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CERTIFICATION

WWW.CERECERTIFICATION.COM

CERE, by UL Solutions is a Testing, Simulation and Certification body that was originally set up as a Certification Entity in 2015.

CERE, by UL Solutions was created in its beginnings as a Certification Entity for Renewable Energies, with the purpose of being the access key to the different countries where certification of components, full installations certificates, modeling and software validation of components and facilities was required.

Currently CERE, by UL Solutions has expanded its capabilities and is dedicated not only to Renewable Energies, but also to Electric Vehicle chargers, Industrial Machinery, Medical Devices and Electrical and Electronic Products.

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Accreditations

We have accreditations that verify our technical competences as a Certification Body and Testing Laboratory. This fact ensures a deep knowledge of the international requirements for components and installations.

CERE, by UL Solutions is accredited by ENAC and a2la (IAF/ILAC members) as a Certification Body according to ISO 17065; and as an Accredited Testing Laboratory according to ISO 17025. We also belong to the IEC Scheme being CBTL Testing Laboratory and NCB Certification Entity.

In addition, we can provide solutions to countries such as North America, Israel, Colombia, Korea, Australia, etc.

ENAC
CERTIFICACIÓN
ISO 17065
Nº147 / C-PR335

ENAC
ENSAYO
ISO 17025
Nº1376 / LE2560

a2la ACCREDITED
CERT #5314.02

ilac-MRA

a2la ACCREDITED
CERT #5314.01

IEC IECEE

SUNSPEC ALLIANCE

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Our team

Our team has a long-accumulated experience in testing, simulation and certification for all its business areas, including an in-depth knowledge of grid integration standards, design, safety, EMC and grid quality.

All this knowledge is applicable in renewable energy generators and controllers, electric vehicle chargers, photovoltaic trackers, household appliances, industry, industrial machinery, electrical and electronic products and medical devices, among others.

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What's CERE Certification and CERE Power?

CERE, by UL Solutions Certification is the certification department and CERE,by UL Solutions Power is the testing and simulation department of CERE (Certification Entity for Renewable Energies).

CERE, by UL Solutions Certification was created to be the access key on the target countries for Renewable Energies, where certification of components or full installations certificates were required.

CERE, by UL Solutions Power fulfil all the requirements for being a Testing and Simulation entity.

Our services include Testing and Certification according Safety, EMC, Grid Quality, grid connection requirements, design certification and complete installations Certificates.

This process includes Testing and Certification of Components such as PV modules, Wind and PV converters, trackers, transformers, string boxes, combiner boxes, etc.

Also, the Certification for full Power Plants according particular country requirements, DSO or TSO specifications.

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CERE Certification Profile

CERE, by UL Solutions team has experience in Certification in more than 10 GW of renewable energy's components and installations for worldwide grid integration, design, safety, EMC and grid quality among others.

During the last 5 years CERE, by UL Solutions has inspected, evaluated and certified more than 3GW of PV, Wind and Hydro, Power plants.

We aim to be your key to the access on the target countries for the Renewable Energies.

In order to be updated with the state of the art of the business, CERE, by UL Solutions participates actively in several International Standardization Committees.

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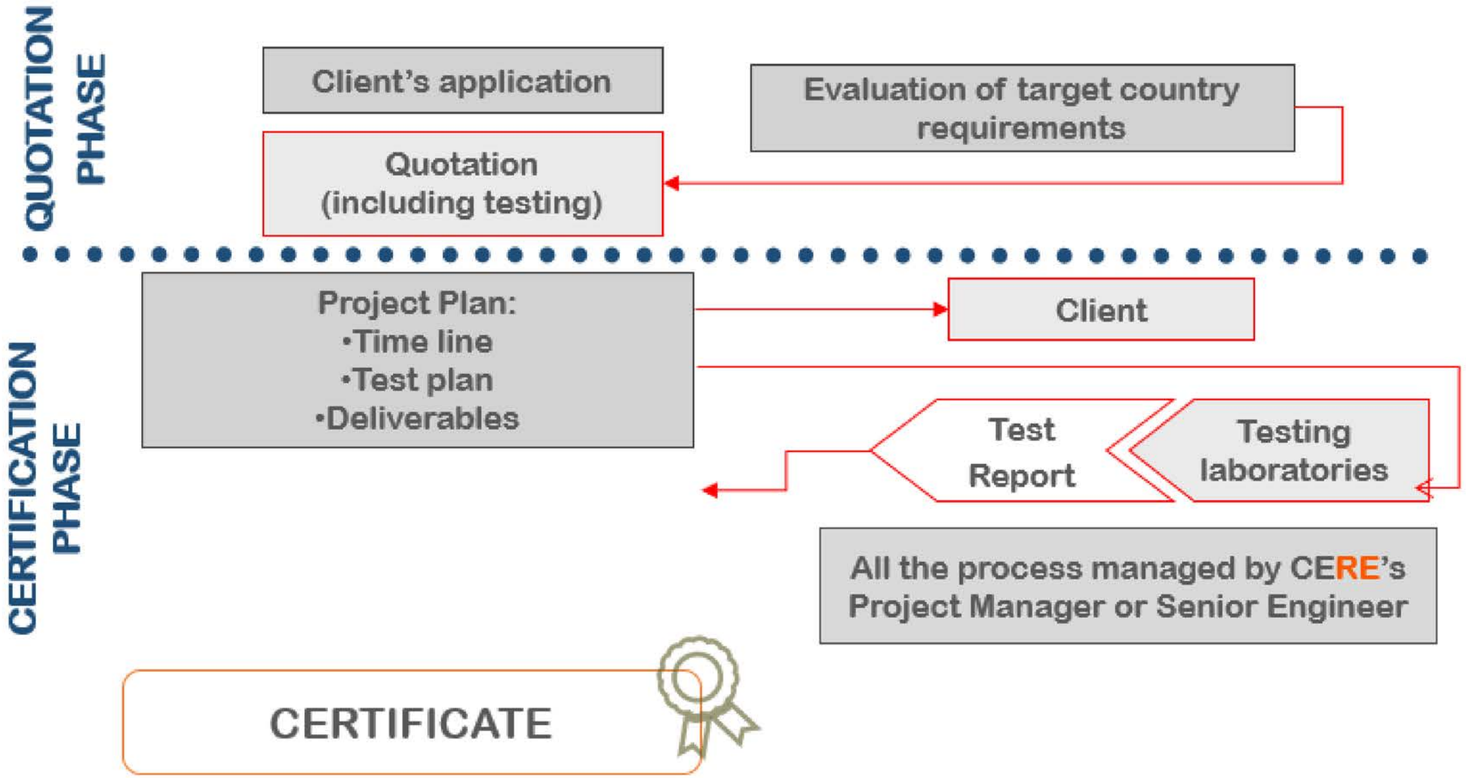
PGU Certification process

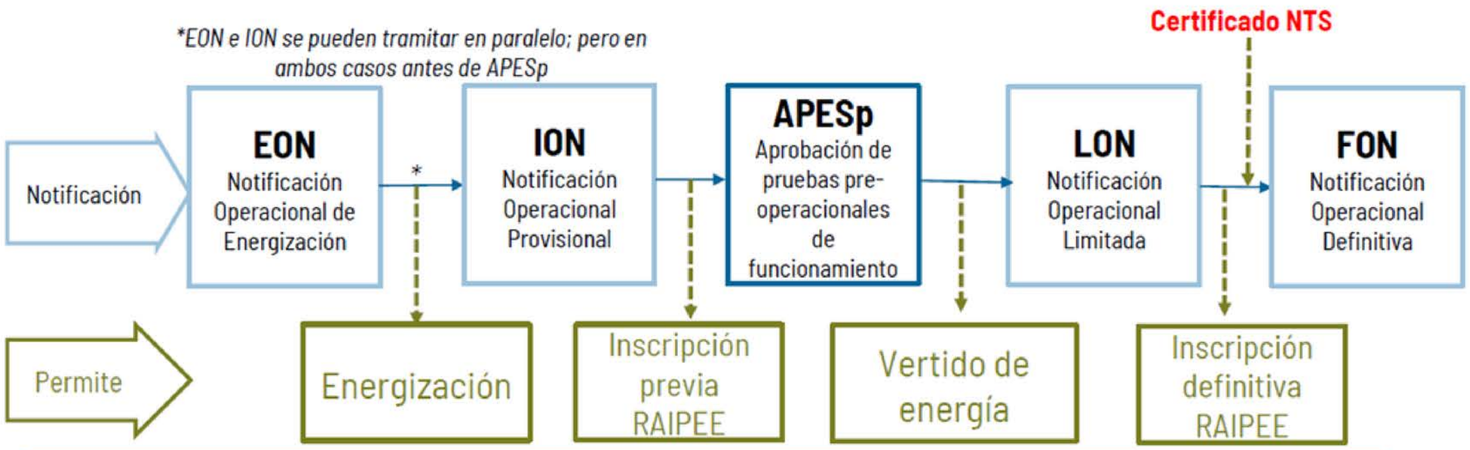
The Certification process involves the following:



NTS 631 Certification Process

Example of a Power Plant certification requirement in a power plant connection process:

Plazo de 24 meses desde aprobación Orden TED 749/2020 (finaliza el 01/08/2022).
para presentar certificado NTS (ya sea el completo, el reducido o el "voluntario").



EON, ION, LON y FON son emitidas por gestor de red pertinente; APESp es emitida siempre por OS.
Para instalaciones conectadas a la red de distribución también se requiere informe previo ION (>1 MW) e informe previo FON (>5MW) emitidos por OS.

Instalaciones ya en servicio que deban cumplir con los requisitos completamente definidos en Reg. (UE) 2016/631 también deben aportar certificado simplificado antes del 01/08/2022.

Reference Certification Standars

CERE, by UL Solutions is accredited as Certification Body and Testing Laboratory according the following standards:

GRID CODE

GENERAL GUIDELINES:

EN 50549-1:2019: Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network - Generating plants up to and including Type B

EN 50549-2:2019: Requirements for generating plants to be connected in parallel with distribution networks - Part 2: Connection to a MV distribution network - Generating plants up to and including Type B

IEC 61727 Latest Version, Photovoltaic (PV) systems - Characteristics of the utility interface

IEC 62116 Latest Version, Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures.

UNE-EN 50438 Latest Version, requisitos para la conexión de microgeneradores en paralelo con redes generales de distribución de baja tensión.

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GRID CODE

GERMANY

BDEW Guideline Latest Version

VDE-AR-N-4105 Latest Version: Generators connected to the low-voltage distribution network – Technical requirements for the connection to and parallel operation with low-voltage distribution networks

VDE-AR-N 4110 Latest Version: Technical requirements for the connection and operation. Of customer installations to the medium voltage network (TAR medium voltage)

VDE-AR-N4120 Latest Version: Technical requirements for the connection and operation of customer installations to the high voltage network (TCR high voltage)

VDE-AR-N 4130 Latest Version: Technical requirements for the connection and operation. Of customer installations to the extra high voltage network (TCR extra high voltage)

GRID CODE

GERMANY

DIN V VDE V 0126-1-1: Automatic disconnection device between a generator and the public low-voltage grid.

Technical Guidelines for Power Generating Units and Systems PART 3 (TG 3): Determination of the Electrical Characteristics of Power Generating Units and Systems in Medium-, High- and Extra-High Voltage Grids; Latest Revision

Technical Guidelines for Power Generating Units and Systems PART 4 (TG 4): Demands on Modelling and Validating Simulation Models of the Electrical Characteristics of Power Generating Units and Systems; Latest Revision

Technical Guidelines for Power Generating Units, Systems and Storage Systems as well as for their Components PART 8 (TG 8): Certification of the Electrical Characteristics of Power Generating Units, Systems and Storage Systems as well as their Components on the Grid; Latest Revision

GRID CODE

PHILIPPINES

Philippine grid code 2016

INDIA

CEA 2019: Central Electricity Authority (CEA) notification 2019

Indian Electricity Grid Code

JORDAN

IRR-DCC-MV:2015: Intermittent Renewable Resources (Wind and PV) distribution Connection Code (DCC) at Medium Voltage (MV)

IRR-TIC:2014: Intermittent Renewable Resources (IRR) Transmission Interconnection Code (TIC)

PORTUGAL

AMBIENTE E AÇÃO CLIMÁTICA 73 Latest Version: Requisitos não exaustivos para ligação dos módulos geradores à Rede Elétrica de Serviço Público.

GRID CODE

SPAIN

NTS 631 V2.1 SEPE: Norma Técnica de Supervisión de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631: NTS-631 v2: Revisión 2.1; Versión del 9 de Julio de 2021, que actualiza y modifica la versión 2 publicada el 3 de noviembre del 2020, con la Aprobación de la Orden TED/749/2020 y del Real Decreto 647/2020, y que sustituye las versiones anteriores “Revisión 1.0 del 18 de Julio de 2019” y “Corrección de errores y aclaraciones de la versión 1.0. 21/10/2019”; Sistema Eléctrico Peninsular (SEPE)

NTS 631 V1.1 SENP: Norma Técnica de Supervisión de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631: NTS-631 v1: Revisión 1.1; Versión del 9 de Julio de 2021, que actualiza y modifica la versión publicada el 3 de noviembre del 2020, con la Aprobación de la Orden TED/749/2020 y del Real Decreto 647/2020; Sistema Eléctrico No Peninsular (SENP)

P.O. 12.3.: Requisitos de respuesta frente a huecos de tensión de las instalaciones eólicas conforme a Proceso particular de verificación según PVVC Ver. 10 "Procedimiento de verificación, validación y certificación de los requisitos del PO 12.3 sobre la respuesta de las instalaciones eólicas y fotovoltaicas ante huecos de tensión“

GRID CODE

SPAIN

Real Decreto 244 Latest Version: de 5 de abril, por el que se regulan las condiciones administrativas, técnicas y económicas del autoconsumo de energía eléctrica.

UNE 217001 Latest Version: Ensayos para sistemas que eviten el vertido de energía a la red de distribución.

UNE 206007-1 Latest Version: Requisitos de conexión a la red eléctrica. parte 1: inversores para conexión a la red de distribución.

UNE 206007-2 IN: Requisitos de conexión a la red eléctrica. Parte 2: Requisitos relativos a la seguridad del sistema para instalaciones constituidas por inversores.

UNE 217002 Latest Version: Inversores para conexión a la red de distribución. ensayos de los requisitos de inyección de corriente continua a la red, generación de sobretensiones y sistema de detección de funcionamiento en isla.

UNE-EN 60601-1/A1 Latest Version: Equipos electromédicos. Parte 1: Requisitos generales para la seguridad básica y funcionamiento esencial.

GRID CODE

FRANCE

Guide pratique UTE C 15-712-1 Latest Version: Installations photovoltaïques connectées au réseau public de distribution.

Arrêté du 9 juin 2020: relatif aux prescriptions techniques de conception et de fonctionnement pour le raccordement aux réseaux d'électricité.

ITALY

CEI 0-16. Latest Version: Regola tecnica di riferimento per la connessione di Utenti attivi e passivi alle retie AT ed MT delle imprese distributrici di energía elettrica.

CEI 0-21 Latest Version: Regola tecnica di riferimento per la connessione di Utenti attivi e passivi alle reti BT delle imprese distributrici di energia elettrica.

THAILAND

PEA (Provincial Electricity Authority) Regulation on the Power Network System Interconnection Code: 2016

MEA (Metropolitan Electricity Authority) Grid-connected Inverter Regulation: 2013

GRID CODE

UNITED KINGDOM

ENA-EREC G99: Engineering recommendation. Latest Version. Requirements for the connection of generation equipment in parallel with public distribution networks on or after 17 May 2019.

ENA-EREC G98: Requirements for the connection of Fully Type Tested Micro-generators (up to and including 16 A per phase) in parallel with public Low Voltage Distribution Networks on or after 27 April 2019

ENA-EREC G59: Recommendations for the Connection of Generating Plant to the Distribution Systems of Licensed Distribution Network Operators.

ENA-EREC G83: Recommendations for the Connection of type tested Small-scale Embedded Generator (Up to 16A per Phase) in Parallel with Low-Voltage Distribution System.

KENYA

Kenya Electricity Grid Code

Official Gazette Communique - Number 28783: Communique on implementation of the regulation related with unlicensed electricity generation in electricity market.

GRID CODE

MALASYA

MS 1837:2015: installation of grid-connected photovoltaic (PV) system.

BRAZIL

NDU 013:2019: Critérios para a Conexão em Baixa Tensão de Acessantes de Geração Distribuída ao Sistema de Distribuição.

NDU 015:2012: critérios para a conexão de acessantes de geração distribuída ao sistema de distribuição da energisa- conexão em média tensão.

ABNT NBR 16149:2013: Sistemas fotovoltaicos (FV) – Características da interface de conexao com a rede elétrica de distribuigao.

ABNT NBR 16150:2013: Sistemas fotovoltaicos (FV) – Características da interface de conexao coma rede elétrica de distribuicao - Procedimento de ensaio de conformidade.

INMETRO ordinances 004/2011: Portaria nº004/2011

INMETRO ordinances 357/2014: Portaria nº 357/2014

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GRID CODE

PERU

COES SINAC:2013: Procedimiento técnico del comité de operación económica del SEIN. Aprobado mediante Resolución OSINERGMIN Nº035-2013-OS/CD.

BELGUIM

C10/11 Latest Version: Specific technical prescriptions regarding power-generating plants operating in parallel to the distribution network.

EGYPT

Egyptian Transmission Grid Code:2017: Solar Energy Plants Grid Connection Code.

Egyptian Transmission Grid Code:2014: Wind Farm Grid Connection Code.

PANAMA

Código de Redes fotovoltaico, Resolución NA No.8774-elec:2015: normas técnicas, operativas y de calidad, para la conexión de los sistemas de centrales solares y centrales solares con tecnología fotovoltaica al sistema interconectado nacional (sin).

GRID CODE

CHILE

NTCO:2019: norma técnica de conexión y operación de PMGDen instalaciones de media tensión.

NTSyCS:2020: norma técnica de seguridad y calidad de servicio.

NIGERIA

Nigerian Grid Code 2014: The Grid Code and guidelines shall be called the Grid Code for the Electricity Industry of Nigeria.

MEXICO

CRE-3025: manual regulatorio de planeación del sistema eléctrico nacional.

ROMANIA

ORDIR 30 Latest Version: Technical conditions for connection to power grids of public interest for photovoltaic power plants.

GRID CODE

SOUTH AFRICA

RPPS:2019: Grid connection code for Renewable Power Plants (RPPS) connected to the electricity transmission system (TS) or the distribution system (DS) in South Africa.

NRS 097-2-1:2010 ed.2: Grid interconnection of embedded generation Part 2: Small-scale embedded generation.

MOROCCO

Moroccan Grid Code:2014: Conditions de raccordement des éoliennes et parcs solaires a base de PV au réseau national de transport.

DUBAI

DEWA:2016: standards for distributed renewable resources generators connected to the distribution network.

GRID CODE

AUSTRIA

TOR Erzeuger: Anschluss und Parallelbetrieb von Stromerzeugungsanlagen des Typs A und von Kleinsterzeugungsanlagen.Latest Version

TOR Erzeuger: Anschluss und Parallelbetrieb von Stromerzeugungsanlagen des Typs B. Latest Version

AUSTRALIA

AS/NZS 4777.2:2015: Grid connection of energy systems via inverters Part 2: Inverter requirements

AS/NZS 4777.3:2005: Grid connection of energy systems via inverters – Grid protection requirements

AS/NZS 3100:2009 + amd2:2012: Approval and test specification – General requirements for electrical equipment

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USA

GRID CODE

UL 9540: 2020: Standard for Safety Energy Storage Systems and Equipment.

UL 1741:2018: Inverters, converters and interconnection system equipment for use with distributed energy resources.

IEEE Std 1547.1-2020: IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Energy Resources with Electric Power Systems and Associated Interfaces

IEEE Std 929-2000: IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems

Electric Rule 21: generating facility interconnections.

SAFETY

UL 3703: 2015: STANDARD FOR SAFETY. Solar Trackers.

UL 2202: 2009: Standard for electric vehicle (EV) charging system equipment

UL 2594:2016: Standard for safety electric vehicle supply equipment

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SAFETY

IEC 62093:2005: Balance-of-system components for photovoltaic systems - Design qualification natural environments.
IEC 62909-1:2017: Bi-directional grid connected power converters - Part 1: General requirements.
IEC 62271-1:2017: High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear.
IEC 62271-202:2014: High-voltage switchgear and controlgear - Part 202: High-voltage/ low-voltage prefabricated substation.
IEC 61851-1:2017: Electric vehicle conductive charging system - Part 1: General requirements.
IEC 62103:2003: Electronic equipment for use in power installations.
IEC 61439-1:2020: Low-voltage switchgear and controlgear assemblies - Part 1: General rules.
IEC 61439-2:2020: Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies.
IEC 60529:1989+AMD1:1999+AMD2:2013: Degrees of protection provided by enclosures (IP Code)
IEC 62109-1:2010: Safety of power converters for use in photovoltaic power systems - Part 1: General requirements.
IEC 62109-2:2011: Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters.
IEC 62477-1:2012+AMD1:2016: Safety requirements for power electronic converter systems and equipment - Part 1: General
IEC 62477-1:2012+AMD1:2016: Safety requirements for power electronic converter systems and equipment - Part 1: General

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EMC

IEC 61851-21-2:2018: Electric vehicle conductive charging system - Part 21-2: Electric vehicle requirements for conductive connection to an AC/DC supply - EMC requirements for off board electric vehicle charging systems.

MIL-STD-704E: department of defense interface standard: aircraft electric power characteristics (01 May 1991)

IEC 61000-3-6:2008: Electromagnetic compatibility (EMC) - Part 3-6: Limits - Assessment of emission limits for the connection of distorting installations to MV, HV and EHV power systems.

IEC 61000-3-7:2008: Electromagnetic compatibility (EMC) - Part 3-7: Limits - Assessment of emission limits for the connection of fluctuating installations to MV, HV and EHV power systems.

IEC 61000-3-4:1998: Electromagnetic compatibility (EMC) - Part 3-4: Limits - Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A.

CISPR 11:2015: Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement.

General Standards

ISO 6858:2017: Aircraft — Ground support electrical supplies — General requirements

DFS 400Hz: Specification for 400Hz-Aircraft Power Supply Electrical Connection Conditions

UNE-EN 50530:2011/A1:2013: Overall efficiency of grid connected photovoltaic inverters.

IEC 61683:1999: Photovoltaic systems - Power conditioners - Procedure for measuring efficiency.

IEC 62817:2014+AMD1:2017: Photovoltaic systems - Design qualification of solar trackers.

IEC 62933-5-2:2020: Electrical energy storage (EES) systems - Part 5-2: Safety requirements for grid-integrated EES systems - Electrochemical-based systems

UNE-EN 50178:1998: Equipo electrónico para uso en instalaciones de potencia.

Regulation 2016/631 of 14 of April 2016: establishing a network code on requirements for grid connection of generators.

IEC 61851-23:2014: Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station.

IEC 61400-21-1:2019: Wind energy generation systems - Part 21-1: Measurement and assessment of electrical characteristics - Wind turbines

CERE's Accreditations

CERE, by UL Solutions is accredited by A2LA as Certification Body and Testing Laboratory for PV Power plant components and construction

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Standardization activities

CERE, by UL Solutions participates actively in a big number of committees for Renewable Energies and Generating Systems

TC 82 Solar photovoltaic energy systems

- WG 3 Systems
  - Project team for EMC standards to PV inverters.
  - Test methodology for LVRT.

TC 8 Systems aspects for electrical energy supply.

- WG 03 Requirements for connection of generators to distribution networks.

SC 8A, Grid Integration of large-capacity Renewable Energy (RE) generation.

- WG 01 Grid code compliance assessment for grid connection of renewable power plants.
- WG 02 Renewable energy power prediction- Overall description of principles and configuration.

CISPR and SC77A/B of Electromagnetic compatibility.

- WG8: Disturbance between 2kHz and 150kHz

Spanish committee of P.O. 12.3 for wind and PV plants.

Spanish committee of EU 2016/631 implementation

TC 120 Electric Energy Storage Systems Committee.

- WG 5 Safety considerations

FGW Technical Guidelines: TR3 (Testing), TR4 (validation) and TR8 (certification)

Laboratory Capabilities

EMC

- ✓ Full Anechoic Chamber of 3 meters and up to 6GHz both in emission and radiated immunity.
- ✓ Complete test capacity of IEC 61000 in both radiated and conducted.

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Test Benches

- Test bench up to 500kVA for converters
- 3 test benches up to 166kVA with parallel connection capacity.
- DC voltage range up to 1500V and AC voltage range up to 800V and 400Hz
- Passive loads up to 100kVA and electronic load up to 500kVA for island testing.

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Environmental and Climate Laboratory

TEMPERATURE RANGE FROM -40ºC TO 85ºC WITH 85%RH OR 125ºC WITHOUT HUMIDITY REFERENCE.

- ✓ Low temperature chamber
- ✓ High temperature chamber
- ✓ Temperature chamber
- ✓ Dycometal temperature chamber
- ✓ Binder temperature chamber
- ✓ IP and Nema Camera
- ✓ Vibration table
- ✓ Saline atmospheres chamber

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