



EUROPEAN SMALL HYDROPOWER ASSOCIATION

ADMINISTRATIVE BARRIERS FOR SMALL HYDROPOWER DEVELOPMENT IN EUROPE

1	Hydropower situation in Europe	2
2	Hydropower Potential in Europe	2
3	Administrative barriers related to Hydropower Development	3
3.1	How long does it take and what are the costs of getting the necessary licenses for SHP?	3
3.2	What are the different barriers causing the delays/increasing the costs of getting licenses?	4
3.3	What are the approval rates for getting permissions for SHP ?	5
3.4	What Community initiatives could be taken to simplify the administrative procedures/reduce administrative barriers for the development of SHP	5
4	Overview of Administrative Barriers in EU Member States	8
4.1	Administrative Barriers in Italy	8
4.2	Administrative Barriers in Spain	10
4.3	Administrative Barriers in France	11
4.4	Administrative Barriers in Sweden	12
4.5	Administrative Barriers in Austria	13
4.6	Administrative Barriers in Germany	14
4.7	Administrative Barriers in Lithuania	14
4.8	Administrative Barriers in Latvia	15
4.9	Administrative Barriers in Estonia	15
4.10	Administrative Barriers in Poland	15
5	Annex 1 Administrative Barriers for SHP development in Portugal	17
6	Annex 2 Time to get all permits to develop a new SHP in Europe	18

This paper summarizes the information gathered by ESHA through a survey to its members. The paper also builds on the results of two IEE Projects: the Project SPLASH and the Project SHERPA; more information on these projects is available at www.esha.be



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1 Hydropower situation in Europe

Hydropower now accounts for around 80% of electricity generated from renewable sources in Europe, and 19% of total electricity production in Europe. Electricity generation from SHP contributed about 3% to the total electricity generation in Europe in 2005. Hydropower, despite being a mature technology (in comparison with other RES) with a vast potential already exploited, has still a significant untapped potential, not only in the development of new plants (of special interest for Europe, concerning very low head Small hydro plants), but also in the upgrading (increase of efficiency and electricity production as well as environmental performance) of old ones.

Not only; is it an affordable, competitive, clean, and efficient, without greenhouse gas emission technology, but in many cases it is a flexible source of electrical power, when associated with a reservoir (lake, dam, etc.). The possibility of being able to modulate quickly the electricity production thus dresses a particular importance, especially with the increase of intermittent sources in Europe.

2 Hydropower Potential in Europe

According to the RES EU Export Masterplan 2002 the European gap between exploited and economic potential is approx. 250 TWh/year, corresponding to 55 GW installed capacity. A further amount of **450 TWh/y (100 GW installed capacity)**, seems to be technically exploitable, but not yet in economic terms. Within this potential 46TWh/year¹ can be the SHP contribution.

Of special interest for Europe, from both the economic and environmental point of view are:

- The exploitation of the high potential for **upgrading and refurbishing**. In France alone, it is estimated that with the existing 25 GW of installed capacity (most machines are 40-50 years old), a 5% increase efficiency of these machines will lead to a production increase of 4 TWh that represents 1 000 turbines. **"Upgrading" may represents a 5% potential of the European hydroelectric production: this represents approximately 30 TWh for Europe (on a total production of 580 TWh)**
- Developing **multipurpose plants** (electricity production combined with drinking water supply systems, waste water treatment plants, irrigation channels) where the infrastructure is already existing.
- At the same time a large proportion of the new potential in Europe involves **low-head and very low head plants**. It is estimated that **1 to 1.5 GW** can be installed in Europe using existing dams, weirs, irrigation infrastructures etc, with a very low environmental impact as the infrastructure already exists. This will generate 6-7 TWh/year.

This huge untapped potential is still available and it can be exploited only by:

- **Supporting R&D activities** (New turbines concept Very Low Head SHPs, lab development, pumped storage research, R&D activities aimed at implementing the WFD and avoiding as much as possible production losses, reducing costs in environmental mitigation technology etc.)
- **Stable financial Support Systems**
- And reduce **administrative barriers**

¹ Source TNSHP 2005

3 Administrative barriers related to Hydropower Development

Indeed the main non-technical problem that constitutes an obstacle to the development of small hydro is the difficulty in obtaining the necessary authorisations to build a new site. Apart from the very long time required to process them, procedures vary strongly from one country to another, or even, for federal states, from one region to another.

3.1 How long does it take and what are the costs of getting the necessary licenses for SHP?

A recent survey carried out by ESHA to SHP associations in Europe show that the average length of administrative procedures varies from **12 months in the best-case scenario in Austria (but little new projects are being developed) to 12 years in Portugal**. In most New EU Member States the average time to get all licence is considerably shorter than in the old European Countries. However what is more significant is that in almost most MS of the EU only a few dozen permissions have been granted recently.

Different types of licences are required regarding the following issues:

- Energy generation,
- Impact on water quality, flora and fauna of the river, and all environmental aspects
- Construction requirements,
- Connection to the grid,
- Landed properties,
- Other Procedures

Which are under the **responsibility of different authorities**. In this context, the procedures not only vary from one country to another, but also within a country from one region to another and even often in the same region, from one project to another.

These procedures - that are **far from being transparent, objective and non discriminatory**- in some cases are supervised by several local administrations, very sensitive to pressure and lobby groups, which multiply the number of interlocutors, and extend the time to take decisions (up to 58 permits from different administrations are necessary in some Italian locations). In addition, the project has to be made public so that people can react.

As a result, the process in some MS can last up to 10 years (for new developments), which discourages the potential investor who will switch to another more attractive RES project or other locations outside the EU.

For **refurbishment and upgrading plants** the situation is generally easier (but not always²) yet **still various permits are still needed** just for upgrading or refurbishment of a plant. Sometimes project

² **Hägerums Kvarn SHP plant in Sweden** The original SHP plant was shut down in 1996. The new owner wanted to increase the capacity to 170 kW (an increase of about 40 percent) and a new licence was needed. The complete procedure took 6 years and a total cost of 45 000 € Main reason: Undercapacity at the environmental court and that an association opposing the project was given too many chances to request investigations that showed not be relevant. The final permission was given in 2005 **Ljungå SHP plant in Sweden** The plant is now under construction and will have a capacity of 1 200 kW. The time to get a licence has taken more than 13 years. It received its final permit in 2006. At the site was an earlier, smaller plant that was shut down about 40 years ago. The main reasons have been a very strong resistance from the regional authority coupled with a not enough professional behaviour from the project team.

developers are requested to conduct EIA of existing infrastructures!. At the end of the concession period and the liberalization of the market, many owners of hydropower plants will not invest in refurbishment since they do not know if the concession will be renewed for them in the future. Some SHP associations of developers have requested to give special rights of preference to the previous owner of the concession.

The cost of required permits (they include mainly hydrological and environmental assessment, preliminary designs, permits and approvals (for water, land use and construction), land rights, interconnection studies, power purchase agreements (PPA), project management and financing fees) varies from country to country with an average from **10 000 to 30 000 euros** for a request of authorisation. This amount is lost if the authorisation is denied. On average for A small hydropower plants the range of investment costs varies in a range of 1000-3000 Euros/Kw,. The financial investment is recovered in 10-20 years.

3.2 What are the different barriers causing the delays/increasing the costs of getting licenses?

Administrative barriers

Numerous institutional barriers exist, the main one being, in many countries, the **difficulty in getting the concession** to use and divert water from the river (and the renewal of the concession after the concession period). Difficulties in **gaining affordable connections to the grid** are also common, as are very long procedures in order to get all permits since **hydro operators have to deal with many administrations** (in Portugal or Spain it can last up to 12 years).

Co-ordination between different administrative authorities is not working successfully as regards deadlines, reception and treatment of applications for authorizations.

Time limits for responses from the Administration are not usually respected. Developers have to undergo successive public consultations on the same project. There are **no real “fast track”** procedures, especially for smaller projects.

Environmental barriers

A non-consistent or coherent **implementation of the WFD** will in fact cause a remarkable reduction of SHP production combined with higher costs. Already in some member states (Germany, Austria), the implementation of the WFD is being considered as the main barrier for further SHP development. Solutions may be found in a more precise definition of some terms in the WFD to make its transposition clear and predictable. A solution should be found on how to overcome this.

Therefore, the implementation of the WFD and the RES-e implementation have to be consistent. To ensure a better integration between the different policies an increase in transparency in decision-making is needed. There is room for significant progress in policy integration by enhancing the recognition of the different interests, fostering the co-operation between the different competent authorities and stakeholders, and promoting more integrated development strategies. Integration between water and energy policies is beneficial since it will create synergies and avoid potential inconsistencies as well as mitigating possible conflicts between water users.

Moreover in some countries there are **even forbidden rivers**, where no hydropower development can be carried out or even investigated. Hydropower is very site specific because rivers are individual and, as such, any generalisation lacks scientific rationality behind it. Here, there is a need to re-discuss the classification of sites forbidden to hydropower and the criteria used for such classification in a transparent process involving all stakeholders.

The small hydro power situation clearly points out how a good support system in terms of economic revenues (support schemes- feed in tariff or green certificates as in Austria, Germany, Italy, Spain), or the setting of ambitious targets, are not sufficient to overcome the administrative and environmental barriers that prevent small hydro power from developing all its untapped potential. Without authorizations no development is possible and therefore support schemes favouring competitive prices become useless, not only to promote SHP but also to achieve 2010 objectives.

3.3 What are the approval rates for getting permissions for SHP ?

It is not easy to state the **approval rates** for SHP projects in Europe, here again indeed, the situation is very different from one country to another. It is not easy to state it for 2 reasons, there is a lack of transparency and information where most public authorities hardly publish this kind of information; in many cases the majority of installations wait very long for a response (the authorisation hasn't been denied but nor accorded, so you cannot establish a rejection rate).

3.4 What Community initiatives could be taken to simplify the administrative procedures/reduce administrative barriers for the development of SHP

There is a need for investigating the possibilities for simplification and harmonisation of administrative procedures: Set up a single reception point for authorisation applications, ensure a co-ordination between the different administrative bodies involved and the establishment of reasonable deadlines. Establish a “*fast-track*” planning procedure for Small hydropower and for refurbishment- nowadays the same procedures are applied for a 50 MW plant than for a 60 kW one. Sometimes it is even more difficult to refurbish an old mill than to build up a new 30 MW gas power plant³. Where applicable, create the possibility of establishing mechanisms under which the absence of a decision by the competent bodies on an application for authorisation within a certain period of time automatically results in an authorisation. At the end of the concession period and the liberalization of the market, many big utilities, owners of hydropower plants will not invest in refurbishment, since they don't know if the concession will be renewed for them in the future.

Proposals for simplification administrative procedures for Small hydropower

Simplification and harmonisation of administrative procedures
One possibility one stop- shop that coordinates all required licences that will be useful to streamline this process. The setting up of a single reception point for authorisation applications.
Simplification and homogenization of procedures. Standard process schemes split into footsteps with timeframes that have to be respected. To harmonize administrative

³ APPA info (22 July 2006)

<p>procedures at the EU level, while taking into account national specific conditions and objectives.</p>
<p>It would be useful to prepare the best practice guidelines for administrative procedures.</p>
<p>Ensuring co-ordination between the different administrative bodies involved and the establishment of reasonable deadlines.</p>
<p>The establishment of a “<i>fast-track</i>” planning procedure for Hydro producers. Specially for smaller projects and for refurbishment and upgrading.</p>
<p>Where applicable, the possibility of establishing mechanisms under which the absence of a decision by the competent bodies on an application for authorisation within a certain period of time automatically results in an authorisation. Indeed, Community Legislation should be reinforced by establishing the principle of positive administrative silence.</p>
<p>The introduction of training programmes for the personnel responsible for the authorisation procedures. Regional expert administrative teams to base licensing processes on a good know-how of hydropower and water quality issues Also Campaigns on the benefits of hydropower for general public and local population.</p>
<p>Request to the Member States and also regional authorities to publish data and information about SHP targets, approval rates and duration of the licensing procedure. They are requested from time to time to monitor the administrative procedures in order to prevent unjustified requirements, to prepare the best practice guidelines for administrative procedures.</p>
<p>At the end of the concession period to give special rights of preference to the previous owner of the concession, to promote upgrading and refurbishment.</p>
<p>National Hydro Development Council where administration and stakeholders meet to monitor processes’ efficiency.</p>
<p>The identification, at national, regional or local level, of sites suitable for establishing New capacity for generating SHP electricity, and for refurbishment and upgrading.</p>
<p>Establish that where there is a river basin plan approved (or other water protection regulations) the local authority cannot introduce other environmental restrictions (e.g. an higher reserved flow) without the support of any scientific research or study.</p>

<p>Possibility of increasing by 20% the installed capacity working on the existing power stations without it being necessary to reconsider the licenses.</p>
<p>Possibility of exploiting the hydraulic power on the existing weirs without formal procedure.</p>
<p>In relation to the implementation of the WFD the identification and share of good practice approaches to managing the adverse impacts of water uses on the hydromorphological characteristics of surface water bodies. So the development of guidance documents on how to integrate different policies. The improvement of CO2 should be also used in the ecological analysis.</p>
<p>In relation to the implementation of the WFD: Revision criteria no-go areas</p>
<p>In relation with the implementation of the WFD: Residual flow setting is a hidden barrier. Local authorities in charge of authorization process set residual flow on personal judgment largely beyond minimum legal value without any water quality and fish impact study.</p>
<p>Create transparent and fair connection terms to the grid where cross subsidies are avoided and with a price structure that reflects the actual costs.</p>
<p>Further harmonise and strengthen the rules on grid access for and transmission of renewable electricity in favour of renewable energy technologies, and secure Member State transposition of existing legislation on grid access.</p>

4 Overview of Administrative Barriers in EU Member States

4.1 Administrative Barriers in Italy

How long does it take and what is the cost of getting the necessary permits and licenses for SHP?

The Legislative Decree n. 387/2003 (implementation of the RES-e Directive) has introduced the "single permit", that is a one-stop shop for all RES project developers. The responsible of the procedure is the Region, or the Province if the Region has delegated it. However, in some Italian Regions this process has not developed yet and also in some Regions where it has been developed there are often problems related to the difficulty to coordinate the different authorisation processes.

In particular, the license for the use of water isn't generally integrated with the authorization procedure to set up and run the plant and institutions are still discussing about the possibility to integrate them.

So, generally, to build up a SHP plant in Italy you need to ask for both the concession for the water use and for the permit to build and run the plant.

With reference to the **concession**, it generally takes **4-8 years** to get it, but it is not unusual to hear about developers who waited for it for about **10 years or more**. The cost of a concession is about **30.000 €** if you don't need the EIA (only very small concession) and about **90.000 €** if you have to do the EIA (most frequent).

With reference to the "**single permit**", Legislative Decree n. 387/2003 established that the procedure should last 180 days, excepted the time to make the EIA procedure if requested. These terms are not often respected and generally it takes almost **1-2 year** to get the permit and even more if you have to enter in the EIA procedure (**1-3 years**).

The cost of a "single permit is about **40.000 €** if you don't need the EIA (only very small plants) and about **100.000 €** if you have to do the EIA (most frequent).

In Italy is the huge number of application that are waiting for a response since many years (10 ore even more) and the majority of them are going through a competition procedure. In some Regions the public authorities are setting a sort of "moratorium" for new concessions. This is the case of Sondrio Province, where a law established that for 2 years to grant a new concession the Province has to ask the Ministry of Environment for an opinion. But the Ministry of Environment, on his side, decided to submit the local territorial plan to a Strategic Environmental Assessment. This means time and means that for at least 2 years all new applications will be stopped!

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

Barriers causing delays:

- Competition procedure: if 2 applications for a concession go into the competition procedure, it is not stated a term for the presentation of the documentation and so if one of the promoters is not really interested in the use of the water, the whole procedure go on indefinitely without a pronouncement. So it happens that in some

situations local authorities ask for a concession in competition with private developers to stop them.

- Lack of a territorial planning for hydropower: local authorities are often not interested in the developing of SHP because of the lack of regional targets for RES. So it is generally not easy to relate with local authorities, also because sometimes they don't have the necessary technical competences to evaluate the projects and need time (and money) to get information from consultants.
- It is not always clear what should be done in case of one of the authorities that have to express an opinion give a negative pronouncement or doesn't give any pronouncement.
- Inappropriate/inconsistent requests: in many cases local authorities make inappropriate/inconsistent requests (e.g. to prove the availability of the land within the application for the concession even if it is known that it is possible to expropriate the land during the procedure!). Sometimes developers oppose to these requests and ask for lawyer assistance. This means time and money.
- Often, especially during the EIA procedure, promoters are asked to provide more and more information (technical information, environmental information, ...) and this cause an interruption of the procedure.

Barriers causing an increasing of the costs:

- Agreements with local authorities: usually local authorities pretend an agreement with the producers to get a percentage of the profits/of the energy production or other economical benefits.
- Environmental mitigation measures: sometimes local authorities ask for environmental mitigation measures that are expensive, not foreseen in the legislation, not supported by scientific studies and sometimes also useless, such as the realization of fish by-passes in mountain area where are present natural barriers to fish migration (e.g. rainfalls) or the installation of 2 flow-rate meters (one at the intake and another one at the tailrace) also in run-off plants.
- Landscape mitigation measures: sometimes local authorities ask for landscape mitigation measures (e.g. pipe interment, use of particular building materials or techniques) that are very expensive and sometimes not appropriate in the context.
- Administrative costs: there are many administrative costs (the annual fee for the use of the water, two additional annual fees to the local authorities, the costs for the trash rack material management and so on) and they are not linked with the productivity of the plant, but only with concession for the water use, so you have to pay them also if you got the concession but are still waiting for the other permits.
 - o Sometimes there are also unexpected new fees: for example the financial law 2006 introduced a new fee for big concessions ($P > 3.000$ kW) to be paid for 4 years.
 - o Often promoters are asked to provide detailed information about the project (technical information, environmental information, ...) during the first phase of the licensing procedure, when it is requested only the preliminary project and there is no certainty about the positive conclusion of the procedure.

What are the approval rates for getting permissions for SHP?

It's not easy to state it for 2 reasons:

- 1 – lack of information and transparency: public authorities hardly publish this kind of information
- 2 – the majority of the applications are still waiting for a response: the authorisation hasn't been neither denied nor accorded.

If we consider a reasonable time of 10 years, we could state that the approval rate is good, but if we consider a single annual rate how do we have to consider all the applications that are still waiting for a response since many years?

4.2 Administrative Barriers in Spain

How long does it take and what are the costs of getting the necessary permits and licenses for RES?

In Spain the main bottlenecks to obtaining the necessary permits to build and operate a SHP plant are the Water Authorities. The average lead-time for the overall authorisation procedure is up to **6 years**.

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

On August 26, 2005 the Spanish government approved the new Renewable Energy Plan (Plan de Energias Renovables, PER), which supersedes the Renewable Energy Promotion Plan, which dates back to 1999. The overall aim of the new Plan is to make it possible to achieve the target of 12 percent of primary energy being met from renewable sources by 2010 and to do so it sets more ambitious objectives in those areas that have been developing successfully and establishes new measures to support technologies that have not yet managed to take off.

The PER 2005-2010 sets a target for 2010 of installed SHP of 2.199 MW. This target means an increase of 450 MW of installed SHP during the period 2005-2010. For 2005, the increase was around 70 MW.

However APPA, the Spanish Association of Renewable Energy producers, has expressed its concerns about the achievement of SHP Spanish Target. According to APPA, the target of the PER will never be reached in matter of SHP if the administrative barriers for the licensing process are not reduced. Indeed, the **long administrative procedures and the lack of coordination between all the administrations involved in the concession of licences are hindering a further development of small hydro**. At the same time environmental requirements are sometimes over exaggerated and constitute a major barrier that small to stop investment in SHP in the country. The decree 1/2001 for the implementation of the WFD, states that reserved flow should be set by the basin authority based on scientific studies for each segment of the rivers, however currently only the Basque Basin authority, has established its a calculation method, in the rest of basin authorities the reserved flow is calculated without any scientific method or criteria.

There are **no real “fast track” procedures** (as requires de RES-e Directive), especially for smaller projects. For example, the Royal Decree 916/1985 of 25th May – amended by the Royal Decree 242/1988 – which settles a short procedure to get licences (concessions and authorisations) for installing, refurbishing or upgrading small hydropower resources (nominal potential of less than 5000 KVA) has in practice made more complicated the licensing process.

What are the approval rates for getting permissions for different RES-E technologies?

Most Hydropower projects are **rejected almost**. No new development are being carried out the main reason argued by the authorisation bodies are that there are no connection networks. Even for refurbishment it is complicated. According to IDAE's bulletin from October 2006, the increase in installed capacity in 2005 was of capacity 39.232 kW, but there is no indication of the total capacity of all projects currently requesting authorization. There is a lack of information and transparency: public authorities rarely publish this kind of information

4.3 Administrative Barriers in France

How long does it take and what are the costs of getting the necessary permits and licenses for SHP?

Since the end of the 80's, there has been little new development of SHP in France: and the activities of the French turbine manufacturers were from 80 % to 90 % applying to projects in foreign countries. The projects in France were mainly concerning refurbishment and maintenance. Licenses process: all the administrative procures that have to be fulfilled to get a licence slow down considerably the implementation of SHP plants in France. Two kinds of licenses are request for hydropower in France.

- Plants < 4.5 MW: authorisation
- Plants > 4.5 MW: concession
- Local authorities deliver concessions for plants < 100 MW.

All licenses are founded on French energy and water laws and regulations (décret 1994 for concessions; décret 1995 for authorizations). All licenses request a water impacts note of the hydro plant project based on a four seasons aquatic life study. Concessions need a public enquiry. Regulation framework is very complex but correct in its main principles.

But administrative process is largely inefficient:

Authorization: **average time to get authorisations is 6 years**. Recent Rural Development Areas law (*loi DTR "développement des territoires ruraux"*) set a maximum of 2 years for such a process;

Concessions the **average time to get a concessions is 18 years**. Some are 22 years. Hydropower law of 1919 establishes a delay of 11 years. Recent ministry of Industry report recommends a 5 years process.

The cost of required permits on average is 10 000 to 30 000 euros for a request of authorisation. This amount is higher in case of request of concession.

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

There were several reasons for that (one of them the long administrative procedures):

- Best sites have already been equipped
- The cost of environmental constraints on the one hand, and the low pay-back tariff on the other hand were making the projects too expensive to meet an economic balance

- There was a strong opposition of fishermen organisations and various environmentalist associations
- Numerous rivers and river sections are forbidden to hydroelectricity.
- The administrative procedures were very heavy

Numerous administrative and para-administrative stakeholders may give their opinion on the project through public consultation (energy, agriculture, tourism, environment, sport, fishermen representatives, municipalities, counties, regions...)

Numerous footsteps of the process. At each one, each administrative stakeholder tries and demands more requests. Local authority in charge of licensing has no instruction about energy policy and renewable development. So it has little decision capacity. Energy is not a priority at local level.

But probably the most important barrier in France it is not purely administrative but an **environmental one**. Indeed there is a need to re-discuss the classification of sites forbidden to hydropower.

Concrete measures have to be taken for a real simplification of procedures and in particular to **No-go Rivers**, since are actually not based on criteria. So they are used as hydropower barriers. No-go rivers must be redefined under new water law December 2006 and based on three criteria: sea-river fish migrations; WFD very good status water-bodies; biological reservoir.

Some water districts try to add some more no-go areas beyond new water law as “patrimonial rivers” or such undefined concepts.

Some water regulations or some water district action plan projects are based on a large or small hydro distinction criterion and Small hydro is declared energy-useless and water pollutant.

Regulation aspects also have to be improved; in particular the rules to be used for the calculation of the residual flow. **Residual flow** setting is a hidden barrier. Local authorities in charge of authorization processes set residual flow on personal judgment largely beyond minimum legal value without any water quality and fish impact study.

What are the approval rates for getting permissions for SHP?

The rates of approval obtained on rehabilitation or optimization of existing projects (100 kw-12 MW) are about **50-70%** but few projects are presented. The rates of approval obtained on new projects (100 kw-12 MW) are weaker and close to **10-30%**.

4.4 Administrative Barriers in Sweden

Licenses are given by the Swedish Environmental Court (Miljöödomstolen) according to the Environmental Law (Miljöbalken), which contains the regulation for building and operation of hydropower plants. SHP plants out of operation and having an old permit, do not normally need a new licence if they have been out of operation a limited time (normally 25-35 years) and if the capacity is not increased at refurbishment.

How long does it take and what are the costs of getting the necessary permits and licenses for SHP?

The application for a licence needs to contain a description of the project, an economic calculation and an EIA. If this work is ordered from an external expert the cost is 10 000 – 25 000 € depending of the complexity of the project. The cost of the court itself is normally 2 500 – 5 000 € but the applicant has to pay the cost of evaluations asked by certain opposing interests as well as state authorities like the Fishery Authority. The cost for this can vary between 5 000 and 50 000 €, sometimes even more.

The time to get a licence from the date the application is given to the court is normally between **2 and 7 years**, sometimes even more.

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

The delays are caused by the lack of capacity at the Court, and because too many people, associations etc. are allowed to question the project and to request further investigations (very often unnecessary requests). Other causes are that judges in the Court do not have enough knowledge of the Water Law Regulations because they are in a rotation system with other laws and are not specialists. Another cause is that Sweden in 1999 introduced a lot of changes to the regulations and these have not yet been fully interpreted. Still another cause is that the regional authorities, having an important role in the licensing process, have very different point of view on SHP although the law is the same. In some regions it is almost impossible to get a new licence or restart a shutdown SHP plant due to resistance from the regional authority.

What are the approval rates for getting permissions for SHP?

In comparison it is more difficult to get a licence for SHP, then comes windpower but it is much easier to get permission for bioelectricity and solar power. There are no official statistics but probably **25 percent of the SHP applications for licence are refused**.

Some examples in Sweden:

Hägerums Kvarn SHP plant: The original SHP plant was shut down in 1996. The new owner wanted to increase the capacity to 170 kW (an increase of about 40 percent) and a new licence was needed. The complete procedure took 6 years and a total cost of 45 000 €. Main reason: Under capacity at the environmental court and that an association opposing the project was given too many chances to request investigations that showed not be relevant. The final permission was given in 2005.

Ljungå SHP plant: The plant is now under construction and will have a capacity of 1 200 kW. The time to get a licence has taken more than 13 years. It received its final permit in 2006. At the site was an earlier, smaller plant that was shut down about 40 years ago. The main reasons have been a very strong resistance from the regional authority, coupled with a not enough professional behaviour from the project team.

4.5 Administrative Barriers in Austria

How long does it take and what are the costs of getting the necessary permits and licenses for SHP? What are the different barriers causing the delays/increasing the costs of getting permits and licenses? What are the approval rates for getting permissions for SHP?

Very few new projects are being developed in Austria; most projects are linked to the upgrading of existing SHP. New SHP can hardly be developed in Austria. Authorities request developers to carry out many ecological surveys arguing that these surveys are requested by the WFD implementation. Project developers prefer to invest their money in other countries than to pay a lot to different surveyors and to have no permission at the end of the process. Administrative barriers but also environmental ones due to the WFD implementation are the main obstacles for project development in Austria; it has become a difficult game to carry out any project. It is much more simple to get permits for upgrading or refurbishment.

4.6 Administrative Barriers in Germany

How long does it take and what are the costs of getting the necessary permits and licenses for SHP? What are the approval rates for getting permissions for SHP?

So far there has been recently more or less no new SHP planned. Only some reactivations of abandoned hydropower schemes all upgrading of existing SHP take place: each year in average less than 50 all over Germany.

The cost to prepare the permits and licences for SHP 100 - 500 kW are (i) engineering costs (ii) expert opinion costs. The period of such work is minimum **6 months and may last 2 years** when the licensing body requires expert opinions exceeding the standard requirements like the (i) environmental impact (ii) impact on water flow. This happens in more than 50% of new reactivation projects, which are in licensing processes. The costs range between Euro 10.000 and Euro 50.000 for such preparatory work. The maximum licence costs is Euro 15.000,- regardless the size of the plant.

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

The main Barriers are:

The difficult and **long-lasting licensing** procedures and ecological requirements especially for protection of the aquatic life in river beds, which are based on EC regulations.

Non-profitable kWh rates for such SHP investments

The implementation of the WFD is the strongest barrier in Germany's licensing processes. In the revision of the EEG (German Renewable Energy Act) the debate is turning around the issue of not licensing from 2008 more plants of smaller capacity of 500 kW.

There is no standard for the administrative process. Barriers and delays are mostly caused by a wide range in which the individual administrator is allowed to demand during the licensing process. The demands are always justified because of ecological improvements. More detailed and standardized process can be established by the EC.

4.7 Administrative Barriers in Lithuania

How long does it take and what are the costs of getting the necessary permits and licenses for SHP?

It takes **1,5 to 3 years**; the costs vary it depends on the size **10.000 to 40.000** euros.

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

Main barriers are bureaucracy, lack of legal acts and grid owner as a monopolist.

4.8 Administrative Barriers in Latvia

How long does it take and what are the costs of getting the necessary permits and licenses for SHP?

The SHP project developer will have to perform an evaluation of impact on environment. These costs will make up approximately **1000 Euro** (just for the EIA). It takes **1,5 years**. If evaluation of impact on environment is not necessary, then duration is 0,5 years.

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

The main obstacles: undue demands of state institutions, sometimes bureaucracy, as well as unarranged methodology of determination of electric power purchasing prices. In most cases the obstacles are caused by unreasonable demands of public organizations.

4.9 Administrative Barriers in Estonia

How long does it take and what are the costs of getting the necessary permits and licenses for SHP?

All procedures take **1-2 years**; all costs are about **5000-7000 €** plus access charge which depends on length of the connecting line and capacity of the plant.

What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

Main barriers are lack of “one stop shop” (many institutions involved) and long debates on fish protection requirements.

4.10 Administrative Barriers in Poland

How long does it take and what are the costs of getting the necessary permits and licenses for SHP?

Unfortunately the investing process in SHP in Poland is extremely complicated. There are no clear rules in this area. Therefore if you already have found a suitable place to build SHP, you have bought the land and you have developed pre-feasibility studies, you still cannot be sure you will get necessary permits. Generally the time you need to get them ranges from **1- 8 years**. The costs of all permits varies between **1.000 to 5.000 EUR**. It depends on how many problems are made by the officials.

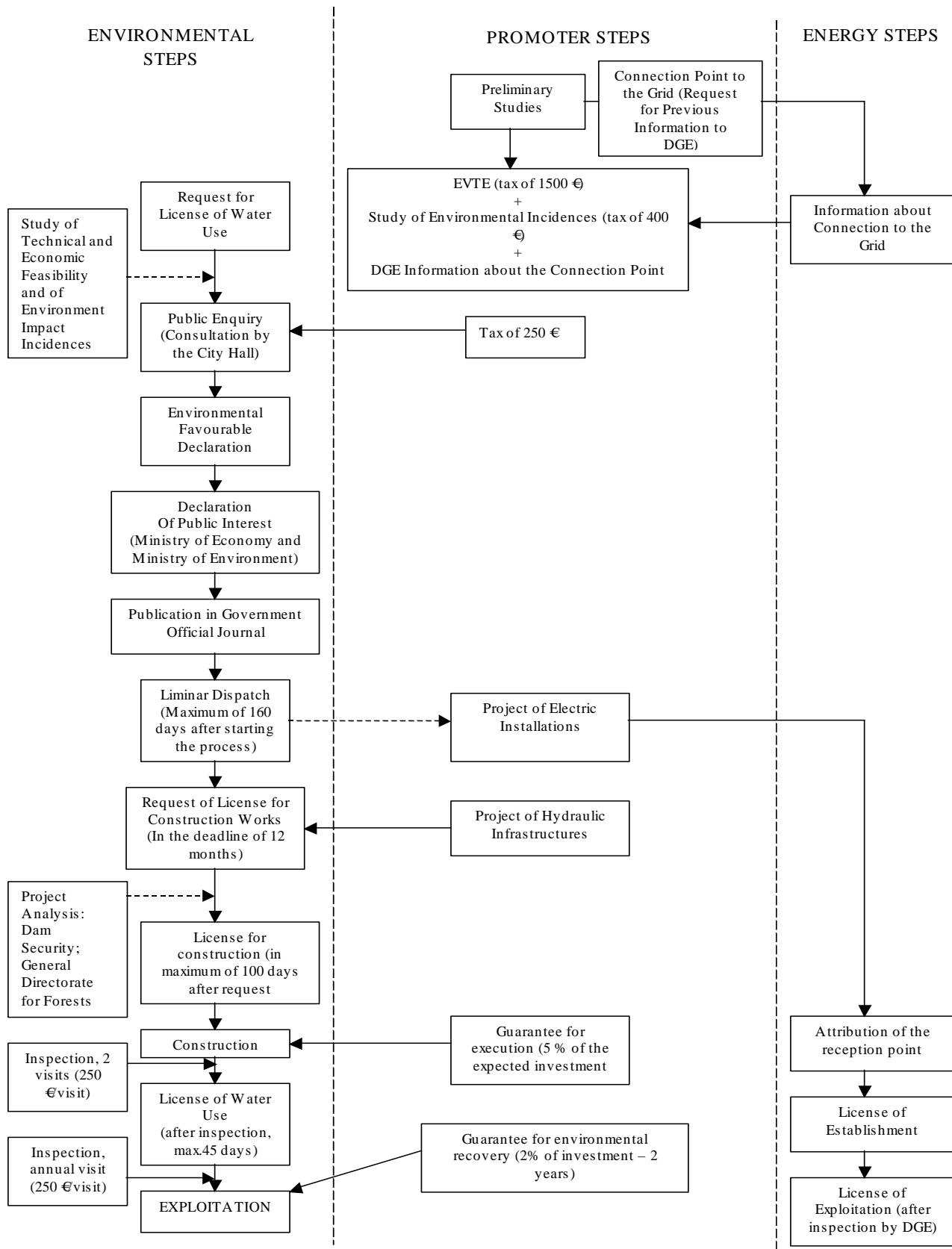
What are the different barriers causing the delays/increasing the costs of getting permits and licenses?

Main barriers which appear during formal preparation of the Investments are:

- Unstable law (the rules are changing so often, that sometimes when you have already prepared document for department, you need to re-write them because they are out of date!)
- Lack of good will in Regional Water Policy Administration (generally permission is not being given to private investors since it is the public administration investing in hydropower in Poland)
- Lack of knowledge concerning hydro plants in departments which give us permissions for using water for energy generation
- Very active fishing lobby – they are against building new dams and against building new SHP on existing objects – therefore they make problems during the procedure of getting permission for using water

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5 Annex 1 Administrative Barriers for SHP development in Portugal



6 Annex 2 Time to get all permits to develop a new SHP in Europe

Member State	Fees for the use of water	Period to get a license
Belgium	Yes	n.a
Germany	No	6 months 2 years
Greece	Fees for water reserve usage and small hydro supplying	3-5 years
Spain	No fee	6-10 years
Italy	Yearly fee to the local authority and the state	4-8 years
Portugal	No fee	9-12 years
Denmark	No fee	Nearly impossible
France	No fee	6 years
Ireland	No fee	1 year
The Netherlands	No fee	10 years
Austria	No fee	1 year best case
Sweden	No fee	2-7 years
United Kingdom	No charges under 5MW, small charges from 5 to 10 MW	5-8 years
Switzerland	n.a	2-5 years
Czech republic	No fee	1-2 years
Estonia	No fee	1-2 years
Hungary	n.a	12-15 months
Lithuania	No fee	1.5-3years
Poland	Generally no fees are charged for SHP. However, some fees can be taken for the state-owned area covered by water used for energy production	1-8 years
Latvia	n.a	1.5 year
Slovakia	Yes, depending on electricity production	2 years
Slovenia	Yes	2 years
Bulgaria	Yes, annual fees paid by the producer	n.a
Romania	No fee	1 year
Turkey	Yes	n.a

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