

COOPERATION WITH THE CLIENT FORMS PART OF THE PHILOSOPHY OF INDAR. THE BASIS OF OUR RELATIONSHIP IS A PERSONALIZED AND UNIQUE TREATMENT, WITH A CLEAR COMMON PURPOSE.

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INDAR has one of the best electric machines and power electronics laboratory in the world.

The main capabilities are:

- On load tests up to 8 MW.
- Back to back configuration testing up to 65 MW.
- LVRT (low voltage ride through) testing capability.
- Self-generated grid of 50/60 Hz 20 MVAs.
- Combined tests of electrical and thermal insulation ageing.
- Climatic chamber (-30°C to 80°C) extreme ambient conditions.



WORLD CLASS TESTING FACILITIES

Indar

R+D+i

This allows INDAR to fully test his designs **under all kind of environmental conditions and to guarantee the best quality on his products.**

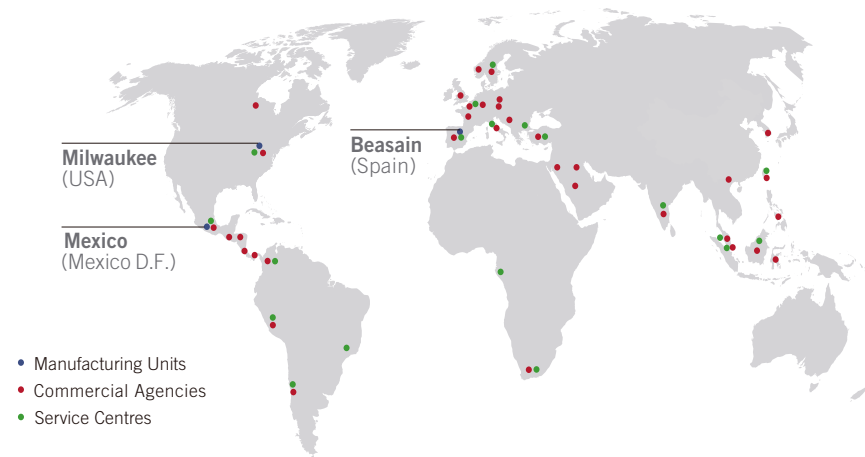
The development of our products and services is specifically adapted to the characteristics of each project and client.

For this purpose the **R&D&I department** is made up of highly qualified personnel, and it has the most advanced computer resources for the design and development of generators.

The philosophy of INDAR is to guarantee the quality and the reliability of its products with in-house fully proven solutions.



Indar
 An *Ingeteam* brand



Your driving force

Indar Electric, S.L.
 www.indar.net



HYDRO GENERATION

Indar

DESIGN, MANUFACTURE AND SUPPLY OF ELECTRICAL ROTATING MACHINES

The experience acquired during over 75 years, allows us to provide a **wide range of products, developed with our own technology, placing us in a position of leadership** in the international market.

One of the most important factors of INDAR ELECTRIC's success is the quality offered in products and services, guaranteed by the **ISO 9001, ISO 14001 and OHSAS 18001 certificates**, as well as the high level of involvement of all of the personnel that take part in the design and manufacturing processes.

In this context, INDAR Electric has decidedly opted for the **LEAN Manufacturing Philosophy** as well as different systems of self-control and bar code traceability, with the aim of offering excellence in our products and services.



In our commitment to offering our clients complete and personalized solutions, we offer a **360° CRS service with all of our product range**, providing you with comprehensive consultancy, direct technical support, training and maintenance services throughout the lifetime of our products.

360° CRS is a dynamic, personalized service that covers **all of stages and contact points between Indar and our customers**. The 360° CRS program is supported by a **professional technical** team whose goal is client satisfac-

tion and continuous improvement of products and services, always hand in hand with the latest advances and technologies in each application sector.

The Technical Support Service included in 360° CRS provides our clients with **specific preventative and corrective maintenance programs for the whole product range**, as well as personalized customer service and guaranteed, **on-site assistance in any part of the world**.

STATE-OF-THE-ART TECHNOLOGY FOR HYDRO APPLICATIONS

Features

- Synchronous generators from **1,250 kVA up to 80,000 kVA**.
- Manufactured in different voltages, from **690 V to 15,000 V**.
- Different forms of construction, in **vertical and horizontal arrangement**.
- **Air and water cooled**.
- For hydraulic turbines of different types, **Pelton, Francis and Kaplan**.
- Wide range of speeds (multipole) and inertias.
- International standards: **IEC, NEMA, IEEE, etc.**

Refurbishment of existing generators

Indar Hydro Service carries out rehabilitation of generators up to **200 MVA**.

Resources available:

- Sheet stamping and laser cutting
- Stacking of stator cores
- Pole manufacturing
- Manufacturing of coils and Roebel bars
- Recovery of bearings

Redesign of active elements and repowering of generators.



13,080 kVA
125 rpm. 8,400 V.



12,570 kVA
600 rpm. 10,000 V.



31,940 kVA
720 rpm. 13,800 V.



49,500 kVA
600 rpm. 11,500 V.



40,500 kVA
107 rpm. 8,500 V.