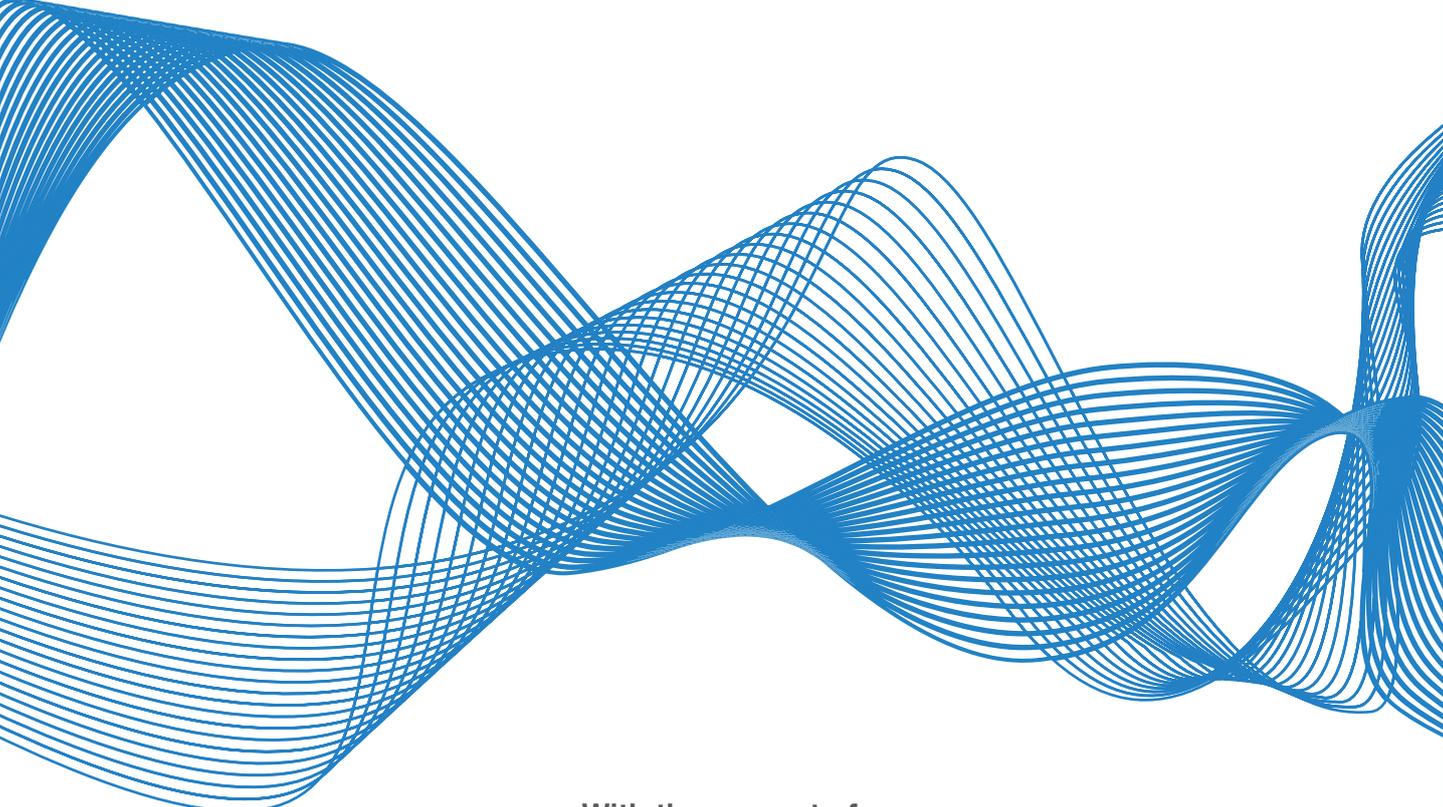




PV LEGAL

1st PV LEGAL STATUS REPORT

July 2010



With the support of

Intelligent Energy  Europe

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Foreword

This report summarises the results of the first year of activity of the PV LEGAL project, a joint effort of several national photovoltaic (PV) industry associations in Europe, led by BSW-Solar, assisted by EPIA and the management consulting company eclareon, with the goal of reducing legal-administrative barriers introduced by administrative authorities and grid operators hampering the development of PV installations throughout Europe.

The project is co-funded by the European Commission through the Executive Agency for Competition and Innovation (EACI) within the framework of the Intelligent Energy Europe programme.

In the following pages, after shortly introducing the project and its methodology, we will present the results of the research carried out in 12 European countries. Its principal goal was to define the most relevant barriers to PV development and to quantify their impact on the work of PV developers and operators, consisting in private citizens, professionals and industry alike. For each country, we will also shortly illustrate the legal-administrative process necessary to develop a PV system. By all means, it should be kept in mind that a much more detailed description of barriers and processes is available in the PV LEGAL database.

Successively, we will be able to quantitatively compare the impact of the legal-administrative barriers across all the countries that were involved in the research carried out by the PV LEGAL project consortium.

After identifying and ranking the most severe barriers in each country, the following and most important objective of PV LEGAL is to address these barriers and to eventually contribute to their lessening or removal. This is already being achieved by the preparation of several Advisory papers targeted at national and regional policy makers. The Advisory papers will be initially discussed during a series of National forums that will take place in the participating countries during autumn 2010 and finalised during the following winter.

Finally, in spring and summer 2011 the relevant policy makers, authorities and grid operators who have been made aware of and informed about the PV LEGAL activities since the beginning of the project will be invited to join small, dedicated National and Regional Review workshops to discuss in depth the legal-administrative framework changes proposals prepared by the PV LEGAL project consortium.

A final status report will be prepared by the end of the project. It will, where appropriate, emphasise the anticipated legal framework changes accomplished and stress the changes that still need to be made. It will contain the main outcomes of the project and will summarize all results, lessons learnt, achievements related to the action undertaken.

Introduction to PV LEGAL

Methodology

The scope of the initial phase of the PV LEGAL project was to research and gather detailed information about the development of PV projects and the legal-administrative barriers associated with such projects in several European countries.

The PV LEGAL research covers 3 distinct PV market segments:

- Segment A: Small scale installations on residential buildings
- Segment B: Small to medium-scale installations on commercial buildings
- Segment C: Medium to large-scale ground-mounted installations on open lands

In some cases, when different legal-administrative requirements apply to PV systems within the same market segment, these systems are gathered into different sub-segments.

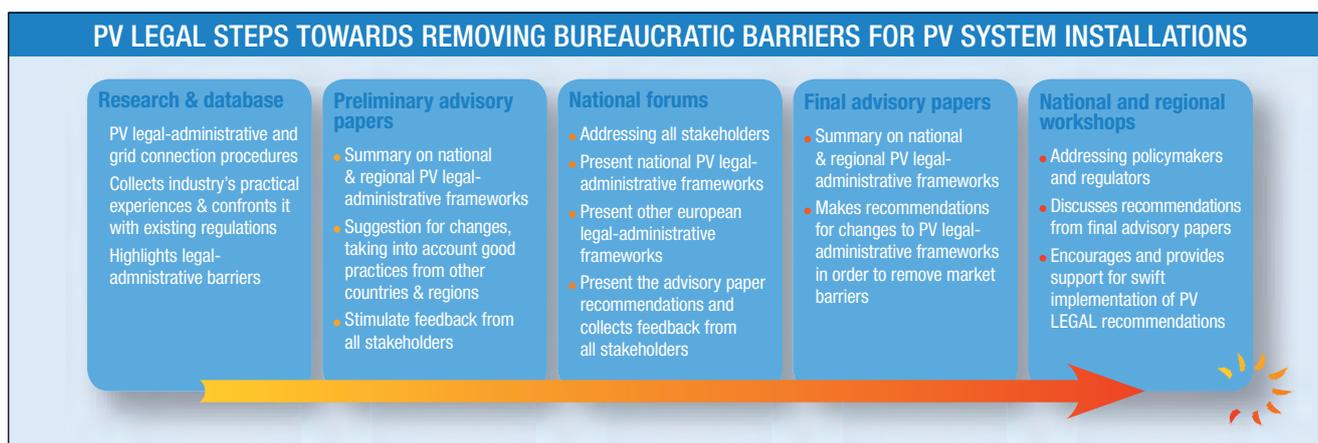
The geographical focus of the research lies on the legal-administrative framework of the following countries: Bulgaria, Czech Republic, France, Germany, Greece, Italy, the Netherlands, Poland, Portugal, Slovenia, Spain and the United Kingdom.

Since the development process of PV projects often depends on regulations on a regional level, the scope of the research covers both the national and regional level. For each participating country, the research provides details about one or more regions where legal-administrative procedures (LAP) regarding the installation of PV systems may differ. Nonetheless, the results of the research for a particular region can be considered valid and in most cases representative for the whole country.

Focus of the research: legal-administrative barriers

The focus of the PV LEGAL research is to identify and analyse all legal-administrative barriers that investors and project developers face when setting up a PV project. PV LEGAL considers legal-administrative barriers to be those involved in the administrative processes that are set-up by regulations stemming from government bodies or grid operators and which disproportionately delay the deployment of PV in Europe.

These barriers are constituted by requests from authorities/grid-operators to supply them with information and data, such as applications, registrations, licences, reports, etc. Such regulations can result in a considerable load of paperwork needed in order to fulfil the obligations. Delays may also be constituted by internal working and reporting processes within authorities/grid operators that may willingly or unwillingly delay PV projects. This may be due to inefficient authorities or simply to a lack of experience with regard to handling PV projects. Both intentional (e.g. rules for environmental protection) and not intentional (e.g. grid connection regulations which do not fit to small residential buildings) barriers have been in the focus of our research.



PV LEGAL research process

The PV LEGAL market research and data collection process was split up into two steps. The first step, the legal-administrative framework research, provided qualitative descriptions of the legal-administrative steps that are necessary to successfully prepare and realise a PV project.

During the autumn of 2009, the PV LEGAL national project partners have researched the 3 market segments, their sub-segments and the PV project development processes in their respective countries and the barriers associated with these processes. The supervision of this phase was ensured by the consultancy eclareon.

PV industry survey

During the second step, the PV LEGAL industry survey, the project consortium researched quantitative data (such as duration, costs and waiting times) involved with the processes and barriers identified in the first step of the research, drawing from the hands-on experience of the national PV industry stakeholders. According to the size of their PV market, the PV LEGAL project partners conducted enough interviews to get a significant sample of PV companies operating in each segment.

The methodology used is based on the internationally accepted methodology of the Standard Cost Model (SCM). The SCM Network is a collaborative international working group sharing experiences and knowledge to reduce administrative burdens by addressing unnecessary bureaucracy and red tape¹. The network has developed a methodology that is currently used by most EU countries and the European Commission to quantify administrative burdens. Since the methodology developed by the SCM network aims at quantifying administrative burdens for national administrations, the PV LEGAL consortium adequately adapted its methodology in order to address the administrative burdens for PV industry stakeholders.

The PV LEGAL database

The results of the research were published in May 2010 in the form of a database publicly accessible on the PV LEGAL website. The database provides users with detailed information about the PV project development process in the different segments and sub-segments of the national PV markets, making extensive use of flowcharts and overview tables.

In order to represent the practical information on the PV project development process in a standardised fashion, the PV LEGAL database displays the PV Project Lifecycle of each researched country as the set of all the procedures required to authorise, install and finally connect a PV system to the grid. Further, a PV Project Lifecycle is defined as a sequential succession of Processes (such as site selection, grid connection, etc.), each of them described by a sequence of Process Steps, (either of administrative or non-administrative nature).

Inside this report as well as on the online database, the project lifecycle of most typical segments in each country are displayed via flowcharts. To be self-explanatory these charts are proportional to the relative length of a process step and the colour code indicates the degree of difficulty of the step as shown in the legend below:

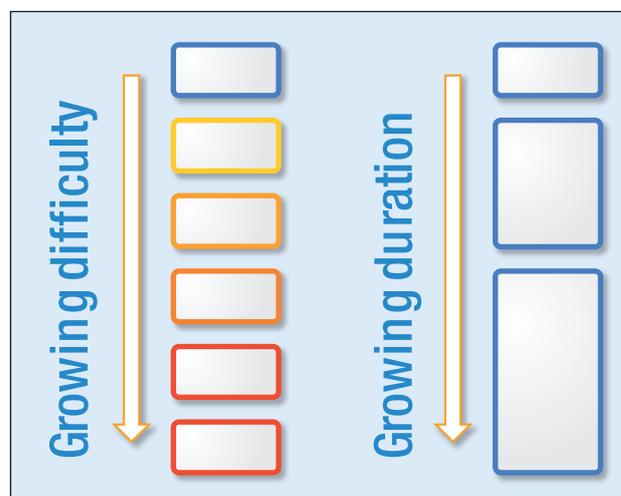


Figure 1 – Legend of Project Lifecycle Flowcharts

The PV LEGAL database is available both in English and the respective language of each country studied; it can be freely accessed online at: <http://www.pvlegal.eu/database.html>

¹ See <http://www.administrative-burdens.com>

PV LEGAL research results

In this section we review the principal trends of each national PV market and the main findings of the PV LEGAL research for each country participating to the project. By all means, it should be kept in mind that a much more detailed description of barriers and processes is available in the PV LEGAL database.

Bulgaria

Introduction

Bulgaria is one of the promising new markets for the deployment of PV power systems. Still, some deficits in the legal framework exist that so far hampered the development of the PV sector. As of today, Bulgaria has a total PV power installed of PV systems amounting to less than 10 MWp. Currently, another 10-20 MWp of new PV systems are under construction and some several dozens of utility scale PV projects are planned. The construction of small and medium-sized rooftop installations has so far been insignificant due to the existence of legal-administrative barriers that are very time and cost-intensive. This is expected to change with the introduction of a new Renewable energy act (REA), to be adopted by December 2010.

The REA regulates the sector, giving clear priority to investments in electricity generation from renewable energy sources (RES), and providing for obligatory grid access and priority connection for systems generating power from RES. PV seems to be the most attractive RES for investors, due to the attractive feed-in tariff (FiT) for a period of 25 years on top of the administrative preferences. In reality slow and burdensome administrative procedures, long waiting times for different procedures and great uncertainty with regards to the grid connection of PV systems hamper the expected development.

An important challenge for the development of the Bulgarian PV market is the lack of political predictability and clear support for PV and RES. Although the REA gives clear priority to RES and PV, several political initiatives have put the political will to support RES and PV in doubt – most notably a proposal for the introduction of a temporary moratorium on all RES over the whole territory of the country, that was announced by the Bulgarian Ministry of Environment and Waters in late 2009 and later abandoned. In addition to that, in early 2010 the Ministry of Agriculture proposed a ban on agricultural land designation for all RES including PV. The ban would clearly go against the stipulations of Directive 2009/28/EC and 2009/72/EC, but was nevertheless approved in a first hearing by the Bulgarian Parliament in June 2010 and may eventually, be adopted in the new Agricul-

ture land protection act (PALA), expected to be finally voted upon in September 2010.

Segmentation

Segment A

The segment of small residential rooftop systems on residential buildings hardly exists because of burdensome, expensive and time-consuming administrative procedures.

Segment B

The situation is similar with regard to medium-sized to large rooftop systems on industry and commercial buildings compared to Segment A. Burdensome, expensive and time-consuming administrative procedures hamper the development of this segment.

Segment C

The segment of medium to large ground-mounted systems bears less administrative barriers, and is the one that has seen the most developments in recent years.

Description of procedures

Segment A and B

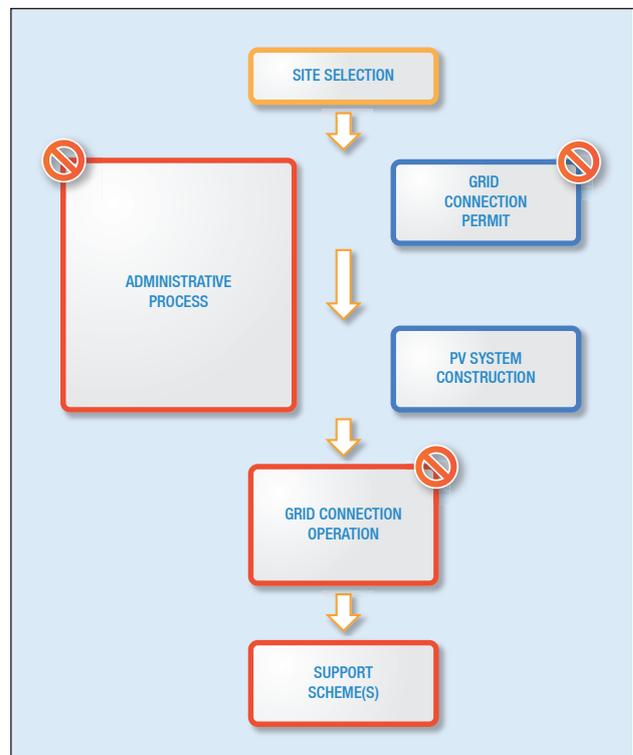


Figure 2- Bulgaria, Project Lifecycle Flowchart for segment A and B

Construction and legalisation procedures are not merely a matter of notification - they involve obtaining a detailed spatial plan and a building permit. This entails the need for a supervision company to monitor the construction of the PV system, architectural, electrical and other designs are subject to special approval by the municipal administration.

Segment C

Change in the designation of the land is needed, if a ground-mounted PV system is to be constructed on agricultural land. The plot should be ultimately converted into industrial land. This involves obtaining a detailed spatial plan and a building permit, as well as an analysis for the need of environmental impact assessment.

Main barriers

On top of the already mentioned difficulties with administrative procedures, it has to be noted that grid operators turned up to be (and still remain) highly sceptical about the integration of RES and PV. Thus, project developers and investors face great difficulties in acquiring the pertinent preliminary agreements, preliminary contracts, final contracts and power purchase agreements, although the grid operators are obliged by the REA to handle PV projects with priority are not allowed to turn off investment interest.

Segment A and B

In these two segments, the waiting time for authorities and grid operators amounts to 30 weeks in average, while costs for administrative procedures and related issues amount to about 30% of the total project investment.

The main barriers are:

- The administrative procedure, even for small PV installations, is both onerous and time consuming in relation to the investment volume. It is almost identical to the one required to authorise the construction of a new building, due to the fact that a new detailed spatial plan and a building permit are needed.
- The administrative procedures in different municipalities often diverge, because the main architects of different municipalities have different approaches with regard to the documents required.
- The preliminary connection study and preliminary contract for grid connection often diverge. The preliminary connection study is a nonbinding study of the available grid capacity, made by the grid operator after an application for grid access has been filed. If the connection study is positive, an application

for a preliminary contract is filed. After a preliminary contract is issued, the investor/project developer has a binding document that – according to the REA – entails the right to connect a PV system to the grid in the course of 24 months after issuing of the preliminary contract. Still, some of the grid operators do not state an explicit connection right, although a positive preliminary contract is given. There are cases of rooftop PV systems that have been constructed and cannot start operation because they are not connected to the grid. This creates general uncertainty with regards to the grid connection of the PV systems, as well as the exact point of connection.

- There have been cases in which grid operators refuse to buy the full amount of electricity produced by rooftop PV installations under the pretext that first the electricity needs of the building/household should be covered and only what is left gets the feed-in tariff. In order to overcome this issue, it is necessary to create a legal entity.

Segment C

In this segment, the waiting time for authorities and grid operators ranges between 40 to 60 weeks, while costs for administrative procedures and related issues amount to about 60% of the total project investment.

The main barriers are:

- Grid access is often refused, although according to the REA the grid operators are obliged to connect all PV installations. The argument of grid operators is the virtual lack of capacity of the grid due to the amount of pending requests: investors are in practice hindered to develop and construct PV installations, as it is unclear if they are going to be connected.
- Preliminary connection study and preliminary contract for grid connection often diverge. The preliminary connection study is a nonbinding study of the available grid capacity, made by the grid operator after an application for grid access has been filed. If the connection study is positive, an application for a preliminary contract is filed. After a preliminary contract is issued, the investor/project developer has a binding document that – according to the REA – entails the right to interconnect a PV system to the grid in the course of 24 months after issuing of the preliminary contract. Still, some of the grid operators do not state an explicit right for connection, although a positive preliminary contract is given. This creates uncertainty with regards to the grid connection of PV systems, as well as the exact point of connection.
- There is a lack of transparency regarding the criteria for issuing an analysis for the need of environmental impact assessment.

Conclusions

Political uncertainty and legal-administrative barriers create difficulties for the development of PV in Bulgaria. A new REA is currently being drafted, and it should solve most of the issues described above, especially with regards to the heavy and time-consuming administrative procedures for the construction of rooftop PV systems. Still, a lot more needs to be done by the Bulgarian government and administration, in order to give a clear sign that PV is supported and that political will exists, so that significant PV capacity can be developed in Bulgaria.

Czech Republic

Introduction

The development of the PV market in Czech Republic started in 2006 with the introduction of a profitable FiT. Before 2006 the FiT was in fact considered too low to stimulate investments. Thanks to the strengthening of Czech currency, the fall of PV module prices and the 5% yearly digression rate of the FiT, the PV market has started booming from early 2008. Currently the total PV power installed is about 500 MWp, and it is expected to at least triple by the end of 2010.

There are two types of support schemes in Czech Republic – the FiT and the green bonus. The FiT is more profitable in case all produced electricity is sold to a distribution grid operator. The green bonus is more profitable in case significant part of the produced electricity is self-consumed or it is traded at market price.

The FiT currently guarantees a payback time minor than 8 years, while the green bonus may provide a chance for higher profits, depending on the price of electricity on the Prague Energy Exchange and on other factors that vary from year to year.

Segmentation

Segment A

Small rooftop systems on residential buildings (systems up to 20 kWp) represent about 75% of the PV systems in Czech Republic and constitute about 5% of the installed power in the country.

Segment B

Medium-sized to large rooftop systems on industry and commercial buildings make up approximately 5 to 10% of the total installed power in the country. Despite of no limitations in size, systems are rarely larger than 200 kWp.

Segment C

Medium to large ground-mounted systems make up 85 to 90 % of the total installed power in Czech Republic. It is expected that this segment will be inhibited in the near future.

Description of procedures

Similar legal and administrative steps are necessary for installing PV systems in all the 3 segments described above. What is different is mainly the time needed to comply with the required documentation and the application processes.

An investor who owns or rents a site for installation of a PV system has first to apply for a grid connection permit to the Distribution System Operator (DSO) in whose area the site is situated. After receiving a positive feedback to the application, he can continue with requesting a building permit, which is usually needed before the PV system construction is started. After the PV system is constructed, the investor has to apply for the electricity production license to the Energy Regulatory Office. Finally, a contract with the DSO is needed in order to sell the produced energy.

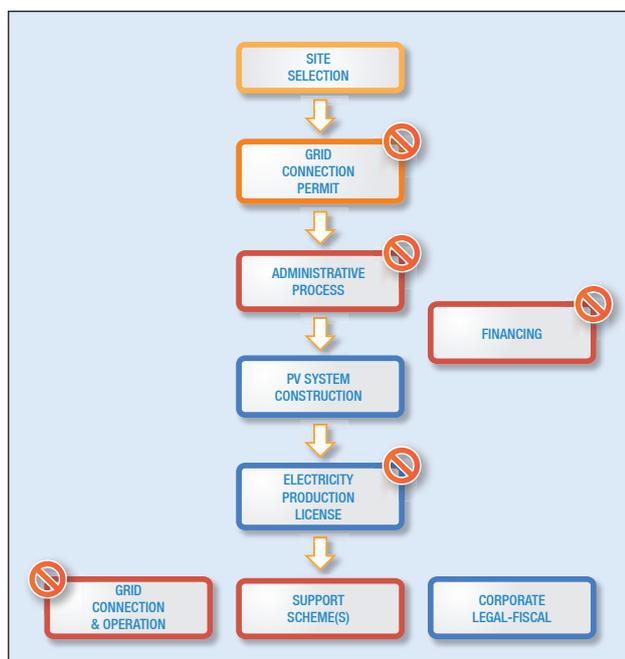


Figure 3 - Czech Republic, Project Lifecycle Flowchart for segment A, B and C

Main Barriers

The main barrier against further PV development in Czech Republic is resulting from the speculative grid connection permit requests whose total corresponding capacity already reached a level that, if it really resulted in real installations, would cause instability to the electricity distribution and transmission systems. Until March 2010, grid connection permits were provided at no cost and with no verification by the DSOs whether there was a real project behind the application. At that time, there were pending applications for more than 8 GWp and assigned permits for 5 GWp. As of July 2010, about 2.5 GWp of permits are still valid, many of them still

speculative. As a result of this fact, currently all Czech DSOs do not provide new grid connection permits.

A second general barrier is related to the grid connection. The connection of a PV system to the grid can be delayed for months by a DSO. In practice, the delay can be up to 11 months and PV systems developed this year may be eventually connected to grid only next year.

Segment A

- No new connection permits: despite the fact that speculation and grid instability risks involved with these very small PV systems should be negligible, even for this segment no new grid connection permits are currently provided by DSOs across the country.
- Building laws: their interpretation differs regionally, depending on the judgment of the executive officer in charge. Certain municipal building authorities require a building permit, some require only a notification, and some require no action at all.
- License for electricity production: this licence has the same legal impact as a trade license. License holder is obliged to observe double-entry accounting and to apply and pay for health and social insurance, but has no right to apply for unemployment grant in case he becomes unemployed.
- Grid connection costs: also in cases when the evacuation capacity of a residential connection point is sufficient to accommodate the production of a new PV system, consistent costs are incurred by the owners. It is in fact necessary to pay the same costs required when the connection point capacity is insufficient and it needs to be increased.

Segment B

- Building laws: their interpretation differs regionally, depending on the judgment of the executive officer in charge. Certain municipal building authorities require a building permit, some require only a notification, and some require no action at all.
- Grid connection study: for larger systems, a feasibility study for the grid connection is required as part of the application for the grid connection permit.
- Technical acceptance issues: It is difficult to introduce new PV equipment (e.g. new module or inverter types or models) to the "white list" of acceptable technologies for grid connection.

Segment C

- Land planning modifications: the process of land planning modifications needed for installations on agricultural lands takes about 12 months to complete. In some cases the process is needed even for installations in industrial areas.
- Landscape protection: in many regions large PV plants are restricted based on these laws.
- Speculation: large quantities of grid connection permits are held by pseudo-investors that do not own the plot of land for which they were granted the permit.

Conclusions

There is an immediate need to introduce a new legal-administrative framework able to inhibit speculation on grid connection permits.

In order to ensure a higher market penetration of small PV rooftop systems (segment A) and to also contribute to reduce grid distribution losses and transmission system load, it is crucial to reduce the administrative complexity of the PV system development process. In particular, owners of small PV systems (less than 5 kWp) should be allowed to conduct simpler accounting procedures, allowing them to be eligible for the unemployment grant if needed.

France

Introduction

In July 2006, the French government set up an attractive FiT, split in two categories: Building Integrated PV (BIPV) and basic installations (not integrated). As a result of severe administrative barriers, the French PV market only started to grow dynamically in 2009, adding more than 200 MWp to the existing 6 MWp connected to the grid at the end of 2006.

Since January 2010, a new FiT has been implemented with three types of FIT: BIPV (58ct€/kWh or 50ct€/kWh), simplified BIPV (42ct€/kWh), other types of installations (from 31.4 to 37.6ct€/kWh). Moreover, a 50% tax credit exists for installations below 3 kWp built on residential houses.

Segmentation

Segment A

Installations on residential buildings are supported by tax credits and with the FiT which is paid for the energy produced. The sub-segment below 3 kWp is the most developed, representing around 60% of PV installations in France.

Segment B

Medium-sized installations from few kWp to several MWp are often located on commercial and industrial roofs. Those installations are essentially supported by the FiT. This segment represents around 30% of PV installations in France.

Segment C

Large-scale ground mounted installations range from hundred kWp to several MWp. This type of installations is also essentially supported by the FiT. This segment represents 10% of PV installations in France.

Description of procedures

Segment A and B

For both segments, procedures are similar and consist in getting a building permit and then dealing with the DSOs in order to be connected to the grid. Initially, it is necessary to obtain a building permit or work declaration, depending whether the PV system is installed on a new or existing building. Secondly, it is necessary to send a connection request to the DSO that will inform EDF OA (the party obliged to purchase the electricity) of the connection operated;

EDF OA will automatically send the purchase contract to the producer. Finally, the PV system can be built, the installation conformity must be certified by CONSUEL (the National committee for energy user safety) and the PV system can thus be connected to the grid.

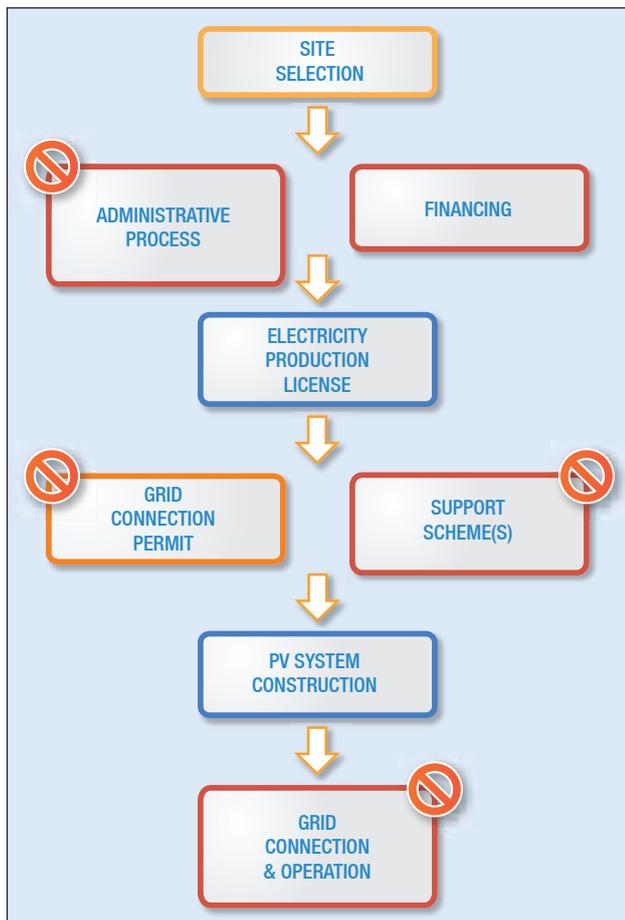


Figure 4 – France, Project Lifecycle Flowchart for segment A

Segment C

In this case, administrative procedures are quite different: Initially, a declaration of operation of a PV installation needs to be sent to the Department for Energy Demand and Energy Markets of the French Ministry of Environment (DIDEME) through the AMPERE website (<http://ampere.industrie.gouv.fr>). If the installation is above 250 kWp, an authorisation of operation needs to be requested instead. Developers have the obligation to carry out an environmental impact assessment. Following the assessment, a public hearing about the project needs to be performed. It aims to present the project to all stakeholders. After receiving a positive outcome from the public hearing and the environmental impact assessment, the PV developer should apply for a building permit. Successively, it is necessary to send a connection request to the DSO that will inform EDF OA (the party obliged to purchase the electricity) of the connection operated; EDF OA will automatically send the purchase

contract to the producer. Finally, the PV system can be built and connected to the grid.

Main Barriers

Segment A

The overall duration of the project development process for PV installations on residential buildings (average of 38 weeks) is excessive. The average waiting time involved with the administrative and grid operator processes is around 23 weeks. The costs of the administrative procedures are considerable. They represent around 25% of the overall costs (excluding PV equipment).

The main barriers affecting this segment are:

- Grid connection permit: the process is managed exclusively by ERDF, the main French DSO. Obtaining this permit takes excessive time even if the application form is correctly filled.
- Grid connection: after the installation is performed, the grid connection phase can still take many weeks. The delay seems to depend more on internal procedures within the DSO rather than on technical matters.

Large and different number of administrative authorisations needed: the municipal level building permit requirements set by Architectes des Bâtiments de France, heavily depend on the building's protection status, its type and location.

Segment B

The overall duration of the project development process is one to two years in average. This lengthy process is mainly explained by the need for more detailed technical studies than for installations from Segment A. Resulting waiting times are quite similar to those existing in segment A. The costs of the administrative procedures are quite high, and they represent in average 20% of the overall development costs (excluding PV equipment).

The administrative barriers are similar to those seen for the residential segment.

Segment C

The development of the project is very long (taking 3 years in average), because of the involved administrative procedures that can rarely be carried out at the same time. The costs related to administrative procedures are very high and represent almost 50% of the overall cost of project development (excluding PV equipment).

The main barriers are:

- **Environmental impact assessment:** this extremely complex study needs also to take into account the impact of other potential energy installations and projects, even if these are not already built.
- **Grid capacity limitations:** The grid needs to be reinforced in some areas. This means that administrative negotiations have to be done with local authorities and the grid operator. Large scale ground-mounted installations also suffer from poor information from the DSO about grid availability.
- **Grid connection:** the grid connection phase can last many weeks. The delay seems to depend more on internal procedures within the DSO rather than on technical matters.

Conclusions

The main barriers highlighted are the delay in the grid connection process, the unclear communication with the grid operator, the urban planning process for ground-mounted installations and, in some areas, the role of the Architectes des Bâtiments de France in the building permitting process.

In order to achieve an improvement in the current situation, several working groups could be set up with the grid operators aiming at improving their actions and the overall grid connection process. The same type of actions, addressed to civil servants, could be started with the French administration. As a result of this discussion process, several law amendments should be proposed in order to overcome the existing barriers.

Germany

Introduction

Germany is one of the most attractive solar markets in the world. The Renewable Energy Sources Act (EEG) that came into effect in 2000 has triggered an unprecedented development in PV system installations and solar electricity production. Within a few years, the annual revenue of the sector has grown to more than 10 billion Euros. 9,800 MWp of PV power were installed in Germany by the end of 2009. This development is largely due to the creation of favourable political framework conditions. Since the establishment of the FiT law in 1991, electricity generated from renewable energy sources enjoys priority status. Any renewable energy plants connecting to grid systems must be given priority. The electricity generated in this way must be purchased, transmitted and paid for by the grid operators at a fixed price, which is set by law for a period of 20 years. Grid operators are required to extend their grid to accommodate the connection of additional renewable energies to the grid.

Segmentation

Segment A

Small rooftop systems on residential buildings – this segment makes up more than 18% of the German PV market in 2009.

Segment B

Medium-sized to large rooftop systems on industry and commercial buildings – this segment makes up about 65% of the market in 2009.

Segment C

Medium to large ground-mounted systems – this segment makes up more than 17% of the market in 2009.

Description of procedures

Segment A and B

Small rooftop systems do not require planning permission. The grid operator is obliged to connect PV systems to the grid immediately and as a priority. The connection of the system must be applied for with the grid operator. The time for processing the application is not regulated by law and varies between one and several weeks. After receipt of the grid connection application, the grid operator conducts a connection study in order to assess the effects on the grid of the planned electricity feed-in

and to allocate the technically and economically most favourable connection point. The closest connection point is usually also the most favourable. For systems with capacity of less than 30 kWp, which are on a plot with already existing grid connection, it is legally defined that the connection point of the plot with the grid is regarded as the most favourable connection point. For systems with capacity of more than 30 kWp, no best connection point is defined in the EEG. The connection study ends with the allocation of a connection point. The system operator bears all costs incurred for the connection of the PV system to the connection point. The grid operator bears all costs (if incurred) from the connection point. The EEG foresees that grid operators must not make the fulfilment of their obligations conditional on the conclusion of an agreement. The conclusion of an agreement may, however, be practical to regulate technical issues, which are not covered by the EEG.

System operators must report the location and capacity of their PV system to the Federal Network Agency. An entitlement to EEG electricity FiT payments only applies if this notification is made.

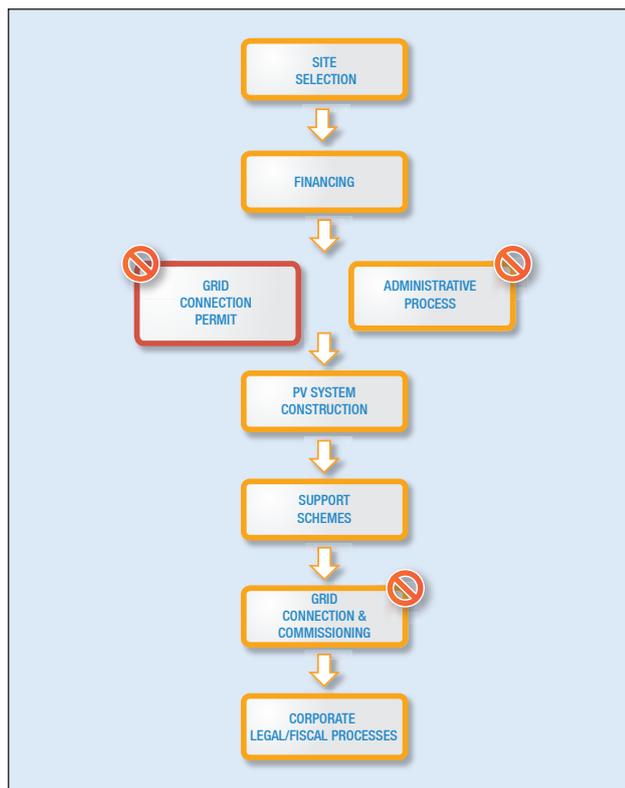


Figure 5 – Germany, Project Lifecycle Flowchart for segment A and B

Segment C

Ground-mounted PV systems are only eligible for FiT payments if they are built in the scope of an urban development plan or on an area for which complex planning procedures were conducted. For PV systems realised in the scope of an urban development plan created or altered after September 2003, there is an additional series of requirements for the quality of the area. Only specific sites such as conversion areas, sealed areas, business parks and land adjacent to motor- and railways qualify for FiT remuneration. The urban development plan is set up by the municipality. The public and administrations, whose scope is touched by the planning, must be involved in the process. Planning permission must be obtained in accordance with the relevant regional building law. In some cases simplified variants of the planning permission procedure are possible.

The grid operator is obliged to connect PV systems to the grid immediately and with priority. The connection of the system must be applied for with the grid operator. The time for processing the application is not regulated by law. After receipt of the grid connection application, the grid operator conducts a connection study, as a rule, in order to assess the effects on the grid of the planned electricity feed-in and to allocate the technically and economically most favourable connection point to the system operator. For systems with capacity of more than 30 kWp, no best connection point is defined in the EEG, contrarily than established for PV systems of up to 30 kWp. The connection study ends with the allocation of a connection point. The system operator bears all costs incurred for the connection of the PV system to the connection point. The grid operator bears all costs (if incurred) from the connection point. The EEG law foresees that grid operators must not make the fulfilment of their obligations conditional on the conclusion of an agreement. The conclusion of an agreement may, however, be practical to regulate technical issues, which are not covered by the EEG. The duty to connect to the grid also exists if feeding the electricity into the grid is only possible when optimising, upgrading or expanding the grid. Accordingly, grid operators must immediately optimise, upgrade and expand their grids, inasmuch as these measures are economically acceptable.

System operators must report the location and capacity of their PV systems to the Federal Network Agency. An entitlement to EEG electricity feed-in tariff payments only applies if this notification is made.

Main Barriers

Segment A and B

The most important barriers in Segment A and B are the following:

- Grid connection: difficulties to connect some installations to the grid (long waiting times, high connection fees, grid operators unduly complicate the connection).
- Definition of technical requirements for grid connection: the PV industry is not represented in the working groups in charge of defining the grid connection rules. The status of these connection rules is furthermore not clearly defined (it is not clear whether these rules are obligatory for grid operators).
- Grid extension: grid extension accompanying the fast development of the PV market is insufficient.
- PV and conservation of listed buildings: it is very difficult to built a PV system on a listed building or in a protected area.
- PV in “residential only” areas: PV plants over 3 kWp are considered to be a commercial business and are according to the law forbidden in “residential only areas”. Many PV systems are installed in these areas; there is therefore a legal uncertainty for these systems.

Segment C

The most important barriers in segment C are the following:

- Identification of areas meeting the EEG requirements thus being eligible for FiT payments: project developers report difficulties in proving that the selected area meets the EEG requirements for being granted a FiT – this creates legal uncertainty for project developers.
- Definition of technical requirements for grid connection: the PV industry is not represented in the working groups in charge of defining the grid connection rules. The status of these connection rules is furthermore not clearly defined (it is not clear these rules have to be followed by the grid operators).
- Grid connection: difficulties to connect some installations to the grid (long waiting times, high connection fees, grid operators unduly complicate the connection).
- Grid extension: grid extension accompanying the fast growing PV market is insufficient.

- Building Permit: modifying or setting up an urban development plan and a land use plan is a very long process. One single member of the municipal council can substantially delay or even stop the whole process before a public hearing can take place. If PV projects fail, they mostly do it at this stage.

Conclusions

The German PV market is the one with the strongest growth in the world. However, PV contributes presently only slightly more than 1% to the electricity supply in Germany. In order to continuously increase the share of PV within the German electricity mix, the above mentioned legal-administrative barriers need to be addressed. This will allow for PV to continue growing and ensure sustainable and stable framework.

Greece

Introduction

The first legislation for PV was introduced in 2006 (law 3468/06) offering generous FiTs and setting the details for authorisation of PV systems. These authorisation processes however were 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 previous years, and thousands of applications have piled up, mainly due the legal-administrative barriers imposed. A new law was introduced in mid-2010 (law 3851/2010), which eases authorisation procedures and is expected to bring positive changes.

Segmentation

The PV LEGAL research focused mainly on the market segments defined below.

Segment A

Residential rooftop systems with a capacity of less than 10 kWp. A special incentives program that commenced in mid-2009 supports this segment.

Segment B

Commercial rooftop systems of any size constitute this segment. Up to now, the main developments have been seen in rooftop systems below 20 kWp, but the recent law changes are expected to favour the development of larger systems.

Segment C

Ground-mounted systems with a capacity above 20 kWp. Up to now, the main developments have been seen in rooftop systems below 150 kWp, but the recent law changes are expected to favour the development of larger systems.

Description of procedures

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 is needed (major obstacle). The first phase of the program applies only to the continental grid and to the islands connected to this grid. The islands that are not connected to the grid are exempted, and they will be integrated into the program in a second phase. 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 in the legal-administrative process are the local branch of the Public Power Corporation (PPC), or any other electricity retailer, with which the "compensation agreement" has been signed, and the local Urban Planning authority, which provides permission for small-scale works.

Segment B

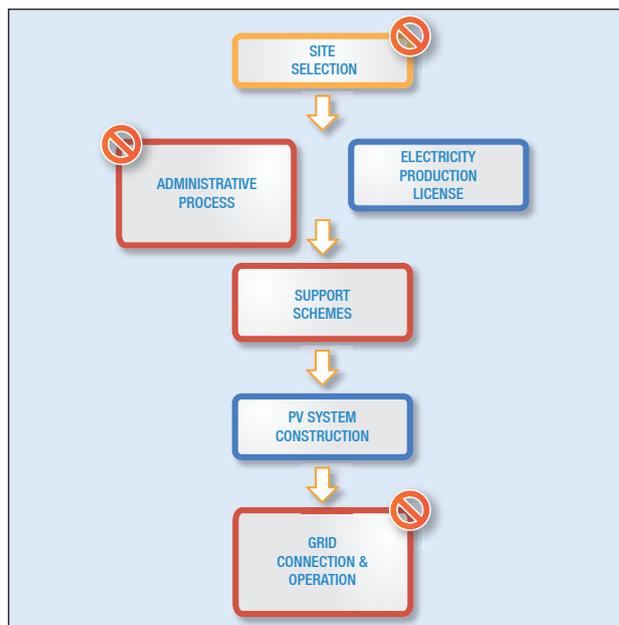


Figure 6 – Greece, Project Lifecycle Flowchart for segment B

The installation of PV systems up to 20 kWp on commercial buildings follows a relatively easy process, although this is not a one-stop-shop and there is significant room for improvement. 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 (law 3851/2010). In the case of listed buildings however, the installation of PV is extremely difficult to impossible.

Segment C

The installation of ground-mounted PV systems requires a long authorisation process that encompasses 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 also require

two additional licenses, the Installation Permit and the Operation License.

Main Barriers

Segment A

While the installation of a residential system (~5 kWp) is completed in a few hours, satisfaction of the legal-administrative requirements prolongs the time of implementation of the work to 3-4 months. The waiting times (mainly for the PPC services) are the maximum possible foreseen by the legislation and often surpass them.

The main barriers are:

- The PV Support Incentives Program is not nationally implemented, as islands that are not connected to the mainland distribution grid are not included yet.
- Certain applications such as facades and louvers are excluded from the support program.
- Long grid-connection times: the procedures required by DSOs could be quicker.
- Relatively high grid-connection cost: connection costs are rather high given the size of the PV installations in this segment.
- Listed buildings are practically excluded from PV applications: a special ministerial decision is needed for each PV system installed on a listed building.

Segment B

While the installation of a small commercial system (~20 kWp) is completed in a few days, satisfaction of the legal-administrative requirements prolongs the time of implementation of the work to 6-7 months. The greatest waiting time refers mainly to the PPC services for connection of the system.

The new law 3851/2010 has abolished some of the main barriers of the recent past; however listed buildings are still practically excluded, as special ministerial decisions are needed for installing PV on such buildings.

Barriers are similar than those for segment A.

Segment C

While the installation of a medium sized ground-mounted system (~100 kWp) is completed in about two weeks, satisfaction of the legal-administrative requirements prolongs the time of implementation of the project to almost 2 years. The greater waiting times refer mainly to the issuance of an exemption from the Regulatory Authority for Energy (RAE) and to the environmental permitting for the project.

The main barriers are:

- Long-lasting permitting procedures: up to 2-3 years are needed to complete the administrative process.
- Unclear definitions of exclusion areas: for instance, the definition for prime agricultural land where PV systems are not allowed is missing.
- Unnecessary barriers for plots of land: for instance, the minimum size of plot is set at 0.4 hectares even for small PV systems.
- The new law 3851/2010 has addressed some of these problems, as systems with a capacity up to 1 MWp do not require a permit from RAE anymore, and most systems with a capacity up to 500 kWp do not need a time-consuming environmental permit anymore, but only a simple environmental authorisation by the regional authorities is now requested.

Conclusions

In Greece, authorisation procedures for PV have been found to be complicated, time consuming or even completely unnecessary in the last few years. As a result, the PV market has developed very slowly and is far from its real potential. As discussed in the previous chapters, the new law introduced in summer 2010, promises to alleviate some of the barriers experienced by investors. However, the new legislation does not address all barriers and further initiatives are needed by the competent authorities.

Italy

Introduction

The Italian FiT “Conto Energia” was introduced in 2005 and revised in 2007 and 2010. The final text of the new decree for the Conto Energia 2011–2013 has been recently agreed upon by the State – Regions Unified Conference. Since 2005 the Italian PV Market developed from virtually zero to the current 1.3 GW of installed power. The year 2009 represented a turning point for the PV sector in the country, with about 40,000 systems and more than 700 MWp installed.

After 2009, the Italian PV market cannot be considered a niche market anymore, but represents a concrete and valuable opportunity for the industrial sector with a turnover (2009) of 2.34 billions € in the distribution and installation of PV systems.

Segmentation

The Italian PV sector is characterized by a neat predominance of small-scale residential and commercial roof-mounted systems.

Segment A

Small-scale residential rooftop systems represent the most widespread segment with over 60,000 installed systems (1-20 kWp) and a cumulative power of 350 MWp. Residential systems count for 32% of the total cumulative capacity installed.

Segment B

Medium-scale commercial rooftop systems between 20 and 200 kWp registered a growth of 46% in 2009. This was helped by the rise of the net metering limit from 20 to 200 kWp.

Segment C

Large-scale ground-mounted PV systems have determined an important market growth since 2009. For PV systems above 1 MWp (most of them ground-mounted, even if no specific data is available), 2009 has been a turning point with 34 systems installed (over a total of 40) and a cumulative power of more than 100 MWp.

Description of procedures

Procedures in Italy are difficult to synthesize due to the number of bureaucratic and administrative layers involved, creating a heterogeneous framework with differences between Regions, but also at provincial and local level. For larger systems, the main issue is obtaining the Autorizzazione Unica (AU). Ground mounted systems, besides the AU, often need to go through environmental procedures. All these requirements must be put in context taking into consideration the huge number of competent Regional, Provincial, Municipal and territorial authorities involved in issuing the authorisations (between 20 and 30).

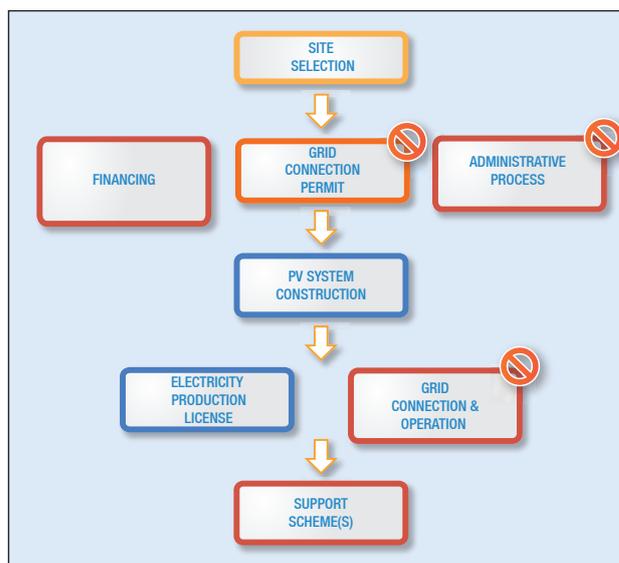


Figure 7 - Italy, Project Lifecycle Flowchart for segment A, B and C

Segment A

The bureaucratic procedure is relatively simple when only a DIA (Start of Activity Declaration) or even a simple communication to the Municipality is required. The DIA is an administrative notification submitted to the Municipality’s Technical Office and signed by an authorised design engineer. For the DIA declaration the silence-consent regime applies if no answer is received after the 30th day. The declaration must contain a graphic plan showing the current and future situation, a technical report that describes in detail the works to be carried out and the national and local reference regulations that govern the decision as well as a certificate of the works’ compliance with the land-use provisions in application at the time the design was drawn up by the design engineer (who assumes responsibility for this).

Segment B

National Decree 387/2003 establishes that for the authorisation of PV systems above 20 kWp an AU is required. The AU is a procedure aimed at centralizing and simplifying the authorisation process by means of an Inter-Administrative Conference gathering all the actors involved in the issuing of permissions in a one-stop shop procedure. The AU is issued by the Region or by the Province delegated by the Regional government. (Decree 387/2003). An Inter-Administrative Conference is held within 30 days of reception of the request. The AU should be issued within a maximum of 180 days and constitutes the right to build and commercially use the system. All environmental, landscape and monumental protection issues are included in the AU. According to the present framework, regional laws establish exemption cases where the AU can be replaced by the simpler administrative procedure of DIA. In future, these exemptions will be regulated by the lately adopted National Guidelines for the AU and will entirely exempt roof-mounted systems from the AU. The electricity production licence is needed for systems larger than 20 kWp.

Segment C

The “normal” procedure for large-scale ground-mounted PV systems is the AU, containing, where required, an environmental impact assessment. According to the present framework regional laws establish exemption cases where the AU can be replaced by the simpler administrative procedure of DIA. In the future, these exemptions will be regulated by the lately adopted National Guidelines for the AU.

Main Barriers

A fragmented regulative framework and the slowness of the authorisation procedures are hampering the development of the PV sector, introducing unnecessary costs and delays. Administrative costs linked to the AU often count for a significant percentage of the overall system development costs. The Environmental Impact Assessment is costly, time consuming and freezes the time limits for the AU, resulting in even longer waiting times. When an authorisation is required for landscape or architectural reasons, the procedure can increase waiting times considerably.

Segment A

Small-scale residential rooftop PV systems are the least affected by administrative barriers, except in some cases:

- Problems (and delays) might arise when further authorisations are required by the Soprintendenza, the Ministerial offices at local level in charge of controlling that the heritage, landscape and architectural qualities of the territory are preserved correctly and responsible for the issuing of permissions, for architectural and heritage reasons.
- Local administrations and National offices at local level, often suffer from a lack of knowledge of the rules governing the PV sector leading to delays or requirements that fall out of the legal procedures. Shortage in personnel is often also an issue.

Segment B

Medium-scale commercial rooftop PV systems are affected by the following main barriers:

- Administrative procedures: due to the lack of National Guidelines for the AU in the past, each Region adopted its own rules, setting limitations or exemptions not foreseen by the law. In most cases the legal time limit of 180 days for the conclusion of the AU procedure was not respected. This barrier should be significantly reduced by the recent adoption of the National Guidelines. Regions will have to adapt their frameworks to comply with the National Guidelines.
- The grid connection procedure can also become an issue leading to delays and additional costs. Delays in the connection of the PV system to the grid by the local utility are subject to an extremely low monetary compensation compared to the costs of non-production.
- The necessity to obtain an electricity production licence for systems larger than 20 kWp often leads to further delays in the authorisation process. The procedure and requirements are not uniform and depend on the provincial offices.

Segment C

Large-scale ground-mounted systems are the most problematic market segment for PV in Italy. The authorisations are more difficult to get and the time needed increases sensibly. Speculation on the authorisations can be present, bringing a distortive effect on the market.

The main barriers are:

- The grid connection procedure is often an issue leading to delays and additional costs. Very high costs may be involved, particularly for large ground-mounted systems, due to the necessity to connect PV systems to a distant connection point as a direct effect of speculation in grid capacity “reservations”. Delays in the implementation of the connection by the local utility are subject to an extremely low monetary compensation compared to the costs of non-production. The presence of speculative requests of grid connection oblige the grid operator to process requests that in most cases will remain on the paper, creating a virtual grid saturation and penalizing real PV investors.
- Administrative procedures: due to the lack of National Guidelines for the AU in the past, each Region adopted its own rules, setting limitations or exemptions not foreseen by the law. In most cases the legal time limit of 180 days for the conclusion of the AU procedure was not respected. This barrier should be significantly reduced by the recent adoption of the National Guidelines. Regions will have to adapt their frameworks to comply with the National Guidelines just approved.
- Large-scale ground-mounted systems are not well accepted because of competing use of the plots of land for agriculture and PV systems and landscape issues. This tension also exists at institutional and legislative level, leading to non-uniform regulations at regional level and to contradictory or conflicting interpretations of the norms.
- The necessity to register an Electricity Production Unit for systems larger than 20 kWp often leads to further delays in the authorisation process. The procedure and requirements are not uniform and depend on the provincial offices.

Conclusions

A general lack of planning and the absence of an updated National Energy Plan constitute the “peculiar environment” in which the Italian energy and PV sectors are developing. The introduction of the Conto Energia and its success was accompanied by a proliferation of regional laws, guidelines and Energy Plans, each with its own angle towards RES and PV. As a matter of fact, there seems to be a generally acknowledged preference towards roof mounted systems (residential or commercial), while the ground-mounted plants, that most of all require clear rules and planning, have been so far subject to the winds of regional decision making. The recent agreement upon the National Guidelines for the AU constitutes a great step forward in harmonising

and simplifying the National framework for the authorisation of PV systems.

The structural necessity to further develop the geographical extension and the capacity of the grid must urgently be taken into account. Furthermore, it is of utmost importance to introduce smart grid solutions in order to overcome the existing grid constraints affecting the development of distributed generation. Different solutions are available and development plans are already operative. Also, the adoption of new rules to discourage speculative applications and speed up administrative procedures are at study.

The Netherlands

Introduction

The market for PV systems in the Netherlands has started to develop in the last few years. A support scheme, based on a FIT, has been introduced in 2008, and is now entering its third year. The support scheme has so far led to an increase of grid-connected systems of only 7 MWp. Presently, the cumulative installed grid connected capacity has passed the level of 50 MWp.

The Dutch government has been proactive in creating easy and transparent procedures for applying for the support scheme. In addition, regulations for installing PV systems on rooftops have been simplified significantly.

Segmentation

In the Netherlands, the following two segments for PV systems can be identified.

Segment A

This segment covers small PV systems (from 1 to 15 kWp) to be installed on rooftops of residential homes and buildings. The majority of PV systems in the Netherlands are installed in this segment, mostly on residential homes.

Segment B

This segment covers medium-size PV systems (from 15 to 100 kWp), to be installed on commercial buildings and large apartment buildings. In the Netherlands, many PV systems of this size are placed on rented roofs. The support scheme for this segment has been heavily oversubscribed over the past years, indicating at the large potential of this segment.

Description of procedures

Segment A

The procedure for developing a project starts with identifying a suitable location for the PV system. This is typically a residential home or building. Thereafter, the application for the support scheme may be issued. This is done electronically via a website of the government controlled "Agency NL". When a grant is received, the planning for permits and construction can start. The PV system should be placed on the rooftop or attached to the side of the building. Ground-mounted PV systems of any size are not allowed. Assuming the PV system is installed in accordance to the practical specifications in the building decree,

no permit is required. Listed buildings do require a light permit. After construction of the PV system, installation of meters and the physical connection to the grid, the system is offered for test to the grid operator.

Segment B

The procedure for implementing a project in segment B is largely comparable with the one of segment A. The difference here is that extra attention is needed on meeting the requirement for placing a large system on rooftops, sometimes resulting in the need to apply for a permit. In addition, after receiving the grant for the support scheme and before starting to construct a PV system, financing will (in most cases) need to be obtained. Several green loans and interest credits are available with banks and through municipalities. This step of obtaining financing is particularly important for developers, which intent to build and operate the PV system, either on their own buildings or on rented roof surfaces.

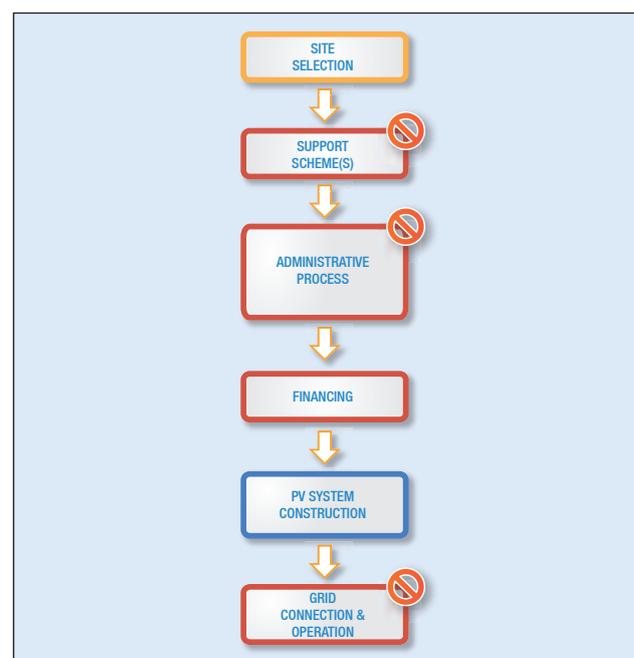


Figure 8 - The Netherlands, Project Lifecycle Flowchart for segment A and B

Main Barriers

Although the Dutch government has been proactive in removing most barriers on building permits and simplifying administrative procedures, the market for PV systems in the Netherlands has not taken off yet as anticipated after the introduction of the support scheme. The man-hours needed to meet the legal and administrative requirements in the Netherlands are in average 25 hours (adding 1,000 € to the cost of the overall project). More importantly, approximately 55% of the duration of the project development of

a PV system is idle time, during which the project developer is required to wait for feedback or approvals from the authorities. This amounts to an average of 17 weeks, resulting in a further unnecessary extra cost for the project.

The main reason for this can be brought back to several remaining legal and administrative barriers, in particular:

- The application for the grant of the support scheme can be issued without any commitment from the applicant. After receiving the grant, applicants still have the option not to invest in a PV system. This low barrier invites many opportunistic parties to apply for the grant. As the level of available grants is capped, serious investors can miss out on the grant due to the sheer number of applications from opportunists, resulting in delays of over 12 months (before re-entering a new application) or in the complete cancellation of their PV projects.
- Long administrative process for assigning the grants of the support scheme. The legally set duration for this process is 13 weeks, but has been extended to 26 weeks in the previous year. This causes problems in the planning of PV systems, in particular for commercial projects and new building projects.
- Building permits are still required if panels and inverter aren't placed in same building, and on monumental buildings when the PV system is not visible.
- Generated electricity from the PV system is taxed (transport tax) when the system is grid connected, even if the users of this electricity are connected to the PV system and based in the same building where the PV system is placed.
- Finally, no government instituted certification or quality scheme is available to identify qualified installers. Major investors of PV systems wish to ensure themselves of working with professionals that are meeting certain quality requirements.

Conclusions

The Dutch government has been successful and proactive in minimising most of the legal and administrative barriers affecting the development of PV projects. Presently, only a few barriers still remain, or have been newly introduced due to the legal structure of the support scheme. Unfortunately, for PV investors these few remaining barriers are causing serious problems in realising their projects, often resulting in the cancellation of the PV projects.

The Dutch Solar Industry Association (Holland Solar) is eager to sit down with the respective policy makers to work in a positive spirit on minimising or ultimately removing these last barriers.

Poland

Introduction

The PV potential in Poland is highly underestimated by policy makers and the general public alike. Currently, the total PV power installed amounts to 1.3 MWp, mostly off-grid. Poland needs to secure a 15% share of RES in overall national energy consumption by 2020 and the fulfilment of these objectives does not envisage any PV power contribution. Total installed PV capacity, according to the official Polish energy policy, will reach 2 MWp by 2010 and 32 MWp by 2030.

In Poland there are no PV-specific support measures. RES are incentivised with Green Certificates, excise tax waivers, soft loans and non-reimbursable grants. The major obstacle is the lack of FiTs for PV (and other RES, too). Access to the national distribution grid is time-consuming, difficult and usually costly.

Segmentation

Segment A

Small rooftop systems on residential buildings up to 20 kWp – such PV systems do not exist in Poland yet.

Segment B

Medium-sized to large rooftop systems on industry and commercial buildings from 20 to 120 kWp – only few installations currently exist in Poland.

Segment C

Medium to large ground-mounted systems above 120 kWp – such PV systems do not exist in Poland yet.

Description of procedures

In Poland, there are no significant differences between the three market segments defined by PV LEGAL with regards to legal-administrative procedures. The only difference is the requirement for a building permit, which is mandatory in segment C, sometimes required in segment B and not required in segment A. In the last case, it is enough to notify authorities about the PV installation. Due to unclear Construction Law, it is a decision of the competent local authorities whether the building permit is required or not.

We present the typical administrative procedure for segment B, which may require either a building permit or only a simple notification.

Initially, it is necessary to check the zoning plan at the local Planning Department (only for systems that require a building permit) and to take a decision on the system design. Then, developers must obtain a preliminary confirmation of the grid connection point from the DSO and a license for the production of electricity from the Regional Energy Distributor (RED). In order to obtain a license from the RED it is necessary to establish a business, or to utilise an extension of an already running company profile. Follows the application for the construction permit, for those cases in which it is needed, or a simple notification in the other cases.

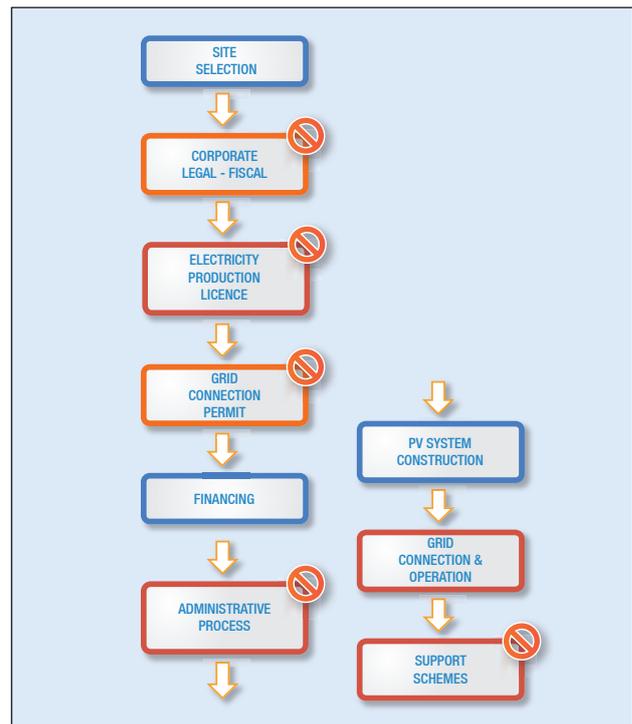


Figure 9 - Poland, Project Lifecycle Flowchart for segment A and B

In order to access the Green Certificates support measure, the system developer has to proceed with the registration of the PV system to the Polish Power Exchange (TGE) and with the application for the certificates of origin. Once the installation is complete, the system owner has to apply to the DSO for the grid connection, and to obtain its approval of the PV system before this can be connected and start its normal operation. The connection of the PV system to the grid by the DSO is followed by the signature of an energy purchase agreement.

Main Barriers

There are very few PV installations in Poland and this fact creates difficulties in estimating the project development duration - though very long - and its associated workloads and costs.

Additionally, the following barriers are identified for all segments:

- **Grid connection process:** the investor has to obtain a permit to connect installation to the distribution grid before he can start all project works. The basic difficulty is the preparation of complex technical documentation, because DSOs do not have experience in this matter and try to postpone the granting of authorizations by multiplying the technical requirements. Legal provisions applying to energy generation systems are designed for the connection of rather large traditional power plants and not for small distributed generation systems like PV, resulting in excessive requirements for information and documentation.
- **Grid connection delays:** the grid connection process is often affected by delays introduced by DSOs with insufficient PV experience and lack of specific procedures developed for small distributed generation systems. Due to their lack of experience, DSOs are afraid to connect PV systems and therefore require careful documentation of the installed PV equipment. They are trying to pass on the cost of implementing the connection to the investor by levitating the total cost of the connection works. Sometimes the investor is charged for full cost recovery, while the Energy Law requires the DSO to cover 50% of the cost of connection for less than 5 MWp of RES.
- **Electricity production concession:** In order to obtain this concession from Office of Energy Regulation (URE), a large number of documents must be delivered by the investor (up to 19). These documents must be obtained from different institutions, significantly increasing the effort required. While these documents may be obtained relatively easily by a company, there is no simplified procedure for small systems, and therefore private citizens have to struggle through the same paperwork.
- **Legal entity requirement:** Since the concession for electricity production from RES can only be obtained by legal entities (not individuals), even a person who wants to install a small photovoltaic system is forced to set up a business and a legal entity.

- **Building permits uncertainties:** it is unclear whether a PV installation requires a building permit, and the problems arising from the Local Development Plan prolong the process and bureaucracy deters investment in PV. With regards to administrative procedures, the law is vague, and it never explicitly mentions PV systems. It can therefore be left in doubt whether you need a building permit or only a notification about construction works. Heavy bureaucratic burdens also affect the construction phase: construction logs, construction manager jobs, preparing the ground for safety and health on the site, preparation of as-built documentation of the work, preparing the building for the reception, etc. are required by the applicable Construction Law.

- **Access to Green Certificates:** this process is affected by the long waiting period for obtaining a certificate of origin (up to 28 days). Further, the considerable administrative burden is the frequent, even monthly, required information about energy production, completely inadequate for small PV systems.

Conclusions

In the case of small PV systems, it can be stated that the current law is totally inadequate for their development. The law does not provide any simplified procedures for the connection of small PV systems, representing the most severe barrier against market development. Although there are small benefits for PV systems smaller than 5 kWp (such as free of charge concession from URE for electricity production from RES), establishing the same formal requirements for a 1 kWp and a 1 MWp PV system is a definite mistake. The other important obstacle is the need to obtain the concession for electricity generation from URE, which may discourage potential investors. Furthermore, the Green Certificates system, providing inadequate economic support for the installation of PV systems, is also a major barrier that should be addressed. These issues should be urgently addressed with the discussion and the publication of an ad-hoc, PV-specific, new law.

Portugal

Introduction

At the moment of writing, in Portugal the concession of further licenses for grid connection of PV systems is not granted by any legal base. A new law, sent in June to the competent associations and stakeholders for discussion, was finally adopted by the Portuguese parliament in July, and is expected to be approved by the President within the end of August. The new law will support, by means of a FiT, micro-generation PV systems of up to 3,68 kWp (11,04 kWp in case of 3-phase systems for buildings with at least 6 flats). Its application will be restricted by an annual market cap of 25 MWp, while 10 MWp are reserved for the remaining months of 2010. The FiT for micro-generation will be granted for 15 years, and is set to 0.40 €/kWh for the first 8 years and 0.24 €/kWh for the last 7 years. Finally, 5% of the annual cap is reserved for public buildings.

Within the end of 2010, further legislation is expected for PV systems up to 150 kWp. (or up to 250 kWp for innovative solar electricity generation, such as concentrated PV or solar thermal electricity).

Segmentation

Segment A

The micro-generation segment has been the only one supported by a legal framework since 2004, and it is therefore of great importance for the sector. PV systems with a maximum capacity of 3.68 kWp are supported. Each consumer is allowed to install a system with a capacity of up to 50% of the contracted power for electrical consumption. Production capacity is also limited to 25% of the medium voltage transformer capacity. Finally, in order to be eligible for the micro-generation FiT, the producer must also install a solar thermal sanitary water system with a minimum of 2m² of collector surface.

Segment B

This segment is about to be addressed by a dedicated legislation currently under definition, expected by the end of 2010. The recently published decision of the Portuguese Ministers Council from July, 8th mentions for this segment a market cap of 500 MWp until 2020. The relevant legislation will be published by October 2010. The licensing process will be set-up online, and the FiT will be set and assigned via an auction process. For the first time in Portugal, third parties will be allowed to participate in the licensing process, while for micro-generation it is only permitted for consumption/production owners.

Segment C

Large-scale ground-mounted PV systems - there is no legislation for this segment foreseen in the next years.

Description of procedures

Segment A

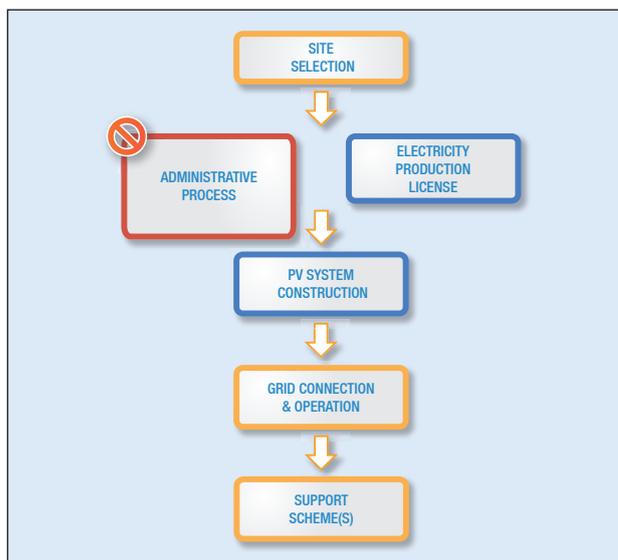


Figure 10 - Portugal, Project Lifecycle Flowchart for segment A

The only way to apply for a micro-generation license is on the online portal at:

<http://www.renovaveusnahora.pt>

During the last 2 years, the previous procedure caused serious problems, including server collapse, due to a very restricted time window for applicants. Also, as a result of the unregulated access system, some applicants tried to apply for a whole year and did not achieve the license, lost interest or had to accept a lower FiT. According to the new legislation, the web portal will be kept open until the yearly cap is reached, all requests will be processed by progressive order and the registration fee (not yet defined, up to 500 €) will have to be paid immediately in order to avoid speculative applications.

The procedure for licensing of micro-generation PV owners is expected to consist in a first registration requiring a legal Portuguese tax number and a valid Portuguese address, followed by the insertion of valid electricity consumption contract details. After the registration fee is paid, a provisional license will be assigned.

A time limit of 120 days for installation of the PV system and final inspection request by the system owner will start from the registration date. Once the PV system is installed and the inspection is passed, the information will be automatically transmitted to the electricity provider, which can now be any DSO company. The energy purchase contract will be sent by post within 10 working days for signing. After devolving the signed contract to the DSO, the maximum time for grid connection will be 20 working days, and the FiT will be assigned from the day when the electricity production is fed into the grid.

Main Barriers

Segment A

In the previous legal-administrative framework, the on-line registration process, though providing PV system developers with a one-stop-shop procedure, was not efficiently designed and represented one of the most severe barriers. In fact, allowing PV system registrations only in very limited time frames often caused a flood of applications resulting in server problems and the actual impossibility of registering new PV systems.

The new micro-generation law has significantly improved the licensing process, and the main barrier will likely be the market cap of 25 MWp per year.

Other barriers will still affect the development of this segment:

- Installed power restrictions: the restriction to only 50% of the contracted power limits the power that can be installed: most Portuguese households contract only 6.9 kWp and therefore can only install 3.45 kWp or less.
- Grid capacity restrictions: A maximum of 25% of the next medium tension transformer capacity is allowed to be injected. If this limit is reached, no further licenses can be assigned.
- Quality inspections: The inspections on the finished PV systems have to be carried out by a further independent institute even though Portuguese PV installers are anyway required to be certified in order to carry out the works.

Conclusions

The Portuguese PV sector stakeholders are carefully optimistic about the new legislation for the micro-generation segment, even if the recent price drop of PV modules and the comparison to other less sunny regions of Europe (where small PV production is well implemented), has led to a substantial reduction in the FiT. If everything goes as expected, 25 MWp can be installed in 2011 and then a 6% yearly growth may be foreseen for the following years. Once also the new legislation for mini-generation is published, it finally will allow for larger PV systems to be developed in Portugal.

Slovenia

Introduction

The general legal framework for the PV industry in Slovenia is constituted by the Energy Act, which came into force in 1999. This act sets the principles of the Slovenian energy policy, the rules for the energy market, the commercial public services in the area of energy, the conditions for operating energy facilities and the issuing of licences and permits and finally defines the bodies performing the relevant administrative tasks.

In May 2009, the Regulation on Support for Electricity Generated from Renewable Energy Sources was adopted and partially entered into force. This Regulation includes a support scheme for electricity generated from renewable energy sources. Support is provided either in the form of FiTs (only for systems up to 5 MWp) or in the form of financial aid for existing business operations. The FiT system ensures that the Support Centre (a company which is responsible for signing the support schemes contracts for FiTs with investors) purchases all net produced electricity, irrespective of market price. The Slovenian photovoltaic market is evolving moderately into a comprehensive, sustainable oriented economic sector, which also offers opportunities for Slovenia to develop advanced technologies and to increase the penetration of RES. However, this development is still constrained by various legal-administrative barriers.

Segmentation

Segment A

Small rooftop systems on residential buildings – this segment is not yet particularly well developed in Slovenia.

Segment B

Medium-sized to large rooftop systems on industry and commercial buildings – rooftop PV systems up to 1MW on commercial buildings are currently in sharp ascent.

Segment C

Medium to large ground-mounted systems – in Slovenia the government has a great interest in installing PV systems on land plots, but this segment has not begun to develop yet.

Description of procedures

Legal-administrative procedures for installing a PV system in Slovenia are more or less the same for all segments. There are minor differences between the processes for ground-mounted or rooftop PV systems.

For segments A and B, an investor has first to find an appropriate roof, checking its suitability and the possibility of the grid connection. PV systems up to 20kWp can usually be connected to the existing electricity supply; for larger systems it is often necessary to build a new connection to a transformer.

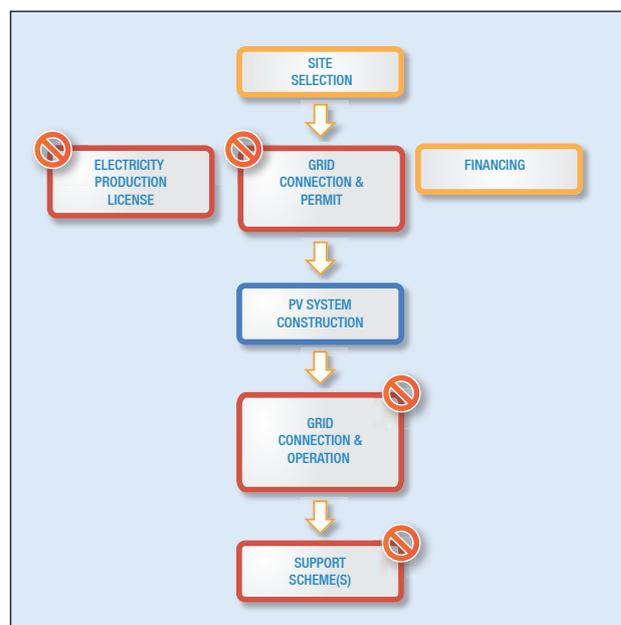


Figure 11 - Slovenia, Project Lifecycle Flowchart for segment A and B

Thanks to a recent change, investors no longer have to set up a legal entity to be able to sell electricity. The grid connection phase requires signing a contract for grid connection, a contract for access to the grid and a contract for the sale of electricity. At this stage, after system construction, it is also necessary to undergo an inspection of the system from the competent authority. In order to access the support scheme (FiT) the investor has to fill a declaration of conformity of the PV production apparatus, open a producer account, receive a decision on the allocation of support and receive a confirmation of the production. For PV systems of size 1 MWp and greater an energy permit from the Ministry of Economy is also required.

Finally, in addition to the procedure outlined above, a building permit is also required for ground-mounted systems belonging to segment C.

Main barriers

The most significant barriers against PV development in Slovenia are:

- **Administrative barriers:** a large number of documents is needed in order to build a PV system, both for the grid connection phase (the contract for grid connection, a contract for access to the grid and a contract for the sale of electricity) and the access to support measures (a contract on the guarantee of support, declaration for production apparatus, open a producer account, decision on the allocation of support and a confirmation of production).
- **Necessity of building permits for all PV systems:** currently, there are animated discussions about the different interpretations of the building permit laws. There is a substantial discrepancy between the interpretation of the law by the Ministry of the Economy and the Ministry of the Environment and Spatial Planning. So far, no rooftop PV system has applied for a building permit before being built. A new regulation is about to be presented by the Ministry of the Environment and Spatial Planning.
- **Problems related to the connection to the grid:** the 5 grid operators have different procedures due to the lack of unified rules for grid connection.
- **Waiting periods:** investors normally have to wait up to three months for the contract on the guarantee of support (FiT). In the meantime, they only have the option to sell the electricity at market price.
- **Low quality installers:** Slovenia is a new and young PV market and not all installers have sufficient expertise, therefore investors have to be very careful with choosing a good contractor.

Conclusions

As discussed, there are two main barriers preventing faster development of the Slovenian PV market. The first one is represented by the administrative process, resulting in a large number of necessary documents and in long waiting periods. The other barrier originates from different interpretations of the law, especially in the field of building permits. ZSFI, the Slovenian PV industry association, believes that it is very important to overcome these barriers and to allow for a faster and more efficient development of the Slovenian PV market.

Spain

Introduction

The general legal framework for the PV industry in Spain is established by Royal Decree (RD) 661/2007, applying to all RES, and by RD 1578/2008 specifically applying to the PV technology. RD 1578/2008 defines the yearly PV market caps and the value of the FiTs. These will be subject to further changes in 2012, following the transposition of RES Directive 2009/28/EC and the National Renewable energy Action Plan to be presented in the Renewable Energy Plan 2011-2020 (PER).

It is worth highlighting the tremendous adjustment that the approval of RD 1578/2008 in September 2008 has meant for the Spanish PV Sector. After the market growth experimented with the previous legal framework based on RD 661/2007 (in 2008 2.7 GWp were installed, representing the vast majority of the total capacity of PV in Spain, currently consisting in 3.5 GWp), the volume of the Spanish solar market has been reduced to less than 100 MWp in 2009 (due to the quotas and new pre-registration administrative procedure). In 2010 the Spanish market should reach the imposed cruising speed of approximately 500 MWp per year. The exact amount of power installed each year is determined by the rate of the FiT reduction in an inverse proportion: the lower the FiT, the higher amount of photovoltaic installations will be allowed.

With this regulation, the Spanish PV market, in a business as usual mode, would reach approximately 11,500 MWp in 2020.

Segmentation

RD 1578/08 establishes a quota of approximately 500 MWp maximum PV power installed per year until 2011 and divides the solar market in two different segments, each segment with its corresponding quotas. The first one – type I – consists in installations on buildings or on constructions associated with them such as parking areas. This segment is assigned approximately two thirds of the yearly market quota. The other segment – type II – corresponds to ground-mounted installations on open lands that are assigned the remaining third of the annual market cap.

The PV LEGAL segmentation was applied as follows.

Segment A

Small-scale installations built on residential buildings up to 20 kWp in size - representing approximately 7% of the Spanish PV market in 2009-10.

Segment B

Small and medium installations built on commercial buildings up to 2 MWp in size (10 MWp under certain conditions) - representing approximately 60% of the Spanish PV market in 2009-10.

Segment C

Medium and large scale ground-mounted installations on open lands with powers up to 10 MWp – representing 33% of the Spanish PV market in 2009-10.

Description of procedures

The legal-administrative procedures necessary to complete and authorise a PV system in Spain are the same for all segments, involving as a first step the registration of the PV project in the Pre-assignment Register of Remuneration (RPR), established by RD 1578/08 in order to limit the supported PV capacity installed each year. All PV projects must be registered in the RPR and obtain the corresponding approval in order to access the FiTs. The projects when applying for the RPR must submit the following documentation:

- An administrative project approval by the municipality.
- A building permit.
- A proof that a bank guarantee of 500 €/kWp (in case of installations larger than 20 kWp) or of 50 €/kW has been raised.

The installations registered and approved into the RPR have one year to be completed and to start feeding electricity into the grid. Installations without this registration and approval will just receive the electricity market price.

Overall, the main steps necessary to develop a PV system are:

- Establishment of the bank guarantee.
- Identification of the connection point to the grid (confirmed by the DSO).
- Obtainment of the Special Regime condition, ensuring that the PV installation belongs to one of the defined groups of Renewable Energies by RD 661/2007.
- Request for administrative project approval.
- Obtainment of the building permit.

- Preliminary inclusion in the Special Regime register.
- Contract with the grid operator.
- Registration of the project in the RPR.
- Obtainment of the certificate issued by the responsible of the grid operator.
- Obtainment of the grid connection permit .
- PV system commissioning.
- Final registration in the Special Regime register.

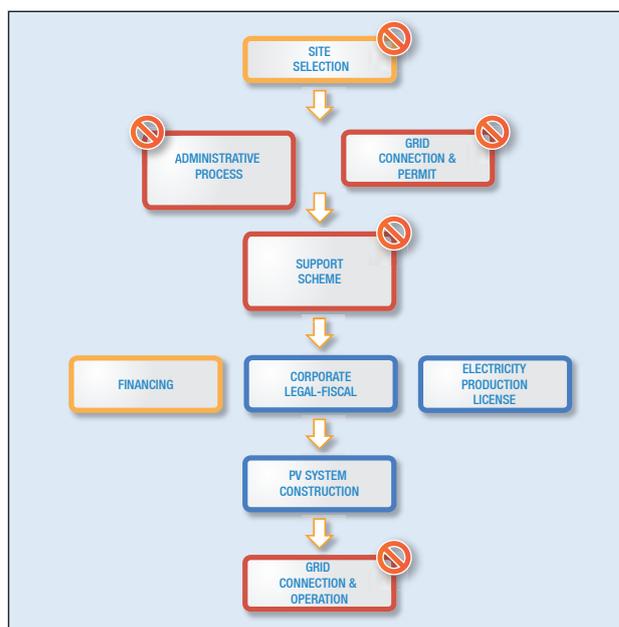


Figure 12 - Spain, Project Lifecycle Flowchart for segment A, B and C

Main Barriers

The main barriers detected in Spain are:

- Administrative procedures: as already stated, are basically the same for small, large and medium scale installations. There are minor differences as, for instance, some PV installations connected to the low voltage network do not need an Administrative Authorisation, and some environmental procedures are not necessary for roof installations, but in general the impact of the administrative process on small and medium rooftop systems is considered inappropriate.

- RPR: Royal Decree 1578/2009 established this new administrative register for PV installations. Obtaining the registration to the RPR is an absolutely necessary condition to receive the FiT. Before having the RPR, and not even knowing whether and when it will be obtained, it is necessary to undergo significant expenses. The inclusion in RPR depends on the number of installations that are in the registration queue, implying further uncertainty regarding the timeline of investment recovery.
- Granting of access and connection to the electric grid: at the time of requesting an access point or a grid connection, there are also economic and technical barriers:
- The economic barriers are related to the costs that grid operators charge to PV operators for various types of concepts, such as the cost of the connection study and the costs related to the changes necessary to evacuate the newly added power via the distribution grid:
- The technical barriers are associated with the evacuation capacity of the network. In fact, according to current provisions low-voltage PV systems cannot exceed 100 kWp, and the sum of the capacity of the distributed generation connected to a low voltage grid may not exceed 50% of the transport capacity of the line at the point of connection.

Conclusions

Two sets of barriers are mainly affecting PV development in Spain: problems related to the administrative procedures (Pre-Registration and Administrative Procedures), and problems in connecting to the grid (rigid requirements based on real or supposed lack of grid capacity, procedures with high costs related directly or indirectly to the connection works, excessive delays). In particular, it is considered inappropriate that small rooftop installations for the residential market do have to respect the same procedure that applies to large ground-mounted systems.

Therefore, it is pretty important to overcome these barriers in order to allow for more efficient development of PV installations. The simplification and streamlining of administrative procedures is essential for redirecting the Spanish PV market to rooftop PV systems, as the previous legislation was mainly focused on ground-mounted.

It will be very important that these objectives are respected in the planning of the Renewable Energy Plan 2011-2020 (PER), currently being prepared by the Spanish Government.

United kingdom

Introduction

The UK RES market is undergoing a period of major transformation as the Government introduces policies to meet its 15% renewable energy target by 2020. Most significantly, the Government has recently introduced a FIT that has come into force in April 2010. Therefore, at present the UK PV market is still very small having relied so far on insufficiently funded support schemes. In 2009, the UK PV market reached 10 MWp of installations, bringing up the cumulated PV power installed to 34 MWp.

Segmentation

Segment A and B

This segment consists in rooftop residential applications of small size that are sub-segmented according to the capacity of the electrical interconnection line. The most recurring case is that of single PV systems up to 16 A².

Segment C

This segment is yet not developed in the UK, where currently no PV systems above 50 kWp are installed.

Description of procedures

Segment A and B

In most cases, solar PV installations are considered Permitted Development, i.e. they can be installed on homes or commercial premises without need to apply for a Planning Permission. However, there are exceptions as for example installations on listed buildings : a check with the local planning authority is sufficient to confirm the requirements in each case. If confirmed as "Permitted Development", the installation can proceed without submitting a Planning Application. Otherwise, a Planning Application will need to be submitted (either on-line or in writing) with the correct fee and the necessary supporting documents. The application will usually be decided upon in eight weeks. The Local Planning Authority (LPA) validates the application and requests any missing documents and acknowledges applicant accordingly.

As for the grid connection, for small systems below 16A it is sufficient to inform the competent DSO of the PV installation not later than the date it is connected and to provide basic data on what has been installed in accordance with the Electricity Network Association recommendations for the connection of small-scale embedded generators (up to 16A per phase) in

² Ampere (A), the unit measure for electrical current.

parallel with public low-voltage distribution networks.

For larger systems, it is necessary to request to the DSO an offer for a modified connection in order to fit the distribution grid for the PV installation and to pay its costs in order for the works to be performed.

To benefit from the new FiT, a contractor accredited under the Microgeneration Certification Scheme (MCS) must construct PV systems below 50 kWp. For these PV systems, in order to claim the FiT an application must be made by the owner to an Electricity Supplier who adheres in the FiTs scheme. All suppliers with more than 50.000 domestic customers must offer FiTs, while smaller ones may adhere on a voluntary basis. PV installations above 50 kWp must additionally be registered to Ofgem, the British Energy and Gas Markets Regulator, utilizing the online portal before a FiT application is made to an Electricity Supplier.

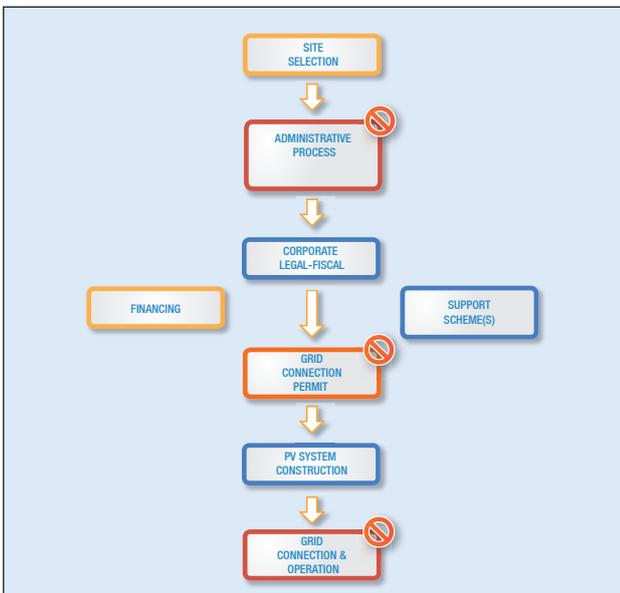


Figure 13 - United Kingdom, Project Lifecycle Flowchart for segment A and B

Segment C

As discussed, large ground-mounted installations are so far absent from the UK market, but the introduction of the new FiT allows for systems up to 5 MWp in size.

Ground-mounted PV systems will be subject to an Environmental Impact Assessment and a Planning Permission will need to be requested to the competent Local Planning Authority.

The grid connection process will imply requesting a connection to the competent DSO that, coordinating with the National Grid Operator (NGC), will provide the PV developer with a connection works offer

also incorporating NGC requirements. This offer will include quotations for the provision of non-contestable connection work and (if requested) contestable works. The PV developer may then seek a quotation for contestable works from approved contractors.

Currently, the subsequent framework for the approval of the connection works by the DSO, and the commissioning of the PV system connected to the grid are under definition.

Main Barriers

Legal-administrative barriers have not been the major reason for the lack of growth in the UK market. However, there has been progress in simplifying the procedures for installing PV systems on homes through the introduction of a simplified grid connection process for small installations and the removal of the need to apply for planning permission in some circumstances.

Some PV industry stakeholders currently consider the Microgeneration MCS product accreditation process as overly burdensome and costly. In fact, with only two currently MCS accredited assessors for PV, there is little competition and therefore little pressure to reduce costs to those needing their products or installers accredited. This situation is likely to improve as the PV market grows and more certification bodies embrace MCS.

Finally, the level of knowledge in the building sector with regards to PV has improved over the recent years as a result of regional planning driven requirements. However, there is still room for improvement, particularly in communicating the benefits of installing renewable technologies. Knowledge amongst the majority of homeowners about PV and funding options is still low. Therefore the introduction of the FiT provides an ideal opportunity to not only inform about the scheme but to increase knowledge about PV technology itself.

Conclusions

The recent, important changes in the UK PV support and legal-administrative framework have suggested to the PV LEGAL partners to wait a few months before running an in-depth PV industry survey, therefore more data will be offered in the update of the PV LEGAL database scheduled for early 2011.

Comparison legal-administrative frameworks and barriers

In the previous sections, we have offered an overview on the legal-administrative barriers that affect the development of PV systems in the European countries participating in the project. Thanks to the PV LEGAL industry survey results, it is possible to better evaluate the impact of these barriers on actual project development.

The quantitative results of the PV industry survey, as they are available in the PV LEGAL database, are represented and may be compared in the charts included in this section.

For each segment and country it is then possible to compare the overall labour necessary to comply with legal-administrative requirements, the overall duration of the PV project development lifecycle, the total waiting time spent waiting for administrative processes to take place, and finally to evaluate the share of legal-administrative costs in the overall PV project development costs (excluding PV equipment and other materials such as modules, inverters and supporting structures).

From the examination of these charts, it is clear how the survey run amongst the German PV market stakeholders confirmed the reputation that this market represents the best practice at European level. This leadership is in fact not only confirmed by the copious yearly PV power installed and the lowest market prices – widely known facts in the PV market – but also by the lowest share of administrative costs, the shortest project development durations and waiting times and, finally, by the most moderate labour requirements in all the considered market segments, as reported by the interviewed stakeholders.

Instead, other markets that are affected by more severe legal-administrative barriers show quite clearly the impact of these barriers in terms of longer project durations, higher costs, longer waiting times and more demanding labour requirements.

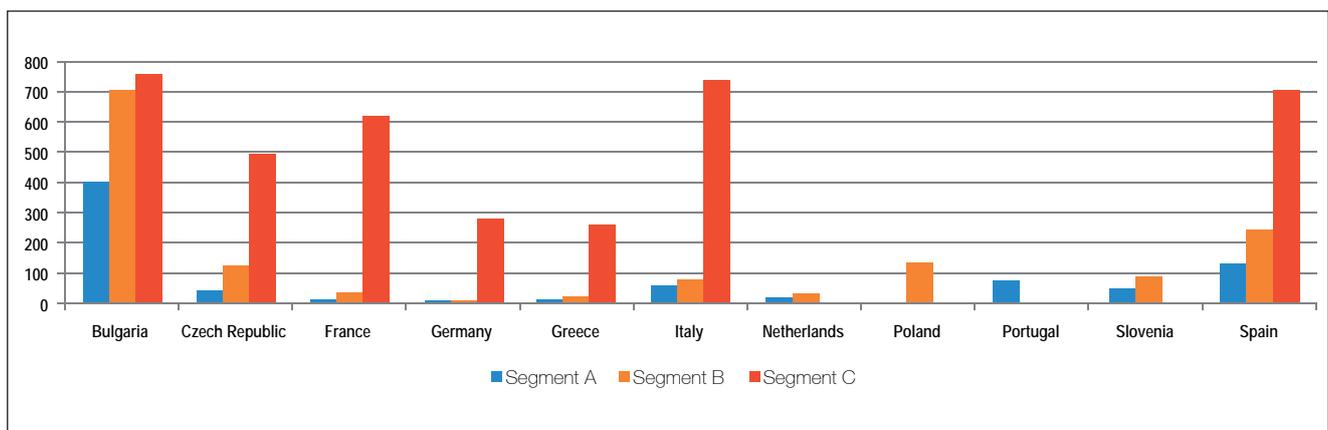


Figure 14 - Compliance with legal-administrative requirements: Overall Labour (hours)

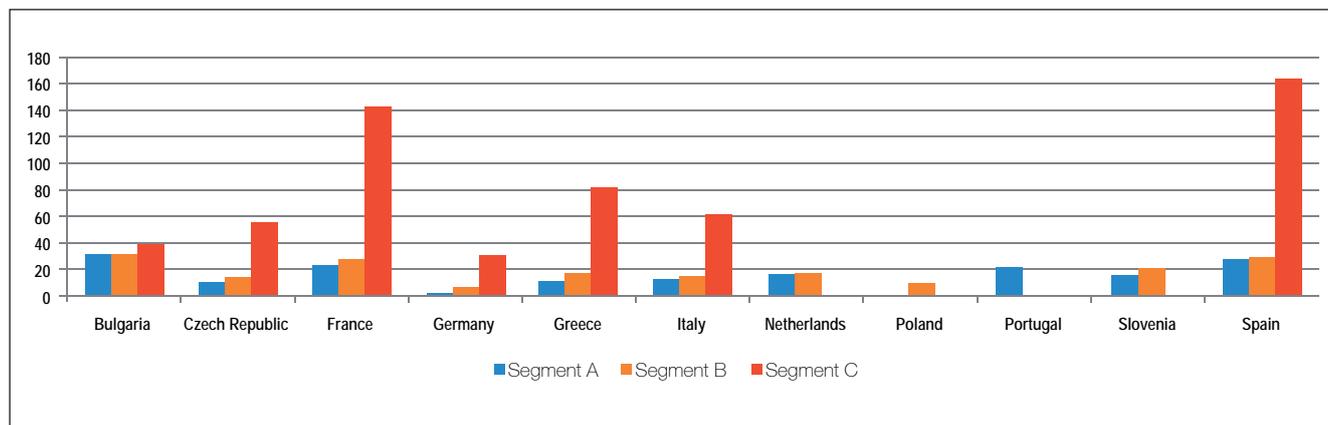


Figure 15 - PV project development process: Overall Waiting Time (weeks)

These effects are scattered unevenly across countries and market segments depending on local factors, but some results seem to emerge clearly enough to allow for a basic analysis:

- France and Spain show very long project development durations across all 3 market segments. For France this is a confirmation that the unclarity of the administrative framework contributed to the delay of the market ramp-up that in fact only happened in 2009. For Spain, this is a confirmation that the new framework set up by RD 1578/08 has de facto slowed down PV deployment after the 2008 boom.
- Developing a PV project in Bulgaria is extremely complicated, requiring excessive labour to comply with its administrative processes.

- The share of administrative costs in Italy, Spain, Greece, Czech Republic and a few other countries appears to be disproportionate and efforts should be made in order to reduce them.

- For a few countries, it was not possible to run the PV industry survey yet either because certain market segments are still not enough developed (as for the Netherlands, Poland and Portugal) or because recent changes of the administrative framework would have not permitted to gather significant results (as in the case of the UK).

Nonetheless, the results of the PV LEGAL industry survey will be updated by the project partners two more times over the duration of the project, with the objectives of refining the accuracy of results on one hand and to hopefully record the improvements in some countries on the other.

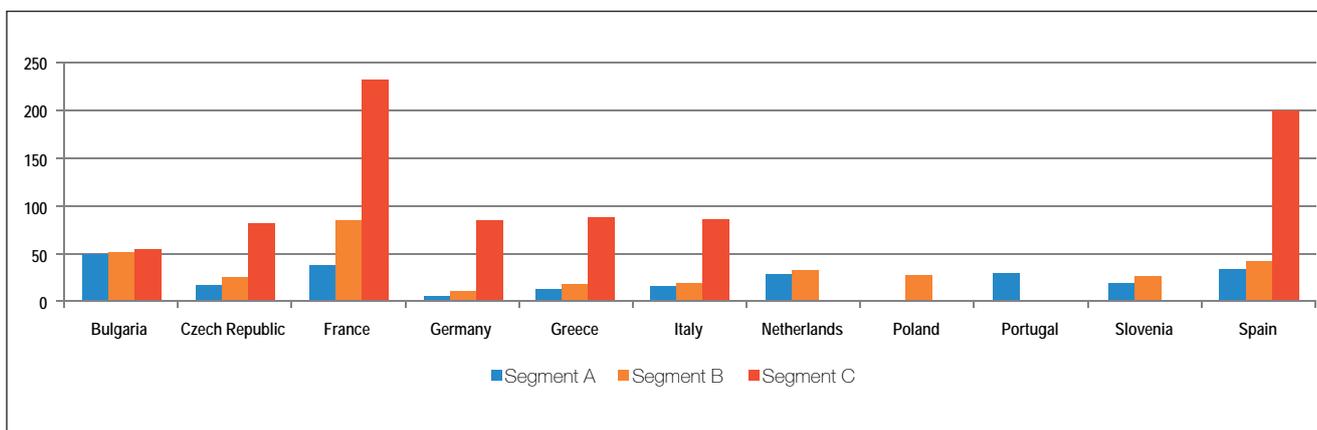


Figure 16 - PV project development process: Overall duration (weeks)

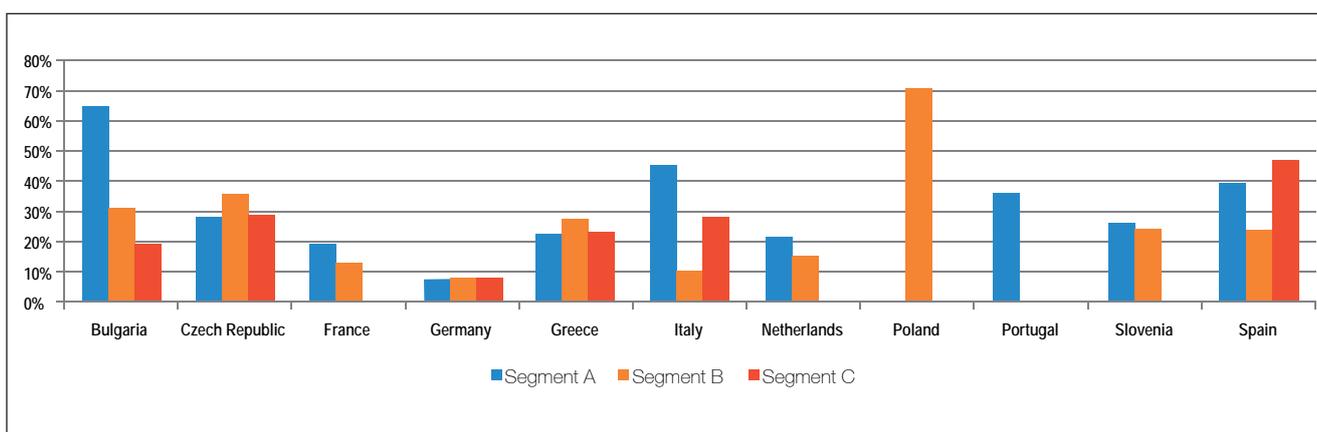


Figure 17 - Legal-administrative costs as a share of overall project development costs (excluding PV equipment)

PV LEGAL - Industry survey results for legal - administrative share of costs involved in PV system development across 12 European countries



Country	Segment A - Small-scale Installations on residential buildings		Segment B - Small to medium-scale Installations on commercial buildings		Segment C - Medium to large-scale ground-mounted installations on open lands	
	Standard PV system size (kWp)	Legal-administrative costs as a share of overall project development costs (excluding PV equipment)	Standard PV system size (kWp)	Legal-administrative costs as a share of overall project development costs (excluding PV equipment)	Standard PV system size (kWp)	Legal-administrative costs as a share of overall project development costs (excluding PV equipment)
Bulgaria	4	65%	100	31%	1000	19%
Czech Republic	5	28%	200	36%	1000	29%
France	3	19%	130	13%	5000	n/a
Germany	5	7%	50	8%	5000	8%
Greece	5	23%	20	27%	100	23%
Italy	3	45%	50	10%	5000	28%
The Netherlands	2,5	21%	40	15%	n/a	n/a
Poland	n/a	n/a	54	71%	n/a	n/a
Portugal	3,7	36%	n/a	n/a	n/a	n/a
Slovenia	7	26%	49	24%	n/a	n/a
Spain	20	39%	100	24%	1000	47%

PV LEGAL - Industry survey results for legal - administrative labour requirements, project duration and waiting times involved in PV system development across 12 European countries



Country	Segment A - Small-scale Installations on residential buildings				Segment B - Small to medium-scale Installations on commercial buildings				Segment C - Medium to large-scale ground-mounted installations on open lands			
	Standard PV system size (kWp)	Overall labour (hours)	Overall duration (weeks)	Waiting time (weeks)	Standard PV system size (kWp)	Overall labour (hours)	Overall duration (weeks)	Waiting time (weeks)	Standard PV system size (kWp)	Overall labour (hours)	Overall duration (weeks)	Waiting time (weeks)
Bulgaria	Min	347	40	8	578	40	8	757	50	8		
	Avg	404	50	32	702	52	32	758	54	40		
	Max	481	60	50	863	60	50	856	60	50		
Czech Republic	Min	35	16	10	82	25	12	430	70	52		
	Avg	44	18	11	125	26	14	500	82	56		
	Max	49	20	12	130	26	16	606	90	60		
France	Min	6	28	10	13	71	3	105	204	114		
	Avg	9	39	24	35	85	28	622	231	143		
	Max	16	52	50	57	113	66	778	263	176		
Germany	Min	4	3	0	5	6	0	90	53	20		
	Avg	5	6	2	7	12	7	280	85	31		
	Max	7	8	5	11	24	12	490	132	53		
Greece	Min	11	14	12	16	17	15	245	87	80		
	Avg	12	14	12	21	19	17	262	89	82		
	Max	13	16	14	25	21	19	285	90	84		
Italy	Min	46	10	7	47	14	8	682	52	30		
	Avg	58	17	13	78	20	15	741	88	61		
	Max	72	24	20	94	28	22	800	156	100		
The Netherlands	Min	13	27	14	18	26	16	n/a	n/a	n/a		
	Avg	20	29	17	31	33	17	n/a	n/a	n/a		
	Max	28	31	18	44	38	17	n/a	n/a	n/a		
Poland	Min	n/a	n/a	n/a	135	28	10	n/a	n/a	n/a		
	Avg	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
	Max	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Portugal	Min	63	25	16	n/a	n/a	n/a	n/a	n/a	n/a		
	Avg	78	30	22	n/a	n/a	n/a	n/a	n/a	n/a		
	Max	92	34	27	n/a	n/a	n/a	n/a	n/a	n/a		
Slovenia	Min	39	19	14	77	23	16	n/a	n/a	n/a		
	Avg	49	20	16	87	27	21	n/a	n/a	n/a		
	Max	57	21	16	96	30	24	n/a	n/a	n/a		
Spain	Min	91	29	27	204	38	26	539	186	153		
	Avg	132	34	28	244	42	30	699	199	165		
	Max	188	47	31	264	47	33	1110	232	184		

Recent legal-administrative improvements

Since the beginning of the project, several countries involved have witnessed an evolution of the legal-administrative frameworks regulating the support and authorisation of PV projects, also thanks to the work of the PV LEGAL project partners. These framework changes are reassumed in the following pages.

Bulgaria

A draft law containing proposals for reducing legal-administrative waiting times and for clarifying and simplifying the connection of PV installations to the grid is currently being discussed by the Bulgarian government. The Bulgarian PV Association BPVA is actively involved in the process and first PV LEGAL findings were presented to the government in several high level meetings. The new law is scheduled to come into force between September and December 2010.

Czech Republic

An amendment to the connectivity regulation has been adopted as of April 1st 2010. The amendment should limit speculative reservations (introduction of deposit payments and introduction of land planning permissions for larger installations). The results of the PV LEGAL research were fed into the discussion on the amendment by the Czech Renewable Energy Agency CZREA.

Moreover a methodical instruction tool on building permissions was published by the Ministry for Regional Development and the Landscape Development Office in November 2009. This document should provide clarity with regards to building law applications for PV systems.

The Ministry of Environment is also running a series of civil servant workshops in order to make the process of PV permission more transparent and to give civil servants proper tools for speeding up the decision making process. CZREA is participating in the workshops as a speaker.

France

Since November 2009 an environmental impact assessment and a building permit are required for every PV system above 250 kWp. These new administrative procedures are considered an improvement by the French PV sector since they should allow for a better regulated development of ground mounted PV in the country.

Since March 2010 a CONSUEL certification is required for PV installations below 250 kWp. The introduction of this new measure has been supported by the French Solar Industry Associations SER-Soler and ENERPLAN, thereby using the knowledge obtained through the PV LEGAL project in order to improve the quality and the security of PV installations in France.

Greece

A new RES law (3851/2010) has been set in force since June 2010. This new law is supposed to remedy some of the drawbacks of the previous authorisation processes for PV deployment. While some improvements are expected in practice, there are still some key barriers which are crucial for the future of the PV market in Greece.

Key changes of the new law are :

- The initial authorisation stage of getting a production license is no longer necessary for systems up to 1 MWp. However, developers cannot apply for a production license in the case of new ground-mounted projects with a capacity over 500 kWp (or 1 MWp within designated industrial areas). According to the law, a special Ministerial Decision is needed by latest September 4th 2010, which will dictate if, when and how such systems will proceed. This Ministerial Decision will be based on the 2020 targets for each renewable technology which sets a cap for each technology including PV (2.2 GWp by 2020). The result of this regulation is that new large scale ground-mounted systems cannot proceed at the moment. 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. An environmental permit is no longer necessary for rooftop systems and PV in designated industrial areas.
- Tariffs for PV remain the same with the exception of systems installed on islands with autonomous grids where tariffs were reduced by 10%.

- The new law shifts priority from ground-mounted systems to rooftop ones.

Italy

The National Guidelines for the AU, the centralized procedure for the authorization of PV Systems, foreseen by legislative decree 387/2003 and left aside for many years, have been readmitted to the political agenda. The document has been adopted the 8th of July 2010 by the State – Regions Unified Conference and will enter into force after publication in the Official Journal. Regions will have to adapt their frameworks to comply with the National guidelines within 90 days. The AU is one of the main bottlenecks for the PV sector in Italy and the lack of clear procedures defined at National level allowed for the proliferation of regional norms. The Guidelines are a significant step forward towards the simplification and harmonization of the authorization process in Italy.

A regulation (now being examined by the Parliament) will simplify the bureaucracy currently necessary to get the landscape planning authorization. This will imply important simplifications for the installation of PV systems when landscape restrictions are present. The regulation might sensibly reduce waiting times from more than 100 to 60 days to get the necessary permissions for a number of interventions judged to be of “minor entity”.

Modifications to the Legislative Decree 152/2006 (environment) have been adopted on June 24, 2010. The decree modifies, among others, part of legislative decree 152/2006 concerning the Environmental Impact Assessment (VIA) with the aim of simplifying the procedures and combining the public interest for the preservation of the environment with that of economic development.

With regard to the low and medium voltage a convention between Enel and the Ministry of Economic Development was signed in February 2010 in order to adapt the distribution grid to the use of electricity produced by PV systems (up to 1 MWp) and develop smart grid solutions in Campania, Puglia, Calabria and Sicily (structural funds).

Speculation on the grid connection permits and the “reservation” of the grid capacity has proved to be a problem particularly in some Regions. The Italian Authority for Electricity and Gas (AEEG) has acknowledged the issue in its “Relazione dell’Autorità per l’Energia Elettrica e il Gas sullo stato di utilizzo ed integrazione degli impianti alimentati da fonti rinnovabili”, (PAS 3/10 of January 29, 2010).

Finally, some improvements are being introduced in the direction of a better and easier access to the

FiT. The Deliberation of the Authority (AEEG) ARG/elt 173/09 gives the GSE (in charge of managing the electricity services) responsibility to introduce on-line procedures in order to simplify the information and document exchange between producers and GSE for the access to the incentives. A new procedure for the formalisation and subscription of the contract of the FiT Conto Energia has been introduced as of January 2010.

The Netherlands

In the past, the support schemes for both small residential systems and for larger commercial systems opened every year at the same date. This resulted in huge numbers of applications being sent in within a period of a week to the administration, which caused unnecessary delays for processing the applications (as all approvals are issued at the same time, after all applications are processed). In the past, this delay has been as long as 25 weeks. In 2010 the support scheme has two different openings, one for the small residential systems and one for the larger commercial systems. In between there is a period of 2 months. This should lead to a reduced workload for the administration, and therefore a shorter processing time.

So far the technical requirements for grid connection have slightly differed between the grid operators. PV investors assumed that there was no difference and often noticed during the connection study that their system didn’t meet the specifications of the regional grid operator. This caused extra cost for modifications of the technical installation, and delays in getting the PV system connected to the grid. This issue was identified and discussed by the Dutch Solar Industry Association Holland Solar with the grid operators. At the moment, this problem is being resolved, and technical specification for grid connection will be the same for all regions (i.e. all grid operators).

A major concern amongst developers of PV systems is the lack of a certification program in the Netherlands. This concern has been raised directly by Holland Solar and through the work done on PV LEGAL, and has recently resulted in the start of a national quality assurance program for PV systems and installers. The government has instituted a project team consisting of its division for renewable energy, the building standardisation association, the association of installers, and Holland Solar. The project team is to develop a recommendation for defining a certification program for PV installers and installations over the next years, also in line with the requirements of the RES directive. Several project meetings and seminars, also involving representatives from the industry and from professional users, have already

taken place, which has led to a first report with recommendations.

Poland

In Poland the URE has recently published on its website a very clear description of the application process for obtaining a licence for the production of electricity³. This information is providing for more transparency in the legal-administrative process. Lead times are expected to be reduced accordingly. Moreover the URE is currently taking into consideration the claim of the Polish Solar Industry Association (PTPV), that the same regulation cannot be applied to large and small systems. First results of the PV LEGAL project were presented to the URE by PTPV. An amendment to the regulation might be proposed soon.

Portugal

On July 8th 2010, the Portuguese cabinet of ministers approved a new decree that regulates the micro-generation of electricity utilising PV technology. Beyond redefining the FiT and setting new annual market caps, the decree is expected to concretely simplify the administrative process granting access to the PV tariffs.

In particular, the new provisions will make sure that online applications are treated on a first-in first-out basis (rather than randomly as in the past) and require an immediate payment of a concession fee that is expecting to deter speculative requests.

Spain

Improvements of the legal-administrative framework are currently being discussed in Spain. First results of the PV LEGAL project have been presented to the Spanish government. The following proposals have already been fed into the Royal Decree draft which is currently being discussed by the Spanish parliament: removal of the need to obtain an administrative permit for all PV installations of up to 100 kWp and connected to the low voltage grid; simplification of the procedure for connecting PV installations of up to 20 kWp to the grid provided the PV installation is associated to an electrical consumption of equivalent or higher power at the same connection point; additional and significant legal-administrative improvements for connecting PV installations of up to 10 kWp to the grid; reduction of bureaucracy for connecting PV installations of up to 10 kWp and located inside an internal electricity network as it would be permitted to connect to the internal low voltage network, instead of connecting to the medium voltage grid.

³ http://www.ure.gov.pl/portal/pdb/471/784/Odnawialne_zrodla_energii.html

Next PV LEGAL project steps

Even before the completion of the research phase and the publication of the database, the PV LEGAL project partners have already started making efforts in the organisation of the next important steps of the action, aimed at concretely reducing the impact of legal-administrative barriers on PV deployment in all participating countries.

Advisory papers

At the time of writing this report, all national project partners are already advanced in the drafting of national and regional preliminary Advisory papers. These papers, drawing from the results of the research phase and the subsequent discussion and analysis of the different national experiences that has taken place in several PV LEGAL project meetings, will address the most severe barriers in each country, proposing concrete measures to lessen or overcome them.

Each paper will follow the same document template, which was preventively discussed and defined, taking advantage of the experience in legal analysis and lobbying of several PV LEGAL partners.

National forums

Successively, the project consortium will organise several National forums addressing relevant stakeholders to discuss the existing national (and regional) legal-administrative frameworks. The aim of the forums, based on the preliminary national and regional Advisory papers, is to evaluate and coordinate the proposals for improvements of such frameworks and the reduction of PV bureaucracy in general.

The dates scheduled so far are:

- Bulgaria: 1 June, Sofia
- Italy: 8 September, Rome
- Germany: 22 September, Berlin
- Spain: 6 October, Madrid
- Greece: 22 October, Athens
- Poland: 27 October, Warsaw
- Slovenia: 11 November, Ljubljana
- France: 25 November, Paris

The programmes of the National forums can be found on the PV LEGAL website.

Review workshops

Building on the outcome of the National forums, the Advisory papers will be finalised, and during 2011 the project consortium will organise a series of focused National and Regional Review workshops directly involving national and regional authorities, policymakers and grid operators. These workshops intend to lead to a review of legal-administrative processes in the selected country or region as well as to a change of regulations and the removal or minimisation of legal-administrative barriers affecting PV market development.

Other events and updates

EPIA and the PV LEGAL project consortium organise a yearly project workshop in parallel to the 25th EU PVSEC. The next workshop will take place in Valencia on September 9th 2010.

For more information on this, other events and all updates concerning the PV LEGAL action, please periodically consult our website:

<http://www.pvlegal.eu>.

Glossary

Distribution System Operator

Distribution system operators (DSO) operate medium- and low-voltage grids and co-ordinate their grids with other electricity grids within a designated area (region).

Electricity Retailer

A company which is selling electricity to the final user.

Grid Connection

The connection of the PV system to the electrical grid.

Grid Connection Fee

The fee to be paid for the connection of the PV system to the grid.

Grid Operator

Operator of transmission or distribution grid that transmits or distributes electricity within a designated area and co-ordinates its services with other grids.

Grid Usage Fee

The fee to be paid for the use of the grid (for example transport of generated electricity into and through the grid).

Ground-Mounted System

This term covers all PV systems which are installed on the ground.

Installed Capacity

The production capacity of a PV system is its rated or nameplate capacity. The term refers to the maximum amount of electricity that can be produced by the plant.

Installer

The person or company that installs the PV system.

Inverter

A device that converts direct current (DC) to alternating current (AC).

Land Development Plan

Higher level in land use planning. Used for planning on town level.

Land Use Planning

Branch of public policy that encompasses various disciplines which seek to order and regulate the use of land in an efficient and ethical way.

Legal-Administrative Barriers

Legal-administrative barriers are caused by regulations stemming from government bodies or grid operators and which delay the authorisation or the installation of PV systems. This definition comprises bureaucratic barriers but it also covers barriers that stem directly from the law, not only from the application of the law by the administration.

Legal-Administrative Labour Requirements

Total amount of time in hours invested for complying with legal-administrative requirements during PV project development process.

Listed Building

A building that has been placed on a list of Buildings of Special Architectural or Historic Interest. Usually, a listed building may not be demolished, extended or altered without special permission from the local planning authority.

Maximum Capacity

The highest possible continuous output of a PV system under normal conditions. The maximum capacity depends on the system component that has the lowest output.

Non Legal-Administrative Labour Requirements

Amount of time in man-hours that need to be invested for this process, excluding the time to be spent for complying with legal-administrative requirements.

Overall Duration

Total amount of time needed project development until PV plant starts operating.

Overall Labour

Total amount of time in hours invested for complying with legal-administrative requirements during PV project development process.

Permission

A license to carry out an act that, without such licence would have been unlawful.

Process

A Process is one of the necessary functional procedures necessary to develop a PV system, such as site selection, grid connection, PV system construction etc. A Process is described by a sequence of Process Steps (which may be either of administrative or non-administrative nature).

Process Duration

The overall time needed to complete a specific process of the PV project lifecycle.

Processes

A Process is one of the necessary functional procedures necessary to develop a PV system, such as site selection, grid connection, PV system construction etc. A Process is described by a sequence of Process Steps (which may be either of administrative or non-administrative nature).

Process Steps

A step is one of a sequential succession of actions that need to be executed in order to satisfy the legal-administrative and the other requirements of a process.

Project Developer

A person or company that is in charge for the planning and development of the PV system.

PV Project Lifecycle

All the procedures required to authorise, install and finally connect a PV system. In our representation, the Project Lifecycle is defined as a sequential succession of Processes (such as site selection, grid connection, etc.), each of them described by a sequence of Process Steps (either administrative or non-administrative).

PV System

A PV system uses a semi-conducting material to convert light into electricity.

PV System Operator

A person or company that owns and operates a PV system.

Rooftop System

This term covers all PV systems which are installed on or in the roof of buildings.

Segment

A segment is a part of the national PV market. Three market segments have been identified within PV LEGAL:

Segment A: small-scale installations on residential buildings.

Segment B: small to medium-scale installations on commercial buildings.

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

Step

A step is one of a sequential succession of actions that need to be executed in order to satisfy the legal-administrative and the other requirements of a process.

Sub-Segment

A sub-segment is a subset of a national market segment, defined by different legal-administrative requirements based on a particular characteristic of the PV systems: size, Installation location, etc.

Transmission System Operator

Transmission system operators (TSO) operate supra-regional high-voltage grids and co-ordinate their grids with those of the distribution grid operators. In many European countries there is only one transmission grid operator. However in some countries, such as Germany, Austria and Great Britain 3 to 4 companies provide transmission services.

Urban Development Plan

The lowest level in land use planning. Used for planning on local level and on parts of a town.

Waiting Time

Overall net waiting time for authorities/administrations or grid operators which have to take an action, thereby delaying the PV project.

Credits

Preparation of report and general revision:
EPIA (<http://www.epia.org>)

National chapters provided by
the national PV associations participating to the project:

- BPvA (Bulgaria, <http://www.bpva.org>)
- CZREA (Czech Republic, <http://www.czrea.org>)
- Enerplan (France, <http://www.enerplan.asso.fr>)
- SER (France, <http://www.enr.fr>)
- BSW-Solar (Germany, <http://www.solarwirtschaft.de>)
- HELAPCO (Greece, <http://www.helapco.gr>)
- Assosolare (Italy, <http://www.assosolare.it>)
- Holland Solar (The Netherlands, <http://www.hollandsolar.nl>)
- PTPV (Poland, <http://www.pv-poland.pl>)
- APESF (Portugal, <http://www.apesf.pt>)
- ZSFI (Slovenia, <http://www.zsfi.si>)
- ASIF (Spain, <http://www.asif.org>)

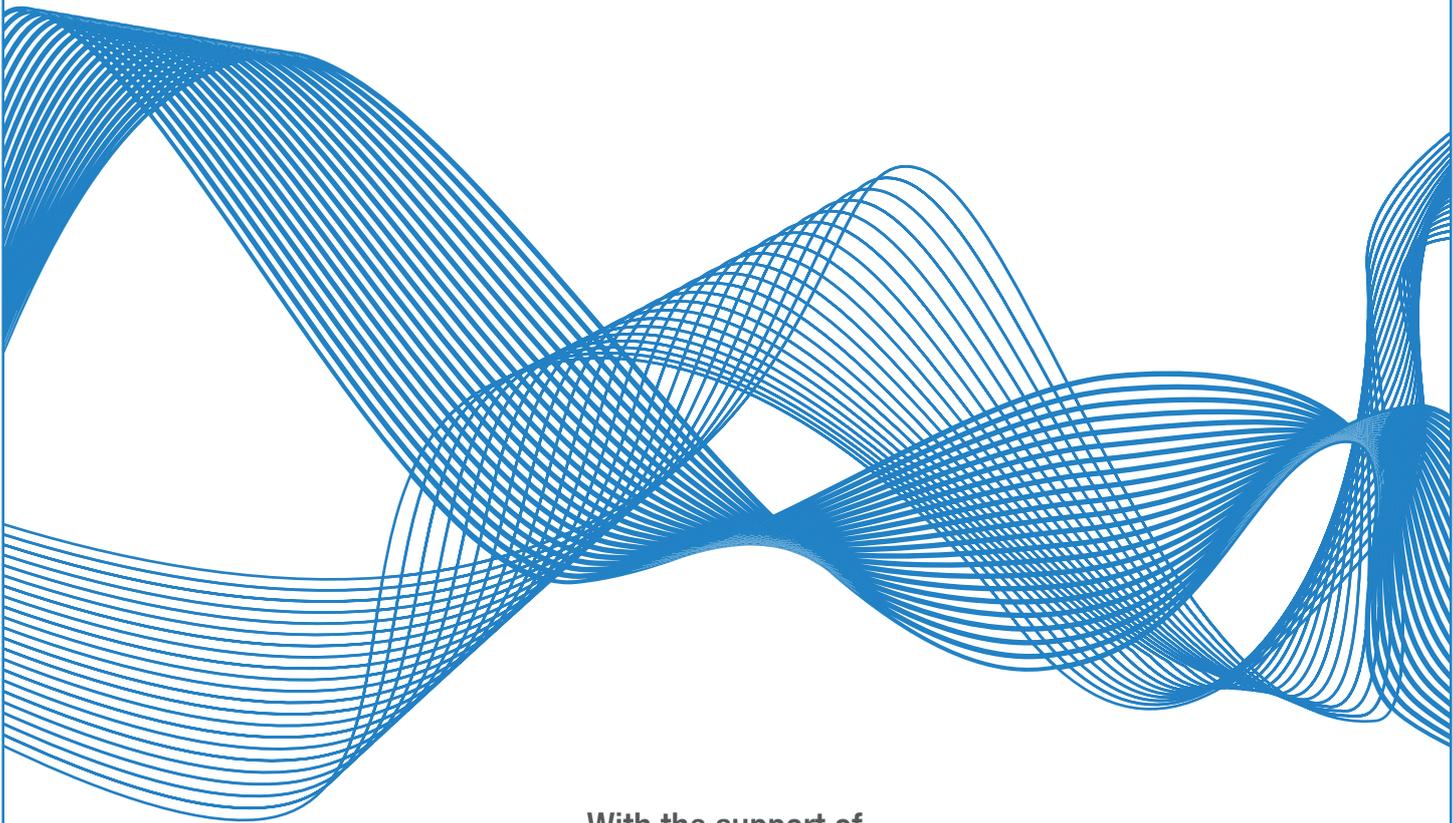
Research coordination and revision:
eclareon (<http://www.eclareon.com>)



PV LEGAL

Reduction of Bureaucratic Barriers for Successful PV Deployment in the EU

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