

RENEWABLE ENERGY

Portugal



Renewable Energy

Consulting editors

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Quick reference guide enabling side-by-side comparison of local insights into market and legal frameworks; treatment of environmental attributes; government incentives and authorisations; dispute resolution; utility-scale renewable energy projects; hydropower; distributed generation; energy storage; foreign investment considerations; offtake arrangements; decommissioning; transaction structures; and recent trends.

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MARKET FRAMEWORK

Government electricity participants

Who are the principal government participants in the electricity sector? What roles do they perform in relation to renewable energy?

In Portugal, several state entities are responsible for supervision and regulation in the energy sector.

- The government defines plans and policies for the energy sector and enacts its primary and secondary legislation and regulations. It also approves network development and investment plans. The bodies responsible for the energy sector are the Ministry of the Environment and Energy Transition and the Secretary of State for Energy.
- The Directorate-General for Energy and Geology (DGEG) is the energy sector licensing body and has several other responsibilities, such as monitoring security of supply.
- The Energy Services Regulatory Authority (ERSE) is the energy sector regulator and has administrative, financial and management autonomy, and operational independence. ERSE is responsible for regulation, supervision and sanctioning in the electricity, natural gas and liquefied petroleum gas industries.

Other entities that play an important role in regulating energy sector activities are the Global System Manager (REN – Redes Eléctricas Nacionais (REN)), the Portuguese Environment Agency (APA) and the Portuguese Competition Authority (AdC).

Law stated - 08 July 2022

Private electricity participants

Who are the principal private participants in the electricity sector? What roles do they serve in relation to renewable energy?

Private participants are found throughout the electricity value chain.

Electricity generation is open to competition. The Portuguese system currently uses a wide range of primary energy sources and technologies (gas, water, waste, wind, biomass and solar). The main electricity generators in Portugal (fossil and hydro resources) are currently EDP – Gestão da Produção de Energia, Turbogás, Tejo Energia, Endesa Generation and Movhera Hidroelétricas do Norte (a consortium led by ENGIE). As regards renewable energy generation (other than large hydro), some of the main generators are EDP Renewables, Galp, Finerge, Iberwind (Ventient Energy), Trustenergy, Endesa and Generg.

The Portuguese transmission network (transportation at very high voltage levels) is operated by a single transmission system operator, under a long-term public service concession granted by the state to REN, which was privatised in 2014.

Electricity is distributed in the national distribution grid (high, medium and low voltage lines). In Portugal, the company E-Redes – Distribuição de Eletricidade, SA (EDP group) is the main distribution system operator. It holds the long-term public service concession to operate the national distribution network for high and medium voltage systems and is also the concessionaire of most low voltage municipal distribution systems. There are also several small electricity distributors, mainly small local communities organised as cooperatives that operate in single municipalities at the low voltage level, with less than 1 per cent of market share.

With the sector's liberalisation, electricity supply and trading activity was opened to market players, including EDP,

Goldenergy, Iberdrola, Endesa, Aldro Energia, Audax Renewables, Aypo, Galp, Coopérnico, ECOCHOICE, JAFplus, Lisboaág, Lógica Energy, Luzboa, Luzigás, Naturgy, OZ Energia, PT Live and Rolear Viva. Consumers can choose their supplier freely and switch at no cost whenever they find a more suitable offer.

Finally, Portugal has a supplier of last resort, SU Eletricidade, SA, which is subject to public service obligations. The last resort supplier is responsible for purchasing all electricity generated by renewable energy plants that benefit from guaranteed remuneration schemes and for supplying electricity to customers who purchase electricity under regulated tariffs. The tariffs of the supplier of last resort are regulated by ERSE.

Law stated - 08 July 2022

Definition of 'renewable energy'

Is there any legal definition of what constitutes 'renewable energy' or 'clean power' (or their equivalents) in your jurisdiction?

In Portugal, renewable energy is legally defined as electricity generated from non-fossil renewable sources, notably wind, solar, aerothermal, geothermal, hydrothermal, ocean energy, hydropower, biomass and renewable gases.

Law stated - 08 July 2022

Framework

What is the legal and regulatory framework applicable to developing, financing, operating and selling power and 'environmental attributes' from renewable energy projects?

The ground rules and current organisation of the Portuguese National Electricity System are established in Decree-Law No. 15/2022 of 14 January, which came into force on 15 January 2022. Decree-Law No. 15/2022 incorporated into Portuguese law Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 regarding common rules for the internal electricity market and Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

Decree-Law No. 15/2022 – which repealed, among others, Decree-Law No. 29/2006, Decree-Law No. 172/2006 and Decree-Law No. 162/2019 – sets out the legal framework applicable to the activities of generation, storage, transmission, distribution and supply of electricity. It consolidates different electricity sector frameworks that were previously scattered across several different pieces of legislation, such as overpowering, additional energy, repowering and distributed generation/self-consumption, and renewable energy communities.

Generally, any promoter wishing to develop a renewable energy generation power plant in Portugal will be subject to prior control procedures and must obtain:

- a title for reservation of grid injection rights from the grid operator, enabling the promoter to be connected to the public grid;
- a prior control licence from the Directorate-General for Energy and Geology (DGEG), before starting power plant construction, which (depending on the installed capacity of the power plant) may be issued as a production licence, a prior registration or a prior communication, entitling the promoter to set up the power plant;
- a construction licence from the municipality where the power plant is located;
- an establishment licence to construct the grid connection infrastructure; and
- an operation licence or certificate from DGEG, after the power plant construction works end and following an inspection of the plant by DGEG.

Depending on plant size and capacity and the environmental status of the land, the licensing of power plants may also include an environmental impact declaration or environmental assessment declaration, and, for some biomass plants, an environmental licence.

Recently enacted Decree-Law No. 30-A/2022 of 18 April – which will remain in force for two years further to its enactment (ie, until 19 April 2024) – simplifies certain steps of the licensing procedure, although it also imposes some additional obligations on promoters, including the proposal of community engagement programmes.

The sale of power, energy generation and storage activities may be subject to two different remuneration schemes:

- the general remuneration scheme, in which producers sell electricity at a market price in organised markets or over the counter (OTC) by means of bilateral agreements (physical or financial power purchase agreements (PPAs)); and
- the guaranteed remuneration scheme, in which producers sell electricity to the last resort supplier (under a predefined PPA) at a guaranteed price (feed-in tariffs or other guaranteed remuneration schemes) for a certain period of time. The guaranteed remuneration is generally granted following a competitive tender procedure.

Pursuant to article 287 of Decree-Law No. 15/2022, the Last Resort Supplier is obliged to acquire power generated under the special regime that benefits from specific remuneration schemes, as well as power generated by producers with assigned injection capacity up to 1MW. It must pay remuneration to be determined according to the generation technology, the legal framework in force on the date of licensing of the power plant in question, and the contractual conditions under which the licensing request was submitted.

The Iberian Electricity Market (MIBEL) is the wholesale electricity market for Portugal and Spain, where producers can sell energy at market prices. MIBEL has three different sub-markets: the spot market (day and intraday market), the futures market and OTC (bilateral contracts).

Renewable energy generators benefit from guarantees of origin, as regulated by Decree-Law No. 141/2010 of 23 April, as amended, and Ministerial Order No. 53/2020. Guarantees are issued and may be transferred at a cost set by law. They provide evidence to costumers that the energy being acquired is from a renewable origin (or from an efficient combined heat and power plant). Producers issue guarantees of origin together with the renewable energy generated, or separately, in organised markets or by bilateral agreements.

Renewable energy generators receiving a feed-in tariff are barred from freely trading their guarantees of origin, in accordance with article 9 of Decree-Law No. 141/2010; it is mandatory for such guarantees of origin to be issued and transferred to DGEG.

Law stated - 08 July 2022

Stripping attributes

Can environmental attributes be stripped and sold separately?

Yes. Guarantees of origin are governed by Decree-Law No. 141/2010 of 23 April, as last amended, which enacted the European renewable energy directive. They may be sold by producers together with the renewable energy generated, or separately under bilateral agreements.

Renewable energy generators benefiting from support schemes need to assign guarantees of origin corresponding to the electricity produced to DGEG, which, afterwards, can auction the electricity for a better price. The first auction of guarantees of origin was held on 28 July 2021. Auctions of guarantees of origin are organised by OMIP, SA, the

manager of the forwards and derivatives market in the electricity sector.

Law stated - 08 July 2022

Government incentives

Does the government offer incentives to promote the development of renewable energy projects? In addition, has the government established policies that also promote renewable energy?

The Portuguese national electricity system closely follows the European Union regulations and policies, and its main aim is to promote the use of renewable energy, currently with a focus on solar photovoltaic projects.

Renewable energy projects that were awarded a point of injection in the electricity grid up to October 2012 typically benefit from a feed-in tariff, which, until the wholesale electricity price rise in 2021, was historically above market prices. Wind farms account for the vast majority of these projects, in terms of installed power.

The Portuguese government has since abandoned the feed-in tariff support schemes (except for cogeneration and experimental projects regarding emerging technologies). Generally, projects are being developed using merchant schemes. No other support schemes, such as feed-in premium and green certificates, are in place.

Grid capacity for connection of power projects has become scarce, although network investment and development plans need to foresee investments aiming to create new capacity, in particular so as to accommodate grid connection requests, subject to approval of the government.

Considering this scarcity of grid injection capacity, the government has also been promoting access to the grid through competitive tenders (only for new renewable energy capacity) and open procedures for creation of revenue in anticipation of injection of new grid capacity through direct investment by the generator.

Additionally, the law foresees other possibilities of maximising the load factor of use of grid injection capacity, notably through hybridisation, repowering or overpowering.

Competitive procedures already launched offer different sale schemes for generators to sell their output. One is typically selling electricity at a fixed price, and another a payment to the system for the electricity for the capacity awarded or electricity generated. The recent auction for the network capacity released by the deactivation of the Pego power plant differs from the previous procedures because it uses different criteria, linked not so much to the electricity price but more to the benefits of the projects to the electricity system and wider merits of the projects.

Law stated - 08 July 2022

Are renewable energy policies and incentives generally established at the national level, or are they established by states or other political subdivisions?

Renewable energy policies are established at the national level and closely follow European policy on promoting the use of renewable sources.

The main plan to promote renewable energy sources is the National Energy and Climate Plan for 2030, approved by Resolution of the Council of Ministers No. 53/2020. Among others, it sets the goal for the growth of installed capacity and generation from renewable energy plants by 2030.

Another important plan is the Recovery and Resilience Plan (PRR), which is a nationally applicable programme with an exceptional implementation period lasting until 2026. The PRR will implement a set of reforms and investments aimed at restoring sustained economic growth, and supporting the goal of convergence with Europe over the next decade. Some assistance is specifically intended for the energy sector, notably to support hydrogen, including renewable energy

generation, decarbonisation and energy-efficiency projects.

Law stated - 08 July 2022

Purchasing mechanisms

What mechanisms are available to facilitate the purchase of renewable power by private companies?

Renewable energy projects that benefit from guaranteed remuneration have the right to sell their electricity generation to the supplier of last resort (this task is expected to be transferred to the aggregator of last resort), which performs a service of general interest. This ensures the robustness of the commitments to purchase this electricity.

Recent competitive procedures (from 2020 on) have foreseen a different sale scheme for projects benefiting from a fixed price, through a contract for differences whereby generators sell their output in the market and have the right, or obligation, to receive or pay the difference between the strike price and the spot price at any given period.

For projects under the general remuneration scheme that sell their output at market prices, the law provides for the creation of an aggregator of last resort to ensure that the power generated by these generators is acquired at market prices by a centralised entity, when the generator cannot engage with an offtaker in the market. However, the procedure for awarding the licence for aggregator of last resort has not yet been launched. Therefore, renewable energy generators need to sell their electricity in organised markets or to offtakers pursuant to freely negotiated PPAs (except projects with an injection capacity of 1 MW or less, which can sell their output to the supplier of last resort under transitional arrangements).

The law provides for privately owned microgrids, but they are not yet widespread. Power generators have the right to install direct cables to supply electricity to end consumers, but only if it is impossible to supply through public networks or, in some cases, if supply by private cable is technically and economically more favourable to the electricity system.

Since 2019, the law has allowed the setting up of collective self-consumption schemes or renewable energy communities that allow self-consumers to share electricity output generated by a jointly owned or operated power plant, using public or internal networks. Excess energy may be sold through the public network, although it is subject to availability of network capacity.

Law stated - 08 July 2022

Legislative proposals

Describe any notable pending or anticipated legislative proposals regarding renewable energy in your jurisdiction.

The electricity sector in Portugal has been seeing significant legislation changes, an example of which is the new electricity framework law of 14 January 2022 (Decree-Law No. 15/2022). This law will require several new regulations and amendments to existing regulations, so as to fully implement the new law, that are expected to take place in 2022, including regarding electro-intensive consumers, closed distribution systems and self-consumption.

Law stated - 08 July 2022

Drivers of change

What are the biggest drivers of change in the renewable energy markets in your jurisdiction?

The main drivers of change in Portuguese renewable energy markets stem from the priorities set in the National Energy and Climate Plan for 2030, which sets the main national objectives in terms of the energy policy for this decade, some of which focus on renewable energy, as follows:

- decarbonisation of the economy to reduce greenhouse gas emissions by between 45 per cent and 55 per cent by 2030, compared with 2005;
- priority given to energy efficiency to reduce primary energy consumption by 35 per cent by 2030 (excluding non-energy uses);
- increased investment in renewable energy to increase the electrification of the economy and ensure 47 per cent of renewable sources in gross final energy consumption by 2030, with the following actions, among others:
 - continuing an auction system to allocate grid injection capacity;
 - disseminating hybrid systems of renewable technologies;
 - increasing wind power production through over-equipment and repowering;
 - organising pilot projects for renewable energy in the demonstration phase that are not very widespread; and
- guaranteeing security of supply by developing energy storage technologies.

The Portuguese Hydrogen Strategy sets ambitious targets for the generation of green hydrogen until 2030, which will create the need for several renewable energy projects to power – by public or private networks – electrolyzers to generate renewable hydrogen for industries.

Law stated - 08 July 2022

Disputes framework

Describe the legal framework applicable to disputes between renewable power market participants, related to pricing or otherwise.

Disputes are usually resolved by courts or by arbitration (when agreed between the parties). Energy consumers can generally resort immediately to the courts for a binding decision.

Disputes between electricity suppliers and individual consumers can also be resolved, if the consumer so wishes, by institutional arbitration or by the courts. Additionally, ERSE can establish means to resolve conflicts between consumers and operators through mediation or arbitration.

Decisions taken by the electricity sector regulator or other state authorities can be challenged in the administrative courts within the legal deadlines. However, decisions and fines applied in administrative offence cases must be challenged in specific courts responsible for competition, regulation and supervision matters.

Law stated - 08 July 2022

UTILITY-SCALE RENEWABLE PROJECTS

Project types and sizes

Describe the primary types and sizes of existing and planned utility-scale renewable energy projects in your jurisdiction.

Portugal has utility-scale projects with various renewable energy sources. The largest in terms of power are hydropower plant and wind, although biomass is also relevant and solar photovoltaic is developing quickly and is expected to achieve major growth in the following years.

Portugal had a total installed capacity of 5,502MW of wind power plants in 2020. Usually, these power plants have different installed capacities, typically ranging between 10MW and 200MW.

Biomass power plants had a total installed capacity of 775MW in 2020, and their individual installed capacity may reach 100MW, normally connected to other activities (industrial or similar).

Hydropower plants have a total installed capacity of around 7,200MW, divided into smaller (up to 10MW) or bigger (more than 10MW) plants. The larger hydropower plants recently commissioned include Baixo Sabor, Feiticeiro and Foz Tua. Iberdrola is building three hydropower plants – Gouvães, Alto Tâmega and Gaivões, with a total 1.2GW of installed capacity – expected to be completed in 2023.

Finally, solar power plants had a total installed capacity of 1,076MW in 2020 and, up to 2030, we expect solar installed capacity to reach 9,000MW (7,000MW in utility-scale projects and 2,000MW in distributed generation).

Law stated - 08 July 2022

Development issues

What types of issues restrain the development of utility-scale renewable energy projects?

Scarcity of network capacity and the time and cost of developing and licensing new power plants are probably the main issues restraining or delaying the development of new power plants in Portugal.

Other significant issues restrain the development of new projects:

- environmental restraints: it is common for renewable energy projects to affect environmentally sensitive areas, such as Natura Network 2000 ecological reserves or areas with protected tree species, and larger projects are subject to environmental assessment procedures;
- planning restraints: utility-scale photovoltaic plants, especially, cover a large area of land and municipal master plans and others may not allow, or foresee, the development of these projects; and
- land restraints: developing a renewable energy project requires securing all the land required for it, with no possibility of expropriation or constitution of administrative easements of land (except for certain interconnection lines, regarding which the possibility thereof was only recently clarified in the law).

A growing number of suppliers are in the business of offtaking the energy generated by renewable energy projects, but the thresholds for bankability of projects in terms of creditworthiness often reduce the number of possible offtakers considered by banks to be creditworthy.

Law stated - 08 July 2022

HYDROPOWER

Primary types of project

Describe the primary types of hydropower projects that are prevalent.

Historically, hydropower projects differ depending on their size. Projects up to 10MW of installed power (small hydro projects) were considered special regime power plants and benefited from feed-in tariffs. However, feed-in tariffs are

currently not provided for these projects.

Portugal has around 470MW of installed capacity of small hydro projects, owned by a variety of private companies.

Hydropower projects over 10MW of installed capacity sell their output in the market and do not benefit from guaranteed remuneration. Usually, owners of these power plants sell their output in organised markets.

Portugal has around 6,700MW of large hydro plants in operation, of which around 2,700MW are pumped-storage power plants. The remainder are conventional run-of-river plants.

Most large hydropower plants are owned by EDP – Gestão da Produção de Energia. However, EDP recently sold part of its hydropower portfolio (six hydropower plants with around 1,700MW installed capacity) to Movhera (a consortium led by ENGIE).

Law stated - 08 July 2022

What legal considerations are relevant for hydroelectric generation in your jurisdiction?

Construction and operation of hydropower plants require the general Portuguese licences for power plants (a construction licence from the municipality is usually not required) and an additional permit to use the hydro domain.

Generally, water resources are considered part of the public domain in Portugal, so their private use to generate electricity for long periods requires a concession agreement with the state. Water Act No. 58/2005 and Decree-Law No. 226-A/2007 set out the main procedures and conditions to use hydro resources.

The procedure to award concessions to use the public hydro domain can be launched by the state or by interested entities, but they are subject to competition whenever there is more than one entity.

The construction of large hydropower plants is typically subject to a very demanding environmental impact assessment procedure, because the comprehensive actions necessary to mitigate and compensate the environmental impact of the project complicate its implementation.

Due to the large amount of land used for water reservoirs created by plants, expropriation procedures are typically required for the promoter to acquire land in exchange for fair compensation.

Finally, the concession agreement and environmental impact decision will typically impose obligations on the promoter during the development, construction, operational and decommissioning stages of the project.

Law stated - 08 July 2022

DISTRIBUTED GENERATION

Prevalence

Describe the prevalence of on-site, distributed generation projects.

On-site generation has historically been allowed in Portugal under several legal frameworks. However, Portugal only recently really started to pick up pace in beginning to develop widespread decentralised production units.

Until 2014, most decentralised production units operated by selling their entire output through the network. The micro-generation and mini-generation frameworks, repealed in 2014, contributed to a total of around 160MW of installed capacity of plants selling their electricity through the networks against a feed-in tariff.

In 2014, new legislation on distributed generation was approved and self-consumption models were boosted. Total installed power of self-consumption units reached around 250MW of installed capacity at the beginning of 2021.

In 2019, new legislation anticipated models of collective self-consumption and renewable energy communities,

allowing for local sharing of electricity between companies and persons, in line with the Renewable Energy Directive II.

This possibility was further reinforced by the new electricity law enacted at the beginning in 2022, which increased the flexibility of requirements regarding licensing of collective self-consumption schemes and renewable energy communities, and acknowledged the concept of citizens' energy communities.

As an effect of these policies, installed capacity of self-consumption plants has increased from 3MW in 2015 to 342MW in 2021 and 604MW in 2022.

Law stated - 08 July 2022

Types

Describe the primary types of distributed generation projects that are common in your jurisdiction.

There are currently two types of distributed generation plants under Portuguese law, and both are regulated by Decree-Law No. 15/2022 of 14 January:

- self-consumption power plants (UPACs), which are generating plants intended for self-consumption, with the possibility to sell surplus energy in the market; and
- small-scale production units (UPPs), which are generating plants with up to 1MW of installed capacity and sell all energy produced in the market.

Self-consumption power plants are intended for on-site or near-site generation of electricity to primarily supply all or part of the consumption needs of one or more self-consumers. From 2022, electro-intensive consumers are allowed to install remote self-consumption power plants, as the legislation exempts them from complying with the requirements regarding maximum distance between the self-consumption plant and the consumption installation.

If grid capacity rights are granted, self-consumption plants can inject excess power into the grid, which is sold at market prices.

Self-consumption schemes may be individual or collective. Collective self-consumption schemes can be developed without creating a separate legal entity or together with the creation of a legal entity of which local consumers are members or shareholders (a renewable energy community). These schemes allow consumers to share local electricity generation from one or more self-consumers. Decree-Law No. 15/2022 allows renewable energy communities to share and trade the renewable energy produced by UPACs among their members.

Decree-Law No. 15/2022 established, for the first time, 'citizens' energy communities', by incorporating Directive (EU) 2019/944 into Portuguese law. These now coexist with renewable energy communities and are essentially governed by the same rules.

Self-consumption plants may be of any source of technology of generation of renewable energy, but the most common is solar photovoltaic, usually installed on roofs or car parks near the consumption units. The plant itself does not need to be owned by the self-consumer, but the generator (and owner of the electricity generation) needs to be a consumer itself. Therefore, it is common for self-consumption schemes to be implemented by a lease model, rather than by a typical electricity sale model.

It is common for self-consumption plants to be developed through a model similar to that used by energy service companies for energy efficiency projects. An investor installs, operates and maintains the plant, maintaining ownership, and receives a share of energy savings or energy benefits generated by the plant for the self-consumer.

Small-scale production units are decentralised and sell their output to the public networks – as a rule, distribution networks. They can operate under general remuneration (merchant) or guaranteed remuneration schemes. A simpler

licensing regime applies to these plants, due to their small installed and injection capacity.

Law stated - 08 July 2022

Regulation

Have any legislative or regulatory efforts been undertaken to promote the development of microgrids? What are the most significant legal obstacles to the development of microgrids?

There is no specific and autonomous legal scheme applicable to microgrids in Portugal. Conceptually, a microgrid will be an interconnected set of electricity wires distributing energy in a given location, typically owned by private parties outside existing public network concession agreements.

Microgrids may be developed within a confined area by owners and users of a self-consumption plant, this falling within the legal concept of internal networks. Additionally, a power plant may supply electricity to one or more consumers through a direct private wire (insofar as it does not qualify as a closed distribution network) provided that there is no access to the public grid and, in some cases, if this is technically or economically more favourable to the electricity system.

Microgrids may also fall under the concept of closed distribution networks, which are distribution networks in a limited industrial, commercial or shared service area, including railways, ports and airports, that distribute energy mainly to the owner of the network or companies related to it. The operator of the closed distribution network has the same duties as the distribution grid operator, in particular to ensure access of energy suppliers to the grid. It is free to set the closed network use tariffs, although users may appeal to ERSE if they believe the tariffs are not appropriate or transparent.

In any case, final implementation of closed distribution networks still depends on (1) approval by the DGEG of technical rules for these networks and requirements to operate them; and (2) setting by ERSE of principles that will guide the tariffs to use these networks.

With growing limitations on network capacity and the accelerated development of self-consumption plants, microgrids can be expected to become more common in Portugal.

Law stated - 08 July 2022

Other considerations

What additional legal considerations are relevant for distributed generation?

Self-consumption units must be installed in close proximity to their consumers. The proximity criterion relevant to self-consumption and energy communities has been redefined by Decree-Law No. 15/2022. It is now provided that this criterion is always fulfilled in the case of (1) self-consumption by internal network or direct line, regardless of physical distance; and (2) self-consumption by the public grid (RESP) if the self-consumption power plant (UPAC) is no more than two kilometres from the user installation or both are connected to the same transformer station or substation, in the case of low voltage, and four kilometres, ten kilometres and 20 kilometres in the case of medium, high and very high voltage connections, respectively.

The proximity criterion may also be considered fulfilled in other cases that do not meet these requirements, such as in case of electro-intensive consumers. This status was created by Decree Law No. 15/2022, and these consumers are exempt from compliance with minimum distances for self-consumption through the grid. Decree Law No. 15/2022 allows for remote self-consumption in the case of electro-intensive consumers.

Self-consumption units must be sized in line with self-consumers' consumption needs.

There is additional complexity if a collective self-consumption scheme is used or a renewable energy community is created, especially in establishing the group of self-consumers, allocating revenues and costs generated by the investment between them, and regulating the relationship with any potential investor.

Contracts with end consumers (non-professional individuals) must comply with consumer protection rules, including specific rules set out in electricity regulations and legislation on sale of goods and assets to consumers.

Law stated - 08 July 2022

ENERGY STORAGE

Framework

What storage technologies are used and what legal framework is generally applicable to them?

Pumped hydro storage is the most common type of electricity storage in Portugal. Especially from 2019 onwards, other means of storage, such as batteries and renewable gases (power to X), have been widely discussed and are already covered by legislation, but they are not common yet.

The activity of electricity storage is regulated in Decree-Law No. 15/2022. Storage may serve as a system service to be provided to the global system manager (REN Eléctrica), against remuneration. In general, storage installations are expected to be owned by generators and self-consumers, although they also may be owned and managed by closed grids operators and, subject to strict requirements and to the Energy Services Regulatory Authority's (ERSE) favourable opinion, by other system operators, notably the transmission system operators and distribution system operators.

Under the law, when storage is developed alongside a power plant, the production licence of the power plant will include the conditions for storage. This will also apply when storage is installed in self-consumption units. Standalone storage requires an autonomous production licence (if installed capacity of the storage is above 1MW) or registration of prior communication, if installed capacity is below 1MW.

Storage will benefit from specific tariff arrangements to avoid or mitigate double charging with network tariffs of electricity acquired for storage and then resold back to the system.

Law stated - 08 July 2022

Development

Are there any significant hurdles to the development of energy storage projects?

Legal hurdles are similar to those existing for generating plants, especially as regards grid injection capacity titles required insofar as the storage plant intends to be granted a grid injection capacity over 1MVA.

Additionally, some uncertainty may exist at the level of zoning and planning rules, as these typically do not foresee storage projects, which are new and unprecedented uses. At the environmental level, larger storage projects may need to undergo environmental permitting procedures that have no precedent in their application to this type of installation.

Finally, the elimination of double charging of network tariffs for all storage units, although foreseen in the law, is still not yet implemented at the regulation level.

Law stated - 08 July 2022

FOREIGN INVESTMENT

Ownership restrictions

May foreign investors invest in renewable energy projects? Are there restrictions on foreign ownership relevant to renewable energy projects?

Foreign investors may freely invest in renewable energy projects and the law places no restriction on foreign ownership.

Portugal has foreign direct investment rules approved by Decree-Law No. 138/2014. Under the rules, the government can exceptionally oppose investment by investors from outside the EU and EEA that allows them a dominant influence (control) in strategic assets in regulated and sensitive sectors. These include energy, insofar as the investment may cause a serious threat to national security or security of supply. Nevertheless, there is no record of this instrument yet being used to block energy sector investment.

There is also a special certification scheme for the transmission system operator if it is controlled by entities from outside the EU, in line with EU Directives. It is necessary to check compliance with unbundling requirements to determine whether there are risks to the security of energy supply due to the external entity having control over the transmission networks.

Law stated - 08 July 2022

Equipment restrictions

What restrictions are in place with respect to the import of foreign manufactured equipment?

Portuguese law does not restrict the import of equipment manufactured abroad. However, there are several national technical regulations issued by Portuguese authorities, in line with EU requirements, that the supply and installation of equipment must comply with. Tariffs and import duties are defined at European level.

Law stated - 08 July 2022

PROJECTS

General government authorisation

What government authorisations must investors or owners obtain prior to constructing or directly or indirectly transferring or acquiring a renewable energy project?

Portuguese law does not provide for a general government authorisation for investors to establish themselves in the country or to operate therein. The applicable permits are those set out in the legislation on engaging in the activities.

Law stated - 08 July 2022

Offtake arrangements

What type of offtake arrangements are available and typically used for utility-scale renewables projects?

A financeable project typically requires a long-term power purchase agreement (PPA) under which an electricity generator (the seller), who develops and owns the renewable energy project, and an offtaker (which may be a supplier or an end consumer) agree on the commercial terms to sell electricity. However, some projects may be financeable without a PPA, depending on the market outlook, guarantee package and risk assessment prepared by financiers.

A PPA may be physical or a mere contract for differences (sometimes called a financial PPA). Physical PPAs are the most common in Portugal, although financial PPAs have been becoming more common as more and more photovoltaic plants enter into operation and the interest of customers in securing electricity supply directly from generators increases. We have also witnessed a growth of corporate PPAs compared to utility PPAs, which, however, remain dominant in the market.

The credit rating of the offtaker and guarantee package is key to the bankability of the project and is one crucial factor that limits the number of bankable offtakers available in the market in Portugal.

Law stated - 08 July 2022

Procurement of offtaker agreements

How are long-term power purchase agreements procured by the offtakers in your jurisdiction? Are they the subject of feed-in tariffs, the subject of multi-project competitive tenders, or are they typically developed through the submission of unsolicited tenders?

In the case of merchant remuneration, producers and offtakers freely negotiate and execute PPAs.

In guaranteed remuneration schemes, such as those arising from public tenders, the tender procedures typically include drafts of PPAs or contracts for differences.

Law stated - 08 July 2022

Operational authorisation

What government authorisations are required to operate a renewable energy project and sell electricity from renewable energy projects?

As a general rule, when a renewable energy power plant is ready to start operation and after inspection by the Directorate-General for Energy and Geology (DGEG), it applies for an operation licence (or operation certificate, depending on the installed power of the plant) from DGEG.

However, a temporary regime created by Decree-Law No. 30-A/2022, of 18 April, allows for power plants to start operating without an operation licence or operation certificate, insofar as the grid operator confirms grid injection conditions are met. In this case, the operation licence or certificate must be obtained within three years of the communication to the authorities that the plant has started operating.

Other licences may be required to operate renewable projects, depending on their specific characteristics.

Law stated - 08 July 2022

Decommissioning

Are there legal requirements for the decommissioning of renewable energy projects? Must these requirements be funded by a sinking fund or through other credit enhancements during the operational phase of a renewable energy project?

In Portugal, the decommissioning of renewable energy projects is governed by general urban planning and environmental laws, in particular, regarding the requirement for a demolition licence and the destination of waste. If a power plant requires an environmental permit (eg, an environmental impact declaration or environmental licence, both issued by the Portuguese Environment Agency), the conditions for decommissioning projects will be set in these

permits.

In addition, Decree-Law No. 15/2022 established the obligation of promoters of renewable energy projects, self-consumption projects or storage projects to present a closure plan when applying for a generation licence. However, there is no requirement to guarantee the closure by means of a security deposit or an annual contribution.

Law stated - 08 July 2022

TRANSACTION STRUCTURES

Construction financing

What are the primary structures for financing the construction of renewable energy projects in your jurisdiction?

Construction of energy projects in Portugal is most commonly financed by means of project finance arrangements, although schemes commonly involve deviations from the non-recourse rule of project finance.

In recent years, we have seen an increase in other means of financing renewable projects, such as the issuance of green bonds.

Law stated - 08 July 2022

Operational financing

What are the primary structures for financing operating renewable energy projects in your jurisdiction?

It is typical, but not mandatory, for third-party financing of renewable energy projects to be done under project finance schemes, by incorporating special purpose vehicles to own the project. As a result of ring-fencing principles, this approach is necessary to create a barrier that segregates a portion of the company's assets from the rest and improves the bankability of the project.

Moreover, some sponsors turn to refinancing (while remaining within a project finance scheme) to operate projects, given that the risk of construction has already disappeared. This is especially relevant in situations where there is a feed-in tariff that allows lenders to have further certainty as to project income.

Law stated - 08 July 2022

UPDATE AND TRENDS

Recent developments

Describe any market trends with respect to development, financing or operation in the renewables sector or other pertinent matters.

The largest transformation expected this decade in Portugal is the huge increase in solar photovoltaic capacity, from the current roughly 1GW of installed capacity to 9GW in 2030. The goal of increasing solar photovoltaic capacity will probably widen in line with the reinforced European Union ambitions set out in the Fit for 55 package and implementation of renewable hydrogen projects, which, according to the additionality rule, will require that hydrogen is generated by new or recent renewable electricity generation projects.

Hybridisation and repowering of existing (or new) projects are and will continue to be a trending topic, as they make it

possible to optimise the use of a scarce resource, which is grid capacity.

Utility-scale solar photovoltaic plants are a hot topic. In order to significantly increase the production of electricity from renewable energy sources, focusing in particular on solar energy, and following the success achieved with the 2019 and 2020 solar auctions, four competitive procedures have been launched and more such launches are expected, including for green hydrogen, offshore wind and eventually non-conventional PV generation (following the 2022 floating PV auction).

Distributed solar, especially self-consumption, is also becoming more and more attractive, and business models around the aggregation of excess production from many small power plants (forming virtual power plants) may become a reality in the future.

In financing of renewable energy projects, issuance of green bonds and sustainability financing are expected to become more common. Concerns regarding the definition and application of criteria to avoid greenwashing will also probably become a concern in the near future.

Law stated - 08 July 2022

Describe any notable pending or anticipated legislative proposals.

Regulation implementing new concepts foreseen in the 2022 electricity law is likely to take place later in 2022.

Law stated - 08 July 2022

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