

*Integral Engineering for the Naval and Industrial sectors*



## About us

"We take the engineering further"

- ▶ GHENOVA is a **500 people international multi-disciplinary engineering and consulting company** that operates in the sectors in need of a comprehensive solution. Our team takes part in large, high technological complexity projects for some of the world's largest firms in the following sectors: **marine and offshore, industry and technology.**
- ▶ We have a clear orientation towards quality, safety, the meeting of deadlines and respect towards the environment. For this reason, GHENOVA is today a company with remarkable experience and reputation in design development and management on global scale projects.
- ▶ **New project in the USA, Polar Cutter Security Ice Breaker for the US Coast Guard Project and OSV offshore vessel.** Our SoW electrical basic design. We have coordinators working in New Orleans in the project. Plus projects in Philadelphia and Wisconsin. In **Energy sector we did basic and detail design of the Mojave and Solana deserts Solar Thermal Power Plants.**
- ▶ Now considering and evaluating a new office in **the USA.**



Headquarters of GHENOVA in Seville (Spain)

- ***Offices in 5 countries***
- ***700.000 Engineering hours/year***
- ***Projects in 25 countries***
- ***500 people***
- ***70% Engineers***

# Evolution of the company

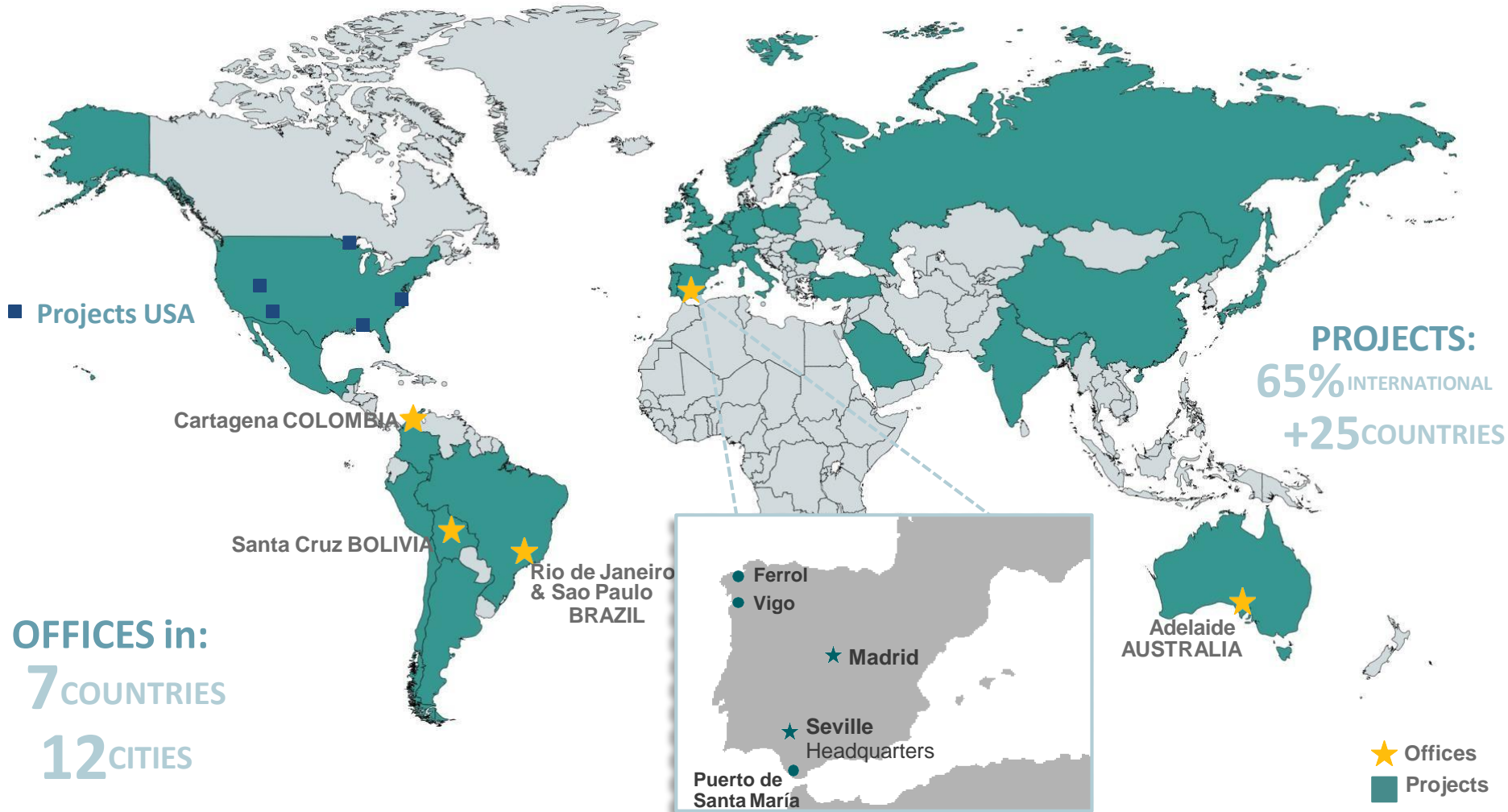
## Main milestones

- ▶ **1963** Gibbs & Hill Inc. and some Spanish electric companies founded **Gibbs & Hill España S.A.** (GHESA).
- ▶ **1983** A new location of GHESA is established in Seville (**GHESA Andalucía**).
- ▶ **1993** GHESA Andalusia opened The Naval Engineering department and embarked on a joint venture with Naval Design (Italy).
- ▶ **1998** We opened the door to aeronautical production engineering services. Among others we participated in projects with EADS-CASA.
- ▶ **2002** GHESA Andalusia creates the Industry Department to support the projects led by the central office in Madrid.
- ▶ **2006** Carlos Alejo and Francisco Cuervas acquire the local office by means of an MBO.
- ▶ **2008** The “GHESA Andalucía” brand becomes **GHENOVA**.
- ▶ **2009** Born **GHENOVA Engineering Germany GmbH** in Germany.
- ▶ **2010** Born **GHENOVA Brasil Engenharia e Projetos Ltda.** in Brazil. **First Energy Project in USA.**
- ▶ **2011** **GHENOVA Netherlands Engineering B.V.** (GNE) open in Netherlands.
- ▶ **2012** GHENOVA purchased **TECNOR I.S.** and is established the headquarters in Ecuador.
- ▶ **2013** Born **GHENOVA-FRAM Engineering AS** in Norway and is opened a new office in Chile.
- ▶ **2015** GHENOVA reinforces naval and industrial areas by acquiring CYPsa and 70% of Alliance T.I.
- ▶ **2015** Born **GHENOVA BOLIVIA** and founded a new office in **Santa Cruz**.
- ▶ **2018** New offices in **Australia and Colombia**.
- ▶ **2019** First contracts with Damen Group, Meyer Turku **and first project in USA.**

GHENOVA consolidated like independent and diversified engineering.

# Where we Are

International office network





# Business Units



MARINE & OFFSHORE



ENERGY/INDUSTRY



INFRASTRUCTURES



Technological/CYBER SECURITY  
(Systems **DIGITAL TWIN,**  
**Shipyard 4.0**)



# Management model

Global Solution



**DESIGN**

Our engineers, technicians and specialists work together to develop a new version of each design.



**DEVELOPMENT**

Development engineering provides the most appropriate solutions for building.



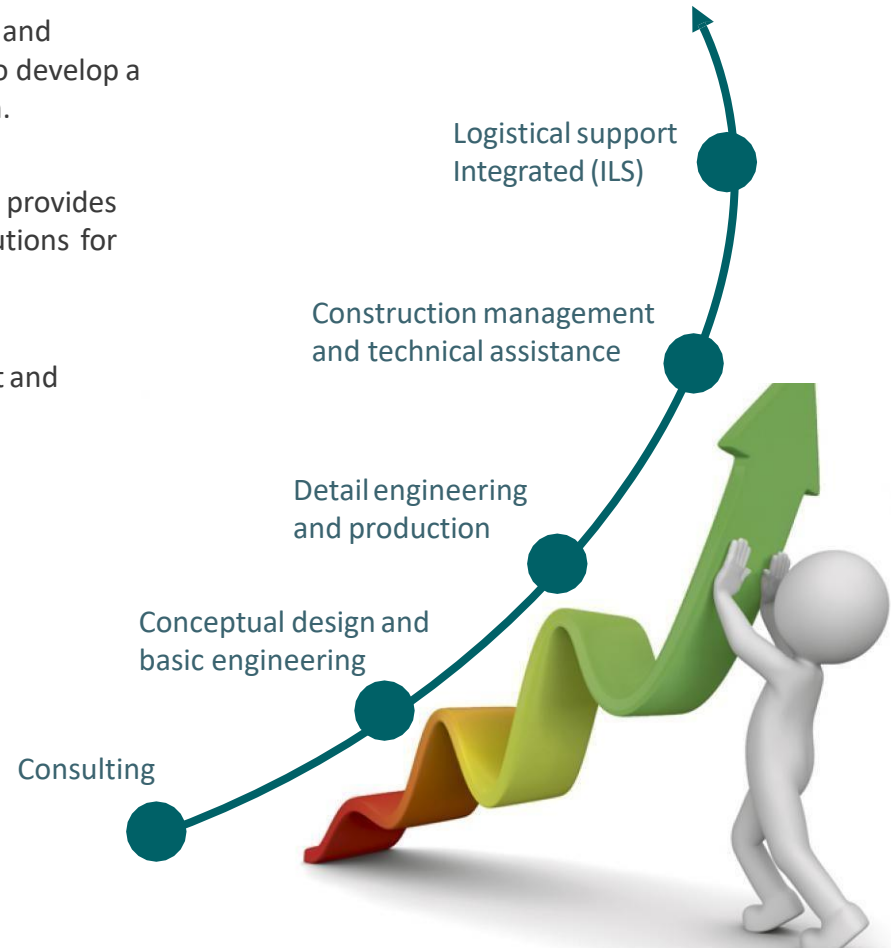
**CONSULTING**

We accompany the client and share their goals and strategical policies.



**MANAGEMENT**

We get involved in logistical aspects concerning the performance, environment and community around the project.



## Marine and Offshore

Engineering to face the new challenges

- ▶ GHENOVA offers **services and integral solutions** to shipyards, shipowners and operators. We participate in large projects of high technological complexity. Our activity is carried out in **all stages of naval engineering**: from conceptual design, to the conversion and modernization of ships.
- ▶ Our clients are reference companies in the world and our best guarantee. Big companies that we work for: Westsea, Damen Group, Royal IHC, Navantia, Chantiers D'Atlantique, Meyer Turku, Fincantieri, SBM offshore o Vard; and army from de Australia, Denmark, Norway, Spain and Portugal.



## Marine Division

Services and solutions for naval engineering (1/2)

### Design

- Feasibility studies
- Conceptual design, all disciplines
- Naval architecture
- Class design
- Finite Element Analysis (FEA)

### Development

- Basic design
- CFD studies
- Detail design
- Production design
- Technical support, construction supervision & commissioning
- 3D laser scanning
- Structural calculations
- Deck outfitting design
- Steel outfitting design

- Accommodation design
- HVAC
- Equipment & services
- Piping
- Electrical engineering
- I&C engineering
- Integrated Logistic Support (ILS)
- Lifting calculations



## Marine Division

Services and solutions for naval engineering (2/2)

### Consultancy

- New regulatory frameworks
- Conversions & *retrofits*
- Environmental solutions and services
- Operating procedures
- Ballast water management
- Use of alternative fuels
- Energy efficiency
- Training
- Definition of vessel operating models

### Management

- Interface management plan
- Contract specifications
- Project management
- HSEQ management
- QA management

## Industry and Energy

GHENOVA's industrial division

- ▶ GHENOVA develops and participates in conventional and renewable **energy** source projects; moreover, projects of different **industrial facilities**.
- ▶ Our commitment to **clean energy** is reflected in more than 4,000 installed-MW in which we have worked on. Solar Thermal, PV Solar, Wind onshore and offshore, Waste to Energy.
- ▶ We provide design, develop, consultancy and management services; and design, production and **installation of turnkey solutions**.
- ▶ **In USA** we did the basic and detail design of two large **Thermal Solar Power Plants** in Mojave and Solana deserts.



### REASONS FOR CHOOSING GHENOVA

**Capacity, knowledge and resources** to develop major industrial projects

We rely on **all the engineering areas** we operate in

**Excellent results** in completed projects

# Industry and energy

## Services and solutions

### Design

- ▶ Conceptual and strategic studies
- ▶ Viability studies
- ▶ Support for lump-sum offers in EPC contracts
- ▶ Cost estimations
- ▶ Risk identifications and assessment
- ▶ Selection and assessment of locations
- ▶ SCADA Design

### Development

- ▶ Basic and detailed engineering
- ▶ Technical support and supervision
- ▶ Building support and launching
- ▶ As-built engineering
- ▶ Factory Acceptance Test (FAT)
- ▶ Site Acceptance Test (SAT)
- ▶ Engineering PPM
- ▶ Processes engineering

- ▶ Mechanical engineering
- ▶ Structural engineering
- ▶ Electrical and instrumentation engineering and installations
- ▶ Upgrade of installations
- ▶ Laser scanning
- ▶ Development of hardware and software systems

### Consultancy

- ▶ Materials quality control
- ▶ Security and health coordination
- ▶ Environmental studies and assessment
- ▶ Investment cycle studies
- ▶ Implementation and evaluation of equipment and installations
- ▶ Circulation analysis

### Management

- ▶ Project and building management

# Infrastructure

Services and solutions

The scope of work of GHENOVA in the area of infrastructures is developed in two large areas: **transport and environment**. Our company has more than twenty years of experience and with the incorporation of the most advanced technologies, which has allowed to implant solidly in the field of civil engineering.



# Infrastructures

## Transportation

### Preliminary drafts and Informative studies:

- Definition of paths.
- Environmental impact studies and corrective measures.
- Analysis of alternatives.
- Study of economic profitability.

### Construction projects

- Complete design of the optimal solution, with the development of geometric and topographic detail to make feasible its construction and economic valuation.

### Technical assistance to the construction:

- Supervision and project coordination.
- Technical assistance to the construction management.
- Project direction.





# Infrastructures

## Environment

### Hydrological planning studies:

- Studies of surface and underground resources.
- Demands for urban supply and irrigation.
- Environmental impact studies and corrective measures.

### Projects of hydraulic works:

- Distribution networks of drinking water and irrigation.
- Watercourse, dams and reservoirs.
- Sanitation and defense against floods.
- ETAP, EDAR.
- Submarine emissaries.

### Technical assistance to the construction:

- Supervision and project coordination.
- Technical assistance to the construction management.
- Project direction.

### Technical assistance for star-up and operation:

- Advice and consultancy.
- Direction and exploitation of dams.
- Drafting of exploitation rules.
- Infrastructure inspection.



# Clients



## Portfolio



## Passenger ships

**STX FRANCE**

*306 m cruise*

**CELEBRITY EDGE**



**LA NAVAL**

*212 m ro-ro passenger ferry*

**LNG FERRY**



**NOBISKRUG**

*143 m luxury yacht*

**SAILING YACHT 'A'**



**WORLD EXPLORER**

*126 m expedition cruise*

**WESTSEA**



**HARMONY OF THE SEAS**

*362 m cruise*

**STX FRANCE**



**MSC MERAVIGLIA**

*315 m cruise*

**STX FRANCE**



# FINCANTIERI Account.

## On Going Projects



### **C.6298 - Marghera** Basic and detail engineering

Client: MC-SCA / MC-PLA  
Shipowner: Norwegian Cruise Line  
Manning: 10.500 horas app.



### **C.6308 - Sestri** Basic and detail Engineering

Client: MC-SCA / MC-APP / MC-PLA  
Shipowner: Oceania Cruises  
Manning: 45.000 horas app.



### **C.6310 - Monfalcone** Detail Engineering

Client: MC-PLA  
Shipowner : Princess Cruises  
Magnitud: 40.000 horas app.  
**Basic Engineering**

Client: MC-SCA / MC-APP  
Shipowner: Princess Cruises  
Manning: 18.000 horas app.



### **C.6312 - Monfalcone** Basic Engineering

Client: MC-APP  
Shipowner: TUI Cruises  
Manning: 7.000 horas app.



### **C.6319 - Monfalcone** Basic Engineering

Client: MC-SCA  
Shipowner: MSC Cruises  
Manning: 3.500 horas app.



### **C.6306 - Monfalcone** Detail Engineering

Client: MC-PLA  
Shipowner: MSC Cruises  
Manning: 7.500 horas app.



## Military ships

**NAVANTIA**

*147 m frigate*

**CRISTOBAL COLON**



**NAVANTIA**

*232 m landing helicopter dock*

**HMAS CANBERRA**



**WESTSEA**

*83 m oceanic patrol vessel*

**SINES/SETUBAL**



**AVANTE 2200**

*98,9 m corvette*

**NAVANTIA**



**HMAS HOBART**

*147 m air warfare destroyer*

**NAVANTIA**



**TCG ANADOLU**

*232 m landing helicopter dock*

**NAVANTIA**

## Mega Yacht 78m

Shipyard: Amels

### Main Particulars

LENGTH OVERALL	: 77.80 m
LENGTH WATERLINE (design draught)	: 75.15 m
BEAM MOULDED	: 14.01 m
BEAM BRIDGE WINGS	: 15.60 m
DEPTH MOULDED	: 7.20 m
DRAUGHT FULL LOAD	: 3.80 m

### Scope of work

#### **Detail PLUS engineering:**

Hull, piping and outfitting.

From midship section to peak.

Procurement technical support.

Software: Nupas Cadmatic

Year: 2017 – 2018.



# Offshore

**EEP**  
*180 m Drillship*  
**PITUBA**



**HJ BARRERAS**  
*131 m FLOTEL*  
**REFORMA PEMEX**



**GARDLINE**  
*Wind Farm Accom. Vessel*  
**WAV Conceptual Design**



**KAOMBO**  
*333 m VLCC to FPSO conversion*  
**SOFRESID**



**WIKINGER Wind offshore**  
*650 t, 62 m jacket*  
**NAVANTIA**



**JASMINE PLATFORM**  
*18.225 t platform*  
**DRAGADOS OFFSHORE**



## Miscellaneous

### LA NAVAL

*161 m cable laying vessel*

### LIVING STONE



### IHC MERWEDE

*164 m cutter suction dredge*

### SPARTACUS



### IHC MERWEDE

*83 m reel lay vessel*

### REEL LAY VESSEL



### LNG BUNKERING

*119 m LNG bunkering*

### REGANOSA



### WAVEWALKER Dredger

*32 x 32 m dredger*

### NEPTUNE SHIPYARD



### LPG FLEET

*4000/7000/12000 LPG Carriers*

### VARD PROMAR

# Renewables

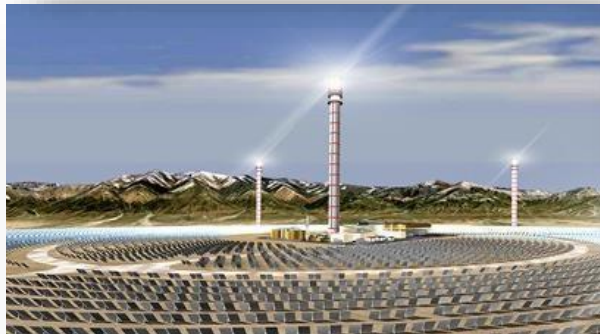
**ENEL GREENPOWER**  
*30+27+45 PCH.*  
**APIACAS**



**ABENGOA USA**  
*560 MWe CCP Solar Thermal Plant*  
**MOJAVE & Solana Deserts - USA**



**ABENGOA**  
*100 MWe CCP Solar Plant*  
**SHAMS I**



**DELINGHA Plant**  
*135 MWe Tower CSP*  
 Client: INGETEAM, Spanish EPC



**CRISTAL**  
*90 MWe Wind Farm*  
 ENEL GREEN POWER



**EL DORADO**  
*37 MWe Wind Farm*  
 ENDE CORANI



# Thermal / Petrochemical / WTE

## PEMEX

*300 MWe cogeneration plant*

## NUEVO PEMEX



## ELECNOR BRASIL

*Gas Production Field*

## GAVIAO BRANCO



## TSK

*373/377/442,5 MWe CCPP*

## SUR/WARNES/ENTRE RIOS



## ECO PARK

*12 MWe WTE Plant*

**M+W GROUP/Exyte**



## DUNBAR

*30 MWe WTE Plant*

**BABCOK & WILCOX**



## PARC ADER

*16,6 MWe WTE Plant*

**CNIM**

# Infraestructures

**BID**  
*2200 km Railway corridor*  
**CORREDOR BIOCEANICO**



**ABC**  
*126 km Road Rehabilitation*  
**SAN RAMON-URUGUAITO**



**EMAPA**  
*Construction Supervision*  
**SILOS ALMACENAMIENTO**



**METRO SEVILLA**  
*Line 1. Project Management*  
**METRO DE SEVILLA**



**TRANVIA JAEN**  
*Project Management*  
**COPT JUNTA ANDALUCIA**



**TERMINAL BAYOBAR**  
*Phosphate Cargo and Storage Terminal*  
**BERENGUER INGENIEROS**



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