EMC

Who we are

CERE was originally set up as a Certification Entity for Renewable Energies.

CERE was created to be the access key on the target countries for Renewable Energies, where certification of components, full installations certificates, modeling and software validation of renewable Power Plants, were required.

The company is accredited as Testing Laboratory and Certification Body.

Our services include Testing and Certification according Safety, EMC, Grid Quality, grid connection requirements, design certification and complete installations Certificates, complementary simulations, modelling validation, electromagnetic transient analysis.

This full process includes Inspection, Testing and Certification of Components such as PV modules, Wind and PV converters, trackers, transformers, string boxes, combiner boxes, etc., and the Certification for full Power Plants according particular country, DSO or TSO requirements and / or According Client Requests

CERE Profile

The Company is managed by Miguel Martínez. Its team has a large experience in Certification for more than 10 years, including renewable energy's components and installations for worldwide grid integration, design, safety, EMC and grid quality, among others.

During the last 6 years CERE has grown exponentially, diversifying its services until the actual company structure:

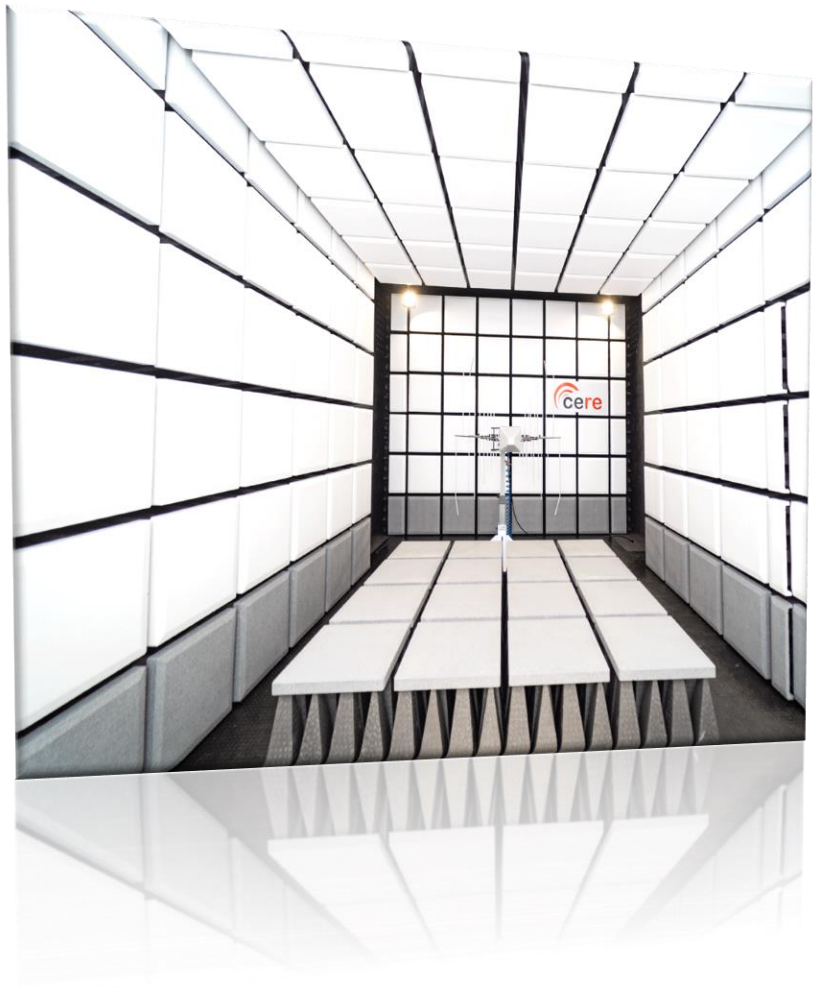
- Certification
- Converters
- Grid Code & safety
- Simulation
- Trackers
- Batteries
- EMC
- Electrical Vehicle Charger
- Transformers
- Medical devices
- Electric and Electronic devices
- Quality System certification

CERE Capabilities

CERE's Facilities in Getafe, Madrid, Spain have the following installations:

- Test site up to 500kVA for all kind of converters and Battery testing
- Test site up to 250kVA for all kind of converters including frequency variators up to 400Hz
- Test site up to 100kVA for DC-AC converters
- Test site up to 50kVA for all kind of converters and Battery testing. The source can act as DC source and AC source and electronic loads
- Test site up to 10kVA for single phase and three phase converters
- Passive loads up to 100kVA
- Electronic loads for Antiislanding up to 500kVA
- EMC Chamber and EMC laboratory
- Safety laboratory
- Simulation laboratory including Power Factory, PSSE and MATLAB

What's CERE EMC?



EMC means Electromagnetic Compatibility, studies the unwanted effects of the generation, propagation and reception of electromagnetic energy.

An equipment is electromagnetically compatible when it is unaffected by the electromagnetic noise around it and does not interfere with other equipment.

Certifying a product is mandatory to be able to sell a product on the market. For this, you must follow the product standard that applies to each device.

The standards establish quite precisely the limits and tests that must be carried out to certify a product.

There are, among others, product standards and testing standards.

The product standards indicate the limits to which each test must be tested.

The test standards indicate the correct procedure to perform each of the tests.

CERE EMC

Electromagnetic compatibility testing is the tool to ensure there are no interferences between different electronic equipment.

CERE tests and certificates under EMC standards both for emission and immunity in order to comply with the European directives and international requirements.

CERE´s team has performed EMC tests on equipment as on-field wind turbines, solar inverters, medical devices, household, IT, etcetera.

CERE has a team specialized in EMC tests on equipment as on-field wind turbines, solar inverters, medical devices, household, IT devices, etcetera.

CERE owns a FullAnechoic Chamber (FAR)

CERE EMC

There are two groups of tests that must be passed to certify a product, Emission and Immunity.

- **Emission**: It is the amount of radiation or energy emitted by a computer. This energy can be received by other equipment and cause it to fail, so it is necessary to set maximum limits that the equipment can emit.

- **Immunity**: It is the ability of a team to defend itself from the radiation it receives from other teams.

CERE's Accreditations

- CERE is accredited by ENAC and a2La (IAF/ILAC members) as Certification Body According ISO 17065 and Testing Laboratory according ISO 17025 for Power Generating Units. This fact ensures a deep knowledge in international requirements for components and Renewable Energies Power Plants.
- CERE is also CBTL and NCB for the IEC Scheme.
- MET approval for the North American market
- Sunspec approval
- SII approval for Israel
- RETIE approved certification body for PV inverters (Colombia)
- Corean Approval

CERE's Accreditation can be checked in:
http://www.cerecertification.com/accreditations

Accreditations

CERE is accredited as Certification Body and Testing Laboratory for Electromagnetic Compatibility according the following standards:

Emission standards

- Radiated and conducted emmision: Characteristics of radioelectric perturbations

CISPR 11 + AMD1 + AMD2

- Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement

UNE-EN 55011+A11

Industrial, scientific and medical equipment. Radio-frequency disturbance characteristics. Limits and methods of measurement (Endorsed by AENOR; October 2016)

- Harmonics

IEC 61000-3-2 + AMD1

Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

- Flicker

IEC 61000-3-3 + AMD1-

Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

Accreditations

CERE is accredited as Certification Body and Testing Laboratory for Electromagnetic Compatibility according the following standards:

Immunity standards

- ESD or electrostatic discharge:

IEC 61000-4-2
Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test

- Radiated immunity:

IEC 61000-4-3
Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test

- Bursts:

IEC 61000-4-4
Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test

- Shock waves:

IEC 61000-4-5 + AMD1
Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test

Accreditations

CERE is accredited as Certification Body and Testing Laboratory for Electromagnetic Compatibility according the following standards:

Immunity standards

- Conducted immunity:

IEC 61000-4-6
Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields

- Magnetic fields:

IEC 61000-4-8
Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test

- Voltage dips, short interruptions and voltaje variations.:

IEC 61000-4-11
Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase

Accreditations

CERE is accredited as Certification Body and Testing Laboratory for Electromagnetic Compatibility according the following standards:

Medical standard

IEC 60601-1-2

Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests

Emission:

- Radiated emission
- Conducted emission
- Harmonics
- Flicker

Immunity:

- ESD or electrostatic discharge
- Radiated immunity
- Bursts
- Shock waves
- Conducted immunity
- Magnetic fields
- Voltage dips, short interruptions and voltaje variations.

Accreditations

CERE is accredited as Certification Body and Testing Laboratory for Electromagnetic Compatibility according the following standards:

Other Product Standards

EN 62040-2
Uninterruptible power systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements

IEC 60947-2
Low-voltage switchgear and controlgear – Part 2: Circuit-breakers

IEC 61326-1
Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

IEC 61400-40 ED1
Wind energy generation systems - Part 40: Electromagnetic Compatibility (EMC) - Requirements and test methods

IEC 61800-3
Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods

IEC 61851-21-2
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

IEC 62920
Photovoltaic power generating systems - EMC requirements and test methods for power conversion equipment

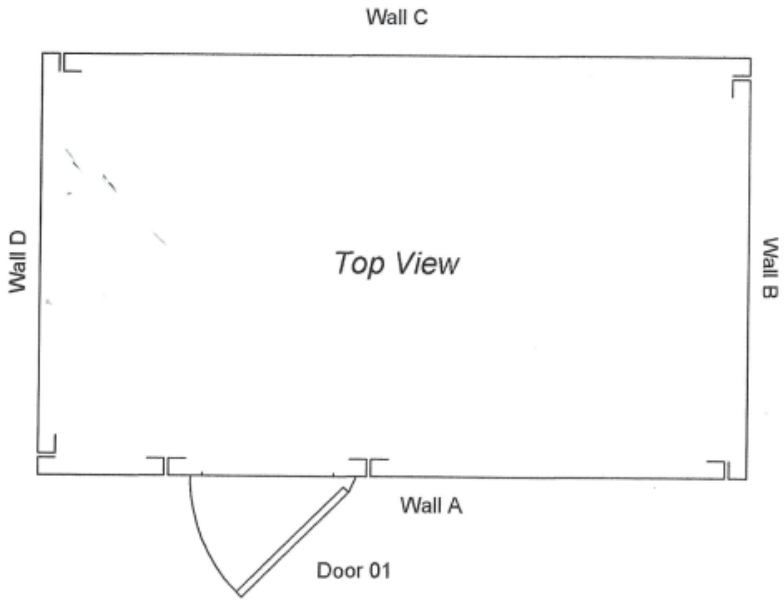
CERE's FullAnechoic Chamber (FAR)

CERE has a FullAnechoic Chamber (FAR), with Quiera Zone (QZ) Ø1.5m (esto es la mesa rotatoria), for EMC Compliance Testing @ 3m: -Radiated Immunity (RI) Industrial environment(1): Full Compliance @ 80MHz-6GHz.:

Approx. external dimensions:
8.10m x 4.80m x 3.975m H up to 1Tonne, 1,5m diameter.

Door 1,5mx 2,4m H

Internal dimensions between hybrid absorbers (HT45 model):
(L x W x H) approx. 7.08m x 3.78m x 2.81m.



CERE EMC Resume

The mains standards CERE used to test and/or certified:

- Industrial environment: IEC 61000-6-2 and IEC 61000-6-4
- Residential environment: IEC 61000-6-1 and IEC 61000-6-3
- Solar inverters: IEC 62920
- Industrial, scientific and medical equipment: CISPR 11
- Grid quality: IEC 61000-3-2, IEC 61000-3-3, IEC 61000-3-11 and IEC 61000-3-12
- Immunity: IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11.
- Medical electrical equipment: IEC 60601-1-2
- Electric vehicle conductive charging system IEC 61851-21-2

Key clients


zgr
always ON


NCLAVE


SIEMENS Gamesa
RENEWABLE ENERGY


Gonvarri
Steel Services


JESIVA
transformers


POWER ELECTRONICS®


i-charging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TECHNOLOGY CENTRE


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HELGESON
SCIENTIFIC SERVICES


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QCORE medical

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producing quality

HTP Medical

i-motion EMS

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