EnAlgae policy landscape analysis for

Belgium

Landscape analysis of national and regional policies of Belgium, that could have an impact in algae cultivation, revealed a number of strategies, mandates, and economic incentives on climate change, bioenergy, and water. Production of Energetic Algae (or algae for production of fuels and energy) is a new concept in Belgium, and existing bioenergy and environmental strategies were not found to be actively supportive to energetic algae. Consequently, to identify policies that could affect energetic algae, research was focussed on generic biomass, bioenergy and environmental strategies.

Many of the identified national and regional policies in Belgium are in fact response mechanisms to EU-level overarching strategies and targets. Nevertheless, Belgium, like each EU member state, can set its own priorities and strategies in order to reach the EU targets. With regards to national energy targets, Belgium has a primary obligation set in the EU Renewable Energy Directive (RED) to source 13% of its energy use from renewables by 2020, including 10% from transport.In response to RED targets, Belgium plans to source 20.9%of electricity and 11.9% of heat consumption from renewable sources. Most energy and climate change policies are partitioned by region (Wallonia, Flanders, Brussels-capital region), which leads to an unclear division of strategies within the regions and between the federal and the regional authorities.

Technologies that Belgium national and regional policies strategically support for production of electricity, heat and biofuels include solar, hydro, biogas, landfill gas, and waste combustion. Further on, these technologies are ranked based on satisfying a list of criteria such as cost of technology, land footprint, and CO2 economy. Advanced energy technologies entailing low capital costs, low land footprint (e.g. offshore), and high CO2savings (including sustainability based on RED), rank strategically higher in Belgian energy and climate policies. Belgian policies support energy technologies by providing financial support, and underpinning technology development. Uptake of energy technologies is economically supported by a quota system (Green Certificates), capital investment subsidies, and product tax regulations.

Energy producers are obliged to satisfy quotas by presenting Green Certificates. The certificates are tradable in the market and have a minimum price guaranteed by the federal government. In regard to the subsidies, admissible costs vary by technology and they are 50% for biomass, biogas and CHP generation plants. Finally the tax cuts are applied for the biofuels sector in a national level in combination to fuel quotas.

Finally as regards to the environment, inland and coastal water as well as wastewater policies have been looked upon. These policies fall under also regional law in Belgium. The identified policies set the framework for water and wastewater management for improving natural environment, agriculture and fisheries.

In the following sectionfindings from landscape analysis of Belgian legislation are listed by topic. First are presented the overarching strategies and acts, which are then followed by targeting incentives.

## General Climate change Policy Framework

|  |  |
| --- | --- |
| Policy | Key Measures/Aims |
| National Action Plan on Renewable Energy 2020  | Sets objectives for heating, power and transportation to reach a 13% share of renewable energy by 2020. Sectorally, this equates to 20.9% renewable electricity (23 TWh), 11.9% heating and cooling (30 TWh) and 10.14% transport (9 TWh) by 2020.  |
| Vlaanderen in Actie Pact 2020  | It is a project aiming to stimulate an innovative, sustainable and social Flanders by 2020. In practice, concrete actions and goals are set in the field of energy, economy, welfare, etc.  |
| Flemish climate policy plan for 2006–2012 (VlaamseOverheid 2006). | Outlines measures to reduce greenhouse gas emissions by 5.2% between 2008 and 2012 compared to 1990. |
| Wallonian Climate-Air plan for 2007−2012[[1]](#footnote-2) | It contains more than 100 measures to reduce GHG emissions by 7.5% compared to 1990 levels. However, the Climate-Air plan does not explicitly break down the target of 7.5% into sector targets in Wallonia. These measures apply to all sectors including industry, transport, energy, buildings, agriculture, and involve a broad range of actors, such as public authorities, transport and the tertiary sector. |
| Brussels-Capital Region’s Government Agreement 2009−2014 | It outlines the main measures to be undertaken by the Government of the Brussels-Capital Region by 2014. According to this agreement, the Brussels-Capital Region plans a 30% reduction of GHG emissions by 2025 (baseline 1990) through the implementation of several measures promoting inter alia energy efficiency and renewable energies. However, the plan does not provide further details on the targets to be reached in each sector. |
| Brussels-Capital region’s action plan (March 2010) in response to Covenant of Mayors (DG TREN) | The Brussels-Capital Region has established an action plan published in March 2010 and outlining the measures to be implemented to achieve emission reductions of 30% by 2025. |
| Brussels Code for air, climate and energy control (COBRACE) (31 May 2013)[[2]](#footnote-3) | It integrates air, climate and energy areas in one single regulation and coordinates the different corresponding measures. |
| Flemish climate programme 2013−2020 (draft 1 February 2013)- VlaamseRegering 2013 | The final plan has not been approved yet (October 2013). The plan comprises two separate but mutually strongly aligned components: The VlaamsMitigatieplan and the VlaamsAdaptatieplan. The first document aims at reducing the emission of greenhouse gases in Flanders by 15% over the period 2005-2020 (indicative objective). That policy plan reaches beyond the borders of individual domains and each sector should finally take its responsibility and present measures to contribute to the intended objective. The second document proposes policy and measures for each non-ETS sector and assesses their impact on greenhouse gas emissions. If in Flanders a difference persisted between the expected emission reductions and the indicative objective of -15%, the flexibility mechanisms will be employed.  |
| Wallonia Climate Decree (expected) | Wallonia is preparing a Climate Decree which should enable it to meet its commitments to cut total greenhouse gas emission (ETS and non-ETS) by 30% by 2020 and by 80 to 95% by 2050, compared to the 1990 level.  |
| Wallonia Climate-Air plan for 2013 (Expected) |  |
| Regional Sustainable Development Plan for Brussels-capital region(expected)  |  |

## Bioenergy

|  |  |  |  |
| --- | --- | --- | --- |
| Policy  | Ambitions | Policy Measures | Financial Incentives |
| Walloon Electricity Decree of 2001 [[3]](#footnote-4)- revised in 2006 (will be revised again in March 2014) | Measures for reaching 8 TWh of renewable electricity in 2020 in Wallonia region. | New amendments underway are anew Green Certificates (GC) delivery method, and new biomass strategy.Electricity suppliers have to deliver a quota of those GC otherwise they will pay a fine (100€). TSO have the obligation of buyback ofthe GC in excess (possible integration withtariff).Industrial customers are exonerated of a part of the quota and extra cost of TSO. | A system of Green Certificates will be delivered to green producer in function of cost of technology, CO2 economy, electricity FWD. The cost of the system is chargedto end users |
| Royal Decree of 16th July 2002 | Federal establishment of mechanisms to promote electricity generated from renewable energy sources | Owners of installations for the production of electricity from renewable energy sources offshore will be granted green certificates by the CREG (Commission for the Regulation of Electricity and Gas, the federal regulatory body). These green certificates are valid for five years. | - |
| Decree of 29th March 2007 (Brussels Region) | Quotas fixed for green certificates from 2008 onwards | Electricity suppliers are obliged to prove, by submitting certificates, that a certain statutory and continuously increasing proportion (quota) of the electricity they supply was generated from renewable sources. The minimum price per certificate is guaranteed by statutory law.  Green certificates are allocated provided the installation meets several requirements, including attesting to CO2 savings of at least 5% compared with conventional installations.  | The number of certificates issued depends on the amount of electricity generated (in kWh) and the amount of CO2 saved. The formula for the calculation of the number of green certificates under 1 MW is the same for all technologies. Above a capacity of 1MW, one certificate is issued for each MWh of electricity produced. |
| Flemish Energy Decree of 2009  | Green certificates (Groenstroomcertificaten) quota system and a certificate trading scheme to support renewable energy technologies (Solar, hydro, biogas, landfill gas, waste combustion, other) | One certificate is equal to 1 MWh of electricity from renewable sources and is issued by the Flemish regulatory authority (VREG). Some caps apply to large volumes supplied. | The energy supplier must pay an administrative fine of €125 for each missing certificate (€118 as of 2013 and €100 after 2013). Green certificates may be sold to the distribution grid operator: 1) For biogas installations: €110 if operating after 31 July 2012 and no other grant is given, otherwise €100 with a guarantee of 10 years, or 20 years for AD of wastes; 2) For waste combustion and landfill gas installations the price is €60 with 10 years guarantee. |
| Besluit van de Vlaamse Regering houdende algemene bepalingen over het energiebeleid – het Energiebesluit van 19 November 2010  |  |  |  |
| Resolution for modification of the Flemish Energy Resolution (8th April 2011, 8 July 2011)  | Ensures the sustainability of feedstock used for bioenergy production | Modifies the Energy Resolution by introducing sustainability criteria for the liquid biomass and guarantees of origin. To be eligible for green certificates, it is necessary to show that biomass is sustainable according to the criteria and that biomass is not an industrial feedstock.  |  |
| Flemish Support for Investment - Support for ecological investments (ecologiesteun)16 March 2012[[4]](#footnote-5) | A new support scheme for strategic ecology projects involving investments in green-technology can be subsidized |  | For SMEs, the maximum subsidy is 40% of admissible costs, and 20% maximum for large organisations. The admissible costs vary according to technology, and are 50% for biomass, biogas and CHP generation plants. |
| Walloon Support for Investment  | Investment premium (and exemption from property tax) | Costs vary according to technology. | Subsidy is at most 50% of admissible additional costs and at most 20-30% for large enterprises.  |
| Brussels Support for Investment  | The ‘energy premiums’ supports project promoters in acquiring installations for the production of energy from renewable energy sources.  |  | Scheme provides premiums equivalent to 30% costs for non-PV electricity generation.Collective housing and the industrial sector provides 50% costs towards costs of feasibility studies. |
| Steunregeling groene warmte(Flemish Green Heat) 2012 [[5]](#footnote-6) | Increase the uptake of renewables in heat generation and cooling in Flanders | Provides financial support for residual heat valorisation, the production of useful heating or cooling from biomass and the injection of biogas into the gas grid. Aid is for a new or renewed installation with a thermal output of 1MW. Aid cannot be combined with cogeneration or green certificates. Solid, liquid and gaseous organic-biological substances are eligible except wastes which can be recycled, or wood with industrial markets. A 6 monthly call system will be used to fund plants. | Scheme has an overall budget of €4.4 million in 2012. Upto €6 per MWh is available to applicants, but requests with lowest support needs per MWh will be more highly ranked.  |

## Biofuels

|  |  |  |  |
| --- | --- | --- | --- |
| Policy  | Ambitions | Policy Measures | Financial Incentives |
| Tax regulation mechanism (exoneration d'accise pour l'huile de colza) - (Arrêté du 10 Mars 2006)  | Rapeseed oil fuel to be totally exempt of excise duty | Subject to the exemption of excise duty are only biofuels from rapeseed oil that1) shall be used as a biofuel under the code NC 1514, and 2) the natural or legal person producing the rapeseed oil shall sell it to the end consumer without intermediary. |  |
| Tax regulation mechanism (défiscalisation des biocarburants)-10/06/2006 Art. 4 Loi des Finances du 10 Juin 2006) | Encourage the uptake of biofuels in the fossil fuel pool.  | It introduces a reduction of the excise rate of biofuels contained in petrol and diesel products and produced by units authorised by the Belgian Government. To that purpose, the Accreditation Commission publishes calls for applications in the official register of the European Union. The accreditation is delivered to the companies for a period of maximum six yearsHowever, the maximum eligible amount of biofuels of the authorised production units shall not exceed:  For bioethanol: 187,500,000 litres until 30 September 2013. For FAME: 284,000,000 litres until 30 September 2013. | Excise for petrol products containing at least 10% v/v bioethanol: €245.4146 per 1,000 litres; Excise for diesel products containing at least 7% v/v of FAME: €198.3148 per 1,000 litres.  |
| Royal Decree 22/11/2006[[6]](#footnote-7) | Defines the rules for the marketing of biofuels which are not standardised | These rules are valid for diesel containing more than 5% (v/v) of biodiesel, gasoline containing more than 5% (v/v) ethanol, or pure rapeseed oil. It indicates that the exemption decision may be granted for non-standardised biofuels when they are sold from a limited number of parties in the context of a specific project or to the final consumer of rapeseed. Waivers are valid for a period of three years and may be extended for a further period of three years based on a new application. It may be withdrawn in the event of non-compliance with permit conditions. |  |
| Biofuel quota -Royal Decree 22/07/2009 (obligation d'incorporation des biocarburants Art. 4 Loi du 22 Juillet 2009)[[7]](#footnote-8) | Promotes the blending of biofuels into the fossil fuel pool.  | The providers of petrol or diesel fuels have to ensure that biofuels make up at least 4 % of the company’s total annual sale of fuel. The obligation must be fulfilled by the end of each calendar year. The following rates apply:FAME (fatty acid methyl ester): at least 4% v/v of the diesel amount Bioethanol or Bio-ETBE: at least 4% v/v of the petrol amount. | If a provider fails to fulfil the quota they shall pay a fine amounting to €900 per 1,000 litres of biofuel that was not blended with the annual amount of petrol or diesel products sold.  |
| Royal Decree 26/11/2011[[8]](#footnote-9)numac 201102435pub. 07/12/2011  | Royal Decree establishing product standards for biofuels | Transposes the sustainability criteria for biofuels from the RED 2009/28/EC and FQD 2009/30/EC and determines which are the sustainability criteria and reporting obligations to be applied to biofuels. The BioFuel database, which will provide a register for biofuels production and declarations of the sustainability of the products, which will begin operation in 2013.  |  |

### Environment

|  |  |
| --- | --- |
|  | Key Measures/Aims |
| Law on the protection of surface waters against pollution – 2003 (Loi sur la protection des eaux de surface contre la pollution)[[9]](#footnote-10) | The Act of 26 March 1971 on the protection of surface waters against pollution, following the first version of 1 January 1989 and updated to 12 September 2003. It is composed of 50 items divided into three chapters. The initial section defines certain terms, such as, "public water system", "coastal", "pollution", etc. General Provisions 1) specific for the Flemish Region on the non-priority public sewer provisions (and small sewage treatment facilities) 2) Special provisions for the Flemish Region in pollution charges of water. |
| Order of the FlemishGovernment in implementation of Chapter III bis of the Act of 26 March 1971 on the protection of surface waters against pollution – 2007 (Arrêté du Gouvernement flamand portant exécution du chapitre IIIbis de la loi du 26 mars 1971 sur la protection des eaux de surface contre la pollution)[[10]](#footnote-11) | It rules the acceptable quality of wastewater that is allowed to discharge in nature, giving specific metrics for common pollutants. |
| Flemish decree creating the Strategic Advisory Council for Agriculture and Fisheries – 2007 Décretportantcréation du Conseilconsultatifstratégique pour l'Agriculture et la Pêche ( VlaamseGewest )[[11]](#footnote-12) | The Councilis assigned to: 1) issue opinions, initiative or upon request, 2) contribute, monitor and interpret to development, and 3) advise on the draft decree.For all economic, ecological, social and societal aspects of agriculture, horticulture, rural, and fisheries sectors of Flemish region. |
| Law on non-navigable water - 2010 (Loi relative aux cours d'eau non navigables)[[12]](#footnote-13) | The law covers the rules on non-navigable water (inland waters; classification/declassification; waterworks; dam). The text is formed by 25 items divided into four chapters: From classification of rivers non-navigable (I) The regular work of cleaning, maintenance and repair (II) Extraordinary improvements or changes (III) General (IV). |

### General sources:

<http://www.cakmak.av.tr/pdf/Global%20Renewable%20Energy%20Guide%202012.pdf>

<http://ec.europa.eu/europe2020/documents/related-document-type/index_en.htm>

<http://ec.europa.eu/clima/policies/g-gas/progress/docs/be_2013_en.pdf>

<http://ec.europa.eu/europe2020/pdf/nd/nrp2013_belgium_en.pdf>

1. <http://airclimat.wallonie.be/spip/Plan-Air-Climat.html> [↑](#footnote-ref-2)
2. <http://www.energiesparen.be/node/3075> [↑](#footnote-ref-3)
3. <http://wallex.wallonie.be/index.php?doc=9075> [↑](#footnote-ref-4)
4. ## <http://www.agentschapondernemen.be/download/file/fid/23995>

 [↑](#footnote-ref-5)
5. <http://www.energiesparen.be/node/3075> [↑](#footnote-ref-6)
6. <http://economie.fgov.be/fr/modules/regulation/arrete_royal/20061122_ar_completant_ar_20050304_relatif_biocarburants.jsp> [↑](#footnote-ref-7)
7. <http://economie.fgov.be/fr/consommateurs/Energie/Energies_renouvelables/Biocarburants/#.Um_uN1OfiW8> [↑](#footnote-ref-8)
8. <http://translate.google.be/translate?hl=en&sl=fr&tl=en&u=http%3A%2F%2Fwww.etaamb.be%2Ffr%2Farrete-royal-du-26-novembre-2011_n2011024352.html&anno=2> [↑](#footnote-ref-9)
9. <http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=011037&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL> [↑](#footnote-ref-10)
10. <http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=066666&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL> [↑](#footnote-ref-11)
11. <http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=066663&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL> [↑](#footnote-ref-12)
12. <http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=021203&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL> [↑](#footnote-ref-13)