

# Non-cost barriers to renewables

– *AEON* study

Belgium

Client: DG TREN

ECORYS Nederland BV

Mr Koen Rademaekers (ECORYS)

Rotterdam, August 2010



ECORYS Nederland BV  
P.O. Box 4175  
3006 AD Rotterdam  
Watermanweg 44  
3067 GG Rotterdam  
The Netherlands

T +31 (0)10 453 88 00  
F +31 (0)10 453 07 68  
E [netherlands@ecorys.com](mailto:netherlands@ecorys.com)  
W [www.ecorys.com](http://www.ecorys.com)  
Registration no. 24316726

ECORYS Macro & Sector Policies  
T +31 (0)10 453 87 53  
F +31 (0)10 452 36 60



# Table of contents

<b>1 Introduction</b>	<b>7</b>
1.1 Policy background	8
<b>2 Issue 1 Administrative Procedures</b>	<b>9</b>
<b>3 Issue 2 Technical Specifications</b>	<b>15</b>
<b>4 Issue 3 Building integrated technologies</b>	<b>17</b>
<b>5 Issue 4 – Promotion of energy efficient renewable energy equipment</b>	<b>19</b>
<b>6 Issue 5 Information/awareness raising</b>	<b>21</b>
<b>7 Issue 6 Certification of installers</b>	<b>23</b>
<b>8 Issue 7 Infrastructure Development</b>	<b>24</b>
<b>9 Issue 8 Power Grid Issues</b>	<b>26</b>
<b>10 Issue 9 Gas Network Issues</b>	<b>28</b>
<b>11 Issue 10 District Heating</b>	<b>29</b>



# 1 Introduction

The content of this report results from interviews conducted with different stakeholders in Flanders and Wallonia. All stakeholders are member of Edora (Fédération de l’Energie D’Origine Renouvelable) or ODE-Vlaanderen, resp. the Walloon and Flemish RES association. A list of interviewed stakeholders is mentioned in attachment.

Renewable energy policy is a regional competence in Belgium (except for off shore) which means that the three regional governments are responsible for making the RES legislation (called ‘decrees’) and that regulation is followed up by three different bodies (the VREG – the Flemish regulator, the CWaPE – the Walloon regulator and Brugel – the Brussels regulator).

Belgium is totally dependent upon imported fossil fuels for its energy needs. Little development of RES exists so far; the share of RES in total primary energy consumption was just above 2% in 2005. However, recent calculations indicate that the current RES share is around 4% and should nearly achieve 6% by 2012. The steep increase should primarily come from onshore wind, followed by photovoltaic and solid biomass. The 2020 target for Belgium is 13% RES.

As stated in the draft plans to achieve its RES target set for 2020, the forecasted role of the different sources, per macro area, is as follows.

**Table 1: Contribution of Renewables (in Gwh for elec and in ktoe for the other RES)**

Type of energy	2005	2011-2012	2013-2014	2015-2016	2017-2018	2020
Biomass – E	1590	4594	5346	6445	7241	8874
Hydro	357	381	406	431	455	480
PV	2	123	307	672	1384	2924
Wind	367	4386	6962	9367	12454	17586
<b>Total elec.</b>	<b>2314</b>	<b>9523</b>	<b>13290</b>	<b>16914</b>	<b>21535</b>	<b>29863</b>
Biomass – H&C	675	1121	1431	1713	1972	1988
Geothermal	3	7	11	16	22	32
Solar thermal	3	31	68	107	156	241
Heat pumps	8	48	82	132	206	342
<b>Total H&amp;C</b>	<b>689</b>	<b>1207</b>	<b>1592</b>	<b>1967</b>	<b>2356</b>	<b>2603</b>
Bioethanol	0	9	43	65	94	144
Biodiesel	0	21	31	46	67	103
Other Biofuels	0	17	25	38	55	84
<b>Total transport</b>	<b>0</b>	<b>169</b>	<b>253</b>	<b>379</b>	<b>548</b>	<b>843</b>

Source: Draft Belgian RES industry roadmap, Edora, 2010

## 1.1 Policy background

The 3 most important cumulative support measures for the production of renewable energy in Belgium are:

- \* Green certificates. These exist at both federal (for off shore wind) and regional level. In the three regions you receive green certificates for the production of ecological electricity. The principles of the system for the green certificates are the same in the three regions (electricity suppliers need to show a number of green certificates on a yearly basis in order to reach their quota; these certificates are given to renewable electricity producers, where 1 certificate represents 1 MWh; the suppliers that do not have a sufficient number of certificates are fined for a certain amount). However, the definitions and the treatment per technology are different per region just like the minimum values for the certificates (if you cannot sell them in the market, the DSO has a final purchase obligation).
- \* CHP certificates. This system exists in two parts. On the one hand, electricity suppliers have the obligation to deliver a minimum share of electricity from CHP installations. On the other hand, owners of CHP installations receive certificates for every MWh of electricity they produce. The owners can sell the certificates to the suppliers who have not yet fulfilled their obligation.
- Ecology support. This support varies between technologies, and a certain percentage is supported of the initial investment of the technology.
- Raised investment tax deduction. There is a raised fiscal deduction on the taxable profits of renewable electricity technologies possible.



## 2 Issue 1 Administrative Procedures

Administrative procedures are a big issue in the RES sector in Belgium. However, first of all one has to know who are the administrative bodies responsible for authorization, certification and licensing procedures. Authorizations for renewable energy plants are given at the regional level, except for offshore wind which directly depends on the federal authority. Above, part of the authorization process is done by local authorities (communes and provinces) and the administrative bodies are different between the regions.

### *Barrier 1.1 – Inefficient general administrative procedures*

#### *Permits and the permitting process*

Most of the permissions for renewable energy plants are given at the regional level, except for off-shore wind, which directly depends on the federal authority. However, part of the permissions stem from local authorities. This can lead to a project delay or rejection. Some biomass projects could also suffer of delay due to shared competences as waste legislation directly depends on the federal authority. On biofuels, excise duties also depend on federal authority. It is argued that there is a need for improvement and coordination of the authorisation and licensing procedures in Belgium.<sup>12</sup> For most technologies, the administrative procedures (and legislation) can differ a lot between Flanders and Wallonia).

Furthermore, there is a lack of a legal, regulatory framework for deep geothermal energy<sup>3</sup>. For biomass projects, you have to pass through a rather complex permitting process. Amongst others, these projects have to deal with regulatory and legal issues regarding spatial planning, energy, emissions, waste and manure. Project developers experience these issues as too complex and vaguely defined. This forms a barrier for the further development of biomass plants<sup>4</sup>. For heating pumps in Flanders, once >200kW or when ground water is used (thus also for individual houses) you need an environmental permit (which is quite a heavy procedure for these small installations); furthermore, in one province, an annual tax should be paid once your installation needs an environmental permit! Finally, the procedure for wind projects is different in function of its capacity<sup>5</sup>.

---

<sup>1</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium.

<sup>2</sup> Federale Raad voor Duurzame Ontwikkeling. 2010. Achtergrondnota biomassa.

<sup>3</sup> VIWTA. 2010. Decentrale Energievoorziening onder Lokaal Beheer

<sup>4</sup> Vlarem II. 2004. Sectorale milieuvorwaarden voor ingedeelde inrichtingen

<sup>5</sup> There are 3 different classes under VLAREM (<500kW, up to 5MW and > 5MW). For Class 3 (<500kW) the municipality is competent.

### *The number of permits required*

The number of permits needed differ from region and technology. The basis is that one needs (except for PV and thermal solar as the building permit for individuals has been abolished in 2008 in Wallonia and will so in Flanders in April 2010) an environmental and urban permit. In Wallonia, a one-stop shopping (at the municipality) is already possible for most RES technologies (the so-called “permit unique” delivering environment and urban planning permits)<sup>6</sup>. In Flanders one needs a separate environmental permit and an urban planning permit before a project is approved. In addition, in some cases an environmental impact assessment is needed. And for some projects an authorisation for cutting trees is needed, creating access to the site, etc. Besides these, one needs a delivery or feed in permit (= an approval of the DSO (otherwise one does not have access to the grid and cannot feed into the grid)) and at the end an approval from the regulator for the green or CHP certificates (which goes often hand in hand with an audit and/or technical certification). For offshore wind projects one has to take into account the domain concession, the permit for the wind park and the offshore power grid.

So overall, one (may) need an environmental and building permit, a permit to feed into the grid, a certificate of Origin and the approval of the regulator to receive green certificates, an audit of an acknowledged auditor and a technical certificate.

### *Time for authorisation*

The renewable project authorisation procedures are too long, especially for wind projects. Currently, 9 out of 10 on shore wind projects lead either to project refusal or nearly automatic appeal procedures, delaying the development of the project at best. Most stakeholders are complaining about the many appeal procedures which makes the process to realize a RES project in a given time very unsecure.

Technology	Time for authorisation (from application to obtaining the final permits)
On shore wind	6 months to several years (the final judgement of the Council of State takes max. 7 years) <sup>7</sup>
Off shore wind	The process is becoming faster as the first off shore wind turbines are realised (and thus the public officers are building up know how) but still takes several years. (the process why somebody gets the authorisation and somebody else not – if there are several candidates – isn't clear)
PV	2 to 5 months for most installations (for < and > than 10kWp). The main delay is due to a lack of follow up by the DSO, especially for >10kWp.
Biomass	6 to 12 months (time required is largely depending on primary energy used) for small projects (max a couple of MW) and up to 16 months for bigger ones. In function of legal issues, the process can last for many years. In Flanders it takes in general more time than in Wallonia (this is primarily due to the different attitude of the regulator regarding more complex issues).

### *Public actors involved*

In Wallonia, they are 13 different distribution system operators, many of them having their own procedures and call centres and in Flanders there are 16 DSOs (pure public or

<sup>6</sup> However, the municipalities are not responsible for the so-called “permits uniques” for wind energy

<sup>7</sup> If you start counting from the public information meeting followed by an EIA (that can take 1 year) and then followed by the authorization procedure, 3 years is a minimum (including 1 year minimum for the authorization alone without appeal).

mixed public actors). Some stakeholders are complaining that these DSOs are often the bottle neck in the procedure (and it needs time to explain them how to proceed, especially for larger or not so common projects). However, in general, most stakeholders say that the requested requirements are appropriate, that it is clear who is the ultimate responsible in the administrative process (the regional regulator and the DSO) and that the information provided for the administrative process is clear, accessible, accurate and efficient.

Generally speaking, the public actors involved in the administrative process are the regional regulator, the regional/provincial or local administration and the DSO. However, some stakeholders said that the number of Flemish actors involved for advisory purposes (related to onshore wind and biomass projects) can increase up to 20 to 30. With the introduction of the one-stop shopping policy in Wallonia, one public actor should do the coordination of all actors involved.

On the question if the involved public actors have sufficient knowledge about the considered technology, quite different answers were received. For the PV technology most interviewed people are rather positive; for on- and offshore wind, the reactions were mixed and for biomass most people are rather negative.

#### *Estimated costs of the administrative process*

The cost related to the administrative process does differ a lot between RES technologies but also within the same technology as it is highly correlated to the authorization time (and thus the often unexpected legal issues involved).

Technology	What are the estimated costs involved in the administrative process?
On shore wind	Depends on the complexity of the project and the number of studies involved + how many times you have to run the same procedure due to legal issues (from 50k to 200k). The Environmental Impact Assessment will cost around 50k€ on average.
Off shore wind	Due to the long process and involved studies the cost increases to 3 to 5M eur.
PV	Is only related to paperwork and is (for small projects) very limited: a couple of hours of work; it can increase to a couple of 1000€ for projects > 10kWp (on roofs of companies, ..)
Biomass	20 to 50k for small projects and up to 100k in Wallonia and 150k to 250k in Flanders for bigger projects (depending on the necessity of safety issues and an Env. Impact report). The Environmental Impact Assessment will cost around 70k€ on average.

#### *Barrier 1.2 – Inexistent or insufficient spatial planning*

Although some Flemish Circulars and the action plan to clear off legal and practical barriers (to realise the Flemish aims for sustainable energy production targets), most stakeholders still indicate that there is a lack of regional spatial planning with an identification of possible favourable zones for renewable energy development. This is especially the case for wind projects.

The Flemish Circular concerning the assessment and conditions for the implantation of wind turbines (12/5/2006) does not indicate strict rules. It is rather a frame for local assessors how to proceed. The Circular, amongst other issues, also set up a workgroup to indicate potential zones for wind turbines besides giving policy advice and it abolished

the distinction between regional and provincial spatial planning. These discussions ended in the adaptation of the Flemish Decree concerning spatial planning permits and reinforcement policy (27/3/2009) – thus it is no longer necessary to make a spatial plan for the implantation of wind turbines in agrarian zones. And on 30/5/2009, a new Circular – now on the implantation of small (<15m) and medium wind turbines (max. 300kW) – was approved. Last but not least, a Wind plan for Flanders has been developed, drawing up an inventory of suitable locations for wind turbines in Flanders region. The Wind Plan focuses on technical aspects like wind speed, grid capacity and environmental considerations, noise and visual intrusion. Every location is accompanied with a dataset describing the appropriate building regulations, grid situation and environmental aspects to be met. The Plan thus gives a more accurate idea of the potential of wind energy in Flanders with respect to the government policy.

Overall, quite some progress has been made concerning spatial planning. Only hic-up is that the available space is very limited and the procedure how to obtain it not very clear. The square km available in Flanders in class 1 (those areas where wind projects are for sure eligible) with reasonable wind speeds is estimated at only 24km<sup>2</sup>, good for about 195MW. Thus, due to spatial limitations and the high demand (because profitable), personal influence on a local level is important.

In Wallonia, the attitude is quite different. In the document on the implantation of wind turbines in the Walloon Region (18/7/2002) it is stated that the time and work needed to develop a wind plan and the potential of it, is disproportionate with the results (and they refer to their neighbours). The Code on the planning of the land and some integration criteria should give the local authorities (provinces and municipalities) enough guidance to define the appropriate zones. However, since 2009 the Greens are part of the Walloon government, and by the end of 2010, the above mentioned Code should be updated and there is the intention to set up a strategy of how to implant wind turbines in a better way.

A total different but also important point is that good planning is necessary to ensure the necessary grid reinforcements in an early stage. That implies also that Elia (the transmission system operator) together with the DSOs should ensure this grid reinforcement (on schedule) and must follow-up the actual implementation, which is currently lacking<sup>8</sup>.

Closely related to the spatial issue is that there is not enough cooperation between the ministries of energy, environment and spatial planning and defence. This hinders the further development of renewable energy, especially wind turbines. What is more, the zone devoted for offshore wind energy is not enough to reach its target in 2020, meaning spatial planning for renewable energy must be enlarged in at least some cases<sup>9</sup>.

Finally, the fact that everybody in Belgium can easily go for an appeal (cf. the Not In My Backyard attitude) makes it very difficult to find an appropriate location which will not end in a legal battlefield.

---

<sup>8</sup> Vlaamse ministeries van openbare werken, energie, leefmilieu en natuur, en financiën en begroting. 2008. An action plan to eliminate the legal and practical barriers in the frame of the Flemish green electricity targets.

<sup>9</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium.

### *Barrier 1.3 – Competing public interests*

Various other public interests are affecting renewable development in Belgium, particularly for wind turbines. A considerable share of the Belgian territory – which includes the Belgian part of the North Sea – is registered as military control zones. In addition, navigation constraints, such as issues related with airports and radar, further impede the development of wind energy in Belgium. Although it is important to include the possible impact of installation of wind turbines on other sectors, it is mentioned that the regulations of the aviation authorities is too stringent, and leading to too much project refusals<sup>10</sup>.

In addition, a clear, scientific and integrated framework for criteria for nature protection is sometimes lacking. This leads to advisory bodies applying their own criteria, which are often too stringent, and are forming a barrier to renewable energy in Belgium which is unnecessary from a society perspective<sup>11</sup>.

Further, in the off- and onshore wind business, there is often a thin line between the private and the public sector (politicians can sit in the board of directors of important developers of RES and do sit in the board of directors of the ‘intercommunalities’, which are the main shareholders of the DSOs). It is obvious, especially if the principle is ‘first come, first served’ that information is crucial and often leaked in advance to some parties. As mentioned, the DSOs play an important role and also here, you need to take into account the wishes of the municipalities. Even more worrisome, is that mayors often ask for a subsidy contract for their municipality (or something equally) especially for onshore wind projects.

Another competing public interest is that the Flemish government has forbidden the implantation of big biomass power plants if the biomass is collected in Flanders (due to competition with the paper and pulp industry for instance).

Finally, there seems to be some competition between gas and heating. Different stakeholders indicated the hostile attitude from the DSO concerning the implementation of biomass based district heating or via heating pumps.

### *Other Barriers*

Green certificates from other regions and off-shore certificates are not acknowledged in the Flemish quota obligation. This forms an extra barrier for the further development of renewable energy across Belgium<sup>12</sup>. What is more, due to a number of lawsuits, the legal confidence in the certificate system is damaged. Apparently, the certificate system is not stable enough.

---

<sup>10</sup> Vlaamse ministeries van openbare werken, energie, leefmilieu en natuur, en financiën en begroting. 2008. An action plan to eliminate the legal and practical barriers in the frame of the Flemish green electricity targets.

<sup>11</sup> Vlaams ministerie van openbare werken, energie, leefmilieu en natuur. 2009. Progress report - An action plan to eliminate the legal and practical barriers in the frame of realizing the Flemish sustainable energy production.

<sup>12</sup> VIWTA. 2010. Decentrale Energievoorziening onder Lokaal Beheer

Finally, the statue of an auto-producer – this is somebody who produces its own electricity without using the official grid and thus doesn't need a license nor ask permission to the DSO – is not easy to get (due to unclear procedure) especially when the installation is financed by a third party.<sup>13</sup>

---

<sup>13</sup> Lignes Directrices CD-9j27- Cwape- relatives aux 'conditions à respecter pour qu'un client final puisse être considéré comme producteur (cas de l'autoproduction)'

### 3 Issue 2 Technical Specifications

#### *Barrier 2.1 – Weak definitions*

Nearly all stakeholders indicated that the technical specifications are clearly defined except for grid connection. Practically speaking, the technological evolution is faster than legislation ('specifications') so it seems not to be a barrier.

The technical conditions for small power installations (up to 25MVA) are described in the AREI (the Belgian code of rules for electric installations).

#### *Barrier 2.2 – European standards*

The AREI (Dutch) or RGIE (French) is linked to European standards for most RES technologies except thus for bigger RES installations and for specific technologies such as offshore windparks and heating pumps.

Especially for heating pumps, different European norms are used and mixed up. The Flemish heating pump platform is in favour of a more uniformed norm system such as the ECO-label. The coefficient of performance (CoP) for all sources (air, water, earth) should be a correct theoretical reflection of reality and will make comparison possible. CoP could be replaced by a calculation based on SPF (seasonal performance factor).

#### *Barrier 2.3 – Specified locations for testing and/or certification*

Generally speaking, technical specifications do state where equipments and systems are to be certified. Foreign test certificates for inverters for example are valid in Belgium and thus no specific Belgian test procedure is necessary.

For biomass, the situation is a bit different. Where the CWaPE<sup>14</sup> is quite flexible when it comes on testing of different (new) kind of biomass products (and giving consequently the certificates), the VREG is not. Consequently, some companies decided to go to Wallonia for their biomass projects.

#### *Barrier 2.4 – Technical specifications that impede the operation of the internal market*

Nearly all stakeholders indicated this is not a problem as conformity with all technical specifications of the outlets is compulsory.

For heating pumps you need a 3 phase 400 Volt connection once the installation is larger than 12kW. Some clients get a negative advice from their DSO if they ask for it. From 2010 onwards, the Flemish region made the conditions (to receive subsidies) for PV more stringent: the insulation of the roof should get at least a value of 3 m<sup>2</sup>K/W.

---

<sup>14</sup> <http://www.cwape.be/>

### *Other barriers*

CHP (the electricity part) receives financial support in Flanders by means of heat power certificates. Not all installations are eligible for funding; the CHP installation needs to save 5% of primary energy compared with the reference boiler or stove on natural gas. Due to technical reasons, CHP installations using renewable energy sources have a hard time reaching this 5% level<sup>15</sup>. This forms a barrier for the further development of CHP in Belgium.

---

<sup>15</sup> VREG. 2004. Beslissing van de Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt



## 4 Issue 3 Building integrated technologies

### *Barrier 3.1 – Administrative procedures*

The Flemish government eased the planning and permitting policy for most building integrated technologies and installations recently. From April 2010 onwards, most technologies such as PV panels and solar boilers, can be installed without a building permit. Buildings or areas with a cultural, historical significance form an exception, and a planning permission is needed in these cases<sup>1617</sup>.

### *Barrier 3.2 – No/insufficient specific rules for building integrated/small scale RES installations*

For the time being, there are no specific rules for building integrated scale RES installations (except if it involves a major adaptation at the building, you need a building permit). Although Belgium started quite early with the implementation of the EPBD (already in 2006, an energy performance certificate was needed for new buildings in Flanders), legislation was and still is focused on how to decrease energy consumption (thus a focus on energy efficiency). RES in buildings is promoted by using different kinds of financial incentives but there is not yet an intention to make it compulsory.

Some stakeholders indicated that for some technologies the rules are not clear or do not exist. For geothermal, for example, there are often no basic rules and also some spatial regulations (to arrive with the drilling machine and the right spot).

### *Barrier 3.3 – Competing public interests*

We are not aware about any competing public interest, other than buildings with a cultural, historical significance.

### *Barrier 3.4 – Renewables obligations insufficient*

In Flanders as well as in Wallonia, there is no legal obligation to include RES in buildings. However, for buildings larger than 1000m<sup>2</sup> there is the Flemish and Walloon<sup>18</sup> compulsory feasibility study for RES in buildings (linked to the EPBD). With the recast EPBD coming up, governments could change their current attitude.

---

<sup>16</sup> Vlaams ministerie van openbare werken, energie, leefmilieu en natuur, 2009; Progress report - An action plan to eliminate the legal and practical barriers in the frame of realizing the Flemish sustainable energy production.

<sup>17</sup> Arrêté du Gouvernement wallon déterminant la méthode de calcul et les exigences, les agréments et les sanctions applicables en matière de performance énergétique et de climat intérieur des bâtiments.

<sup>18</sup> [Le décret modifiant le CWATUP \(Code Wallon de l'Aménagement du Territoire, de l'Urbanisme et du Patrimoine\) en vue de promouvoir la performance énergétique des bâtiments](#)

### *Barrier 3.5 – Exemplary role of public buildings neglected*

The Flemish government actively searched for appropriate locations for the installation of a PV system on public buildings, in order to take advantage of its exemplary role. Two locations – the Ferraris and Conscience Buildings – were thought to be suitable, and PV systems were installed. This project is a demonstration in the first place, aimed at familiarising the public of PV and to illustrate its possibilities and opportunities. A display is installed in the arrival hall of both buildings, thereby informing the visitors<sup>19</sup>.

### *Barrier 3.6 – Tenancy law and ownership law does not impede the development of Building Integrated RES technologies*

In general, the law does not impede the development of RES. The only problem for larger PV-systems on a dwelling with different owners (e.g. apartments) is that the subsidies and connection are specified for individual owners. This relates to the grid connection, the green certificates and the income tax deduction. A solution could be that a legal entity (can be a commercial company) becomes the owner of the PV-system (and deals with the grid and financial issues) and makes different supply contracts with the owners of the apartment or just sell it into the market. The CWaPE has now anticipated on this issue and published a note on 30/3/2010 to solve this problem.<sup>20</sup>

---

<sup>19</sup> <http://www.energiesparen.be/node/928>

<sup>20</sup> Application des lignes directrices CD-9j27-CWaPE relatives aux conditions à respecter pour qu'un client final puisse être considéré comme producteur dans l'hypothèse particulière du bail ordinaire ou de la location « tous services compris » d'immeubles équipés de panneaux photovoltaïques

## 5 Issue 4 – Promotion of energy efficient renewable energy equipment

### *Barrier 4.1 – Non-compliant promotion schemes<sup>21</sup>*

The regions in Belgium actively support the different RES technologies. Due to the severe requirements in the RES Directive (Art. 13(6) indicates that in the case of biomass, Member States shall promote conversion technologies that achieve a conversion efficiency of at least 85 % for residential) the promotion schemes are not always compliant with the RES Directive.

Interesting is that an independent organisation, named Quest, is taking up (from 2009 onwards) the challenge to coordinate the quality issues for RES in Belgium (for small scale RES technologies).

### *Barrier 4.2 – Lack of substitution of existing inefficient systems*

There is no policy framework to substitute less efficient older systems.

### *Barrier 4.3 – Use of national procedures*

On the website <http://www.premiezoeker.be> (Flanders) and <http://energie.wallonie.be/fr/primis-energie-2009-2010> (Wallonia) are the technical standards specified that are eligible for financial support. The only technologies that include efficiency standards for Flanders are PV panels (with different efficiency standards per type of PV panel) and geothermal heat pumps. Wallonia includes biomass stoves as well.

The most important condition for getting the financial incentives is that the RES equipment should be installed by a certified person and the certified person should take into account the technical specifications. For example, for PV the IEC norms should be taken into account together with a minimum efficiency and the orientation of the PVs. The heating pump should be the main heating tool of the dwelling and the condense power should be 80% at least.

### *Barrier 4.4 – Insufficient information*

On one hand, the Flemish energy agency (VEA) and the Walloon administration responsible for energy (cf. Portail de l'énergie en Région wallonne) do have websites with plenty of information on the different RES technologies and the financial incentives involved. On the other hand, no information is given on quality and installation issues.

---

<sup>21</sup> Arrêté du Gouvernement wallon relatif à la promotion de l'électricité produite au moyen de sources d'énergie renouvelables ou de cogénération - AGW du 20 décembre 2007, art. 2

The two renewable energy associations in Belgium (ODE and Edora) try to fill in these gaps together with Quest.

## 6 Issue 5 Information/awareness raising

### *Barrier 5.1 – Insufficient availability of information on support measures & of guidance for planners and architects*

Generally speaking, the regions in Belgium provide ample of information related to support measures. This is not the case looking at information related to guidance for planners and architects, where there is a general lack of information and guidelines.

For hydropower, the administrative procedures remain particularly intricate and seem to be specific to each site. No comprehensive information currently exists to complete such a procedure<sup>22</sup>. Moreover, since there are several options for biomass – e.g. burning, gasification or fermentation – there are a large number of complex technologies available. Due to the lack of information, project developers experience troubles to make a well-informed investment decision. This is further worsened by the fact that project evaluators are not skilled or informed enough to judge every project proposal<sup>23</sup>.

### *Barrier 5.2 – Insufficient public funding for campaigns/programmes*

Flemish municipalities can obtain funding for awareness campaigns from the Fonds Hernieuwbare Energiebronnen (renewable energy sources fund)<sup>24</sup>. However, it is mentioned that this funding is not enough to suffice for all necessary information and awareness campaigns in Flanders.<sup>25</sup>

Walloon municipalities, provinces and NGOs can also obtain money from the regional level if investing in RES in the building environment (wind and some cogeneration is excluded, cf. UREBA subsidies). However, there is no link to funding that could be used for awareness campaigns.<sup>26</sup>

### *Barrier 5.3 – Insufficient campaign-/programme-design*

Public information on renewable energy sources (e.g. on pellets) and their advantages are scarce. In general, public information campaigns are necessary<sup>27</sup>.

---

<sup>22</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium

<sup>23</sup> Vlaamse ministeries van openbare werken, energie, leefmilieu en natuur, en financiën en begroting. 2008. Actieplan voor het wegwerken van de juridische en praktische belemmeringen die zich kunnen voordoen in het kader van de realisatie van de Vlaamse groenestroomdoelstelling

<sup>24</sup> Elektriciteitsdecreet. Decreet van 17 juli 2000 houdende de organisatie van de elektriciteitsmarkt Hoofdstuk VIII Fonds hernieuwbare energiebronnen

<sup>25</sup> Vlaams ministerie van openbare werken, energie, leefmilieu en natuur. 2009. Voortgangsrapportage - Actieplan voor het wegwerken van de juridische en praktische belemmeringen die zich kunnen voordoen in het kader van de realisatie van de Vlaamse doelstellingen inzake milieuvriendelijke energieproductie

<sup>26</sup> <http://energie.wallonie.be/fr/cogeneration-de-qualite-ou-recours-a-des-sources-d-energie-renouvelables-ureba.html?IDC=6370&IDD=12282>

<sup>27</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium

### *Other barriers*

There is a general lack of communication campaigns on renewable energy production. The public does not have the ability to obtain good, objective information of the different technologies and associated funding opportunities to make an informed decision. This barrier is further increased by the presence of lobby groups (in Wallonia) that disseminates erroneous rumours on renewable energies (e.g. impacts of wind turbines) during the compulsory local information meetings. It is obvious that it negatively impacts social acceptance and local decisions during the authorisation process.

This barrier is further increased by the lack of awareness, rumours and disinformation regarding renewable energy projects.

## 7 Issue 6 Certification of installers

### *Barrier 6.1 – Lack of a Certification body*

Certification bodies in the three regions do exist but the initiatives are nearly all related to the energy performance of buildings (thus not to RES). That means that in the different regions, three bodies are taking care for the certification of energy auditors and installers of fossil fuelled heating installations. The only exception is Wallonia where there is a certificate for solar thermal installers. Just like for the other fossil fuelled heating certificates, the certificate for solar thermal heating systems (named Soltherm) is a voluntary scheme but the client has to work with a certified installer if he or she wants to make use of the financial incentive of the Walloon region.<sup>28</sup> In Flanders, there is a similar private initiative for solar thermal, which started under the name Belsolar (now taken over by Quest, cf. infra), but it is not linked to a compulsory certificate system (to get the premium of the Flemish government). And this brings us to the next issue. Three different frameworks are employed between the Belgian regions. The sector is demanding that certification schemes should be harmonised between regions in order to insure high homogenous quality of installations and equipment throughout the country and avoid competition distortion between the regions.<sup>29</sup>

### *Barrier 6.2 - Lack of guidelines*

The installers of any RES type (except for solar thermal in Wallonia) do not need to be certified, therefore there are no guidelines. Installers are appointed by the installing companies and this is the main quality assurance for the installers to deliver quality in their work.

### *Barrier 6.3 Lack of training*

There is a lack of training (and education) in RES on all levels of the chain: from architects and planners to installers and technicians.<sup>30</sup> In general, there is a lack of possibilities to train skilled personnel in the field of renewable energy<sup>31</sup>.

This is observed from a demand perspective as well. The renewable energy sector in the three Belgian regions experiences an increasing shortage of skilled personnel. In addition to creation new skills, there is also a need to upgrade old skills for professional target groups such as plumbers and electricians.<sup>32</sup>

---

<sup>28</sup> Art 6 de l'arrêté du Gouvernement wallon du 27/11/2003.

<sup>29</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium.

<sup>30</sup> Ecorys, Ex-ante evaluation of the initiative on the building workforce training and qualification in the field of energy efficiency and renewable energy within the Intelligent Energy Europe Programme, for DG ENER, March 2010.

<sup>31</sup> Vlaams ministerie van openbare werken, energie, leefmilieu en natuur. 2009. Voortgangsrappportage - Actieplan voor het wegwerken van de juridische en praktische belemmeringen die zich kunnen voordoen in het kader van de realisatie van de Vlaamse doelstellingen inzake milieuvriendelijke energieproductie

<sup>32</sup> ODE-Vlaanderen. 2009. "Hernieuwbare energie werkt in Vlaanderen" Memorandum over hernieuwbare energie

## 8 Issue 7 Infrastructure Development

### *Barrier 7.1 - Problems concerning development of electricity network infrastructures according to a long-term strategy*

Just like most other EU countries, there is a need in Belgium to invest in the electricity network infrastructure which is the responsibility of Elia<sup>33</sup>. There are plans on Federal and on regional level. Above, these plans should be predominantly financed by the clients of Elia by paying a certain tariff and Elia has to ask the regulator on an annual basis for permission to change these tariffs<sup>34</sup>. These discussions on the level of the tariff will play an important role on the speed of the further development of the Belgian grid. A good example is the need for a new 380kV grid between Eeklo and Zeebrugge the coming years to connect the offshore wind parks that should be built the coming years. In 2009, Elia extended the 380kV grid from Zomergem to the coast at Zeebrugge in order to transport the first electricity produced offshore but it is widely accepted these extensions are no solution in the long term.

The current offshore windparks (also the ones under development) had to foresee in their own connection to the land. With the development of more offshore windparks, it should be more efficient to work with a connection point in the sea organised by the TSO. Also in function of the development of offshore windparks, there are currently no harbours in Belgium that have the infrastructure to facilitate the construction and assembling of wind turbines.

The associations Edora and ODE are in favour of the identification of favourable zones for renewable development (per technology) in order to ensure – in an early stage – the necessary grid enforcements.

### *Barrier 7.2 - Problems concerning grid expansion processes of existing electricity networks*

Elia assesses the authorisation procedures for grid reinforcement as long and complex<sup>35</sup>. The procedure needs to be simplified and limited in time (1-3 years depending on the scale of the project).

---

<sup>33</sup> Elia is the Belgian TSO and owns all of Belgium's 150 to 380 kV and almost 94% of its 30 to 70kV grid infrastructure. In Belgium, the 380-150 kV is the responsibility of the federal government: in accordance with the Electricity Act, which was amended in 2005, Elia must draw up a ten-year development plan, which should be modified every three years.

<sup>34</sup> Responsibility of the 70-30 kV grid is in the hands of the regions. Elia must draw up a separate plan for each region. The tariffs are based on budgeted costs, less a number of sources of non-tariff income, and on the estimated volumes of electricity taken from the grid.

<sup>35</sup> viWTA. 2004. Is er plaats voor hernieuwbare energie in Vlaanderen



### *Barrier 7.3 - Problems concerning development of a Trans-European Electricity Network*

For some there is still a need for more discussion among the North Sea countries linked to the TEN-E initiatives. There is not enough discussion between national governments or cooperation between TSOs<sup>36</sup>. For others, is the decision of December 2009 on the North Sea grid planning (9 member states + Norway) a positive step into the direction of a trans-European electricity network.

---

<sup>36</sup> Vlaams ministerie van openbare werken, energie, leefmilieu en natuur. 2009. Voortgangsrapportage - Actieplan voor het wegwerken van de juridische en praktische belemmeringen die zich kunnen voordoen in het kader van de realisatie van de Vlaamse doelstellingen inzake milieuvriendelijke energieproductie

## 9 Issue 8 Power Grid Issues

### *Barrier 8.1 - Problems concerning grid connection*

The current power grid in Belgium is the result of the grouping of locally developed grids and reinforced (thus centralized) in the 1950s and 1960s in function of the implantation of big (nuclear) power plants (with Doel and Tihange as the most recognizable examples). Due to this historical background, weak points in the Belgian power grid are present, and reinforcements are needed to overcome delays of the installation of renewable electricity production plants. This barrier is further hampered by long lasting authorisation procedures for power grid development and a current lack of renewable deployment strategy in terms of spatial planning.

There is no guarantee for grid connection. Flemish network operators regularly refuse to connect renewable electricity and CHP installations to the grid. The operators are legally allowed to do this by the electricity act<sup>37</sup>. There is a lack of a policy framework to avoid this barrier. For PV systems (once above 3.68 or 4.6kW), the grid connection is more related to a technical issue and about who should pay for the technical adaptation of the connection. Also here, a legal standard procedure is still missing. Even more, a Walloon stakeholder indicated that even in the case rules are available they are sometimes not respected.

Technology	After how long from receiving the installation permit can electricity be connected to the grid?
On shore wind	12 months on average; however, depends on the available capacity: if there is enough capacity it can go very fast, if not it can take years
Off shore wind	6 months to several years
PV	For small systems < 10kWp there is no approval required so connection can be immediately after installation; for PV systems > 10kWp a grid study is required and this can last for months as it is entirely the responsibility of the DSO (in Wallonia it takes between 15 days and 4 months).
Biomass	From 5 months up to 2 years

Finally, surprisingly for most stakeholders, was the fact that the CREG gave green light to the DSOs for an injection tariff for all decentralised installations that want to inject electricity into the grid, without differentiation between conventional production and renewable sources. Furthermore, access to the grid must be paid by the electricity

<sup>37</sup>Vlaams ministerie van openbare werken, energie, leefmilieu en natuur. 2009. Voortgangsrapportage - Actieplan voor het wegwerken van de juridische en praktische belemmeringen die zich kunnen voordoen in het kader van de realisatie van de Vlaamse doelstellingen inzake milieuvriendelijke energieproductie

producers. These two issues form an extra barrier, especially in comparison with centralised, conventional electricity producers.

#### *Barrier 8.2 - Problems concerning grid access*

1. Priority or guaranteed grid access is not ensured by law.

Priority access to the grid for renewable installation – required by the directive 2009/28/EC – is currently inscribed in federal and regional legislations and technical regulations. However, this priority is associated to several conditions (“as far as it is possible”, “taking into account the security of supply”, “depending of the grid security”, etc.). In practice, these conditions delays to process of injection of renewable electricity into the grid<sup>38</sup>.

2. Priority access when dispatching at transmission level is, however, in many cases not provided for.
3. Grid and market operational measures don’t minimise curtailment of electricity from renewable energy sources.

#### *Barrier 8.3 - Problems concerning TSOs and DSOs*

In Flanders, DSO Eandis obliges the decentralized power producers the installation of remote control boxes. These boxes are expensive and big and could be replaced by Power Line Communication. Furthermore, with these boxes, the DSO can independently decide to disconnect the plant without any feedback to the owner/operator of that plant. There are no clear rules about disconnecting and there is also no compensation foreseen for being disconnected. There is an urgent need at transparency.

As already indicated, there is one TSO in Belgium but a multitude of DSOs. The problem is that there is no uniformity between these DSOs. Conditions for connection can be quite different between DSOs. An extreme example is that for one windpark, different connection conditions are applied for the turbines as they depend of a different distribution net.

---

<sup>38</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium.

## 10 Issue 9 Gas Network Issues

Biogas is produced mainly in waste water treatment plants, industrial plants, separately collected organic waste digestion, agricultural biogasplants and landfill recuperation. There were 29 biogas installations operational in Belgium in 2009. Some well known operators per type are Aquafin, Interbrew, IVVO in Ypres, STORG and Hooge Maey. Together, these 29 installations have an electric power of 38 MW. However, none of these biogas producers are upgrading the gas to biomethane due to the lack of incentives.

### *Barrier 9.1 – Problems related to the upgrading process*

A support mechanism for the upgrading of biogas to biomethane is non-existent in Belgium, possibly due to the lack of a compulsory share of renewable gas injection from the government<sup>39</sup>.

### *Barrier 9.2 – Lack of information*

There is a need for heat load maps on a regional level. In addition, clear information regarding ownership and investment needs of the gas network are currently missing. It is thought this forms a significant information barrier for the further development of renewable gas in the Belgian gas grid.

### *Barrier 9.3 – Inefficient authorisation procedures*

Not applicable since there is no biogas production or biomethane injection.

### *Barrier 9.4 – Insufficient cooperation of grid operators*

The gas distribution companies are not obligated to support the injection of biomethane.

---

<sup>39</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium

## 11 Issue 10 District Heating

In Belgium district heating was scarcely present. A few local networks could be found in the Luchtbal neighbourhood in Antwerp, in Aalst, Ghent and Verviers. However, due to the lack of a policy framework or incentives, Electrabel – the largest electricity and gas supplier in Belgium – ceased all activities. District heating activities are nowadays set up by smaller companies quite often in a joint venture with a real estate developer. The most heard complaint is that there is currently no legal or financial support from government to incentivize the development of district heating. People are in favour of a more general framework for district heating, to allow for a more clear view on the rights and duties of both producers and consumers. Also, a more active role of public bodies is required to achieve realizable plans for district heating.

### *Barrier 10.1 – Lack of positive conditions for the increase of the share of renewables in existing DH systems*

There is not any infrastructure or policy framework allowing or promoting district heating.<sup>40</sup> However, the Flemish energy agency (together with ODE) is currently developing a support mechanism for heat and cold. The proposed support will be valued as a production support and not an investment subsidy. It is believed the new support mechanism can be put to action in the forthcoming year.

### *Barrier 10.2 – Lack of positive conditions for the initiation and expansion of DH systems largely based on renewables*

There is not any infrastructure or policy framework allowing or promoting district heating.

Spatial planning must be adapted for district heating development and development of heat plants in zones with high density in energy demand. These developments must allow an optimal mix of renewable energy technologies and sources, and maximize heat recovery.

Regional and local authorities' awareness is low with regard to the potentials and advantages of district heating and cooling development and the opportunities of public – private partnerships.

Currently, an evaluation of the feasibility of a district heating infrastructure is not compulsory for any new construction of housing estates and communities of sufficient densities and collective habitat.

---

<sup>40</sup> EDORA. 2010. National renewable energy source industry roadmap Belgium.

Especially for district heating, different investors are involved. However, only the eligible person or legal entity who introduces the subsidy request (often the final client) could receive the financial incentive. This leads frequently to accounting issues between the involved parties.