 482 | 2 139 073 | 1 173 169 | 0,548 | 565 | 2 471 356 | 1 561 359 | 0,632 | + 33% |

Table 3.4-1: Change in production of green electricity between 2006 and 2007²⁴

The 33% overall increase in the number of green certificates reported in 2007 can be explained mainly by the following factors:

- As regard hydro-electric, the increase is explained mainly by the more favourable weather conditions in 2007 than in 2006. So compared with 2006, almost 30 000 more GCs were issued than in 2006.
- As far as wind energy is concerned, the increase of nearly 80 000 GCs is mainly explained by the growth in installed capacity in the Walloon Region of almost 65%.
- As far as biomass generation is concerned, the increase of slightly over 60 000 GCs is due essentially to the production from Unit 4 of Electrabel's Awirs power station, which is gradually moving towards full-scale operation.
- Regarding biomass cogeneration, the increase of nearly 220 000 GCs is explained by the commissioning of large facilities such as Electrawinds, Erda and Renogen.

The average actual rate of issuance in 2007 was 0.63 [GC/MWhe], or a maximum level of overall support (see section 2.6) of 63 EUR/MWhe. The average actual rate of issuance in 2007 for generation from renewable energy sources was 0.92 [GC/MWhe], or a maximum level of overall support of 92 [EUR/MWhe]. The average actual rate of issuance in 2007 for fossil fuel cogeneration was 0.12 [GC/MWhe], or a maximum level of overall support of 12 [EUR/MWhe].

For information, as far as certificates of origin are concerned, 1 681 548 COs were issued by the CWaPE for electricity generated in 2007²⁵, which represents slightly less than 70% of the generation of green electricity in 2007.

| GCs issued | CO-RES | CO-RES & HQC | CO-HQC | Total CO |
|----------------------|------------------|--------------|----------------|------------------|
| Photovoltaic | 0 | 0 | 0 | 0 |
| Hydro-electric | 369 504 | 0 | 0 | 369 504 |
| Wind | 190 067 | 0 | 0 | 190 067 |
| Biomass | 402 914 | 0 | 0 | 402 914 |
| Biomass cogeneration | 150 003 | 9 571 | 234 | 159 808 |
| Fossil cogeneration | 0 | 0 | 559 256 | 559 256 |
| Total | 1 112 487 | 9 571 | 559 490 | 1 681 548 |

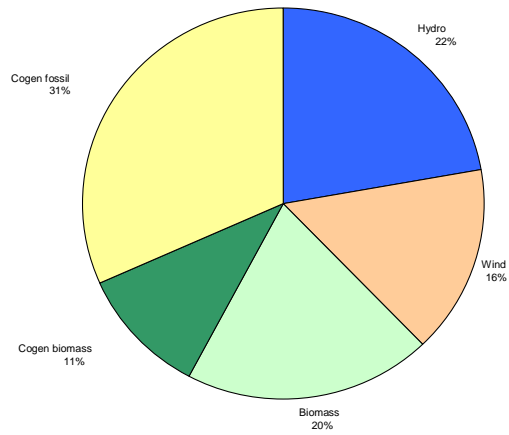
Table 3.4-1: Issue of COs by the CWaPE in 2007

(CO-RES: renewable energy sources; CO-RES & HQC: renewable energy sources and high-quality cogeneration; CO-HQC: fossil energy sources and high-quality cogeneration)

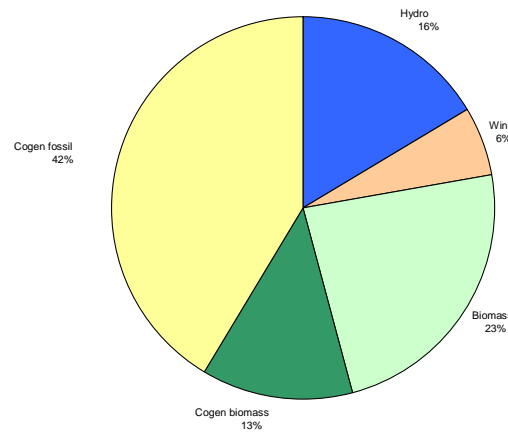
²⁴ Given the definition of green power in the decree, for the cogeneration units (fossil and biomass) as well as the hydroelectric plants with a net developable capacity during the period (Pendp) of over 20 MWe, "green MWh" correspond to the net electricity generated multiplied by the ratio (20 / Pendp).

²⁵ Only electricity fed into the grid or supplied locally grants an entitlement to the issue of COs.

Installed output capacity: 482 MWe



2 139 GWh generated



Number of GCs issued: 1 173 169

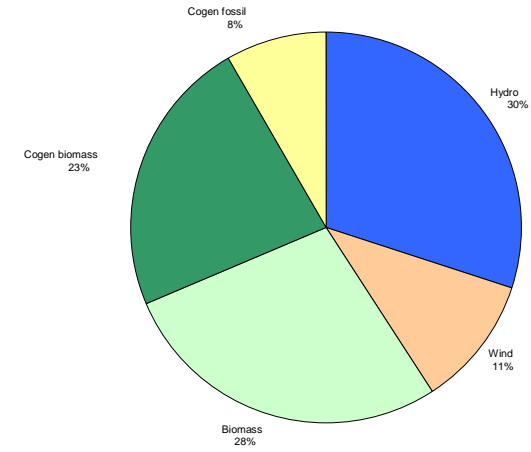
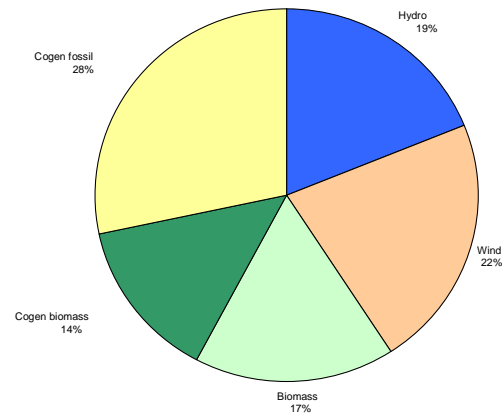
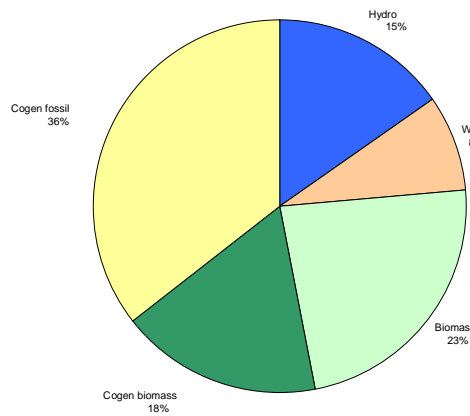


Figure 3.1: Generation facilities for green power in 2006

Installed output capacity: 565 MWe



2 471 GWh generated



Number of GCs issued : 1 561 359

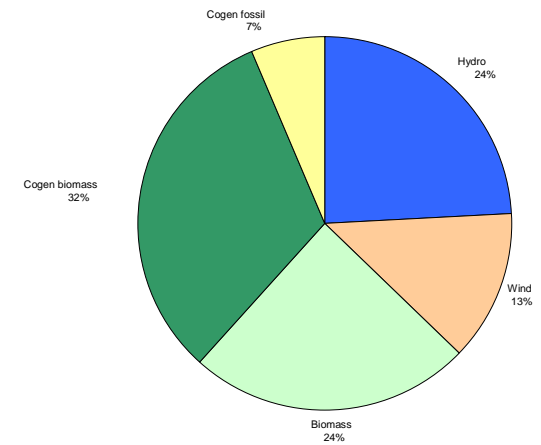


Figure 4.2 Generation facilities for green power in 2007

3.1.4 Share of green power in electricity supply in the Walloon Region

In 2007, electricity generation in facilities certified as green represented approximately 10% of electricity supplies in the Walloon Region (24 070 385 (MWh) compared with about 6% in 2003.

| | MWh | % Supplies in Walloon Region |
|----------------------|------------------|------------------------------|
| Photovoltaic | 25 | 0.00 % |
| Hydro-electric | 377 909 | 1.57 % |
| Wind | 204 840 | 0.85 % |
| Biomass | 576 441 | 2.39 % |
| Biomass cogeneration | 434 025 | 1.80 % |
| Fossil cogeneration | 878 115 | 3.65 % |
| Total | 2 471 356 | 10.27 % |

Table 3.5: Share of the supplies in the Walloon Region of net electricity generated by facilities certified as green in 2007

Based on the figure below, we observe that over the period 2003-2007, the share of electricity generated from renewable energy sources rose from 2.5% to 6.5%. For high-quality cogeneration (fossil and renewables), its share rose from 4.5% to 5.5%.

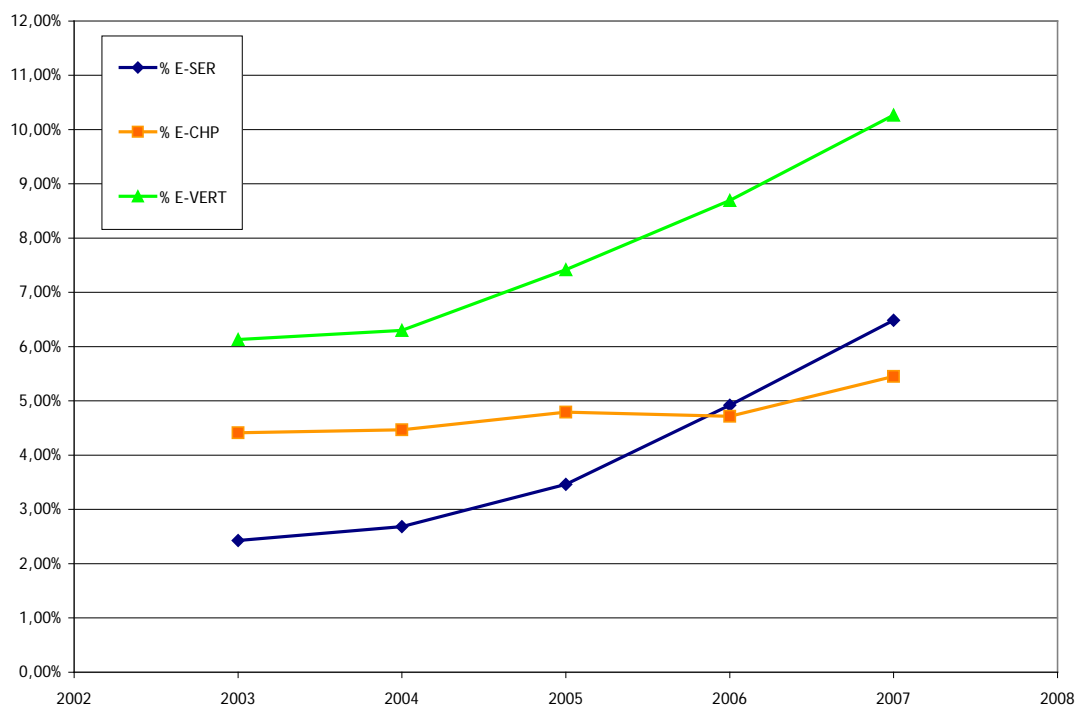


Figure 3.4: Change in share of green power in supplies in the Walloon Region (period 2003-2007)

3.2 Market for green certificates

3.2.1 Green certificate transactions

During 2007, 648 592 GCs were traded²⁶. The average unit price this year was approximately 89.95 euro. These transaction prices published on the CWaPE site concern about 60% of the green certificates issued since the system came into effect. The balance corresponds to green certificates granted to production sites belonging to suppliers and used for their respective quotas, or held back for future use.

| | Transactions | Volume of GCs | Unit price | | |
|---------|--------------|---------------|------------|------|------|
| | Number | | Average | Min | Max |
| 2007 Q1 | 48 | 110 610 | 90.80 € | 80 € | 95 € |
| 2007 Q2 | 57 | 153 496 | 88.87 € | 80 € | 95 € |
| 2007 Q3 | 75 | 226 778 | 91.46 € | 80 € | 95 € |
| 2007 Q4 | 54 | 157 708 | 88.21 € | 75 € | 95 € |
| 2008 Q1 | 75 | 253 624 | 89.42 € | 75 € | 99 € |

| | Number of GCs | Average unit price |
|------|---------------|--------------------|
| 2003 | 164 943 | 84.38 € |
| 2004 | 326 733 | 91.74 € |
| 2005 | 413 720 | 92.10 € |
| 2006 | 483 697 | 91.58 € |
| 2007 | 648 592 | 89.95 € |

Table 3.6: Average price of green certificate transactions

3.2.2 Green certificate quotas (nominal and actual)

The number of green certificates to be supplied to CWaPE as per the obligation imposed on suppliers and system operators by Article 25 of the AGW of 30 November 2006 on the promotion of green power was calculated on the basis of a "nominal" quota of 7%, and on the other hand on the basis of the quota reductions for supplies to heavy-use end customers.

Electricity supplies declared and taken into account for 2007 were 24 089 582 MWh.²⁷ (or 2% less than in 2006). The nominal quota of 7% corresponds to a number of 1 686 271 green certificates, a further increase of over 14%.

In 2007, 80 sites of heavy-use end customers for electricity benefited from a quota reduction. The total consumption of these sites represents about 40% of electricity supplies in the Walloon Region.

The quota reductions granted amounted to a total of 279 555 green certificates or 16.5 % of the nominal quota of green certificates. The average quota with reduction in 2007 for the 80 sites which benefited from a quota reduction was 3.9%.

The saving made by suppliers on behalf of their end customers can be evaluated as follows:

| Savings made (in euro) | 2006 | 2007 |
|--|------------|------------|
| Based on the amount of fines (100 €/GC) | 23 451 100 | 27 955 500 |
| Based on the average price of GCs on the market (91.58 € in 2006; 89.95 in 2007) | 21 476 426 | 25 145 977 |

²⁶ Redemptions, i.e. use of GCs for the quota, are not counted as transactions.

²⁷ This is the value declared by suppliers as of 28 February, including corrections for the year 2006. Corrections made after that date have not been taken into account in calculating the 2007 quotas, but will be carried forward into the 2008 quotas.

The "nominal" quota of 7% for the year 2007 was thus reduced to an actual quota (ratio between the number of green certificates to be submitted and the number of MWh supplied) of 5.84%, taking account of the reductions allowed, which corresponds to a number of 1 406 716 GCs actually to be submitted by suppliers and grid operators.

The figure below shows the change in quotas since the green certificate system came into effect.

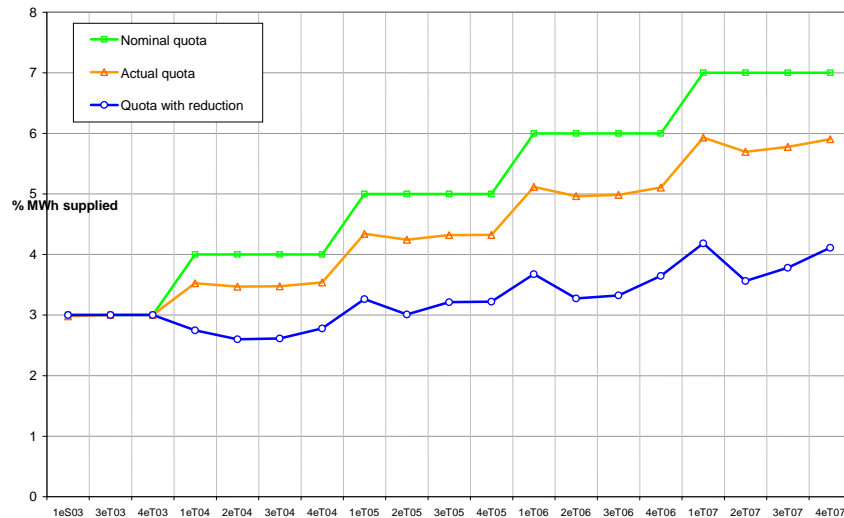


Figure 3.5: Change in quotas over the period 2003-2007

The nominal quota corresponds to the quota that suppliers of customers who do not benefit from reductions in their green certificates are required to submit.

The quota with reduction corresponds to the average quota to which suppliers of heavy-used end users of electricity who benefit from reductions are subject.

The actual quota corresponds to the actual demand on the green certificate market.

3.2.3 Supply and demand on the green certificate market

The following graph shows the GC market at the time of the quota returns. The first column shows the number of green certificates issued between two quota return dates.

The "GCs available" are the GCs available on the market at the time of the quota return. They come from the total of the green certificates issued during the period and the stocks of unused green certificates from the previous period, minus the green certificates used for the quota return of the Brussels Capital Region.

"GCs to be supplied" is the number of GCs to be supplied by the suppliers and system operators. This equals 7% of the total power supplied), minus the reductions granted for heavy-use end customers.

Finally, "GCs supplied" is the actual number of certificates supplied for the quota in the Walloon Region. The difference between the GCs available and the GCs supplied is the stock of green certificates available at the quota return date.

The difference between the "GCs to be supplied" and the "GCs supplied" corresponds to the fines. We observe that at the time of each quota return, the number of green certificates available was enough to cover the requirements in 2007, and is starting to increase significantly.

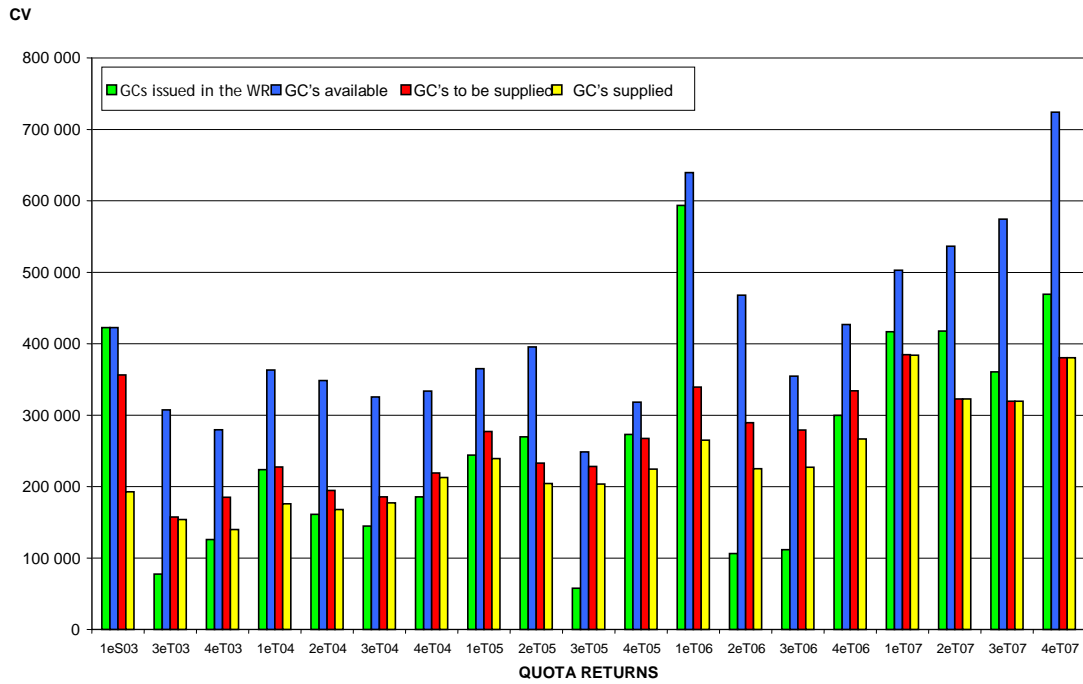


Figure 3.6: Change in supply and demand on the green certificate market

The graph below shows the information concerning the green certificate market in 2003, 2004, 2005, 2006 and 2007. We observe that, for the first time since a quota of green certificates was imposed in 2003, the number of green certificates issued in 2007 is higher than the number of green certificates to be supplied for the quotas (including those supplied for the Brussels quota).

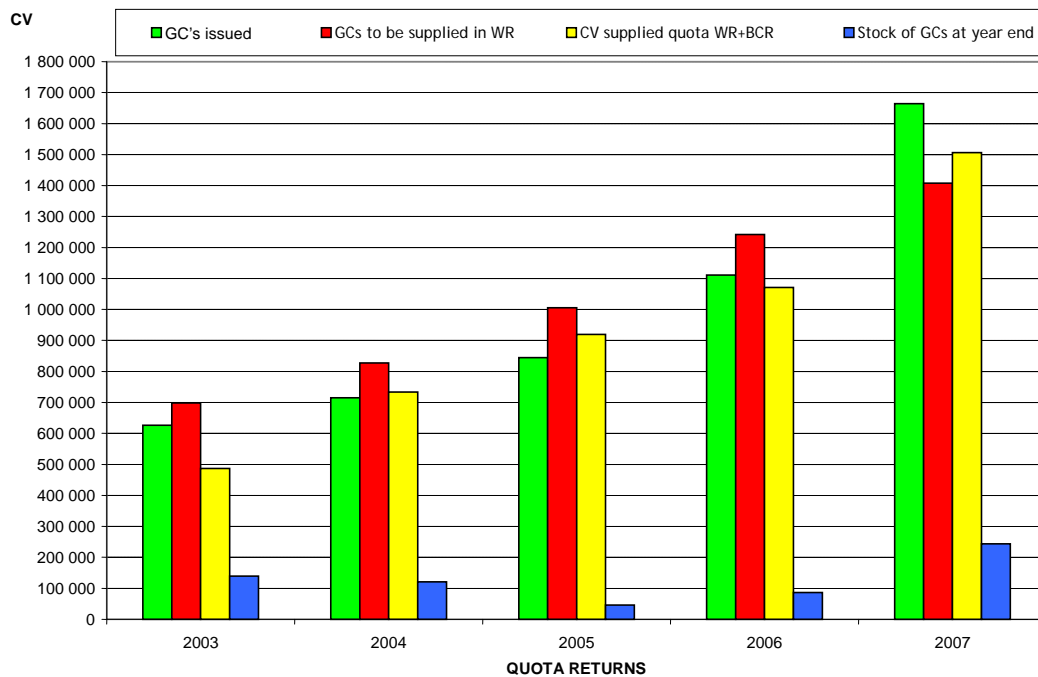


Figure 3.7: Annual results of the green certificate market

3.2.4 Quota returns of green certificates in the Walloon Region

The number of green certificates supplied to CWaPE pursuant to the obligation imposed on suppliers and grid operators rose to 1 406 350 GCs for the whole of 2007, compared with 983 852 for 2006. The 1 406 350 GCs supplied to the CWaPE represent 99.93% of the number of GCs that should have been supplied, compared with only 79.23% in 2006.

The number of suppliers and grid operators which were bound to submit quarterly returns of supplies in 2007 and a number of green certificates corresponding to the minimum quota of 7% to the CWaPE is as follows:

- 10 suppliers with a general supply licence;
- 2 suppliers with a limited supply licence;
- 13 grid operators.

3.2.5 Change in the amount of fines

Given the number of green certificates available on the market were able to comply with their quota obligation and only 4 grid operators were fined a total amount of 36 602 EUR compared with slightly less than 26 million EUR in 2006.

In view of the forecasts concerning the supply of green certificates over the period 2008-2012, it can be expected that henceforth, the total amount of fines paid will remain at an extremely low level.

3.2.6 Redemption of Walloon green certificates for the quota in the Brussels Capital Region

Suppliers holding Walloon green certificates can submit them to BRUGEL in order to meet their quota of green certificates in the Brussels Capital Region (BCR).

In this case, a multiplier coefficient corresponding to the amount of fines is applied. The ratio of fines during 2007 was 100/100.

For 2007, about 100 000 Walloon GCs were submitted by suppliers in order to meet their quota of green certificates in the Brussels Capital Region, compared with about 75 000 GCs in 2006 and 60 000 GCs for the 2005 quota.

Table 3.6: Quarterly quota returns of green certificates

| | Total sales over year (MWh) | Regularisation during the year (MWhe) | Supplies for which GCs submitted during the year (MWh) | Quota of GCs excluded reduction | GC reduction | GCs to be supplied | GCs supplied | Missing GCs | Admin. fine (in euro) |
|------------------------------|-----------------------------|---------------------------------------|--|---------------------------------|--------------|--------------------|--------------|-------------|-----------------------|
| 1 st quarter 2007 | | | | | | | | | |
| Suppliers | 6 398 141 | 72 076 | 6 470 217 | 452 915 | 71 174 | 381 741 | 381 741 | 0 | 0 |
| Grip operators | 14 673 | 18 760 | 33 433 | 2 340 | 0 | 2 340 | 2 245 | 95 | 9 502 |
| Total | 6 412 814 | 90 836 | 6 503 650 | 455 256 | 71 174 | 384 082 | 383 987 | 95 | 9 502 |
| 2nd quarter 2007 | | | | | | | | | |
| Suppliers | 5 664 704 | -53 570 | 5 611 134 | 392 779 | 70 955 | 321 824 | 321 824 | 0 | 0 |
| Grip operators | 11 566 | 123 | 11 689 | 818 | 0 | 818 | 818 | 0 | 0 |
| Total | 5 676 270 | -53 447 | 5 622 823 | 393 598 | 70 955 | 322 642 | 322 642 | 0 | 0 |
| 3rd quarter 2007 | | | | | | | | | |
| Suppliers | 5 523 770 | -7 442 | 5 516 328 | 386 143 | 67 425 | 318 718 | 318 718 | 0 | 0 |
| Grip operators | 11 267 | -96 | 11 171 | 782 | 0 | 782 | 718 | 64 | 6 400 |
| Total | 5 535 037 | -7 538 | 5 527 499 | 386 925 | 67 425 | 319 500 | 319 436 | 64 | 6 400 |
| 4th quarter 2007 | | | | | | | | | |
| Suppliers | 6 423 532 | -10 565 | 6 412 967 | 448 908 | 70 001 | 378 907 | 378 907 | 0 | 0 |
| Grip operators | 22 733 | -90 | 22 643 | 1 585 | 0 | 1 585 | 1 378 | 207 | 20 700 |
| Total | 6 446 265 | -10 655 | 6 435 610 | 450 493 | 70 001 | 380 492 | 380 285 | 207 | 20 700 |
| TOTAL 2007 | | | | | | | | | |
| | Total sales over year (MWh) | Regularisation during the year (MWhe) | Supplies for which GCs submitted during the year (MWh) | Quota of GCs excluded reduction | GC reduction | GCs to be supplied | GCs supplied | Missing GCs | Admin. fine (in euro) |
| Suppliers | 24 010 146 | 500 | 24 010 646 | 1 680 745 | 279 555 | 1 401 190 | 1 401 190 | 0 | 0 |
| Grip operators | 60 239 | 18 697 | 78 936 | 5 526 | 0 | 5 526 | 5 160 | 366 | 36 602 |
| Total | 24 070 385 | 19 197 | 24 089 582 | 1 686 271 | 279 555 | 1 406 716 | 1 406 350 | 366 | 36 602 |

The total sales shown in this table correspond to the amounts declared on 28/02/2008. Corrections made after that date have not been taken into account in calculating the 2007 quotas, but will be carried forward into the 2008 quotas.

4 Outlook

4.1 Change in green power generation facilities in 2008

Table 4.1 shows, for each generation system, facilities that are expected to come onstream and be certified in 2008.

| New sites 2008 | Number of sites | Capacity (kWe) | GCs expected in 2008 |
|----------------------|-----------------|----------------|----------------------|
| Photovoltaic | 1 000 | 3 000 | 10 500 |
| Hydraulic | 8 | 2 900 | 12 000 |
| Wind | 3 | 36 000 | 33 000 |
| Biomass | 1 | 350 | 2 000 |
| Cogeneration biomass | 5 | 19 750 | 60 000 |
| Cogeneration fossil | 4 | 2 350 | 4 500 |
| Total | 1 021 | 64 350 | 122 000 |

Table 4.1 : New facilities that will be certified in 2008

Among these new facilities, we should mention particularly the biomass cogeneration facilities (IBV in Vielsalm, RENOGEN phase 2 at Amel, etc.), and about 20 MW in the new wind farms (ASPIRAVI in Amel, Air Energy in Pont-à-Celles and in La Bruyère) making a total of 36 MW.

Based on the new facilities planned during the year 2008 (+ 120 000 GC), the increase in production of the facilities commissioned in 2008 (+ 200 000 GC), the improvement of the performance of the facilities already in existence in 2006 (+ 60 000 GC), the increase in the number of green certificates can be estimated in 2008 can be estimated at 380 000 GC.

However, taking account of the reduction that will be applied in 2008 when issuing green certificates to historic sites (reduction estimated at 245 000 GCs), the actual increase from 2007 to 2008 is estimated to be only 135 000 GCs.

The forecasts of generation facilities at the end of 2008 are shown in the following figures.

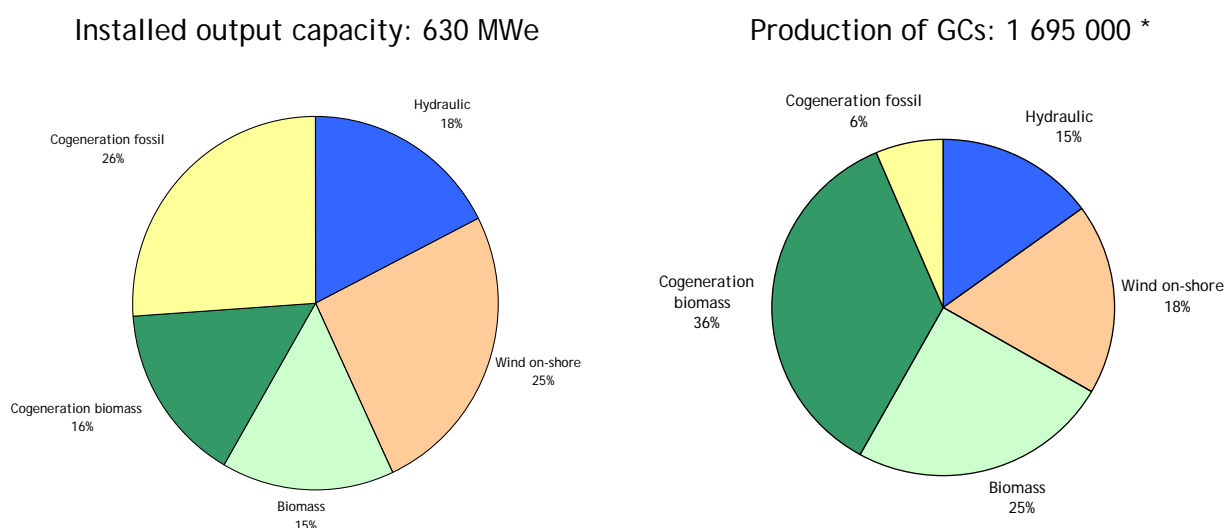


Figure 4.1: Forecasts for 2008

(* after application of the reduction factors "q" to historic sites from 01/01/2008)

4.2 Change in the green certificate market in 2008

Based on the change in previous green power generation facilities, it is possible to simulate the change in supply and demand for green certificates for 2008, using the following hypotheses:

- increase in the number of sites eligible for quota reduction(100 sites in 2008) as well as the total amount of reductions granted to these sites (445 000 GCs in 2008) ²⁸
- increase in electricity supplies of 1% in 2008
- use of Walloon green certificates for quota returns in the Brussels Region (+/- 85 000 GC for the Brussels quota in 2008).

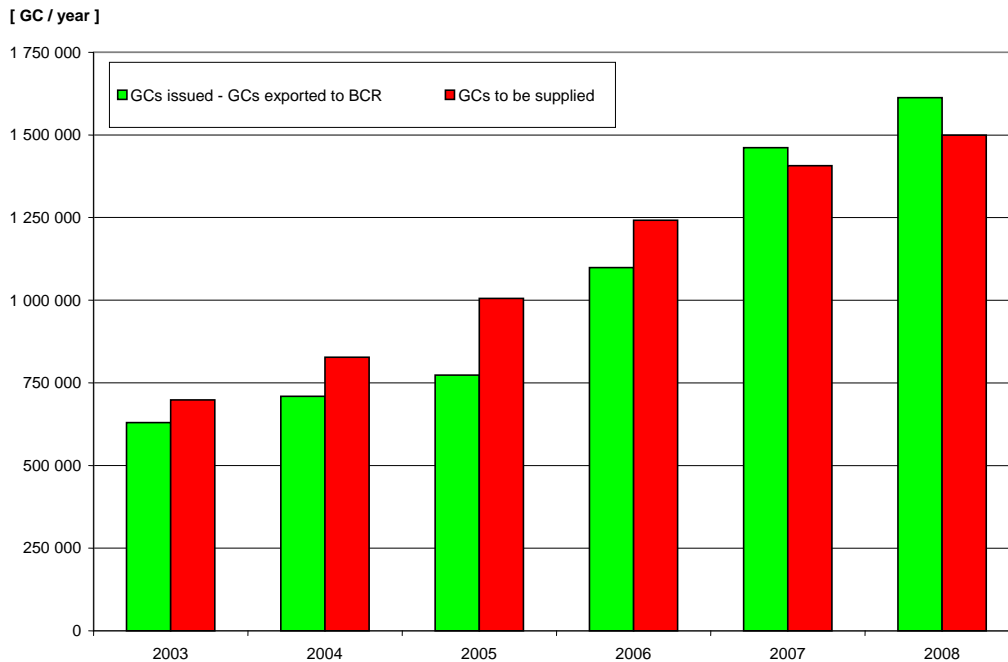


Figure 4.2 Change in supply and demand on the green certificate market

Based on these forecasts, it is estimated that the inversion of the scheme observed in 2007 will be maintained (see point 3.2) and in 2008, the supply of green certificates will be greater than the demand. For 2008, this surplus should remain limited, however, and be of such a nature as to improve the liquidity of the green certificate market.

However, the sensitivity of these results should be borne in mind:

- to the smooth operation of some power stations (Electrabel in Awirs, Electrawinds in Mouscron, etc.);
- to the gradual emergence of the new biomass cogeneration facilities such as IBV, Renogen, etc. ;
- to weather conditions for hydro-electricity and wind power;
- to the increase in the number of sites eligible for quota reduction.

²⁸ See, in particular, OPINION CD-7i04-CWaPE-170

4.3 Change in generation of green power over the period 2008-2012

4.3.1. Hypotheses

Based on the Arrêté of 30 November 2006 setting quotas for the period 2008-2012, amended on 20 December 2007, the following hypotheses were taken into consideration for the simulation of the change in green power generation facilities:

- Application of the reduction coefficient "q" from 2008 onward for historic production facilities²⁹. The overall reduction is estimated at 245 000 GC in 2008. Due to the possibility of significant changes in these historic facilities, that reduction is expected to fall gradually in the following way:

2009: reduction of 205 000 GC

2010: reduction of 175 000 GC

2011: reduction of 150 000 GC

2012: reduction of 150 000 GC

- Concerning the off-shore wind energy system, given that there is currently no agreement on the arrangements for recognition/sharing between the regions of green certificates that will be issued by the CREG to off-shore wind farms, it was deemed more sensible not to take account of this form of generation, in order to limit the analysis to the study of generation systems strictly under the responsibility of the region.
- Solar PV generation: the outlook is based on the Solwatt Plan, of the change observed over the first half of 2008 and that observed in Flanders since 2006.
- Hydro-electric generation: the outlook is established on the basis of an average weather year (probable variation upwards or downwards of the order of 40 000 GC per year in 2012).
- On-shore wind farms: 100% probability if the permit is granted, 25% if the planning application is being examined, 12.5% if the impact study is ongoing, 0% in other cases. The outlook is also established on the basis of an average weather year (probable variation upwards or downwards of the order of 50 000 GC per year in 2012).
- Biomass generation: 100% probability if the project is under construction, minimum probability (0%, 25%, 50%) estimated on the basis of CWaPE's knowledge of the projects. No new biomass power station over 20 MW following the limitation on issue of green certificates above that threshold
- Biomass cogeneration: 100% probability for projects under construction or which are the subject of a known decision to go ahead, 0% in other cases. Elimination of the limit of the CO₂ saving rate to 1 for output capacity of more than 5 MW for a single biomass cogeneration site; No new biomass power station over 20 MW following the limitation on issue of green certificates above that threshold
- Fossil fuel cogeneration: 100% probability if the project is under construction, minimum probability (0%, 25%, 50%) estimated on the basis of CWaPE's knowledge of the projects. Only gas engine type facilities are taken into consideration.

²⁹ See Opinion CD-6j06-CWaPE-149

4.3.2. Results

The results presented below have been drawn up based on the projects identified by CWaPE following a methodology identical to the one presented in the proposal CD-5f28-CWAPE-101, taking account of the application of reduction factors to historic facilities from 2008.

| Evolution 2008-2012 | Number of sites | Pend (kW) | GC / year | MWh/year |
|----------------------|-----------------|----------------|------------------|------------------|
| Solar PV | 12 190 | 41 750 | 227 750 | 34 500 |
| Hydraulic | 19 | 8 810 | 42 250 | 42 250 |
| Wind on-shore | 34 | 381 300 | 920 000 | 920 000 |
| Biomass | 1 | 350 | 62 000 | 107 000 |
| Cogeneration biomass | 15 | 43 715 | 717 000 | 409 500 |
| Cogeneration fossil | 18 | 13 850 | 25 750 | 78 750 |
| Total | 12 277 | 489 775 | 1 994 750 | 1 592 000 |

**Table 4.2 : Change over the period 2008-2012
(new facilities and improvement of existing facilities)**

Based on new facilities planned during the period 2008-2012 and the improvement in the performance of the existing facilities by the end of 2007, the increase in the number of green certificates over the period 2008-2012 is estimated at 1 995 000 GCs.

However, taking account of the reduction that is due to be applied in 2012 when issuing green certificates to historic sites (reduction estimated at 150 000 GCs), the actual increase from 2007 to 2012 is estimated to be only 1 845 000 GCs.

The forecasts of green power generation facilities at the end of 2012 are shown in the following figures.

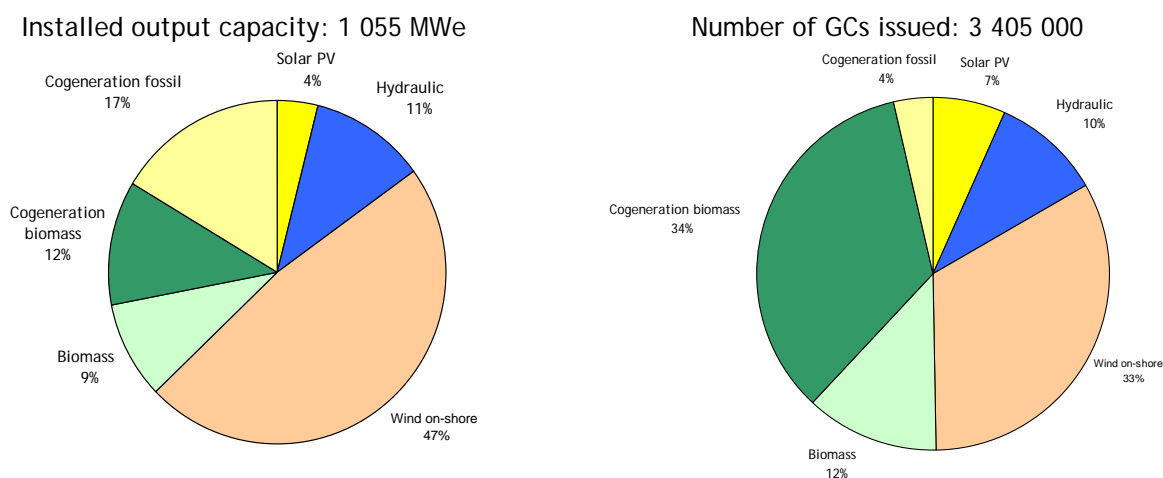


Figure 4.3 Forecasts for 2012

(* after application of the reduction factors "q" to historic sites from 01/01/2008)

Compared with the forecasts made in the specific annual report for 2006, we observe overall an increase in installed capacity of about 70 MW and an increase of about 200 000 in the number of green certificates. This is largely explained by taking account of the development of the solar photovoltaic system as a result of the Solwatt Plan, and by the change in status of a large number of wind farm projects of significant size (farms authorised and under construction in 2008). These increases largely compensate the more conservative hypotheses adopted (see point 4.3.1.) concerning cogeneration (biomass and fossil fuel).

4.3.3. Equilibrium conditions on the green certificate market

Based on the system of quota reductions in force since 1st January 2008, of a scenario concerning change in the number and consumption of sites that can benefit from a quota reduction³⁰, as well as a growth hypothesis of 1% in electricity supplies in the Walloon Region over the period 2008-2012, one can predict the change in the actual quota (and that to which suppliers of sites of heavy-consumption end users of electricity benefiting from a reduction) based on the normal quota (see figure 4.4).

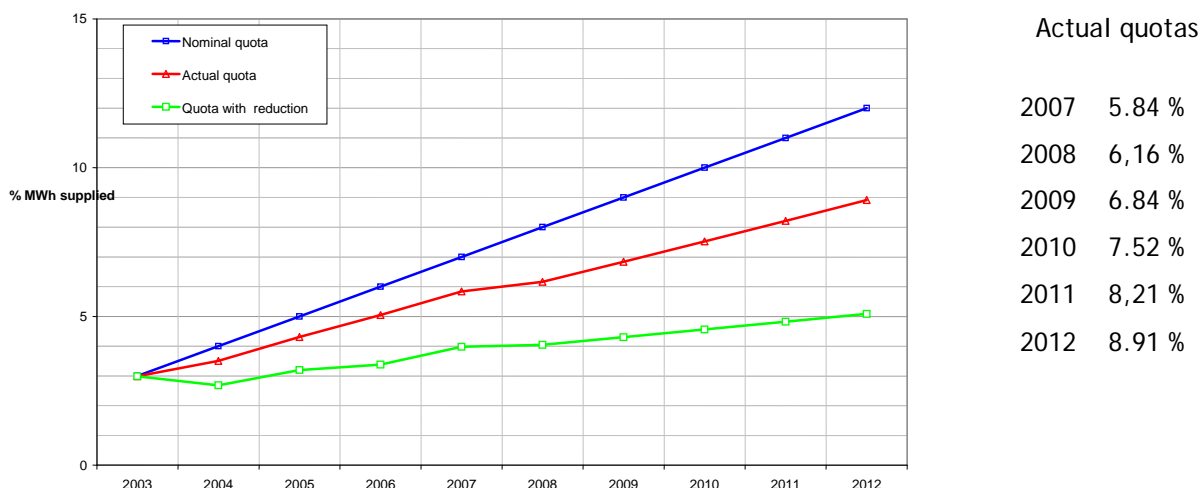


Figure 4.4 Nominal quota and actual quota

Based on this scenario, about 165 sites are expected to benefit by 2012 from the quota reduction system. Their supplies would represent about 45% of total supplies in the Walloon Region. The average actual quota applied to sites benefiting from a quota reduction would be 5%. Based on the prevailing reduction system, for a nominal quota set at 12% in 2012, the actual quota is estimated at slightly less than 9%.

On this basis, the increase in effective demand for green certificates over the period 2008-2012 is about 845 000 G.C. This corresponds to the output of a wind farm of 375 MW.

The annual change in this increase is shown in the table below:

| Year | GC/year |
|--------------|----------------|
| 2008 | 90 000 |
| 2009 | 180 000 |
| 2010 | 185 000 |
| 2011 | 190 000 |
| 2012 | 200 000 |
| Total | 845 000 |

Table 4.3: Effective demand for green certificates in the period 2008-2012

Additional demand from the Brussels market must also be taken into account in the analysis Based on the report by the Brussels regulator (BRUGEL), the annual quantities of Walloon green certificates "exported" to meet the Brussels quota are as follows:

| Year | GC/year |
|------|---------|
| 2008 | 85 000 |
| 2009 | 55 000 |
| 2010 | 40 000 |
| 2011 | 35 000 |
| 2012 | 25 000 |

Table 4.4: Exportation of green certificates to the BCR over the period 2008-2012

³⁰ See opinion CD-7104-CWaPE-170 of 5 September 2007 concerning 'further reductions of quotas for businesses in sector agreements' (scenario 2 - average between hypotheses 1 and 2).

You will find below the change in equilibrium conditions between supply and demand that can be deduced from the foregoing projections. It can be observed that there is substantial excess supply of green certificates from 2009 onward, leading by the end of 2012 to a stock of green certificates representing more than the actual quota of that year.

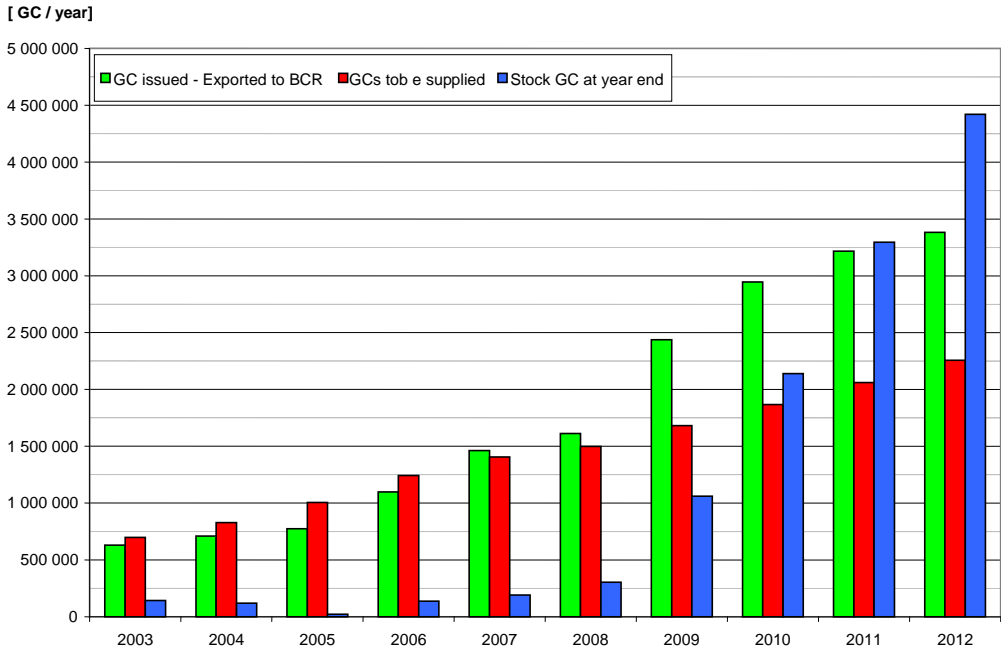


Figure 4.5 Equilibrium between supply and demand

The increase in the issue of green certificates from 2009 onward (about 800 000 GCs) is essentially due to the commissioning and progressive scaling-up of the operations of biomass cogeneration facilities of significant size such as BIOWANZE, IBV, etc. (+400 000 GCs), as well as the commissioning of many wind farms (+350 000 GCs) now authorised and under construction, like that of Windvision in Estinnes (66 MW).

It is important to bear in mind that this increase is largely based on facilities which will be brought into service during the second half of 2008 and the first half of 2009. So the green electricity generation facilities that is due to be installed by the end of 2009 should, on its own, be able to fulfil the quota obligations in the Walloon Region for the whole period 2009-2012 (see figure 4.5). Based on these provisions, the CWaPE considers a revision of the quotas necessary from 2009 onward.

In accordance with the provisions of Article 25 of the Arrêté of the Walloon Government of 30 November 2006 on the promotion of green power, these quotas will have to be set taking account of the targets that the European Union will set shortly for Belgium.

In this context, the CWaPE points out that there is a need to provide long-term visibility for the whole electricity sector (minimum 10 or even 15 years). This is necessary to reduce the generation cost of green power by encouraging long-term investment decisions and not just based on short-term return, as well as to enable adaptation to the lower cost of infrastructures, whose development, which is inherent in decentralised generation, requires long-term planning. By way of example, the quotas established in the context of the "renewables obligation" that applies in the United Kingdom, comparable to the Walloon green certificate system, has been set until 2026.³¹

Based on these considerations, the CWaPE recommends in 2009 setting the green certificate quotas for a period from 2013 to 2020 or even 2025.

³¹ In the United Kingdom, the quotas have been set at a level of 6.7% in 2006, to reach a level of 15.4% in 2015, and will then be maintained at that level until 2026.

Contents

| | | |
|-------|--|----|
| 1 | Subject..... | 2 |
| 2 | The green certificate system | 3 |
| 2.1 | Legal framework and goals | 3 |
| 2.2 | Main legislative changes in 2007..... | 4 |
| 2.3 | The principle of the green certificates system..... | 5 |
| 2.4 | The main concepts relating to the issuance of green certificates..... | 6 |
| 2.4.1 | Definition of green power generation (Décret, Art. 2)..... | 6 |
| 2.4.2 | Principles of issuance of green certificates (Décret, Art. 38)..... | 6 |
| 2.5 | Conditions and procedure for the issuance of green certificates (AGW-PEV)..... | 7 |
| 2.5.1 | Green power metering procedures and code..... | 7 |
| 2.5.2 | Certification of a green power generation facility | 7 |
| 2.5.3 | Prior application for the issuance of green certificates | 8 |
| 2.6 | Level of support for green producers: | 8 |
| 2.7 | The market for green certificates..... | 9 |
| 2.7.1 | The supply side: green certificates issue to green producers - (AGW-PEV, Art. 13)..... | 9 |
| 2.7.2 | Organisation..... | 9 |
| 2.7.3 | The demand side: the quota return for suppliers..... | 10 |
| 2.7.4 | The guaranteed purchase price mechanism for green certificates | 12 |
| 3 | Results for 2007 | 13 |
| 3.1 | Generation facilities..... | 13 |
| 3.1.1 | Generation facility certification | 13 |
| 3.1.2 | Green power generation sites | 14 |
| 3.1.3 | Generation of green power, green certificate and certificates of origin | 15 |
| 3.1.4 | Share of green power in electricity supply in the Walloon Region | 18 |
| 3.2 | Market for green certificates | 19 |
| 3.2.1 | Green certificate transactions..... | 19 |
| 3.2.2 | Green certificate quotas (nominal and actual) | 19 |
| 3.2.3 | Supply and demand on the green certificate market | 20 |
| 3.2.4 | Quota returns of green certificates in the Walloon Region | 22 |
| 3.2.5 | Change in the amount of fines | 22 |
| 3.2.6 | Redemption of Walloon green certificates for the quota in the Brussels Capital Region | 22 |
| 4 | Outlook | 24 |
| 4.1 | Change in green power generation facilities in 2008 | 24 |
| 4.2 | Change in the green certificate market in 2008..... | 25 |
| 4.3 | Change in generation of green power over the period 2008-2012..... | 26 |
| 4.3.1 | Hypotheses | 26 |
| 4.3.2 | Results | 27 |
| 4.3.3 | Equilibrium conditions on the green certificate market..... | 28 |
| | Contents | 30 |
| | ANNEX 1 1a.: List of green power production sites at the end of 2007 (P>10 kW)(I) | 31 |
| | ANNEX 1a: List of green power production sites at the end of 2007 (P>10 kW)(II) | 32 |
| | ANNEX 1b: List of green power production sites at the end of 2007 (P≤10 kW) | 33 |
| | ANNEX 1c: Age of green power production facilities at the end of 2007 | 34 |
| | ANNEX 2: Issue of green certificates at the end of 2007 - Breakdown by generation system and per quarter..... | 35 |

ANNEX 1 1a. : List of green power production sites at the end of 2007 (P>10 kW)(I)

| Type of generator | Green power producer | Production site | Pend (kW) | |
|---|---|---|------------------------------------|-------|
| Photovoltaic | ALAN & CO | 172_PHOTOVOLTAIQUE ALAN & CO | 42 | |
| | Photovoltaic - Net developable electric power (Pend) (kW) | | 42 | |
| | Number of sites | | 1 | |
| Hydro | C. E. Bruno MARAITE | 061_HYDRO MARAITE (LIGNEUVILLE) | 217 | |
| | C.E. LA FENDERIE | 071_HYDRO LA FENDERIE (TROOZ) | 276 | |
| | CENTRALES GAMBY | 059_CENTRALE HE CHAPUIS | 100 | |
| | | 060_CENTRALE HE D'OLNE | 256 | |
| | DONY | 048_MICRO CENTRALE HE DU VAL DE POIX | 94 | |
| | ELECTRABEL | 028_CENTRALE HE DE LORCE | 51 | |
| | | 029_CENTRALE HE HEID DE GOREUX | 7 344 | |
| | | 030_CENTRALE HE DE ORVAL | 47 | |
| | | 031_CENTRALE HE DE COO DERIVATION | 385 | |
| | | 032_CENTRALE HE DE STAVELOT | 106 | |
| | | 033_CENTRALE HE DE CIERREUX | 100 | |
| | | 034_CENTRALE HE DE LA VIERRE | 1 976 | |
| | | 035_CENTRALE HE DE BUTGENBACH | 2 106 | |
| | | 036_CENTRALE HE DE BEVERCE | 9 902 | |
| | | 077_CENTRALE HE DE BARDONWEZ | 32 | |
| | ENERGIE BERCHIWE | 122_CENTRALE HE MOULIN DE BERCHIWE | 22 | |
| | ENHYDRO | 065_CENTRALE HE DE PONT-A-SMUID | 174 | |
| | | 066_CENTRALE HE DE SAINTE-ADELINE | 116 | |
| | HYDROLEC DENIS | 051_CENTRALE HE DE DOLHAIN | 80 | |
| | | 053_CENTRALE HE DU MOULIN PIRARD | 49 | |
| | HYDROVAL | 047_CENTRALE HE ZOUDE | 178 | |
| | JEANTY Nadine (particulier) | 076_CENTRALE HE MOULIN DE VILLERS-LA-LOUE | 15 | |
| | MERYTHERM | 057_CENTRALE HE DE MERY | 205 | |
| | | 058_CENTRALE HE DE RAVORIVE | 60 | |
| | MET - I. G. 45 | 078_CENTRALE HE DE L'EAU D'HEURE | 951 | |
| | | 079_CHE DU PLAN INCLINE DE RONQUIERES | 2 690 | |
| | MOULIN FISENNE | 073_CENTRALE HE MOULIN FISENNE | 95 | |
| | MOULIN HICK | 158_MOULIN HICK (VAL-DIEU) | 18 | |
| | MUYLE HYDROELECTRICITE | 087_CENTRALE HE DE MORNIMONT | 659 | |
| | PIRONT Alphonse | 074_CENTRALE HE PIRONT (LIGNEUVILLE) | 62 | |
| | | 075_CENTRALE HE MOULIN MAYERES | 119 | |
| | PROTIN Josette (particulier) | 056_CENTRALE HE MOULIN D'EN BAS | 15 | |
| | REFAT ELECTRIC | 067_CENTRALE HE DE STAVELOT | 245 | |
| | SAPIEF | 072_CENTRALE HE DE FRAIPONT | 75 | |
| | SCIERIE MAHY | 083_CENTRALE HE MAHY | 25 | |
| | SPE | 012_CENTRALE HE DE FLORIFFOUX | 843 | |
| | | 013_CENTRALE HE DES GRANDS MALADES | 4 887 | |
| | | 014_CENTRALE HE D'ANDENNE | 8 986 | |
| | | 015_CENTRALE HE D'AMPSIN NEUVILLE | 9 910 | |
| | | 016_CENTRALE HE D'IVOZ RAMET | 9 742 | |
| | | 017_CENTRALE HE DE MONSIN | 17 765 | |
| | | 018_CENTRALE HE DE LIXHE | 22 979 | |
| | | 116_CHE DES GROSSES BATTES | 513 | |
| | SOCIETE WALLONNE DES EAUX | 054_COMPLEXE DE L'OURTHE | 758 | |
| | | 055_COMPLEXE DE LA VESDRE | 1 519 | |
| | VERTWATT | 202_HYDRO SAINT-ROCH (COUVIN) | 92 | |
| | WILLOT Jean-Luc (particulier) | 099_CENTRALE HE MOULIN DE JEHOULET | 22 | |
| | ZEYEN (particulier) | 062_CENTRALE HE MOULIN DE WEWELER | 169 | |
| | Net developable electric power (Pend) (kW) - Hydro | | 107 032 | |
| | Number of sites | | 48 | |
| | Wind | A+ENERGIES | 117_ÉOLIENNE BRONROMME | 328 |
| | | ALLONS EN VENT | 132_ÉOLIENNES TIENNE DU GRAND SART | 794 |
| | | ELECTRABEL | 070_ÉOLIENNES DE BUTGENBACH | 7 993 |
| ELECTRASTAR | | 144_ÉOLIENNES DE MARBAIS | 15 816 | |
| ÉLECTRICITÉ DU BOIS DU PRINCE | | 233_ÉOLIENNES DE FOSSES-LA-VILLE | 21 745 | |
| ÉNAIRGIE DU HAINAUT | | 160_ÉOLIENNES DE DOUR-QUIÉVRAIN | 7 900 | |
| Énergie 2030 Agence | | 180_ÉOLIENNE DE CHEVETOGNE | 800 | |
| Énergie 2030 Coopérative | | 104_ÉOLIENNE DE ST-VITH | 593 | |
| GREENELEC EUROPE | | 146_ÉOLIENNES DE COUVIN | 1 977 | |
| INTERAGRI DUMOULIN | | 124_ÉOLIENNE DE SEILLES | 199 | |
| LES ÉOLIENNES DE PERWEZ | | 130_ÉOLIENNES DE PERWEZ 3 | 4 495 | |
| LES VENTS DE L'ORNOI | | 086_ÉOLIENNES DE GEMBLOUX-SOMBREFFE | 8 982 | |
| LES VENTS DE PERWEZ | | 107_ÉOLIENNES DE PERWEZ 2 | 7 396 | |
| LES VENTS D'HOUYET | | 094_ÉOLIENNE AUX TCHERETTES | 1 390 | |
| MICHAUX Jean-Pierre | | 091_ÉOLIENNES DU CHAMP DE RANCE | 18 | |
| P. B. E. | | 069_ÉOLIENNES DE PERWEZ 1 | 597 | |
| RENEWABLE POWER COMPANY | | 050_ÉOLIENNES DE SAINTE-ODE | 7 484 | |
| SPE POWER COMPANY | | 100_ÉOLIENNES DE VILLERS-LE-BOUILLET | 12 000 | |
| SPE POWER COMPANY | | 121_ÉOLIENNES DE WALCOURT | 9 000 | |
| SPE POWER COMPANY | | 163_ÉOLIENNES DE DINANT & YVOIR | 12 000 | |
| WALDICO | | 147_ÉOLIENNE WALDICO GHISLENGHIEN | 1 969 | |
| Net developable electric power (Pend) (kW) - Wind | | 123 476 | | |
| Number of sites | | 21 | | |

ANNEX 1a: List of green power production sites at the end of 2007 (P>10 kW)(II)

| Type of generator | Green power producer | Production site | Pend (kW) | |
|---|--|---|---|---------|
| Biomass | AGRIBERT - BENIEST | 140_FERME DE LA GRANGE DE LA DIME | 85 | |
| | ELECTRABEL | 084_C.E.T. DE MONTZEN | 176 | |
| | | 097_AWIRS 4 | 80 000 | |
| | IDEA HENNUYERE | 068_BIOMASSE STATION D'ÉPURATION DE WASMUEL | 429 | |
| | IDELUX | 186_BIOMASSE C.E.T. DE HABAY | 444 | |
| | INTRADEL | 082_BIOMASSE C.E.T. D'HALLEMBAYE | 2 048 | |
| | ITRADEC | 027_BIOMASSE ITRADEC (HAVRE) | 1 623 | |
| | SHANKS S.A. | 002_BIOMASSE C.E.T. DE MONT-ST-GUIBERT / CETEM | 9 023 | |
| | SITA WALLONIE | 001_BIOMASSE C.E.T. D'ENGIS-PAVIOMONT | 1 780 | |
| | VERDESIS | 090_BIOMASSE A.I.V.E. (MARCHE) | 26 | |
| | Net developable electric power (Pend) (kW) - Biomass | | | 95 634 |
| | Number of sites | | | 10 |
| | Cogeneration biomass | AIGREMONT | 109_BIOMASSE AIGREMONT (FLÉMALLE) | 759 |
| | | ARBORETUM | 183_BIOMASSE L'ARBORETUM (PÉRUWÉLZ) | 25 |
| ATELIER PROTÉGÉ LE SAUPONT | | 126_BIOMASSE LE SAUPONT (BERTRIX) | 178 | |
| BEP - ENVIRONNEMENT | | 115_BIOMASSE C.E.T. DE HAPPE CHAPOIS | 260 | |
| BURGO ARDENNES | | 043_BIOMASSE BURGO ARDENNE (VIRTON) | 29 801 | |
| BURNIAUX Marcel | | 123_FERME PRÉ DE PRÉAT | 85 | |
| CAP FORME | | 128_BIOMASSE CAP FORME (LA GLANERIE) | 12 | |
| CAROLIMMO | | 134_BIOMASSE BUSINESS HOTEL (CHARLEROI) | 12 | |
| DEBRY Bernard | | 129_FERME DE L'HOSTÉ | 22 | |
| ELECTRABEL | | 010_BIOMASSE LUTOSA (LEUZE) | 2 190 | |
| ELECTRABEL | | 102_BIOMASSE SECOCOIS (MARIEMBOURG) | 608 | |
| ELECTRAWINDS BIOMASSE MOUSCRON | | 153_BIOMASSE ELECTRAWINDS MOUSCRON | 17 240 | |
| ÉNERGIES RENOUVELABLES DES ARDENNES | | 312_FERME ERDA (BERTRIX) | 6 300 | |
| HECK | | 023_HOF HECK (NIDRUM) | 110 | |
| IDELUX | | 063_BIOMASSE C.E.T. DE TENNEVILLE | 693 | |
| KESSLER FRERES | | 038_FERME DE FAASCHT | 428 | |
| LENGES | | 024_HOF LENGES (RECHT) | 962 | |
| MONSHOTEL | | 204_BIOMASSE HOTEL MERCURE (NIMY) | 25 | |
| MYDIBEL | | 135_BIOMASSE MYDIBEL (MOUSCRON) | 1 382 | |
| OLEO | | 157_BIOMASSE OLEO (VIRGINAL) | 1 557 | |
| RECYBOIS | | 112_BIOMASSE RECYBOIS (LATOOUR) | 2 600 | |
| RENOGEN | | 138_BIOMASSE RENOGEN KAISERBARACKE_BIOFUEL | 2 949 | |
| RENOGEN | | 149_BIOMASSE RENOGEN KAISERBARACKE_BOIS | 4 700 | |
| SEVA | | 111_BIOMASSE SEVA (MOUSCRON) | 903 | |
| SODECOM QUÉVY | | 205_BIOMASSE SODECOM (QUÉVY) | 1 330 | |
| SPAQUE | | 064_BIOMASSE C.E.T. D'ANTON (BONNEVILLE) | 293 | |
| SPAQUE | | 105_BIOMASSE C.E.T. DES ISNES | 49 | |
| VEOLIA ENVIRONMENTAL SERVICES | | 020_BIOMASSE C.E.T. DE COUR-AU-BOIS | 3 041 | |
| VERLAC | | 155_BIOMASSE VERLAC (ALLEUR) | 50 | |
| Net developable electric power (Pend) (kW) - Cogeneration biomass | | | 78 564 | |
| Number of | | | 29 | |
| Cogeneration fossil | | BENEO ORAFI SA | 113_COGEN RAFFINERIE NOTRE-DAME (OREYE) | 9 500 |
| | | BIESBROUCK | 150_COGEN BIESBROUCK (PECO) | 1 952 |
| | CLINIQUE PSYCHIATRIQUE DES FRERES ALEXIENS | 103_COGEN CLINIQUE PSY DES FRERES ALEXIENS (HENRI-CHAPELLE) | 251 | |
| | CPAS DE NAMUR | 164_COGEN CPAS DE NAMUR | 118 | |
| | DETRY FRERES | 042_COGEN DETRY (AUBEL) | 798 | |
| | ELECTRABEL | 004_COGEN CHR DE NAMUR | 813 | |
| | | 005_COGEN IRE (FLEURUS) | 1 025 | |
| | | 006_COGEN LABO THISSEN (BRAINE-L'ALLEUD) | 338 | |
| | | 007_COGEN MINERVE (GOSSELIES) | 765 | |
| | | 008_COGEN SWEDEPONIC WALLONIE (FONTAINE-L'ÉVÊQUE) | 341 | |
| | | 009_COGEN HÔPITAL VÉSALE | 1 331 | |
| | | 025_COGEN CENTRALE DE BRESSOUX | 2 732 | |
| | | 039_COGEN SOLVAY (JEMEPPE) | 94 447 | |
| | | 089_COGEN STATION D'ÉPURATION DE MOUSCRON | 403 | |
| | ISERA & SCALDIS SUGAR | 098_COGEN SUCRERIE DE FONTENOY | 5 580 | |
| | PROVITAL INDUSTRIE | 096_COGEN PROVITAL INDUSTRIE (WARCOING) | 984 | |
| | RAFFINERIE TIRLEMONTAISE | 037_COGEN RAFFINERIE TIRLEMONTAISE (WANZE) | 12 475 | |
| | | 108_COGEN RÂPERIE DE LONGCHAMPS | 6 888 | |
| | SEDIFIN POWER INVEST | 003_COGEN UCL (LOUVAIN-LA-NEUVE) | 9 255 | |
| | SPE | 011_COGEN SUCRERIE DE WANZE | 529 | |
| | TECHSPACE AERO | 141_COGEN TECHSPACE-AERO (MILMORT) | 1 155 | |
| | VITAFISH | 161_COGEN VITAFISH (DOTTIGNIES) | 375 | |
| | WARCOING INDUSTRIE | 041_COGEN SUCRERIE DE WARCOING-Site 1 | 981 | |
| | | 118_COGEN SUCRERIE DE WARCOING 2 -- NIRO | 803 | |
| | | 119_COGEN SUCRERIE DE WARCOING 3 -- TURBO | 6 547 | |
| | Net developable electric power (Pend) (kW) - Cogeneration fossil | | | 160 386 |
| | Number of sites | | | 25 |
| TOTAL Net developable electric power (Pend) (kW) | | | 565 133 | |
| TOTAL Number of sites | | | 134 | |

ANNEX 1b: List of green power production sites at the end of 2007 (P≤10 kW)

| Type of generator | Green power producer | Production site | Pend (kW) | |
|--|--|---|-------------------------------|------|
| Photovoltaic | BELENGER Michel | 131_PHOTOVOLTAIQUE BELENGER Michel | 1,7 | |
| | BERTRAND ANDRE | 212_PHOTOVOLTAIQUE BERTRAND André | 1,3 | |
| | BRUNO GREINDL | 114_PHOTOVOLTAIQUE GREINDL Bruno | 1,0 | |
| | CORNET Georges | 169_PHOTOVOLTAIQUE CORNET Georges | 1,7 | |
| | DANDOY Annick | 178_PHOTOVOLTAIQUE DANDOY Annick | 2,4 | |
| | DAVENNE J-P. | 088_PHOTOVOLTAIQUE DAVENNE J-P | 1,2 | |
| | DE LUCA Daniel | 197_PHOTOVOLTAIQUE DE LUCA Daniel | 6,0 | |
| | DE VOS Roger | 179_PHOTOVOLTAIQUE DE VOS Roger | 2,6 | |
| | DEFALQUE Jean | 136_PHOTOVOLTAIQUE DEFALQUE Jean | 4,2 | |
| | DEHAYE Bruno | 199_PHOTOVOLTAIQUE DEHAYE Bruno | 1,4 | |
| | DELFORNO | 239_PHOTOVOLTAIQUE DELFORNO | 2,6 | |
| | DRAMIC ASSOCIATES | 159_PHOTOVOLTAIQUE DRAMIC | 1,5 | |
| | DUCARME Didier | 201_PHOTOVOLTAIQUE DUCARME Didier | 2,4 | |
| | EKOWATT - Installateur | 403_PHOTOVOLTAIQUE SCHELLINCK | 4,3 | |
| | FONDER Daniel | 198_PHOTOVOLTAIQUE FONDER Daniel | 1,2 | |
| | GILLET André | 231_PHOTOVOLTAIQUE GILLET André | 2,8 | |
| | GODIN Jean | 143_PHOTOVOLTAIQUE GODIN Jean | 1,0 | |
| | HAINAUT Jean | 168_PHOTOVOLTAIQUE HAINAUT Jean | 1,8 | |
| | HAQUENNE S. C. S. I. | 165_PHOTOVOLTAIQUE HAQUENNE | 7,0 | |
| | HECO-HANNECART | 125_PHOTOVOLTAIQUE HECO-HANNECART | 3,1 | |
| | MASSART Roger | 187_PHOTOVOLTAIQUE MASSART Roger | 1,5 | |
| | NISSAN MOTOR MANUFACTURING | 156_PHOTOVOLTAIQUE NISSAN LLN 2 | 5,1 | |
| | PRAVISANO Sergio | 175_PHOTOVOLTAIQUE PRAVISANO Sergio | 1,8 | |
| | QUITTRE Laurent | 095_PHOTOVOLTAIQUE ISSOL | 1,0 | |
| | RENSON FRANCIS | 166_PHOTOVOLTAIQUE RENSON Francis | 1,3 | |
| | SALMON Jean | 209_PHOTOVOLTAIQUE SALMON Jean | 2,5 | |
| | SPIES Jacques | 174_PHOTOVOLTAIQUE SPIES Jacques | 1,2 | |
| | SPIES Marc | 195_PHOTOVOLTAIQUE SPIES Marc | 2,0 | |
| | SPINOIT Paul | 139_PHOTOVOLTAIQUE SPINOIT Paul | 5,0 | |
| | STRIVAY Jean-Luc | 182_PHOTOVOLTAIQUE STRIVAY Jean-Luc | 2,2 | |
| | SUNSWITCH - Installateur | 232_PHOTOVOLTAIQUE SCHROBILTGEN Stéphane | 1,3 | |
| | TIERNY Jean | 200_PHOTOVOLTAIQUE TIERNY Jean | 2,4 | |
| | VANHOUTVINCK Bernard | 181_PHOTOVOLTAIQUE VANHOUTVINCK Bernard | 4,9 | |
| | VANKERKHOVEN-JOSSIEAUX | 184_PHOTOVOLTAIQUE VANKERKHOVEN-JOSSIEAUX | 1,3 | |
| | WEVERBERGH Dany | 194_PHOTOVOLTAIQUE WEVERBERGH Dany | 1,2 | |
| | Net developable electric power (Pend) (kW) - Photovoltaic | | | 86 |
| | Number of sites | | | 35 |
| | Hydro | HOTTOIS David | 120_MOULIN DE JAUCHE | 7,3 |
| | | KELLER Pol | 192_MOULIN DE VAUX (BASTOGNE) | 10,0 |
| | | ECOPEX | 154_HYDRO DE MOHIMONT | 10,0 |
| COMMUNE DE MARTELANGE | | 127_MOULIN KUBORN (MARTELANGE) | 4,0 | |
| JIMOPONROL | | 173_MOULIN DE SART (JEHONVILLE) | 5,0 | |
| RIVIERE | | 167_HYDRO ANCIENNE FORGE DE RIVIERE | 7,5 | |
| Net developable electric power (Pend) (kW) - Hydro | | | 44 | |
| Number of sites | | | 6 | |
| Cogeneration fossil | COPROPRITE DU BOIS DEL TERRE | 189_COGEN BOIS DEL TERRE (OTTIGNIES) | 5,0 | |
| | ELECTROTECH | 206_COGEN ELECTROTECH (GOSSELIES) | 6,0 | |
| | Puissance électrique nette développable (Pend) (kW) - Cogénération fossile | | | 11 |
| | Nombre de sites | | | 2 |
| TOTAL Net developable electric power (Pend) (kW) | | | 140 | |
| TOTAL Number of sites | | | 43 | |

ANNEX 1c: Age of green power production facilities at the end of 2007

| Type of generator | <2001 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | Total |
|----------------------|-----------|----------|-----------|----------|----------|-----------|-----------|-----------|------------|
| Solar PV | | | 1 | 2 | 1 | 2 | 3 | 27 | 36 |
| Hydro | 36 | 1 | 3 | 2 | 2 | 3 | 3 | 4 | 54 |
| Wind | 3 | | 1 | 2 | 1 | 4 | 5 | 5 | 21 |
| Biomass | 5 | | | 1 | 1 | 1 | 1 | 1 | 10 |
| Cogeneration biomass | 3 | | 3 | 2 | | 6 | 7 | 8 | 29 |
| Cogeneration fossil | 14 | | 3 | | 2 | 2 | 2 | 4 | 27 |
| Total | 61 | 1 | 11 | 9 | 7 | 18 | 21 | 49 | 177 |

Number of sites by date when the facilities were commissioned

| Type of generator | <2001 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | Total |
|----------------------|----------------|-----------|---------------|---------------|--------------|----------------|---------------|---------------|----------------|
| Solar PV | | | 3 | 2 | 5 | 4 | 7 | 107 | 128 |
| Hydro | 105 594 | 75 | 362 | 301 | 54 | 542 | 19 | 128 | 107 075 |
| Wind | 1 208 | | 7 484 | 16 975 | 1 390 | 28 724 | 23 281 | 44 414 | 123 476 |
| Biomass | 14 903 | | | 176 | 26 | 80 000 | 85 | 444 | 95 634 |
| Cogeneration biomass | 30 204 | | 6 193 | 1 121 | | 5 179 | 4 640 | 31 227 | 78 564 |
| Cogeneration fossil | 145 663 | | 2 778 | | 654 | 7 691 | 3 107 | 504 | 160 397 |
| Total | 297 573 | 75 | 16 820 | 18 575 | 2 129 | 122 140 | 31 139 | 76 822 | 565 274 |

Installed output capacity (kWe) by date when the facilities were commissioned

ANNEX 2: Issue of green certificates at the end of 2007 - Breakdown by generation system and per quarter

Green power generation and production of green certificates - breakdown by generation system and per quarter

| | | 2003*** | 2004 | 2005 | 2006 | 2007 | 2007 – 1 st quarter | 2007- 2 nd quarter | 2007 – 3 rd quarter | 2007 – 4 th quarter |
|----------------------|---------------------------------------|------------|------------|------------|------------|------------|-----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| Photovoltaic | GC produced | 0 | 1 | 2 | 9 | 25 | 3 | 6 | 7 | 9 |
| | RES electricity generated (MWh) | 0 | 1 | 2 | 9 | 25 | 3 | 6 | 7 | 9 |
| | Net electricity (MWh) | 0 | 1 | 2 | 9 | 25 | 3 | 6 | 7 | 9 |
| Hydro-electric | GC produced | 310 988 | 305 024 | 277 690 | 350 276 | 377 909 | 146 558 | 69 489 | 77 614 | 84 249 |
| | RES electricity generated (MWh) | 310 988 | 305 024 | 277 690 | 350 276 | 377 909 | 146 558 | 69 489 | 77 614 | 84 249 |
| | Net electricity generated (MWh) | 310 988 | 305 024 | 277 690 | 350 276 | 377 909 | 146 558 | 69 489 | 77 614 | 84 249 |
| Wind | GC produced | 25 244 | 46 132 | 70 927 | 126 149 | 204 840 | 60 716 | 39 178 | 42 389 | 62 557 |
| | RES electricity generated (MWh) | 25 244 | 46 132 | 70 927 | 126 149 | 204 840 | 60 716 | 39 178 | 42 389 | 62 557 |
| | Net electricity generated (MWh) | 25 244 | 46 132 | 70 927 | 126 149 | 204 840 | 60 716 | 39 178 | 42 389 | 62 557 |
| Biomass | GC produced | 65 167 | 81 501 | 172 681 | 315 894 | 379 548 | 100 745 | 75 566 | 89 543 | 113 694 |
| | RES electricity generated (MWh) | 65 167 | 81 724 | 243 658 | 476 650 | 562 933 | 149 189 | 111 521 | 133 866 | 168 357 |
| | Net electricity generated (MWh) | 65 167 | 81 893 | 263 903 | 501 821 | 576 441 | 151 584 | 114 928 | 138 409 | 171 519 |
| Biomass cogeneration | GC produced | 162 520 | 200 356 | 217 504 | 277 075 | 497 315 | 97 075 | 121 384 | 125 809 | 153 047 |
| | RES electricity generated (MWh) | 165 590 | 200 541 | 215 337 | 257 079 | 414 110 | 84 263 | 106 949 | 105 576 | 117 322 |
| | Net COGEN electricity generated (MWh) | 183 203 | 221 582 | 233 845 | 275 964 | 434 025 | 91 387 | 111 219 | 110 379 | 121 040 |
| | Net electricity generated (MWh) | 183 203 | 221 582 | 233 845 | 275 964 | 434 025 | 91 387 | 111 219 | 110 379 | 121 040 |
| Fossil cogeneration | GC produced | 65 963 | 76 271 | 95 365 | 103 766 | 101 721 | 27 731 | 23 888 | 23 159 | 26 943 |
| | RES electricity generated (MWh) | 0 | 578 | 562 | 1 076 | 1 564 | 510 | 411 | 420 | 224 |
| | Net COGEN electricity generated (MWh) | 847 912 | 834 275 | 885 077 | 884 854 | 878 115 | 242 334 | 200 966 | 191 887 | 242 928 |
| | Net electricity generated (MWh) | 847 912 | 834 275 | 885 077 | 884 854 | 878 115 | 242 334 | 200 966 | 191 887 | 242 928 |
| Total green power | GC produced | 629 882 | 709 286 | 834 169 | 1 173 169 | 1 561 359 | 432 829 | 329 511 | 358 521 | 440 498 |
| | RES electricity generated (MWh) | 567 055 | 634 001 | 808 178 | 1 211 240 | 1 561 382 | 441 239 | 327 554 | 359 872 | 432 717 |
| | Net COGEN electricity generated (MWh) | 1 031 115 | 1 055 857 | 1 118 922 | 1 160 818 | 1 312 140 | 333 721 | 312 185 | 302 266 | 363 968 |
| | Net electricity generated (MWh) | 1 432 720 | 1 488 907 | 1 731 445 | 2 139 073 | 2 471 356 | 692 583 | 535 786 | 560 685 | 682 301 |
| | Tonnes CO2 saved | 287 226 | 323 434 | 380 381 | 534 965 | 711 980 | 197 370 | 150 257 | 163 486 | 200 867 |
| Share of supplies | Electricity supplies | 23 368 935 | 23 628 470 | 23 341 061 | 24 606 202 | 24 070 385 | 6 412 814 | 5 676 270 | 5 535 037 | 6 446 265 |
| | % of RES electricity* | 2,43% | 2,68% | 3,46% | 4,92% | 6,49% | 6,88% | 5,77% | 6,50% | 6,71% |
| | % of COGEN electricity** | 4,41% | 4,47% | 4,79% | 4,72% | 5,45% | 5,20% | 5,50% | 5,46% | 5,65% |
| | % Net electricity generated | 6,13% | 6,30% | 7,42% | 8,69% | 10,27% | 10,80% | 9,44% | 10,13% | 10,58% |

* RES electricity is electricity generated from renewable energy sources as defined by the EU (Directive 2001/77/EC)

** COGEN electricity is electricity generated from high-quality cogeneration facilities;

The Walloon definition is close but different to the EU definition of high-quality cogeneration as defined by the EU (Directive 2004/8/EC)

*** The 2003 statistics include some generation certified in 2002.