

STAGE – STE partner

tecnalia  Inspiring
Business

STAGE
TE  EERA

Iñigo Iparraguirre Torres
Inigo.iparraguirre@tecnalia.com

1. TECNALIA

2. MAIN ACTIVITIES – COMPETENCES IN CSP

3. ACTIVITIES IN STAGE – STE

TECNALIA is the first applied research centre in Spain and one of the most important in Europe with around **1.500 staff**, **110 million Euro** turnover and over **4.000 clients**.

**A unique commitment,
an opportunity,
a challenge.**



Organised in 7 Business Divisions: we work from the experience and the expertise we have acquired in the markets in which we operate, with an efficient and proactive attitude.

1 SUSTAINABLE CONSTRUCTION

2 ENERGY AND ENVIRONMENT

3 INNOVATION STRATEGIES

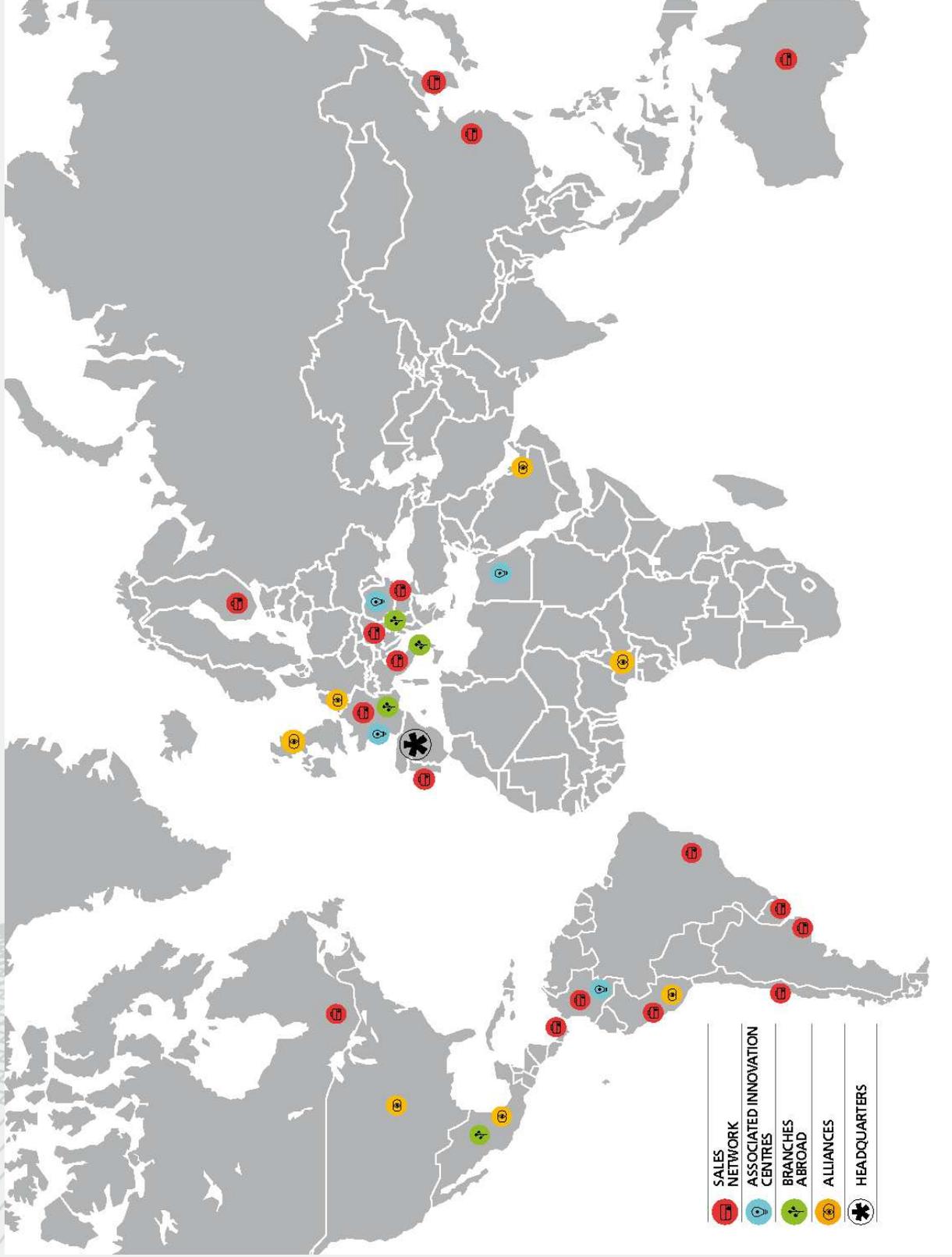
4 ICT-EUROPEAN SOFTWARE INSTITUTE

5 INDUSTRY AND TRANSPORT

6 HEALTH

7 TECHNOLOGICAL SERVICES





4.059
CLIENTS

28
NTBCs
ESTABLISHED

93
PATENTS
IN OUR PORTFOLIO

1.475
STAFF



192
DOCTORS



27
NATIONALITIES



116
MILLION EUROS
INCOME

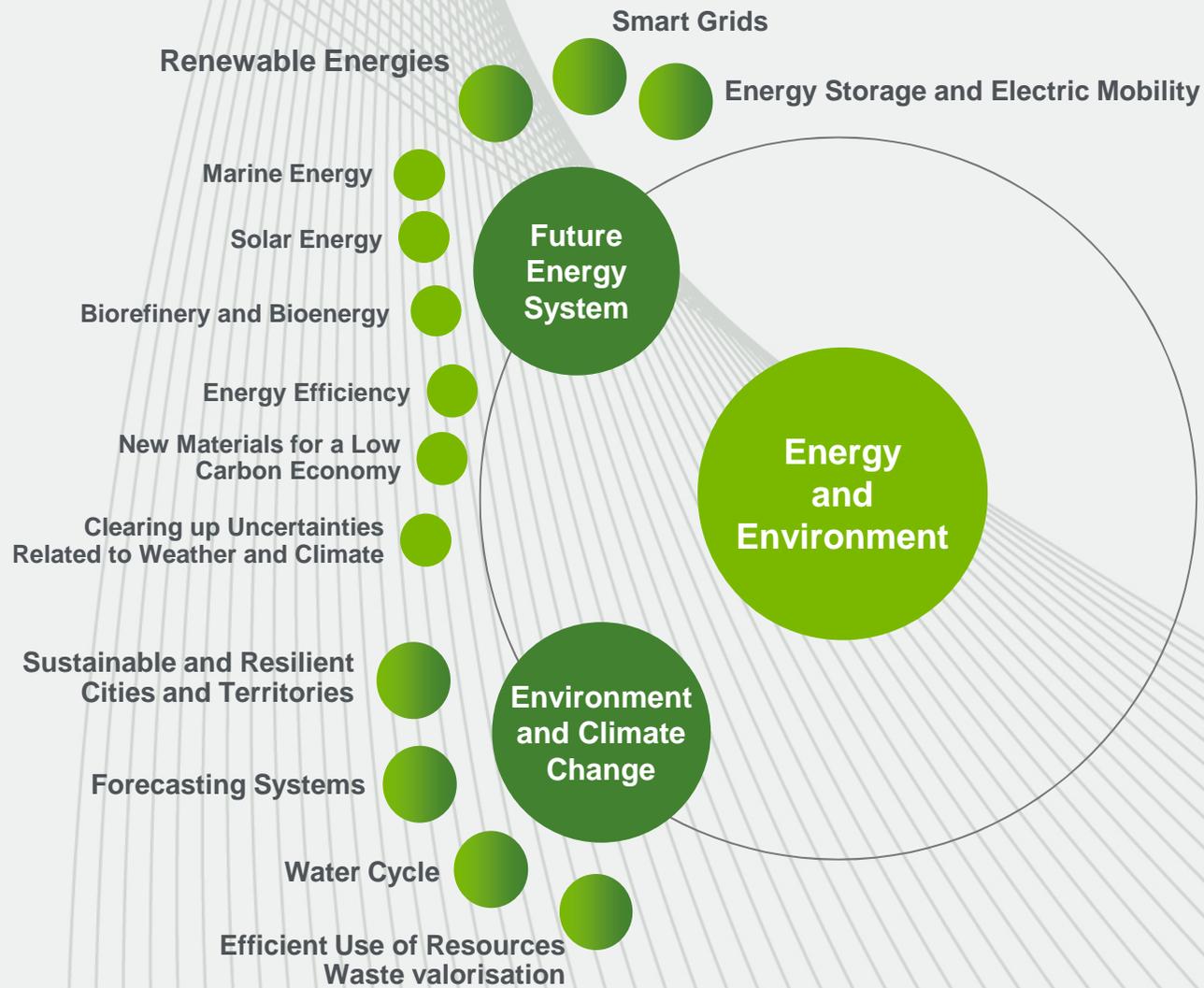


TECNALIA'S INVOLVEMENT IN THE EU 7FP (2007-2011)

No. of approved projects **229**

No. of projects led **51**

Return **86 M€**



**Solutions
for Future
Energy System**

Marine and Offshore Wind Energy

Solar Energy

Energy Storage

Smart Grids and Electric Vehicle

Energy Efficiency (Electric and Thermal)

Bioenergy, Biorefinery and CO₂ Valorisation

Materials for Energy and Environment

Urban Environment and Territorial Sustainability

Meteorology and Climatology

Water Management and Treatment. Water Resource Planning

Efficient Use of Resources. Waste Valorisation

Ecoinnovation and Industrial Sustainability

**Solutions for
Environment
and Climate Change**

1. TECNALIA

2. MAIN ACTIVITIES – COMPETENCES IN CSP

3. ACTIVITIES IN STAGE – STE

- **HIGH THERMAL ENERGY STORAGE (SENSIBLE AND LATENT):**

Storage and structural material selection and validation, thermal conductivity optimization of PCM, nano to macro encapsulation of PCM, nanoparticles in salts, metallic PCM, system designing and simulations (CFD).

- **COLECTORS AND HELIOSTATS:**

Tracking systems, coatings (high temperature selective, anti-reflective, anti-soiling, first surface reflectors) designing, development and testing, Ray-Tracing, monitorization of working parameters, prototype manufacturing, medium temperature concentrating collectors (materials and designs).

- **MATERIALS FOR HIGHLY AGRESSIVE ENVIRONMENTS:**

Protective coatings, material selection and validation for different CSP components, welding analysis, novel heat transfer fluids, novel metallic and ceramic components.

- **SMALL SCALE CSP:**

Medium temperature collectors, novel absorption chillers, novel ORC, solar cooling, solar process heat.

- **SERVICES TO INDUSTRY:**

Weather forecast, analysis of components in plants, incorporation of sensors and monitoring of variables, tools for operation and maintenance, optimizations in civil works.

1. TECNALIA

2. MAIN ACTIVITIES – COMPETENCES IN CSP

3. ACTIVITIES IN STAGE – STE

Beneficiary number and short-name	WP 1	WP 2	WP 3	WP 4	WP 5	WP 6	WP 7	WP 8	WP 9	WP 10	WP 11	WP 12	Total per Beneficiary
-----------------------------------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-----------------------

WP1. Governance and management.

WP2. Integrating activities, Foundations for long-lasting research cooperation.

WP3. Enhancement of STE research facilities cooperation.

WP4. Capacity building and training activities.

WP5. Relationship with industry and transfer of knowledge

WP6. International cooperation.

14 - TECN	3.00	4.00	6.00	4.00	6.00	0.00	16.00	6.00	0.00	0.00	21.00	2.00	66.00
-----------	------	------	------	------	------	------	-------	------	------	------	-------	------	-------

WP7. Thermal Energy Storage: Feasibility of using metallic PCM in Thermal Energy Storage Systems.

WP8. Materials for solar receiver and STE: Outdoor and abrasion testing of reflectors.

WP9. Solar Fuels.

WP10. STE plus desalination

WP11. Line Focusing STE technologies: Medium Temperature Collectors and their integration in industrial and solar cooling applications.

WP12. Point Focusing STE technologies: Receiver materials.

WP7:

- **Design/Simulation tools (CFD, metallic alloy Thermo Calc, 3D designing, etc.).**
- **Metallic alloy synthesis installations at Tecnia.**
- **Alloy characterization laboratories (alloy analysis and thermo physical properties)**

WP11:

- **Design/Simulations tools (CFD, Ray-tracing, 3D designing, etc.).**
- **Workshops and testing installations at Tecnia.**

Indoor/Outdoor testing:

- **Climatic chambers, abrasion testing, etc.**
- **Optical characterization.**
- **Outdoor/roof solar testing installations at Tecnia (Bilbao).**
- **Outdoor/roof testing installation in Cadiz (Tecnia, Chiclana de la Frontera) and testing installations in the University of Cadiz.**
- **Testing installations by other Tecnia's collaborations.**

EERA Joint Programme on
CSP



www.tecnalia.com

tecnalia Inspiring
Business