



Report on the regulatory impact analysis (RIA) of the draft Royal Decree amending the Low Voltage Electrotechnical Regulation, approved by Royal Decree 842/2002 of 2 August 2002, as well as the Regulation on technical conditions and safety guarantees in high voltage electrical facilities and its Complementary Technical Instructions ITC-RAT 01 to 23, approved by Royal Decree 337/2014, of 9 May 2014.

EXECUTIVE SUMMARY

Proposing Ministry/body	Ministry of Industry and Tourism		22/05/2025
Title of the regulation	Draft royal decree amending the Low Voltage Electrotechnical Regulation, approved by Royal Decree 842/2002 of 2 August 2002, as well as the Regulation on technical conditions and safety guarantees in high voltage electrical facilities and its Complementary Technical Instructions ITC-RAT 01 to 23, approved by Royal Decree 337/2014 of 9 May 2014.		
Type of report	Normal <input checked="" type="checkbox"/> Abbreviated		
TIMELINESS OF THE PROPOSAL			
Subject	This regulation amends certain technical conditions to be met by low and high voltage electrical installations in order to ensure the safety of people and property, as well as the protection of the environment, and to keep up with technological developments.		
Objectives	It aims to adapt the safety regulations for electrical systems to self-supply and its technical demands, as well as to improve certain aspects of the regulation taking into account technological advances and the experience garnered in applying these advances. The new ITC specifically for direct current facilities is also approved.		
Main alternatives considered	<p>The following are assessed as alternatives:</p> <ul style="list-style-type: none"> a. Amending the provisions necessary to adapt the safety regulations of electrical facilities to self-supply. b. Drafting a new regulation that repeals and replaces the previous one c. Not amending the 2002 regulation and creating supporting documents (guides) with the necessary clarifications and guidance, based on the existing regulation. d. Not taking any further action. 		
CONTENT AND LEGAL ANALYSIS			
Type of regulation	Royal Decree.		
Structure of the regulation	The draft royal decree consists of a preamble, two articles, a single additional provision, eight transitional provisions, a single derogatory provision and three final provisions.		
Reports collected	In processing this regulation, the following reports must be gathered:		

	<ul style="list-style-type: none"> - Report from the General Technical Secretariat of the Ministry of Industry, Trade and Tourism. - Report from the Office of Coordination and Regulatory Quality, Ministry of the Presidency, Justice and Parliamentary Relations. - Report from the Ministry of Transport and Sustainable Mobility. - Report from the Ministry of Ecological Transition and Demographic Challenge. - Report from the Ministry of Economy, Trade and Enterprise. - Notification to the European Commission on matters of technical regulations and on matters of the Services Directive. - Report from the Industrial Safety Coordination Council. - Expert Opinion of the Council of State.
<p>Prior consultation</p>	<p>A public consultation was held before drafting the text, pursuant to Article 26(2) of Law 50/1997 of 27 November, 1997 concerning the Government.</p> <p>The public consultation procedure began on 8 March 2021 and was completed on 29 March.</p> <p>Comments have been received from most of the sectoral associations considered to be the most representative.</p>
<p>Hearing process</p>	<p>The draft royal decree has been published on the MINTUR website as part of the public information procedure pursuant to Article 26(6) of Law 50/1997 of 27 November 1997. The following have been specifically notified: the Directorates-General responsible for industry of the different Autonomous Communities and Autonomous Cities, the main associations in the field of industrial safety that are in contact with the proposing Sub-Directorate and the professional associations.</p> <p>After this and following the amendments introduced after the hearing procedure (as a result of the submissions received), the draft royal decree was subjected to a new hearing procedure so as to inform the interested parties of the substantial changes introduced in the wording. To this end, the previous process was repeated by placing the text on the MINTUR website and specifically notifying the General Directorates with competence in the field of Industry of the different Autonomous Communities and of the cities of Ceuta and Melilla and those interested parties that made submissions during the first process.</p>
<p>IMPACT ANALYSIS</p>	
<p>COMPLIANCE WITH THE DISTRIBUTION OF POWERS</p>	<p>In general terms, this royal decree is issued pursuant to Article 149(1)(13) of the Spanish Constitution, which confers on the State exclusive powers regarding bases and coordination of the general planning of economic activity, without prejudice to the powers of the Autonomous Communities to establish additional provisions for purposes of protection.</p>

	Similarly, Article Three and the sixth transitional provision also fall within the competence conferred on the State by Article 149(1)(25) of the Spanish Constitution on the bases of the mining and energy systems.	
ECONOMIC AND BUDGETARY IMPACT	General impact on the economy.	It entails an expense for distributors and other owners of transformer substations of €218 211 231.
	With regard to competition	<input checked="" type="checkbox"/> The regulation has no significant impact on competition. <input type="checkbox"/> The regulation has a positive impact on competition. <input type="checkbox"/> The regulation has negative impacts on competition.
	With regard to administrative burdens.	<input type="checkbox"/> The regulation entails a reduction in administrative burdens. Estimated quantification: _____ <input checked="" type="checkbox"/> Incorporates new administrative burdens. Estimated quantification: €2 044 750 per year <input type="checkbox"/> It does not affect administrative burdens.
	With regard to budgets, the regulation <input type="checkbox"/> Affects the budgets of the State Administration. <input type="checkbox"/> Affects the budgets of other Regional Administrations	<input checked="" type="checkbox"/> Does not entail an increase in expenditure, to the extent that it is limited to regulating certain existing aspects. <input checked="" type="checkbox"/> Does not entail revenues.
GENDER IMPACT	The regulation has the following gender impact	<input type="checkbox"/> Negative <input checked="" type="checkbox"/> None <input type="checkbox"/> Positive
IMPACT ON CHILDREN AND ADOLESCENTS	The regulation has the following impact on childhood and adolescence	<input type="checkbox"/> Negative <input checked="" type="checkbox"/> None <input type="checkbox"/> Positive
IMPACT ON	The regulation has the following	<input type="checkbox"/> Negative <input checked="" type="checkbox"/> None <input type="checkbox"/> Positive

FAMILIES	impact on families			
OTHER IMPACTS CONSIDERED	<p>The impact on SMEs is deemed non-existent.</p> <p>The impact on competition is deemed non-existent.</p> <p>The impact on climate change is deemed non-existent.</p>			
OTHER CONSIDERATIONS	None.			

1. Timeliness of the proposal: statement of reasons, objectives and alternatives

1.1 Rationale

Royal Decree 244/2019 of 5 April 2019 regulating the administrative, technical and economic conditions for the self-consumption of electrical energy introduced a series of measures to promote self-consumption, amending Article 9 of Law 24/2013 of 26 December 2013 on the Electricity Sector; specifically the definition of self-consumption and its modalities (with or without surpluses) and the economic and administrative regime applicable to them. As a consequence of this regulatory update, it is necessary to adapt the electrotechnical Regulation regarding low voltage to ensure the safety of these installations.

It is also necessary to develop a specific Supplementary Technical Instruction (ITC) for direct current system installations that are part of the interior installation of a consumer or of an electricity generator connected to the distribution network or to the consumer's interior installation.

In addition, following accidents occurring as a result of the overheating of high-voltage distribution transformers, as was notably the case in Cadiz in 2016, which resulted in fatalities, it is considered necessary to introduce additional requirements for this type of transformer in order to prevent dangerous temperature increases and ensure that they disconnect before potential explosions or deflagrations occur. Thus, amendment is made to ITC RAT-09 of the Regulation on technical conditions and safety guarantees in high voltage electrical facilities and its supplementary technical instructions ITC RAT-01 to -23, approved by Royal Decree 337/2014 of 9 May 2014.

1.2 Objectives

The central objective is to adapt the safety regulations for low voltage systems to the new paradigm in which self-supply is becoming universal. At the same time, we aim to update the parts of the regulatory text most closely related to self-supply to technological advances, while at the same time improving and updating the safety requirements. In particular, a new supplementary technical instruction (ITC) is approved regarding facilities with direct current systems.

By the same token, our aim is to put in place the technical measures to prevent or reduce, to the greatest extent possible, accidents in medium and high voltage transformers due to overheating.

1.3 Alternatives

As an alternative to the partial amendment of the Electrotechnical Regulation for Low Voltage, approved by Royal Decree 842/2002 of 2 August 2002, the following have been assessed:

- Drafting a new regulation that repeals and replaces the previous one
- Not amending the 2002 regulation and creating supporting documents (guides) with the necessary clarifications and guidance, based on the existing regulation.
- Not taking any further action.

Finally, it was decided to amend the regulation in part due to the urgency of the matter, with the aim of reducing the time needed to draw up the text.

As alternatives to amending the Regulation on technical conditions and safety guarantees in high voltage electrical installations and its supplementary technical instructions ITC RAT 01 to 23, approved by Royal Decree 337/2014 of 9 May 2014, the following were considered:

- Updating application guides only, without introducing additional safety requirements
- Acting through UNE standards, which do not have the power to stipulate requirements in addition to those established by the regulations

In the end, a decision was made to amend the text of the regulation (specifically, Section 4(7) of ITC RAT 09), which was the only option for requiring that temperature control and monitoring devices and disconnect systems be installed.

1.4 Principles of sound regulation

This regulation has been drawn up in consideration of the principles for good regulation set out in Article 129 of Law 39/2015 of 1 October 2015 on Common administrative procedures in public administration.

In particular, the principles of necessity and effectiveness are observed, since the adoption of this royal decree is the necessary instrument to achieve this aim. The principle of proportionality is deemed to have been observed since the royal decree contains the regulations necessary to achieve its purpose.

The principle of legal certainty is ensured since this regulation is consistent with the rest of the legal system, and efforts were made to ensure that it is clear and that it facilitates action and decision-making for individuals and companies. As regards transparency, all the mandatory reports were requested during its drafting process and published on the website of the Ministry of Industry and Tourism, in order to enable potential target groups to participate actively in the aforementioned process. Furthermore, in this same regard, prior to the drafting of this royal decree, a public consultation was held, as indicated in Article 26(2) of Law 50/1997 of 27 November 1997 on the Government.

Finally, with regard to the principle of efficiency, although the amendments introduce additional burdens, these are kept to the minimum necessary to ensure, as stated in the section on economic impact and administrative burdens, both safety and the Administration's knowledge of certain facilities

In this regard, it is worth highlighting the additional cost (described in the corresponding section) for readapting existing transformers on entry into force of this royal decree through the sixth transitional provision (new requirement introduced as a result of the submissions received during the first hearing procedure). Although previous legislation allowed certain transformers to operate without protection against overload, the incidents of which we are aware, especially since 2017, make it advisable to reassess the protection of transformers, especially those that antedate the entry into force of Royal Decree 337/2014, of 9 May 2014, which approves the Regulation on technical conditions and safety guarantees in high-voltage electrical systems and its Complementary Technical Instructions ITC-RAT 01 to 23. Therefore, given the danger of these incidents causing damage to third parties, the measures to protect against overloads must be retroactive in nature.

Finally, it is worth mentioning that the draft royal decree was included in the Annual Regulatory Plan in accordance with the estimated time periods.

2. Content

The draft Royal Decree consists of a preamble, two articles, a single additional provision, eight transitional provisions, a single derogatory provision and three final provisions. It introduces new technical requirements with the aim of ensuring the safety of installations in the context of the widespread introduction of self-consumption.

The draft Royal Decree consists of:

Article 1. Amendments are made to the electrotechnical Regulation regarding low voltage, approved by Royal Decree 842/2002 of 2 August 2002 and its supplementary technical instructions ITC BT-01, ITC BT-02, ITC BT-03, ITC BT-04, ITC BT-05, ITC BT-06, ITC BT-07, ITC BT-11, ITC BT-12, ITC BT-13, ITC BT-14, ITC BT-15, ITC BT-16, ITC BT-17, ITC BT-23 and ITC BT-40. The new ITC BT-53 on direct current system installations is also approved.

Article 2. Amendment of ITC RAT-09 of the Regulation on technical conditions and safety guarantees in high voltage electrical facilities, approved by Royal Decree 337/2014 of 9 May 2014.

Single additional provision. Updating of references to UNE standards.

First transitional provision. Authorisation of inspection bodies for activities affected by this Royal Decree during a transitional period of 18 months.

Second transitional provision. Establishes the regime whereby the owners of facilities that are not known to the competent body for industry in the corresponding Autonomous Community submit the necessary documentation for their regularisation.

Third transitional provision. Establishes the periodic inspection regime and the deadline for first inspection for facilities implemented and put into operation prior to this Royal Decree.

Fourth transitional provision. Sets out details of the regulations applicable to facilities that are under construction when this Royal Decree enters into force and of what constitutes a facility under construction.

Fifth transitional provision. Specifies that previously authorised low-voltage installation companies should not resubmit the self-declaration established by the new ITC BT-03.

Sixth transitional provision. Establishes the retroactive nature of the safety devices introduced with the amendment of ITC RAT-09, approved by Royal Decree 337/2014 of 9 May 2014.

Seventh transitional provision. Establishes a two-year time limit to cease the installation of AC residual current circuit breakers.

Eighth transitional provision. Establishes a two-year time limit to comply with the obligation to conclude a maintenance contract.

Single repealing provision. All regulatory provisions of equal or lower rank that run contrary to the provisions of this Royal Decree, and particularly, in addition, Article 14 of Royal Decree 1699/2011 of 18 November 2011 on the connection to the network of low-power electricity generation plants, are repealed.

First final provision. Regarding the area of competence, which is generally based on Article 149(1) (13) of the Constitution.

Similarly, Article 3 and the sixth transitional provision also fall within the competence conferred on the State by Article 149(1)(25) of the Spanish Constitution on the basis of the mining and energy systems.

Second final provision. Establishes the authorisations for the development and amendment of the electrotechnical regulation for low voltage and its supplementary technical instructions.

Third final provision. Entry into force. This regulation enters into force on 2 January 2026.

3. Legal analysis

3.1. Legal bases

The proposal falls within the scope of Law 21/1992 of 16 July 1992, on Industry, Article 1 of which states that:

'The purpose of this Law is to establish the bases for the organisation of the industrial sector, as well as the criteria for coordination among public administrations, pursuant to Article 149(1) (1) and (13) of the Spanish Constitution'.

Article 2 states that:

'The purpose expressed in the previous article shall be specified as the pursuit of the following objectives:

.....

3. Industrial safety and quality

.....

The purpose of the law is also to contribute to making industrial activity compatible with environmental protection.'

3.2. Regulatory status

The draft royal decree essentially addresses the need to adapt the safety regulation for low-voltage electrical facilities to the gradual introduction of universal self-supply, while improving the regulation by taking into account technological advances and the experience resulting from their application.

The draft royal decree is based on a regulation approved by Royal Decree 842/2002 of 2 August 2002.

A draft regulation with the status of royal decree is deemed to be the appropriate instrument, since it aims to amend or repeal other legal provisions of equal or lower status.

In addition, there is no material or formal reservation of law in this matter that requires its regulation by means of a legal provision, and its approval by Royal Decree is sufficient, since Law 21/1992, of 16 July 1992, on Industry, establishes in Article 12(5) that the Industrial Safety Regulations of national scope shall be approved by the National Government, without prejudice to the fact that the Autonomous Communities with legislative powers over industry may introduce additional requirements on the same matters in the case of facilities located in their territory.

Finally, since the draft contains provisions of a markedly technical nature, the law is not the ideal instrument for its regulation.

3.3. Repeal of regulations

All legal provisions of equal or lower rank that conflict with the provisions of the royal decree are repealed.

In particular, Article 14 of Royal Decree 1699/2011 of 18 November 2011 is repealed.

3.4. Entry into force

The regulation will enter into force on 2 January 2026, pursuant to Article 23 of Law 50/1997 of 27 November 1997, concerning the Government,

The regulation is expected to remain in force indefinitely.

4. Process

4.1. Procedures conducted

The **authorisation at the start** of the procedure for processing the Royal Decree was approved on 2 November 2020.

The **public consultation** procedure started on 8 March 2021 and ended on 29 March 2021 (see details in [Annex I](#)).

While the public consultation initially concerned a draft royal decree approving a new Electrotechnical Regulation for Low Voltage, given the urgency of introducing the necessary changes, a final decision was taken to approve a draft royal decree amending the current Electrotechnical Regulation for Low Voltage, approved by Royal Decree 842/2002 of 2 August.

The draft was prepared in collaboration with the Autonomous Communities and relevant sectoral associations, and a **first public hearing** procedure was held. This public hearing procedure began on 31 August 2022 until Friday 30 September 2022 (see details in [Annex II](#)).

As a result of the substantial amendments in the text resulting from the submissions incorporated, a **second public hearing** was held. That hearing began on 18 July 2023 and ended on 22 September 2023. The procedure focuses on the amendments incorporated into the text submitted to the first hearing procedure and is expressly communicated both to the competent bodies in the different Autonomous Communities and the cities of Ceuta and Melilla and to the interested parties who made submissions during the first procedure (see details in [Annex III](#)).

After assessing the submissions received, the initial proposal was revised by making specific changes to the text of the draft royal decree, mainly in response to the comments received, as well as to correct errors and introduce improvements in the text.

Annex III of this document provides a summary of the submissions received together with their corresponding assessment.

In addition, certain changes were introduced in the draft as a result of proposals received from relevant actors in the sector after the end of the second public hearing period. These changes make the implementation of the text more consistent and lead to improvements in the safety conditions of the facilities, without entailing additional costs. Specifically, changes are introduced in the categories of facilities that are obliged to conclude a maintenance contract in the ITC BT-05.

4.2. Next procedural steps

After having analysed the allegations and, where appropriate, having incorporated the necessary amendments to the text of the Royal Decree, the following reports are requested:

- Report of the General Technical Secretariat of the Ministry of Consumer Affairs, pursuant to Article 26(5)(4), of Law 50/1997 of 27 November 1997, concerning the Government.
- Report of the Office on Regulatory Coordination and Quality of the Ministry of the Presidency, Justice and Parliamentary Relations, pursuant to Article 26 of Law 50/1997 of 27 November 1997 and to Royal Decree 1081/2017 of 29 December 2017, which lays down the operating conditions for the Office on Regulatory Coordination and Quality.
- Report of the Ministry of Transport and Sustainable Mobility (Article 26(5), paragraph 1, of Law 50/1997 of 27 November 1997, concerning the Government)
- Report of the Ministry for Ecological Transition and Demographic Challenge (Article 26(5), first paragraph, of Law 50/1997 of 27 November, concerning the Government).
- Report of the Ministry of Economy, Trade and Enterprise (Article 26(5) first paragraph of Law 50/1997 of 27 November 1997, concerning the Government).

The text will also be sent to the European Commission to request its report in accordance with the technical regulations procedure and also the report of the Services Directive in order to ensure that the text complies with European Union law, pursuant to Articles 258 and 260 of the Treaty on the Functioning of the European Union.

After that, the report of the Industrial Safety Coordination Council will be requested, given that since that council is required to report on draft industrial safety regulations at the national level (Article 2(d) of the Regulation concerning the Industrial Safety Coordination Council, approved by Royal Decree 251/1997 of 21 February 1997).

Finally, the expert opinion of the Council of State will be requested (Article 22(3) of Organic Law 3/1980 of 22 April 1980 on the Council of State), before sending the proposal to the General Commission of Secretaries and Undersecretaries of State and then escalating it to the Council of Ministers for their approval.

5. Impact analysis

5.1. Overall economic impact

The purpose of this analysis is to study the impact on the economic aspects derived from the draft Royal Decree.

Most of the changes introduced stem from an improvement in the implementation of the regulation with no economic impact, but some of the changes intended to increase the safety of facilities in accordance with technological advancements may indeed entail an increase in the cost for certain

economic actors. In any case, all changes are aimed at increasing the safety of the facilities, taking into account the increase in the electrification of the facilities in our country (among them, power generation facilities for self-supply or recharging facilities for electric vehicles). In particular:

- New safety devices are incorporated into the connecting and indoor facilities to ensure safety in updated facilities that are more complex than those covered by previous regulations. Specifically, there has been an increase in the number of circuits or in the separation of circuits for new uses and components: such as, among others, generation circuits, load limitation circuits, or measurement circuits. In particular, ITC-BT-23 stipulates a universal obligation to incorporate surge protectors (SPDs) into connecting and indoor facilities (also including facilities corresponding to generation facilities ITC-BT-40 and ITC-BT-53), which will generally increase the cost of indoor electrical facilities.

Nevertheless, the universal use of surge protectors (SPDs) can even have a positive economic impact over the longer term, as it will prevent the failure of many receivers and fittings that would need to be replaced after internal or external overvoltage.

- Moreover, the repeal of Article 14 of Royal Decree 1699/2011 of 18 November 2011 on 'Protections', means the suppression of the obligation to install homopolar protections in facilities with a voltage greater than 1kV and up to 36 kV, as set out in Section 1(e) of that article.

Owners of distributed generation facilities, especially small residential and commercial facilities, could experience a reduction in initial installation costs, since no investment is required in specific protection systems such as homopolar protections. These systems can represent a significant part of the total installation cost.

The cost of this type of protection can vary significantly depending on several factors, including: the type of facility (from small residential to larger-scale industrial facilities), the technology used (circuit breakers, quick disconnects, inverters with integrated safety features, among others) and the specific requirements of the network operator, which may have additional requirements.

Generally speaking, for a residential PV power generation installation, the cost of these protection systems can range from €300 to 1 500, depending on the complexity and specifications of the system. For larger-scale facilities, such as solar parks or industrial facilities, the costs can be substantially higher, reaching several thousand euros.

- Finally, it is worth noting the costs resulting from the sixth transitional provision, which stipulated that the need to install overload protections in HV/LV transformers has retroactive effect. In this case there will be costs for existing facilities if the HV/LV transformers do not have the overload protection indicated in ITC-RAT-09.

To estimate the costs associated with this measure, we have used the calculations provided by the main distributors (e-Redes, Viesgo, Begasa, e-distribución, i-DE and UFD) and then added the estimated costs of the other distributors. In particular, the costs associated with the various possible solutions are estimated:

- Placing of frame with LV magnetothermal switch on support with no need to modify the rest of the facility.

Distributor	E-REDES	Viesgo	Begasa	e-distribución	UFD	i-DE
Units				3 901		
Unit cost				2 191		
Total (€)	8 547 091					

- Placement of frame with low voltage magnetothermal switch on support; with a need to reform the low voltage frame.

Distributor	E-REDES	Viesgo	Begasa	e-distribución	UFD	i-DE
Units	263	107	143		1 797	3 703
Unit cost	9 923	9 923	9 923		7 343	9 200
Total (€)	52 354 430					

- Work on birdhouse-type enclosures whose low-voltage panels must be renovated to incorporate LV magneto-thermal switches.

Distributor	E-REDES	Viesgo	Begasa	e-distribución	UFD	i-DE
Units					1 534	
Unit cost					7 341	
Total (€)	11 260 588					

- Work on indoor transformer substations, with modern cubicles prepared for cubicle tripping.

Distributor	E-REDES	Viesgo	Begasa	e- distribución	UFD	i-DE
Units				1 701		2 929
Unit cost				690		1 500
Total (€)	5 566 689					

- Work on indoor transformer substations, with old cubicles that do not permit tripping on the cubicle, but where an LV magneto-thermal thermometer can be installed by replacing cubicles.

Distributor	E-REDES	Viesgo	Begasa	e- distribución	UFD	i-DE
Units	98	37	24	1 481	597	261
Unit cost	23 576	23 576	23 576	21 948	22 558	18 371
Total (€)	54 521 695					

- Work on indoor transformer substations, with old cubicles that do not permit tripping on cubicle and do not permit placement of LV magnetothermal thermometer; it is necessary to replace the transformer.

Distributor	E-REDES	Viesgo	Begasa	e- distribución	UFD	i-DE
Units				501		
Unit cost				12 854		
Total (€)	6 439 854					

- Work on transformer substations with old cubicles that require trip wiring.

Distributor	E-REDES	Viesgo	Begasa	e-distribución	UFD	i-DE
Units					421	
Unit cost					217	
Total (€)	91 543					

- Work on transformer substations that require the implementation of digital solutions.

Distributor	E-REDES	Viesgo	Begasa	e-distribución	UFD	i-DE
Units				56 390		750
Unit cost				1 047		1 000
Total (€)	59 790 330					

- Work on transformer substations of the other distributors. According to estimates, 9% of the transformer substations belong to the rest of the distributors. Since the total costs calculated above, equivalent to 91% of the transformer substations is €198 572 220, a cost of €19 639 011 can be estimated for the other distributors.

Therefore, the total estimated cost is €218 211 231.

Accordingly, we must clarify the following specific points in this regard. Most of the transformers to be adapted will be transformers installed before the entry into force of Royal Decree 337/2014 of 9 May 2014. And so, Section 4(2)(1) of ITC RAT 09 stipulates that 'Transformers with a real-time load monitoring system do not need protection against these overcurrents. In other cases, they shall be protected against overload by means of switches operated by over-current relays or thermal devices which detect the temperature of the winding or refrigerant.'

However, the previous ITC MIE RAT 09, approved by the Order of 6 July 1984, which approves the supplementary technical instructions (ITC) for the Regulation on technical conditions and safety guarantees in electric power plants, substations and transformer substations, excluded those transformers in which possible overloads are foreseen, so that in many cases transformers installed before 9 December 2014 lacked overload protections based on that provision.

Nevertheless, in many cases where it was foreseen at the time that such a transformer would not work with overloads, the situation is different today. In this regard, it should be noted that the ITC MIE RAT-08, approved by the Order of 6 July 1984, already stipulated that '*Intensity*

transformers must be chosen to withstand the thermal and dynamic effects of the maximum intensities that may occur, as a result of overloads and short circuits in the facilities in which they are placed.'

Likewise, Section 1 of the former ITC MIE RAT 09 indicated that: *'All facilities referred to in this regulation shall be adequately protected against the hazardous thermal and dynamic effects that may be caused by short-circuit currents and overloads if these may cause faults and disturbances in said facilities.'*

Therefore, at the time when the load forecasts on which the facility was built changed, the owner of the facility was obligated to install the appropriate protections.

In addition, it should be noted that there have been incidents in Spain involving transformers that did not have these protections, which even resulted in deaths. Therefore, in order to increase the protection of facilities against possible effects that may cause similar incidents, it is necessary to introduce this requirement in existing facilities.

5.2. Impact on competition

The draft legislation is limited to updating the Spanish regulations on the safety of low-voltage installations, and it is not expected to introduce restrictions on competition in any of its major forms: number of market players, ability and incentives to compete.

5.3. Impact of administrative burdens

The administrative burdens are analysed pursuant to Article 26(3)(e) of Law 50/1997 of 27 November 1997 and Article 2(1)(e) of Royal Decree 931/2017 of 27 October 2017.

The text includes the following administrative burdens arising from new obligations with which the governed must comply. In particular:

Firstly, a new section is introduced in the ITC BT 05 regarding the obligation for certain electrical facilities to conclude a maintenance contract. This obligation is consistent with other industrial safety regulations, such as the Regulation on fire protection facilities, approved by Royal Decree 513/2017, of 22 May 2017, or the Safety Regulation for refrigeration facilities, approved by Royal Decree 552/2019, of 27 September 2019, among others.

In addition, in several Autonomous Communities, the requirement of maintenance contracts has already been implemented in various facilities. In this regard, this measure is intended to standardise this requirement. Thus, a maintenance contract is currently required in Madrid (only for public premises and outdoor lighting), Murcia, Valencia, the Canary Islands and Catalonia (where the maintenance contract requirement applies to all facilities that require a blueprint).

In this regard, the proposal of the Ministry of Industry and Tourism, establishes the mandatory requirement in the facilities subject to periodic inspection so that this requirement can be verified during the periodic inspections, thus establishing a manner of tracking compliance. And so this is the case, without prejudice to the fact that Autonomous Communities, such as Catalonia, may continue to make the same requirement for all facilities that require a blueprint.

In order to estimate the burden associated with this measure, we have used as a basis the calculations provided by the Spanish National Federation of Electrical, Telecommunications and Air Conditioning Installation Companies (hereinafter, FENIE), which is made up of 74 associations

comprising more than 15 000 installation companies. This report assesses and compares the cost of complying with the regulatory obligations established for the owners or users of the facilities without a maintenance contract with the cost when such a contract has been concluded, which in turn includes additional services. The conclusion of this analysis is that, according to FENIE's data, concluding a maintenance contract with a qualified installation company is slightly cheaper than hiring the company each year on an ad hoc basis to check the earthing system, as established as compulsory in Section 12 of the ITC BT-18; hence, the economic impact of this measure can be considered non-existent. This is due to the fact that, through the maintenance contract, installation companies will be able to better plan their activity, which reduces their costs and, therefore, the cost associated with their service.

As for the maintenance contract there is an option for the owner to assume the implementation of and liability for maintenance provided that they have the necessary knowledge and means included in the ITC BT-03, and that they submit a self-declaration to the competent authority of the Autonomous Community. In this regard, we assume that this option will not usually be taken, and it will entail a charge of €4 per owner who decides to exercise this option when submitting the documentation to the Administration. It is therefore considered negligible.

In addition, inspection activities are increased to verify compliance with the additional requirements incorporated in ITC BT-40 for generation facilities.

To this end, ITC BT-05 introduces periodic inspections every 10 years, in addition to the electrical facilities where these were already compulsory, also for collective self-supply generation facilities with surpluses from 15 kW and up to 100 kW, and for electrical facilities in buildings intended mainly for dwellings, commercial premises, warehouses and offices, which are not considered to be premises for public gathering, in vertical or horizontal construction, with installed power of more than 50 kW and less than 100 kW. This amendment entails administrative burdens associated with this type of facility.

As far as the inspections of self-supply facilities with surpluses from 15 kW and up to 100 kW, the rapid increase in this type of facilities (by July 2024, roughly 100,000 facilities) and the increase in incidents associated with generation facilities for self-supply make it necessary to establish a periodic control of these facilities.

The following are taken into account when calculating the load:

- Estimated population: The number of facilities without surplus power between 15 and 100 kW registered in the Register of Electricity Self-Supply (RADNE) until July 2024 is 2000.
- Frequency: inspections are every 10 years.
- Cost of Inspection: According to the data provided by FEDAOC (Spanish Federation of Associations of Control Bodies), the average time needed to inspect a generation facility of up to 100 kW is 1.25 hours. For its part, according to that federation, the average cost of a technician could be set at 50 €/h, although it would be necessary to take into account that different control bodies may not distribute costs in the same manner.

For that matter, after consulting some control bodies, an average inspection cost can be estimated at €95/h, and we must add the preparation of the report to this figure: €55.

Therefore, the cost of the associated inspection would be: $1.25 * 95 + 55 = €173.75$.

Taking the above into account, we would have a burden of: $173.75 * 2000 / 10 = €34\ 750/\text{year}$

As for building facilities with an installed power of more than 50 kW, according to FENIE data, it is estimated that the new periodic inspections would affect some 134,400 (population) communities with an installed power of between 50 kW and 100 kW. In this case, according to FEDAOC data, an average inspection time of 1 hour for common facilities in buildings with a power of less than 100 kW can be estimated from the FEDAOC procedure although this case would not be covered by the FEDAOC procedure. It should be borne in mind that, although the building may have a power of 100 kW, the power of the common facility to be inspected will be around 10 kW.

Based on the above analysis, an inspection cost of $95 \times 1 + 55 = \text{€}150$ is estimated, which is equivalent to an annual cost (frequency: one inspection every ten years) per owners' association of €15, and an aggregate burden of €2 010 000/year.

These inspections aim to monitor the condition of facilities that have lower power and are mainly associated with older facilities (modern facilities are usually associated with a higher level of electrification) and where, for example, the installation of a single electric charger could lead to an increase in the expected power of between 6.8% and almost 15% for facilities of 50 kW. Therefore, given the increasing prevalence of electric vehicles, it is clearly necessary to conduct a more exhaustive control of these facilities.

The amended ITC BT-40, in turn, includes verification and testing requirements for self-supply generators that may increase the associated cost for the facility's inverters. Nevertheless, these requirements were already taken into account in passages scattered over other pre-existing regulations on network codes and quality, self-supply, among others, which means that there is zero cost.

In conclusion, the overall increase in administrative burdens amounts to €2 044 750/year. Although this has been reflected in the calculation of the administrative burdens, it should again be noted that the high increase in administrative burdens is due to the high number of facilities, since the increase per facility is between €15 and €17.3 per year.

5.4. Budgetary impact

This measure has no budgetary impact, as the project is expected to have no effects on public expenditure and revenue, either financial or non-financial.

5.5. Gender impact

Pursuant to Article 26(3)(f) of Law 50/1997 of 27 November 1997, concerning the Government, it is stated that this royal decree, in terms of its form and content, has no gender impact whatsoever and certainly contains no provisions that might encourage situations of gender-based discrimination. From this point of view the impact is **non-existent**, since the regulation deals exclusively with technical issues and does not have direct legal effects on individuals.

5.6. Impact on children and adolescents

Pursuant to Article 22(d) of Organic Law 1/1996 of 15 January 1996 on the Legal protection of minors, the partial amendment of the Civil Code and of the Code of Civil Procedure, with wording provided by Law 26/2015 of 28 July 2015 amending the system for the protection of children and adolescents, the draft regulation has **no impact on children and adolescents**, because it addresses technical product issues and does not have direct legal effects on individuals.

5.7. Impact on family

Pursuant to the tenth additional provision of Law 40/2003 of 18 November 2003 on the protection of large families, introduced by the fifth final provision of Law 26/2015 of 28 July 2015, which amends the system for protecting children and adolescents, the draft legislation has **no impact on families**, since it exclusively addresses technical product issues and does not have direct legal effects on individuals.

5.8. Impact on SMEs

The study of the impact that the regulation has on SMEs is especially important in Spain, where small and medium-sized enterprises represent 99.9% of the Spanish business landscape, contributing approximately 58% to the gross value added and 63% to total employment; their activity is crucial to determining the progress of the Spanish economy.

In order to assess the impact of the proposed amendment on SMEs, the indications of the Methodological Guide for the preparation of the report on the regulatory impact analysis have been taken as a reference, notably those in paragraph 3(a) 'General economic impact'.

Inasmuch as this proposal for a Royal Decree improves the application of the low voltage regulation, **the impact on small and medium-sized enterprises could be considered zero.**

Therefore, it is understood that it is not necessary to perform the SME Test. In any case, during the public hearing procedure, the main sectoral associations were expressly informed, and no comments were received in this regard.

5.9. Impact in terms of climate change and the energy transition

The fifth final provision of Law 7/2021 of 20 May 2021 on climate change and energy transition has introduced this impact and amended Article 26.3 of Law 50/1997 of 27 November 1997.

In this regard, we indicate that the draft royal decree has no impact on climate change and the energy transition.

6. Ex-post evaluation

In light of Article 3(2) of Royal Decree 286/2017, of 24 March 2017, which governs the Annual Regulatory Plan and the Annual Regulatory Evaluation Report of the State Administration and creates the Board of Regulatory Planning and Evaluation, and in light of the nature and content of the regulation, it is considered that the draft regulation is not subject to ex-post evaluation.