Bioenergy can make an important contribution to a sustainable energy supply world wide. Thus, several important aspects must be considered to ensure a proper environmental performance of bioenergy installations, both from a local and from a global perspective.

The permitting procedures should lead to an optimal ecological and economic performance of bioenergy installations, according to the current European and national legislations, and ensure that these installations make a contribution to the global environment and the local economy, also respecting also local environmental conditions.

Several prejudices associated with bioenergy technologies must be addressed and overcome, in order to ensure an objective analysis of the projects and avoid endangering the valuable contribution that the bioenergy sources can make to a sustainable energy supply around the globe.

Further Information about this study and its results can be found under:
http://ec.europa.eu/energy/renewables/bioenergy/installations_en.htm

PERMITTING OF BIOENERGY INSTALLATIONS IN THE EU-27

Practical recommendations based on a study of 130 real cases

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Cover Source: Econcern

Benchmarking of Permitting Procedures for Bio-Energy Installations in the EU-27

About the study

Recognizing that one of the major non-technical barriers for the development of bioenergy projects is often the permitting procedure, the Directorate General for Energy and Transport of the European Commission has called for a tender of a study on benchmarking of permitting procedures for bio-energy installations and guidelines for streamlined authorization processes in the EU-27.

A consortium formed by Ecofys International and Golder Associates conducted this study during 2008.

Materials and Methods

Based on the analysis of more than 130 real cases of licensing processes covering biofuel, biogas, biomass combustion and co-firing technologies, Ecofys International and Golder Associates have identified the key factors influencing the outcomes of the permitting procedures (lead time, costs and success or failure) and proposed solutions for the identified bottlenecks.

A questionnaire was developed to gather the necessary information for the analysis. The information gathered was mainly related to:

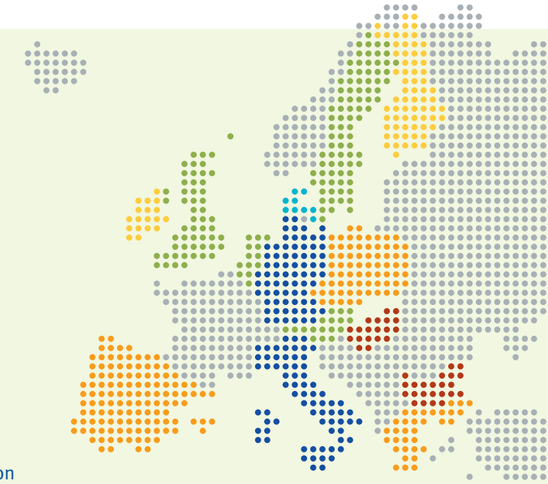
- Content related information: type of installation, feedstock, scale of the installation, location of the plant, etc.
- Process related information: level of expertise of applicant, authorities and other stakeholders (NGOs or inhabitants, etc), information available, communication of the project, etc.
- Procedure related information: legislative framework, interaction between different permits, number of activities needed during the procedure, etc.
- Outcome related information: lead times of every applied permit, costs of permitting, number of objections and higher appeal, outcome (permits granted or not granted, etc).

The information gathered was statistically analyzed, correlating the outcomes with the different indicators, in order to determine the factors with higher levels of influence in the outcomes of the permitting processes.

Main Outcomes

Number of Permits and Procedural Steps

Considering permitting procedures more as a series of activities rather than a series of permits, the executed analysis pointed out that the lead time is mainly influenced by the number of process steps involved. A low number of necessary permits, which require a large number of process steps (e. g. Environmental Impact Assessment, appeals between consecutive permits) most likely leads to a higher lead time than the vice-versa situation.



Lead time and bioenergy technologie

The analysis revealed that the second main influencing factor on the average lead time is the type of conversion technology. The effect is indirect since more complex technologies require more activities.


Source: Econcern

Best practice example: Biogas plant in Germany

Production capacity 500 kW_e electricity and 500 kW_{th} heat, based on energy crops. Integrated Permit. Scale of the project under the threshold for public participation and EIA. Plant was granted a permit in 6 months. A premature start of construction was requested and granted, as no major constraints were expected by the authority.

Keys for success:

- Location was selected with agreement of the authorities, after an evaluation of four possible locations
- Early involvement of the authorities in informal discussions prior to the application and in the location finding process
- Gaining of trust and therefore a constructive role of stakeholders
- Responsible contact person remained, making communication easier and more effective
- Permit advisor already had experience in permitting procedures


Source: Econcern

Best practice example: Bioethanol plant in Hungary

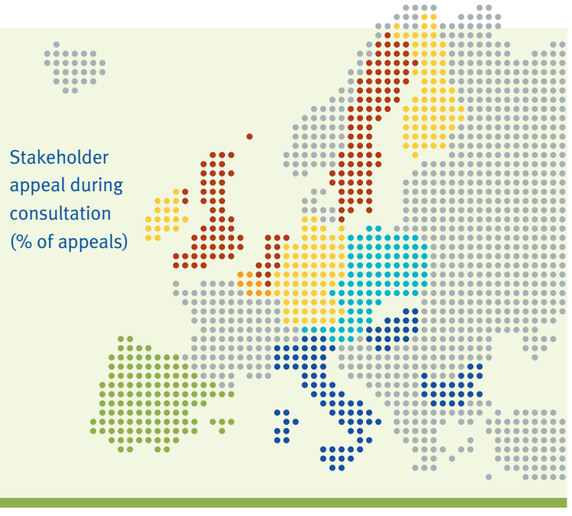
Bioethanol production plant in Hungary. Production capacity over 1 Mt / year, based on energy crops. Twelve different permits needed. Plant permitted in 23 months with no appeals.

Keys for success:

- Located in an uncritical area
- Used feedstock is not considered as waste
- Already existing factory location
- Early involvement of the local residents, the inhabitants of the neighbouring settlements and the authorities in informal discussions prior to the application and public information campaign
- Gaining of trust and therefore a constructive role of stakeholders

Public Resistance

The most common reason for appeal is the expected emissions of the bioenergy installation, followed by traffic movements, land use and sustainability aspects. In case of a higher appeal, emissions are again the main reason for objections, followed by sustainability issues. In case of emissions, the most common aspects named by the appellants are noise, smell, NOx and fine dust.



In approximately one third of all analyzed cases, permits were appealed or objected. After the final decision of the responsible authorities, still 13 % of the cases (17 cases in total) were appealed to higher authorities. The appellants are commonly the residents and NGOs, where the most common reasons for appeal are emissions and sustainability issues. As expected, the highest resistance was found, against projects based on complex and / or contaminated materials.

Around 60 % of the cases which were appealed by NGOs, were appealed to higher authorities.

Costs

The costs are highly inhomogeneous and strongly vary from case to case. However, the major driver for the costs is the inclusion of the environmental impact assessment (EIA). The execution of the EIA at least triples the absolute costs of the integral procedure for a specific biomass technology combination.

General Recommendations for Project Developers

- Make a thorough review of all permits and steps needed for the permitting of the projected plant. Ask for advice if the information is not easily available. A good overview of the serial and parallel steps, as well as of the responsible authorities for each procedure, will provide valuable help in planning the whole permitting process.
- Recognize critical aspects of the applied technology early in the planning, in order to search for economical alternatives (use of Best Available Technology). For example, consider the use of the best flue gas cleaning technology or the use of closed halls with air filters for handling with wastes (MSW) for installations near to habited or protected natural areas.
- Contact the permitting authorities in early stages of the project, in order to overcome prejudices and to include eventual exigencies in the planning of the project. The most widely spread prejudices and objections against this kind of installations are dust and NOx emissions, smell, excess of traffic movements and noise. The planning for the construction and operation of the installation and their presentation to the authorities should handle these aspects explicitly and present plausible solutions.
- In some cases, an information campaign about the planned installation addressed to the residents and, if needed, to involve NGOs, in early stages of the process, may help to overcome prejudices of the inhabitants and reduce the risk of appeal. For more complex projects, the advice of professional consultants (technical experts, negotiators, etc) could help to establish a good communication channel with the different stake holders. It is very important to reduce the risks of appeal and especially higher appeal by involving the community in the process and including their concerns as far as economically possible.
- When possible, take into account the experience of the permitting authorities on the proposed technology for the selection of the location of the planned installation. In some cases, it could be very useful to provide the authorities with independent information from recognized advisors on the actual state of the art of the technology, being honest in showing the problems and constructive in searching for solutions.
- Sustainability of the feedstock is a critical issue and might increase the resistance of NGOs or residents against the project. It could be very helpful to take this into consideration during the planning of the installation and to gather information about the currently discussed sustainability schemes for biomass resources in order to incorporate measures to ensure the compliance of the sustainability criteria.

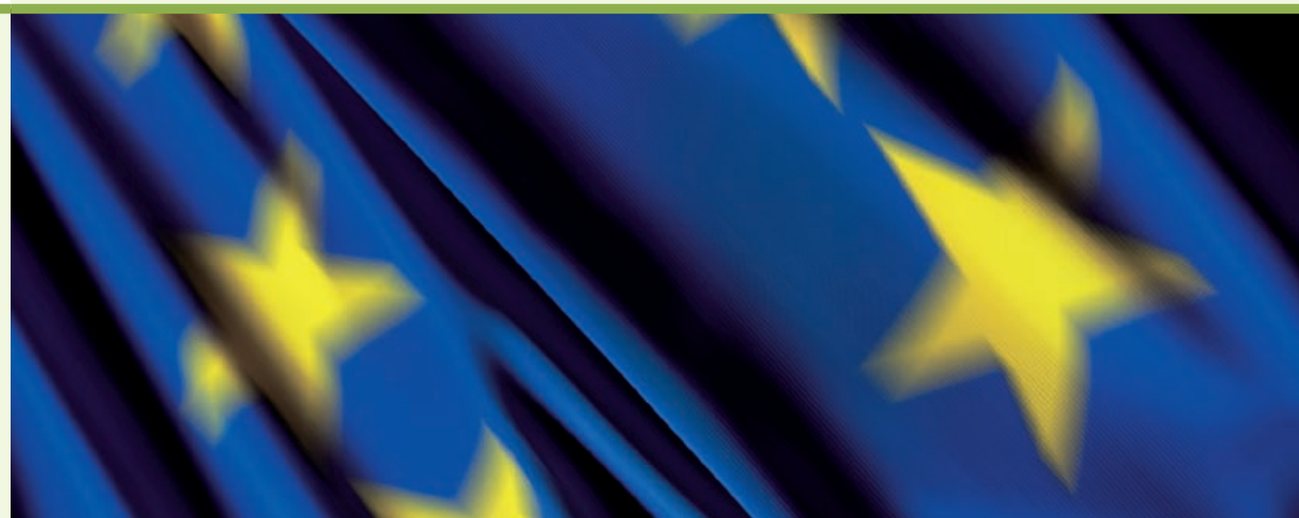

Source: Econcern

Best practice example: CHP-Power in the Netherlands

Electrical Capacity of 50 MWe based on demolition wood, waste wood and industrial by-products. Six different permits were needed including EIA. Permitted in two phases: first permit for the use of clean biomass (11 months) and a second phase where the use of waste wood was permitted (10 months). Various appeals were made. No higher appeals.

Keys for success:

- Two step approach
- Thorough planning of the permitting activities prior to application
- Early involvement of the authorities and NGO's in informal discussions prior to the application and public information campaign and constructive role of Stakeholders
- Involvement of a consulting company with experience in permitting procedures and knowledge of Bioenergy installations
- High level of expertise of the permit advisor
- Involvement of experts for critical elements of the permit



General Recommendations for NGOs

- Bioenergy installations can make an important contribution to the local economy and to the accomplishment of regional, national and European CO_2 emission and renewable energy targets. The construction of these kinds of installations should therefore be analyzed, not only from a local perspective, but considering also regional and national policies.

- If there are concerns about the effects on the local environment of the planned installation, it might be convenient to look for constructive contact with the project developer in order to try to find solutions together. The direct, honest and constructive communication with the project developer could lead to desirable changes in the planning, avoiding an eventual costly and time consuming legal process.

- Search for information on the technology in general and especially for the consequences on the specific location. The engagement of independent advisers or consultants to judge the implications of the facility on people and the environment might be useful to gain a better and more objective overview on the possible effects of the operation of the installation.

- The sustainability of the used feedstock is clearly one of the key issues for the environmental performance of bioenergy installations. If there are doubts or lack of information about the precedence of the feedstock, it might be useful to contact the project developer to raise questions about it, or even to inform him about the constraints and possible alternative solutions.

- There might be cases of bioenergy installations which are facing unjustified strong resistance from the neighbours or other kind of purpose-driven organizations, although the effects on the local environment are considered as minor or marginal. In these cases, it could be very useful to disseminate objective information and to mediate between the developers and the appealing people or organizations in order to make the potential contribution of the bioenergy installation to the global environment become a reality.

General Recommendations for Permitting Authorities

- Bioenergy installations can make an important contribution to the local economy and to the accomplishment of regional, national and European CO_2 emission and renewable energy targets. The bottlenecks for the construction of these kinds of installations should therefore be analysed, not only from a local perspective, but also taking regional and national policies into consideration.

- A catalogue of best practice examples with contact details should be created so that local, regional and national authorities can easily access the experience and lessons learned of other authorities when dealing with new or less known technologies and systems.

- Coordination of work within permitting authorities is needed to avoid excessive information exchange and the associated amount of repetitive work. This coordination could take the form of a "one-stop-shop", where all relevant authorities and stakeholders responsible for issuing a permit meet to discuss an application and decide together on whether a bio-energy plant should get approval.

- In order to ensure transparency and to decrease the work load of authorities, the full set of criteria needed to gain permits should be published, listing all important requirements to obtain the authorisations needed and informing the applicants as early as possible about them. Thus, critical aspects may be included in the planning and the application stages.

- A preliminary meeting with the applicants for a screening of the requirements (contents of an eventual EIA, required protection and mitigation measures, etc) could also be very valuable to reduce any misunderstandings or errors in the application process and to accelerate the process.

- In order to increase the knowledge base inside the permitting authorities, it could be useful to set up an in-house pool of experienced employees, who have previously participated in former similar permitting procedures and can advise others during the process of new permitting applications. This could be complemented with regional or even national networks of experts within the permitting authorities. In that way, the necessary search for information, as well as the needed exchange of information, could be managed more efficiently.

- In case of a lack of experience with new technologies, external advice could be helpful to clarify questions related to the technologies, the possible impacts, the mitigation measures, etc.

- Identify suitable locations which could be designated for industrial activities or for small-scale bio-energy production. It is also advised that authorities should consider how best to use local biomass waste-streams for local energy purposes (heating, electricity or transport).