Technical support for RES policy development and implementation – Simplification of permission and administrative procedures for RES installations (RES Simplify)

Portugal

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Executive summary

This report offers comprehensive insights and analysis on the main procedures necessary to produce electricity from renewable energy resources (RES-E) in Portugal – i.e., obtaining an electricity production licence, connecting electricity-production units to the grid, and other administrative and legal steps. The main technologies covered by it are wind (onshore) and solar (ground-mounted and PV). The information laid out in this document derives, to a great extent, from the analysis of the relevant legal framework, articles, reports, and presentations from stakeholders and organisations from the RES-E sector; interviews with specialists; and from Portugal's National Energy and Climate Plan (NECP) 2021-2030.

The processes here outlined, as well as the barriers identified, apply (virtually) to all RES-E technologies. Portugal's latest amendments to the legal framework on electricity generation from RES (Decree-Law 76/2019 and Decree-Law 162/2019) establish the general procedures and criteria for the licensing and installation of any RES-E plant, highlighting, when applicable, information specific to certain technologies. Emphasis will be given, however, to the solar PV (ground-mounted and rooftop) and wind (onshore) technologies, which, according to Portugal's NECP, are the ones that will increase the most in installed capacity by 2030 and, therefore, will be the ones to receive most investments.

Despite the administrative and organisational developments introduced by the recent legal framework for renewables, the Portuguese system of issuing production licences and installing and connecting plants to the grid is still convoluted and rife with obstacles. Some of the main challenges identified are: i) abundance of entities and organisations involved in the process; ii) no specified deadlines for certain procedures; iii) great level of discretion in decision-making from stakeholders; and iv) procedures are time-consuming and financially costly.

The process steps in which the challenges aforementioned are most present are i) conducting an environmental incidence assessment and environmental impact assessment; ii) applying for an electricity production licence; and iii) connecting the unit to the grid. Although the Directorate-General for Energy and Geology (DGEG) plays a central role in most of the procedures related to those steps, it does so by coordinating with and delegating functions to a considerable number of entities from the energy and environmental sector – e.g., Regional Coordination and Development Commissions, Transmission System Operator and Distribution System Operators. This ends up rendering the entire process slow and overwhelming applicants with the excess of documents required and overlapping deadlines.

Notwithstanding those challenges, there are also a handful of innovations and opportunities introduced by the recent decrees, namely i) obtaining a grid capacity reserve title prior to applying for a production licence (a mandatory requirement towards evaluating the feasibility of the project vis-à-vis the availability of grid capacity); ii) adoption of competitive procedures – i.e., auctions – for attribution of grid capacity (a strategy already being applied to the solar sector); iii) possibility of applicants to contribute to the betterment of the grid infrastructure by means of an application to pay for grid reinforcement (another way of obtaining a capacity reserve title); iv) hybridisation of power plants (a strategy especially aimed for the wind sector); and v) scheme of prior registration for producers of electricity from renewables up to 1 MW.

Table 1 contains a traffic-light assessment of the relevant process steps for the installation of solar ground-mounted and rooftop PV and onshore wind in Portugal.

Table 1: Traffic light assessment of the relevant process steps

Process step	Site selection	Electricity production license	Application preparation process	Administrative authorisation	Grid connection permit	Corporate legal-fiscal	Other
PV ground-mounted							
PV rooftop							
Onshore wind							

No barriers identified
Minor barriers identified
Severe barriers identified
Moderate barriers identified
Not relevant for target country
No projects implemented

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1. National RES targets and relevant RES technologies

As described in its National Energy and Climate Plan (NECP) 2021-2030, Portugal has great interest in increasing the share of electricity generated from renewable energy resources in the national energy mix. By doing this, the country would both reduce its historical dependence on external energy resources – which stood at 75.9% in 2018 and, provisionally, at 74.2% in 2019 (DGEG Energy Indicators, 2019) – and grasp the full potential of its natural resources in electricity production. To reach these goals, Portuguese policymakers envisage renewable energy resources to contribute with 47% of the national gross final energy consumption and with at least 80% of the electricity by 2030, of which 31% (9.3 GW) will come from wind energy (considering, too, the equivalent hours of production), 27% (9.0 GW) from solar PV energy and 22% (8.2-8.7 GW) from hydropower (NECP, p. 39). These ambitious targets will require a great deal of coordination between stakeholders, institutions, and processes.

Solar PV energy is the government's main bet for the development of an electricity sector highly decarbonised. It will be the technology that will increase the most, in installed capacity, in the period 2020-2030, going from the current 1.068 GW (provisional data) to 9.0 GW (NECP, p. 38 and DGEG's Quick Stats 2021, p. 8). Given its high priority in the government's agenda, the solar sector is set to receive more than half of the total investments directed towards increasing electricity generation from renewables. The first stage of the solar strategy will be focused on centralised power plants, whose installed capacity is set to evolve from 0.668 GW to 7.0 GW in the decade; only then the government will proceed to invest in decentralised production – e.g., rooftops of residential and service buildings –, with a perspective to take it from 0.4 GW to 2.0 GW by 2030 (NECP, p. 38 and DGEG's Quick Stats 2021, p. 10.).

Improving electricity generation from wind farms ranks second in the government's strategy – only being surpassed by investments in solar energy. For this sector, policymakers' efforts are on increasing the hybridisation of plants and investing in over-equipment and repowering. Hybridisation is a rational instrument in as much as it allows for more complementarity between forms of energy (e.g., wind and solar), thus reducing production costs and maximising grid connection capacity. Through the over-equipment method, new capacity will be installed in existing power plants where capacity surplus is feasible, respecting the limit of 20% of the power plant's installed capacity (art. 5, para. 1 of Decree-Law 94/2014). Repowering, just like in the over-equipment case, will be employed in plants where it is possible to provide existing wind farms with more efficient equipment (NECP, p. 68). The target for wind energy generation is to increase the installed capacity from the current 5.4 GW to 9.3 GW by 2030. Priority will be given to onshore wind projects, which show far more promise, in terms of increase in installed capacity, than offshore projects. Onshore installed capacity is expected to increase substantially in the decade, from 5.4 GW to 9.0 GW, whereas the offshore one will go from 0.03 GW to 0.3 GW (NECP, p. 38).

It is worth mentioning that investing in hydropower is also a significant part of Portugal's plan to increase the share of renewables in the energy mix. However, this technology will not be discussed thoroughly in this report given its relatively low priority when compared to solar and wind energies. It is expected that its installed capacity will expand from 7.0 GW to 8.2-8.7 GW by 2030 (ibid.).

When speaking of RES technologies and targets in Portugal, another noteworthy strategic document is the Roadmap for Carbon Neutrality 2050. This instrument expands the horizon set by the NECP even further, establishing more ambitious electricity generation goals for

2050. By then, the government expects both centralised and decentralised solar power to be the ones contributing the most to the energy mix, with both reaching 13 GW of installed capacity. Onshore wind power is also expected to contribute with 13 GW by 2050 (RNC, p. 31). The document underlines that both technologies have the potential to jointly supply 50% of the electricity generated in 2030 and 70% in 2050 (ibid.).

Figure 1 displays the annual deployment of PV and onshore wind between 2010 and 2019. Onshore wind was deployed to a large extent in 2010 and 2011 and since then figures decreased dramatically. The installed capacity of PV increased slightly in 2019, compared to 2010.

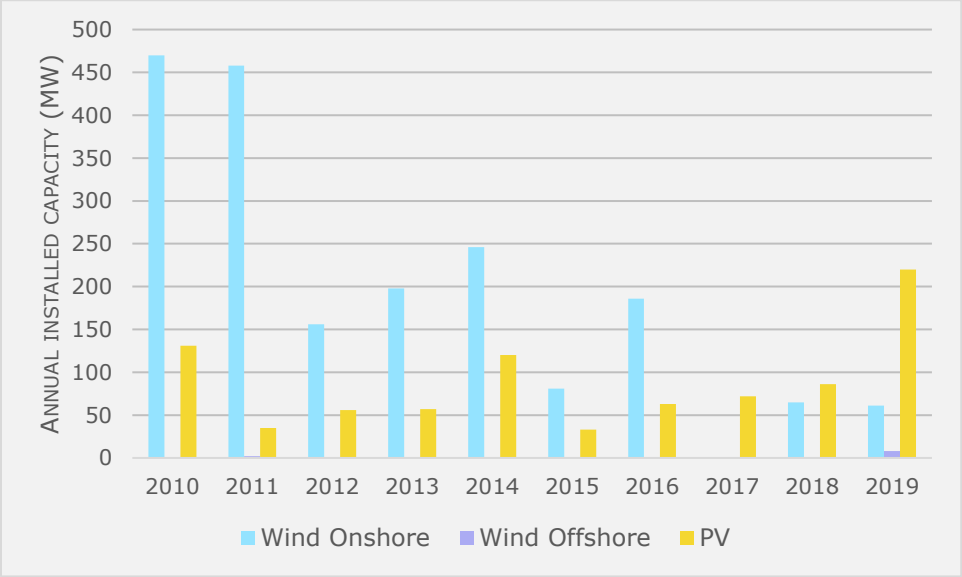

Figure 1: Annual installed capacity of PV and Wind power 2010-2019 (source: EurObserv'ER)

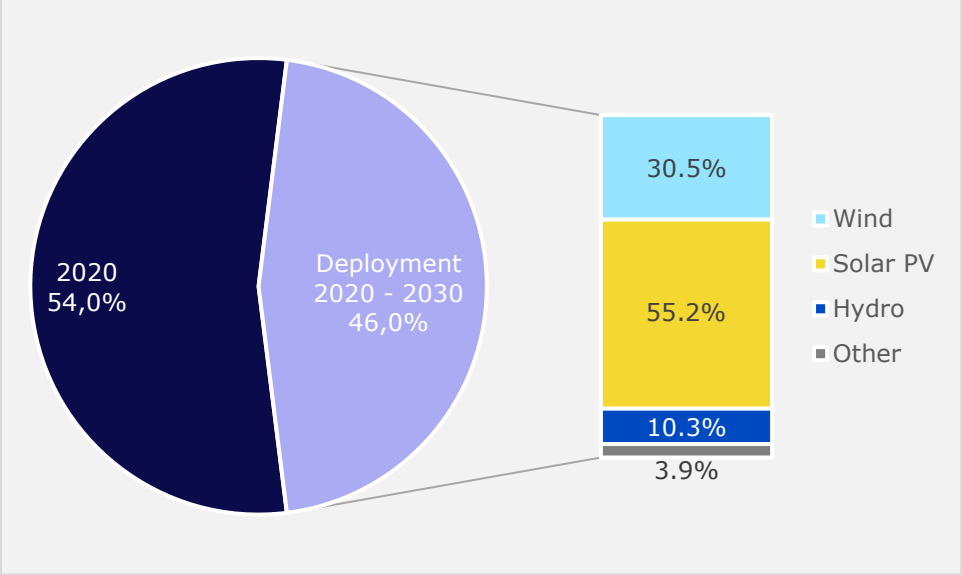

Figure 2: Planned deployment of RES-E 2020-2030 in relation to past deployment (source: NECP)

2. Administrative and grid connection procedures

2.1. Relevant process steps

The main steps applicable to virtually every RES-E project in Portugal comprehend the following: choosing the site where the project will be carried out, which also implies in obtaining a construction permit and, when necessary, conducting an Environmental Incidence Assessment (AIncA), or an Environmental Impact Assessment – depending on the project locations and specificities; obtaining a capacity reserve title; obtaining an electricity production licence; and connecting the plant to the grid. The following subsections refer mainly to onshore wind, ground-mounted solar PV, and rooftop solar PV.

Site selection is the first and one of the most important steps in the process, as it will determine whether the project will be located in an area deemed as sensitive or protected – resulting in project developers having to conduct an environmental incidence (or impact) assessment.

With a location selected, producers may proceed to apply for a capacity reserve title. This is an instrument introduced by Decree-Law 76/2019, which electricity producers ought to apply for before moving on to the production licence and connection to the grid steps. The capacity reserve title has been envisaged by policymakers as a way to ensure that there is energy reception capacity in the grid for the project, ensuring that both the administration and the project owner do not engage in unfruitful endeavours. Instructions on how to obtain the title are under the grid connection section, as the Distribution System Operator (DSO) plays a big role in this step.

After obtaining the capacity reserve title, project developers may proceed with applying for an electricity production licence. This process is spearheaded by the Directorate-General for Energy and Geology (DGEG) and requires that the applicant has successfully completed all steps abovementioned. Project developers may also conduct, simultaneously, the connection of the power plants to the grid.

During the electricity production licence process, producers may be required to obtain a declaration of environmental impact, DEI, depending on the environmental risks inherent to the project. With the production licence and DEI in hands, they can then apply for a construction permit. Both steps are well explained under the 'administrative authorisation' section of this report.

2.1.1. Site selection

Process flow

Choosing the location in which the power plant will be built rightfully takes precedence over all the other steps, in as much as it will determine the subsequent requirements and authorisations necessary to proceed with the project.

While choosing a site to build their power plants in Portugal, renewable energy producers must be especially aware of the following restrictions:

- Areas that have been stricken by wildfires are not eligible for any activities that might inflict a negative environmental impact (i.e., agricultural, industrial, touristic enterprises, etc.) for the next ten (10) years following the incident (art. 1 Decree-Law 55/2007). However, this impediment can be lifted by a joint order of the State

Secretariat of Spatial Planning and Nature Conservation and the State Secretariat of Forestry and Rural Development upon producers' request (DGEG, APA and APREN working group, 2019 and 2020), on the condition that the origin of the fire is proved to be due to causes unrelated to producers and considering that the project is of public interest or of relevant importance; and

- The Ministry of Agriculture often hinders the development of photovoltaic projects in areas belonging to the National Agricultural Reserve (*Reserva Agrícola Nacional*, RAN, in Portuguese). This restriction stems from the fact that RANs occupy only 12% of the national territory, being, therefore, considered a scarce good. Usually, renewable energy projects (especially ground-mounted photovoltaic ones) occupy large areas of land for a long period of time, hindering the development of projects which the RAN areas were originally designed for: agriculture and livestock. However, renewable energy projects may, exceptionally, be carried out in RANs via a request for the use of the area for non-agricultural purposes, provided that i) there is no other feasible alternative other than the RAN area; ii) the project is integrated into a viable RAN area; iii) the project has a small area compared to the size of the RAN; iv) and the energy produced be used in the RAN (art. 22 Decree-Law 199/2015 and State Secretariat of Forestry and Rural Development, 2017). This means that projects whose electricity generated will be exclusively, or almost exclusively, sold to the grid are rarely approved.

Apart from the exceptionally intricate site-related issues abovementioned, producers must also be mindful of other areas classified as sensitive[1], or protected, as stated in art. 2 of Decree 152-B/2017. These are areas in which projects may be carried out only after a thorough assessment of an environmental impact study, which producers have to hand in to environmental authorities by the time they start their applications, so that they can obtain a Declaration of Environmental Impact (DEI). Areas stricken by wildfires and RANs may be subject to environmental impact assessments, too.

The process for obtaining DEIwill be explained thoroughly in the 'administrative authorisation' section (section 2.1.3).

Deadlines

For fire-stricken areas

Producers have one year, counting from the date of the fire occurrence, to request the lifting of restrictions in the area to the State Secretariat of Spatial Planning and Nature Conservation and the State Secretariat of Forestry and Rural Development. The city council responsible for the region may also make the request in producers' stead (art. 1, paragraph 4 of Decree-Law 55/2007).

In case of a project, enterprise being of manifest public interest (acknowledged by a joint order of the State Secretariat of Spatial Planning and Nature Conservation and the State Secretariat of Forestry and Rural Development), the lifting of restrictions may be requested at any time – not being bound to the 1-year waiting period (art. 1, paragraph 5 of Decree-Law 55/2007).

For RANs

The use of RAN areas for non-agricultural purposes is contingent on the issuance of a binding opinion, to be issued by the regional entity responsible for managing the RAN –

[1] For instance, the Portuguese Natura 2000 sites, areas belonging to the National Ecological Reserve (REN), and the National Network of Protected Areas.

the Regional Directorate for Agriculture and Fishery, DRAP, in Portuguese –, following the endorsement of the government official responsible for rural development. Producers have to request the use of the area following the format presented in Annex III of Ordinance 162/2011 and containing all the elements identified in Annex II of the same Ordinance. RAN authorities have to issue their opinion within twenty (20) days of the request (art. 23 of Decree-Law 199/2015). Authorities may also demand, within ten (10) days of the receipt of the request and only once, additional elements that may support the decision-making. If DRAP does not issue an opinion within the 20-day deadline, an automatic approval is issued (ibid.).

In case of the request being rejected, producers can appeal against the decision to the national RAN authority, following the Code of Procedure in Administrative Courts. A decision will be issued after twenty (20) days of the appeal submission (ibid.).

After assessing all documents and issuing a favourable opinion, the RAN regional authority forwards its report to national RAN authorities (listed in art. 31 of Decree Law 199/2015), which then have thirty (30) days to issue an opinion and prepare a decision proposal to government officials responsible for rural development (art. 25 of Decree-Law 199/2015).

For other areas

Other areas (i.e., not ravaged by fire, nor inserted into the RAN regime) follow the deadlines established by the regional city councils territorially responsible for them and, when applicable, the ones of environmental entities. These deadlines will be presented in detail in the 'administrative authorisation' section (section 2.1.3).

Detected barriers

Delay in the assessment of requests to lift restrictions in areas stricken by wildfires. A task force led by APREN (Portuguese Renewable Energy Association), the Portuguese Environment Agency (APA), and Directorate-General for Energy and Geology (DGEG) identified cases in which, even past two years of the request to lift restrictions for projects on areas previously ravaged by wildfires, no joint order by the relevant authorities was issued. This constitutes a significant impediment for the issuing of a production licence by DGEG and may completely derail the implementation schedule of projects (APREN, APA and DGEG Task Force, 2019).

Constant denial of requests to carry out photovoltaic projects in RANs. Even though the law allows non-agricultural projects to be exceptionally conducted in RAN areas, APREN, APA, and DGEG's task force pointed out that requests from photovoltaic producers have been systematically rejected, even for areas deemed as of less importance or not too sensitive. Similarly, projects located in big areas, with only a portion of those being recognised as RAN, have had their realisation compromised as well. This systematic denial of requests might stem, according to the task force's findings, from the lack of update of the government's RAN database, which may be misclassifying areas known for their low agricultural value as 'sensitive'. These severe restrictions also apply to grid connection lines (between project site and substation), but not to wind projects, as these have been mainly implemented in mountainous areas, which are not included in the RAN system (APREN, APA and DGEG Task Force, 2019).

Environmental NGOs' strong stance against projects in protected, sensitive areas. The League for the Protection of Nature (LPN) affirmed to be in favour of the realisation of photovoltaic and wind projects (but are contrary to the expansion of hydroelectric powerplants) as long as they are not located in protected areas (e.g., RAN areas, Natura 2000 sites, and others) – including the transmission power lines, which, according to LPN,

sometimes cross mountains and other areas of high conservation value. LPN also highlighted that the developers oftentimes present project location proposals that do not encompass an alternative other than the protected, sensitive areas – transforming what should be an exception into a rule (Ana Rita Martins, 2021).

Creation of new management rules for Special Conservation Areas. APREN's working group (2020) identified that new management plans for special conservation areas have been submitted for public consultation. If approved, these plans could add more barriers to producers that own power plants in Natura 2000 areas, for instance. Amongst the measures to be implemented are: regulatory conservation measures, complementary management measures and complementary support measures.

Reclassification of areas where wind projects have been installed: APREN stakeholders pointed out (via unofficial exchange of information) that municipalities have been changing their maps, reclassifying areas which wind farms have been built in. This reclassification hinders the development of repowering and over-equipment projects, which are obliged to follow even stricter environmental rules, according to annex III of Decree-Law 152-B/2017.

Identified good practice

No good practice related to this process step was identified.

2.1.2. Electricity production licence

Process flow

Portugal's legal framework for renewables provides that the activity of electricity production from renewable energy sources is contingent upon obtaining an electricity production licence and an exploitation one. This is true, however, for centralised production, which is mainly composed of medium and large-sized plants (i.e., power plants with installed capacity higher than 1MW). When it comes to the decentralised production variety, producers may benefit from simplified procedures depending on the type of unit, plant, that they own. Decentralised production consists of Small Production Units (*Unidades de Pequena Produção,* UPPs[2], in Portuguese), and Self-Consumption Units (*Unidades de Produção para Autoconsumo*, UPAC, in Portuguese). UPPs are electricity production units, based on a single production technology, with a maximum installed capacity of 1 MW and whose total electricity produced is injected into the grid. UPACs, on the other hand, are electricity production units whose installed capacity may surpass 1 MW and whose main aim is to produce energy for self-consumption; however, in certain cases, the surplus electricity produced by the unit may be sold to the grid. Medium and large-sized plants as well as UPPs are regulated by Decree-Law 76/2019; UPACs are regulated by Decree-Law 162/2019. UPPs and UPACs are subject to simplified procedures to start their operations, as it will be described below and in the grid connection section.

The only RES projects that require an electricity production licence are medium and large-sized plants (both onshore wind, and solar ground-mounted and rooftop technologies), and UPACs in the following cases: wind (onshore, with more than 1 MW of installed capacity) and solar (ground-mounted and rooftop, with more than 1 MW of installed capacity). UPPs and other UPAC categories *do not require* an electricity production licence to operate (FF

[2] The former distinction between micro and mini production regimes no longer exists. Now both modalities are legislated by the same rules (provided for in Decree-Law 76/2019) and have been placed under the umbrella term 'Small Grid Feed-in Unit' (*Unidade de Pequena Produção*, UPP).

Solar Comparison: Self-Consumption vs. Small Production Units, 2017. Article 3, paragraph 5 of Decree-Law 162/2019. Article 4, paragraph 4 of Decree-Law 76/2019).

Producers that need an electricity production licence to initiate their operations may apply for one only after obtaining a grid capacity reserve title. This is a new, mandatory requirement, introduced by Decree-Law 76/2019 and Decree-Law 162/2019, which precedes the application for a production licence and aims at ensuring that producers and the administration will not 'waste' efforts in projects for which there is no grid capacity, infrastructure available.

Simplified pre-registration procedure for UPPs and UPACs (≤ 1 MW)

UPPs that are going to produce electricity from renewable energy resources, based on a single production technology, with a maximum installed capacity of up to 1 MW and intended for the total sale of energy to the grid, are subject to a pre-registration procedure. This registration can be conducted on DGEG's SERUP platform and is a simplified way for installing the unit and obtaining a certificate of exploitation (much like a 'fast-track' system) (art. 27 B of Decree-Law 76/2019). Similarly, UPACs whose installed capacity is between 30 kW and less than or equal to 1 MW are also subject to the pre-registration procedure (art. 3, paragraph 3 of Decree-Law 162/2019).

It is noteworthy that this simplified process may not apply for projects that involve the installation of several UPPs close to each other, which could render a cumulative, rising environmental risk. In such cases, an environmental impact assessment might have to be carried out.

The electricity production licence process can be carried out concomitantly with connecting the plant to the grid – after the applicant manages to obtain a capacity reserve title.

After obtaining the title, the licensing procedure > 1MW plants progresses as follows:

Upon receipt of the licensing request via the SERUP platform, the licensing entity (DGEG) deliberates on questions of formal and procedural nature which may hinder the acknowledgement of the request, determining either i) the improvement of the request, whenever there is a lack of a required document – and when the lack cannot be unofficially remedied; or ii) the preliminary rejection of the request, provided that the analysis of the documents and elements results in the request being manifestly contrary to the applicable regulation (art. 9, paragraph 1 of Decree-Law 76/2019).

When there is no preliminary rejection, nor any requirements for improvements/correction of the documents and elements, it is understood that the applicant's request is in order. In this case, the licensing entity proceeds to issue the payment slips for the fees related to the licensing and the capacity reserve title processes and will consult external entities that are both horizontally and vertically involved in the process of granting the licence (art. 9, paragraph 4 and 5 of Decree-Law 76/2019).

The external entities consulted are both from the electricity/energy sector (in this case, the global managing institution of the Portuguese Electricity System, SEN, which is the *Redes Energéticas Nacionais*, REN) and from the environmental sector, which is the Regional Coordination and Development Commission (CCDR) and the Institute for Nature Conservation and Forests, ICNF (other entities may also have a say here, upon CCDR's discretion). After the external entities have issued an opinion/declaration, the licensing entity proceeds to make a final decision on the applicant's request (art. 10, paragraphs 6 and 7 of Decree-Law 76/2019).

Similarly, UPACs whose installed capacity is greater than 1 MW require production and exploitation licences (art. 8 Decree Law 162/2019). And for those UPACs for which there is a possibility of energy injection into the Public Utility's Electricity Grid (RESP) superior to 1 MVA, there is the need to obtain a capacity reserve title before beginning the procedure for obtaining a production licence. The title can be obtained by filling out the form available on DGEG's platform.

Just like UPPs, other types of UPACs are subject to simplified procedures, as follows:

- UPACs whose installed capacity is equal or inferior to 350 W are not subject to prior notification to nor registration by DGEG. The producer may simply buy the equipment and install it (art. 3, paragraph 1 of Decree-Law 162/2019).
- UPACs whose installed capacity is greater than 350 W and equal or inferior to 30 kW only need to provide prior notification, via SERUP, to DGEG (art. 3, paragraph 2 of Decree Law 162/2019).
- UPACs whose installed capacity is greater than 30 kW and equal or inferior to 1 MW are subject to prior registration for its installation and need to obtain a certificate of exploitation (art. 3 Decree Law 162/2019 and art. 27 B Decree Law 172/2006). The registration can be carried out on SERUP, just like in the process for UPPs.

Deadlines

For medium and large-sized plants and UPACs (larger than 1 MW of installed capacity):

The licencing entity will deliberate, within ten (10) days of the receipt of the applicant's request, matters of formal and procedural nature which may hinder the approval of the request. In case its first analysis identifies missing data or inaccurate information, the licencing entity will determine:

- The improvement of the request, by means of additional elements and documents; or
- The preliminary rejection of the request, provided that the analysis of the documents submitted results in the request being evidently contrary to the regulations in force.

In the first case abovementioned, the applicant is notified, *only once*, so that they have a chance to provide additional elements to substantiate their request. Applicants will be able to so within a period of no more than thirty (30) days. The legislation does not clarify if the authority can require more information or extra documents for a second time.

If applicants fail to provide the solicited elements, the licencing entity will proceed to reject the request within ten (10) days from the end of the period to present the additional elements (art. 9, paragraphs 1, 2 and 3 of Decree-Law 76/2019).

If there is no preliminary rejection, it is assumed that the application is properly instructed. In this case, the licensing entity will proceed to:

- Issue the payment slips for the fees incurred in the process (as provided for in Ordinance 15/2020); and
- Consult external entities that ought to issue an opinion, authorisation or decision about the licensing request.

External entities will be contacted by the licensing entity within five (5) days, after the conclusion of all the procedures aforementioned. The consulted entities' deadline for issuing an opinion is of twenty (20) days counted from the receipt of the request from the licensing entity.

Within a period of five (5) days the entity consulted may request, only once, additional elements to support its analysis. These elements shall be given to it within fifteen (15) days of the request.

In case the entity issues no opinion within twenty (20) days of the consultation period, it is presumed that there is no objection to the application.

Detected barriers

Lack of coordination amongst entities and shortage of personnel. The issuance of an electricity production licence is extremely intricate, costly and time consuming. It involves the participation of a handful of institutions (both horizontally and vertically related to the energy/environmental areas) that have very few coordination amongst themselves and whose legal framework for dealing with such requests (deadlines to be fulfilled, documents required, etc.) differs largely from one another.

The State Secretariat of Energy tried to create a working group to streamline the procedures amongst the entities, but they affirmed that such a thing was not feasible given the lack of personnel in many of them. According to APREN, this lack of human resources is also reflected on the increasingly high volume of processes that each entity has to assess (Serôdio and Lacerda, 2021). Insufficiency of personnel was also a barrier reported by members of the League for the Protection of Nature (LPN), who affirmed that they were unable to participate in some public consultations and to assess environmental impact studies due to scarce human resources (Ana Rita Martins, 2021).

No one-stop shops. Members of the Portuguese Renewable Energy Association (APREN) affirmed that there is no one-stop shop in Portugal. DGEG spearheads only the licensing procedure, having to coordinate with or delegate to other authorities (e.g., APA, CCDRs, and transmission and distribution operators) issues pertaining to other areas – environmental approval, grid connection, etc. This means that producers have to liaise, individually, with each entity responsible for a specific area. One of the measures proposed in Portugal's NECP 2030 was the creation of a one-stop shop by 2021; however, government authorities have reported to Portuguese renewable energy producers that, due to lack of resources, they have been unable to carry it out (Serôdio and Lacerda, 2021).

DGEG's SERUP platform is, from a very distant perspective, the incipience of what one could call a 'one-stop shop'. It is a shoddy attempt (i.e., still struggling with functionality problems) to provide applicants with one single platform to request their production licences. However, a considerable proportion of the other processes (environmental approval, for instance) still relies on the applicant having to engage with different authorities that are not connected to the SERUP platform. Therefore, it takes a long time and effort from the applicant to get to the end of the process.

Lack of clear regulation and incentives for repowering (wind sector). Decree Law 76/2019 has introduced a handful of legislative benefits for the RES sector, including the possibility of hybridisation of plants (important for the NECP 2030 wind-sector strategy). However, there is still an untapped window of opportunity, concerning the wind sector, not yet fully explored by the Decree: repowering.

Unlike countries such as Italy, which have created benefits and simplified mechanisms for the repowering of wind farms, Portugal has not yet explored further this modality (Simões, Couto and Estanqueiro, 2019). Decree Law 76/2019 merely states that there is the possibility of changing the installed capacity and the number of groups of generators and turbines in the plants (art. 4, par. 2). However, given that this, according to the law, implies in a substantial alteration of the plant, it requires the issuing of new production and exploitation licences – a lengthy and costly process.

Lack of user-friendliness on SERUP. Entities from the RES sector have complained that SERUP (Electronic Registration System for Production Units) needs to be revamped urgently, given that its current version has serious operational problems related to the registration of UPPs and UPACs (APESF and LNEG, 2019).

English translation not available for some legal instruments. When analysing the various legal instruments that impact the electricity production licence process in Portugal, it has been noted that a substantial part them is only available in Portuguese. This may constitute a significant barrier for producers that are not assisted by a Portuguese-speaking entity in their process of joining the country's RES energy market. Likewise, the complexity of the legal framework, and the consistent changes made to it, may render it even harder for non-Portuguese speaking newcomers to catch up with.

Identified good practice

Hybridisation of power plants (Decree Law 76/2019). The publication of Decree Law 76/2019 represented a significant legislative step towards enabling RES to play a bigger role in the country's energy mix. Specifically, the changes made in the electricity production licensing regime with the intent to enable the existence of hybrid plants (art. 4, par. 3 '[…] installation of new units in an already existing power plant that uses a different power source') are to be commended, as hybridisation provides for more flexibility and efficiency, given that it increases the optimisation on the use of electricity infrastructures and allows for more supply stability – i.e., a hybrid plant can use photovoltaic energy when there is abundance of sunlight and can switch to another source, such as wind, when the weather is cloudy. When requesting production licences for the installation of new units that use a different power source, in an already-existing power plant and maintaining the same installed capacity, the licensing entity informs producers of the documents that have been previously submitted for that power plant, and are still valid, allowing for more agility in the process.

Simplified procedures for UPPs UPACs. Decree-Law 76/2019 and 162/2019 simplified even further the regulatory procedures applied to UPPs and UPACs. For certain UPAC categories (depending on the installed capacity), a mere notification to DGEG is required in order to start operating the unit (for others not even that is required), which is a positive reinforcement for small photovoltaic producers as well as owners of small/mini wind turbines.

Over-equipment for wind farms (Ordinance 203/2020). Recognising the advantages of speeding up administrative procedures related to the authorisation of over-equipment for wind farms, the Ordinance introduces the possibility of waiving the prior deliberation/authorisation by the Energy Services Regulatory Authority (ERSE) to the producer of the facility to be overequipped that expressly opts for the application of the general remuneration system to the energy produced by the over-equipment.

APREN, APA, and DGEG's task force. In an attempt to help government entities to tackle the numerous processes, and also to assist its own associates with their endeavours,

APREN spearheaded in 2019, following a request by the State Secretariat of Energy, a task force composed of APA and DGEG with the aim to identify the main problems in the licensing, environmental and grid connection steps (APREN, APA and DGEG Task Force, 2019).

2.1.1 Administrative authorisation

Process flow

Construction Permit

After obtaining a production licence, renewable energy producers must obtain approval of the location from the City Council in order to obtain a construction permit.

The permit will be successfully issued by the City Council if the applicant delivers a set of documents proving that the project complies with all municipal rules, such as architectural projects and elements containing the details of foundations, electricity, and the security of the plant. It is noteworthy that the elements, documents required for the issuing of a permit may vary from one municipality to another. Therefore, producers are advised to check with the city council territorially responsible for their projects on the exact list of elements demanded.

If the project, however, is not subject to the legal framework for Environmental Impact Assessment or Environmental Incidence Assessment, the permit will have to be issued by the Regional Coordination and Development Commission (CCDR) of the region in which the power plant will be built (art. 8, annex I, paragraph 1, letter J of Decree-Law 76/2019).

Environmental Impact Assessment (EIA)

To be granted a Declaration of Environmental Impact (DEI) and a production licence, projects need first to undergo an assessment of their possible risks for the environment. Wind projects (and solar ones, indirectly) are regulated by the Environmental Impact Assessment (EIA) framework (Decree-Law 152-B/2017), which establishes that EIA is mandatory for projects: i) whose thresholds – i.e., installed capacity, number of equipment, distance from other facilities, etc. – are set in the Decree; ii) located either partially or completely in sensitive areas and are deemed as likely to provoke substantial environmental impact due to their location, size or purpose; or iii) whose thresholds are not included in the regulation, nor are located in sensitive areas, but still are deemed as likely to provoke substantial environmental impact due to their location, size or purpose, according to the criteria laid out in annex III of the Decree.

Projects located in non-sensitive areas:

According to the regulation, wind-farm projects not located in sensitive areas will be subject to an EIA in case they comprise 20 or more turbines or are located within a distance of 2 km (or less) from other wind farms. Similarly, EIA must be conducted in existing wind farms that have not been previously subject to EIA, but in which over-equipment will be added to, resulting in a total of 20 or more turbines or which distance from other farms will be brought down to less than 2 km due to the addition of over-equipment.

Photovoltaic projects are not explicitly mentioned in the EIA regulation; however, according to the analysis of several projects that have been previously submitted to EIA, solar plants fit in the category 'industrial installations destined for the production of electricity' (Annex II, no. 3, letter A of Decree-Law 152-B/2017). According to this category, projects located in non-sensitive areas, and whose installed capacity is superior or equal to 50 MW, are subject to an EIA.

Projects located in sensitive areas:

Wind projects located in sensitive areas are subject to stricter EIA criteria. In this case, EIA will be required for projects with 10 or more turbines or that are located within 2 km of other wind farms.

For solar projects, the EIA framework establishes that projects with an installed capacity superior or equal to 20 MW are subject to an EIA.

Environmental Incidence Assessment (EInCA)

Despite presenting an extensive list of projects that are subject to an environmental impact assessment, the EIA framework falls short of comprising every type of project – e.g., the installation of 7 wind turbines in a sensitive area or the implementation of an 8 MW-capacity solar project in a sensitive area, for instance. In such cases, Decree Law 225/2007 states that RES projects which are not covered by the EIA framework – and have an installed capacity higher than 1 MW and whose location is in a sensitive area (i.e., National Ecological Reserve, Natura 2000 sites, RAN areas, and others) – must undergo an environmental incidence assessment (EInCA). All specificities between EIA and EIncA projects considered, the following steps are applicable to projects that fit both categories.

The applicant will have to hand in an environmental incidence study, pursuant to art. 10 of Decree No. 140/1999, containing all of the elements provided for in Annex IV of Decree No. 152-B/2017, as well as an environmental monitoring plan and a copy of the execution project to the CCDR territorially responsible for it via its own electronic platform (each CCDR has one). After handing in the study, CCDR will then verify how compliant it is against the legal framework on environmental impact – giving the applicant a chance to amend, correct, or add new elements if CCDR's first evaluation identifies the absence of documents or unprecise, faulty data/information.

Upon validation of the elements provided by the applicant, CCDR will open a public consultation, via its website, and will require other entities from the environment sector (Institute for Nature Conservation and Forests – ICNF, for projects located in sensitive areas, and others, when applicable) to issue their opinion about the applicant's project. Only after finishing the public consultation and obtaining input from other entities (e.g., environmental NGOs, civil society partners, politicians and government officials from the environmental/energy area, etc.) will CCDR draft its report stating whether it is in favour, conditionally in favour, or not in favour of the applicant's environmental assessment study.

Important: all consultations described above will be waived if the applicant demonstrates to already have the opinions issued by those entities – which cannot be older than one (1) year.

In order to proceed to the next steps (i.e., applying for a production licence and connecting the plant to the grid), the applicant needs to receive from CCDR a Declaration of Environmental Impact (DEI) that is either favourable or conditionally favourable to the project.

Important: The authority responsible for conducting EIA is the Portuguese Environmental Agency (APA), whereas CCDR will be responsible for carrying out EIncA.

Deadlines

Construction permit

According to Decree-Law 4/2015 (i.e., the Portuguese Administrative Procedure Code, CPA), the City Council territorially responsible for the project has thirty (30) days, from the date of receipt of the documents, to issue an opinion on its location.

EIA and EInA

According to Decree-Law 76/2019, article 9, upon receipt of the documents via the licensing system, the APA or the competent CCDR has up to ten (10) days to verify the compliance of the material against the relevant framework.

In the absence of any document, or if the material provided does not fully comply with the legal framework, the applicant has up to fifty (50) days to submit new elements or correct any mistakes. All other deadlines will be suspended up until the applicant hands in the additional elements. If the applicant fails to so, the environmental assessment will be closed.

Within five (5) days of the receipt of the additional material, APA/CCDR informs the licensing authority (DGEG) about the procedure and installs a public consultation for twenty (20) days, making available on its website the environmental impact study, the identification of the project as well as its location. APA/CCDR will draft a report on the results of the public consultation within ten (10) days of its closing.

Concomitant to the opening of the public consultation, APA/CCDR also requests the opinion of external entities horizontally involved in the environmental assessment process. These entities (mandatorily the Institute for Nature Conservation and Forests, ICNF, for projects located in sensitive areas) then have twenty (20) days to issue an opinion – considered that no other deadline is specified by law.

Article 10 of the same Decree states that APA/CCDR's final decision – either favourable or unfavourable, or conditionally favourable, to the applicant's project – will be issued within twenty (20) days of the drafting of the report or after the relevant entities have manifested themselves.

It is noteworthy that, although the regulation allows for a tacit deferral of the environmental process, most applicants don't apply for it so as to avoid future repercussions.

Detected barriers

Construction permit

City Council process is not clear enough: The requirement for obtaining the approval from the relevant City Council for the installation of the power plant has been introduced explicitly only recently, in Decree-Law 76/2019 (Annex I, no. 1, letter J). Previous legislation only implicitly suggested that producers ought to obtain the City Council's approval for the project if the same was bound to the environmental framework (Decree-Law 172/2006, art. 8, no. 3, letter J), resulting in many applicants requesting prior information on the feasibility of their projects. Although the new legislation makes it explicit that the City Council must issue a permit for certain projects, it does not specify the deadline for it to do so, nor the period of validity of the permit – should the City Council approve the project. According to Portuguese lawmakers, for the former, the Portuguese Administrative Procedure Code should be applied, establishing a deadline of 30 days for the Council to issue an opinion. For the latter, however, there is no precedent in the CPA. Therefore, lawmakers argue that the decision should be valid for as long as there are no alterations in the approved project or in the law (Mirador and Nogueira Gaspar, 2020).

EIA and EInA

Long-lasting and expensive environmental impact assessment procedure. Renewable energy projects are subject to environmental impact assessment (EIA) (Decree-Law no. 152-B/2017), which has a negative impact on the projects due to lengthy

and expensive EIA procedures. The Environmental Impact Assessment Committee is composed of various departments, which can be involved or not depending on the type and location of the renewable energy project. There are no restrictions on the data, mitigation, and compensation measures requested by the Environmental Impact Assessment Committee from the project developer during the EIA process. Therefore, decisions are often subject to the opinion of various departments, which sometimes do not even have to be included in the EIA process according to the EIA regulations. If additional documents or data are requested from the project developer, the procedure is suspended for a period of up to 6 months or until the requested documents or data are submitted. New content may also result in a declaration from a new certification body being required and some essential formalities such as the public consultation having to be repeated (based on data from Eclareon's Renewables Networking Platform, 2017. Data collected in 2012).

Undue application of wind-related EIA regulation to solar projects. APREN stakeholders identified that the rule that establishes that EIA is mandatory to wind farms within a distance of 2 km (or less) from one another is being applied to solar projects as well, even though the decree does not include the latter in its list of projects for which EIA is mandatory (APREN, APA and DGEG Task Force, 2019).

Great level of discretion from stakeholders. Portuguese government officials from the environment area, members of environmental organisations and civil society are entitled to demand, during public consultations, specific or additional elements that ought to be included in applicants' environmental impact studies. Conversely, government officials may also, only exceptionally and through substantiated reasons, partially or completely waive the EIA for a given project (art. 4 of Decree-Law 151-B/2013).

EIA has become slower and more complex over time. The case-by-case analysis method adopted by environmental authorities whilst evaluating projects (in which emphasis is put on cumulative impacts amongst projects) is rendering the entire process slow. Another factor adding up to the slowness is that requirements are becoming increasingly more complex – e.g., protection rules for specific plants are being expanded to other species (Serôdio and Lacerda, 2021). The Fund for the Protection of Wild Animals (FAPAS) affirmed that EIA administrative procedures have, indeed, become slow and anachronic – i.e., they are no longer sufficient to manage the workload efficiently (Nuno Gomes Oliveira, 2021).

EIA authorities cannot prioritise the assessment of more feasible projects. According to APREN stakeholders, environmental authorities may not filter, nor prioritise, projects. This means that even if authorities identify that certain projects are more viable than others, they ought to analyse each of them following the order in which they have been submitted, which often leads to huge workload to authorities (Serôdio and Lacerda, 2021).

Need to conduct more strategic and independent environmental assessments. The League for the Protection of Nature (LPN) emphasised the need to conduct more strategic environmental assessments – especially for photovoltaic projects – avoiding the evaluation of projects in isolation. They also underscored that the environmental assessment should be conducted more independently, given that producers are the ones tasked with conducting the study – oftentimes being themselves responsible for choosing the entity, company, that will assess their own projects (Ana Rita Martins, 2021). Adding to that, FAPAS suggested that the lack of independence in the assessment and confection of studies ends up decreasing transparency and responsiveness, which can be observed in cases of project owners refusing to provide (or simply ignoring requests of) supplementary information when required (Nuno Gomes Oliveira, 2021).

English translation not available for some legal instruments. Just like in the electricity production process, the legal instruments that guide the procedures for the Environmental Impact and Incidence Assessments are mostly available only in Portuguese. This might incur significant delay in the process for producers that cannot count on the assistance of a Portuguese-speaking entity, party to support them.

Environmental Licensing Integrated System (SILiAmb) needs improvement. Producers have been complaining that the procedure for submitting the environmental impact assessment (EIA) through the platform is slow and, sometimes, it is not possible to send the document all at once, being necessary to split it in several parts, causing the document to lose reading quality (Gonçalves and Ponce de Leão, 2020).

Identified good practice

No good practice related to this process step was identified.

2.1.3. Grid connection permit

Process flow

Obtaining a Grid Capacity Reserve Title

This process must be conducted as a first step, right after site selection and before pursuing a production licence and connecting the plant to the grid, as it will ensure that there is grid capacity for the project.

The capacity reserve title can be obtained by filling out a form available on DGEG's platform. There, the applicant will have to properly identify the company and add information and materials related to its location and its commercial registration certificate. After the due validation of the form, the distribution system operator, which is registered on the same platform, will issue an opinion – following a sequential order of the requests – about the technical conditions of the grid and the compliance with the applicable legal framework.

The Issuance of the capacity reserve title can occur through three different procedures (art. 5-A, no. 2 of Decree-Law 76/2019):

i) **Request issuance of title:** this is the standard regime of issuance of titles. Here, the applicant requests a title to the grid operator, which will grant the capacity reserve title provided that there is capacity available in the grid. It must be taken into consideration that:

- if there is more than one applicant, priority will be given to the one that has first requested the title.
- the issuance of the title will also require a security deposit of EUR 10,000 per MVA of capacity reserve to be allocated. This amount is directed towards covering the costs of obtaining the production licence and, when applicable, the compliance with tender procedures.
- the issuance of the title can only be denied in case there is no grid capacity or if there is refusal, by the applicant, to pay the security deposit.

Important: Although the law establishes that this first procedure (request issuance) is viable for obtaining the title, APREN stakeholders informed that, due to lack of grid availability, this option is currently blocked (APREN, 2020).

ii) **Agreement:** in case there is no grid capacity available, an agreement may be decided between the applicant and the operator. In this modality, the applicant will agree to bear the costs arising from the amplification, reinforcement of the grid.

iii) **Tender procedure:** this modality may occur if a government official responsible for the energy area decides, through an ordinance, that the attribution of the title shall be carried out through a competitive procedure. Here, the title is issued by the grid operator following a competitive tender procedure for the allocation of reservation of reception capacity. Usually, the applicant offering the lower price or the higher contribution to the electricity system wins the tender. The opening of the procedure is officially announced through the Official Gazette and documents of the procedure are approved by a government ordinance and published on DGEG's website. This modality has been used by the government especially for capacity attribution of solar energy projects.

Connecting the plant to the grid

The grid connection procedure differs from project to project, depending on the size of the power plant and its installed capacity.

Procedure for UPPs and UPACs with installed capacity equal or inferior to 1 MW:

After pre-registering the unit on SERUP, the system will issue a receipt (containing the sequential number, as well as the date and time in which the registration was validated), so that the applicant can proceed with the payment of the fee related to this step. The fee must be paid within ten (10) days of its issuance and can vary, for UPPs, from 400 EUR to 600 EUR (Ordinance 15/2020) and, for UPACs, from 200 EUR to 600 EUR, for units with injection to the grid, and from 140 EUR to 400 EUR if there is no injection to the grid (Ordinance 16/2020). Once the fee is paid, the registration of the unit is complete, and the installation of the power plant may begin.

The installation is carried out by a private institution or a technician responsible for the execution of electrical installations, enabled under the terms of the applicable legislation.

After the installation of the power plant, the producer requests the Inspection Entity for Electrical Installations (IEP, IQS, or other entity accredited by DGEG and the Portuguese Accreditation Institute, IPAC) to verify the conformity of the power plant with the applicable legal and regulatory standards (art. 27-C of Decree-Law 76/2019).

Following the submission of the inspection report attesting to the compliance of the power plant, the certificate of exploitation is issued for the UPP and UPAC after the payment of the fees. Then a contract for the sale and acquisition of the total electricity produced can be agreed between the UPP/UPAC and CUR (Retailer of Last Resort) – in the case of UPACs, a contract will be made only if the producer intends to sell the surplus energy to the grid (art. 8 of Decree-Law 76/2019 and EDP, 2018). ERSE's (Energy Services Regulation Authority) final approval of the contract is also required (art. 55 of Decree-Law 76/2019).

After the producer signals the conclusion of the contract, SERUP notifies the distribution system operator to proceed with connecting the UPP, and the UPAC, in case of sale of the surplus energy, to the grid.

Important: Small Production Units' (UPPs) installed capacity may not exceed 1 MW and grid operators must give priority to the electricity derived from RES power plants, with the exception of hydroelectric plants with an installed power greater than 30 MW (art. 33 Decree Law 172/2006 amended by Decree Law 215-B/2012).

Procedure for medium and large-sized plants and UPACs whose installed capacity is greater than 1 MW:

After obtaining a grid capacity reserve title (and obtaining a production licence, which is a step that can be conducted concomitantly to the grid connection), producers have to obtain an exploitation licence by soliciting the connection of their plants to the grid.

Producers may only initiate operations in their plants after obtaining the exploitation licence. The request for one must contain the elements provided for in art. 20-B, no. 2 of Decree Law 76/2019.

If the request is in order, the licensing entity (DGEG) notifies the distribution system operator (*Energias de Portugal*, EDP) about its decision. The licence may only be denied after an audience with the producer, following the terms provided for in the Administrative Procedure Code, and based on one of the reasons below i) non-conformity of the plant's installations with the legal framework; ii) failure to obtain a Declaration of Environmental Impact (DEI) favourable to the project; and iii) lack of a greenhouse gas emission permit – when applicable (art. 20-B of Decree Law 76/2019).

After issuing the licence, DGEG proceeds to hold an inspection in the facility with the assistance of an accredited institution within the deadline described in the process for UPPs and UPACs. The contract for the sale and acquisition of the electricity produced is then agreed just like in the terms for UPPs and UPACs. UPACs with an installed capacity other than 1 MW are subject to simplified procedures, as follows:

- UPACs whose installed capacity is equal or inferior to 350 W are not subject to prior notification to nor registration by DGEG (art. 2 of Decree-Law 162/2019).
- UPACs whose installed capacity is superior to 350 W and equal or inferior to 30 kW only need to provide prior notification, via SERUP, to DGEG (art. 3 of Decree Law 162/2019).

Deadlines

Obtaining a Grid Capacity Reserve Title

According to article 5-A of Decree-Law 76/2019, capacity reserve requests will be analysed by the regional distribution system operator within forty-five (45) days after the global manager of the Portuguese Electricity System (which is the *Redes Energéticas Nacionais* - TSO) has issued an opinion and after the applicant has paid the fees and the security deposit related to this service.

The security deposit will be returned within five (5) days of the following events: i) if the capacity reserve request expires or ii) when the producer obtains an electricity production licence (art. 5-A, paragraph 15 of Decree-Law 76/2019). In case of a tender procedure, the caution will be given back if: i) the auction ends up not happening because there's only one contender; ii) in the case the producer is not awarded any grid capacity in the auction; and iii) in the case the producer does not qualify for the procedure (art. 14 of the Portuguese Tender Procedure rules).

Clause 7 of the Tender Procedure rules states that the holder of the capacity title has to obtain an electricity production licence within the following deadlines:

- In the case of a project being subject to an environmental impact/incidence assessment, twenty-four (24) months.
- In the case of projects not being subject to environmental impact/incidence assessment or analysis of environmental incidence, eighteen (18) months.

Similarly, an exploitation licence must be obtained within the following deadlines:

- In the case of a project being subject to an environmental impact/incidence assessment, forty-eight (48) months.
- In the case of projects not being subject to environmental impact assessment or analysis of environmental incidence, forty-two (42) months.

Connecting the plant to the grid

For UPPs and UPACs with installed capacity equal or inferior to 1 MW:

Article 27-C of Decree-Law 27-C establishes that within ten (10) days after the submission of the inspection report attesting to the compliance of the power plant, a certificate of exploitation is issued and, after the contract with the CUR is concluded (when applicable), the connection to the grid is authorised, which, for this purpose, is communicated to the grid distribution operator.

After the contract has been agreed upon between the UPP (or UPAC) and the Retailer of Last Resort, SERUP informs the distribution system operator to proceed with connecting the UPP/UPAC to the grid. The operator has up to ten (10) days to do so.

For medium and large-sized plants and UPACs with installed capacity greater than 1 MW:

The licensing entity has up to ten (10) days upon the receipt of the request for exploitation licence, to issue a decision (art. 20-B of Decree-Law 76/2019).

Article 16 of Decree-Law 76/2019 states that grid operators must provide, at the request of new electricity producers from renewable energy sources, detailed information related to the process, including an estimate of the costs incurred in connecting the plant to the grid and a timetable of the procedure.

Producers have sixty (60) days, after the allocation of the reception point of the grid to which they intend to connect to, to request the information abovementioned. The grid operator must provide a response within ninety (90) days, in case the assigned reception point is established in an already-existing installation of the grid, not requiring any expansion procedures. The deadline will be of one hundred and twenty (120) days, if the assigned reception point demands reinforcement.

In cases where there is no reception capacity at the grid and the expansion requires reinforcement measures that have not been previously included in the grid investment plans, the grid operator must provide the producer, within sixty (60) days, with a reasonable timetable for processing the request (ibid.).

The rest of the procedures (i.e., contract for sale of the electricity produced and connection to the grid) follows the same deadlines as the ones for UPPs and UPACs with installed capacity equal or inferior to 1 MW.

Detected barriers

Connecting the plant to the grid

Excess of procedures and authorities involved in the step. The grid connection procedure, similar to other processes, is convoluted (i.e., rife with strict deadlines and procedures that are both time-demanding and costly) and requires a great deal of coordination from applicants, given the considerable number of entities that have a say in the process (based on data from Eclareon's Renewables Networking Platform, 2017. Data collected in 2014).

Simultaneity of procedures is oftentimes counterproductive to producers. Connecting the plant to the grid may be carried out simultaneously with the electricity production licence step. The simultaneity of these processes has probably been conceived with the intention to provide producers with more time efficiency. However, it does the opposite: since both procedures are filled with strict deadlines and require producers to speak and liaise with several entities, the result is that applicants are rendered overwhelmed by the number of processes.

Identified good practice

Obtaining a Grid Capacity Reserve Title

Tender procedure. This modality, introduced by Decree-Law 76/2019, has been adopted in response to the scarcity in energy injection capacity in the Public Utility's Electricity Grid (RESP), substituting the former drawing modality. By ensuring that the winner of the tender is the one that offers the best price for the sale of electricity, the administration encourages constant competitivity and the improvement of grid conditions.

Connecting the plant to the grid

Simplification of procedures. Decree-Law 162/2019 now establishes that, for certain small-medium sized power plants, it is only necessary to notify the DGEG of their intention to connect the unit to the grid – and, for specific cases, not even a notification is required. Such instrument provides agility to photovoltaic projects that fit in the criteria, reducing costs and optimising time efficiency of projects.

3. Use of IT systems

Electronic Registration System for Production Units (SERUP)

This is an online platform that allows for the interaction of the public administration and UPP/UPAC producers of electricity from renewable energy sources. Although still defective, it is a development in terms of communication between RES agents.

Environmental Licensing Integrated System (SILiAmb)

This is a platform designed to facilitate the contact between producers and the environmental impact assessment authorities. It allows for better communication and interaction between licensing entities responsible for the environmental impact assessment steo (e.g., APA, Evaluation Commission, Consulting Board, and others) and project owners. Through SILiAmb, authorities may evaluate environmental studies, requesting, when applicable, additional elements, and holding public consultations.

Participa Portal

The Portal acts as a digital forum in which NGOs, civil society, associations and virtually anyone can participate and issue opinions about projects placed for public consultation in the country.

4. Complaint procedure

Since all procedures (obtaining a production and exploitation licence, conducting an environmental impact assessment, and connecting the plant to the grid) are held within the public sphere, they all abide by the Administrative Procedure Code (CPA). Decrees 76/2019 and 162/2019 state that producers whose projects have been rejected have the right to appeal of the decision by holding a hearing with all interested parties, following the terms provided for in the CPA.

According to article 47 of Decree-Law 76/2019, producers have the right to appeal of a tacit (i.e, not yet final) negative decision by means of a prior hearing. DGEG can only deny producers the right to continue with the process after the hearing is over. In its 100th article, CPA provides that that the entity responsible for conducting the appeal may choose between holding either a written or an oral hearing. In the case of a written hearing, the entity will notify the interested parties within a period of 10 days or more to show evidence and documents supporting their case (CPA, art. 122). If an oral method is preferred, then the entity will summon the parties for an in-person hearing. The hearing will not be adjourned if one of the interested parties fails to attend; however, if the absence is justified in advance, the hearing may be adjourned to a new date within the next 20 days following the adjournment (CPA, art. 123).

The entity then has from 60 to 90 days from the receipt of the appeal request to reach a decision (CPA, art. 128).

5. Specific features to ease administrative procedure

Table 2 below provides information on the existing specific features to ease administrative procedures in Portugal.

Table 2: Specific features to ease administrative procedures

Specific feature	Existing	Short description
Simultaneous procedures	yes	The processes for obtaining an electricity production licence and for connecting the power plant to the grid may be carried our simultaneously, once the applicant has successfully obtained a grid capacity reserve title.
National contact points and one-stop-shops	no	There are no one-stop-shops in Portugal. Members of the Portuguese Renewable Energy Association (APREN) stated that, despite government officials having listed that modality as a priority measure in the country's NECP, they now affirm that they have no resources to carry out the implementation of one-stop shops (Serôdio and Lacerda, 2021).
Application of 2+1 and 1+1 rules	no	
Simple notification procedure	yes	A simple notification procedure is available for UPACs whose installed capacity is between 350 W and or inferior to 30 kW. Those whose installed capacity is inferior to 350 W have an even more simplified procedure, not being subject to prior notification nor control – producers may simply buy the equipment and install it.
Pre-planning	no	
Pre-application consultation	yes	Prior to applying for a capacity reserve title, renewable energy producers may demand from the grid operator an estimate of the costs to connect to the grid. The deadline for receiving this information is of thirty (30) days.
Project acceptance measures	no	
Measures to streamline litigation by third parties	no	
Other	no	

6. Indicators to measure the performance of the overall process

Table 3 below provides information on the indicators to measure the performance of the overall administrative and grid connection process in Portugal.

Table 3: Performance indicators to assess administrative and grid connection processes

Performance indicator	Description
Average response time by the competent authorities and TSO/DSO for grid connection procedures	Art. 27-C, par. 3 of Decree-Law 76/2019, states that the average time that TSO/DSO authorities take to address the specific matter of connection units to the grid is ten (10) days.
Process duration	Members of the Portuguese Renewable Energy Association (APREN) affirmed that, according to the input given by its associates, the entire process lasts around 46 months. This is the average time calculated for the implementation of greenfield projects amongst APREN associates (with a focus on solar and wind projects and excluding hydro power) (Serôdio and Lacerda, 2021).
Project approval rates	**Environmental Impact/Incidence Assessment step:** According to FAPAS stakeholders and specialised news, the approval rate of projects subject to EIA/EInA is incredibly high, with only 6% of the 2,300 projects analysed in the last 25 years being denied a declaration of environmental protection compliance (Gomes Oliveira, 2021).
Costs of administrative processes	N/A
Share of permits that are legally challenged	N/A
Share of legal challenges that are overruled	N/A
Stakeholder interests	Public consultations with relevant stakeholders and entities are mandatory, by law, both in the electricity production licence procedure and in the environmental assessment. Through them, interested parties (i.e., government officials, members of environmental organisations, civil society, etc.) may voice their opinion on the projects' characteristics and can also ask for more details and elements of the project at any time during the consultation period.

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Decree-Law 4/2015 – Approves the Portuguese Administrative Procedure Code (CPA).

Decree-Law 94/2014 – Establishes the rules applicable to the added capacity and energy generated by over-equipment in power plants.

Decree-Law 151-B/2013 – Establishes the legal framework of the environmental impact assessment of projects susceptible to significantly impact the environment.

Decree-Law 215-B/2012 – Sets the rules for the internal electricity market (6th amendment to Decree-Law 172/2006)

Decree-Law 142/2008 – Provides the definition of "sensitive/protected areas" (within an environmental context).

Decree-Law 225/2007 – Clarifies the mandatory elaboration of studies of environmental Incidences of projects that are not covered by the Environmental Impact Assessment (EIA) framework.

Decree-Law 55/2007 – Provides protective measures to areas that have been ravaged by wildfires.

Decree-Law 172/2006 – Regulates the activities of production, transportation, distribution and trade of electricity.

Decree-Law 140/1999 – Lays out the criteria for the realization of environmental impact and incidence assessments. Currently, the most updated version of this regulation is Decree-Law 152-B/2017.

Order 883/2021 – Clarifies the legal regime for environmental impact assessment (EIA), approved by Decree-Law 151-B / 2013 and amended by Decree-Law 152-B/2017.

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