

Research RES LEGAL – Grid issues

Country: Spain

1. Overview

Overview of grid issues	<p>In Spain, renewable energy systems are statutorily entitled to priority access to , connection to and use of the grid. Renewable electricity is granted priority dispatch in the electricity markets at no cost, provided the stability and security of the grid infrastructure can be maintained.</p> <p>System operators may be contractually entitled to the expansion of the grid. If the expansion is required for a system to be connected to the grid, the operator of the system shall bear the costs of the expansion works ("deep" connection charges). Apart from that, the grid operator is obligated to expand his grid in compliance with the general legislation on energy.</p>
Connection to the grid	System operators are contractually entitled against the grid operator to priority access and connection of their systems to the grid.
Use of the grid	System operators are contractually entitled to priority use of the grids export and transmit electricity until grid capacity is used up and as long as stability is maintained.
Grid expansion	System operators may be contractually entitled to the expansion of the grid. If the expansion is required for a system to be connected to the grid, the grid operator shall bear the costs of the expansion works. Apart from that, the grid operator is obliged to expand his grid in compliance with the general legislation on energy.
Statutory provisions	<ul style="list-style-type: none"> • L 54/1997 (Ley del Sector Eléctrico – Law on the Electricity Sector) • RD 1955/2000 (Real Decreto 1955/2000, de 1 de diciembre, por el que se regulan las actividades de transporte, distribución, comercialización, suministro y procedimientos de autorización de instalaciones de energía eléctrica – Royal Decree on the Distribution and Transmission of Electricity) • RD 661/2007 (Real Decreto 661/2007, de 25 de mayo, por el que se regula la actividad de producción de energía eléctrica en régimen especial – Royal Decree on electricity production through a special feed-in tariff scheme ("Régimen Especial"). • RD 1663/2000 (Real Decreto sobre conexión de instalaciones fotovoltaicas a la red de baja tensión – Royal Decree setting the conditions for the connection of photovoltaic (PV) installations to the low-voltage grid) • RD 436/2004 (Real Decreto en el que se establece la metodología para la actualización y sistematización del régimen jurídico y económico de la actividad de producción de energía eléctrica en régimen especial – Royal Decree establishing the legal and economic framework for the operation of generators under "Régimen Especial") • RD 1565/2010 (Real Decreto por el que se regulan y modifican determinados aspectos relativos a la actividad de producción de energía eléctrica en régimen especial – Royal Decree modifying certain aspects of the operation of generators under "Régimen Especial") • RD 6/2009 (Real Decreto-ley 6/2009, de 30 de abril, por el que se adoptan determinadas medidas en el sector energético y se aprueba el bono social – Royal Decree establishing new regulations for the energy sector) • RD 1578/2008 (Real Decreto 1578/2008, de 26 de septiembre, de retribución de la actividad de producción de energía eléctrica mediante tecnología solar fotovoltaica para instalaciones posteriores a la fecha límite de mantenimiento de la retribución del Real Decreto 661/2007, de 25 de mayo, para dicha tecnología - Royal Decree on photovoltaic electricity

	<p>generation)</p> <ul style="list-style-type: none"> • RD 222/2008 (Real Decreto por el que se establece el régimen retributivo de la actividad de distribución de energía eléctrica – Royal Decree establishing the refund mechanism for the distribution of electricity)
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2. Basic information on legal sources

Name of legal source (original language)	L 54/1997	RD 1955/2000	RD 1663/2000
Name of legal source (full name)	Ley 54/1997, de 27 de noviembre, del Sector Eléctrico	Real Decreto 1955/2000, de 1 de diciembre, por el que se regulan las actividades de transporte, distribución, comercialización, suministro y procedimientos de autorización de instalaciones de energía eléctrica	Real Decreto 1663/2000, de 29 de septiembre, sobre conexión de instalaciones fotovoltaicas a la red de baja tensión.
Name (English)	Law No. 54/1997 of 27 November on the Electricity Sector	Royal Decree No. 1955/2000 of 1 December on the Transmission, Distribution, Marketing, and Supply of Electricity and the Authorisation Procedure for Electricity Generation Systems	Royal Decree No. 1663/2000 of 29 September setting the conditions for the connection of photovoltaic (PV) installations to the low-voltage grid
Abbreviated form	L 54/1997	RD 1955/2000	RD 1663/2000
Entry into force	29.11.1997	16.01.2001	01.10.2000
Last amended on	13.04.2010	13.03.2010	
Future amendments			
Purpose	Regulating the electricity sector	Regulating the connection and access of electricity to the grid and the transmission and distribution of electricity.	Regulating the connection of photovoltaic systems to the low-voltage grid.
Relation to renewable energy	This law also applies to systems that generate electricity from renewable sources (Articles 27-31).	This decree also applies to systems that generate electricity from renewable energy sources.	This decree establishes specific rules for photovoltaic installations.
Link to full text of legal source (original language)	http://www.boe.es/aeboe/consultas/bases_datos/act.php?id=BOE-A-1997-25340	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?coleccion=iberlex&id=2000/24019	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?id=BOE-A-2000-17599

Link to full text of legal source (English)			
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Name of legal source (original language)	RD 661/2007	RD 1578/2008	RDL 6/2009
Name of legal source (full name)	Real Decreto 661/2007, de 25 de mayo, por el que se regula la actividad de producción de energía eléctrica en régimen especial	Real Decreto 1578/2008, de 26 de septiembre, de retribución de la actividad de producción de energía eléctrica mediante tecnología solar fotovoltaica para instalaciones posteriores a la fecha límite de mantenimiento de la retribución del Real Decreto 661/2007, de 25 de mayo, para dicha tecnología	Real Decreto Ley 6/2009, de 30 de abril, por el que se adoptan determinadas medidas en el sector energético y se aprueba el bono social
Name (English)	Royal Decree No. 661/2007 of 25 May on the Regulation of Electricity Production through a Special Feed-in System ("Régimen Especial")	Royal Decree No. 1578/2008 of 26 September on the Payment for Electricity Generated by Photovoltaic Systems that were Registered after the Deadline for Eligibility for Payment under Royal Decree No. 661/2007 of 25 May.	Royal Decree Law No. 6/2009 of 30 April establishing certain measures for the energy sector and adopting the social bonus
Abbreviated form	RD 661/2007	RD 1578/2008	RD 6/2009
Entry into force	01.06.2007	28.09.2008	07.05.2009
Last amended on	23.12.2010	19.11.2010	09.04.2010
Future amendments			
Purpose	Establishing legal and economic provisions for electricity producers under "Régimen Especial".	Regulating photovoltaic electricity generation.	Establishing a new framework for the energy sector.
Relevance for renewable energy	This Decree directly promotes the generation of electricity from renewable energy sources.	This decree stipulates that operators of renewable electricity generation systems that would like to benefit from RD 661/2007 have to register their systems with a preliminary register (art. 4 RD 1578/2008).	This decree stipulates that operators of renewable electricity generation systems that would like to benefit from RD 661/2007 have to register their systems with a preliminary register (art. 4 RD 6/2009).

Link to full text of legal source (original language)	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?coleccion=iberlex&id=2007/10556	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?coleccion=iberlex&id=2008/15595	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?coleccion=iberlex&id=2009/07581#analisis
Link to full text of legal source (English)			

Name of legal source (original language)	RD 436/2004	RD 222/2008	P.O. 3.7
Name of legal source (full name)	Real Decreto 436/2004, de 12 de marzo, por el que se establece la metodología para la actualización y sistematización del régimen jurídico y económico de la actividad de producción de energía eléctrica en régimen especial.	Real Decreto 222/2008, de 15 de febrero, por el que se establece el régimen retributivo de la actividad de distribución de energía eléctrica	P.O. 3.7: «Programación de la generación de origen renovable no gestionable»
Name (English)	Royal Decree No. 436/2004 of 12 March establishing the methodology to update and refine the legal and economic framework for electric power generation under “Régimen Especial”.	Royal Decree No. 222/2008 of 15 February establishing the refund mechanism for the distribution of electricity	P.O. 3.7: «Programming of intermittent RES generation»
Abbreviated form	RD 436/2004	RD 222/2008	P.O. 3.7
Entry into force	28.03.2004	19.03.2008	28.05.2009
Last amended on	25.5.2007	26.12.2008	N/A
Future amendments			
Purpose	Establishing the legal and economic framework for the operation of generators under “Régimen Especial”	Regulating the Spanish electricity distribution sector and the development of its infrastructure.	Defining the operational procedures for on-grid RES generators.

Relation to renewable energy	Establishing the production forecasting requirements for RES generators	It creates incentives for distribution grid operators to take into account the development of RES when planning grid infrastructure.	It defines the operational procedures for grid curtailment, power factor range compliance and low-voltage ride through (LVTR) capability
Link to full text of legal source (original language)	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?id=BOE-A-2004-5562	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?id=BOE-A-2008-5159	http://www.boe.es/aeboe/consultas/bases_datos/doc.php?id=BOE-A-2009-8813
Link to full text of legal source (English)			

3. Further information

Institution (name)	Website	Name of contact person (optional)	Telephone number (head office)	E-mail (optional)
Instituto para la Diversificación y Ahorro de la Energía (IDAE) – Energy Agency	http://www.idae.es/index.php/mod.indice/mem.i		+34 914 564 900	comunicacion(at)idae.es
Asociación de Productores de Energías Renovables (APPA) – Association of Spanish producers of electricity from renewable sources	http://www.appa.es/index.php	Dr. Mischa Bechberger (International Affairs Manager)	+ 34 93 241 93 63	mbechberger(at)appa.es
Comisión Nacional de Energía (CNE) - Energy Market Regulator	http://www.cne.es/		+ 34 91 432 96 00	dri@cne.es
Red Eléctrica de España – Electric System Operator and only Transmission grid operator	http://www.ree.es/operacion/procedimientos_operacion.asp		+34 91 650 85 00	redelectrica@ree.es

4. Connection to the grid

<p>Abbreviated form of legal sources</p>	<ul style="list-style-type: none"> • Ley 54/1997 • RD 1955/2000 • RD 1663/2000 (PV only) • RD 661/2007 • RD 1578/2008 • RD 6/2009 		
<p>Overview</p>	<p>The operators of renewable energy systems are entitled against the grid operator to connection to the grid (art. 17 RD 661/2007).</p> <p>Entitled party. The persons entitled are operators of systems that come under the so-called “Special Regime” (“Régimen Especial”), (art. 2 RD 661/2007). The electricity generation systems entitled to Régimen Especial are those that respect the following conditions:</p> <ul style="list-style-type: none"> • Technologies: The systems' primary source of energy shall be a renewable source of energy as defined by statutory law (art. 2 par. 1 no. 2 b RD 661/2007). • Classification by the authorities: Systems shall be officially notified of their admission to Régimen Especial (art. 6-14 RD 661/2007). <p>In order to access the support measures, RES systems are required to be listed in the Special Regime Administrative Register (art. 9 RD 661/2007). For renewable electricity generation systems to be eligible for the Special Regime Administrative Register, they must be registered in a preliminary register (“Registro de Pre-asignación”). Registration in the preliminary register is conditional upon certain criteria (art. 4 RD 6/2009, art. 4 RD 1578-2008).</p> <p>Obligated party. The person obligated is the grid operator (art. 17 RD 661/2007).</p>		
<p>Procedure</p>	<table border="1"> <tr> <td data-bbox="616 1042 1093 1465"> <p>Procedure</p> </td><td data-bbox="1093 1042 2074 1465"> <p>In general, the procedure for access and connection consists of the following steps:</p> <ul style="list-style-type: none"> • APPLICATION for access point • Provisional ASSIGNATION of access point • CONNECTION request • NEGOTIATION of connection contract • AGREEMENT and signature of contract • EXECUTION of connection works • CONNECTION <p>The procedure for connecting RES installations to the distribution or</p> </td></tr> </table>	<p>Procedure</p>	<p>In general, the procedure for access and connection consists of the following steps:</p> <ul style="list-style-type: none"> • APPLICATION for access point • Provisional ASSIGNATION of access point • CONNECTION request • NEGOTIATION of connection contract • AGREEMENT and signature of contract • EXECUTION of connection works • CONNECTION <p>The procedure for connecting RES installations to the distribution or</p>
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		transmission grid, are established in articles 53 to 66 of RD 1995/2000 and in Annex IX of RD 661/2007. Additionally, Red Eléctrica de España's P.O.s (<i>Procedimiento de Operación</i>) 12.1 and 12.2 further define the technical and procedural rules for connection to the transmission infrastructure.
	Deadlines	<p>For the connection to the transmission grid, the deadlines are set in articles 53,57,58 and 59 of RD 1955/2000:</p> <ul style="list-style-type: none"> • Once the transmission grid operator receives from an applicant an access and connection request, it shall respond on the feasibility of access and connection within 2 months. • Successively, the applicant has to request connection from the owner of the access point, who shall produce a technical report and pass it to the transmission grid operator within 1 month. The transmission grid operator shall assess and finally accept the report within another month. • The transmission grid operator and the applicant shall then negotiate and agree on the connection contract within one month. Thereafter, the connection works may start. The connection contract shall not be signed unless all administrative authorisations for the connection works have been obtained. • <p>For the connection to the distribution grid, the deadlines are set in articles 62,63 and 66 of RD 1955/2000:</p> <ul style="list-style-type: none"> • Once a distribution grid operator receives from an applicant a request for access to its infrastructure, it shall respond whether there is sufficient access capacity within 15 days. The distribution grid operator shall forward to the transmission grid operator all access requests that may have an influence on the transmission infrastructure as established in article 63 of RD 1955/2000. • A positive access capacity response from a distribution grid operator will have a validity of 6 months. During this period, the applicant may request connection. • Where a distribution grid operator receives a connection request that might have an influence on the transmission grid infrastructure, the distribution grid operator shall inform the transmission grid operator, who shall respond on the feasibility of the connection within one month. The distribution grid operator shall then inform the applicant. • The distribution grid operator and the applicant may then, in case of a positive response, enter in the contract negotiation phase. <p>Systems shall be connected to the grid after the contract on the technical</p>

		conditions has been concluded (art. 16 RD 661/2007) and a bank guarantee of € 500 per kW of installed capacity for photovoltaic systems and € 20 per kW for other systems has been provided (art. 66 bis RD 661/2007).
	Obligation to provide information	The transmission grid operator and distribution grid operators are obliged to explain the cases where access to the grid was denied and to provide alternative access points. The transmission grid operator and the distribution grid operators also have to make publicly available the information on all access and connection requests in their areas of competence (articles 53, 62 RD 1955/2000)
Priority to renewable energy (qualitative criteria)	(x) Priority to renewable energy () Non-discrimination	Renewable energy systems shall be given priority connection, i.e. they shall be connected prior to conventional power systems (art. 17e, Annex XI no. 4 RD 661/2007).
Capacity limits (quantitative criteria)		
Funding		
	State	
	Consumers	
	Grid operator	
	System operator	The plant operator shall bear the costs of connection to and the possible expansion of the grid (Annex XI no. 8, 9 RD 661/2007). Furthermore, the operators of plants, or clusters of plants connected to the same access point, whose capacity exceeds 10 MW, must be connected to a control system and shall bear the costs of installation and maintenance of the control systems, including installation and maintenance of the communication lines to the grid operator (art. 18 d RD 661/2007).
	Distribution mechanism	Plant operators may not pass on the costs of connection to the grid.

5. Use of the grid

<p>Abbreviated form of legal sources</p>	<ul style="list-style-type: none"> • RD 1955/2000 • RD 436/2000 • RD 661/2007 • RD 6/2009 • RD 1578/2008 • RD 1565/2010 • P.O. 3.7
<p>Overview</p>	<p>The plant operators are statutorily entitled against the grid operator to priority export and dispatch of renewable electricity (art. 17 RD 661/2007). However, plant operators and grid operators are obligated to conclude an agreement that regulates the qualitative and quantitative conditions for the electricity to be exported to the grid. The agreement shall comply with the model contract provided by the Ministry of Energy and Mining (art. 20 par. 2, art. 16 RD 661/2007).</p> <p>Entitled party. The persons entitled are operators of systems that come under the so-called special regulation ("Régimen Especial"), (art. 17 RD 661/2007 in conjunction with art. 2 par. 2 no. 2 b RD 661/2007). The following power systems have a special status:</p> <ul style="list-style-type: none"> • Technologies. The systems' primary source of energy shall be a renewable source of energy like solar or wind energy as defined by statutory law (art. 2 par. 1 no. 2 b RD 661/2007). • Classification by the authorities. Systems shall be classified as coming under the special regulation by official notice (art. 6, 8, 14 par. 1 RD 661/2007). • Connection to a central control system. All systems, or clusters of systems connected to the same access point, that generate electricity as specified by the special regime regulation and whose capacity exceeds 10 MW shall be connected to a central control system (CECRE), which shall be the interface to the plant operator. The control system, managed by the Transmission grid operator, shall provide real-time system information and make sure that the plant operator's instructions are implemented in such a way as to guarantee the reliability of the electric system. All RES installations or clusters larger than 1 MW are required to provide to the transmission grid operator real-time telemetry information about their operating conditions. • Curtailment. The transmission grid operator may reduce electricity imports for the following reasons: grid stability or short-circuit power warnings, grid congestion, inadequate active or reactive power levels, production variations, balancing issues and minimum load. RES generators may be curtailed only after conventional generators have been curtailed wherever possible. In practice, wind farms are curtailed more often than other RES installations. (RD 661/2007, RD 1565/2010) • Other operation requirements for RES installations may involve, depending on the technology used and the capacity installed, power factor ranges to be respected and low voltage ride through (LVTR) capability. (RD 661/2007, RD 1565/2010) <p>Systems are required to be listed in the register of systems in order to be awarded the status of system under the special</p>

	<p>regulation (art. 9 RD 661/2007). For renewable energy systems to be eligible for the register of systems, they must be registered in the preliminary register ("Registro de Pre-asignación). Registration in the preliminary register is conditional upon certain criteria (art. 4 RD 6/2009, art. 4 RD 1578-2008).</p> <p>Obligated party. The obliged entity is the grid operator (art. 17, 20 RD 661/2007).</p>	
Procedure	Procedure	<ul style="list-style-type: none"> • Grid connection • The claim for purchase and transmission arises when the system is connected to the grid. • The grid operator is then obliged to import and transmit the electricity.
	Deadlines	In general, the grid operator shall satisfy his obligation to take in RES electricity unconditionally and without undue delay. However, he may impose limitations if the capacity of the grid is fully used up or if there are other technical concerns (Annex XI RD 661/2007).
	Obligation to provide information	The procedure to be followed by the transmission grid operator is described in P.O. (Procedimiento Operativo) 3.7. In summary, the transmission grid operator, via the CECRE and the generation control centres connected to it, may send instructions to the RES production facilities every 12 seconds. These instructions have to be observed within 15 minutes.
Priority to renewable energy (qualitative criteria)	(x) Priority to renewable energy () Non-discrimination	Electricity from renewable sources shall be fed in and dispatched with priority, i.e. prior to electricity from conventional sources of energy. However, this priority ceases for system operators not complying with the conditions laid down by the contract on the technical relations between a plant operator and the grid operator (art. 17e, Annex XI no.4 RD 661/2007).
Grid stability	The grid operator is obligated to take in all net electricity generated by a plant operator whenever the export of electricity to its infrastructure is technically possible (art. 17b, 20 RD 661/2007). Net electricity shall refer to the gross amounts of electricity generated by a system less the system's own consumption.	
Funding		
	State	
	Consumers	
	Grid operator	The costs of feeding in and transmission of electricity generated from renewable energy are borne by the grid operator (Annex XI RD 661/2007).
	System operator	
	Distribution mechanism	There are no special mechanisms allowing for the costs to be passed on to the consumers.

6. Grid expansion

Abbreviated form of legal source	<ul style="list-style-type: none"> • L 54/1997 • RD 1955/2000 • RD 661/2007 • RD 222/2008 	
Overview	<p>A system operator may be contractually entitled against the grid operator to an expansion of the grid, if the expansion is required for his system to be connected to the grid (entitlement arises from the obligation to bear the costs, as specified by Annex XI no. 9 RD 661/2007). However, the grid operator is not directly obligated to expand the grid. Yet, the grid operator has the obligation to expand his grid according to general criteria specified by legislation (art. 8-16 RD 1955/2000). Possible individual claims for an expansion may arise if grid expansion is required for a system to be connected to the grid (Annex XI no. 9 RD 661/2007).</p> <p>Entitled party. A system operator may be entitled to an expansion, if the expansion is necessary to connect his system and this right has been laid down in the contract.</p> <p>Obligated party. The contracts concluded with the plant operators may oblige the grid operator to expand his grid. As far as the grid operator's general obligation to expand the grid is concerned, he shall elaborate a grid expansion plan in co-operation with the Ministry of Industry Tourism and Trade every four years. The plan shall take into account the number of existing and new systems and the opinions of various stakeholders (art. 11 RD 1955/2000).</p>	
Procedure	Procedure	<p>The system operator may be contractually entitled against the grid operator to the expansion of the grid, if grid expansion is required for his system to be connected to the grid (entitlement arises from the obligation to bear the costs as specified in Annex XI no. 9 RD 661/2007). However, the grid operator is not directly obligated to expand the grid. Yet, the grid operator has the obligation to expand his grid according to general criteria specified by energy law (art. 8-16 RD 1955/2000).</p> <p>Possible individual claims for an expansion may arise if grid expansion is required for a system to be connected to the grid (Annex XI no. 9 RD 661/2007).</p>
	Enforcement of claims	<p>The circumstances in which an individual claim arises depend on the conditions of the contract.</p>
	Deadlines	<p>Time limitations and deadlines of an expansion of the grid depend on the terms of the contract.</p>
	Obligation to provide information	<p>The Ministry of Industry Tourism and Trade is obliged to publish a 6-10 years grid development plan, and to update it annually. Based on this planning, the Spanish government approves and publishes in the Official Journal (BOE) a detailed annual plan of interventions to be implemented in the transmission grid infrastructure</p>
Incentives for grid expansion		

Funding		
	State	
	Consumers	
	Grid operator	The costs of a general expansion of the grid are borne by the grid operator (Annex XI RD 661/2007).
	System operator	If the expansion is to the benefit of the plant operator only, he shall bear the costs of the expansion (Annex XI RD 661/2007).
	Distribution mechanism	Statutory law does not provide for distribution mechanisms.
Grid studies	Ministry of Industry Tourism and Trade (2008) <i>Planificación de los sectores de electricidad y gas 2008-2016.</i> Available at: http://www.mityc.es/energia/planificacion/Planificacionelectricidadygas/Desarrollo2008/Paginas/Desarrollo2008.aspx	