IEE Project ‘BiogasIN’

Permitting procedures for biogas projects in Austria, Germany, Denmark, The Netherlands and Italy

WP 3.1.1

European Biogas Association
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Preface

The BiogasIN project “Development of sustainable biogas markets in Central and Eastern Europe” (Contract No. IEE/09/848) is supported by the European Commission in the “Intelligent Energy for Europe” Programme. The objective of BiogasIN is to effectively improve the framework conditions for the installation of new biogas plants in 7 Eastern European countries: Bulgaria, Croatia, Czech Republic, Greece, Latvia, Romania and Slovenia.

BiogasIN consists of 10 European partner organisations from 9 different European States. The project is coordinated by the Croatian Energy Institute “Hrvoje Pozar”.

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Introduction: Biogas in Europe

Biomass currently accounts for 2/3 of the renewable energy produced in Europe and bioenergy will play a key role in achieving the ambitious targets approved by the Directive 2001/77/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL - on the promotion of the use of energy from renewable energies. 20 % of the final energy consumption has to be provided by renewable sources by 2020. In the EU, in order to be in compliance with the EU Directive, additional electricity production of 300 TWh from renewables is needed until 2020, as well as the installation of 50,000 MWel investment volume of 100 -150 billion EURO (depending on the technology mix).

According to a study of the European Environmental Agency, the potential from agriculture is still largely unexploited and this sector is expected to have the highest growth rates in the coming years. Within the bioenergy sector the increased use of biogas opens up new fields of applications. Biogas production through anaerobic digestion (AD) is the most promising method of treating the organic fraction of municipal solid waste (MSW), agricultural wastes and sewage sludge. Anaerobic bacteria convert the biomass into biogas or landfill gas which is the most versatile renewable energy carrier: biogas can be converted in electricity and/or heat energy, it can be upgraded to biomethane and becomes a perfect substitute for natural gas and, as such, biogas can be also used as biofuel in vehicles.

In agricultural digesters usually a mixture of animal manure and waste from food industry is digested (co-digestion). Co-substrates from industry can considerably improve the overall economics (payback time) of the plant because gate fees have to be paid for the proper treatment of the waste. In addition the co-substrates increase biogas productivity. The digestate from co-digestion can be directly recycled as a fertilizer at reasonable cost. In a country with abundant co-digestion like Denmark or Germany, the biogenic waste materials from industry may become limited. In such a limiting situation of industrial wastes, energy crops are an interesting alternative; especially when the plants are grown on fallow or set-aside land which. A number of crops demonstrate good biogas potentials. Maize has become the most popular co-substrate in Germany. In Austria, Sudan grass is grown as an energy crop for co-digestion. It demonstrated excellent growth yields even on the dry soils in the south-eastern parts of Austria.

With responsible and more efficient administrative procedures for the exploitation of agricultural resources, together with increases in area efficiency of agriculture in general, dedicated energy crops are a viable and sustainable alternative for the production of biogas as energy carrier for electricity production but also for vehicle fuel after upgrading to biomethane.

The biogas production in Germany and Austria is already dominated by energy crops, Germany alone generated 122PJ (34TWh) in 2008. With a conservative land utilization (5% of the arable land), estimations on the biogas potential of energy crops from anaerobic digestion in EU-27 show yields ranging between 2,600 PJ and 7,700 PJ (720 – 2,100 TWh) with harvest yields of 10-30 tonnes dry solids per hectare.

Besides the situation in Germany, the most common substrate type for biogas production in today’s Europe is waste and residual products, mostly of urban origin. Statistics for EU 2008 have shown 11.6 TWh of biogas from wastewater treatment and 42.2 TWh biogas from municipal solid and agricultural waste combined.

The main supporting scheme for electricity produced by biogas are national feed-in laws, characterized by guaranteed grid access and a pricing scheme, generally a feed-in tariff or a premium. In a feed-in tariff system, as it is in place in Austria, producers sell their renewable electricity at a pre-set price per kWh. This fixed price, or tariff, is normally above market price for electricity and guaranteed for a number of years. In a premium scheme, producers sell their renewable energy at market price, and a premium, also guaranteed for a number of years, is added to that price.
1. Austria

1.1. Legal basis for energy production from biogas in Austria

This chapter provides an overview about Austrian support systems concerning biogas plants including requirements and eligibility criteria.

Table 1: Overview about Austria’s support systems for biogas plants

<table>
<thead>
<tr>
<th>Support system</th>
<th>Legal framework</th>
<th>Functionality</th>
<th>Authority</th>
<th>Responsibility/recurring assessment</th>
<th>Requirements/documents</th>
<th>Costs &amp; time requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ökostromgesetz</td>
<td><a href="http://ris.bka.gv.at/Bgbl-Auth/">http://ris.bka.gv.at/Bgbl-Auth/</a></td>
<td>Feed in Tariff</td>
<td>Federal ministry for economy family and youth (BMWFJ)</td>
<td>Law, feed in tariff</td>
<td>Feedback plan</td>
<td>Acceptance/approval, building depends on the sheets which are sent in / time under 2 month</td>
</tr>
<tr>
<td>Umweltförderungsgesetz</td>
<td><a href="http://ris.bka.gv.at/Bgbl-Auth/">http://ris.bka.gv.at/Bgbl-Auth/</a></td>
<td>Investment subsidies - not for power production</td>
<td>Federal ministry for agriculture, forest, environment and water (BMLFUW)</td>
<td>Law</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emissionszertifikategesetz</td>
<td><a href="http://ris.bka.gv.at/Bgbl-Auth/">http://ris.bka.gv.at/Bgbl-Auth/</a></td>
<td>Greenhouse gas certificates - not for plants who received other subsidies like feed in tariffs or investment subsidies</td>
<td>Federal ministry for agriculture, forest, environment and water (BMLFUW)</td>
<td>Law</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Applications of biogas which are supported

<table>
<thead>
<tr>
<th>Application of biogas</th>
<th>Power</th>
<th>Power/Heat</th>
<th>Heat</th>
<th>Injection to the gas grid</th>
<th>Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed in tariff</td>
<td>Yes (total efficiency must be over 60%)</td>
<td>Yes (total efficiency must be over 60%)</td>
<td>No</td>
<td>Yes (total efficiency must be over 60%)</td>
<td>No</td>
</tr>
<tr>
<td>Investment subsidies</td>
<td>No</td>
<td>Only for the heat relevant investments</td>
<td>Yes</td>
<td>Only for heat relevant investments</td>
<td>Yes</td>
</tr>
<tr>
<td>Green certificates (not compatible with other subsidies)</td>
<td>ERUs/EUAs</td>
<td>ERUs/EUAs</td>
<td>ERUs/EUAs</td>
<td>ERUs/EUAs</td>
<td>ERUs/EUAs</td>
</tr>
</tbody>
</table>

Ökostromgesetz (Eco-electricity Act)

In 1999, the framework for supporting electricity production from renewable energies was modified with the beginning of the liberalisation of the Austrian electricity market and the establishment of a competitive market model with corresponding rules. There were two essential changes. On the one hand, more transparency of the promotion volume was established through a yearly assessment of the subsidies and the designation on each electricity bill. On the other hand, a national promotion framework was established for the development of an eco-electricity market. The Eco-Electricity Act
Encourages production via feed-in tariffs and investment subsidies (not for biogas). A new scheme was prepared in 2009. In Austria, the EU directive 2001/77/EC was transposed into national law by the Eco-Electricity Act (EEA) which was published in 2002 and went into force on January 1st, 2003. The following objectives were set out herein:

- Increasing the share of electricity produced from renewable energy sources in Austria in order to meet the indicative target of 78.1% set out in the EU directive 2001/77/EC,
- Efficient use of funding,
- Focusing technology policy on technologies to produce a mature renewable energy market,
- Increasing the share with electricity produced at small-scale hydropower plants (capacity <10MW) to 9% in 2008,
- Guaranteeing investment security in respect of existing and future installations,
- Country-wide equalisation of costs incurred in promoting energy production from renewable energy sources and combined heat and power.

Renewable energy sources are dominant in the Austrian electricity production structure. About 70% of the total generation (which covers more or less the total electricity demand of Austria) is produced from renewable sources, about 56% with large hydro power (>10 MW, currently not financial supported), 8% from small hydro (<10 MW, supported by the EEA) and 3% from wind power, photovoltaic and biomass/biogas. The producers of green electricity, who invest in plants that enter operation in the year 2003 through the middle of 2006 (if they have the building permissions before end of 2004), receive a feed-in tariff for the green electricity which is fed into the public grid. This feed-in tariff is guaranteed for 13 years (from beginning of operation) and is not adjusted to the inflation rate. The feed-in tariff differs for the different renewable energy sources and in some cases it also varies with capacities (e.g. higher feed-in tariffs for more expensive smaller capacity units). The values of the feed-in tariffs are fixed in accordance with the generation costs and final customers and traders paying the costs. The feed-in tariffs are intended to support investments to meet the Austrian legal green electricity target, which is to generate, by 2008, a minimum of 4% of total electricity (compared to the total amount distributed by the public grid) by wind power and biomass. The starting percentage was 0.8% in the year 2002. The fixed feed-in tariffs were accepted by the green electricity investors as very attractive, as shown by intensive investment programmes. The 4% target was reached already in the year 2005. For 2010 the act set a target of 10%.

Since 2006, there is a cap on the available funding volume for new contracts of green plants. The current annual additional support is € 21 million. To achieve the indicative target of 15% subsidized green energy in 2015, according to the second amendment to the Green Electricity Act 2008 (BGBl. I Nr. 114/2008), an additional installation of 100 MW biomass / biogas (assuming raw material availability) will be need. There is an annual adjustment on tariffs (for new plants), which is done via appropriate regulations.

The tariff is also divided into 14 technologies, one of which supports biomass CHP, which is further divided into a total of 29 capacity and fuel type tariffs. As in the 2002 act, final customers and traders pay for the support. The act established a special office (OEMAG) to handle the financial flows from consumers to producers, and a producer must have a contract with this office in order to benefit from the feed-in tariff. The office is only authorised to contract for a prescribed amount of new capacity per year, and publishes the remaining sum on its website. Since the introduction of the feed-in system, there were 3 amendments of the act. The fundamental changes in the area of biogas are:

1. limitation of new biogas facilities per year

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1 The difference of about 3% comes from industrial plants fuelled with residues.
D.3.1.1 Best practice examples for permitting biogas projects

2. minimum fuel efficiency of 60%
3. CHP bonus
4. bonus for a upgrading system to natural gas
5. fixed feed-in tariff for 15 years

In Austria, the three existing transmission system operators (TSOs) have to buy supported green electricity from the green electricity plant operators and have to pay a legal feed-in tariff which is higher than the market price. The TSOs sell this green electricity to all electricity traders who have to take the same percentage and have to pay a price of 4.5 €/kWh. The difference between this price and the feed-in tariffs is financed by a surcharge on network tariffs paid by all end consumers.

Table 3: electricity feed-in tariffs for biogas

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Tariff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 250 kW</td>
<td>18,5 Cent / kWh</td>
</tr>
<tr>
<td>Up to 500 kW</td>
<td>16,5 Cent / kWh</td>
</tr>
<tr>
<td>Over 500 kW</td>
<td>13,0 Cent / kWh</td>
</tr>
</tbody>
</table>

- Facilities up to 250 kW must use a share of 30% manure
- By using of non agricultural feedstock, the feed-in tariff will be reduced by 20 percent
- Additionally CHP bonus of 2 Cent / kWh when certain criteria of efficiency fulfilled
- Additionally technical bonus of 2 Cent / kWh when the biogas is upgraded and injected into the gas grid

How to get the feed-in tariff:
To get the feed-in tariff you have to follow the followed steps:
- You need to have all permissions for building and running the plant.
- From your power grid operator you need an identification of the metering point.
- You send a request to your state government for application of your plant, including the permissions, a feed stock concept and a concept how you will reach the needed efficiency of 60%. Your state government has to recognize your power plant as a eco electricity plant.
- Finally you send a request to the OEMAG who has to make a contract for the produced eco electricity with you. This valid absorption contract is precondition for the absorption of eco electricity from an accepted eco electricity facility. The obligation for absorption of eco electricity is only given if the operator of the eco electricity plant delivers eco electricity for a whole year and he has to be a member of the eco balance group.

The Eco-BGR will buy eco-electricity from ecoproducers and sell it to the balance-group representatives and/or electricity traders - in accordance with their share of sales to end customers supplied by them. In addition, grid operators will charge end customers grid-tariff premiums, which will have to be transferred to the Eco-BGR.

**Umweltförderungsgesetz (The environmental subsidies act)**

Combating climate change is one of the main goals of the Austrian environmental policy. A major contribution to this challenge is made by the Austrian Eco-funding scheme which is financed by the Ministry of Agriculture, Forestry, Environment and Water Management. Today about 95% of all measures in the environmental fund are climate relevant and the instrument became the most important financial instrument in the Austrian climate strategy.
In the frame of the Environmental Support Act the Environmental Support Scheme for Austrian Enterprises offers subsidies to companies. Companies can obtain subsidies for the use of renewable energies (precondition: standards of heating and cooling equipment have to be met), for the enhancement of energy efficiency and for other climate related measures.

In the field of renewable energies the fund supports:

- biomass (individual plants, local heat, CHP)
- heat distribution
- geothermal installations
- energy recovery from organic waste
- solar-thermal systems
- electricity producing plants (only possible if no feed-in tariff is used)

The Umweltförderungsgesetz (since 1993) provides a basis for the eco-funding granted in Austria. This refers to environmental measures in the areas of residential water management, remediation of contaminated sites as well as environmental support in Austria and abroad (Umweltförderung im In- und Ausland). The different measures have diverse target groups and funding conditions. The funding scheme for environmental actions (including climate change) in companies is the so called "Umweltförderung im Inland" the Ministry of Agriculture, Forestry, Environment and Water Management. The aim of the funding programme "Umweltförderung im Inland" is the protection of the environment by preventing or reducing:

- CO₂ emissions,
- air pollution and
- Prevention and treatment of hazardous waste.

During the period from 2005 to 2007 6 409 projects were funded through the "Umweltförderung im Inland" by a total sum of EUR 213.5 million (only grants) which induced an investment volume for environmental actions of EUR 1 150 million. Most projects were funded in the areas of biomass heating systems (31%), thermal solar power systems (27%) and thermal insulation of commercial buildings (9%). In terms of money provided most funds (approximately 33%) were spent on biomass-fired combined heat and power plants, whereupon 15% of the total subsidies were spent on individual biomass heating systems, 9% on biomass district heating.

The subsidy for environmental actions in Austria ("Umweltförderung im Inland") covers mainly the heating sector with enterprises as target group. In total more than 25 target technologies have been identified and own funding regulations were issued.

**Target groups:**
- all natural and juristic persons for exercise of commercial actions
- confessional entities and non-profit institutions
- entities of public authorities with business operation
- utility and traffic companies

**Object of subsidy:**
Facilities producing biogenic and gasiform fuels, like

- production line of biodiesel
- production line of bioethanol
- production line of vegetable oil
- biogas plants for the production of biomethane including upgrading systems for biogas for grid injection or using as vehicle fuel at petrol stations
Best practice examples for permitting biogas projects

- biogas plants which use biogenic feedstock and residues,
  - The subsidy can only be used when the biogas plant is not listed as eco electricity facility and the feed-in tariff is used
  - Otherwise only the heat distribution grid for the used waste heat can be promoted
  - The share of biogenic feedstock and residues must have a minimum of 95% of the fuel heat input
- thermal gasification plant for the production of process gas from biomass including process technology for the production of liquid and gasiform vehicle fuel
- production line of biofuels (second generation)

Volume of support:
- the standard is 25% of the environmental relevant costs. There is an additional sustainability charge of 5% for a greenhouse gas emission reduction of 45%. The subsidy takes place in orientation to the domestic disposal of fuel and petrol.

Requirements:
- the request takes place before start of construction at Kommunalkredit Public Consulting GmbH
- the complete environmental relevant investment costs have to be amounted by a minimum of EUR 10,000
- the feedstock has to be captured regional. The transport distance is limited by 100 km
- the capture of feedstock and the greenhouse gas balance have to be in line with the sustainability criteria of the Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (RES Directive)

Required documents:
- application
- technical description
- economic calculation
- feedstock concept
- contracts for products and financial matters
- investment costs
- permissions and orders
- in case of municipalities, a confirmation that the company is market orientated

Emission certificates

Under the Kyoto Protocol, Joint Implementation (JI) and the Clean Development Mechanism (CDM) will allow industrialised countries\(^2\) to achieve part of their emission reduction commitments by conducting emission-reducing projects abroad and counting the reductions achieved toward their own commitments. JI will allow projects in other industrialised countries like Austria with Kyoto targets. A condition for the issue of credits in respect of the reductions achieved is that the projects result in real, measurable and long-term climate change. The JI projects must follow two different procedures.

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\(^2\) The Flexible Mechanisms of the Kyoto Protocol can only be used by Parties listed in Annex I of the UNFCCC and with a commitment inscribed in Annex B of the Kyoto Protocol.
provided by JI guidelines of the first Conference of the Parties (COP)\(^3\). These two Tracks of presentations and the approval of JI projects have the following the characteristics.

Track I allows the host country to use national guidelines for approving projects and for monitoring and verifying GHGs emission reductions. Track I allows host countries of JI projects to introduce national simplified procedures in comparison to JI Track II which must be in accordance with procedures established by Article 6 of the Joint Implementation Supervisory Committee (JISC). The proposed projects must conform to the rules and requirements for JI/CDM projects established by the Kyoto Protocol and relevant Conference of the Parties (COP) decisions, and must contribute to sustainable development in the host country. Emission reductions resulting from a JI/CDM project activity have to be additional to those that would occur without that activity.

EUAs are European Union Allowances, which permit the holder to emit one tonne of carbon dioxide. EUAs are issued under the European Union Emission Trading Scheme (EU ETS), which was established by member states in the EU as a mechanism to meet their commitments to reduce carbon dioxide emissions agreed in the Kyoto Protocol.

The trading system allows governments to define maximum values for the emission of greenhouse gases; during the involved companies have the choice of place and kind to reach emission reductions.

The participants of the EU ETS get an allocated and limited amount of emission rights (certificates). Each certificate equals to one tonne of the regarding greenhouse gas. When the company (participant) emits an lower amount of greenhouse gases due to a higher forecast or the use of renewable energies like biogas, it can sell the surplus certificates on the free market - OTC trading or exchange trading (EEX, EXAA, Nordpool, ECX, Powernext), for instance to other EU ETS participants. The trading scheme of EUAs has the aim to reduce Europa’s emissions of thermal, caloric power plants.

Domestic offset projects (national projects) are a new mechanism whose introduction has sparked increasing debate in recent years. They can be seen as a form of ‘unilateral’ JI: they generate emission reduction certificates, but the project activity is actually carried out in the investor country and no other country is involved. Should policymakers decide in favour of domestic offset projects, the legislature must introduce appropriate legislation to ensure they prove a meaningful addition to the climate change instruments that have either already been introduced or are in the planning stages.

\section*{1.2. Legal basis for permitting of biogas projects in Austria}

This chapter shows the legal basis for building and operation of biogas plants. Table 4 gives an overview about the permitting procedure and Table 4 shows all relevant laws with the corresponding authority and a short description of the relevance concerning biogas plants.

There are three umbrella laws under which the future plant operator has to apply for the permissions. These umbrella laws are

- Abfallwirtschaftsgesetz
- Gewerbeordnung
- Elektrizitätswirtschafts- und Organisationsgesetz

\footnote{UNFCCC – Report of the conference of the parties serving as the meeting of the parties to the Kyoto Protocol on its first session held at Montreal from 28th November to 10th of December in 2005, FCCC/KP/CMP/2005/8/Add.2, paragraphs 20-45, 30th of March 2006}
The choice of feedstock and the way of biogas utilisation determine the umbrella law that the biogas investor has to apply for the permission. Figure 1 shows under which law you have to apply for the permission.

<table>
<thead>
<tr>
<th>Feedstock</th>
<th>No Waste</th>
<th>Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power production</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Heat production</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Figure 1: Relevant laws in Austria during the permission procedure

**Abfallwirtschaftsgesetz (waste economy law)**

This law defines the rules for building and running permission for all plants which use waste. It is a typical umbrella law which means that with application under this law almost all other laws which are needed for building and running the plant are included. This means that the planner/future operator has to deliver all information which is needed to judge the project.

- Area dedicated plan
- Abstract of title
- Map of the area
- Site plan, cut plan, view plan
- Exhaust plan for air and loudness
- Technical data and description of the plant
- Safety devices, plan of explosion prevention
- Description of the biogas process, how to run the process, how to start the process, how to stop the process
- Description of the used feedstock, use of the produced biogas and application of the produced digestate

The permission, usually given by the local government, or state government depends on in which state the plant operator wants to situate the plant. During the permission procedure, up to nearly 10 state experts have to judge the project to all laws which are included in the permission.

**Gewerbeordnung (Trade, Commerce and Industry Regulation Act)**
The “Gewerbeordnung” is the second umbrella law under which biogas plants can get their permission if waste is not used as feedstock and if biogas is only used for heat production. If your plant is running as CHP facility and produces power and heat you can also apply for the permissions under this law. Apart from the documents needed for using waste, the needed documents and rules to get the permission are usually the same as under the “Abfallwirtschaftsgesetz”.

ElektrizitätsWirtschafts und Organisationsgesetz (ELWOG)

The “Elektrizitätswirtschafts- und Organisationsgesetz” is the third umbrella law under which biogas plants can get their permission. It is only used for biogas plants producing electricity without waste. Apart from the documents needed for using waste the needed documents and rules to get the permission are usually the same as under the “Abfallwirtschaftsgesetz”:
### Table 4: Austria’s relevant laws regarding permissions for biogas plants

<table>
<thead>
<tr>
<th>umbrella laws for the permitting procedure</th>
<th>legal framework</th>
<th>functionality</th>
<th>authority</th>
<th>responsibility/recurring assessment</th>
<th>costs &amp; time requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abfallwirtschaftsgesetz (AWG)</td>
<td>defines the rules for permissions and operation of waste biogas plants</td>
<td>federal ministry for agriculture, forest, environment and water (BMLFUW)</td>
<td>state government/county government</td>
<td>permission/recurring assessment all 5 years</td>
<td>depends on the sheets which are sented - under € 4.000,-</td>
</tr>
<tr>
<td>Elektrizitätswirtschafts- und Organisationsgesetz (ELWOG)</td>
<td>defines the rules for permissions and operation of biogas plants who don’t uses waste as feedstock</td>
<td>federal ministry for economy family and youth (BMWFJ) for the federal law - state government for the state law</td>
<td>state government/county government</td>
<td>permission</td>
<td>depends on the sheets which are sented - under € 4.000,-</td>
</tr>
<tr>
<td>Gewerbeordnung</td>
<td>defines the rules for permissions and operation of biogas plants who also sells heat over 4 MW</td>
<td>federal ministry for economy family and youth (BMWFJ)</td>
<td>state government/county government</td>
<td>permission/recurring assessment all 5 years</td>
<td>depends on the sheets which are sented - under € 4.000,-</td>
</tr>
<tr>
<td>Gaswirtschaftsgesetz</td>
<td>defines the rules for gas grid connection</td>
<td>federal ministry for economy family and youth (BMWFJ)</td>
<td>state government/county government</td>
<td>permission</td>
<td>law</td>
</tr>
<tr>
<td>Tiermaterialiengesetz</td>
<td>defines the rules of feedstock from side products of animal</td>
<td>federal ministry for health (BMG)</td>
<td>county government</td>
<td>permission</td>
<td>law</td>
</tr>
<tr>
<td>Verordnung explosionsfähiger Atmosphären (VEXAT)</td>
<td>defines the safety rules for explosive atmospheres</td>
<td>federal ministry for economy family and youth (BMWFJ)</td>
<td>state government/county government</td>
<td>permission</td>
<td>law</td>
</tr>
<tr>
<td>Technische Grundlage für die Beurteilung von Biogasanlagen <a href="http://www.bmwfj.gv.at">www.bmwfj.gv.at</a></td>
<td>guideline for authorised experts to evaluate a planned biogas plant</td>
<td>federal ministry for economy family and youth (BMWFJ)</td>
<td>state government/county government</td>
<td>permission</td>
<td>guideline</td>
</tr>
<tr>
<td>Starkstromwegesgesetz</td>
<td>defines the rules for the power grid connection</td>
<td>state government/county government</td>
<td>law/permission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raumordnungsgesetz</td>
<td>defines the rules where you can built a biogas plant</td>
<td>state government</td>
<td>municipality</td>
<td>permission</td>
<td>depends on the state ~ € 1 000,-</td>
</tr>
<tr>
<td>Bauordnung</td>
<td>defines the rules how building has to be built</td>
<td>state government</td>
<td>county government</td>
<td>permission</td>
<td>law</td>
</tr>
</tbody>
</table>

VEXAT (regulation of explosive atmospheres), Bauordnung (building regulation), Wasserrechtsgesetz (water-rights law), Gaswirtschaftsgesetz (gas economy law), Arbeitnehmerschutzgesetz (industrial safety law) and several other regulations like: ÖNORM`s, ÖWAV guidelines.
The change of the spatial planning act (Raumordnungsgesetz) for the place where the biogas plant should be situated has to be applied at the local municipality before applying for the building permission. Not included is the application to the power grid. For this permission has to be applied after the building permission.

### 1.3. Responsible permitting authorities in Austria

Austria’s energy policy is simultaneously conducted at several levels: the federal and the regional level. The federal Constitution allocates responsibilities either to the federal level or to the regional level. The most important Austrian energy policy making institutions at the federal level are:

- Federal Ministry of Economics and Labour: the main government institution responsible for energy matters at the federal level e.g. for the “Gewerbeordnung” and “ELWOG”
- Federal Ministry of Agriculture, Forestry, Environment and Water Management: responsible for environmental protection, including climate change and emissions from combustion e.g. for the “Abfallwirtschaftsgesetz”
- Federal Ministry of Transport, Innovation and Technology: responsible for transport policy and energy R&D
- Federal Ministry of Finance: responsible of setting energy taxes

The approval of plants for the production of energy from renewable sources falls within the jurisdiction of the district administrative authority. By the one-stop-shop principle, there is only one authority as a focal point for the approval process.

The responsible authority for the permission under the three shown umbrella laws is usually the local government or the state government depending on in which state the plant should be built. At the regional level, the governments of the nine federal states also have responsibility for policy making, setting subsidy levels, and implementing regulatory control of energy companies e.g. transportation of “ELWOG” in a regional law. That is the reason why sometimes permissions have to be applied at regional level. But the judgement of projects is done by the state experts, who are always the same person at state level.

Information about the fees for permitting and registration procedures is given by the government of the federal states. Often information is also provided by the internet.

At a local level, municipalities or cities also have some possibilities for implementing energy measures. Examples are land-use planning activities, measures concerning energy supply, mobility and internal organisation. Further, cities have a big responsibility regarding awareness raising. They can for example start information campaigns, organise special energy events or publish brochures to inform their inhabitants.

### 1.4. Permitting procedures in Austria

Planning and preparation of permits for biogas plants (administrative processes) are made in close collaboration with the plant designer, the equipment manufacturer and the energy consultant. The government of the federal states also publish helping guidelines for the permitting procedure. These guides provide an overview on the requirements (by federal or state law provisions) as well as the legal framework, standards and directives. The awarding of supply contracts between the green electricity producer and OeMAG follows “first come – first served” principle.

The applicable law to apply for the building permission and operation of a biogas plant depends on the foreseen substrate and on the utilisation of the produced biogas.
Table 4 above shows the relevant laws during the permission procedure. When the facility will be run without waste as feedstock and the produced energy is used only for heat, the “Gewerbeordnung” is the only law that has to be considered. For power production the “ELWOG” has also to be considered. The “Abfallwirtschaftsgesetz” (AWG) defines the rules for building and running permission for all plants which use waste. With the application under one of this three umbrella laws most of other needed permissions will be included.

1.5. Lessons learned

Before Austria had the regulation of this three umbrella laws, each future biogas plant operator had to make sure that he applied for all needed permissions by himself. Since Austria got this three umbrella laws the future operator usually gets all other relevant laws. Only the application for the spatial planning law (“Raumordnung”) has to be made by the municipality before applying the building permission.

The last years have shown that the economic feasibility of a biogas plant in Austria depends on the feedstock concept- and prices as well as the feed-in tariffs. Therefore, strong political awareness and will are the most important components regarding a well functioned biogas branch. The political stakeholder must be well informed by the operator side in order to ensure a legal basis and safe long term conditions which support the energy production through biogas plants.

At the beginning, the permitting procedure was very short. The approvals were given within 2 months. But through the development of various, technical plant equipment and biogas plant types which lead to a more complicated permitting process, the procedure was sometimes extending to over one year. With the introduction of the three umbrella laws and transparency of permitting procedure through compiled guidelines, the duration for approvals was reduced considerably. With the use of an environmental expert report the permitting procedure engages between 4 and 6 months.
2. Germany

2.1. Legal basis for energy production from biogas in Germany

The German energy sector is liberalised and generally allows the production of electricity and heat. Thus, any interested person or organisation is allowed to produce biogas. From the energy perspective there is even no requirement for permissions. However, permits are needed for the building of biogas plants which is described in the subsequent chapter.

The sale of electricity and heat from biogas as well as the sale of upgraded biogas (biomethane) does not require permission except from a business licence; moreover it is legally supported by legislation. The Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, or EEG) is promoting the development of renewable energy sources with an electricity feed-in tariff scheme. The latest version of the EEG was issued in 2009. It includes a feed-in tariff scheme for biogas. Grid operators must pay a government-specified feed-in tariff for 20 years to biogas plant operators supplying electricity to the grid. According to the EEG the heat from biogas plants has to be valorised, too. However, there is no dedicated legislation for heat from renewable energy. The sale/use depends on private agreements and contracts between the heat producer and the heat user. More detailed information can be found in the BiogasIN report about best practice examples for biogas plant financing.

Another increasing opportunity to gain revenues from biogas production in Germany is the sale of upgraded biogas to natural gas quality (biomethane) through the national natural gas distribution network. The price of grid-injected biomethane is not guaranteed as the fixed electricity feed-in tariff. It depends on market prices and the sale as “green energy”. The last version of the Regulation on Access to the Natural Gas Grid (Gasnetzzugangsverordnung; GasNZV) from 2010, however, allows biomethane producers to inject biomethane in the natural gas grid and regulates the costs for grid access: For access to the grid of less than 1 km distance, 75% of the costs for the grid access has to be paid by the grid operator, 25% (up to 250 000 €) by the biogas plant operator.

2.2. Legal basis for permitting of biogas projects in Germany

The installation and operation of biogas plants in Germany always requires permission by public authorities. The minimum requirement is a building permit (either as independent permit or in the framework of the BImSchG as described below). The permit procedure depends on the size and location of the biogas project as well as on the feedstock material. The German legislation specifically addresses biogas installations and foresees several measures included in the laws to simplify permitting procedures.

There are generally two different options for permit procedures which are based on the following two legislations:

- **Federal Immission Control Act** (Bundes-Immissionsschutzgesetz; BimSchG)
- **Federal Building Code** (Baugesetzbuch; BauGB)

The BimSchG is a law to control harmful environmental impacts such as air pollution, noise, vibrations and other impacts. It is one of the most important laws in the environmental area. It only regulates general issues about immissions. Specific technical issues which are important for practical applications are regulated in several implementing ordinances (Durchführungsverordnungen; BImSchV) under the BimSchG.
The classification if permit procedures for biogas plants are based on the BImSchG or on other legislation such as on the Federal Building Code is defined in the 4th BImSchV (Ordinance on Installations Requiring a Permit). The following graph shows a decision tree for assessing the applicable permitting procedure for biogas plants.

![Decision tree for permit procedures for biogas plants in Germany](image)

Figure 2: Decision process or the permission procedure for biogas plants in Germany

In comparison to the permitting procedure under the BauGB, the **permitting procedure under the BImSchG** is more sophisticated and complex. If a biogas plant has to undergo the procedure according to the BImSchG, the permit automatically includes the permit for building and the compliance with Regulation EC/1774/2002 on “laying down health rules concerning animal by-products not intended for human consumption”. Thus, the biogas project only requires one single permit after BImSchG.

Depending on the amount of daily treated waste materials, a simplified or a formal permitting procedure within the BImSchG is applicable. The formal procedure is more time intensive since public participation is required.

The **permitting procedure under the BauGB**, usually for smaller biogas plants, is simpler than the permitting procedure under the BImSchG. In order to determine compliance with the BauGB, two issues have to be clarified: is the plant permissible (1) regarding the building development plan, which answers the question whether the location is suitable for the plant and (2) regarding the building regulation which determines how the plant has to be installed.

In areas for which building development plans (Bebauungsplan) exist, the permission of biogas plants depends on the compliance with these plans. In areas for which no building development plans exist, permissions depend on several factors such as it is in a residential area or in an industrial area.
The most suitable location for biogas plants however is in rural areas. This is also recognised by German law. Since 2004 biogas plants are privileged in rural areas. This means that in rural areas biogas plants always have to be permitted, given that they do not violate public interest and if needed access to infrastructure is available. Thus, in these areas, the permitting procedure is much simpler. However, this privilege applies only for biogas plants which fulfil the following preconditions:

- The biogas plant is closely connected to a farm (or similar business) regarding the location and the type of the farm.
- The feedstock is mainly provided by this farm and from close farms.
- Only one plant is operated per farm or per business location.
- The installed electrical output is lower then 0.5 MW.

Apart from the building development plans, the issuing of a building permit also requires compliance with the building regulation which determines how the plant has to be installed. This is usually included in the regulations of the federal states in Germany and thus differs from federal state to federal state. These regulations usually include safe working conditions, fire protection, location of the plant on the dedicated site, etc.

Generally, the interpretation and enforcement of the BImSchG and BauGB is varying between the different German federal states, as well as even between the permitting authorities of different counties. Several past and continuing decisions by authorities and court decisions on different levels were needed to specify the permit procedures according to BImSchG and BauGB. Due to these differences, authorities of some federal states have even elaborated specific handbooks and guidelines for the permitting procedures of biogas projects.

Besides the permits which are a prerequisite for the implementation of a biogas project, several legislations have to be considered and in some cases compliance has to be proved for the permitting authorities. This legislation includes for example:

- Act for Promoting Closed Substance Cycle Waste Management and Ensuring Environmentally Compatible Waste Disposal Waste and recycling law (Kreislaufwirtschafts- und Abfallgesetz; KrW-/AbfG)
- Federal Water Act (Wasserhaushaltsgesetz; WHG)
- Fertilizer Act, Fertilizer Ordinance (Dünggesetz; DüngG; Düngeverordnung DüV
- Regulations on work safety and safety of operation, fire protection
- Biomass Ordinance (Biomasseverordnung; BiomasseV)
- Environmental legislation
- Legislation on veterinary aspects
2.3. Responsible permitting authorities in Germany

The permitting authority for the permission procedure under the BImSchG usually is the county administration (Landratsamt, Kreisverwaltungsbehörde).

For the permission procedure under the BauBG the permitting authority is usually the county administration or the building authority of municipalities or cities.

2.4. Permitting procedures in Germany

The first step to build a biogas plant should be to meet with a consultant of the Ministry of Food, Agriculture and Forestry (Amt für Ernährung, Landwirtschaft und Forsten). The consultant provides information about the suitability of the location, economic efficiency, and helps the investor to define the responsible authorities.

It is very advisable to meet with representatives of the District Office (Landratsamt) in charge before handing in the blueprint of the plant. A lot of potential problems concerning building permission and environmental protection can be solved here and can be included in the blueprint. Furthermore this helps to decide if the plant needs a permission procedure under the BImSchG or not.

The practical procedure for permissions under the BauBG is very different between the federal states and even between the counties and municipalities. This includes the application forms and required information which the applicant has to provide. Therefore it is difficult to make general statements about the procedure. In any case, the procedure is usually launched by the applicant who gets in contact with the authority and discusses further steps. Due to the good framework conditions as described above, this procedure is usually no problem. Usually the duration of these procedures is about 2 to 5 month.

The permitting procedure under the BImSchG influences the procedure: the simplified or the formal procedure.

The practical simplified procedure for permissions under the BImSchG is much simpler than the formal procedure, since no public participation process is required. The legislation foresees a time limit of this procedure of three month, starting from the approval date of the authority that all required information was submitted.

The practical formal procedure for permissions under the BImSchG requires an Environmental Impact Assessment (EIA) (Umweltverträglichkeitsprüfung). Therefore it lasts much longer than the simplified procedure. The EIA Regulations relate to a European Union Directive (Directive 85/337/EEC as amended by Directive 97/11/EC on the assessment of the effect of certain public and private projects on the environment), and give planning authorities a means of ensuring that they can take account of the environmental implications of individual developments in their decisions on planning applications.

The EIA Regulations only apply to certain biogas plants as described above. Thus in a so called “screening”, it can be determined whether a full EIA is needed or not. This screening includes usually a meeting between all related parties. However this meeting is not mandatory. Where a project requires an EIA, the applicant can ask the planning authority for advice on the scope of the information to be gathered during the EIA and to be covered in the Environmental Statement which is called “scoping”. Also the scoping meeting is not mandatory, although strongly recommended. After these two initial steps, the full application can be submitted to the authorities.
The legislation foresees a time limit of the permission procedure of seven month, starting from the approval date of the authority that all required information was submitted.

### 2.5. Lessons learned

The German legislation has introduced several measures to create an efficient and reliable framework for permission procedures for biogas plants. It has furthermore simplified the overall procedure and introduced different requirements for small to large scale plants. This includes the involvement on one or only few authorities, in contrast to other countries in which the investor has to contact many different authorities. Furthermore, the duration of the permitting process is short.

The prioritization of (small – to medium) biogas plants in rural areas (BauGB), as well as the procedure under the BImschG for larger plants, acting as an umbrella law, has contributed to the success of the German biogas market.
3. Denmark

3.1. Legal basis for energy production in Denmark

In Denmark there are two types of agriculture biogas plants. Co-operative biogas plants receive manure and organic waste from a number of farms, mostly also industrial waste and rarely organic household waste. The gas produced by these installations is sold to local combined heat and power (CHP) plants. Farm biogas plants digest agriculture residues mostly manure from a single or a few farms. Today there are around 22 co-operative and 60 farm biogas plants in operation. The produced gas is mostly used for combined heat and power for district heating. District heating is very popular in Denmark as 60% of the population is supplied with heat through district heating.

The Danish energy sector is liberalised and generally allows the production of electricity and heat. Thus, any interested person or organisation is allowed to produce biogas. Permission is needed to build a biogas plant which is described in the following chapter.

The sale of electricity and heat produced by biogas plants is supported by legislation. The sale of upgraded biogas for the natural gas grid is actually not profitable due to incentives favouring district heating plants, but this will be changed by the government in the near future. Injection and sale of upgraded biogas is regulated in the Law on natural gas supply (Lov om naturgasforsyning).

The District Heat Act (Bekendtgørelse af lov om varmeforsyning) gives many restrictions, is protecting the consumer from profit-making heat companies, i.e. district heating in Denmark has to be non-profit by law.

The Law on promotion of Renewable Energies (VE-Lov - Lov on fremme af vedvarende energi No. 1392/2008) promoting renewable energies with a feed-in tariff scheme which was significantly improved in February 2008. The biogas plant operator receives a fixed bonus which is paid on top of the market price. The bonus plus market price shall not exceed a certain statutory maximum depending on the date of connection of the plant to the national power grid system, at present approx. 10 Eurocent/kWh. If the market price exceeds the total amount specified by statutory law, the exceeding amount will be deducted from future bonus payments. The payment is guaranteed for 10 years.
3.2. **Legal basis for permitting biogas projects in Denmark**

The installation and operation of biogas plants in Denmark always requires various permissions by public authorities. The minimum requirement is a **building permit**, and a **fire safety approval**, a **EIA** (Vurdering af Virkninger pa Miljøet, VVM - Environment Impact Assessment, EIA) screening procedure resulting in:

- (an) **environmental approval**,  
- (often a) **land zone approval**,  
- (and often a) **local plan**.

The main responsibility for the permission is in the hand of local authorities and requires several phases with public hearings. Besides permissions, which are fundamental requirements for the implementation of a biogas project, several legislations have to be considered and in some cases their compliance has to be proved by the authorities. This legislation includes for example:

- Planloven (Land-use planning law)  
- Miljøbeskyttelsesloven (Environmental protection law)  
- Naturbeskyttelsesloven (Nature protection law)  
- Animalske Biprodukter (By-products instruction)  
- Licitationslovgivning (Tender procedure law)  
- Forsyningsdirektivet (Supply law)  
- Environmental protection act

3.3. **Responsible permitting authorities in Denmark**

The responsible authority for the permission of biogas projects in Denmark is in general the **municipality**. Depending on the type and size of the biogas plant the Danish Ministry of Environment as well as the Danish Ministry of Food, Agriculture and Fisheries, The Danish Plant Directorate ("Foedevarerregion and Plantedirectoratet") has to be informed.

The **Ministry of Environment (regional EPA-office)** is responsible for the permission of biogas plants with high impact on the environment. Furthermore, the ministry is responsible for biogas plants with gas storage of more than 8 700 m³.
3.4. Permitting procedures in Denmark

In general every manure based biogas plant in Denmark needs a building permit and permission from the fire authority. Furthermore, the EIA screening, the land-use plan and an environmental assessment have to be done for all biogas plants.

Building permit

Biogas projects in Denmark have to apply for a building permit at the municipality. The installation of biogas plants have to follow the guidelines of the planning law.

In general, farm biogas plants are established at rural areas. The neighbours have to be informed about the planned project and an application for a building permit has to be submitted at the municipality.

Co-operative biogas plant projects must be integrated into the local plan. This process is complicated and more comprehensive, thus it takes much longer than the integration of farm biogas plants.

Environmental Impact Assessment (EIA)

The EIA Regulation only applies to certain biogas plants which have a substantial impact on the environment. First step of the assessment is a screening indicating if a comprehensive report is necessary or not. A comprehensive EIA report contains a description of the location of the biogas plant, an evaluation of environment impacts, a description of alternatives, a description of possible accidents and redevelopment measures as well as a non technical summary. The procedure of the EIA report generally takes about one year or longer.

Environmental approval

For the construction of a biogas plant in Denmark, it is necessary to get an environmental permission. Biogas plants with a capacity of more than 30 tonnes biomass per day are obligated to apply for an environmental approval even if they do not have to run an EIA report. Usually the local authority (municipality) writes the environmental approval but it is recommended to co-operate with them to avoid extra work.

For the environmental approval it is necessary to have an EIA and a technical description of the environmental engineering.

Land-use plan

A revision of the Land-use Planning Act is in process implying that in the future municipalities have to identify advanced areas where biogas plants can be built. This is done with the intention to accelerate long permission processes.

On the basis of the EIA report a municipality plan complements has to be added to the local plan. Since the Ministry for Environment (Regional Environmental Protection Agency) has a veto right it is recommended to integrate it in the process as soon as possible.

Timetable of the permission process

In the best scenario the permission can be done within two years by the authorities. But in reality the permitting procedure lasts up to almost six years. The necessary time for the permitting procedure depends among others also from the preparation of the biogas project leader. A good preparation for the procedure and a continuous dialogue with the authority can help to accelerate the process. Danish...
experiences have shown that it could be advisable to create a working group in an early project implementation stadium which supports decisions maker on the basis of their expertises. Before getting in contact with the local authorities it takes normally about 3 to 6 months to work out a business plan. Following steps shown in Table 5 have to be followed on the way through the process of approval with several public authorities. Typical for the Danish permission process is public involvement. This leads to a high acceptance of biogas projects in Denmark, but also leads to prolong the whole procedure.
### Table 5: Timetable for biogas plant permitting procedure in Denmark

<table>
<thead>
<tr>
<th>Step</th>
<th>Phase</th>
<th>Timetable for biogas plant permitting procedure in Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Orientation</td>
<td>Project presentation at the local authority</td>
</tr>
<tr>
<td>2</td>
<td>Project</td>
<td>Project will be discussed at the environmental and technical committee</td>
</tr>
<tr>
<td>3</td>
<td>Elaboration</td>
<td>Elaboration of the basis of discussion</td>
</tr>
<tr>
<td>4</td>
<td>Interior hearing</td>
<td>Interior hearing at the local authority</td>
</tr>
<tr>
<td>5</td>
<td>Announcement</td>
<td>Announcement</td>
</tr>
<tr>
<td>6</td>
<td>1st Public phase</td>
<td>Public hearing on the local plan and commune plan complement and VVM</td>
</tr>
<tr>
<td>7</td>
<td>To hold open council(s)</td>
<td>To hold open council(s)</td>
</tr>
<tr>
<td>8</td>
<td>To take in consideration incoming comments</td>
<td>To take in consideration incoming comments</td>
</tr>
<tr>
<td>9</td>
<td>Law of local planning</td>
<td>Law of local planning</td>
</tr>
<tr>
<td>10</td>
<td>Parliamentary committee</td>
<td>Parliamentary committee treats the project</td>
</tr>
<tr>
<td>11</td>
<td>Elaboration of the local plan</td>
<td>Elaboration of the local plan</td>
</tr>
<tr>
<td>12</td>
<td>Concept and internal hearing</td>
<td>Concept and internal hearing</td>
</tr>
<tr>
<td>13</td>
<td>Proposal on environmental committee and advisory board</td>
<td>Proposal on environmental committee and advisory board</td>
</tr>
<tr>
<td>14</td>
<td>Announcement</td>
<td>Announcement</td>
</tr>
<tr>
<td>15</td>
<td>2nd Public phase</td>
<td>Public hearing on the local plan and commune plan complement and VVM</td>
</tr>
<tr>
<td>16</td>
<td>To take in consideration incoming comments</td>
<td>To take in consideration incoming comments</td>
</tr>
<tr>
<td>17</td>
<td>Internal hearing and elaboration of the agenda</td>
<td>Internal hearing and elaboration of the agenda</td>
</tr>
<tr>
<td>18</td>
<td>Approval of environmental committee and advisory board</td>
<td>Approval of environmental committee and advisory board</td>
</tr>
<tr>
<td>19</td>
<td>3rd Public phase</td>
<td>Public announcement</td>
</tr>
<tr>
<td>20</td>
<td>Period for objection for the local plan, the commune plan complement and the VVM</td>
<td>Period for objection for the local plan, the commune plan complement and the VVM</td>
</tr>
<tr>
<td>21</td>
<td>Environmental approval</td>
<td>Application for environmental approval (?)</td>
</tr>
<tr>
<td>22</td>
<td>Treatment of application</td>
<td>Treatment of application</td>
</tr>
<tr>
<td>23</td>
<td>To go through the concept, hearing of concerned persons/groups</td>
<td>To go through the concept, hearing of concerned persons/groups</td>
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<tr>
<td>24</td>
<td>Announcement</td>
<td>Announcement</td>
</tr>
<tr>
<td>25</td>
<td>4th Public phase</td>
<td>Period for objection for the environmental approval</td>
</tr>
<tr>
<td>26</td>
<td>Thermal use</td>
<td>Project application in relation to the plan of thermal use / project approval</td>
</tr>
<tr>
<td>27</td>
<td>Treatment of thermal use and project application</td>
<td>Treatment of thermal use and project application</td>
</tr>
<tr>
<td>28</td>
<td>To go through the concept, hearing of concerned persons/groups</td>
<td>To go through the concept, hearing of concerned persons/groups</td>
</tr>
<tr>
<td>29</td>
<td>Announcement</td>
<td>Announcement</td>
</tr>
<tr>
<td>30</td>
<td>5th Public phase</td>
<td>Period for objection thermal use plan and environmental approval application</td>
</tr>
<tr>
<td>31</td>
<td>Building permission</td>
<td>Application for building permission</td>
</tr>
<tr>
<td>32</td>
<td>Approval for building permission</td>
<td>Approval for building permission</td>
</tr>
<tr>
<td>33</td>
<td>Possible application for by product law</td>
<td>Possible application for by product law</td>
</tr>
<tr>
<td>34</td>
<td>By product law</td>
<td>Approval for by product law</td>
</tr>
<tr>
<td>35</td>
<td>Financing</td>
<td>Financing depends on capital contribution</td>
</tr>
<tr>
<td>36</td>
<td>Application for commumeguarantee</td>
<td>Application for commumeguarantee</td>
</tr>
<tr>
<td>37</td>
<td>Commu appeal for guarantee</td>
<td>Commu appeal for guarantee</td>
</tr>
<tr>
<td>38</td>
<td>Appraisal of alternatives</td>
<td>Appraisal of alternatives</td>
</tr>
<tr>
<td>39</td>
<td>Financing finished</td>
<td>Financing finished</td>
</tr>
<tr>
<td>40</td>
<td>Plant</td>
<td>Possible bid invitation/bidding/contract</td>
</tr>
<tr>
<td>41</td>
<td>Start of construction</td>
<td>Start of construction</td>
</tr>
<tr>
<td>42</td>
<td>Plant phase</td>
<td>Plant phase</td>
</tr>
<tr>
<td>43</td>
<td>Start of running the plant</td>
<td>Start of running the plant</td>
</tr>
</tbody>
</table>
4. The Netherlands

4.1. Legal basis for energy production from biogas in the Netherlands

Before 2004, spreading of digestate produced by co-digestion biogas plants as fertilizer on agriculture fields was not permitted in the Netherlands if they contained other materials than liquid manure. But this changed in 2004 when the government passed a “Positive list” of organic materials used for co-digestion. This means that the minimal input of 50% has to be animal manure. The produced digestate of co-digestion biogas plants remains legally manure and is thus permitted to be spread on agriculture fields as fertilizer.

In general, the Dutch energy sector is liberalised and generally allows the production of electricity and heat. Thus, any interested person or organisation is allowed to produce biogas. However permission is needed to build biogas plants. This is described in the following chapters. Besides that the sale of electricity and heat from biogas as well as the sale of upgraded biogas (biomethane) does not require permission expect from a business licence; moreover it is legally supported by legislation.

The SDE-Programme (Besluit stimuleren duurzame Energie – Incentivising sustainable energy production) offers a price regulation in terms of bonus payments for the production of electricity from renewable energies. It grants a bonus payment to biogas plant operators, which aim to compensate the difference between the market price of electricity from fossil resources and the additional price for electricity from renewable sources or upgraded biogas. This extra payment is given for a period of 12 years. The SDE-Programme is not an investment subsidy. It is a feed-in (tariff) subsidy scheme. However there is no dedicated legislation for heat from renewable energies. The sale/use of heat depends on private agreements and contacts between the producer and the consumer.

The Dutch Gas law (Gaswet) regulates the access to the natural gas grid in the Netherlands. The defined quality requirements are expected to be updated at the end of 2010. Biogas upgrading and gas injection in the Netherlands will be at focus during the next years.

4.2. Legal basis for permitting biogas projects in the Netherlands

The installation and operation of biogas plants in the Netherlands always require permission by public authorities. The legal basis for permitting biogas plants comprises the building permit, planning permission as well as an Environmental Impact Assessment (EIA Report) and an environmental provision (Inrichtingen en vergunningenbesluit Wm); each is described in the subsequent sections. Biogas plants in the Netherlands are strongly connected to the utilization of manure. Thus, each agricultural biogas plant treats manure in large proportions. The permission procedures for manure digestion biogas plants are quite similar in the whole country. Large scale centralised biogas plants have more complex conditions concerning their location in the land-use plan.

In general, provinces as well as municipalities are involved in the permission procedure for biogas projects in the Netherlands. The most important laws concerning the permission of biogas projects are given by the Dutch central government.
M.E.R (Milieueffect rapportage - Environmental Impact Assessment)

The Environmental Impact Assessment Report (EIA) is included into Dutch national law. The provisions for it are content of the Wet Milieubeheer (Dutch environmental law). The Dutch report scheme which is prescribed for the environmental impact assessment is given by the Milieueffectrapportage (M.E.R.). Such a report has to be done if the biogas plant has a larger treatment capacity of more than 100 tons substrate per day. Furthermore, some Dutch provinces have the possibility to regulate guidelines for environmental impact assessment also for small biogas plants with lower capacity in their provincial environmental regulation (provinciale Umweltverordnung (PVM)). Besides that, the Dutch environment legislation requirements are stronger than the one in the European legislation.

In the preparation phase the responsible project coordinator prepares a "startnotitie" which describes the project with its alternatives and environmental impacts. The "startnotite" will be discussed in public. The project coordinator subsequently prepares the EIA which will be proved and evaluated by the responsible authorities. After that, they decide on further measurements to reduce the negative environmental impact.

Involved authorities in the EIA are:

- Ministerie van Verkeer en Waterstaat (Ministry of Transport and Water)
- The respective province
- The respective municipality
- Commissie voor de mileu-effectrapportage (Commission of independent experts)

Building permit

The law regarding spatial planning (Ruimtelijke Ordening (WRO)) which is furnished by provinces identifies local zones in different categories (extensive used areas, developed cultivation developed areas, mixed areas) where it is allowed to build biogas plants.

The land-use plans of provinces are the base of the building permits. The building application must refer to the land-use plan and the application will be denied if it is not conform to it. Thus, the land-use plan is obligatory and determines if the project gets a building permit or not. The national spatial strategy defines the governments’ visions of the rural development and should be considered in the planning.

In general, the current development for the implementation and permission of biogas plants seems to be very good at this time. Since intensive animal husbandry is currently extended, resettlement and development of new places will be needed. In contrast to that, the permission in extensive agriculture areas is nearly impossible because of odour emissions. In mixed areas it is hardly practicable to implement intensive animal husbandry and thus it is also hard to establish a biogas plant.

The energy supply in the Netherlands is not restricted through the land-use plan.

Getting the planning permission

Biogas plants are buildings. According to this fact they need a building permit under consideration of the land-use plan.

The Dutch legislation distinguishes between agricultural and commercial biogas plants. Agricultural biogas plants are integrated into the farm business. Such biogas plants use their own substrates and
D.3.1 Best practice examples for permitting biogas projects

utilize the digestate on own fields. Additionally the plant can be delivered with substrates by external suppliers and users of the digestate.

A commercial biogas plant is not integrated in a farm. The operation of the biogas plant can not be seen as in-house activity. Such plants are in general large scale, centralised biogas plants which digest manure and other organic wastes solely from external suppliers. The produced digestate is utilized on external fields. To get the planning permission for commercial biogas plants particular provisions in the land-use plan must be additionally considered.

Besides the permits which are essential for the implementation of a biogas project, several legislations have to be considered and in some cases compliance has to be proved for the permitting authorities. This legislation includes for example:

- Odour emissions
- Dutch fertilizer law (Meststoffenwet – MINAS)
- Integrated Pollution Prevention and Control Regulation (IPPC), European Directive
- Environmental Protection Act
- Environmental Management Act
- Legislation on veterinary aspects
- Regulations on work safety and safety operation, fire protection

4.3. Responsible permitting authorities in the Netherlands

The permitting procedure for biogas projects in the Netherlands is based on the land-use plan. Depending on the size of the plant and its substrates the municipality or province is responsible (Fehler! Verweisquelle konnte nicht gefunden werden.).

The permitting authority for the permission procedure for small-scale biogas plants, with a treatment or storage of up to 10 m³ substrate, is the municipality.

The province is the permitting authority for biogas plants with a substrate treatment capacity of more than 25 000 m³ per year. Furthermore the province is responsible if the storage capacity of waste (for example specific kinds of permitted co-substrates) increases 1 000 m³ or for biogas plants charged with more than 15 000 m³ of co-substrates produced or delivered by external farmers or suppliers.
Best practice examples for permitting biogas projects

Figure 3: Authorities competences for the environmental provision (Inrichtingen- en vergunningenbesluit Wm) for biogas plants in the Netherlands

4.4. Permitting procedures in the Netherlands

The practical permission procedure in the Netherlands is relative equal among the Dutch provinces. Depending on the plant size and the treated feedstock, the implementation of biogas plants requires approval by local authorities.

The practical formal procedure for permissions requires an M.E.R. (Dutch form of Environmental Impact Assessment - EIA) - depending on the counties environmental act, in case the digesters of the biogas plant are charged with 100 tons or more per day. In some counties the environmental impact assessment is also necessary when the digester capacity is lower than 100 tons per day.

The EIA Regulations are related to a European Union Directive (Directive 85/337/EEC as amended by Directive 97/11/EC on the assessment of the effect of certain public and private projects on the environment), and give planning authorities a means of ensuring that they can take account of the environmental implications of individual developments in their decisions on planning applications.
The EIA Regulations only apply to certain biogas plants as described above. Thus, in a so called "screening" it can be determined whether a full EIA is needed or not. The screening usually includes a meeting between all related parties. However this meeting is not mandatory. When a project requires an EIA applicants can ask the planning authority for advice on the scope of necessary information, which have to be gathered during the EIA and covered in the Environmental Statement, called "scoping". Also the scoping meeting is not mandatory but strongly recommended. After these first steps, the full application can be submitted to the authorities. The actual problem for further developments of the Dutch biogas market is not the complicated or long permitting procedure. It is more affected by the fixed amount of bonus payments for biogas plants which is not sufficient for all applicants.
5. Italy

5.1. Support systems in Italy

Overview

On the subject of renewable energy sources, **Italian Legislative Decree No. 387 of 29 December 2003**, defines "non-fossil renewable energy sources (wind, solar, geothermal, wave, tidal, hydraulic, biomass, landfill gas, sewage gas and biogas). In particular, biomass means the biodegradable fraction of products, waste and residues from agriculture (including plant and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste.

With the electricity system reform, the mechanisms for promoting the use of renewable sources have also been substantially modified. Electricity producers and importers are now obliged to feed "green energy" into the transmission grid, i.e. energy produced by **plants utilising renewable sources (RES plants)**.

The "Green Certificate" incentive system

The renewable energy production incentive system aims to replace the old tariff incentive policy known as Cip6 and switch to a market mechanism based on so-called "Green Certificates". These are securities issued by the **Gestore dei Servizi Elettrici** (the Italian national energy services company **GSE**, formerly GRTN) that certify the production of energy from renewable sources.

Italian Law No. 239 of 23 August 2004 (the "Marzano" Law) reduced the denomination of "Green Certificates" from 100 MWh to 50 MWh.

Green Certificates are real electricity market securities, issued and controlled by the GSE. Their purpose is to stimulate the production of electricity from renewable sources and certify its origin either from plants using renewable sources or from the transformation of plant products or organic and inorganic waste in power plants.

To qualify for certification, a power plant must be classified by the GSE as a plant using renewable sources. Therefore biogas plants that use organic waste and/or plant products to produce electricity are entitled to be classified as RES plants and receive Green Certificates, which are obtained by:

- applying to the GSE for RES plant recognition;
- once recognition is obtained, the GSE may be asked to issue the Green Certificates for the current year;
- the statement made to the UTF (Italian Financial Technical Office) that reports the actual production for the years following the plant's coming into operation must be submitted together with the application.

Demand on the Green Certificate market arises from the fact that producers and importers are obliged to feed in an annual "quota" of energy from renewable sources equal to 2% of the amount imported and/or produced using conventional sources during the previous year. From 2004 to 2006, the obligatory quota increased by 0.35 percent each year (section 4, subsection 1 of Italian Legislative Decree No. 387/2003).

The increases in the obligatory minimum quota for the years 2007-2009 and 2010-2012 will be determined by a decree issued by the Ministry of Economic Development.

Supply, on the other hand, consists of the Green Certificates issued to electricity producers with plants that obtain RES plant classification from the GSE, as well as the green certificates the GSE issues for the energy produced by "CIP 6” plants (Cip6 is a measure adopted in April 1992, which sets incentive
prices for electricity produced by plants fuelled by renewable and assimilated sources. Plants fuelled by assimilated sources include cogeneration plants, plants that use manufacturing and/or industrial process waste, and plants that use fossil fuels if produced from minor isolated fields.

RES plant building works are also in the public interest, as laid down in Italian Legislative Decree No. 387/03. Therefore, besides the issue of the Fire Prevention Certificate by the Fire Department of the Ministry of Interior, all works relating to building and running plants are subject to a single authorization issued by the Regional Government or other delegated entity. Furthermore RES plants that produce less than 3 M\text{Wh} are considered of little significance for air pollution.

"New" Green Certificates

Italian Law No. 222/07, Italian Law No. 244/07 ("2008 Finance Act") and Italian Regulatory Authority for Electricity and Gas Resolution No. 280/07 introduced new incentive mechanisms for plants using renewable sources that came into operation after 31 December 2007. These plants may either be newly built, renovated or upgraded.

The following plants of agricultural interest with rated annual average output of more than 1 M\text{Wh} are eligible for Green Certificates for a period of fifteen years: wind energy (for systems larger than 200 kW); hydraulic power; biomass and biogas from agricultural, livestock and forestry (short rotation coppice) businesses.

Since 1 January 2008, Green Certificates have had a unit value of 1 M\text{Wh}. The number of certificates issued by the GSE is equal to the electricity production multiplied by a specific coefficient according to the source (1.8 for biogas).

Since 2008, the Green Certificates issued by the GSE have been placed on the market at a price (referring to electric M\text{Wh}) equal to the difference between the reference value, fixed upon first application of the laws as 180 euro per M\text{Wh}, and the average annual sale price of electricity recorded for the previous year, as defined by the Regulatory Authority for Electricity and Gas. This annual sale price has been published by the Authority itself by 31 January each year since 2008.

The reference value and coefficients may be updated every three years in order to ensure adequate remuneration for the purpose of promoting the development of renewable energy sources.

All-inclusive flat rate

As an alternative to Green Certificates, upon the producer's request, the production of electricity from renewable sources with a rated annual average of no greater than 1 M\text{Wh}, fed into the electrical system, is entitled to an all-inclusive flat rate of 30 \text{€c/kWh} for a period of 15 years in the case of biomass and biogas from short-production-chain agricultural, livestock and forestry businesses (this rate may be adjusted every three years by Ministry of Economic Development Decree to ensure the adequacy of the remuneration in order to promote the development of renewable energy sources).

After the fifteen-year incentive period, the electricity is paid for at the price defined in Italian Legislative Decree No. 387/03.

"New" all-inclusive flat rate

Italian Law No. 99 of 23 July 2009 introduces a new all-inclusive price of 28 \text{€c/kWh} valid for plants fuelled by “biogas and biomass, excluding liquid biofuels with the exception of pure vegetable oils traceable through the integrated administration and control system laid down in European Council Regulation (EC) No. 73/2009 of 19 January 2009".
The law also stipulates the possibility of combining incentives, without any obligation of proving the origin of the biomass. In other words, a biomass-fuelled plant owned by a farm, or operated in connection with an agricultural, food, farming or forestry company may combine the all-inclusive fixed price, after it comes into commercial operation, with other public incentives with advance capitalization not exceeding 40% of the cost of investment.

Table 6: incentives for the production of biogas applicable in Italy

<table>
<thead>
<tr>
<th>Reference provisions</th>
<th>Subject-matter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian Decree Law No. 79/99</td>
<td>Definition of renewable sources. Introduction of Green Certificates</td>
</tr>
<tr>
<td>Italian Legislative Decree No. 387/03</td>
<td>Obligation for producers and importers to feed in an annual &quot;quota&quot; of energy from renewable sources equal to 2% of the amount imported and/or produced using conventional sources during the previous year. From 2004 to 2006, the obligatory quota increased by 0.35 percent a year.</td>
</tr>
<tr>
<td>Italian Decree Law No. 239/04</td>
<td>The &quot;Marzano&quot; Decree: Electricity producers obliged to feed 3.05% from renewable sources into the transmission grid.</td>
</tr>
<tr>
<td>Legislative Decree No. 152 of 3 April 2006</td>
<td>Duration of Green Certificates increased to 12 years.</td>
</tr>
<tr>
<td>Italian Law No. 222/07</td>
<td>Introduces new incentive mechanisms for plants using renewable sources, which came into operation after 31 December 2007. These plants may either be newly built, renovated or upgraded. Biogas plants with a rated average production of no more than 1 MWh, fed into the electrical system, are entitled to an all-inclusive flat rate, for a period of 15 years, amounting to 30 €/kWh in the case of biomass and biogas from farming, livestock and forestry (short rotation coppice) businesses.</td>
</tr>
<tr>
<td>Italian Law No. 244/07</td>
<td>Introduces a new all-inclusive price of 28 €/kWh valid for &quot;biogas and biomass&quot; plants.</td>
</tr>
</tbody>
</table>

Table 7: incentives for the different applications of biogas in Italy

<table>
<thead>
<tr>
<th>Application of biogas</th>
<th>power</th>
<th>power/heat</th>
<th>heat</th>
<th>Injection to the gas grid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed-in tariff</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Investment subsidies</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Green Certificates</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

5.2. Authorization procedures for biogas plants in Italy

Overview

The building and operation of electricity generation plants must be authorized by various local authorities according to their different jurisdictions. The complexity of the authorization procedure is still one of the major obstacles to the increase in use of renewable sources.

Section 12 of Italian Legislative Decree No. 387/2003, which defines plants that produce electricity from renewable sources as "urgent works in the public interest", introduced important instructions for "streamlining and simplifying authorization procedures".

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Plants with rated power < 200 kWh: the work commencement notice

Italian Law No. 244/07 (the 2008 Finance Act) introduced some important improvements to Italian Legislative Decree No. 387/2003, making it possible to open small plants with a work commencement notice.

The work commencement notice is one of the most important town planning instruments in the building industry. It is submitted by an authorized professional (engineer, architect or surveyor registered in the relevant professional register), which "asserts" - i.e. clearly declares - the works to be performed.

The consent by silence mechanism may be applied to work commencement notices: if no news is received from the competent Public Administration within a set time (30 days at present) of submitting the notice, implicit authorization to begin the work is understood to be granted at that set time and therefore work may begin. This authorization is considered a true administrative act.

A work commencement notice is drawn up on a specific form and must include a technical report and the draft plan of the plant. It has to be submitted to the Engineering Department of the Town or City Council concerned.

In the case of plants installed in buildings or on sites protected by town, historical or environmental planning restrictions, the necessary local permits, such as environmental or park authority clearance, must be attached to the work commencement notice.

There are two different types of architectural constraint that apply to renovations, both of which are laid down in the Code of Cultural Heritage (Decree Law No. 42 of 22 January 2004). One is the environmental constraint, which is enforced by local authorities through their development plans or sometimes through specific landscape plans.

The other is the cultural constraint, defined more precisely as an artistic, historical, archaeological and ethno-anthropological constraint. This constraint applies to individual "items", including real estate, and is enforced by the State, i.e. by the Superintendence under the authority of the Ministry of Cultural Heritage and Activities.

Plants with rated power > 200 kWh: the Single Authorization

For plants producing over 200 kWh, Italian Legislative Decree No. 387/2003 laid down a simplified procedure called the "Single Authorization". It is regulated at the regional or provincial level and can save time and streamline the authorization procedure.

The regional regulations should be based on "national guidelines for the purpose of obtaining the Single Authorization". However, to date, these guidelines have not yet been published. In the absence of the national guidelines, many regions have moved on their own, providing different rules for granting the authorization.

In addition to plant building, "alteration, upgrading, total or partial reconstruction and reactivation, as defined by the laws in force, as well as the associated works and infrastructures required to build and operate the plants themselves" are also subject to the Single Authorization procedure.

The Single Authorization, which authorizes the building and operation of the plant, gets its name from the fact it is issued at the end of a "single procedure", during the Local Authorities Planning Conference, attended by all the authorities concerned. The document is then issued by the regional governments, or the provincial governments on behalf of the regions. It is important to stress that the Single Authorization is "whenever necessary, an alteration to the planning instrument".

The Local Authorities Planning Conference is an instrument that helps simplify decision-making processes. At Local Authorities Planning Conferences, all opinions, permits, clearances and the consent of all the authorities involved in an administrative procedure are produced.
The single procedure takes place within 30 days of submission of the application for the Single Authorization. Within 180 days, the Local Authorities Planning Conference is required to complete the procedure and express an opinion.

If disagreement should arise between the parties involved, the decision is referred to the Regional Council Executive Committee. The only exception is where the dissent is "expressed by a state administrative body in charge of protecting the environment, landscape or historical and artistic heritage," such as the Superintendency of Cultural Heritage.

The Single Authorization contains, all together, a series of acts that would otherwise be spread between different bodies (regional, provincial, town and city governments, associations of mountain municipalities, Superintendencies, State Forestry Corps, Regional Agencies for Environmental Protection, Local Health Authorities, etc.) including:

- building permission
- authorization to build and commission transmission lines
- hydro-geological permit
- environmental permit

**Departmental Order of 10 September 2010**

Establishes guidelines for the approval of plants using renewable sources and simplifies the authorization procedure. Electricity generation plants fuelled by biomass, landfill gas, sewage gas and biogas used in cogeneration plants with a maximum generating capacity of less than 1,000 kWh (small-scale cogeneration) or 3,000 kWh may be built with a work commencement notice.

The Departmental Order is awaiting implementation and application by the regional governments.

**Connections to the transmission grid and authorization procedures**

The authorization procedure for plants fuelled by renewable sources, in most cases, obliges producers to prepare and submit a series of documents to the various bodies responsible for issuing permits (town and city councils, Superintendency of Environmental and Architectural Heritage, Fire Brigade, etc.). The complexity of the procedural requirements depends on the size of the plant to be authorized (under certain thresholds a simple work commencement notice is enough) and on any regional regulations regarding the Single Authorization.

Normally, the same companies that design and build plants deal with applying for the necessary building permits. This service obviously has a cost, but frees the owner of all the tasks that stem from handling the authorization procedure directly.

During the procedures for connection to the electricity transmission grid, distribution companies - when drawing up the cost estimate for the connection - are required to provide the applicant free of charge with all information and documentation on the steps necessary to obtain the permission to build and operate the plant.

When applicants accept the quote for the connection (within 45 days of its validity), they have to indicate whether they intend to deal with the authorization procedure themselves or completely or partially entrust it to the distribution company that builds the connection. In the latter case, applicants are required to pay the distribution company a fee "determined on the basis of transparent and non-discriminatory conditions (...)”.

When dealing with the distribution company, applicants may opt for one of the following three alternatives:

- The producer asks the distribution company to prepare only the documentation required to apply for the permits (which may include technical drawings).
The producer asks the distribution company to deal with the entire authorization procedure, freeing itself of any bureaucratic tasks.

- The producer explicitly declares that he/she will deal with the entire authorisation procedure. In this case, the producer becomes solely responsible for all the procedures necessary for the issue of permits.
Table 8: Authorization procedures for biogas plants in Italy

<table>
<thead>
<tr>
<th>Reference provisions</th>
<th>Functionality</th>
<th>Authority</th>
<th>Responsibility/Recurring assessment</th>
<th>Costs &amp; time requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian Legislative Decree No. 387/2003</td>
<td>defines renewable electricity generation plants and introduces important directions for rationalizing and simplifying authorization procedures. For plants &gt; 250 kWh, it lays down a simplified procedure called the &quot;Single Authorization&quot;.</td>
<td>national government/local government</td>
<td>law “the deadline for completion of the procedure laid down in this subsection may not in any case exceed one hundred and eighty days”</td>
<td>in practice, it is estimated that the authorization procedure for a biogas plant in Italy takes an average of 12 months.</td>
</tr>
<tr>
<td>Italian Law No. 244/07 (&quot;2008 Finance Act&quot;)</td>
<td>makes it possible to open small plants (250 kWh) simply with a work commencement notice.</td>
<td>Local administration and Superintendency of Environmental and Architectural Heritage.</td>
<td>law 30 days. The consent by silence mechanism may be applied to the work commencement notice: if no news is received from the Public Administration within 30 days of submitting the notice, implicit authorization to begin the work is understood to be granted at the 30-day deadline and therefore work may be begin.</td>
<td></td>
</tr>
<tr>
<td>Italian Presidential Decree No. 380/2001</td>
<td>defines and governs the work commencement notice. This administrative document is one of the most important town planning instruments in the building industry.</td>
<td>Local administration and Superintendency of Environmental and Architectural Heritage.</td>
<td>law 30 days.</td>
<td></td>
</tr>
<tr>
<td>Resolution ARG/elt No. 99/2008</td>
<td>Code for Active Connections, containing the “terms and conditions for electricity grid connection with the obligation to connect third party electricity generation plants”.</td>
<td>Regulatory Authority for Electricity and Gas</td>
<td>permits € 100 - 2,500 just for the connection request. The price of the connection, which covers the cost of the work carried out by the distribution firm, varies, and is the most significant amount a company that intends to build a plant has to spend. From 20 to 60 working days to draw up the cost estimate. From 30 to 90 working days to build the connection.</td>
<td></td>
</tr>
<tr>
<td>Resolution ARG/elt Nos. 179/08, 205/08, 130/09 and 125/10</td>
<td>amendment to the Code for Active Connections</td>
<td>Regulatory Authority for Electricity and Gas</td>
<td>permits</td>
<td></td>
</tr>
</tbody>
</table>


### Italian Legislative Decree No. 152/2006

Environmental Consolidation Act. Contains regulations for plant building and management. In particular, it defines which plants have to undergo an Environmental Impact Assessment (EIA) procedure. It defines which by-products may be used. It governs atmospheric emissions.

### Italian Law No. 129/2010

Defines which by-products may be used in a biogas production plant.

### Departmental Order 10-9-2010

Guidelines for the approval of plants fuelled by renewable sources. Simplifies the authorization procedure. Decree. Must be implemented by the Regional governments.
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