

Center of technical excellence

Center
of technical
excellence

Company profile

Created with the ambition of being a center of technical excellence, EDP Labelec is a reference in the areas of engineering, preventive maintenance and innovation.

Our services are aimed at the entire value chain of the electricity sector, from production and transport to the distribution and consumption of electricity.

The vast experience in high voltage services, electrical and electromechanical tests, inspections, research, certifications, consultancy and environment, has earned our laboratory a growing national and international prestige. The quality, technological knowledge and the innovation ability of the EDP Labelec technical team have also contributed to this, allowing for an efficient and tailored response to our customers.

New testing technologies focused on optimizing preventive maintenance of electrical equipment and systems, sustainability, entrepreneurship, renewable sources and energy efficiency are, today, the trends that characterize EDP Labelec's activity. This is in line with the EDP Group's strategy that continues to contribute to a more sustainable future, as a leader in the energy transition.

Focuses on excellence

Providing services in 4 areas



Tests & trials

of electrical equipment and insulating materials



Environment

tests, studies and consultancy



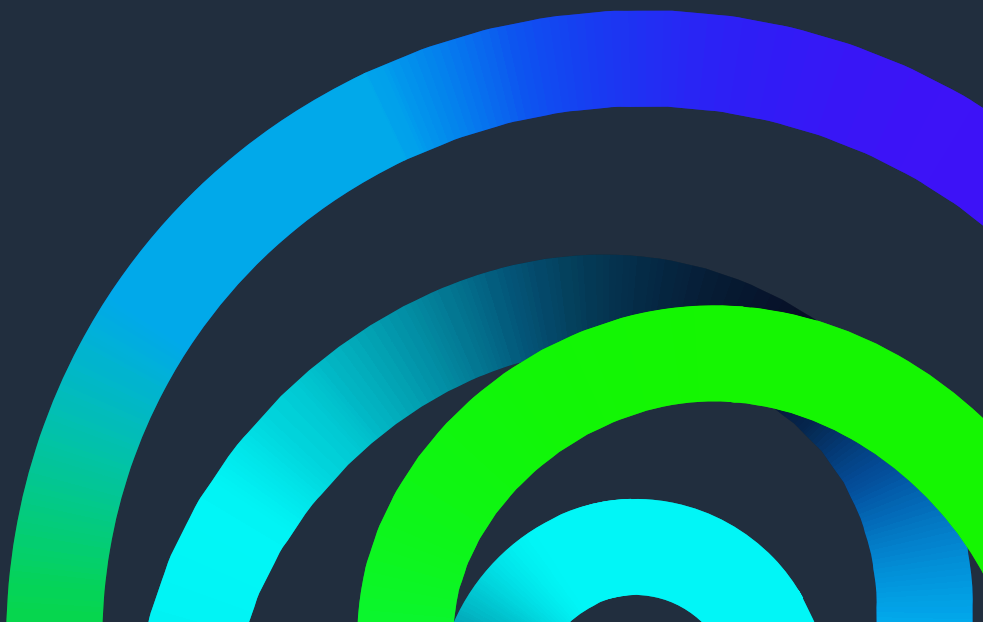
Qualification & inspections

of suppliers and equipment



Energy consulting

in technical studies and innovation projects





Tests & trials

Develops asset management and maintenance activities, in order to increase safety, reduce failures and optimize maintenance and environmental costs.

Electrical and electromechanical tests

- Analysis of the performance of electrical and electromechanical systems
- health index determination of systems and electrical equipment
- type tests and routine tests
- maintenance engineering and fault diagnosis
- calibration of test and measurement equipment
- tests of live working tools.

Insulating materials

- Preventive supervision and life expectancy determination of electrical equipment
- transformer insulating oils regeneration
- consultancy on online monitoring of transformers
- post-mortem analysis of transformers.

Power grid asset inspection

- Overhead power line multi-sensorial inspection (helicopter and UAV): infrared thermography, visual, ultraviolet and LiDAR
- LiDAR processing: distance clearance on power line corridors, point cloud production, 3D digital models
- asset condition monitoring based on infrared thermography (substations, powerplants and other industrial installations).

A low-angle, upward-looking photograph of a large industrial testing facility. In the foreground, a thick blue vertical rod passes through several large, white, ring-shaped components. To the right, a large, curved, metallic, ribbed structure is visible. In the background, yellow metal walkways and structural beams of a large building are visible under bright, overhead lights. The overall scene suggests a high-pressure or high-temperature testing environment.

Tests & trials



Environment

Develops practical solutions to better manage environmental issues related to legal requirements of water legislation.

Our expertise and equipment allows the water quality survey services that we provide to span an extensive range of physicochemical, biological and hydromorphological parameters in rivers and reservoirs.

Laboratory

- Monitoring and quality assessment of surface water (reservoirs, lakes and rivers) and groundwater
- quality control of water intended for human consumption
- characterization of liquid, gaseous and leachate effluents
- monitoring of industrial water (water-steam circuit and cooling circuit)
- analyses on biofuels, solid waste, sediments and soils
- verification and calibration of online analyzers for industrial installations.

Studies

- Consulting services on applied limnology and freshwater ecology
- ecological assessment of environmental flows efficacy
- studies and monitoring of biofouling.

A close-up photograph of a microfluidic device. The device features several coiled, transparent plastic tubes. A central component is a small, clear, square-shaped mixing chamber with a label '5220' on its side. This chamber is connected to various tubes and a small, clear, cylindrical component. The background is blurred, showing other parts of the device and a dark, circular object. The overall scene is set on a light-colored, textured surface.

Environment



Qualification & inspections

Develops activities of qualification and inspection to ensure the quality of electrical equipment and service providers, processes certification and technical staff training.

Smartlab laboratories

- Smart Grid, Smart Metering and Metrology Calibration Laboratories are mainly focused on testing the conformity of equipment to be installed on the electrical grid:
 - a smartgrid state-of-the-art testing hub designed to test and validate both smartgrid equipment installed on low voltage grids up-to secondary substation level – focused on digital grid devices, energy storage and e-mobility technologies – and also equipment incorporated in substation automation systems
 - consultancy services in the designing, commissioning and certification of new laboratory units
 - preparation of technical specifications for equipment used in electrical grid
 - meter verification – energy and clock accuracy
 - forensic meter fraud/tampering analysis
 - calibration services on power/energy, current and voltage.

On-Site

- Factory acceptance tests of all type of electrical equipment
- technical inspections and audits to check manufactory processes, on materials in warehouses or in construction sites
- energy metering system tests according to regulatory and international standards
- maintenance works of energy metering systems
- audit, commissioning and start-up works of metering and protection systems for digital grids on LV, MV and HV levels.

A photograph of a row of white LV network cabinets in a utility room. The cabinets are arranged in a line, receding into the background. Each cabinet has a glass door revealing internal components like meters and switches. The text 'LV NETWORK' is printed on the side of each cabinet. The floor is made of large grey tiles, and the ceiling has recessed lighting. A blue vertical bar is on the right edge of the image.

Qualification & inspections



Energy consulting

Develops consultancy and innovation projects in the field of energy systems and conducts simulation studies on electrical power systems and equipment.

Technical studies

- Expertise analytical and digital simulation studies:
 - renewable Energy Power Plants integration in the grid
 - insulation coordination
 - grounding systems evaluation and design
 - power quality and reliability
 - post-mortem incident analysis
 - overhead line and underground cable interference with buried pipelines
 - power systems dynamics and stability
 - electromagnetic field evaluation
 - power systems protection.

Technological consultancy

- Development and application of innovative technology solutions in power systems
- development of assets management projects (key equipment evaluation, preventive and corrective maintenance programming)
- development of energy efficiency studies
- project development in fields such as:
 - renewable energy
 - asset management
 - energy storage
 - electric mobility.

Fablab EDP

- Digital fabrication and prototyping laboratory with digital tools and computer controlled machines based on a concept of free access tools and knowledge sharing to be able for anyone to make almost anything
- innovation and creativity enhancement; methodology learn by doing.



Energy consulting

Accreditations and certifications

IPAC accreditation, according to NP EN ISO/IEC 17025 standards, enhances customer confidence in the tests performed by EDP Labelec.

Environment



High voltage



Energy metering

EDP Labelec LAB-CE

This laboratory is a metrological verification body recognized by the Portuguese Institute for Quality (IPQ) and IPAC, LAB-CE



Thermography



Insulating materials



Electrical metrology



Certification in the integrated quality, environment and safety system







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