



HELLENIC ASSOCIATION OF PHOTOVOLTAIC COMPANIES

REDUCING BUREAUCRACY FOR PV DEPLOYMENT

A FEASIBLE TASK

Preliminary National Advisory Paper for Greece

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1 EXECUTIVE SUMMARY

Despite the generous feed-in-tariffs for PV valid since 2006, the Greek PV market has developed rather slowly in the past four years. The major reason for this disappointing growth rate is bureaucracy which hinders the smooth deployment of PV projects.

A much simpler and effective framework is needed in order to develop a healthy and robust market. One such initiative is the *PV Legal* program which takes advantage of the cumulative experience in 12 European countries. HELAPCO, the Greek Association of Photovoltaic Companies, is participating in the *PV Legal* consortium, drawing valuable conclusions from the legal-administrative procedures in other countries.

This report summarises the basic conclusions of this research, identifies the basic barriers that hinder the smooth development of the market, and offers suggestions for overcoming these barriers including best practices in other European countries.

In the context of the European project *PV Legal*, we have examined and compared with 11 other European countries three basic segments of the Greek PV market: residential systems, small commercial rooftop systems, and medium-size ground-mounted PV systems. In most cases, the time needed for the development of the projects in Greece is beyond the European average, and unacceptable.

While conducting the research, a new RES law was voted in Greece in mid-2010 (L. 3851/2010) which tried to remedy some of the drawbacks of the previous authorisation processes. Furthermore, there were some new Ministerial Decisions which have lifted certain bureaucratic barriers. While some improvements are expected in practice by these new regulations, there are still some key barriers which are crucial for the future of the PV market in Greece. The most important of them are:

- **Barrier 1:** issuing of a 'Production License' (which is accompanied by an 'Installation License' and an 'Operation License') has been a serious cause for delays as it applies to many of the proposed projects of a certain capacity and above.
- **Barrier 2:** the 2020 National Renewable Energy Action Plan has set a rather low ceiling for PV installations by 2020 which does not facilitate the unrestricted development of the market, especially with regard to new large scale ground-mounted systems.
- **Barrier 3:** the environmental permitting process still remains complicated, despite the recent improvements.
- **Barrier 4:** authorities do not respect prescribed time limits for issuing permits.
- **Barrier 5:** installation of PV systems >10 kWp is not yet feasible on islands connected to the mainland grid.

Barrier 1: Delays of 2-3 years were not uncommon in issuing a 'Production License' in the recent past. Although the new legislation is expected to improve the situation (something which has to be proven in practice though), it should be stressed that, in other countries such as Germany for example, there is not an authorisation stage such as getting a 'Production License'. Abolishing the 'Production License' stage would facilitate the fast and smooth development of the PV market as it will drastically reduce the time, effort and costs needed for project development. It will also reduce the burden of the involved authorities which complain for being understaffed, and finally it will stop the permit trading which is an unhealthy phenomenon triggered by the existing legislation.

Barrier 2: The 2020 National Renewable Energy Action Plan which was presented in July 2010 followed by a relevant Ministerial Decision two months later, have set a target of 2.2 GWp for PV in the next decade. Such a target does not reflect the real potential of the market nor its current dynamics. As a result of this plan, it is not clear if and when the Regulatory Authority for Energy (RAE) will be able to approve new applications for large scale ground-mounted systems. As a consequence, a black market for permits has been developed, as many people having applied in the previous years and having a 'Production License' in their hands are keen to sell it in high prices to desperate newcomers who cannot enter the market immediately. This problem could be resolved by setting a more ambitious target for PV in 2020 reflecting the real potential of the market.

Barrier 3: Environmental permitting of PV systems has been one of the major barriers for the development of the market. Under the previous regime, the relevant processes were unclear, complicated and extremely time-

consuming. The new RES law 3851/2010 offered a remedy for some of the drawbacks of the older regime (environmental authorisation is no more needed for buildings and those projects developed within designated industrial areas), however it has created new ones. As explained more in detail below, the idea of having an 'exemption' approval from the authorisation of environmental terms by the Region is creating a new barrier and more delays. The PV sector believes that such an 'exemption' approval from the authorisation of environmental terms should be abolished. Authorities have the opportunity to control any abuse of existing land use regulations at a later stage. Abolishing this new barrier would mean faster development of PV projects, less costs, and fewer burdens for regional authorities which often complain for being understaffed. A one-stop-shop service should be established for environmental permitting, whenever needed, where the developer should present a simple environmental notification and the authorisation should be granted in a very short time instead of the current time-consuming processes.

Barrier 4: The authorisation process lasts much more than usually prescribed by the relevant regulations and laws. The reason is that many different authorities are involved in the authorisation process, and many of the needed procedures are linear in nature and cannot proceed in parallel. The only way to respect deadlines and time limits is to make explicitly clear to any relevant regulation that if a competent authority does not reply in the prescribed time, then its consent should be considered as given and the developer should be able to move forward with the authorisation process. It is true that most of the relevant authorities are well understaffed. There are two ways to overcome such a barrier: [1] involve more staff in the authorisation process, and/or [2] make sure that only those substantial permits really needed are requested. Getting rid of unnecessary permits and procedures would save valuable time for the few officers dealing with authorisation of PV projects.

Barrier 5: While RAE has announced a call for expression for installing PV on autonomous grid islands in June 2007, such a call was never announced for those islands connected to the mainland grid (such as the island of Evia, the Ionian islands, Sporades, etc). As a result, installation of PV on these islands was not and is still not possible. The only exception to this rule is the residential sector, since it is allowed to install small residential systems up to 10 kWp on interconnected islands since June 2009. RAE should announce a call for expression of interest by developers for interconnected islands. Such a call can be based on available technical data supplied by the Public Power Corporation (PPC) for each island.

2 INTRODUCTION

The first Greek legislation for PV was introduced in 2006 (L.3468/06) offering generous feed-in-tariffs and setting the details for authorisation of PV systems. These authorisation processes were however complicated and certain procedures were long-lasting or even unnecessary. As a result, and despite the good financial incentives, the Greek PV market developed very slowly in the last four years, and thousands of applications have piled up, mainly due to the legal-administrative barriers imposed.

The Greek PV sector has been very active in trying to convince the relevant decision makers that a much simpler and effective framework is needed in order to develop a healthy and robust market. One such initiative is the *PV Legal* project which takes advantage of the cumulative experience in 12 European countries. HELAPCO, the Greek Association of Photovoltaic Companies, is participating in the *PV Legal* consortium, drawing valuable conclusions from the legal-administrative procedures in other countries.

In the context of the *PV Legal* project, a thorough national research has been conducted for over six months with the valuable participation of stakeholders from the Greek PV sector. Their experience in developing PV projects of various sizes and capacities has lead to a much clearer picture of the investment environment for PV in Greece.

This report summarises the basic conclusions of this research, identifies the basic barriers that hinder the smooth development of the market, and offers suggestions for overcoming these barriers including best practices in other European countries.

The report is meant to be discussed and reviewed thoroughly within the Greek PV sector before it is presented to those stakeholders and decision makers who influence the development of the market (such as politicians, regulatory bodies, grid operators, etc).

During the preparation of this report, which mainly draws conclusions from the established situation since 2006, a new RES legislation (Law 3851/2010) was passed by the Greek Parliament in mid-2010 bringing further changes in the legal-administrative framework. Furthermore, there were some new Ministerial Decisions which have lifted certain bureaucratic barriers. We tried to incorporate the suggested changes and figure out whether and how these will influence the previous situation and whether they will improve or further complicate the authorisation procedures.

3 IMPACT OF LEGAL ADMINISTRATIVE REQUIREMENTS/BARRIERS

The key conclusion of the report is that the development of PV in Greece faces severe and often unnecessary barriers which prevent Greece from exploiting its potential and thus from reaching its targets, and significantly increase the costs of solar electricity.

Even medium-size projects which only take a few weeks to be installed, may take over two years in practice before they are connected to the grid, due to the long-lasting authorisation procedures.

In the context of the *PV Legal* project, we have examined three basic segments of the Greek PV market: residential systems, small commercial rooftop systems, and medium-size ground-mounted PV systems. In most cases, the time needed for the development of the projects is unacceptable. A summary of the identified delays and resulting costs is given below.

Segment A: Residential systems

Although this is the segment with the most simplified legal framework, delays and costs are still beyond what would be considered acceptable.

Our research has shown, for example, that the waiting times (mainly due to the services delivered by PPC, the Public Power Corporation which is the practically the only grid operator for residential customers currently) are the greatest possible which are foreseen by the legislation and often surpass them. This is true for all installed residential systems so far. While the physical installation of a residential system is completed in a few hours, meeting the requirements of the legal-administrative requirements prolongs the time of implementation of the work to 3-4 months. The legal-administrative procedures require approximately 20% of the total time, and cause on average 22.5% of the total labour costs needed to install a typical system with a capacity of 5 kWp.

Although this is supposed to be the less burdened segment of the market, it is interesting to compare the situation with the one in Germany, the leading European market. The overwhelming majority of rooftop systems in Germany are exempt from permission. The legal-administrative costs make up an average of 4.6% to 14.8% of the overall development costs of a PV project (excluding material costs), while the average net waiting time for the development of a 5 kWp rooftop system is in the range of 2 to 5 weeks.

Segment B: Small commercial rooftop systems

The legal-administrative procedures require approximately 17% of the total time, and cause on average 27% of the total labour costs needed to install a typical small commercial system of 20 kWp. While the physical installation of a small commercial system is completed in a few days, meeting the legal-administrative requirements prolongs the time of implementation of the work to 6-7 months. The greatest waiting time refers mainly to the Public Power Corporation services for connection of the system.

As in the case of residential systems, the legal-administrative delays and resulting costs are much higher than in Germany.

Segment C: Ground-mounted systems

Most of the systems installed until the end of the research phase were of medium-size with an average capacity of 100 kWp, which is the predominant size of the Greek market so far. The legal-administrative procedures require approximately 33% of the total time occupied in installing such a system. The legal-administrative procedures correspond to on average 23% of the total labour cost for the installation of a medium size system on a playing field. While the installation of a medium sized ground-mounted system is completed in about two weeks, satisfaction of the legal-administrative requirements prolongs the time of implementation of the work to almost 2 years. The greater waiting times refer mainly to the issuance of an exemption from the Regulating Authority for Energy and to the granting of environmental permission for the work.

Although the Greek market differs from the German one regarding the average size of ground-mounted systems, it is interesting to note that even a 5 MWp PV system in Germany requires less time and less administrative costs to develop in general than a 100 kWp system in Greece. This implies a clear room for improvements in Greece.

4 MAJOR OBSTACLES AND BOTTLENECKS IN LEGAL ADMINISTRATIVE PROCEDURES CONNECTED WITH PV SYSTEM INSTALLATION

The kind as well as the severity of the legal-administrative barriers differs according to the size of the PV system and the relevant segment. There are barriers which equally apply to all segments and others which affect only certain segments. We briefly mention the most important of them. Once again we stress that the barriers identified during the research period refer to the period after 2006 and some of the procedures have been changed in mid-2010 but their effect has yet to be seen.

Main legal-administrative barriers

- **Barrier 1:** issuing of a 'Production License' (which is accompanied by an 'Installation License' and an 'Operation License') has been a serious cause for delays as it applies to many of the proposed projects of a certain capacity and above.
- **Barrier 2:** the 2020 National Renewable Energy Action Plan has set a rather low ceiling for PV installations by 2020 which does not facilitate the unrestricted development of the market, especially with regard to new large scale ground-mounted systems.
- **Barrier 3:** the environmental permitting process still remains complicated, despite the recent improvements.
- **Barrier 4:** authorities do not respect prescribed time limits for issuing permits.
- **Barrier 5:** installation of PV systems >10 kWp is not yet feasible on islands connected to the mainland grid.
- **Barrier 6:** installation of residential and small commercial rooftop systems <10 kWp is not yet feasible on islands with autonomous grids.

4.1. Overcoming Barrier 1: issuing of a 'Production License'

4.1.1. Description of the barrier

According to Law 3468/06, a permission to produce electricity signed by the Minister of Environment, Energy and Climate change was required until recently, following a positive opinion from the Regulatory Authority for Energy (RAE). This 'Production License' was needed for systems above 150 kWp. According to the new RES legislation 3851/2010, the 'Production License' is issued by RAE and not by the Minister, and the capacity above which such a license is needed has risen to 1 MWp. Systems requiring a 'Production License' also need an 'Installation License' and an 'Operation License' which are given at a later stage of the project development. Issuing of these licenses requires considerable time, effort and costs, and consists a severe barrier for the development of PV systems, as in practice it takes 2-3 years for the issuing of all relevant licenses.

According to the old legislation (Law 3468/06), systems <150 kWp did not need a 'Production License' but instead a so-called 'Exemption' which was issued by RAE. The law prescribed that such an exemption should be given in 10

days. Reality has shown however that in certain cases a project developer might wait for two full years before getting such a license. The new RES law 3851/2010 has rightfully abolished this 'Exemption'.

The rationale behind this 'Production License' was that there should be a control by competent authorities of the electricity generators entering the grid. Among the criteria examined was the capability of potential investors to deliver the suggested project, and the technical integrity of the project. As one prerequisite for the 'Production License' was a preliminary environmental impact assessment (PPEA), authorities would not proceed with those projects not eligible from an environmental point of view.

It has been often argued that the need for such a license stems from Directive 2009/72/EC of 13 July 2009 concerning common rules for the internal market in electricity (article 7 of this Directive mentions that for the construction of new generating capacity, Member States shall adopt an authorisation procedure, which shall be conducted in accordance with objective, transparent and non-discriminatory criteria). Article 13 of the RES Directive however (2009/28/EC, 'Administrative procedures, regulations and codes') mentions that "Member States shall ensure that any national rules concerning the authorisation, certification and licensing procedures that are applied to plants and associated transmission and distribution network infrastructures for the production of electricity (...) are **proportionate and necessary**".

When it comes to PV, the rules for issuing a 'Production License' are neither proportionate nor necessary. In practice, RAE does not examine the technical specifications of PV plants in any detail. It does only examine the financial capability of the developer, but this again is not the job of a state agency but a task taken by the banks which will finance the project anyway. If a project is bankable, RAE should accept it.

4.1.2. Analysis/ background

The 'Production License' is needed for all renewable technologies, not just for PV. The rationale behind it was that the state authorities should have a control of the electricity market which in Greece is still monopolistic in nature. It is not yet fully accepted that producing electricity is a democratic right and privilege of all citizens, and not just the domain of a state monopoly as was the Public Utility until recently. It makes sense for state authorities to control a market consisting of large utility scale plants but it does not make any sense at all when the same authorities deal with decentralised systems trying to impose often irrational rules to them.

In practice, the 'Production License' process (as well as other authorisation processes) has been used as a tool for controlling the flow of projects rather than the necessity and viability of them. The authorities issue licenses for only a certain number of projects per region at a given time, thus controlling the overall installed capacity of PV systems. Such a control would make sense only if the market was saturated and there were too many systems installed, far beyond the grid's capacity. In a new and emerging market, such barriers make no sense at all.

Another argument often heard is that many developers have acquired a 'Production License' in the past having gone through all the painful and time-consuming procedures. Newcomers should therefore go through similar procedures for the sake of justice. Although this is not a rational argument, it is used however as an excuse for imposing further barriers.

The new RES Law 3851/2010 tried to relax the 'Production License' process by naming RAE as the authority which issues such a license instead of the Minister. The license is now given without first conducting a preliminary environmental impact assessment. These two key changes are expected to decrease the time needed to acquire the 'Production License' and are therefore welcome.

4.1.3. Options to overcome barrier

Authorisation of a PV system may be done in different ways and during various stages of the project development. Any authorisation stage should have a specific purpose though. With regard to the 'Production License', there seems to be no serious reason for justifying it. Such a license does not take into account any environmental criteria (which are examined at a later stage) nor is it related to the grid capability to accept new projects (this again is examined at a later stage). It is only a process left from the old legislative regime which is now completely obsolete.

This stage does not even exist in other countries, such as Germany for example, as has been shown by the *PV Legal* research. Whenever an authorisation is needed, it should be related to something substantial (such as land use criteria for example). It should not just be another meaningless red tape.

These arguments have been expressed by HELAPCO to the relevant Ministry for Environment, Energy and Climate Change. In fact, the first draft of the new RES legislation was indeed suggesting the abolishment of the 'Production License' stage for PV, a suggestion which did not survive the consultation process though.

Realising that the old legislative regime was outdated, the authorities suggested an increase of the minimum capacity over which a 'Production License' is needed (from 150 kWp to 1 MWp). Although this somewhat improves the situation, it is not the ultimate solution. The new authorisation process is supposed to reduce the time needed for acquiring a 'Production License' to just 2 months. This however is only theory at the moment. The previous legislation had also foreseen short periods for the authorisation. In practice however, getting a 'Production License' could take 2-3 years.

Abolishing the 'Production License' stage would facilitate the fast and smooth development of the PV market as it will drastically reduce the time, effort and costs needed for project development. It will also reduce the burden of the involved authorities which complain for being understaffed, and finally it will stop the permit trading which is an unhealthy phenomenon triggered by the existing legislation. Apart from being unhealthy, this permit trading also increases the overall cost of projects (current black market prices can be as high as 1 €/Wp).

4.2. Overcoming Barrier 2: cap set by National Renewable Energy Plan

4.2.1. Description of the barrier

The 2020 National Renewable Energy Action Plan, which was presented in July 2010 followed by a relevant Ministerial Decision two months later, has set a target of 2.2 GWp for PV in the next decade. Such a target does not reflect the real potential of the market nor its current dynamics. As a result of this plan, it is not clear if and when the Regulatory Authority for Energy (RAE) will be able to approve new applications for large scale ground-mounted systems. As a consequence, a black market for permits has been developed, as many people having applied in the previous years and having a 'Production License' in their hands are keen to sell it in high prices (up to 1 €/Wp) to desperate newcomers who cannot enter the market immediately.

4.2.2. Analysis/ background

Law 3468/06 gave a first indicative target for PV, describing a first phase of a so-called "PV Development Program". This first target was initially set at 700 MWp and was soon increased to 840 MWp. That was not a cap though but rather a first trajectory for PV deployment until 2014 (although a time limit was never mentioned explicitly).

Following a spectacular expression of interest by potential investors (8,000 applications with a cumulative capacity of 3.7 GWp were filed to RAE within 20 months, before a freeze on new applications was imposed), it was soon realised that this first indicative target was rather unrealistic and very conservative. Law 3734/09 asked RAE to examine all applications and go beyond the first indicative target.

In July 2010, a target of 2.2 GWp till 2020 was set for PV, a target which is far lower from what the market dynamics seem to be able to deliver at the moment.

If this is indeed the case, then the PV market will face a serious threat. Although the national target for Greece foresees at least 40% share for renewables in the electricity sector in 2020, the lion's share of this is kept for wind. Interestingly enough, the newly installed capacities of wind and PV in 2010 are comparable in size. However, many officials believe that the share of wind should be almost three times more than that of PV in the next decade. The only argument expressed is the higher cost of PV. A more in depth analysis though shows that the cost of PV will drop drastically in the next years, grid-parity will be reached in the period 2013-2017, and the cost for consumers (who pay for the feed-in-tariff) will reach a peak in 2015 and then fall until 2020.

A low target for PV in 2020 will also jeopardise the very existence of the PV manufacturing plants in Greece, which now have a cumulative production capacity of ca. 250 MWp per year. Thousands of jobs are threatened among others by a potential wrong political decision.

Setting more ambitious targets for PV on the other hand guarantees not only thousands of jobs but a much more stable electricity system, while protecting the environment and achieving the national targets for 2020.

4.2.3. Options to overcome barrier

Following a Ministerial Decision of September 29th 2010, filling of new applications is now permitted regardless of the size of the PV system. This is in principle a positive step forward. This decision should be accompanied by a more ambitious target for PV in 2020 and will have the following advantages:

- Stop the unhealthy black market in permit trading which is only beneficial for speculators and practically increases the cost of PV project development.
- Unleash the real potential and dynamics of the market.
- Guarantee the viability of the national PV manufacturing capacity.
- Create thousands of new green jobs.
- Reach the 20-20-20 targets much easier and sooner.

HELAPCO supports the EPIA target for 12% PV electricity by 2020. In the case of Greece, this translates to ca. 6.2 GWp in 2020, a capacity which can guarantee all the above benefits. In fact it is estimated that up to 14,000 full-time green jobs could be created in the PV sector by achieving such a target and an extra 22,400 full-time jobs could also be supported in other sectors of the economy as a result of a robust PV market in Greece.

4.3. Overcoming barrier 3: complicated environmental permitting

4.3.1. Description of the barrier

Environmental permitting of PV systems has been one of the major barriers for the development of the market. Under the previous regime, the relevant processes were unclear, complicated and extremely time-consuming.

The environmental permitting process was described by Ministerial Decision 104247 of 2006 (Government Gazette 663B, 26-5-2006). For systems >150 kWp the process had two stages: a preliminary environmental impact assessment (PPEA - related to the issuing of the 'Production License'), and an authorisation of environmental terms (EPO – related to the 'Installation License'). For systems with a capacity of 20-150 kWp only the second stage was needed, while there was no environmental permitting for systems <20 kWp unless such systems were installed in Natura 2000 designated areas. The legislation did not distinguish between ground-mounted and rooftop systems. As a result, even small commercial rooftop systems had to go through this process thus being delayed considerably.

The rationale behind having two separate stages of environmental permitting was that the authorities had no other way to check whether the project would be developed in an appropriate area as there are no thorough land and property registries in the country. Some authorities insisted in having two stages claiming that this is in favour of the investor. If an investor could not survive the first stage, he would save the extra costs for the second stage. This however is not valid as the authorities involved in the second stage were practically the same as in the first stage, and the developer had to go through them twice.

The first stage of the preliminary environmental impact assessment would normally take 3-6 months (depending on the region), while the second stage of the authorisation of environmental terms would normally take 2-3 months, but could last even more in the case of smaller systems where only this stage was needed. Waiting times of over half a year were not unusual.

The new RES legislation 3851/2010 tried to rationalise this process by abolishing the preliminary environmental impact assessment and by merging the two stages in just one. Furthermore, environmental authorisation is not anymore needed for buildings and those projects developed within established industrial areas. This is a step forward, although there are still many problems remaining.

4.3.2. Analysis/ background

The environmental permitting process is needed for all renewable technologies. In fact, the original process of 2006 was designed having in mind conventional energy projects as well as wind farms development and it was practically tailor made to them. Soon it was realised that this process is inappropriate for PV. As there is one-for-all process, the developer had to fill useless forms describing whether there were any waste, noise, and air pollution from the PV system. Irrelevant authorities had to be involved even in cases where this is obviously not needed. For example, there have been cases of small commercial rooftop systems in industrial areas, where the authorities were asking for the consent of the Forestry Department before issuing an authorisation of environmental terms.

The new RES law 3851/2010 offered a remedy for some of the drawbacks of the older regime. Environmental authorisation is not any longer needed for buildings and those projects developed within established industrial areas. For ground-mounted systems the following process has been set.

- Ground-mounted systems >500 kWp need an authorisation of environmental terms according to the existing legislation (unless they are installed in designated industrial areas).
- For ground-mounted systems <500 kWp an authorisation of environmental terms is not needed but an 'exemption' from it is still required. Such an exemption approval is issued by the regional authorities if certain criteria are fulfilled (the PV system is not installed in a Natura 2000 designated area, and there are no other PV systems with a cumulative capacity of 500 kWp in a range of 150 meters from the assumed project). This exemption approval is supposed to be issued in maximum 20 days.

4.3.3. Options to overcome barrier

The new RES law 3851/2010 has remedied some of the previous problems. It has created new ones however. The idea of having an 'exemption' approval from the authorisation of environmental terms is creating a new barrier and more delays.

In fact, the rationale behind this new barrier was exactly this. Some people in the administration believe that there should be barriers so that there is a controlled flow of projects in order to avoid bottlenecks in later authorisation stages in case there is an increased interest for projects by developers.

Another argument used for imposing this 'exemption' approval was that authorities should know somehow whether a project might be developed in a restricted area (such as a nature protected area). This however could be checked at a later stage just before the construction of the project, when a license is needed by the local Urban Planning Department.

The Greek PV sector believes that such an 'exemption' approval from the authorisation of environmental terms should be abolished. Authorities have the opportunity to control any abuse of existing land use regulations at a later stage. Abolishing this new barrier would mean faster development of PV projects, less costs, and fewer burdens for regional authorities which often complain for being understaffed.

With regard to the documentation needed for environmental permitting, new, simpler, and to-the-point formats and procedures are needed. Instead of filling useless forms as prescribed by the relevant Ministerial Decision 104248/2006 (OJ 663B, 26.5.2006) for Environmental Impact Assessments, which is a generic form for any kind of renewable energy projects, whenever needed, PV developers should present a substantial document –a notification of environmental terms- focusing only on the key issues related to the specific investment. Such key issues include:

- A checklist denoting that the project is not installed in an exclusion zone.
- Any particular site and/or project specific environmental problem.
- Appropriate measures for the mitigation of any potential problem.

Such environmental permitting should be facilitated by a one-stop-shop service in a very short time, instead of today's process which involves numerous authorities. Random controls of installed systems should then be taken by authorities to safeguard that the information given in these environmental notifications (e.g. with regard to exclusion zones) are indeed true and, in the case of law violation, sanctions should be imposed to developers including the dismantling of the PV system and the termination of the PPA contract.

4.4. Overcoming barrier 4: no respect for prescribed time limits for issuing permits

4.4.1. Description of the barrier

The authorisation process lasts much more than usually prescribed by the relevant regulations and laws. The reason is that many different authorities are involved in the authorisation process, and many of the needed procedures are linear in nature and cannot proceed in parallel. As a result, there is always an excuse that certain authorities cannot precede faster even if they would like to do so.

A second argument has to do with the overload of certain authorities which are normally understaffed and unable to cope with the piles of applications in due time.

The following examples indicate the magnitude of the problem.

According to Law 3468/06, those systems exempted from the 'Production License' (systems <150 kWp, alias known as 'Exemptions') should be authorized by the Regulatory Authority of Energy (RAE) within ten (10) days. The truth is that so far it has normally taken 1-2 years before such an authorisation was granted. The excuse was that either the files were incomplete or there were too many applications to be examined (some 7,000 of applications for small and medium-size systems were filed in just 20 months from July 2006 to February 2008, when a decision to freeze further new applications was taken).

With regard to residential rooftop systems, the Ministry of Environment, Energy and Climate Change had foreseen that a system could be authorized, installed and connected to the grid within 70 days. In fact, this is the minimum time needed in practice. The main delay lies with the grid operator as it takes them a lot of time to deal with the residential applications, an issue which does not seem to be a priority for them due to low volumes so far.

4.4.2. Analysis/ background

A reason for abnormal delays in issuing the 'Production License' is that this license was, until recently, linked to a preliminary environmental impact assessment (PPEA). Delays in getting approval for this preliminary assessment were in fact delaying RAE from issuing a 'Production License'.

This however does not apply to the so called 'Exemptions' which were never linked to environmental permitting but still were given with unacceptable delays.

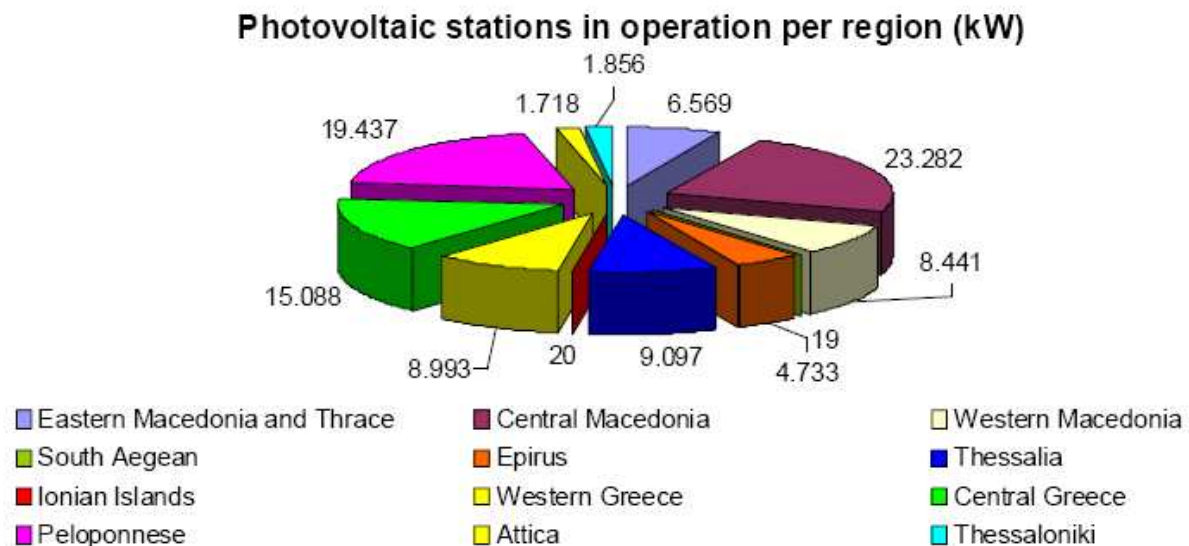
Another reason for delays in the issuing of the 'Production License' is that this license was signed by the Minister of Environment, Energy and Climate Change following a positive opinion of RAE. This in practice meant that the files were looked thoroughly once again by the services of the Ministry before they were signed by the Minister. In practice this caused extra delays of 2-6 months.

Delays during the environmental permitting process are often attributed to the lack of thorough and clear land and property registries in Greece. Due to this, relevant authorities claim that they have to be more cautious before issuing any license. A major cause of delays during this authorisation step is the lack of criteria for designating a plot as prime agricultural land. As a result, local authorities were often reluctant to grant permission for installing PV systems on open lands and they were either rejecting the project or simply delaying any decision until the whole issue of defining proper criteria is resolved.

A second reason for delays during the environmental permitting process was that such permitting was taking place in two stages (the preliminary environmental impact assessment, and the authorisation of environmental terms)

which involved more or less the same authorities, so the developers had to spend much more time since they had to visit most of the authorities twice.

As is shown by the graph below, different regional authorities treat PV projects in different ways depending on whether the competent staff has a positive attitude towards PV or not. In general, applications have been applied almost evenly throughout the country. In certain regions though, PV projects have proceeded much slower than in others, while the same rules for authorisation apply to all regions. This clearly shows that the awareness of the staff and the setting of clear and strict timelines could facilitate the smooth development of the market.



Source: Hellenic Transmission System Operator, August 2010

4.4.3. Options to overcome barrier

Since everybody agrees that authorisation times are unacceptable, there has been an effort to improve the situation. In mid-2010 a new RES law was set in force (Law 3851/2010) which tries to reduce the time needed for authorisation. This new law disconnects the issuing of the 'Production License' from the environmental permitting. Furthermore, the 'Production License' will be issued from now on by RAE and not by the Minister of Environment, Energy and Climate Change. These two regulations are expected to save a lot of time and reduce delays.

The new legislation also dictates certain timeframes within which authorisation should be granted. There are however no guarantees that this will happen in practice.

The only way to respect deadlines and time limits is to make explicitly clear to any relevant regulation that if a competent authority does not reply in the prescribed time, then its consent should be considered as given and the developer should be able to move forward with the authorisation process.

An argument against this approach is that this may in theory lead to a situation where no authority replies on time and the investment proceeds without any substantial control, implying that reluctance to answer may be the result of unclear and under-the-table handling. The fear of corruption however should not be used as an excuse for inaction.

It is true that most of the relevant authorities are well understaffed. This holds true for RAE, the grid operator, as well as regional authorities involved in environmental permitting. There are two ways to overcome such a barrier: [1] involve more staff in the authorisation process, and/or [2] make sure that only those substantial permits really needed are requested. Getting rid of unnecessary permits and procedures would save valuable time for the few officers dealing with authorisation of PV projects.

4.5. Overcoming Barrier 5: installation of PV systems >10 kWp not yet feasible on islands connected to the mainland grid

4.5.1. Description of the barrier

Islands in Greece are divided in two categories when it comes to PV. Islands with autonomous grids and islands which are connected to the mainland grid (interconnected islands). Different rules have been set by RAE for these two categories. In the first case, systems up to 150 kWp (<100 kWp in practice) were allowed but the residential sector has been practically excluded, as the incentives for residential systems were announced at a later stage when the available capacity per island had already been distributed to potential investors. While RAE has announced a call for expression for installing PV on autonomous grid islands in June 2007, such a call was never announced for those islands connected to the mainland grid (such as the island of Evia, the Ionian islands, Sporades, etc) which are considered potentially congested (although in most of them there are hardly any RES installed). As a result, installation of PV on these islands was not and is still not possible. The only exception to this rule is the residential sector, since it is allowed to install small residential systems up to 10 kWp on interconnected islands since June 2009.

4.5.2. Analysis/ background

There is no convincing argument why larger systems cannot proceed on these interconnected islands. The only argument heard is that since RAE was overwhelmed with so many applications for other islands, they wanted to deal with them first and then deal with the remaining islands not included in the first call for expression of interest. This argument though has the consequence that developers on these islands are not eligible to the incentives which apply to the rest of the country and this is unfair to them.

There seems to be no serious technical barrier related to grid capacity on interconnected islands. Even if there is such a problem, the relevant authorities, i.e. RAE and PPC, could determine the technically feasible capacity per island, as has already happened in the case of islands with autonomous grids.

The result of this inaction is that the potential of interconnected islands remains unexploited, these islands are mainly dependent of fossil fuels while there could be a remarkable penetration of renewable green energy, and investors are not equally treated.

4.5.3. Options to overcome barrier

RAE should announce a call for expression of interest by developers for interconnected islands. Such a call can be based on available technical data supplied by PPC for each island. There is already a lot of experience from this procedure which has been tested in the last three years for numerous other islands with autonomous grids.

At the moment there is no legislative gap that could hinder or delay such a call for expression of interest. It is merely a political decision. The supervising Ministry of Environment, Energy and Climate Change should ask RAE to proceed immediately with such a much needed process.

4.6. How do general administrative principles impair PV development

It is true that administrative procedures in Greece are problematic in general and affect all aspects of social and economic life. PV could not be an exception to this unpleasant rule. The European Commission estimates the administrative burden of Greece's bureaucracy - the value of work devoted to dealing with government-imposed administration - is equivalent to 7 per cent of gross domestic product, twice the EU average. In January 2007, the Commission launched the Action Programme on reducing administrative burdens in the European Union in order to measure administrative costs arising from legislation in the EU and reduce administrative burdens by 25% by 2012. Greece has therefore a Herculean task to fulfil in the coming two years.

An issue which makes things even more complicated is that although the PV market is fairly new in the country, there is already a pile of regulations relevant to PV. In fact there are far too many and, even so, there are a lot of unclear issues not determined yet. Regulations should be clear and straightforward and they are not. Such a

legislative mess triggers even more bureaucracy. The idea of one-stop-shops, although advertised for many years, has hardly been realized in most of the public services. With regard to renewable energy, this has never been the case unfortunately. Public services have a reputation of not respecting deadlines and time limits and there are no sanctions for this in practice. They are far from what is described in the EU RES Directive (2009/28/EC): "the respective responsibilities of national, regional and local administrative bodies for authorisation, certification and licensing procedures including spatial planning are clearly coordinated and defined, with transparent timetables for determining planning and building applications". The legal system itself is overburdened with bureaucracy and there is hardly any time left to deal with these administrative burdens. On the contrary, the courts have often been used to block renewable energy projects and in such cases (especially wind projects) there have been delays of up to four years.

In principle, the rights of PV project developers are protected by law. Developers have the right to an application for treatment, to objection or quasi-judicial action and to litigation in case an authority does not respect the imposed regulations, although it is in practice very difficult for citizens to get a final verdict if they decide to pursue a legal remedy. Generally speaking, regulations try to protect investors. The grid operator, for example, does not have the option to proceed or not to connection, nor has the Transmission and System Operator the option not to sign a PPA contract, since they have circumscribed powers. Consequently, their failure to connect or to sign a contract constitutes a "failure of due legal action," and the aggrieved party can submit an application for cancellation to the Administrative Court.

The new RES law 3851/2010 in line with the new EU RES Directive (2009/28/EC) also offers, for the first time, the opportunity for authorising small projects through simple notification instead of the normal permitting procedure. Such a notification process is now applied in the residential sector (as of September 2010), abolishing the license for small scale works which was issued by local urban planning authorities.

5 ACTION LIST

Barrier Number	Procedure/ Barrier name	Authority	Legal source	Possible option
1	Obtaining a 'Production License'	The National Parliament	Law 3468/06 (art. 4) and Law 3851/2010 (art. 2)	<p>Option 1: PV systems are exempted from the issuing of a Production License.</p> <p>Option 2: PV systems with a capacity of less than 10 MWp are exempted from the issuing of a Production License.</p>
2	Low cap for PV could seriously constrain the market	Ministry of Environment, Energy and Climate Change	Law 3851/2010 (art. 2)	A minimum of 12% PV electricity by 2020 could guarantee healthy market development. This can be described in an amendment of the National Renewable Energy Action Plan submitted to the European Commission.
3	Obtaining an environmental permit 'exemption' for ground-mounted systems <500 kWp	The National Parliament	Law 3851/2010 (art. 3)	Abolish this environmental permit 'exemption' as well as the paragraph saying that an environmental permit is needed for ground-mounted PV projects up to 500 kWp in the case that there are other PV systems with a cumulative capacity of 500 kWp in a range of 150 meters from the assumed project.
	Complicated and time-consuming process for environmental permitting	Ministry of Environment, Energy and Climate Change	Ministerial Decision 104248/2006 on Environmental Impact Assessment of renewable projects	A one-stop-shop service should be established for environmental permitting, whenever needed, where the developer should present a simple environmental notification and the authorisation should be granted in a very short time instead of the current time consuming processes.

Barrier Number	Procedure/ Barrier name	Authority	Legal source	Possible option
4	Authorities do not respect prescribed time limits for issuing permits	The National Parliament	Law 3851/2010 (art. 3)	<p>Make explicitly clear to the law and any relevant regulation that if a competent authority does not reply in the prescribed time, then its consent should be considered as given and the developer should be able to move forward with the authorisation process.</p> <p>In the case of residential systems, the grid operator should be encouraged not only to respect prescribed time limits but also facilitate the quicker connection of small systems and reduce connection costs which are now overwhelming.</p>
5	Installation of PV systems >10 kWp is not yet feasible on islands connected to the mainland grid.	Regulatory Authority for Energy (RAE)	Law 3468/06 (art. 4) and Law 3851/2010 (art. 2)	RAE should announce a call for expression of interest by developers for interconnected islands. Such a call can be based on available technical data supplied by PPC for each island.

ANNEX I

Methodology

Most of the barriers examined above were identified during the research for the *PV Legal* database (www.pv-legal.eu). The research consisted of two steps:

- 1) an in-depth analysis of the legal-administrative framework,
- 2) a coordinated survey of PV industry stakeholders.

The first step provided qualitative descriptions of the legal-administrative steps necessary to initiate and execute a successful PV development project. The market segments, the project development processes and the barriers associated with these processes were researched by the national PV associations. HELAPCO conducted desk research, made use of own experience and compared the results with industry stakeholders and legal experts active in the PV sector. A quality check was done by the consultant company *eclareon* Ltd.

The second step, the *PV LEGAL* industry stakeholder survey, provided quantitative data (such as duration, waiting time and cost indicators with regard to the processes and barriers identified) and thus hands-on experience from the PV industry stakeholders. According to the size of our PV market, HELAPCO conducted enough interviews to get a good sample of PV companies operating in each segment. The methodology for the *PV Legal* industry stakeholder survey was based on the internationally accepted methodology of the Standard Cost Model (SCM).

For more details, please have a look at the project website (<http://www.pvlegal.eu/presentation/project-methodology.html>).

ANNEX II

Country Information

1. Market segments

The *PV Legal* research focused on the following market segments in Greece:

SEGMENT A: Small Scale Installations on residential buildings

Sub-segment 1: Residential rooftop systems with a capacity of less than 10 kWp (supported by a special incentives program which commenced in mid-2009)

Sub-segment 2: Residential rooftop with a capacity of less than 10 kWp on historical buildings

SEGMENT B: Small to medium-scale installations on commercial buildings

Sub-segment 1: Commercial rooftop systems with a capacity up to 20 kWp (major segment up to now)

Sub-segment 2: Commercial rooftop systems with a capacity of less than 10 kWp (supported by a special incentives program which commenced in mid-2009)

Sub-segment 3: Commercial rooftop systems with a capacity of 20-150 kWp (emerging segment which is expected to boom after the introduction of the new legislation in mid-2010)

Sub-segment 4: Commercial rooftop systems with a capacity over 150 kWp (emerging segment which is expected to boom after the introduction of the new legislation in mid-2010)

Sub-segment 5: Commercial rooftop systems on historical buildings

SEGMENT C: Medium to large-scale ground-mounted installations on open lands

Sub-segment 1: Ground-mounted systems with a capacity between 20 kWp and 150 kWp (major segment up to now)

Sub-segment 2: Ground-mounted systems with a capacity over 150 kWp (emerging segment)

SEGMENT A

Since 1 July 2009 a program has been in force for the installation of small PV systems (<10 kWp) in the residential sector. For listed buildings and areas subject to monument protection, a special ministerial decision was needed until recently (major obstacle which was however lifted in September 2010). The first phase of the program applied only to the continental grid and to the islands connected to this grid. The islands that are not connected to the grid were exempted until recently; however, this has been resolved in September 2010. In order to be eligible for incentives, a part of the building's hot water needs must be covered by renewable sources of energy. The authorities involved are the local branch of the Public Power Corporation (PPC), or any other electricity retailer, with which the "compensation agreement" has been signed, and, until recently, the local Urban Planning authority, which provided permission for small-scale works. As of September 2010, the only authority involved is the local branch of the Public Power Corporation (PPC).

SEGMENT B

The installation of PV systems up to 20 kWp on commercial buildings follows a relatively easy process. Until recently, for systems over 20 kWp an environmental permit was required (from the competent regional authorities) as well as the issuance of a Production Permit or a so-called 'exemption' from the Regulatory Authority for Energy. These authorisation steps have been abolished by the new legislation (L.3851/2010). As of September 2010, the only authority involved is the local branch of the Public Power Corporation (PPC).

SEGMENT C

The installation of ground-mounted PV systems required a long authorisation process that encompassed the acquisition of a special permission from the Regulatory Authority for Energy as well as an authorisation of environmental terms from the local authorities. Until recently, the large projects had to pass through two stages for getting an environmental permit in which the same services were more or less involved. The new Law 3851/2010 has merged these two stages in just one. Large projects (>1 MWp) also require two additional licenses, the Installation Permit and the Operation License.

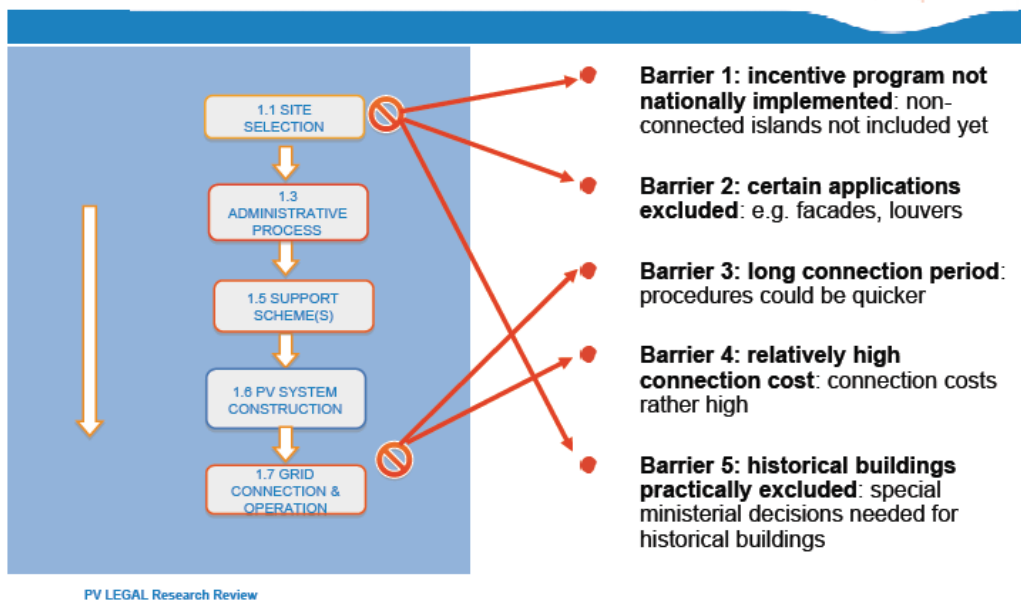
2. Project Development Process

These barriers have been identified during the first research phase of the *PV Legal* project and reflect the situation before the voting of the new RES law in mid-2010. As a result of pressure by the PV industry and public consultation, some of these barriers (especially for rooftop systems) have been lifted recently with the introduction of new legislation in mid-2010. Such positive changes in legislation include:

- Installation of residential PV systems is now allowed in the autonomous island grids as well (as of September 2010).
- Applications previously excluded (such as facades, louvers, warehouses, carports, etc) are now feasible in the residential sector (as of September 2010).
- PV systems on historical buildings can now be deployed under a special authorisation procedure (as of September 2010).
- Rooftop systems of any size do not require environmental permitting any more.
- Production license is now needed only for ground-mounted systems >1 MWp.
- Installation of PV systems on agricultural land is now permitted with certain limitations.

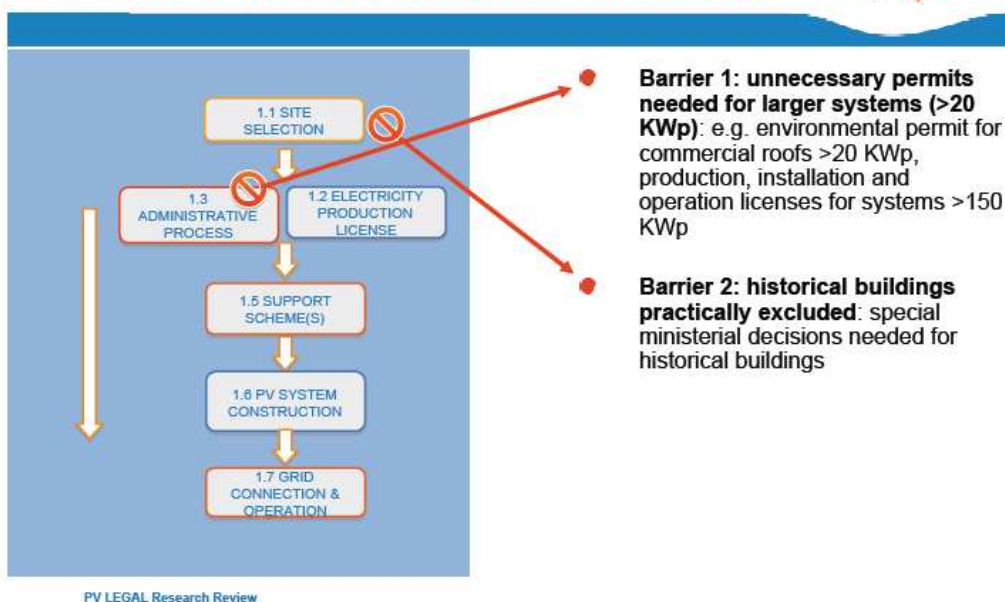
2.1. Segment A

Segment A: Small Scale Installations on residential buildings



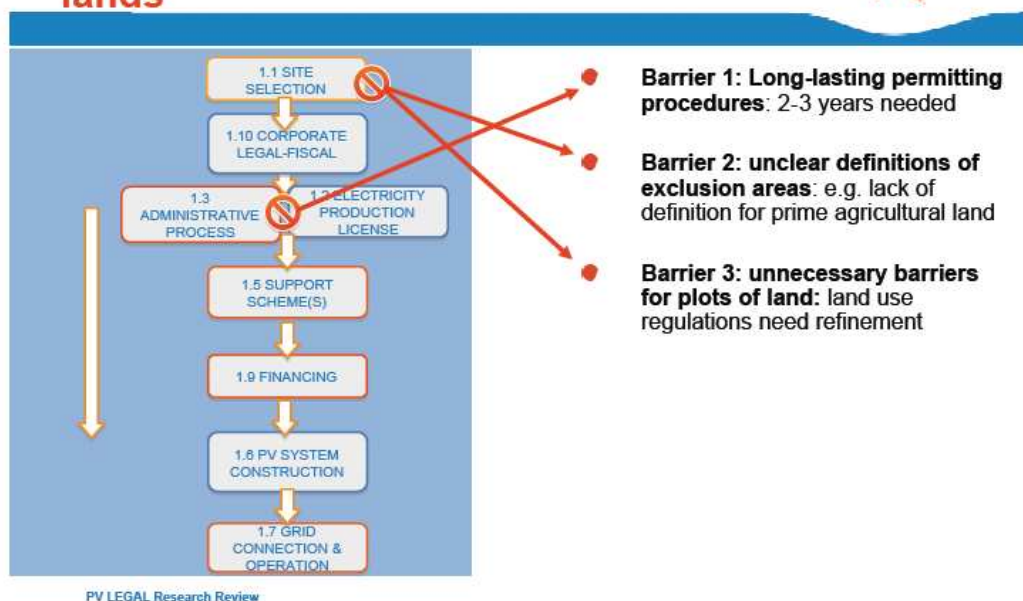
2.2. Segment B

Segment B: Small to medium-scale installations on commercial buildings



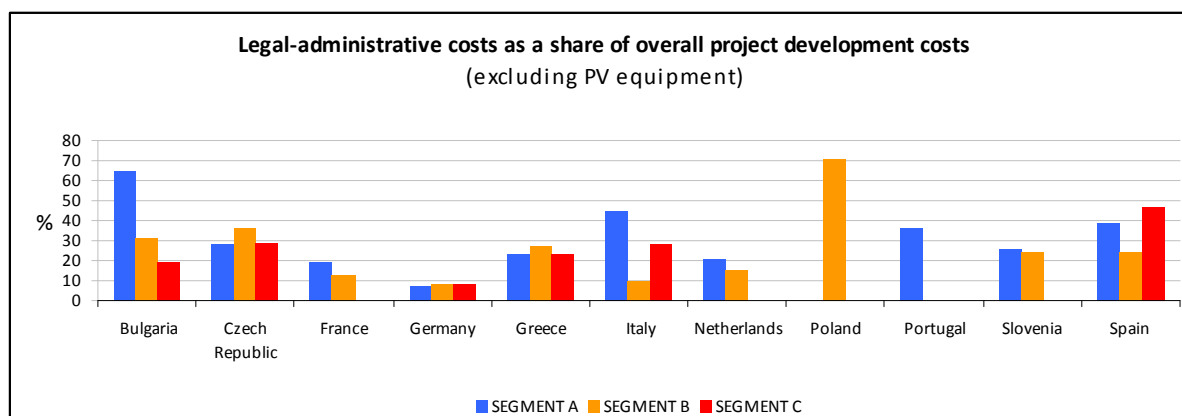
2.3. Segment C

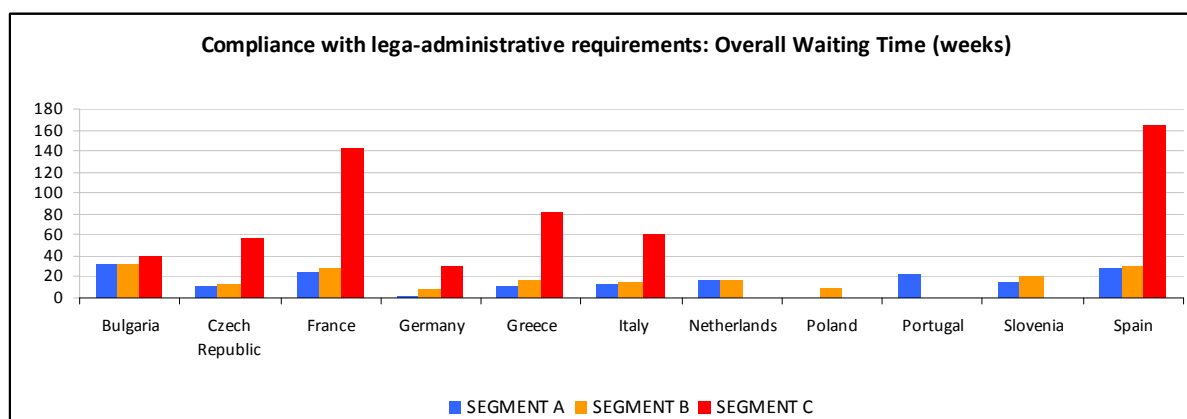
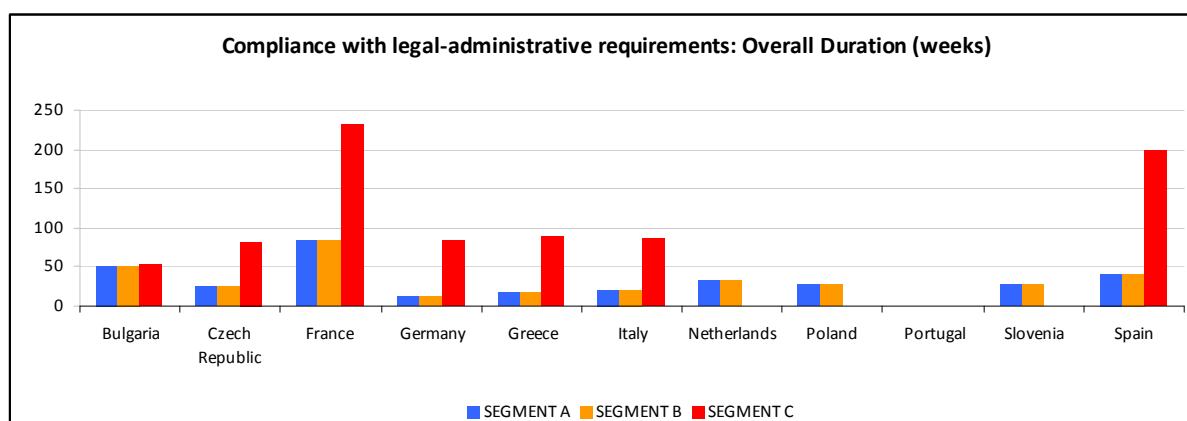
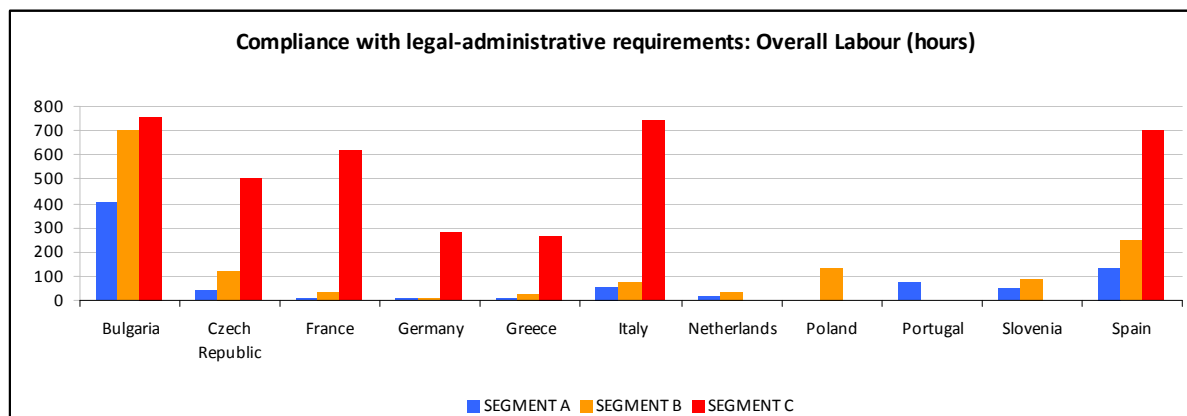
Segment C: Medium to large-scale ground-mounted installations on open lands



2.4. Country comparison

The following diagrams show the differences among the participating countries. They should be read with caution however, as the segments compared may refer to PV systems of different sizes (e.g. Segment C in Greece refers to 100 kWp systems, while in Bulgaria, Czech Republic and Spain to 1 MWp, and in France, Germany and Italy to 5 MWp).







HELLENIC ASSOCIATION OF PHOTOVOLTAIC COMPANIES

Reduction of Bureaucratic Barriers for Successful PV Deployment in the EU

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